

DS8030

Wheelchair Scale

User Manual

doran[®]

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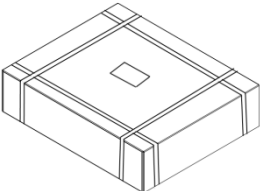
Section 1. Unpacking and Installation

Introduction

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 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.

Unpacking

<p>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.</p>	
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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 pick up the scale platform or the indicator by the cord.
- 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 platform and indicator with a moist cloth.
- Only clean with a mild detergent.
- Do not get water inside the scale platform or indicator.
- 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.

Installation

Connect the loadcell cable male connector to the inline female connector coming from the indicator. Do not use excessive force to push the connectors together. The connector is keyed to prevent misalignment. Be sure the mating keys are aligned,

The indicator can be wall mounted using the keyholes located on the backside of enclosure.

Section 2. Battery Operation

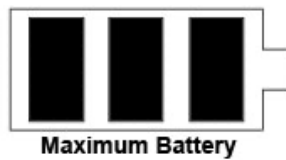
Battery Installation

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.



Section 3. Scale Operation

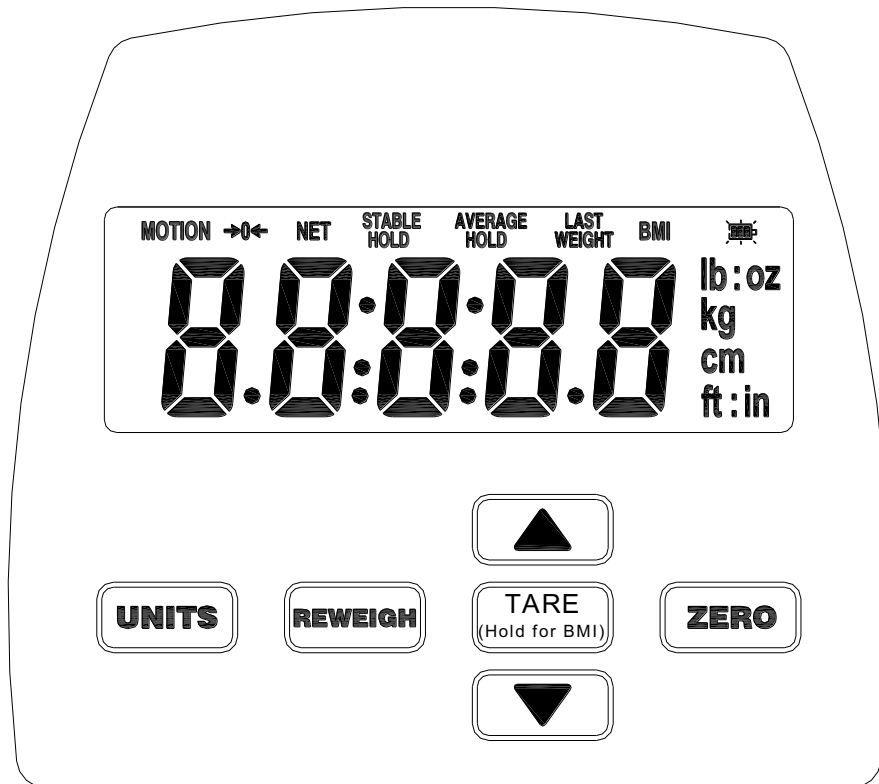


Fig. 3 Front Panel

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 on” message is displayed when button is locked and “L off” 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 "Su181" and the revision "r 3.1" or higher and then display "StEst" 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. Data Communications

RS-232 Communications Port

The indicator is equipped with an RS-232 communications port. The RS-232 connection is located on the back of the indicator behind the top access cover. An optional RS-232 cable is available. Insert the phone style connector into the receptacle on the indicator housing and connect the 9-pin connector to your computer or printer.

Note: This option may reduce battery life.

Basic understanding of RS-232 data communications is needed when setting up the indicator to communicate with a printer or PC. When setting up an RS-232 communications system, there are two concerns which affect the configuration of that system. These are:

- Baud Rate
- Data Bits and Parity

The baud rate determines how fast the data is sent from the scale. The sending and receiving units must be set to the same baud settings. Refer to the **For.** parameter for details.

The indicator's data bits, parity and stop bits are set when configuring the **For.** parameter. The receiving units must match the scale setting for proper communication.

USB Communications Port

The indicator is equipped with a USB communications port. The USB connection is located on the back of the indicator behind the top access cover. 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 indicator and connect the other end of the cable to your computer.

IQ Vitals protocol (IV)

Fairbanks TeleWeigh (9600,7,ODD,2)

Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
Z or z		Zero the scale (if in motion, scale will wait until stable, then zero)
<cr> or W	<weight><sp><uu><sp> <mot><sp><sp><cr><lf> <eot>	Current Display Weight. Active, Stable Hold, or Average Hold. (<mot> GR = stable, gr = motion)
U		Scale scrolls through available weight units.
H	<height><sp><hh><sp>GR<sp> <sp><cr><lf>	Current height value in inches "in".
R or r		Scale performs a Reweigh operation (same as pressing the Reweigh button)

Welch Allyn Spot protocol (VU)

(2400,7,EVEN,1)

Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
DR<cr><lf>	<mot><sp><sp> <weight><uu><cr><lf>	Current Weight. (<mot> SD = stable, S_ = motion)

Doran F0 protocol (f0)

(9600,8,NO,1)

Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
Z or z		Zero the scale (if in motion, scale will wait until stable, then zero)
<cr> or W	<stx><pol><weight><sp> <uu><sp><cr><lf>	Current Display Weight. Active, Stable Hold, or Average Hold.
U		Scale scrolls through available weight units.
H	<height><sp><hh><sp>GR <sp><cr><lf>	Current Height value in inches or centimeters.
R or r		Scale performs a Reweigh operation (same as pressing the Reweigh button)

Doran F1 protocol (f1) (9600,8,NO,1)		
Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
Z or z		Zero the scale (if in motion, scale will wait until stable, then zero)
<cr> or W	<stx><pol><weight>#<uu># GRS#<tare>#<uu>#<height># <hh>#<bmi>#BMI<cr><lf>	Current Display Weight. Active, Stable Hold, or Average Hold.
U		Scale scrolls through available weight units.
R or r		Scale performs a Reweigh operation (same as pressing the Reweigh button)

Doran Fd protocol (Fd) (9600,8,NO,1)		
Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
Z or z		Zero the scale (if in motion, scale will wait until stable, then zero)
<cr> or W	---:--/--/--, <bmi>, <height>, <pol><gross><uu><sp>G, <tare><uu><sp>T, <pol><net><uu><sp>N, <cr><lf>	Current Display Weight. Active, Stable Hold, or Average Hold. (<mot> G or N = stable, g or n = motion)
U		Scale scrolls through available weight units.
R or r		Scale performs a Reweigh operation (same as pressing the Reweigh button)

Doran FH protocol (FH) (Continuously transmits at 3.75 per second - 2400,8,NO,2)		
Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
Z or z		Zero the scale (if in motion, scale will wait until stable, then zero)
<cr> or W	<stx><status><0xD7><0xE4> <weight><cr>	<status> 0x80 = positive lb weight, 0x82 = positive kg weight, 0xB0 = negative lb weight, 0xB2 = negative kg weight. Current Display Weight. Active, Stable Hold, or Average Hold.
U		Scale scrolls through available weight units.

Doran FH protocol (FH)

(Continuously transmits at 3.75 per second - 2400,8,NO,2)

Command (RXD) Computer to Scale	Scale Output Responds (TXD) Scale to Computer	Description
R or r		Scale performs a Reweigh operation (same as pressing the Reweigh button)

Data String Key

<> = Separator for reference, not printed
 <stx> (☺) = ASCII 02h, start of text, non-printable character
 <etx> (♥) = ASCII 03h, end of text, non-printable character
 <eot> (♦) = ASCII 04h, end of transmit, non-printable character
 <cr> (♪) = ASCII 0dh, Carriage return, non-printable character
 <lf> (☐) = ASCII 0ah, Linefeed, non-printable character
 <sp> () = ASCII 20h, space
 <mot> = GR for stable, gr for motion or SD for stable, S_ for motion
 <pol> = minus sign for negative weight or a space for a positive weight
 <weight> = current displayed weight 6 character field with decimal point
 <gross> = gross weight 5 character field with decimal point
 <net> = net weight 5 character field with decimal point
 <tare> = tare weight 6 character field with decimal point
 <height> = 6 character field with decimal point
 <hh> = Height units
 <bmi> = 5 character field with decimal point
 <status> = status byte, weigh units and polarity

Section 5. Specifications

Indicator Height	44" from the top of the platform to the weight display.
Platform Overall Dimensions	Single Ramp: 39" L x 36" W Dual Ramp: 49" L x 36" W
Platform Weighing Surface Dimensions	Single Ramp: 29" L x 30" W Dual Ramp: 29" L x 30" W
Indicator Dimensions	8" L x 6.5" W x 2.3" H
Power	AC Adapter (UL, ULc, CE) 6 AA Alkaline Batteries (Optional) Up to 28,000 measurements before battery replacement.
Displayed Units	lb, kg
Capacity	800 x 0.2 lb or 360 x 0.1 kg
Construction	Powder Coated Steel and Heavy Duty Composite Plastic
Options	RS-232 Communication cable USB Communication cable WIFI
Warranty	2 years

Section 6. 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 rst 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>
Ernn	<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>
ErsP	<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>
Erng	<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>
ourld	<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>
Gs 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>
Gs 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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