

**DS9100**

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Wheelchair Scale

# User Manual

**doran**<sup>®</sup>

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## **Section 1. Unpacking and Care**

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

As an ISO9001 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.

### **Unpacking**

Carefully remove the scale from the shipping carton. 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.

### **Cautions and Warnings**

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 ensure years of trouble free service from your new scale.

- Do not use sharp objects to press any of the buttons.
- Do not pick up the scale by the indicator or cables.
- Do not use the scale if it 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.

- This scale will withstand typical cleaning methods and chemicals that are used in healthcare environments. This includes but not limited to cleaners that contain sodium hypochlorite (bleach), hydrogen peroxide and alcohol.
- Do not get water inside the indicator or platform.
- Do not immerse in water or any liquid.
- Do not use strong solvents or abrasive cleaners as this can damage the touch panel or other plastic parts.

### **Preventive Maintenance**

- Examine the scale periodically for damage and wear and tear before use.
- If the scale is damaged, check calibration of the scale and safety before use.
- Check calibration annually and calibrate if necessary.
- Remove batteries during long periods of non-use.

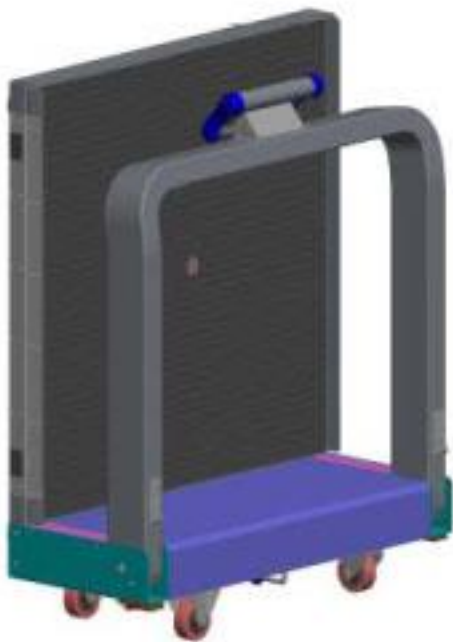
## Moving Scale

To move the scale the tower must be folded and locked into place.

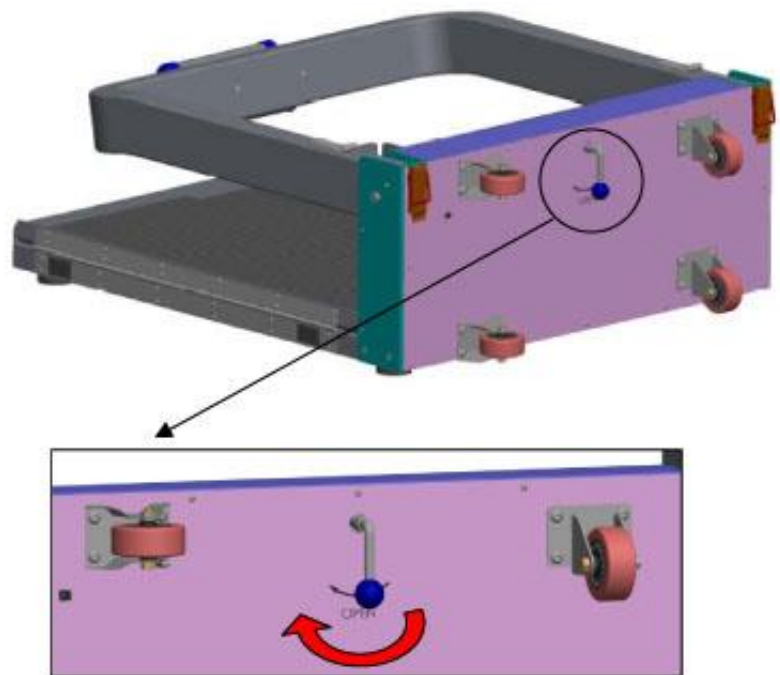
1. Fold the ramp(s) onto the scale platform.
2. Release both latches on each side of the tower.
3. Pull the tower release handle at the rear of the scale to release the tower.
4. Push the tower downwards towards the platform until you hear a click.
5. Once the tower is locked into place the scale can be tilted onto the four wheels at the rear of the platform. See Figure 1.

Once the scale is relocated, and is ready for use,

1. Place the scale platform onto the floor. See Figure 2.
2. Pull the release lever in the direction of the arrow to release the tower.
3. Pull the tower upwards. A hydraulic system will assist raising the tower.
4. When the tower locks in place, pull it towards the base to ensure it has locked into place.
5. Engage the two latches at the rear of the tower.
6. If required, unfold the ramp(s) for use.
7. Press Zero.



**Fig. 1 Scale Ready for Transportation**



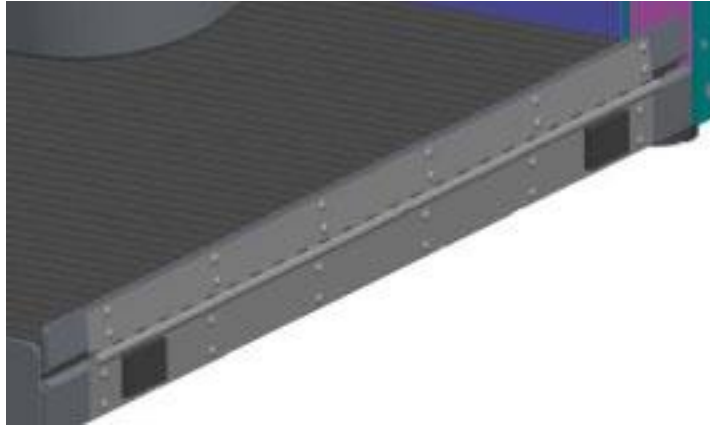
**Fig. 2 Release Lever**

## Moving Ramp Location on Platform

If it is desired, the ramp can be installed on either side of the scale platform.

1. To remove the ramp, fold it onto the platform.
2. There are four rows of small screws. Remove the lower two rows of screws to detach the ramp.
3. Remove the wheelchair stop plate from the side directly opposite to the ramp.

4. Install the ramp to the side desired. Be sure to install all screws, washers and lock washers and tighten completely for safety.
5. Install the wheelchair stop to the side directly opposite of the ramp.



**Fig. 3 Ramp Screw Configuration**

### **Adjusting Ramp Extension Angle**

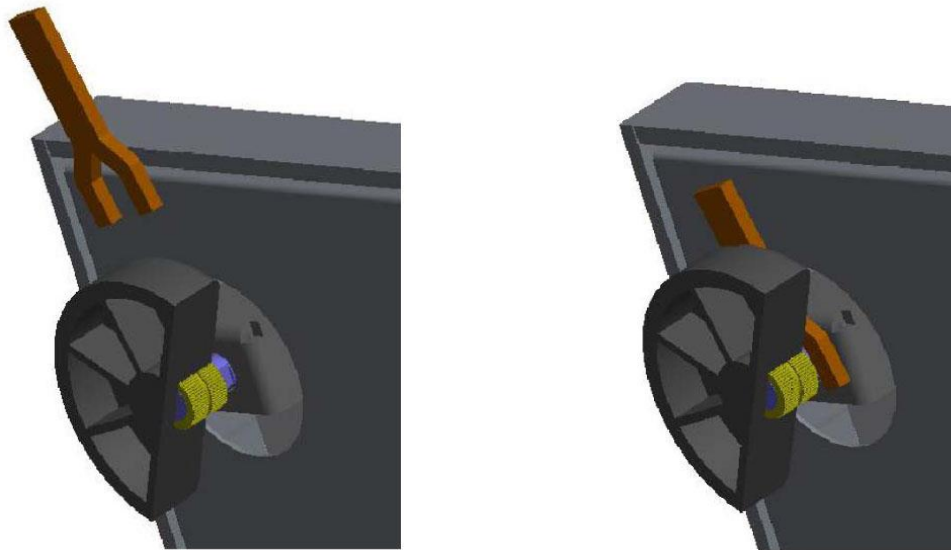
The ramp is designed to not touch the floor when weight is not applied to the ramp. This feature increases scale accuracy and repeatability. If required, the angle of the ramp when extended can be changed.

1. Extend the ramp from the platform.
2. If the ramp is contacting the ground, an adjustment is required.
3. Fold the ramp onto the platform.
4. Five large screws control the angle of the ramp when extended.
5. Adjust the screws outward to raise the ramp or adjust inward to lower the ramp when extended.
6. Extend the ramp and confirm the ramp is no longer touching the ground. Up to a 1/8" gap is acceptable.

## Leveling Scale

If the scale is to be used in a permanent location, it is recommended to level the scale. Leveling the scale will provide a stable weighing surface and optimal accuracy. To level the platform, use the end of the flat wrench marked with an 'F' provided with the scale. Insert the wrench into place and twist the foot to change the height while grasping the wrench.

After leveling the scale, press Zero.



## Section 2. Battery Operation

### Battery Installation

The indicator can be powered by a set of six AA alkaline batteries. These batteries supply two years of typical use with the standard Automatic Shutoff Timer settings.

The battery compartment is located on the backside of the indicator. Press locking tab up to release battery compartment cover. Completely remove all the batteries from the indicator and install the new set of batteries. Be sure the batteries are oriented properly. Reinstall battery compartment cover to complete the battery installation.

### Battery Indicator

The battery indicator displays the remaining battery life available. A low battery status is also indicated by two beeps when a weight is held (If Parameter  $bH$  is set to  $on$ ). This indicator will not be displayed if the scale is powered by its wall transformer instead of batteries.



Replace Batteries



Maximum Battery

## Section 3. Scale Operation



Fig. 3 Front Panel

### Display Pushbuttons

The Model DS7060 controls consist of UNITS, ZERO, REWEIGH, ▲, ▼, and TARE buttons. The display is used to provide weight indications and operator messages indicating scale operation.

### Power On/Off

Press the ZERO button to turn on the indicator. Press and hold the ZERO button for 3 seconds to turn off the indicator. The indicator has an adjustable Automatic Shutoff Timer that will turn off the indicator when not in use.

### Zero

When the ZERO button is pressed, the scale will be reset to zero weight. This feature can be used to zero out any weight not desired to be part of the patient weight. Current BMI entry will be changed back to a default 0.0 value.



## Units

Press the UNITS button to toggle between lb and kg weighing units. The current unit will be displayed to the right of the weight digits. *NOTE: The UNITS button can be locked or unlocked by pressing and holding Units for 5 seconds. An “L” message is displayed when button is locked and “L UN” when unlocked.*

## Reweigh

To reinitiate the weighing process, press REWEIGH. This will allow a new measurement to be taken without the patient having to leave the platform.

## Tare

To enter a tare weight for a wheelchair, press the TARE button. A “TARE” message is momentarily displayed, then 15.0 lb. Adjust the weight value by using the ▲ or ▼ buttons. Press the TARE button to save the value and exit the tare entry mode. If a weight value has been entered, the scale will display NET weight. *To clear current tare weight, press the ZERO button. A menu timer will exit out of this entry mode if no buttons are pressed within a 30 second time period.*

## BMI

With the hold weight being displayed, press and hold the TARE button for 1.5 seconds to enter the height of the patient. Adjust the value by using the ▲ or ▼ buttons. *NOTE: Select the Height units by pressing the UNITS button to toggle between the height in inches or centimeters. A menu timer will exit out of this mode if no buttons are pressed within a 30 second time period.*

## Display Annunciators

The display annunciators will indicate the scale status.

### NET

Net mode is indicated by the NET annunciator. When on, the scale is displaying a net weight. When off, the scale is displaying a gross weight.

### Motion

When the scale senses motion, MOTION will be indicated. Once motion ceases, a stable reading will be displayed.

### Stable Hold

Indicates a stable weight has been achieved and held on the display. This indicates an accurate weight has been achieved. *Note: Weights below 30 pounds will not be held.*

### Average Hold

Indicates that the weight held on the display is a result of averaging several weights due to excessive motion on the scale. *Note: Weights below 30 pounds will not be held. The Average Hold weight may be slightly less accurate than a Stable Hold weight.*

Displaying an Average Hold weight instead of a Stable Hold weight will speed the weightment process of patients that cannot stand still. The Average Hold weight will differ from the patient's actual weight based upon the severity of the motion caused by the patient while on the scale. Although this weight may be less accurate than a Stable Hold weight, the deviation from the patient's actual weight will be minimal.

The time required for the Average Hold to engage is based upon the Average Aperture parameter. See the Parameter Setup section for configuration instructions.

### **Battery Indicator**

The battery indicator displays the remaining battery life available. See the battery operation section for detailed information. *NOTE: Battery Indicator will be disabled when using an external power supply.*

### **Software Number and Revision display**

Pressing and holding the Reweigh button for 3 seconds will perform a display test, show the Software number "5.0.1" and the revision "r 3.1" or higher and then display "5.0.1" to indicate Switch test mode is active. The Switch test mode stops after 10 seconds if no switch was pressed. Scale will then run a Display Segment test. After Display Segment test, the scale will return to the normal weighing operation.

### **Weighing a Patient without Tare**

- Turn on the indicator by pressing the ZERO button.
- The indicator will perform a startup zero.
- The indicator will display scrolling dashes “-----”. Then display 0.00 weight.
- Place the patient on the scale platform.
- The display will scroll dashes for about 3 seconds until the patient’s weight is captured.
- The indicator will beep (when enabled) and then hold the weight on the display until the scale shuts off.

### **Weighing a Patient with Tare**

#### **Example 1:**

- Turn on scale.
- Scale zeroes.
- Press TARE.
- 15.0lb is displayed.
- Use the ▲ and ▼ arrows to set the tare value.
- Press TARE to apply the tare value and return to the weight display.
- Display now shows a negative value and the NET indicator is displayed.

#### **Example 2:**

- Turn on scale.
- Scale zeroes.
- Place patient and wheelchair on the scale.
- Display holds the weight.
- Press TARE.
- 15.0lb is displayed.
- Use the ▲ and ▼ buttons to set the tare value.
- Press TARE to apply the tare value and return to the held weight.
- The displayed weight now shows the NET patient weight. The tare value has been applied to the held weight. *Note that the scale operator does not need to press REWEIGH for the tare to be applied to the held weight.*

Once a TARE value has been applied it will remain in effect until changed or until the scale shuts off.

### **Zero Operation**

1. Place item to be zeroed on the scale platform.
2. Press ZERO. The scale will display a zero weight. If the item is removed, the stable negative weight will be shown.
3. The patient and the item are then place on the scale platform. The patient's weight, less the item's weight, will be displayed.
4. To reset the scale weight to zero, Press Zero again with the scale platform empty.

*NOTE: Stable weights between -5 lb and +5 lb will be zeroed out after 3 seconds.*

### **BMI Operation**

1. With a hold weight displayed, press and hold the TARE button for 1.5 seconds to enter the height value. Height entry starts at 5: 6.0 or 168.0, representing 5 foot 6 inches or 168 centimeters. *NOTE: Height units can be changed by pressing the Units button.*
2. Press the ▲ button to increase or the ▼ button to decrease the value. When the correct value is displayed, press the BMI button to enter value and exit. *NOTE: A menu timer will exit out of this entry mode if no buttons are pressed within a 30 second time period.*

### **Reweigh Operation**

1. With the patient standing on the scale platform, press Reweigh to reinitiate the weighing process.
2. The display will scroll dashes for about 3-5 seconds until the patient's weight is captured.
3. The indicator will beep (when enabled) and hold the weight on the display until the scale shuts off automatically.

## Section 4. Specifications

Scale Platform Dimensions	32.5" L x 33" W x 3" H
Scale Dimensions with Ramp Folded	42" L x 33.5" W x 45.5" H
Scale Dimensions with Ramp Extended	42" L x 49" W x 45.5" H
Scale Dimensions with Second Ramp option, Both Ramps Fully Extended	42" L x 64.5" W x 45.5" H
Wheels	Permanently sealed and lubricated Wheel Material EVA
Power	AC Adapter (UL, ULc, CE)  6 AA Alkaline Batteries Up to 28,000 measurements before battery replacement.
Displayed Units	lb, kg
Capacity	1000 x 0.1 lb 454 x 0.05 kg
Construction	Powder Coated Steel and Heavy Duty Composite Plastic
Options	RS-232 Communications USB Communications Second Ramp AC Adapter
Options	RS-232 Communication cable  USB Communication cable  WIFI

## Section 5. Troubleshooting

### General Problem Resolution

Problem	What to Do or Check
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 or interfering with the platform.</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 (Motion annunciator is off). 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 floor.</p>
Scale drifts off zero.	Check for air currents and/or vibration around the scale.
Scale shuts itself off or will not turn on.	<p>Press the ZERO button to turn on the indicator.</p> <p>Check that new batteries are installed properly in the battery tray.</p> <p>If using an AC adapter, confirm that it is firmly plugged into a functioning wall outlet.</p> <p>Verify the connector at the rear of the indicator is properly installed.</p>

## Error Messages

Error Message	What to Do or Check
Er EP	<p>The setup parameters loaded in nonvolatile memory have become corrupted.</p> <p>Reset all parameters to factory default with the <code>r 5t</code> parameter.</p>
Er Ad	<p>The A/D communication is not detected. Ensure the cable is connected to the rear of the indicator.</p> <p>If problem persists, internal connectors will need to be checked. Contact Doran Technical Support for assistance.</p>
Er nn	<p>Motion Error, weight reading during calibration is too unstable. This error is displayed during zero or span calibration attempt. Error will disappear when platform becomes stable.</p> <p>Refer to the Calibration Troubleshooting section for additional information. If this problem persists, contact Doran Technical Support for assistance.</p>
Er SP	<p>The span calibration is out of range. This error is displayed after a span calibration attempt. Place the proper weight on the platform and press TARE to perform the span calibration again.</p> <p>Refer to the Calibration Troubleshooting section for additional information. If this problem persists, contact Doran Technical Support for assistance.</p>
Er n9	<p>The span calibration is in a negative range. This error is displayed after a span calibration attempt. Place the proper weight on the platform and press TARE to perform the span calibration again.</p> <p>Refer to the Calibration Troubleshooting section for additional information. If this problem persists, contact Doran Technical Support for assistance.</p>
udrld	<p>The scale is in underload. The load on the scale platform is less than the Calibration zero level by more than 20% of the scale capacity.</p> <p>Add table top to scale platform. If problem persists, recalibrate. If this problem still persists, contact Doran Technical Support for assistance.</p>
oovrld	<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 input range, or there is a bad connection between indicator and platform.</p> <p>Immediately remove excess weight from scale platform as damage can occur. Check connections between indicator and platform. If this problem still persists, contact Doran Technical Support for assistance.</p>
95 ul	<p>The scale is in an extreme underload condition. None or very low signal is detected. This error occurs when the raw counts present at the scale's input falls below 250.</p> <p>Check connections between indicator and platform. If this problem still persists, contact Doran Technical Support for assistance.</p>



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