Rice Lake Digital Chair Scale

Model 550-10

Software Revision 11454

Operation Manual

RICE LAKE
WEIGHING SYSTEMS
To be the best by every measure®

PN 130893 Rev E

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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.

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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 550 Digital Chair scale is efficiently designed to provide accurate, reliable and repeatable weight measurements and has features that enable a fast and convenient weighing process. The Rice Lake 550 Digital Chair scale features an ergonomic design, has two armrests that can be lifted separately and a foot rest that can be folded. Its four swivel casters can be locked in place.

This manual can be viewed and downloaded from the Rice Lake Weighing Systems web site at www.ricelake.com. Technical information on these products and other medical products are available on the Rice Lake Weighing Systems website.

Figure 1-1. Rice Lake 550 Digital Chair Scale

2.0 Safety

With the Rice Lake 550 Digital Chair scale there are certain precautions that should be taken to prevent personal injury to the user and damage to your scale.

2.1 Safety Signals

Safety Signal Definitions:

WARNING *Indicates a potentially hazardous situation that, if not avoided, may result in death or serious injury*

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.*

2.2 Safety Precautions

Do not operate or work on this equipment unless you have read and understand instructions in the manual. 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. Proper care is your responsibility.

WARNING ***Before attempting to operate this unit, make sure every individual who operates or works with this unit has read and understands the following safety information. Please follow these instructions carefully.***

- Do not transport the scale while the platform is loaded.
- Always lock the caster brakes of the chair before seating the patient.
- Make sure the footrest is in the up position when seating the patient.
- Do not drop the scale or subject it to violent shocks.
- For accurate weighing, the scale must be placed on a flat, stable surface.
- For accurate weighing, verify proper operation according to the procedure described in this manual before each use.
- Weight exceeding the maximum capacity (660 Lb/300 Kg) may damage your scale.
- Do not use in the presence of flammable materials.
- Operating at other voltages and frequencies than specified could damage the equipment. Use only medically approved AC adaptors.
- 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.
- Rice Lake Weighing Systems offers optional AC adaptors, utilizing an adaptor not supplied by us voids all warranties.
- These scales are used to determine weight of people while sitting.
- To avoid cross contamination, the scale plate must be cleaned regularly. It is recommended after each weighing which could result in potential contamination such as when there is direct skin contact during the weighing process.
- The scale is not waterproof so avoid contact with excessive moisture.
- To prevent injury, do not exert unnecessary force on the arm rests.

3.0 Scale Assembly

3.1 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:

- The chair scale
- This manual
- Box labeled *Parts Inside*
- The *Parts Inside* box contains the following:
  - Serial communication cable
  - AA batteries (6)
  - 5 mm Allen key
  - M6 x 16 Allen screws (4) — (to attach seat to base)

3.2 Save Packaging

If the Rice Lake 550 Digital Chair scale must be returned for any reason, it must be properly packed with sufficient packing materials in the original carton.

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

3.3 Setting Up Your Scale

Use the following steps to set up the Rice Lake 550 Digital Chair scale.

Move the box into an area where the scale can be assembled. It's recommended that the scale be placed on a hard, level surface for the most accurate weighments.

1. Locate the operator's manual from inside the box and set it aside as it will provide instructions on the proper scale removal and set up.

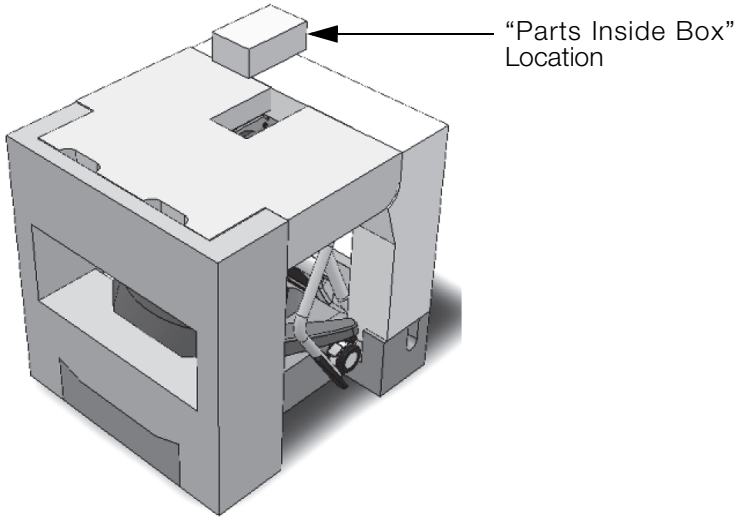


Figure 3-1. Chair Scale Packaging Once Out of the Box

2. Locate and remove the "*Parts Inside*" box and locate the 5 mm Allen key.

3. Remove top Styrofoam piece and remove the seat from the attached Styrofoam.

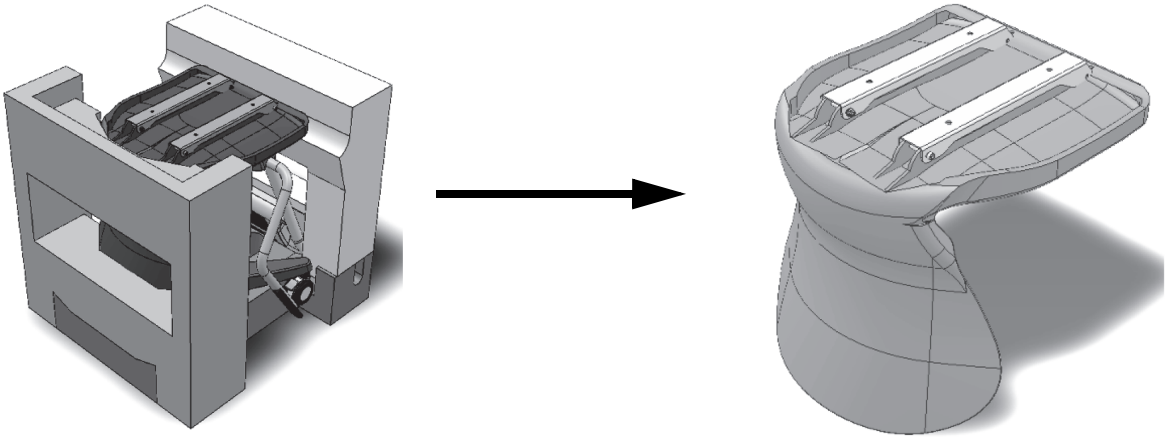


Figure 3-2. Remove Seat From Packaging

4. Set the seat aside for later assembly.
5. Remove the side and the back handle Styrofoam pieces.

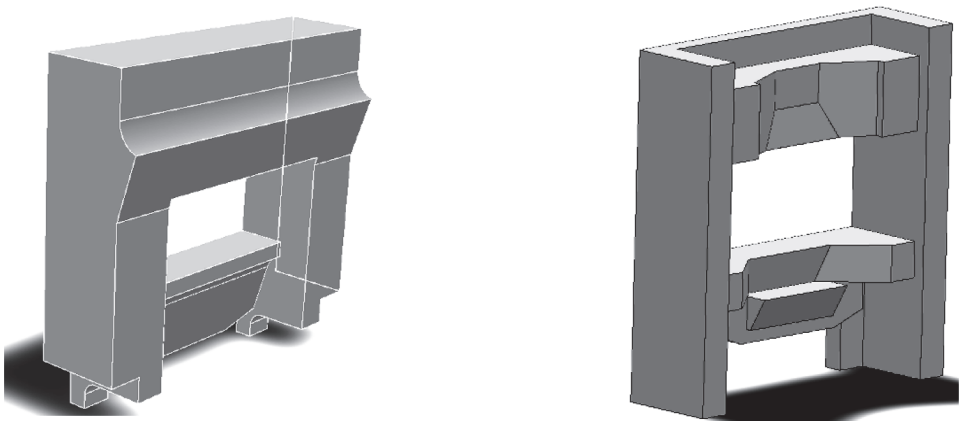


Figure 3-3. Remove Side Styrofoam Pieces From Packaging

Note ***The chair is heavy so use assistance in taking it out of the box and placing it on the floor, making sure it does not get dropped.***

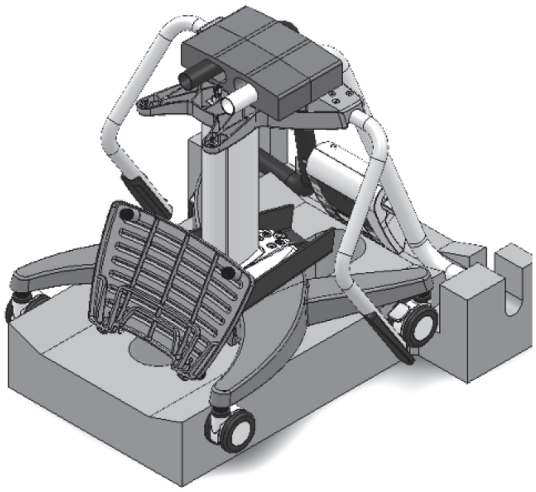


Figure 3-4. Chair Scale Without Side Packaging Materials

6. Lift chair off of Styrofoam packing material using assistance and place it on the floor.

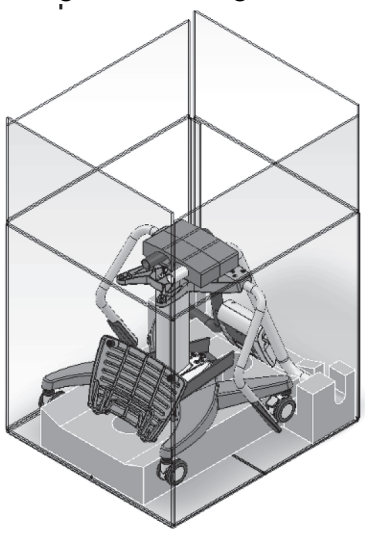


Figure 3-5. Lift Chair off of Styrofoam Bottom Packaging

7. Collect the Styrofoam pieces and place them back in the carton box.

Chair Assembly

Use the following steps to assemble the chair.

1. Use the Allen key provided in the “Parts Inside” box.
2. Release both of the screws holding the back handle frame (which is marked with circles in Figure 3-6).

Remove screws to release the back handle frame.

Do not completely unscrew the screws.

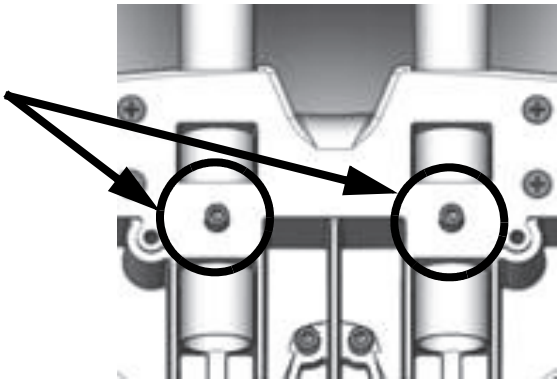


Figure 3-6. Remove Screws to Release the Back Handle Frame

3. Remove Styrofoam pieces from the main handle.

Figure 3-7. Remove Styrofoam Packing Pieces from Main Handle

4. Pull out the back handle frame and rotate it so that the indicator will be facing up.

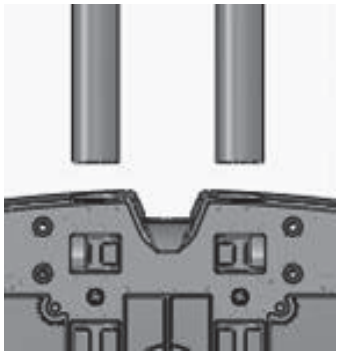


Figure 3-8. Pull out Frame and Rotate

5. Insert the main handle into the frame and secure it with the screws.

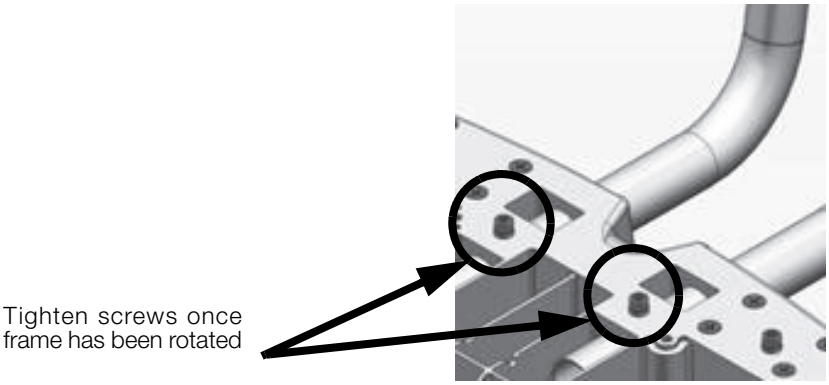


Figure 3-9. Tighten Screws Once Frame Has Been Rotated and Reinserted

6. Connect the load cell cable and indicator cable making sure to position the load cell cable on the grooves so that it doesn't get damaged or pinched.

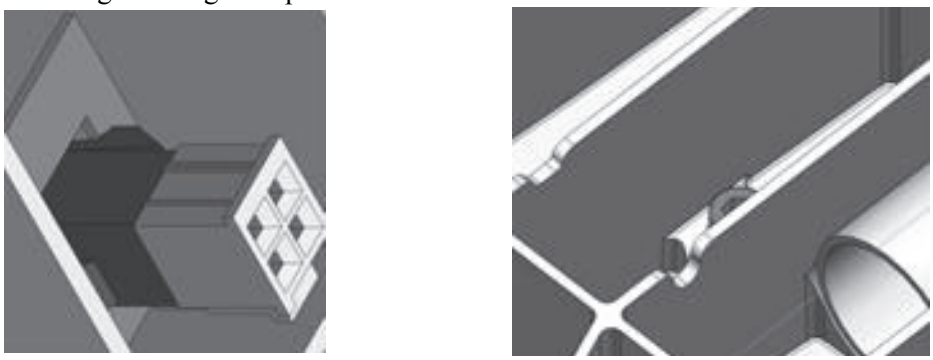


Figure 3-10. Connect Load Cell Cable and Indicator Cable

7. Use the Allen key (provided) to release both screws holding the arm rest frame (marked with circles below).

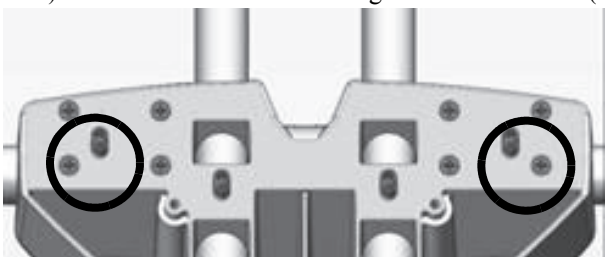


Figure 3-11. Loosen Screws Holding Arm Rest Frame

8. Rotate the arm rest until the arm rests are parallel to the seat base.
9. Tighten the screws to secure the arm rests in place.

Note ***The arm rests can move up and down to allow easy patient access.***

Figure 3-12. Arm Rest Assembly

10. Place the seat on the seat base and secure it into place using the four (4) M6 x 16 Allen screws.

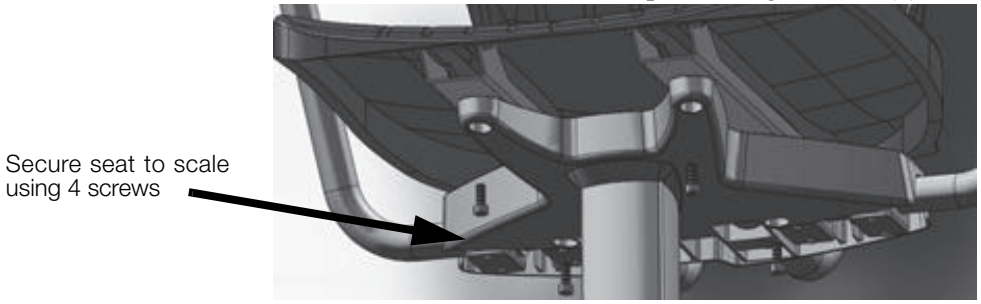


Figure 3-13. Secure Seat to the Scale Using Screws

11. Use level bubble to check for level and adjust feet as needed by adjusting bolts located on top of each caster wheel.

Figure 3-14. Bubble Indicates that the Scale is Level

Note *Ensure casters are in a locked position prior to having a patient sit down on the chair scale.*

Figure 3-15. Brake Location on Each Caster Wheel

12. Foot rest must be in the UP position prior to patient sitting down on the chair scale. Once the patient is seated, you can lower the foot rest.

Figure 3-16. Flip Footrest Down

Inserting Batteries

The Rice Lake 550 Digital Chair scale uses six (6) AA batteries which offers an average of 25 hours of continuous use from the batteries. The batteries come with the product.

To install the batteries,

1. Open the battery chamber cover.
2. Insert batteries.

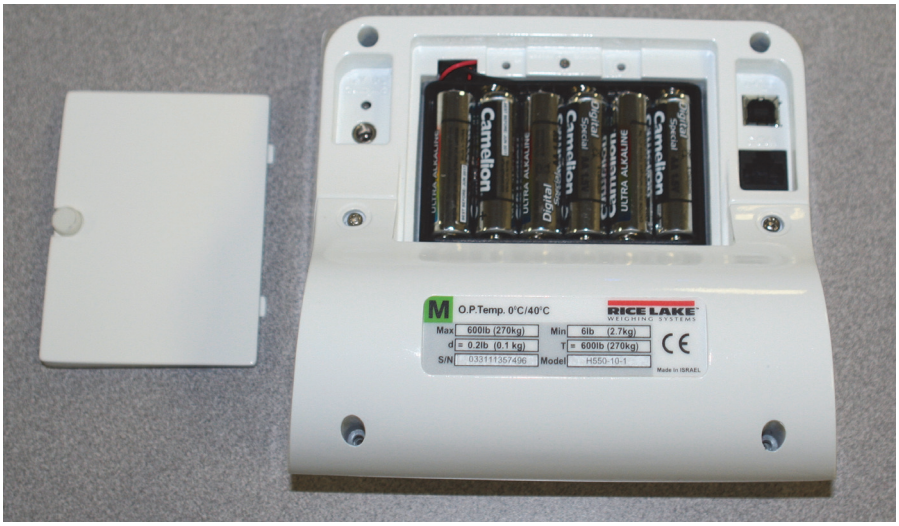


Figure 3-17. Batteries in Battery Chamber

3. Close battery chamber cover.

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

When on battery or USB power supply, the backlight power is deducted to 60 percent.

AC Power Connections

The Rice Lake 550 Digital Chair scale has an optional 120 VAC adaptor or 230 VAC adaptor to use when power is readily available. The optional AC power adaptor plugs into the back of the indicator as shown in Figure 3-18. Rice Lake Weighing Systems offers optional AC adaptors, utilizing an adaptor not supplied by us voids all warranties.

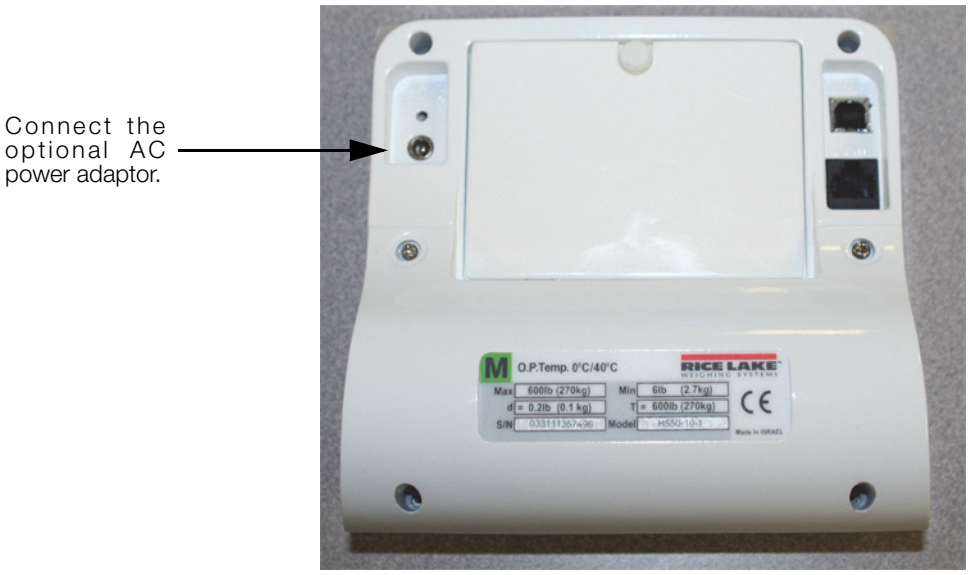


Figure 3-18. Power Connection

4.0 Scale Operation

The Rice Lake 550 Digital Chair scale display has various front panel keys. They are shown below.

Figure 4-1. Rice Lake 550 Digital Chair Scale Front Panel Display Keys

Key Descriptions

Table 4-1 describes each of the Rice Lake 550 Digital Chair scale's key functions.

Key	Name	Function
On/Off	On/Off	Switches the scale on or off
Print LB/KG	Print LB/KG	Print - A long key press will send data out from the RS-232 and USB ports. LB/KG - A short key press allows the user to toggle between kilograms and pounds providing that it's enabled in configuration mode.
Zero	Zero	Clears the weight off the scale and returns it back to zero.
Hold Release	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.
BMI	BMI	Enables the user to access the BMI (Body Mass Index) function. This key only works if there is a locked weight shown on the display and the BMI function is turned on in the configuration settings.
TARE	Tare	Is used to subtract the weight off the scale, ie: oxygen tank, other equipment.
CLEAR	Clear	Allows you to return to normal weighing when the BMI value is being displayed.

Table 4-1. Digital Chair Scale Key Functions

Key	Name	Function
	ENTER	Used to accept height in BMI mode.
	Up/Down Arrows	Used to adjust height input (0.5 in/0.5 cm) while in BMI mode.

Table 4-1. Digital Chair Scale Key Functions

Note ***The keys on the front panel display are very sensitive so only a gentle pushing motion is required to obtain results.***

CAUTION ***To prevent injury, do not exert unnecessary force on the arm rests.***

The scales have the capability of performing different operations beyond just calculating weight. The various operating instructions are described below.

4.1 Weighing

Use the following steps to weigh a person.

1. Press the **On/Off** key to turn on the scale and *0.0* will appear on the display along with *ZERO* on the upper display.
2. Have the person sit down on the scale. The display shows the person's weight, and the *LOCK* annunciator is on in the upper display and beeps to indicate the end of the weighing process.
3. To change the display from Lb to Kg and vice-versa, press the **LB/KG** key.
4. To turn off the scale, press and hold the **On/Off** key until *OFF* appears on the display.

4.2 Hold/Release Function

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

1. When the person is on the scale, press the **Hold/Release** key.
2. When the person gets off the scale, the weight and the *HOLD & LOCK* annunciator will remain on the display.
3. At this stage the **ZERO** key will not work. The only way to return to zero from here is to press the **Hold/Release** key one more time.

Note ***Pressing the HOLD key prior to a person getting on the scale will also work.***

4.3 Preset Tare

Use the following steps to use the Preset Tare:

1. When the weight is set to *0.0*, place the extra load on the scale and press the **TARE** key until the display returns to *0.0* and *NET* appears on the display.
2. Remove the extra load from the scale. The weight will appear with a negative symbol to the left of it.
3. Ask the patient to sit down on the scale with the extra weight. The display then shows the patient's weight. The *NET* annunciator is still on. The weight of the extra load remains stored in memory.
4. To cancel the tare weight, press and hold the **TARE** key until *NET* disappears from the display and the display turns back to *0.0* and *GROSS* appears. Tare weight is also canceled when the scale is turned off.

4.4 Toggle Tare

Use the following steps to use the Toggle Tare function:

1. When the weight is set to *0.0*, press the **TARE** key.
2. The default tare value is displayed (default is programmed to be 33.0 Lb/15.0 Kg), while the zero is flashing.
3. Use the **UP/DOWN** arrow keys to adjust the value.
4. Press **ENTER** to start the tare function and the *NET* annunciator will be turned on instead of the *GROSS* annunciator.

4.5 Using the Body Mass Index (BMI) Function

Use the following steps in determining the BMI.

LB Mode

1. Ensure that the scale is at zero.
2. Have the person sit down on the scale to obtain a weight.
3. The *LOCK* annunciator is illustrated on the display.
4. Press the **BMI** key. The BMI and FT/IN annunciators are lit on the display and a default value of 5 feet and 7.5 inches (ie: 5-07.5) is flashing.
5. Use the **UP/DOWN** arrow keys to adjust the height value, and press the **ENTER** key to move to the next step.
6. 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.

KG Mode

1. Ensure that the scale is at zero.
2. Have the person sit down on the scale to obtain a weight.
3. The *LOCK* annunciator is illustrated on the display.
4. Press the **BMI** key. The BMI and CM annunciators are lit on the display and a default value of 170.0 cm (ie: 170.0) is flashing.
5. Use the **UP/DOWN** arrow keys to adjust the height value, and press the **ENTER** key to move to the next step.
6. 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.

5.0 RS-232 Communication

The 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 System. Figure 3-18 on page 9 shows where the RS-232 connection is.

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

5.1 Pushbutton Keypad Print

With a stable, in-range weight, press and hold the **LB/KG/Print** key for at least three seconds, or until the scale displays "*PRINT.*" Note that if the scale does not beep after five seconds, then release the button as the weight was either in motion, or out of range.

- If displaying weight and not BMI, the scale will send out the following 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)

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>

- 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

5.2 USB Connection

The Rice Lake 550 Digital Chair scale 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 5-1.

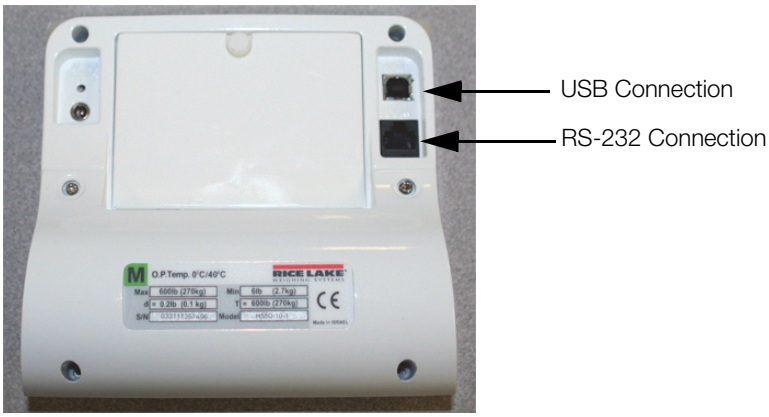


Figure 5-1. USB Connection Port and RS-232 Connection Port

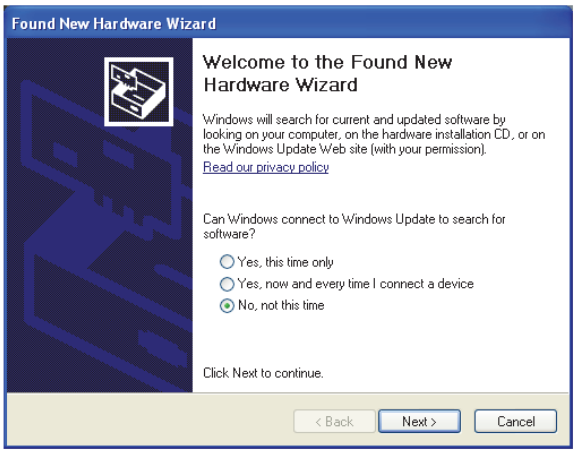
Connecting software and downloads should be addressed by your IT department and can vary depending on what type of computer platform you're using. Basic information on USB driver installation using Windows is described in the following steps and serves only as an example. The USB driver can be downloaded from the Rice Lake Weighing Systems website at the following location; http://www.ricelake.com/software.aspx

Select Medical/Health Scales, Software and Get Downloads. Opening any product will show a USB driver download. click on *Download* to open and download the driver to your computer.

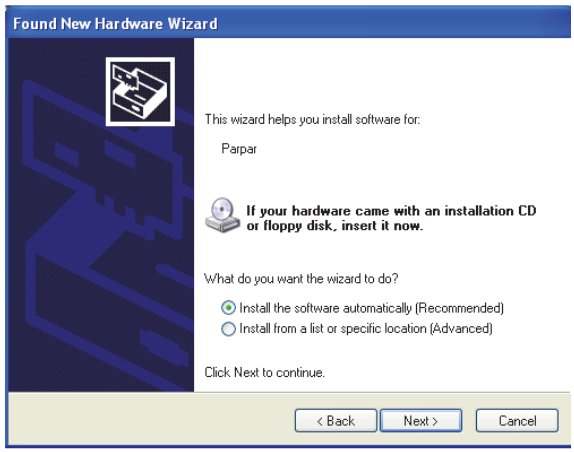
1. The graphic below shows the window that pops up when the USB cable is connected to the indicator and the scale is turned on.

Follow the screen prompts to navigate through the screens below.

2. Select *No, not this time* and then select **Next**.

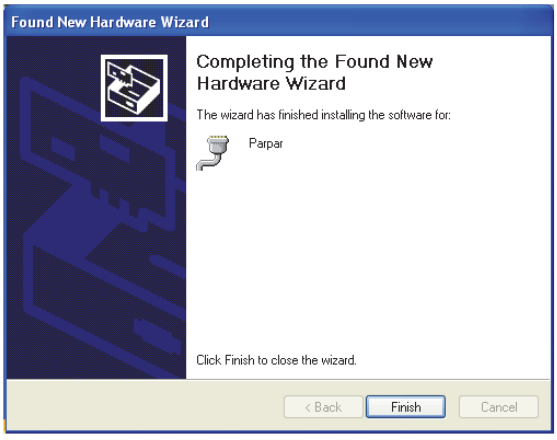


3. Select *Install the software automatically*, then select **Next**.

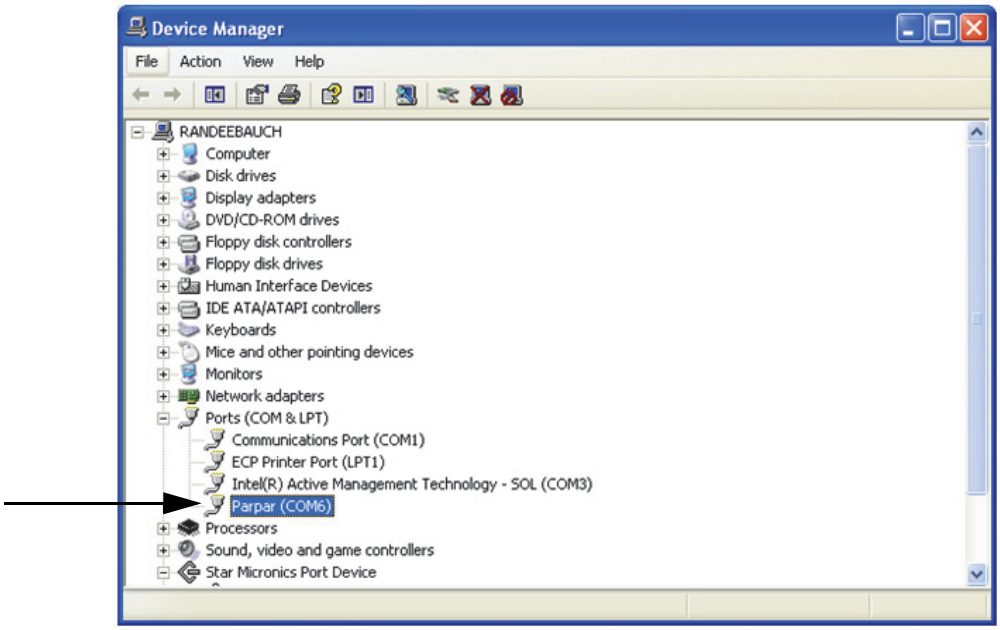


4. The following screen appears while the driver is installing on to your system.

5. The following screen appears when the installation is complete. Click on **Finish**.



6. If you want to verify the installation, you can view the driver by looking at the device manager of your system.



7. To print a ticket using the USB driver, open the software driver (shown above) and the port assigned to that driver is shown.
8. Ensure that the USB cable is properly connected and the unit is on.
9. Another terminal type program (such as Hyperterminal) 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
```

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

6.0 Troubleshooting and Testing

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

Symptom	Possible Cause	Corrective Action
Scale does not turn on	Dead battery	Connect the scale to a power source.
	Faulty electrical outlet	Use a different electrical outlet.
	Bad power supply	Replace optional adaptor.
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 the 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's specs.
The display shows *LO Bat* message	The battery is low	Recharge the battery.
The display shows Err message as detailed in the table 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 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 Scale Line

7.0 Maintenance

The following section provides instructions for maintaining and cleaning the Rice Lake line of scales. Maintenance operations other than those described in this section should be performed by qualified service personnel.

7.1 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, abuse, etc.
2. Inspect the condition of the optional AC adaptor for cord cracking or fraying or for broken or bent prongs.

7.2 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.

8.0 Rice Lake 550 Digital Chair Scale Specifications

Power
Optional AC Adaptor - 120 VAC-9VDC-60Hz / 230 VAC-9VDC-50Hz

Battery Type
(6) AA size 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 to +95°F (10 to 35°C)
Storage Temperature
32 to 122°F (0 to 50°C)
Humidity
85% relative humidity

Capacity and Graduation
Digital Chair Scale
660 Lb (300 Kg) 0.2lb (0.1Kg)

Seat Dimension 17"W x 15"L x 16"H
Inner Dimension arm to arm at narrowest point 19-3/4"

Certifications and Approvals
RoHS Compliant

CE

For More Information

System Manuals

- *Rice Lake 550 Digital Chair Scale Technical Manual*, PN 155191

Literature

- 4-color *550-10 Series Digital Chair Scale 550-10 Series* literature, PN 130955

Web Site

- http://www.ricelakehealth.com

Contact Information

Hours of Operation

Knowledgeable customer service representatives are available 6:30 a.m. - 6:30 p.m. Monday through Friday and 8 a.m. to 12 noon on Saturday. (CST)

Telephone

- Sales/Technical Support 800-472-6703
- Canada and Mexico Customers 800-321-6703
- International 715-234-9171

Immediate/Emergency Service

For immediate assistance call toll-free 1-800-472-6703 (Customers in Canada and Mexico, please call 1-800-321-6703). If you are calling after standard business hours and have an urgent scale outage or emergency, press 1 to reach on-call personnel.

Fax

Fax Number 715-234-6967

Email

- U.S. sales and product information at prodinfo@ricelake.com
- International (non-U.S.) sales and product information at intlsales@ricelake.com

Mailing Address

Rice Lake Weighing Systems

230 West Coleman Street

Rice Lake, WI 54868 USA

Digital Chair Scale 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 written 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.

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To be the best by every measure®

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