160-10-7N

Low-Profile Digital Athletic Scale

Operator Manual

RICE LAKE
WEIGHING SYSTEMS

June 15, 2021

PN 193841 Rev B

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www.ricelake.com

Contents

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1.0 Introduction

The 160-10-7N Low-Profile Digital Athletic Scale is efficiently designed to provide accurate, reliable and repeatable weight measurements. The large, stand-alone indicator can be placed on a table or the floor. It can also be mounted to a wall using the sturdy, built-in bracket. The 160-10-7N Low-Profile Digital Athletic Scale is an NTEP-certified device that provides the highest possible accuracy when weight is a critical factor.

Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com/health

Figure 1-1. Rice Lake Low-Profile Digital Athletic Scale (RL160-10-7N)

1.1 Standard Features

- Capacity: 550 lb x 0.2 lb (250 kg x 0.1 kg)
- Platform dimensions (L x W x H): 14.4" x 14.4" x 1.65"
- Motiontrap™ (movement compensation technology)
- Large LCD display
- 6 AA alkaline batteries
- Low battery indicator/automatic power-off
- BMI (body mass index) function
- Hold function
- Unit of Measure: lb only, kg only, lb/kg
- EMR compatible

Note ***The BMI and Hold buttons do not function when set up as a NTEP-certified scale.***

1.2 Options

Transport/Carrying Case (PN 107445)

1.3 Safety

Safety Signal Definitions:

DANGER — *Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.*

WARNING — *Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.*

CAUTION — *Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.*

IMPORTANT — *Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.*

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Subjects with disabilities or who are physically frail, should always be assisted on and off the scale.

Do not use the scale on slippery surfaces, such as a wet floor.

Do not use this scale when body/feet are wet, such as after taking a bath.

Do not transport the scale while someone is standing on it.

To avoid cross contamination, the scale should be cleaned regularly.

Do not allow minors (children) or inexperienced persons to operate this scale.

Do not jump on the scale.

Do not use in the presence of flammable materials.

Use the scale only to determine weight of people while standing.

Do not drop the scale or subject it to violent shocks.

For accurate weighing, the scale must be placed on a flat, stable surface. Thin carpeting is fine but not recommended.

Weight exceeding the maximum capacity (550 lb/250 kg) may damage scale.

Operating at voltages and frequencies other than specified could damage the equipment.

If the LO Bat indicator activates, replace the batteries or connect the scale to an AC power source as soon as possible.

Do not use in a wet or humid environment.

Do not make alterations or modifications to the scale.

2.0 Scale Assembly

2.1 Unpacking Scale

Place the unopened shipping container in an open area with room for unpacking the scale. Parts included:

- Scale base and indicator
- Six AA batteries
- AC adapter
- USB 2.0 Cable AM/BM 1.5 M
- Serial cable 9.5' with female DB9 and RJ45 connectors

2.1.1 Repacking

The 160-10-7N must be properly packed with sufficient packing materials prior to being moved or shipped. Retain the original shipping materials and container, if possible.

IMPORTANT ***Damage caused by improper packaging is not covered by the warranty.***

2.2 Setting Up Scale

Place the scale on a hard level surface for the most accurate weighments.

Note ***Thin carpeting is acceptable but is not recommended. Weighing on carpet can cause a weight discrepancy.***

2.2.1 Leveling the Scale

Use the bubble level to check for level and adjust feet as needed.

Figure 2-1. Bubble Level

2.3 Indicator

Use the following sections to setup the provided Rice Lake Indicator.

2.3.1 Load Cell Connection

The indicator and scale come connected with a 6-foot load cell cable. Follow the procedure below if the load cell cable needs to be replaced or reconnected to the indicator.

1. Unscrew and remove the tilt stand bracket from the indicator to gain access to the load cell connection.

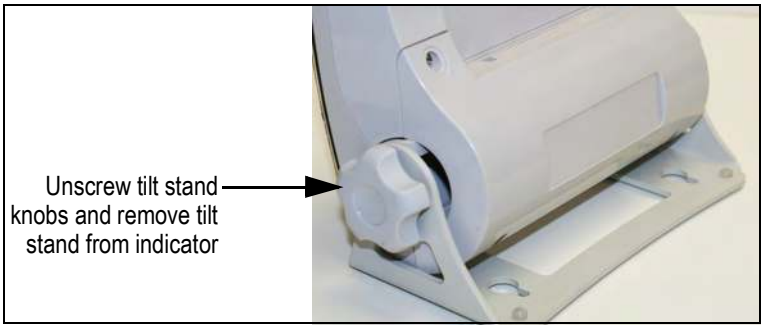

Figure 2-2. Remove Tilt Stand

2. Remove the four back retaining screws to remove the back cover to the indicator.

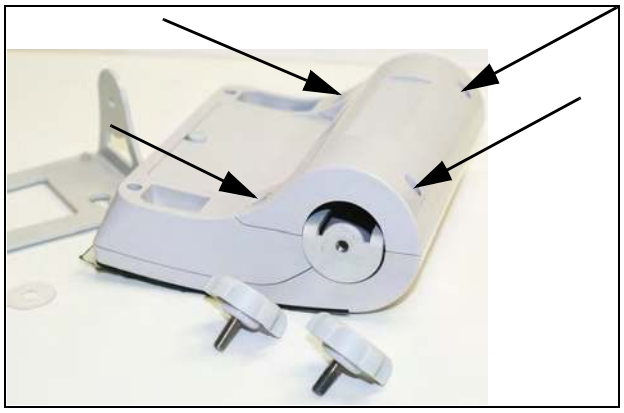

Figure 2-3. Remove Back Cover

3. Plug the end of the load cell cable into the load cell connection. When it clicks the load cell cable is properly seated into the connection.

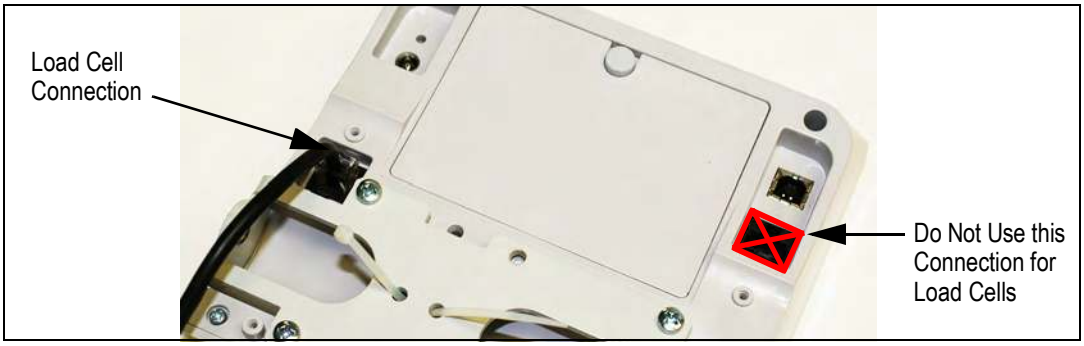

Figure 2-4. Load Cell Connection Point

4. Reinstall the backplate and attach to the tilt stand.

2.3.2 Insert Batteries

The six AA batteries that come with the scale offer an average of 25 hours of continuous use.

To install the batteries:

1. Open the battery chamber cover by turning the thumbscrew to the left and remove the cover.
2. Insert batteries into the battery chamber as illustrated in the back of the chamber.

Figure 2-5. Battery Chamber

3. Put the cover in place and turn the thumbscrew to the right to secure it.

Note ***Remove the batteries prior to storing if the product is not going to be used for an extended period of time.***

2.3.3 Optional Power Connection

Rice Lake Weighing Systems includes an AC power adapter to use when power is available.

IMPORTANT ***Only use power adapters supplied by or purchased from Rice Lake Weighing Systems. The use of a power adapter not from Rice Lake Weighing Systems voids the warranty.***

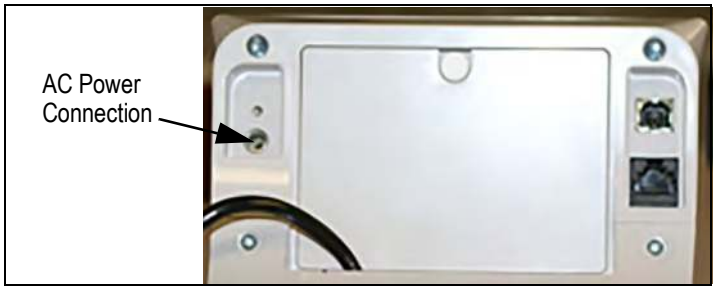

Figure 2-6. Power Connection Site

Note ***The battery annunciator on the display turns off when using an AC power connection.***
The brightness of the backlight is reduced to 60% when using a battery power connection.

3.0 Operation

This section describes the indicator, functionality of each button and basic scale operations.

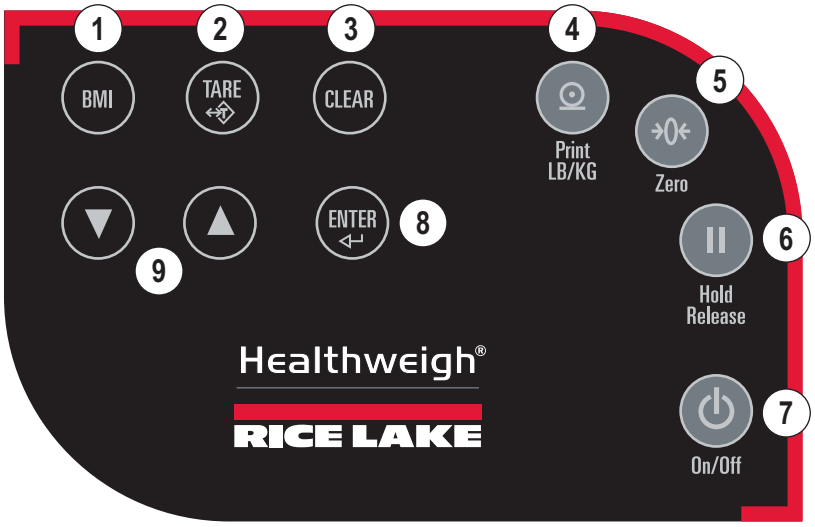

Figure 3-1. Indicator Front Panel

Item No.	Function
1	**Does not function when set up as an NTEP-certified scale** Body Mass Index (BMI) – enable in configuration; a stable weight is required
2	TARE – subtracts weight of accessory items, required by subject, from the scale; *Example: oxygen unit or other equipment*
3	CLEAR – returns to weigh mode after BMI value displays
4	Print – long key press sends data out from the RS-232 port or USB port LB/KG – short key press toggles pounds and kilograms (must be enabled in configuration mode); disabled in BMI mode
5	Zero – sets the weight to **0.0** and displays **ZERO**; weight must be stable and less than 2% of capacity to be cleared
6	**Does not function when set up as an NTEP-certified scale** Hold/Release – press to keep the current weight value displayed; press again to clear the weight; disabled in BMI mode
7	On/Off – turns the scale on and off ON – press to turn the scale on; after a system test, **0.0** displays OFF – press and hold until **OFF** displays to turn the scale off
8	ENTER – accepts an entered value and moves to the next parameter; long press during start up enters the ID display
9	Arrows – adjusts the value of the flashing digit/number

Table 3-1. Indicator Key Functions

IMPORTANT ***The front panel keys are sensitive, press gently.***

3.1 Scale Power

Press to turn the scale on. After a system test, ***0.0*** displays.

Press and hold until ***OFF*** displays to turn the scale off.

3.2 Set Units

Press to toggle between pounds (lb) and kilograms (kg), display unit desired for weights.

3.3 Live Weigh Mode

Have subject to be weighed step onto the scale. The weight value displays.

3.4 Preset Tare

1. With the weight at ***0.0*** and ***ZERO*** displayed, place accessory items required by subject, (e.g. oxygen unit or other equipment) onto the scale.
2. When weight is stable, press TARE until ***0.0*** is displayed and the ***NET*** annunciator is on.
3. Remove the additional items from the scale. A negative weight and ***NET*** display.
4. Have subject step on the scale with accessory items. The net weight displays.
5. The weight of accessory items remain stored in memory. To cancel the tare weight, press and hold TARE until the weight returns to ***0.0*** and the ***GROSS*** annunciator displays.

Note ***The tare weight is also canceled when the scale is turned off.***

3.5 Toggle Tare

When the weight of the accessory items is known, use this function to enter the weight manually.

1. With the weight at **0.0**, press TARE. The default tare value (33.0 lb/15.0 kg) displays.
2. Press or to change the tare weight value.
3. Press ENTER to accept the entered value and start the tare function. A negative weight and ***NET*** displays.
4. Have subject step on the scale with the accessory items. The weight is displayed and the ***NET*** annunciator remains on.
5. The weight of the additional items remain stored in memory. To cancel the tare weight, press TARE.

3.6 Body Mass Index

Note ***The BMI button does not function when set up as an NTEP-certified scale.***

3.6.1 LB Mode

Set the units to LB if needed.

1. With the weight at ***0.0*** and the ***ZERO*** annunciator on, have subject step onto the scale. The weight value displays. If configured, the ***LOCK*** annunciator displays and an audible tone indicates the end of the weighing process.
2. Press BMI. The ***BMI*** and ***FT/IN*** annunciators display and a default value of 5' and 7.5" (***5-0.75***) flashes.
3. Press ▲ or ▼ to adjust the height value.
4. Press ENTER to accept the entered height value. The BMI value displays and the ***BMI*** annunciator is on.
5. Press CLEAR to turn off the BMI function and return to weigh mode.

3.6.2 KG Mode

Set the units to KG if needed.

1. With the weight at ***0.0*** and the ***ZERO*** annunciator on, have subject step onto the scale. The weight value displays. If configured, the ***LOCK*** annunciator displays and an audible tone indicates the end of the weighing process.
2. Press BMI. The ***BMI*** and ***FT/IN*** annunciators display and a default value of 170.0 cm (***170.0***) flashes.
3. Press ▲ or ▼ to adjust the height value.
4. Press ENTER to accept the entered height value. The BMI value displays and the ***BMI*** annunciator is on.
5. Press CLEAR to turn off the BMI function and return to weigh mode.

3.7 Hold Release

Note ***The Hold button does not function when set up as an NTEP-certified scale.***

1. Have subject to be weighed step onto the scale.
2. When weight is stable, press ⏸. ***HOLD*** annunciator displays.
3. Have subject step off the scale. The weight continues to display.
4. Press ⏸ to release the hold. The displayed weight returns to ***0.0*** and the ***ZERO*** annunciator displays.

Note ***Pressing ⏸ prior to stepping on the scale will also hold the weight display.***
The ZERO function is not available until HOLD is released.

4.0 Communication

The indicator comes with an RS-232 port which enables weight data to be transmitted to other equipment, such as a computer or printer. The RS-232 cable with DB-9 connector (PN 100719) is available from Rice Lake Weighing Systems. Figure 4-1 on page 10 shows where the RS-232 connection is located on the indicator.

IMPORTANT ***Always use medical grade isolators for USB and RJ45 when connected to non-medical equipment, or when other medical equipment is connected to patient during procedure.***

The RS-232 parameters are 9600 baud (default), 8 data bits, 1 stop bit, no parity and no handshaking.

There are three methods of communication:

- Pushbutton keypad print
- Escape protocol
- Maintenance protocol

4.1 Pushbutton Keypad Print

With a stable, in-range weight, press and hold  for at least three seconds, or until the scale emits two quick beeps.

Note ***If the scale does not beep after five seconds, release the button as the weight was either in motion, or out of range.***

In the weigh mode, the scale sends the 21 character string: xxxxxxxxx<SP>uu<SP>mmmmm<SP><CR><LF>

Where:

xxxxxxxxx is the weight with decimal point and " - " sign, if negative
uu is the unit (lb or kg)
mmmmm is the mode (gross or net)

Example:

-10 Lb net = <SP><SP><SP><SP>-10.0<SP>lb<SP><SP>Net<SP><SP><SP><CR><LF>
10 Lb gross = <SP><SP><SP><SP><SP>10.0<SP>lb<SP>Gross<SP><CR><LF>

Note ***The BMI button does not function when set up as an NTEP-certified scale.***

Example: in BMI mode (displaying the BMI value), the scale sends the following data:

GROSS WEIGHT	215.0 LB
TARE WEIGHT	0.0 LB
NET WEIGHT	215.0 LB
PATIENT HEIGHT	5-01.0 FT
PATIENT BMI	30.1

4.2 USB Connection

The scale can be connected to a PC using a USB connection and a USB cable.

IMPORTANT ***Always use medical grade isolators for USB and RJ45 when connected to non-medical equipment, or when other medical equipment is connected to patient during procedure.***

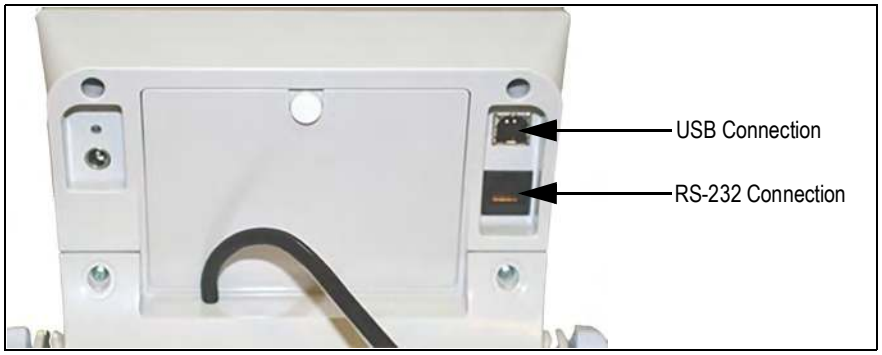

Figure 4-1. USB and RS-232 Connection Ports

Connecting software and downloads should be addressed by an IT professional, and can vary depending on the computer platform used. Basic information on USB driver installation using Windows® is described in the following steps and serves only as an example.

A USB driver can be downloaded from the Rice Lake Weighing Systems website at:

https://www.ricelake.com/resources/software-firmware

1. Click on *Software*.

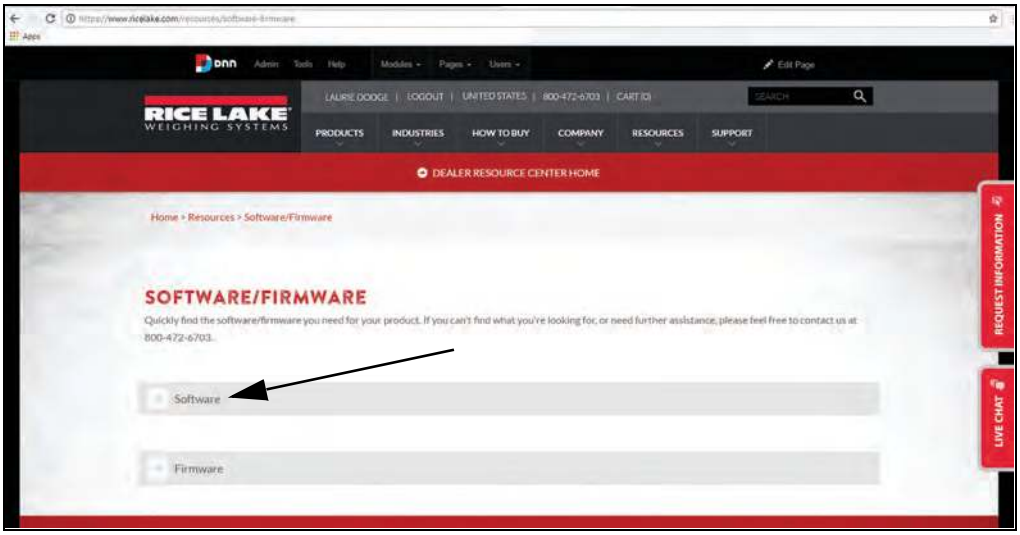

Figure 4-2. Software/Firmware Page

2. From the category drop down, select *Health Scales*.

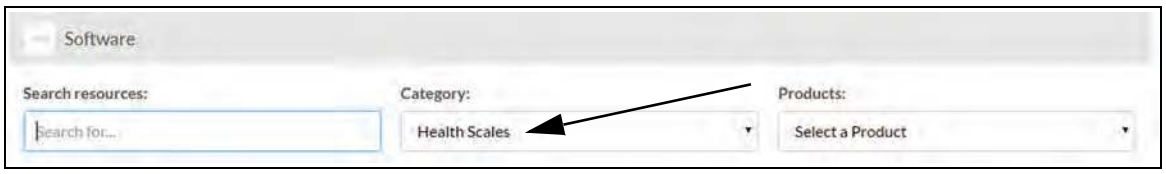

Figure 4-3. Software Download Page

3. Locate the *Titanium USB Driver*. Click on *Download* to open and download the driver to a local computer.

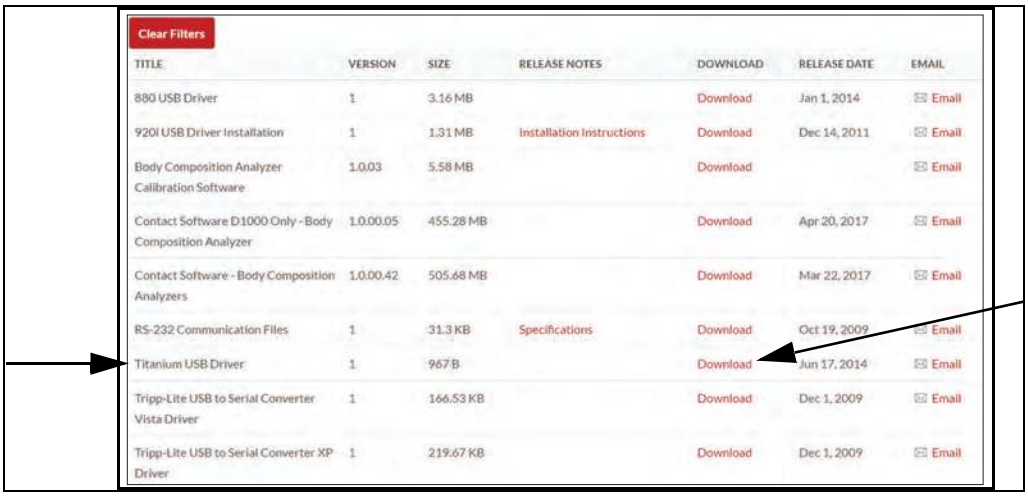

Figure 4-4. Example of Drivers List Page

4. When the USB cable is connected to the indicator and the scale is turned on, the *Found New Hardware Wizard* displays. After reading the privacy policy, select prompts to navigate through the software install process.

Figure 4-5. Hardware Wizard Menu

5. Select *No, not this time* and click **Next**.
6. Select *Install the software automatically* and select **Next**. A file transfer screen displays as the file downloads and installs to the computer.
7. Click on **Finish** when the completion screen displays.

8. To verify the installation, the driver can be viewed in the device manager of the computer.

Figure 4-6. Device Manager

9. To configure a printer using the USB driver, open the software driver *Parpar* in the device manager (Figure 4-6). The port assigned to that driver is displayed.
10. Ensure the USB cable is properly connected and the unit is on.
11. Open and connect a terminal emulation program, such as Hyperterminal, via the USB driver. Select the port assigned to the software driver *Parpar* to establish a port. The terminal emulation program is necessary to view information transmitted from the indicator to the PC.
12. Press . The following example ticket prints.

```
10.0 lb
```

Figure 4-7. Example Ticket - Printout

A single print ticket has four spaces after PATIENT WEIGHT, one space between the weight value and units (lb), and seven <CR><LF> after.

5.0 Sealing of the Unit

The 160-10-7N Low-Profile Digital Athletic Scale is an NTEP certified scale. To maintain NTEP certification, the unit must not be opened.

5.1 NTEP Regulations

Weights and Measures stickers or foil labels are used on both sides of the unit to seal and prevent it from being opened.

Whomever installs the scale is responsible for placing stickers on the unit. The desired sticker location is noted in Figure 5-1.

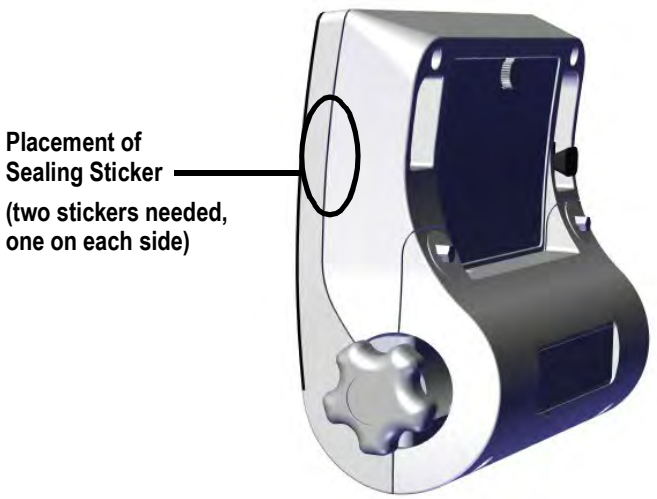

Figure 5-1. Desired Sealing Sticker Location

5.2 Measurement Canada Regulations

Lead wire sealing can be used to comply with Measurement Canada and NTEP regulations.

Figure 5-2. Wire Sealing Location

6.0 Maintenance and Troubleshooting

6.1 Maintenance

The following section provides instructions for maintaining and cleaning the Rice Lake line of scales.

IMPORTANT

Do not immerse the scale in cleaning or other liquid solutions.
Do not use isopropyl alcohol or other solutions to clean the indicator display surface.

Before using the scale and after periods of non-use, check the scale for proper operation and function. If the scale does not operate correctly, contact a qualified service personnel.

Basic Maintenance Includes:

- Check the overall appearance of the entire scale for any obvious signs of damage
- Inspect the condition of the AC adapter cord for cracking, fraying or broken/bent prongs
- Using an adapter that has been used elsewhere may cause issues with the scale
- Change batteries on a regular interval; leaving batteries in for long periods of time can cause batteries to leak

6.2 Cleaning

Proper care and cleaning is essential to ensure a long life of accurate and effective operation. Before beginning the cleaning process, disconnect the scale from the AC power source.

- Clean all external surfaces with a clean, damp cloth or tissue
- Mild soap and water solution may be used
- Standing platform may be cleaned with isopropyl alcohol
- Dry with a clean soft cloth

6.3 Troubleshooting

Refer to Table 6-1 to diagnose and correct failures prior contacting service personnel for assistance.

Symptom or Error	Possible Cause	Corrective Action
Scale does not turn on	Dead battery	Replace batteries or connect scale to a power source
	Faulty electrical outlet	Use a different electrical outlet
	Bad power supply	Replace AC adapter
Questionable weight or the scale does not zero	External object interfering with scale	Remove the interfering object from the scale
	Display did not show 0.0 before weighing	Help the patient off the scale, zero the scale and begin the weighing process again
	Scale is not level	Ensure the scale is level and begin the weighing process again
	Scale is out of calibration	Check the weight with a known weight value
Displayed messages as detailed below		
LOBAT	The batteries are low	Replace the batteries
- - - - -	Underload	Scale is underloaded – Zero the scale
OL	Overload	Scale is overloaded – Remove load from scale
-SAT-	Disconnected or damaged load cell cable	Connect or replace load cell cable
ERR01	A/D saturation	Load cell not connected properly – Check the cables and mechanical connections; If the problem persists, replace the set of load cells
ERR02	Calibration save error	Recalibrate the scale
ERR06	Identifier - ADC	AD too high
ERR07		AD too low

Table 6-1. Troubleshooting Table

7.0 Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for two years.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, *Protecting Your Components From Static Damage in Shipment*, available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

These warranties exclude all other warranties, expressed or implied, including without limitation warranties of merchantability or fitness for a particular purpose. Neither RLWS nor distributor will, in any event, be liable for incidental or consequential damages.

RLWS and buyer agree that RLWS's sole and exclusive liability hereunder is limited to repair or replacement of such goods. In accepting this warranty, the buyer waives any and all other claims to warranty.

Should the seller be other than RLWS, the buyer agrees to look only to the seller for warranty claims.

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of RLWS and the Buyer.

RICE LAKE WEIGHING SYSTEMS • 230 WEST COLEMAN STREET • RICE LAKE, WISCONSIN 54868 • USA

8.0 Specifications

Capacity
550 lb x 0.2 lb (250 kg x 0.1 kg)

Platform Dimensions
W x L x H: 14.4 x 14.4 x 1.65 in (36.6 x 36.6 x 4.2 cm)

Power
9 VDC, provided by six AA alkaline batteries (included)
or 120/230 VAC adapter, NEMA 1-15 plug (included)

Battery Type
Six AA alkaline (included)

Battery Use
25 hours continuous use with batteries
Automatic power-off can be configured

Operating Temperature
41 to 95°F (5 to 35°C)

Display
5-digit LCD display, 0.75 in (1.9 cm) digit height

Data Communications

Connections	RS-232 with RJ45 jack, USB
Baud Rate	9600 (Default)
Bits	8; 1 stop bit
Parity	None
Handshaking	None

Warranty
Two-year limited warranty

Certifications
RoHS Compliant

Approvals
CC 18-011

AM-6097

E113986

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