150-10-7

Digital Floor Level Scale
Software Revision 11454

Operation Manual

RICE LAKE
WEIGHING SYSTEMS

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PN 131994 Rev C

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www.ricelake.com

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Technical training seminars are available through Rice Lake Weighing Systems. Course descriptions and dates can be viewed at ***www.ricelake.com/training*** *or obtained by calling 715-234-9171 and asking for the training department.*

Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit ***www.ricelake.com/webinars***

1.0 Introduction

The Rice Lake Digital Floor Level Scale is efficiently designed to provide accurate, reliable and repeatable weight measurements. The large stand alone indicator can be placed on a table or floor and has a sturdy built-in bracket for wall mounting.

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

Warranty information can be found on the website at www.ricelake.com/warranties

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.

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

For accurate weighing, the scale must be placed on a flat, stable surface.

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

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

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

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

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.

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

Avoid contact with excessive moisture.

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

Do not jump up and down 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 make alterations or modifications to the scale.

People with disabilities, or who are physically frail, should always be assisted by another person when using this scale.

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

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

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2.0 Scale Assembly

2.1 Unpacking Your Scale

Place the unopened box in an open area that has ample room for unpacking the scale.

Parts contained in the shipping box include:

- Scale base and indicator
- Manual
- Serial cable 9.5' with female DB9 and RJ45 connectors
- AA batteries (6)

2.2 Repacking

If the Rice Lake Digital Floor Level Scale must be returned any reason, it must be properly packed with sufficient packing materials in the original carton. Whenever possible, use the original carton when shipping the scale back.

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

2.3 Setting Up Your Scale

Move the scale into the area where the weighing process will occur. Place the scale on a hard, level surface for the most accurate weighments.

2.3.1 Inserting Batteries

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

To install the batteries:

1. Remove the battery cover panel of the new display by turning the screw of the battery cover counter clockwise.

Figure 2-1. Uninstall Battery Cover Panel

2. Insert batteries into battery compartment of the new display.

Figure 2-2. Battery Chamber

3. Secure the battery cover panel of the new display by turning the screw clockwise.

Figure 2-3. Secure Battery Cover Panel

Note

If an external power supply or USB power supply is connected, the battery flag on the display is turned off. When using battery or USB power supply, the backlight power is deducted to 60%.

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2.3.2 AC Power Connections

Use the optional 120 VAC or 230 VAC adapter (PN 133077) when power is available. The optional AC power adapter plugs into the back of the indicator. Rice Lake Weighing Systems offers optional AC adapters. Using an unauthorized adapter supplied by Rice Lake Weighing Systems voids all warranties.

Connect the optional AC power source shown in Figure 2-4.

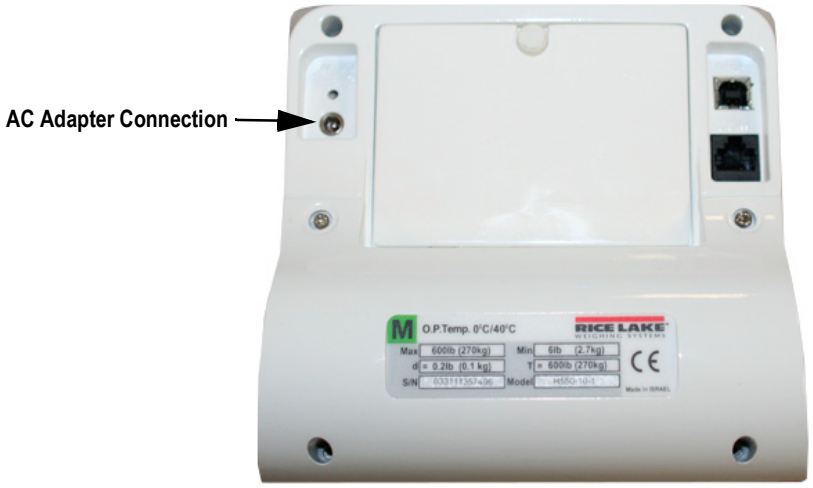

Figure 2-4. Power Connection

Leveling the Scale

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

Figure 2-5. Bubble Indicates Scale Is Level

Note ***On a flat surface, adjust scale feet until the bubble indicates that the scale is level.***

3.0 Scale Operation

The unit display has 10-front panel keys (Figure 3-1).

Figure 3-1. Front Panel Display Keys

3.1 Key Descriptions

Key functions are described in Table 3-1.

Key	Name	Function
On/Off	On/Off	Powers the scale on or off
Print LB/KG	Print LB/KG	Sends data out from the RS-232 port; Allows to toggle between kilograms and pounds providing that it is enabled in ***Configuration*** mode; Cannot toggle while in the ***BMI*** mode
Zero	Zero	Clears the weight off the scale and returns it to zero after three seconds; Only functions if the current weight is stable and zero, up to 2% of max weight
Hold Release	Hold Release	Displays most current weight value on the display; a second press releases the weight value; Not active while in ***BMI*** mode
BMI	BMI	Enables access to the BMI (Body Mass Index) function; only works if there is a locked weight on the display and the BMI function is turned on in the ***Configuration*** mode
TARE	TARE	Used to subtract the weight off the scale, example: oxygen tank, other equipment
CLEAR	CLEAR	Returns to normal weighing when the BMI value is being displayed; While in ***BMI*** mode, the height display causes the value to return to the default of 190.0 cm, 5', 7.5"
ENTER	ENTER	Used to accept height in ***BMI*** mode; Accepts the value of the parameter last entered and moves to the next stage; press during scale start up to enter ID display (pre-parameter mode)
▲	Up Arrows	Adjusts height input (0.5"/0.5 cm) while in ***BMI*** mode; Adjusts the value of the flashing digit/number
▼	Down Arrows	Adjusts height input (0.5"/0.5 cm) while in ***BMI*** mode; Adjusts the value of the flashing digit/number

Table 3-1. Key Functions

CAUTION ***The front panel key display are very sensitive so only a gentle pushing motion is required to obtain results.***

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3.2 Weighing

Use the following steps to weigh.

1. Press to turn on the scale. ***0.0*** prompts along with ***ZERO*** on the display.
2. When the patient steps on the scale the display shows the weight of the patient. The ***LOCK*** annunciator is on in the upper display and beeps to indicate the end of the weighing process.
3. Press to change the display from kg to lb.
4. To turn off the scale, press and hold until ***OFF*** prompts.

3.3 Hold/Release Function

Use the following steps to use the Hold/Release function.

1. Press to turn on the scale. ***0.0*** prompts along with ***ZERO*** on the display.
2. Press when the patient is on the scale.
3. The weight and ***HOLD & LOCK*** annunciators remain on the display when the patient steps off the scale.
4. Press again to return to zero.

Note ***Pressing will not work while in Hold/Release function.***

Note ***Pressing prior to the patient getting on the scale will also work.***

3.4 Preset Tare

Use the following steps to use the Preset Tare.

1. Press to turn on the scale. ***0.0*** prompts along with ***ZERO*** on the display.
2. Place the extra weight on the scale.
3. Press until the display returns to ***0.0*** and ***NET*** prompts on the display.
4. Remove the extra weight from the scale. The weight will prompt with a negative symbol to the left of it.
5. Ask the patient to step on the scale with the extra weight. The display identifies the patient weight. The ***NET*** annunciator is still active. The weight of the extra weight is stored in memory.
6. Repeat Step 5 to cancel the tare weight, press and hold until ***NET*** disappears from the display and the display turns back to ***0.0*** and ***GROSS*** prompts.

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

3.5 Toggle Tare

Use the following steps to use the Toggle Tare function.

1. Press when the weight is set to ***0.0***. The default values prompts while ***0.0*** is flashing (default is programmed to be 33.0 lb/15.0 kg) on the display.
2. Use and to adjust the value. Press to start the tare function. The ***NET*** annunciator turns on instead of the ***GROSS*** annunciator.

3.6 Using the Body Mass Index (BMI) Function

Use the following steps in determining the BMI.

3.6.1 LB Mode

1. Ensure that the scale is at zero.
2. Have the patient step on the scale to obtain a weight.
3. The ***LOCK*** annunciator is illustrated on the display.
4. Press BMI. The ***BMI*** and ***FT/IN*** annunciators are lit on the display and a default value of 5' and 7.5" (5-07.5) is flashing.
5. Press ▲ and ▼ to adjust the height value.
6. Press ENTER.
7. The BMI value and ***BMI*** annunciator is shown on the display. Press CLEAR to return to the ***Weighing*** mode and the BMI function will be turned off.

3.6.2 KG Mode

1. Ensure that the scale is at zero.
2. Have the patient step on the scale to obtain a weight.
3. The ***LOCK*** annunciator is illustrated on the display.
4. Press BMI. The ***BMI*** and ***CM*** annunciators are lit on the display and a default value of 170.0 cm (170.0) is flashing.
5. Use ▲ and ▼ to adjust the height value.
6. Press ENTER.
7. The BMI value and ***BMI*** annunciator is shown on the display. Press CLEAR to return to the ***Weighing*** mode or step off the scale and the BMI function will be turned off.

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4.0 RS-232 Communication

The unit comes with an RS-232 port which enables weight data to be transmitted to other devices. The RS-232 cable with DB-9 connector (PN 100719) is available from Rice Lake Weighing Systems, see Figure 4-1 on page 9 for RS-232 connections.

The parameters of RS-232 are:

- 9600 baud (selectable baud rate)
- 8 data bits
- 1 stop bit
- No parity
- No handshaking

There are three methods of communication:

- Pushbutton keypad print
- Standard remote protocol
- Escape 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.

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

- The scale will send out the following 21 character string if displaying just weight and not BMI:

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)

Examples:

-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>

- The scale will send out the following data while in ***BMI*** mode (displaying the BMI value):

Setting	Value
Gross Weight	215 lb
Tare Weight	0.0 lb
Net Weight	215 lb
Patient height	6–01.0 ft
Patient BMI	28.4

Table 4-1. BMI Data

4.2 USB Connection

The unit has the capability of connecting to a PC using a USB connection and a USB cable (not included). That connection location is shown in Figure 4-1.

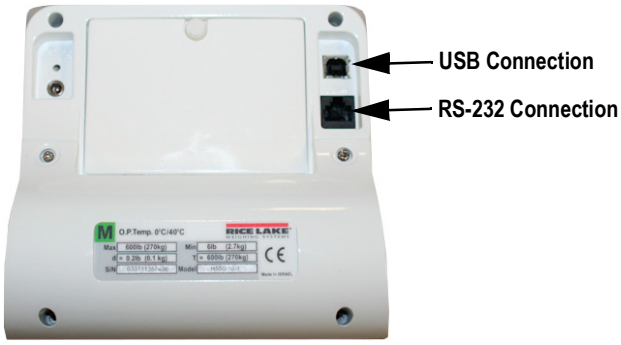

Figure 4-1. USB Connection Port and RS-232 Connection Port

Connecting software and downloads will be addressed by the IT department and may vary. Basic information on USB driver installation using Windows® is described in the following steps and serves only as an example. The USB driver can be downloaded from the Rice Lake Weighing Systems website at the following location; http://www.ricelake.com/software.aspx. Select ***Medical/Health Scales***.

1. Select ***Software***.
2. Select ***Get Downloads***.
3. Select **Download** to download the driver. Selecting a download will prompt a download notification.
4. ***Found New Hardware Wizard*** prompts.

Figure 4-2. Found New Hardware Wizard

5. Follow the prompts to complete installation.

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6. Select ***No, not this time*** then select **Next**.

Figure 4-3. No, Not This Time

7. Select ***Install the software automatically*** then select **Next**.

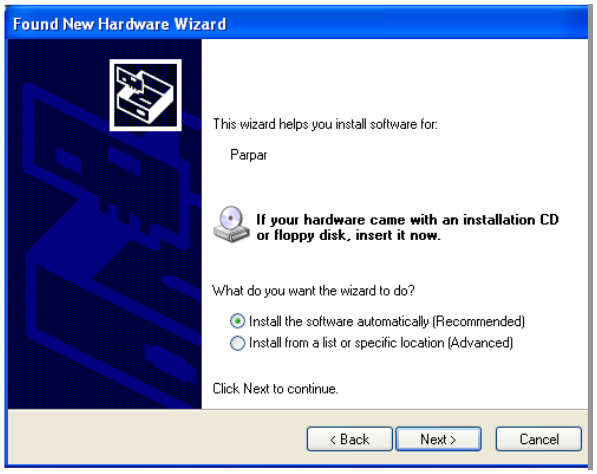

Figure 4-4. Install The Software Automatically

8. Allow the driver to install.

Figure 4-5. Software Installation

9. ***Completing the Found New Hardware Wizard*** prompts when installation is complete. Select **Finish**.

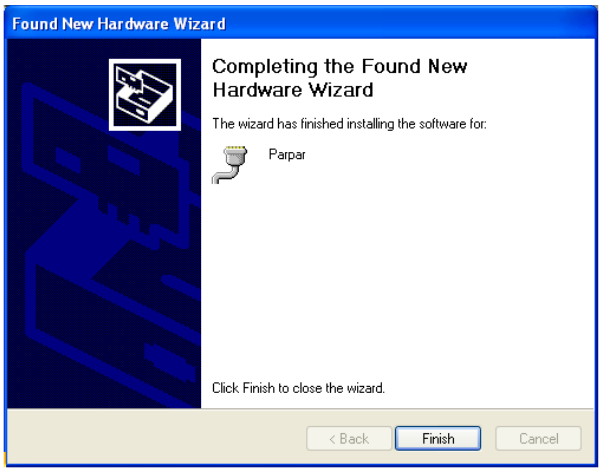

Figure 4-6. Finish Installation

10. To verify the installation, view the driver information in ***Device Manager***.

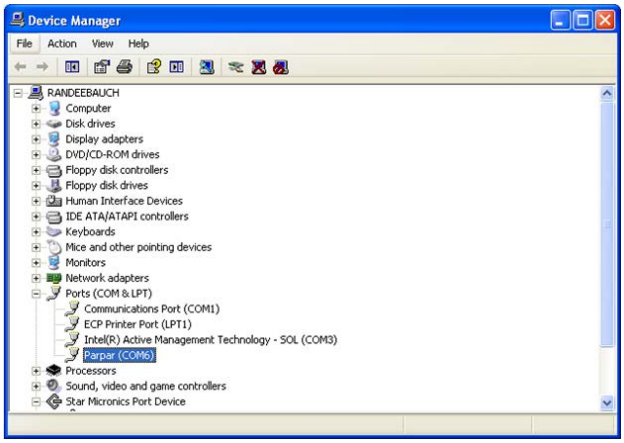

Figure 4-7. Driver Selection

11. To print a ticket using the USB driver, open the software driver and the port assigned to that driver is shown.
12. Ensure that the USB cable is properly connected and unit is on.
13. Another terminal type program (such as Hyperterminal or Putty) needs to be opened and connected through the USB driver to the indicator to be able to see the information being sent to the PC. A port needs to be established, so select the port that is assigned to Parpar and print the ticket. The following example tickets will print.

```
                                        WEIGHT
PATIENT WEIGHT    84.4 lb
```

```
                                          BMI
GROSS WEIGHT     84.4  lb
TARE WEIGHT       0.0  lb
NET WEIGHT       84.4  lb
PATIENT HEIGHT 4ft 07.0in
PATIENT B.M.I    19.6
```

Figure 4-8. Example Tickets

Note ***A single print ticket has four spaces after "patient weight" and only one space between weight and lb in the examples shown above.***

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5.0 Troubleshooting and Testing

Refer to the following table to check and correct any failure before contacting service personnel.

Symptom	Possible Cause	Corrective Action
Scale does not turn on	Dead battery	Replace battery or connect to AC power
	Faulty electrical outlet	Use a different electrical outlet
	Bad power supply	Replace adapter
Questionable weight or the scale does not zero	External object is interfering with the 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 placed on a level floor	Ensure scale is level and begin the weighing process again
	Scale is out of calibration	Check the weight with a known weight value
The display shows a *STOP* message	The load on the scale exceeds the capacity of the scale	Remove the excess weight and use the scale according to manufacture specifications
The display shows *LO Bat* message	The battery is low	Replace batteries
The display shows Err message as detailed below		
Err 2	Low saturation state (low A/D)	The load cell is not connected properly; Check the cables and mechanical connections; if the problem persists, replace the set of load cells
Err 3	High saturation state (high A/D)	See Err 2
Err 6	Unstable weight; Cannot calibrate	Check the load cell mechanical surroundings and ensure nothing is contacting the load cell and that the cables are properly welded
SAT	Damaged load cell cable	Replace load cell cable

Table 5-1. Troubleshooting Table

6.0 Maintenance

The following section provides instructions for maintaining and cleaning the unit.

6.1 Basic Maintenance

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

Go through the following steps for basic maintenance.

1. Check the overall appearance of the entire scale for any obvious signs of damage.
2. Inspect the condition of the AC adapter for cord cracking or fraying or for broken or bent prongs.

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.

1. Clean all external surfaces with a clean, damp cloth or tissue. Mild soap and water solution may be used. Dry with a clean soft cloth.
2. Do not immerse the scale into cleaning or other liquid solutions.
3. Do not use isopropyl alcohol or other solutions to clean the display surface.

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7.0 Warranty

Rice Lake Weighing Systems (Rice Lake) warrants that all Rice Lake brand equipment and systems properly installed by an Authorized Reseller or original equipment manufacturer (OEM) will operate per written specifications as confirmed by the Authorized Reseller/OEM and accepted by Rice Lake. All systems and components are warranted against defects in materials and workmanship for two (2) years from the date of shipment from Rice Lake, unless otherwise stated in the product catalog or manual.

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

- Upon discovery by the customer of such non-conformity, Rice Lake will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to Rice Lake for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in the publication, “Protecting Your Components from Static Damage in Shipment,” available from Rice Lake Equipment Return Department.
- Examination of such equipment by Rice Lake confirms that the non-conformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair, or improper testing. Rice Lake shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than Rice Lake or its duly authorized repair agents.
- Cutting the load cell cable will void the warranty.
- Rice Lake will have a reasonable time to repair or replace the defective equipment. The customer is responsible for shipping the product to Rice Lake. Rice Lake is responsible for shipping the product back to the customer.
- In no event will Rice Lake be responsible for travel time or on-location repairs, including assembly or disassembly of equipment. Nor will Rice Lake be liable for the cost of any repairs made by others.
- On all intrinsically safe equipment, any field repair or modifications voids any and all warranties expressed or implied and void F.M. approval.
- Any loose hardware, screws, washers or non-ESD bags of hardware stored inside indicator will void warranty. This could cause harm to repair technician or damage CPU board.
- If just the board is sent in for repair, the serial number of the product the board is from should accompany the board.

These warranties exclude all other warranties, expressed or implied, including without limitation warranties of merchantability or fitness for a particular purpose. Neither Rice Lake nor Authorized Reseller will, in any event, be liable for incidental or consequential damages at the point of use.

Rice Lake and the customer agree that Rice Lake’s sole and exclusive liability here under is limited to repair or replacement of such goods. In accepting this warranty, the customer waives any and all other claims to warranty.

Should the seller be other than Rice Lake, the customer 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 Rice Lake and the customer.

8.0 Specifications

Power

120 VAC-9 VDC-60 Hz / 230 VAC-9 VDC-50 Hz
Battery Type
6-AA size Alkaline batteries

Battery Use

25 hours continuous use
Automatic power-off can be configured

Data Communications

RS-232 with RJ45 jack
USB Connection
Selectable baud rate, default - 9600
8 bits
No parity
1 stop bit
No handshaking

Environmental

Operating Temperature
50 to +95°F (10 to 35°C)
Storage Temperature
32 to 122°F (0 to 50°C)
Humidity
85% relative humidity

Capacity and Graduation

Floor Level Scale
550 lb x 0.2 lb (250 kg x 0.1 kg)

Dimensions (W x L x H)

Platform Dimensions
14.5" x 14.5" x 3"

Certifications and Approvals

RoHS Compliant

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