

Digital Handrail Scale

*Model 260-10-1
Software Version 11454*

Operation Manual



RICE LAKE[®]
WEIGHING SYSTEMS

PN 172479

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1.0 Introduction

The *Rice Lake 260-10-1 Digital Handrail Scale* is efficiently designed to provide accurate, reliable and repeatable weight measurements. A non-skid platform paired with side rails assists individuals needing extra support for safety reasons. The weight is displayed on the indicator in pounds or kilograms.



Manuals can be viewed and downloaded from the Rice Lake Weighing Systems website at www.ricelake.com

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

1.1 Safety Symbol Definitions



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



CAUTION Indicates a potentially hazardous situation that, if not avoided, may 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 you have read and understand the instructions and warnings in this Manual. Contact any Rice Lake Weighing Systems dealer for replacement manuals. Proper care is your responsibility.



Failure to heed may result in serious injury or death.

Ensure every individual who operates or works with this unit has read and understands the following safety information.

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

Do not allow minors (children) or inexperienced persons to operate this 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 a person's body or feet are wet, such as after taking a bath.

Do not jump on the scale.

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

Prior to cleaning, make sure the scale is disconnected from the power source.

Do not use near water.

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

Do not use this product if any of the components are loose or cracked.

Do not use in the presence of flammable materials.



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

Weight exceeding the maximum capacity (800 lb/360 kg) may damage the scale.

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

Avoid contact with excessive moisture.

Rice Lake Weighing Systems offers optional AC adapters; utilizing an adapter not supplied by RLWS voids all warranties and approvals.

Do not make alterations or modifications to the scale.

2.0 Assembly

2.1 Unpacking the Scale

A minimum of two people should transport, unpack and assemble the scale for their own personal safety and to ensure the integrity of the scale. Use caution while removing packaging and unpacking the scale. After unpacking, visually inspect the *Rice Lake 260-10-1 Digital Handrail Scale* to ensure all components are included and undamaged. Contact Rice Lake Weighing Systems and the shipper immediately if the scale was damaged during shipping.

Parts contained in the shipping box include:

- Scale platform with handrail center post
- Indicator
- Handrails
- Parts kit including hardware for assembly
- Six AA non-rechargeable batteries

2.1.1 Repackaging the Scale

If the *Rice Lake 260-10-1 Digital Handrail Scale* must be returned for modification or repair, it must be properly packed with sufficient packing materials. Whenever possible, use the original carton when shipping the scale back.

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

2.2 Setting Up the 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. A 3/8 inch socket wrench (or equivalent) and a Phillips screwdriver are required for assembly.

1. A minimum of two people should carefully remove the scale by lifting it out of the box by the scale base.

! **Important** *Do not lift the scale out of the box by the handrail post as this may cause damage.*

2. Place the scale on the floor or other hard level surface.
3. Remove the screw knob at the base of the handrail center post.



Figure 2-1. Scale in Shipping Position

4. Lift the handrail center post until it is perpendicular to the base.
5. Insert and tighten the screw knob on the base until the handrail center post is rigid and does not move.

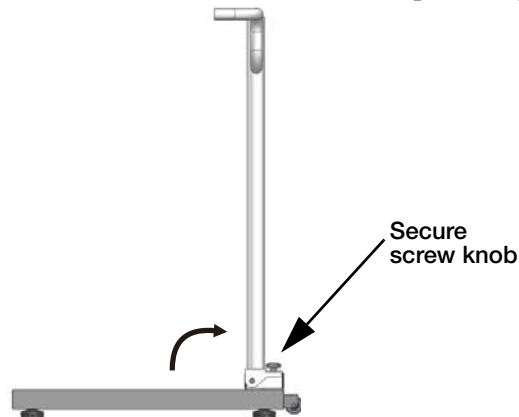


Figure 2-2. Scale in Upright Position

6. Roll back the rubber grip from each handle.



Figure 2-3. Scale Handrail

7. Insert the handles into the handrail post (Fig. 2-4).

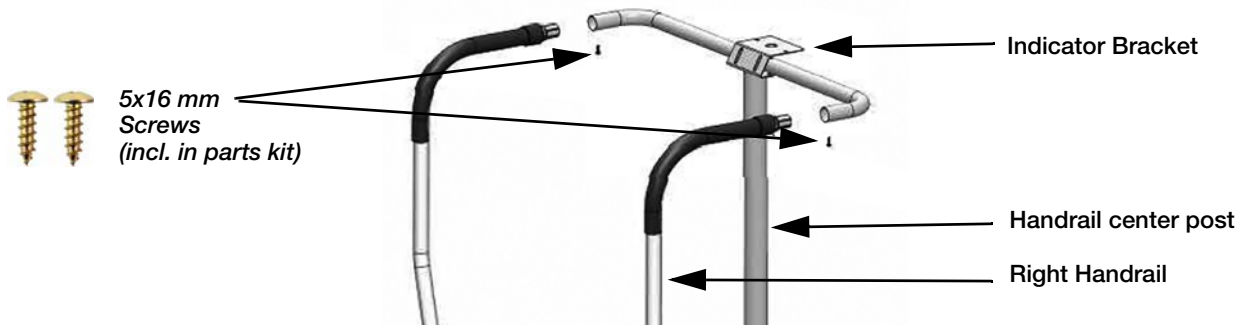


Figure 2-4. Handrail to Post Assembly

The right handrail is denoted by a red dot sticker on the base end of the handrail (Fig. 2-5). This sticker may be removed after assembly.

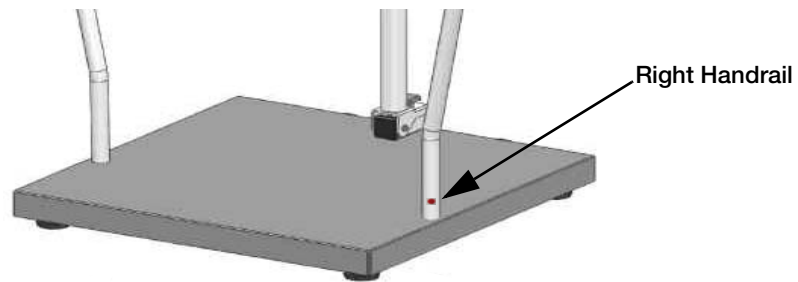


Figure 2-5. Right Handrail Designation

8. Insert the screws and tighten with a Phillips screwdriver to secure the handles to the handrail base.
9. Roll the rubber grips back into position.



Figure 2-6. Rubber Grips in Proper Position

10. Gently tip the scale and lay it down so that the handrail center post is touching the floor.
11. Insert the bolts and washers, in the order shown, from underneath the platform and into the handrails. Tighten with a 3/8 inch socket wrench.

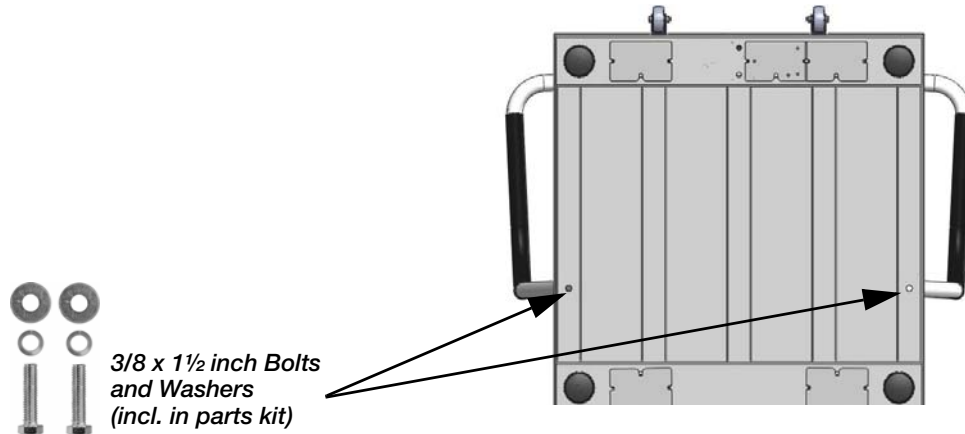


Figure 2-7. Handrail to Base Assembly

12. Secure the indicator to the handrail center post by inserting two screws and washers, in the order shown, from the top plate of the indicator and through the bracket.
13. Tighten with a Phillips screwdriver.

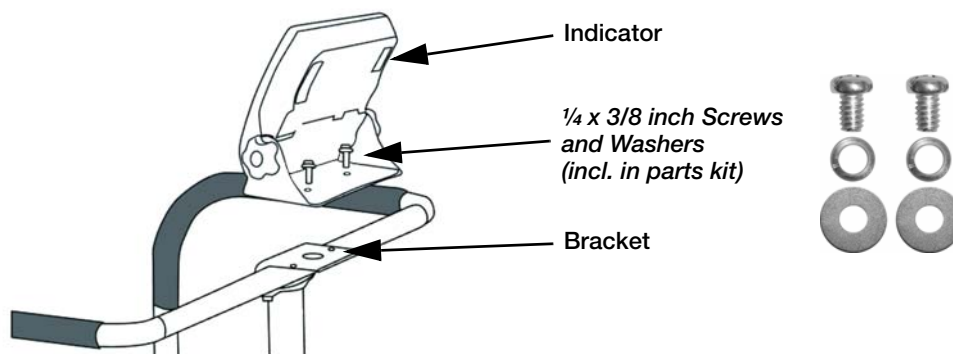


Figure 2-8. Indicator Assembly

14. Remove the four screws securing the back cover to the indicator with a Phillips screwdriver.
15. Connect the cable to the indicator by plugging it into the load cell connection port.
16. Replace the back cover of the indicator and secure with a Phillips screwdriver.

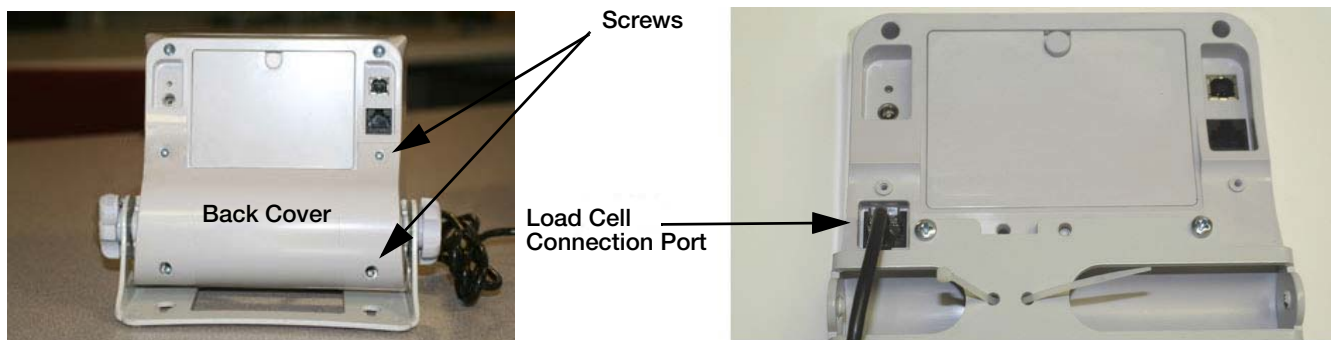


Figure 2-9. Indicator to Load Cell Cable Connection

2.3 Inserting Batteries

The six AA non-rechargeable 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 loosening the thumbscrew.
2. Insert batteries into the battery chamber. Ensure that the batteries are aligned according to the diagram in the battery chamber.



Figure 2-10. Battery Chamber

3. Close the battery chamber.

If an external power supply is connected, the battery flag on the display is turned off.

When using a battery power supply, the brightness of the backlight is reduced to 60 percent.

2.4 AC Power Connections

Rice Lake Weighing Systems offers optional 120 VAC or 230 VAC adapters to use when power is available. The optional AC power adapter plugs into the back of the indicator as shown in Figure 2-11.



Note The indicator does not contain a recharge circuit and will not recharge batteries of any kind.



Important Utilizing an adapter not supplied by Rice Lake Weighing Systems voids all warranties and approvals.

Optional AC
power source
connection



Figure 2-11. Optional AC Power Connection

3.0 Operation

The *Rice Lake 260-10-1 Digital Handrail Scale* has the capability of performing operations beyond just calculating weight. The following describes the various operating keys and instructions for operating the scale.

3.1 Key Description

The *Rice Lake 260-10-1 Digital Handrail Scale* has ten front panel keys.






Figure 3-1. Front Panel Key Display

Key	Key Name	Function
	On/Off	The power key switches the scale on or off.
	Print LB/KG	Print — A long key press will send data out from the RS-232 port. LB/KG — A short key press allows the user to toggle between kilograms and pounds, providing that it's enabled in configuration mode. Toggling between pounds and kilograms is not available in the BMI mode. The BMI will be calculated according to the unit selected prior to entering the BMI mode.
	Zero	The Zero key clears the weight off the scale and returns the scale to zero after three seconds. the zero function works only if the current weight is stable and will zero up to 2 percent of full weight.
	Hold Release	Hold Release — The first press holds the most current weight value shown on the display. A second press releases the weight value shown. This key is not active while in BMI mode.
	BMI	The BMI key enables the user to access the BMI (Body Mass Index) function. This key works only if there is a locked weight shown on the display and the BMI function is turned on in the setup mode.
	TARE	Used to subtract the weight of additional items off the scale. <i>Example: blankets, oxygen units, and other equipment.</i>
	CLEAR	Allows the user to return to normal weighing when the BMI value is being displayed.
	ENTER	Used to accept height in BMI mode. Accepts the value of an entered parameter and moves to the next stage. A long press of the ENTER key during the scale's start up process will enter the ID display (pre-parameter mode).
	Up/Down Arrows	The Up/Down arrows are used to adjust height input (0.5 in/0.5 cm) while in BMI mode and to enter a toggle tare value. The Up/Down arrows adjust the value of the flashing digit/number.

Table 3-1. Front Panel Keys and Functions





3.2 Weighing

Use the following steps to weigh a person.


1. Press  to turn the scale on. The display shows **0.0** and the **ZERO** annunciator is on.
2. Have the person step on the scale. The display shows the person's weight, the **LOCK** annunciator is on and the indicator beeps to indicate the end of the weighing process.
3. Short press  to toggle the display from kg to lb, if desired.
4. Have the person step off the scale. The display returns to **0.0** and the **ZERO** annunciator is on.
5. Turn the scale off by pressing and holding  until **OFF** displays.

3.3 Hold Release

Use the following steps to perform the Hold Release function.



1. Press  to turn the scale on. The display shows **0.0** and the **ZERO** annunciator is on.
2. Have the person step on the scale. The display shows the person's weight, the **LOCK** annunciator is on, and the indicator beeps to indicate the end of the weighing process.
3. Press .
4. Have the person step off the scale. The display shows the person's weight and the **HOLD LOCK** annunciator is on. The  will not work at this stage.
5. Press  to return to zero. The display shows **0.0** and the **ZERO** annunciator is on.



Note Pressing  prior to a person getting on the scale will also hold the weight display.






3.4 Preset Tare

Use the following steps to perform a Preset Tare.

1. With the weight at **0.0** and the **ZERO** annunciator on, place the additional items (such as blankets, oxygen units, and other equipment) on the scale. Wait for the weight to stabilize.
2. Press  until the display returns to **0.0** and the **NET** annunciator is on.
3. Remove the additional items from the scale. The display will show the weight with a negative symbol to the left of it and the **NET** annunciator remains on.
4. Have the person step on the scale with the additional items. The display shows the person's weight, the **NET** annunciator remains on, and the weight of the additional items remains stored in memory.
5. To cancel the tare weight, press and hold  until the **NET** annunciator no longer displays, the weight returns to **0.0** and the **GROSS** annunciator displays. Alternatively, tare weight is canceled when the scale is turned off.

3.5 Toggle Tare






Toggle tare is used to set a tare value when the weight of the additional items (such as blankets, oxygen units, and other equipment) is known. Use the following steps to perform a Toggle Tare.

1. With the weight at 0.0 and the **ZERO** annunciator on, press . The default tare value (33.0 lb/15.0 kg) is displayed with the last digit flashing.
2. Press  and/or  to adjust the value.
3. Press  to accept the entered value and start the tare function. The display will show the weight with a negative symbol to the left of it and the **NET** annunciator will display.
4. Have the person step on the scale with the additional items. The display shows the person's weight, the **NET** annunciator remains on, and the weight of the additional items remains stored in memory.
5. To cancel the toggle tare weight, press and hold  until the **NET** annunciator is no longer displayed, the weight returns to 0.0 and the **GROSS** annunciator displays. Alternatively, the toggle tare weight is canceled when the scale is turned off.






3.6 Body Mass Index (BMI)

Use the following steps in determining BMI.

3.6.1 LB Mode

1. With the weight at 0.0 and the **ZERO** annunciator on, have the person step on the scale. The display shows the person's weight, the **LOCK** annunciator is on and the indicator beeps to indicate the end of the weighing process.
2. Press . The **BMI** and **FT/IN** annunciators display and a default height value of 5 feet and 7.5 inches (5-07.5) is flashing.
3. Press  and/or  to adjust the height value.
4. Press . The display shows the BMI value and the **BMI** annunciator is on.
5. Press  to return to the weighing mode and turn off the BMI function.

3.6.2 KG Mode

1. With the weight at 0.0 and the **ZERO** annunciator on, have the person step on the scale. The display shows the person's weight, the **LOCK** annunciator is on and the indicator beeps to indicate the end of the weighing process.
2. Press . The **BMI** and **FT/IN** annunciators are displayed. The default height value of 170.0 cm (170.0) is flashing in the display.
3. Press  and/or  to adjust the height value.
4. Press . The display shows the BMI value and the **BMI** annunciator is on.
5. Press  to return to the weighing mode and turn off the BMI function.

4.0 Communication


The *Rice Lake 260-10-1 Digital Handrail Scale* 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 shows where the RS-232 connection is located on the indicator.

The RS-232 parameters are 9600 baud (selectable in the programming mode), 8 data bits, 1 stop bit, no parity and 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.



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 weighing mode, the scale will send out the 21 character string: xxxxxxxx<SP>uu<SP>mmmmm<SP><CR><LF>

Where:

xxxxxxx 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>

Example: in BMI mode (displaying the BMI value), the scale will send out the following data:

GROSS WEIGHT	215.0 LB
TARE WEIGHT	0.0 LB
NET WEIGHT	215.0 LB
PATIENT HEIGHT	6-01.0 FT
PATIENT BMI	28.4

4.2 USB Connection

The *Rice Lake 260-10-1 Digital Handrail Scale* has the capability of connecting to a PC using a USB connection and a USB cable (not included). The USB cable location is shown in Figure 4-1.

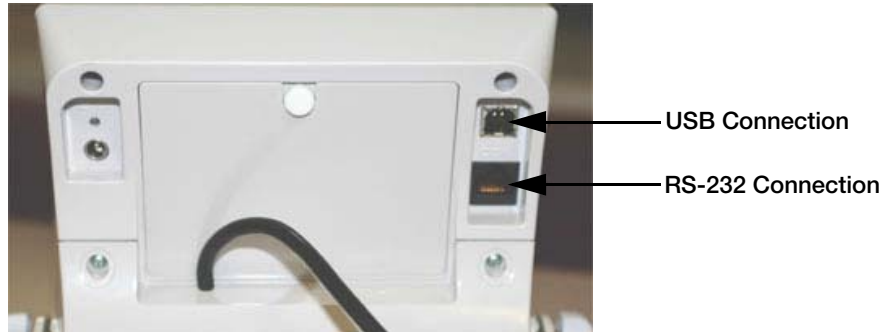


Figure 4-1. USB and RS-232 Connection Ports

Connecting software and downloads should be addressed by an IT professional, and can vary depending on what type of computer platform is being used. Basic information on USB driver installation using Windows^{®1} 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:

<http://www.ricelake.com/software.aspx>

1. From the drop down menus select: *Medical/Health Scales, Software, All Languages* (or select desired language), then click on *Get Downloads*.

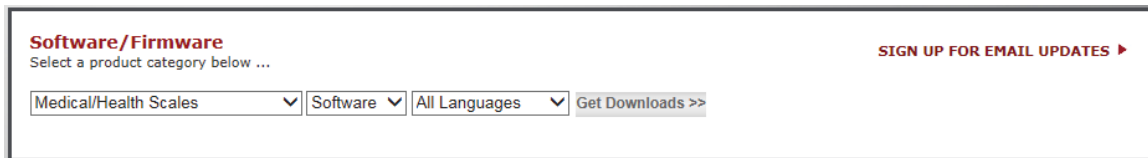


Figure 4-2. Software Download Page

2. Select any product by clicking the > next to the product name and a USB Driver download will display.
3. Click on *Download* to open and download the driver to a local computer.
4. Figure 4-3 shows the window that pops up when the USB cable is connected to the indicator and the scale is turned on. Follow the screen prompts to navigate through the software install process.

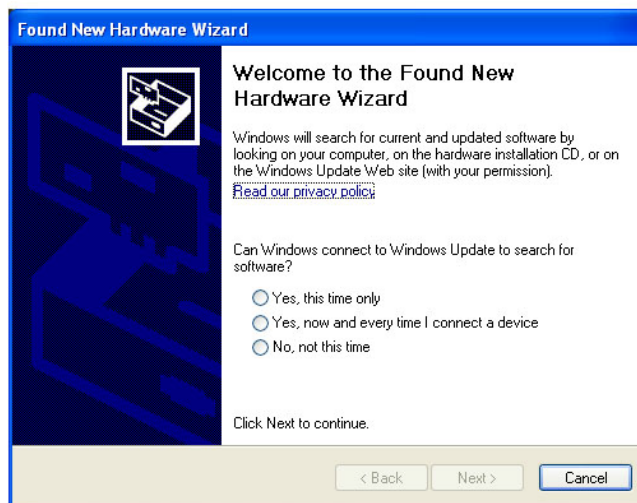


Figure 4-3. Hardware Wizard Screen

1. Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

5. Select *No, not this time*, and then select **Next**.
6. Select *Install the software automatically*, then select **Next**. A file transfer screen will display 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.

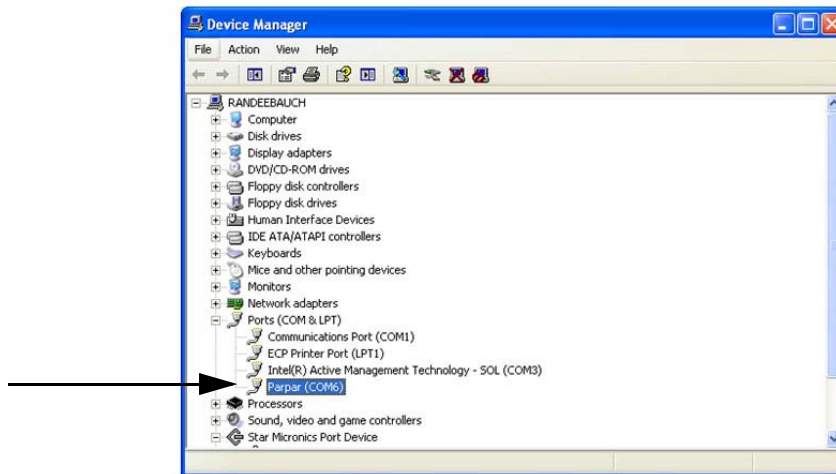



Figure 4-4. Device Manager

9. To configure a printer using the USB driver, open the software driver *Parpar* in the device manager (Figure 4-4). The port assigned to that driver is displayed.
10. Ensure that the USB cable is properly connected and the unit is on.
11. Another terminal type program (such as Hyperterminal) must be opened and connected through the USB driver to the indicator to see the information being transmitted to the PC. To establish a port, select the port that is assigned to *Parpar*.
12. Press . The following example tickets will print.

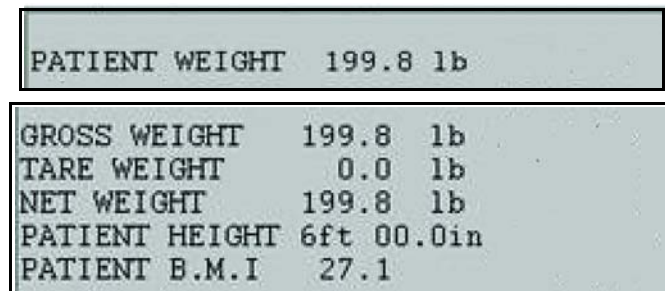


Figure 4-5. Example Tickets

A single print ticket has four spaces after *PATIENT WEIGHT* and only one space between weight and lb in the examples shown above. Then seven <CR><LF> after.

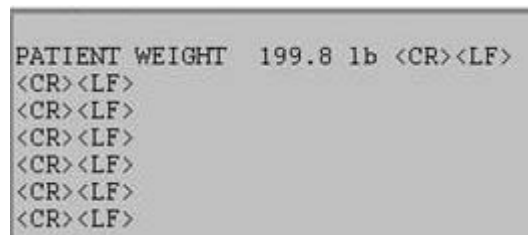


Figure 4-6. IT Example Ticket

 **Important** Figure 4-6 is for IT information only. The tickets print as in Figure 4-5.

5.0 Maintenance

5.1 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.

Perform 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 a cracking or fraying cord, as well as for broken or bent prongs.

5.2 Cleaning

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

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

6.0 Troubleshooting

Refer to the following to check and correct any errors. Contact Customer Service personnel if the issue persists.

Symptom	Possible Cause	Corrective Action
The scale does not turn on.	The batteries are dead.	Install new batteries or connect the scale to a power source.
	The electrical outlet is faulty.	Plug the scale into a different electrical outlet.
	The AC power adapter is bad.	Replace the optional AC power adapter.
The weight is questionable or the scale does not zero.	An external object is interfering with the scale.	Remove the interfering object from the scale.
	The scale was not at zero prior to weighing.	Help the patient off the scale, zero the scale and begin the weighing process again.
	The scale is not placed on a level floor.	Ensure the scale is level and begin the weighing process again.
	The scale is out of calibration.	Check the scale with a known weight value. Recalibrate the scale.
The indicator displays a STOP message.	The load on the scale exceeds the capacity of the scale.	Help the patient off the scale and remove any additional items. Use the scale according to manufacture's specifications. See Section 7.0 on page 14.
The indicator displays a LO Bat message.	The battery power is low.	Install new batteries or connect the scale to a power source.
The indicator displays any of the following Err messages.		
Err 2	A low saturation state (low A/D) exists. The load cell is not connected properly.	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	A high saturation state (high A/D) exists. The load cell is not connected properly.	The load cell is not connected properly. Check the cables and mechanical connections. If the problem persists, replace the set of load cells.
Err 6	The weight is unstable and calibration does not work.	Check the load cells' mechanical surroundings and see that nothing touches them and that the cables are properly welded.

Table 6-1. Troubleshooting Table for the Rice Lake 260-10-1 Digital Handrail Scale

7.0 Specifications

Power

Optional AC Adapter - 120 VAC-9VDC-60Hz or 230 VAC

Battery Type

6 AA size non-rechargeable alkaline batteries

Battery Use

25 hours continuous use

Automatic power-off can be configured

Data Communications

RS-232 with RJ-45 jack

USB connection

Selectable baud rate, default - 9600

8 bits

No parity

1 stop bit

No handshaking

Environmental

Operating Temperature

50°F to 104°F (10°C to 40°C)

Storage Temperature

32°F to 158°F (0°C to 70°C)

Humidity

85% relative humidity

Capacity and Graduation

800 lb (360 kg) 0.2 lb (100 g)

Dimensions

Platform Dimensions

23½ in W x 23½ in L x 2¾ in H

Height

33½ in

Height with Height Rod (optional)

87½ in

Certifications and Approvals

RoHS Compliant



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