

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).

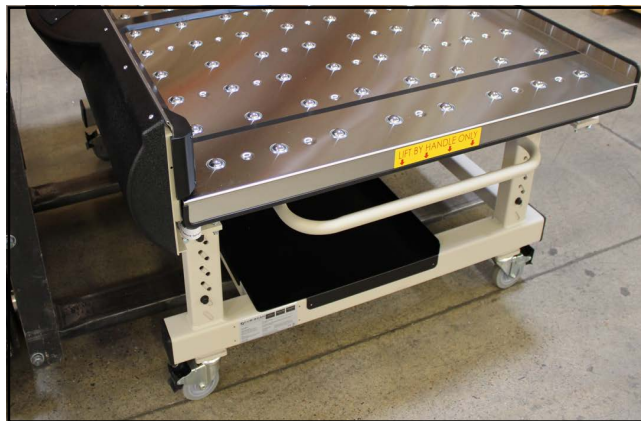


Figure 3
Position of forklift forks under frame

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).

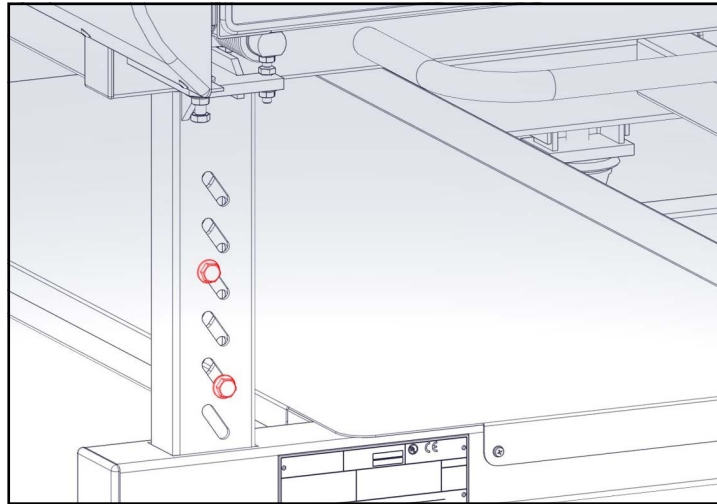


Figure 4
Platform retaining bolts and adjustment holes

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).

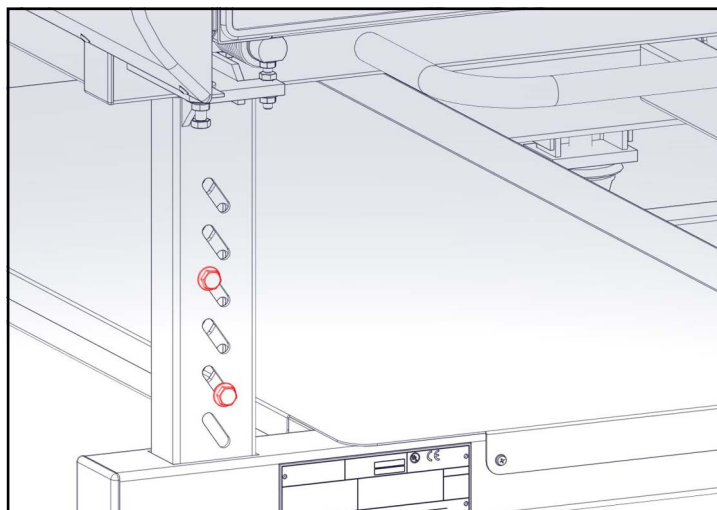


Figure 5

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.

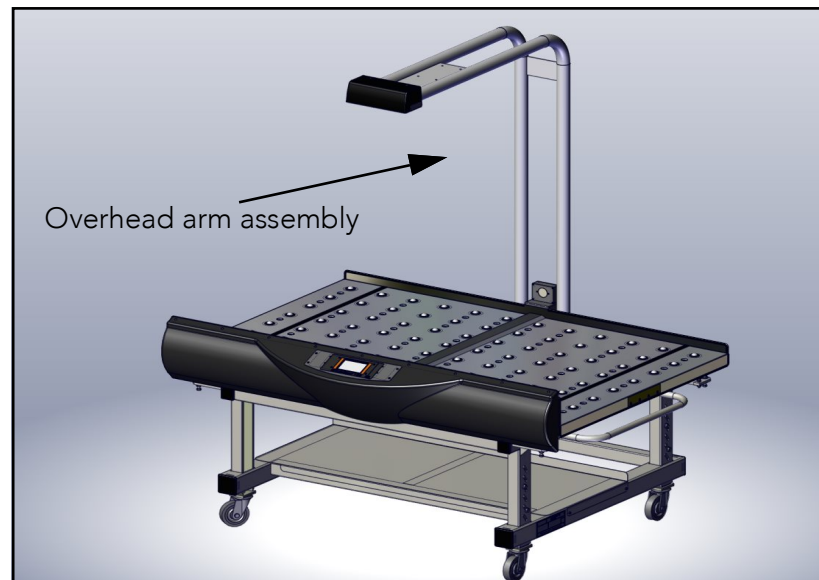


Figure 6
Overhead arm installed on the Cubiscan 150-TC

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.

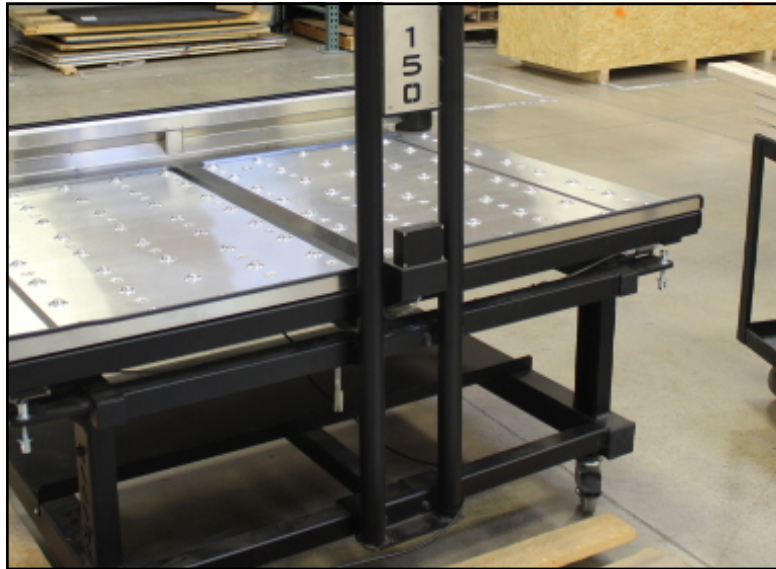


Figure 7
Attaching the overhead arm to the base

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.

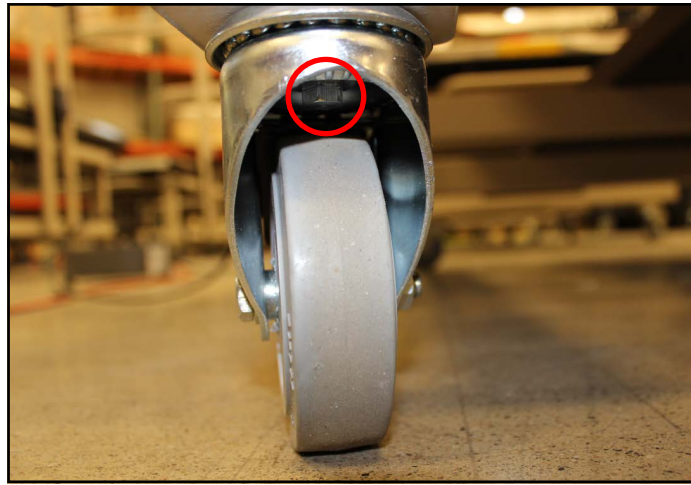


Figure 9
Caster height adjustment bolt

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).

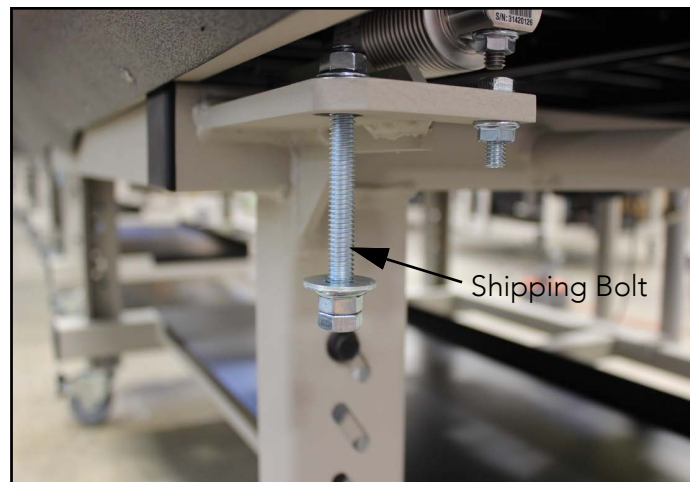


Figure 11
Shipping bolts

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.

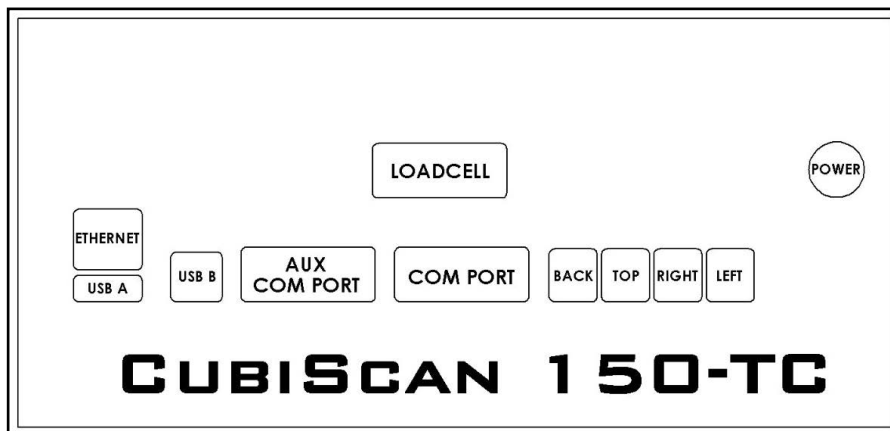


Figure 12
Connection box

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.

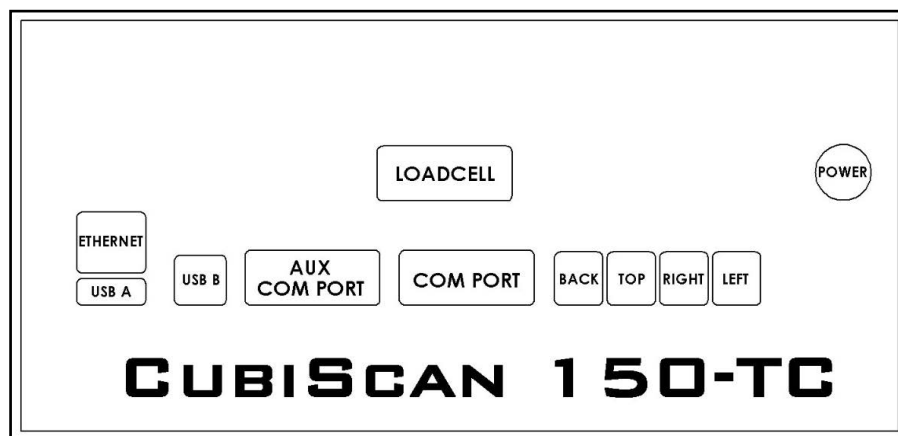


Figure 13
Connection box

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.

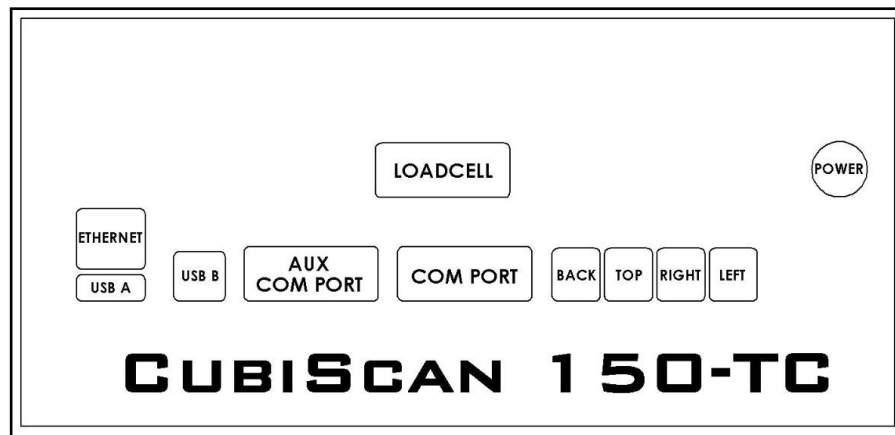


Figure 14
Connection box

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.

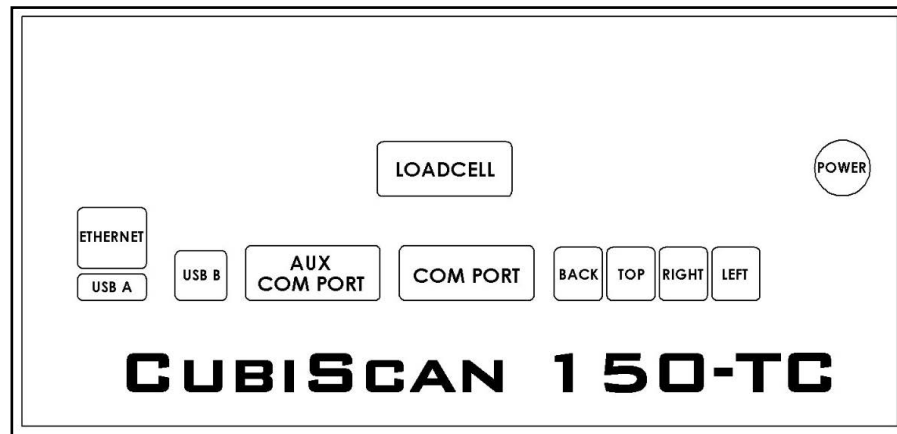


Figure 15
Back of controller

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)



The Cubiscan 150-TC has an additional USB or serial port for connecting to a barcode scanner. To connect the Cubiscan to a barcode scanner, complete the following steps.

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.

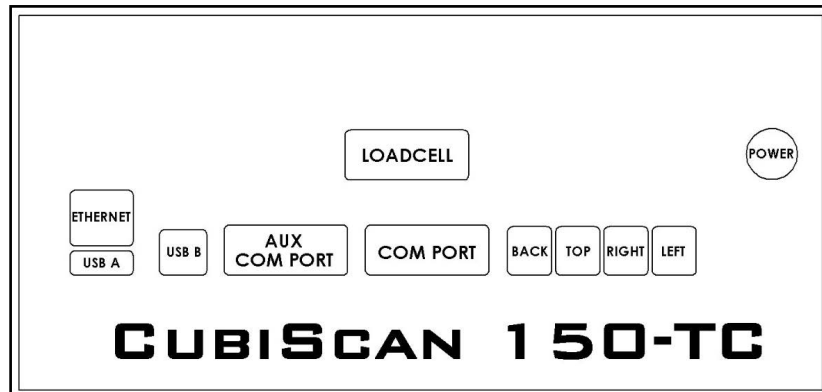


Figure 16
Back of controller

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.

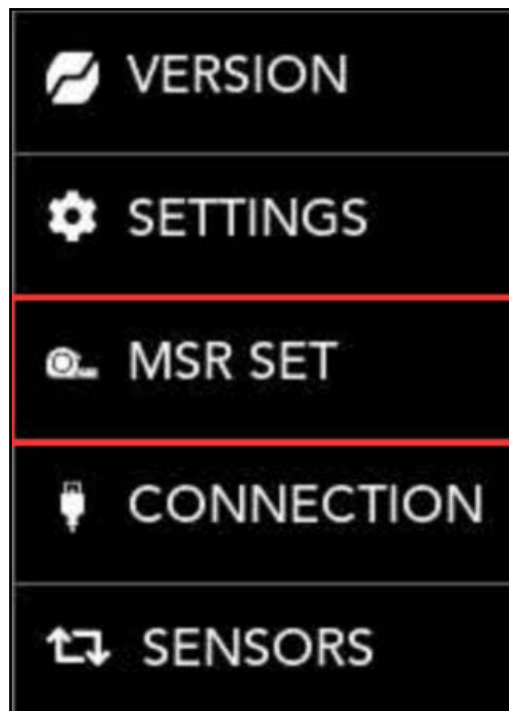


Figure 17
MSR set

4. Select the number of barcodes.

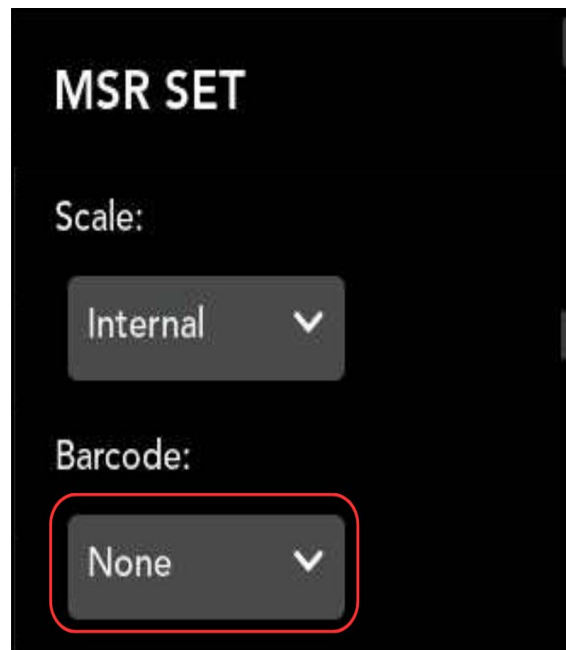


Figure 18
Barcode enabled

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.