

DS5100

Digital Beam Scale

User Manual



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Section 1. Unpacking and Assembly

Introduction

Thank you for purchasing a Doran scale. This product has been designed with the highest level of technology. We are dedicated to deliver a superior product that will provide many years of trouble free service.

As an ISO9000 registered company, Doran Scales is dedicated to delivering products built with strict compliance to our high quality standards. If you have any questions regarding your scale, please contact Doran Scales, Inc.

Cautions and Warnings

Your new scale is a durable industrial grade product, but it is also a sensitive weighing instrument. Normal care should be taken when handling and using this product. Improper handling or abuse can damage the scale and result in costly repairs that may not be covered by the warranty. Please observe the following precautions to insure years of trouble free service from your new scale.

- Do not use sharp objects to press any of the buttons.
- Do not use the scale if the scale is damaged in any way.
- Do not leave patients unattended on the scale.
- Do not exceed the scale capacity.
- Do not drop the scale.
- Do not drop objects on the scale.
- When transporting, do not hit other objects, walls or doorframes with the scale.

Care & Cleaning

With reasonable care, this product will last for many years. Here are some tips to care for your scale. Failure to comply with these guidelines may void the warranty.

- Hand clean the scale base and indicator with a moist cloth.
- Only clean with a mild detergent.
- Do not get water inside the base or display.
- Do not use strong solvents or abrasive cleaners as this can damage the touch panel or other plastic parts.
- Do not immerse.
- Examine the scale periodically for damage and wear and tear before use.
- Remove batteries during long periods of non-use.

Moving Scale

The scale has two wheels at the rear of the scale platform. Grasp the scale display neck just above the aluminum column and tilt the scale back towards you until only the wheels contact the floor. Use the wheels when moving the scale to prevent damage. Once the scale has been moved, press ZERO before weighing.

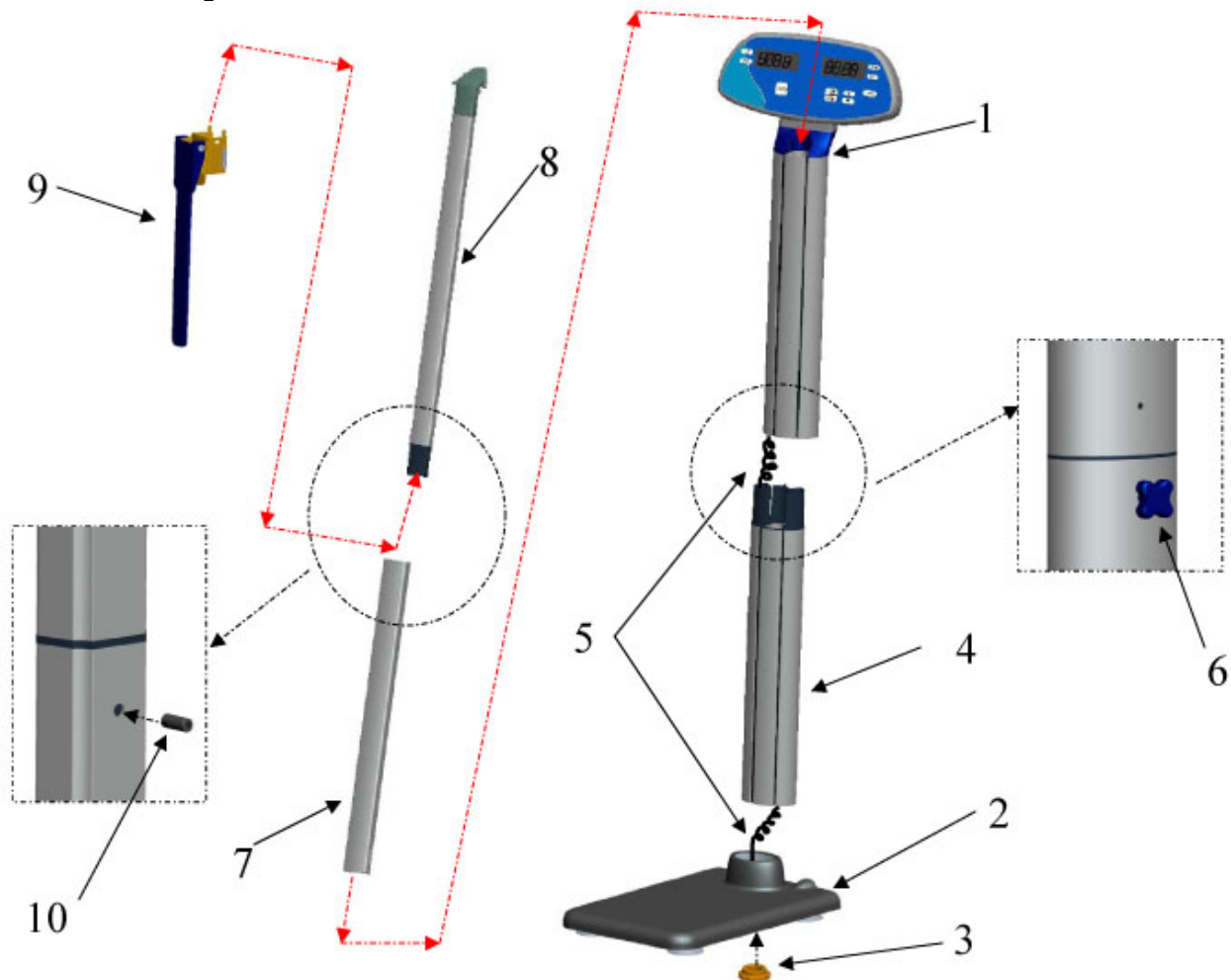
NOTE: The DS5100 will automatically perform a zero function periodically. When moving the scale, it may perform an automatic zero, which will affect the accuracy of the weight reading. Be sure to zero the scale after it has been moved.

Scale Assembly Instructions

Before assembly, ensure you have all the components below. If any items are missing, contact Doran Scales. Please be careful to follow all instructions. Improper assembly may void the warranty. If you notice any shipping damage, notify the shipper immediately. Be sure to retain all shipping materials in case the scale must be shipped elsewhere.

Component List

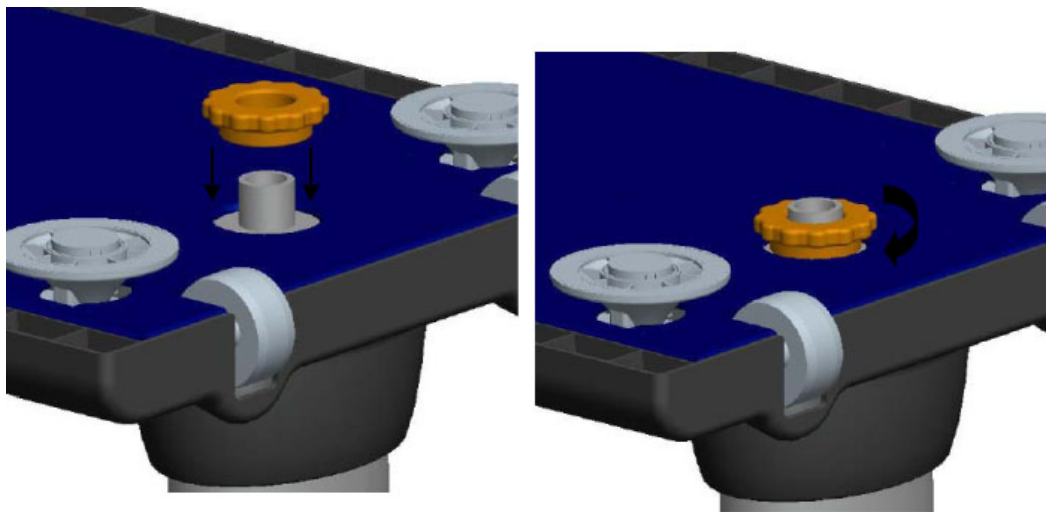
1. Indicator and Upper Tower
2. Scale Platform
3. Scale Platform Hand Nut
4. Lower Tower
5. Wire Harness
6. Tower Hand Nut
7. Lower Height Rod
8. Upper Height Rod
9. Height Rod Arm
10. Height Rod Screw



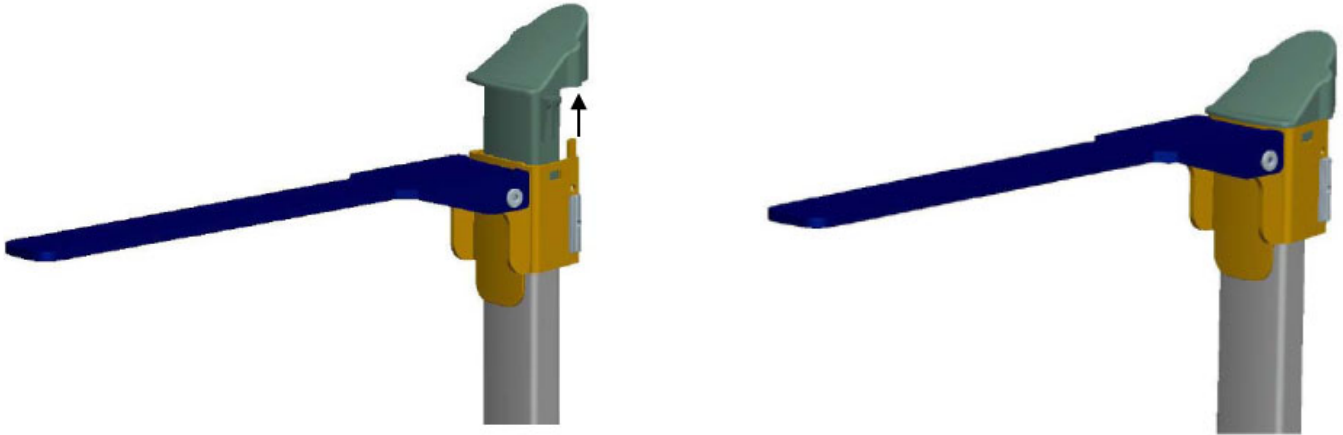
1. Carefully remove the scale from the shipping carton. The Upper Tower (1), Lower Tower (4) and Scale Platform (2) are Connected by the Wire Harness (5) and must be removed for the packaging together.

CAUTION: DO NOT PUT STRESS ON THE WIRE HARNESS WHEN REMOVING ITEMS FROM THE BOX.

2. Insert the Lower Tower (4) into the Scale Platform (2). Carefully pull the wire harness from the top of the Lower Tower to prevent pinching the cable between the Lower Tower (4) and the Scale platform (2).
3. Hand tighten the Scale Platform Hand Nut (3) to the threaded rod on the bottom of the Scale Platform (2).



4. Place the Upper Tower (1) onto the Lower Tower (4). Be careful not to pinch the Wire Harness (5).
5. Hand Tighten the Tower Hand Nut (6).
6. Slide the Height Rod Arm (9) onto the Upper Height Rod (8) and snap into place. Be sure the tabs on the Upper Height Rod (8) are completely seated into the Height Rod Arm (9) slots and do not force into place.



NOTE: Proper installation of the Height Rod Arm (9) is shown above. The Upper Height Rod (8) tabs are engaged completely and the Height Rod Arm (9) tabs are inserted into the Upper Height Rod cap properly.

7. Connect the Upper Height Rod (8) and the Lower Height Rod (7) and install the Height Rod Screw (10) and washer using a Phillips screwdriver.
8. Insert the Height Rod assembly into the opening at the top of the Indicator and Upper Tower (1)
9. Place the scale on a stable flat surface. The scale should rest evenly on all four feet.
10. Press ZERO and the scale is ready to weigh.

Battery Installation

The DS5100 comes with a set of four C alkaline batteries. These batteries supply three year's of typical use. The batteries can be accessed at the rear of the scale display.

1. Press the button at the top of the battery compartment to release.
2. Slide the compartment upwards and remove the compartment from the scale.
3. Insert the new set of batteries with the correct polarity.
4. Reinsert the battery compartment and slide downwards until you hear a click.



Fig. 1 Battery Compartment

Section 2. Scale Operation

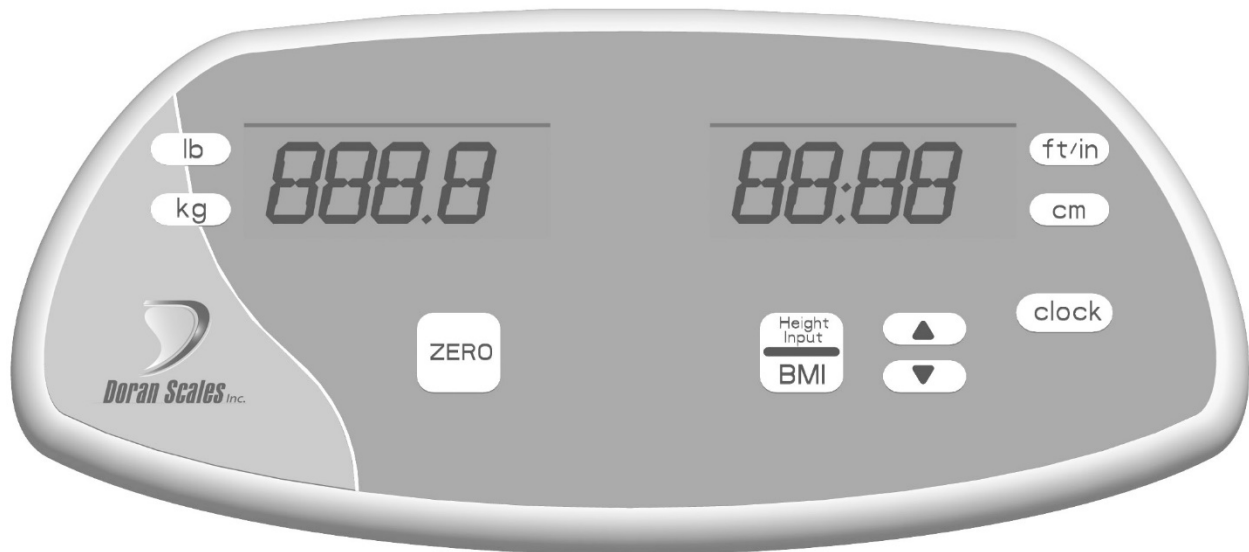


Fig. 2 DS5100 Front Panel

Display Pushbuttons

The Model DS5100 controls consist of ZERO, LB, KG, FT/IN, CM, CLOCK and BMI buttons. The display is used to provide weight indications and operator messages indicating scale operation.

Power On/Off

The scale automatically turns on when a patient stands on the scale. The scale has an Automatic Shutoff Timer that will power down the indicator when not in use.

Zero

When the zero button is pressed, the scale will be reset to zero weight. Use this function when the display is not reading zero when the scale platform is empty and after the scale has been relocated.

Weight Units Select

Press LB to weigh in pounds.

Press KG to weigh in kilograms.

The current unit will be displayed to the right of the weight digits.

Both the LB and KG buttons also act as REWEIGH buttons. If a patient's weight is held, and LB or KG is pressed, the scale will capture a new weight.

*Note that the weight units can be locked. If pressing the LB or KG button does not switch to that weight unit, that unit is locked. See disable instructions in next section

BMI Units Select

Press FT / IN to enter patient height in feet and inches.
Press CM to enter patient height in centimeters.
The current unit will be displayed to the right of the height digits.

BMI

Scale enters BMI mode. See instructions below.

Clock

Accesses clock settings. See instructions below.

Units Lock

Lock out one unit of measure. See instructions below.

Scale Displays

Two LCD displays are utilized to indicate Weight, BMI, Clock values as well as the current scale status.

Weight Display

The patient weight is displayed on the left LCD display.

Hold

Indicates a stable weight has been achieved and held on the display. This indicates an accurate weight has been achieved.

Low Batt

Indicates when the batteries require replacement.

BMI / Clock Display

The BMI height and BMI calculated values are displayed on the left LCD in BMI mode. When not in the BMI mode, the left LCD will display the current time.

Weighing a Patient

1. Step on the scale and stand still.
2. When a stable weight is reached the display will lock and the HOLD annunciator will be displayed.
3. The weight will be displayed until the scale automatically shuts off.

BMI (Body Mass Index) Operation

1. Step on the scale and stand still.
2. When a stable weight is reached the display will lock and the HOLD annunciator will be displayed.
3. Press BMI.
4. The height will flash on the right display.
5. Adjust the height with the up and down arrows and press BMI to accept the current height.
6. The patient weight and BMI value will be displayed until the scale automatically shuts off.

Reset Scale To Zero

1. Clear the scale platform.
2. Press ZERO.
3. The display will show dashes.
4. When scale becomes stable, the display will read zero.

Set Clock

1. Press and Hold the CLOCK button.
2. When the display reads $\overline{24HR}$ or $\overline{12HR}$, release the CLOCK button.
3. To select 12 hour or 24 hour mode, press the up arrow button.
4. Press CLOCK to select the displayed hour format.
5. The hour digit(s) will flash.
6. Use the up and down arrow keys to enter the correct hour.
7. Press CLOCK to accept the current hour value.
8. The minute digits will flash.
9. Use the up and down arrow keys to enter the correct hour.
10. Press CLOCK to accept the current minute value and exit the clock mode.

Units Lock Enable

1. Step on the scale and stand still.
2. Verify the unit of measure is set to your desired unit.
3. Press and hold the up arrow until you hear two beeps.
4. This will lock the unit of measure to only the selected unit of measure.

Units Lock Disable

1. To turn off unit lock and enable both again, step on the scale and stand still.
2. Press and hold the up arrow until you hear two beeps.
3. Press the alternate weight unit to verify it is now unlocked.

Height Measurement

When moving the height rod arm, lift the arm upwards until you hear a click. Grasp the arm at the point closest to the hinge of the height rod arm. Improper use of the height rod arm may void the warranty.



Fig. 3 Proper use of the height rod arm



Fig. 4 Improper use of the height rod arm

To measure a height 43.25" (110cm) or LOWER

1. Extend the Height Rod Arm.
2. Step onto the scale.
3. Adjust the Height Rod Arm until it touches the top of the patient's head.
4. The height reading is indicated by the bottom of the Height Rod Arm as shown below.



To measure a height ABOVE 43.25" (110 cm)

1. Extend the Height Rod Arm.
2. Pull the Height Rod Arm above the height to be measured.
3. Step onto the scale.
4. Adjust the Height Rod Arm until it touches the top of the patient's head.
5. The height reading is indicated by the height reading above the stationary plastic indicator.



Section 4. Data Communications

USB Communications Port

The scale is equipped with a USB communications port. The USB connection is located on the back of the indicator. An optional USB cable is available. Follow the instructions included with the option to install all necessary drivers.

Once the USB drivers are installed on your PC, insert the USB connector into the receptacle on the back of the scale and connect the other end of the cable to your computer. The USB drivers will automatically create a virtual COM port on you PC.

The scale will automatically transmit weight data to your PC one time for each patient when:

1. The patient's BMI is displayed or
2. The patient steps off the scale or
3. The scale automatically turns off.

Data string transmitted from the scale:

Characters	Description
HH:MM	Time. 5 characters.
0x2C (',')	Field separator (comma). 1 character.
MM/DD/YY	Date. The DS5100 does not store the date so dashes replace the month/day/year (--/--/--). 8 characters.
0x2C (',')	Field separator (comma). 1 character.
BMI	BMI value. 4 character field with leading spaces. Includes decimal point.
0x2C (',')	Field separator (comma). 1 character.
HEIGHT	<p>If in inches: F'NN.N" where F is the number of feet and NN.N is the number of inches. 7 characters. Example1: 5' 9.0" Example2: 5'11.0"</p> <p>If in centimeters: CCC.C cm where CCC.C is the height in centimeters, followed by a space and then cm. 8 characters. Example1: 69.0 cm Example2: 175.3 cm</p>
0x2C (',')	Field separator (comma). 1 character.
WEIGHT	Weight. #####.##UU or ###.##UU where #####.# is the weight, with leading spaces, and UU is the units. The units can be lb or kg. 8 characters.
0x20 (' ')	Space. 1 character.
0x47 ('G')	The letter G. This indicates that the scale is in the gross mode. 1 character.
0x0D and 0xdA	Carriage return and line feed. 2 characters.

Example with height in inches and weight in pounds: (carriage return and line feed not shown)

13:46,--/--/--,27.0,5' 9.0", 183.2lb G

Section 5. Specifications

Scale Dimensions	22.6" L x 15" W x 54" H
Platform Dimensions	15" L x 13" W x 2" H
Power	4 C Alkaline Batteries Four year battery life in typical applications.
Displayed Units	lb, kg
Capacity	500 x 0.1 lb 200 x 0.05 kg
Construction	ABS Plastic Housing Aluminum Tower and Height Rod Mild Steel and Plastic Platform
Options	USB Communications Cable
Warranty	3 Year Limited Warranty

Section 6. Troubleshooting

General Problem Resolution

Problem	What to Do or Check
Scale will not turn on when buttons are pressed or when a patient stands on the scale.	<p>Check the battery compartment to be sure the batteries are installed with the correct polarity.</p> <p>Ensure that the battery compartment is installed properly and is pushed fully into place.</p> <p>The scale requires XX lb to turn on when stepped on. For a lighter weight press ZERO and have the patient stand on the scale platform before the scale display times out.</p>
Weight reading will not repeat or scale does not return to zero when weight is removed.	<p>Person or object other than that being weighed is touching the scale.</p> <p>Verify that there is nothing caught in the feet area of the platform or interfering with the feet.</p>
Scale overloads before scale capacity is reached.	Verify scale calibration is correct. If problem persists, recalibrate the scale.
Scale will not come to zero when the ZERO button is pressed.	Make sure that the scale is stabilizing. After pressing the ZERO button, the scale should zero as soon as it becomes stable.
Weight readings are not correct.	<p>Verify the scale calibration with an accurate test weight. If the readings are not correct, recalibrate.</p> <p>Be sure the platform is on a flat surface and all four feet are touching the surface.</p>
Scale drifts off zero.	Check for air currents and/or vibration around the scale.
Scale shuts itself off prematurely.	Install a new set of batteries.

Error Messages

Error Message	What to Do or Check
Err EP	<p>The setup parameters loaded in nonvolatile memory have become corrupted.</p> <p>If this problem persists, contact Doran Technical Support for assistance.</p>
Err Ad	<p>The A/D communication is not detected. Ensure the wire harness was not pinched during assembly.</p> <p>If this problem persists, contact Doran Technical Support for assistance.</p>
Err 0	<p>The calibration zero is out of range. Error is displayed after a zero calibration attempt.</p> <p>Refer to the Calibration Troubleshooting section for additional information. If this problem persists, contact Doran Technical Support for assistance.</p>
Err SP	<p>The span calibration is out of range. Error is displayed after a span calibration attempt.</p> <p>Refer to the Calibration Troubleshooting section for additional information. If this problem persists, contact Doran Technical Support for assistance.</p>
ou ld	<p>The scale is in overload. The load on the scale platform exceeds the scale capacity by more than 105%.</p> <p>Remove excess weight from scale platform. If problem persists, recalibrate. If this problem still persists, contact Doran Technical Support for assistance.</p>
95 ol	<p>The scale is in an extreme overload condition. The load on the scale platform exceeds the scale capacity by more than 150%.</p> <p>Immediately remove excess weight from scale platform as damage not covered under the warranty can occur. If problem persists, recalibrate. If this problem still persists, contact Doran Technical Support for assistance.</p>

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