RL1200

Portable Beam Scale

Installation & Operation Manual

RICE LAKE®
WEIGHING SYSTEMS

January 19, 2026

PN 157986 Rev B

All information contained within this publication is, to the best of our knowledge, complete and accurate at the time of publication. Rice Lake Weighing Systems reserves the right to make changes to the technology, features, specifications and design of the equipment without notice.

The most current version of this publication, software, firmware and all other product updates can be found on our website:

www.ricelake.com

Revision History

This section tracks and describes the current and previous manual revisions for awareness of major updates and when the updates took place.

Revision	Date	Description
–	July 30, 2015	Initial manual release with the launch of the product; revision history established after this release
A	June 9, 2022	General enhancements to the manual and changed out indicator that is used
B	January 19, 2025	General image updates; added grounding information

Table i. Revision Letter History

Contents

1.0 Introduction

This manual provides assembly and operating instructions for the RL1200 portable beam scale, which is available in both avoirdupois and metric. Please read all instructions carefully before assembling the scale. This manual covers the installation and setup of two versions of the RL1200:

- Mechanical assembly of the RL1200
- Mechanical to electronic conversion option for the RL1200

Instructions on assembling the mechanical to electronic version of the RL1200 can be viewed in Section 4.0 on page 18.

Manuals are available from Rice Lake Weighing Systems at **www.ricelake.com/manuals**

Warranty information is available at **www.ricelake.com/warranties**

Figure 1-1. RL1200 Portable Beam Scale (Mechanical and Electronic Conversion Models Shown)

1.1 Safety

There are certain precautions that should be taken to prevent personal injury to the user and damage to the scale. Care should be exercised to assure proper assembly and operation of the RL1200. The RL1200 should be assembled only by a trained scale technician. Untrained personnel should not attempt to assemble this scale, nor make any adjustments not specified in these instructions.

Safety 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.

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

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

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

Do not transport the scale while objects are loaded.

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

Do not jump up and down on the scale.

Do not make alterations or modifications to the scale.

Avoid contact with excessive moisture.

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

Weight exceeding the maximum capacity (1,000 lb/500 kg) may damage the scale.

2.0 Installation

2.1 Unpacking the Scale

Place the unopened box in an open area that has ample room for unpacking the scale. Remove all parts from the box. Parts contained in the shipping box include:

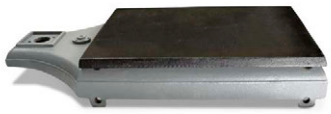
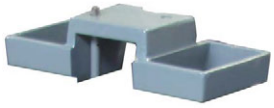
Item Description	Quantity
Scale base 	1
Weight rack 	1
Beam cap assembly 	1
Beam cap washers 	2
Axle washers 	4
Wheel 	4
Wheel axle 	2
Trig loop assembly 	1

Table 2-1. RL1200 Parts

Item Description	Quantity
Pillar rod 	2
Steelyard rod 	1
Beam assembly 	1
Counterpoise assembly 	1
Loop clamp 	2
Axle cotter pins 	4
Axle locking bolts 	2
Cap nut for beam cap 	2
Counterpoise weights, 100 lb (1), 200 lb (2), 400 lb (1) 	
Steel shot for counterpoise	1

Table 2-1. RL1200 Parts (Continued)

Item Description	Quantity
Pillar 	1
Trig loop mounting plate 	1
Trig loop mounting bolts 	2
Trig loop mounting washers 	2

Table 2-1. RL1200 Parts (Continued)

2.2 Repacking

If the RL1200 must be returned for modification or repair, it must be properly packed with sufficient packing materials. Whenever possible, use original carton when shipping the scale back.

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

2.3 Scale Setup

2.3.1 Assemble Wheels onto Frame

Use the following steps to assemble wheels onto the RL1200 frame.

1. It is preferable to set the scale base on a box or other item to keep the scale base up off the floor. Tip the scale base on its side.

Figure 2-1. Scale Base on its Side

2. Place wheel axles through the holes in the frame.

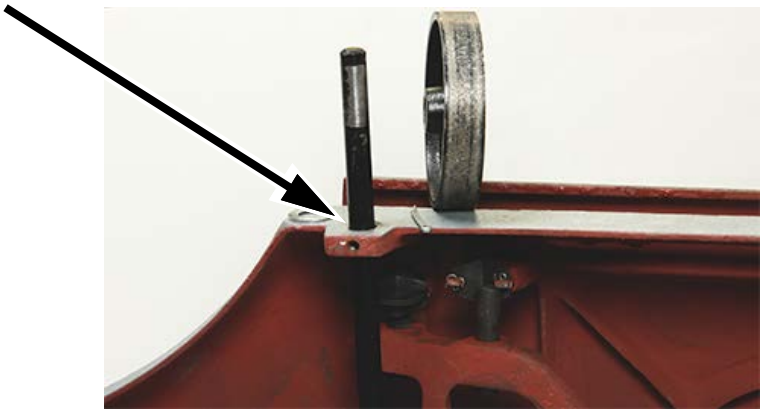


Figure 2-2. Run Axle Through Scale Base Frame Holes

3. Place the wheels and washers on the axles.

NOTE: Washers must be placed on the insides of the wheels next to the scale frame. Wheels must be placed with the extended hub next to the scale frame.

Figure 2-3. Place Washers and Wheels on Each Axle

4. Place the washers and wheels against the frame and insert cotter pins in the holes in the axles. Bend the cotter pin with pliers to prevent it from slipping out.

Figure 2-4. Run Cotter Pins Through Wheel Axle Holes to Prevent Slipping

5. Finish the wheel assembly by securing axles to frame by securing wheel axle rods with axle locking bolts and lock nuts. Center the axle and tighten bolt and locknut.

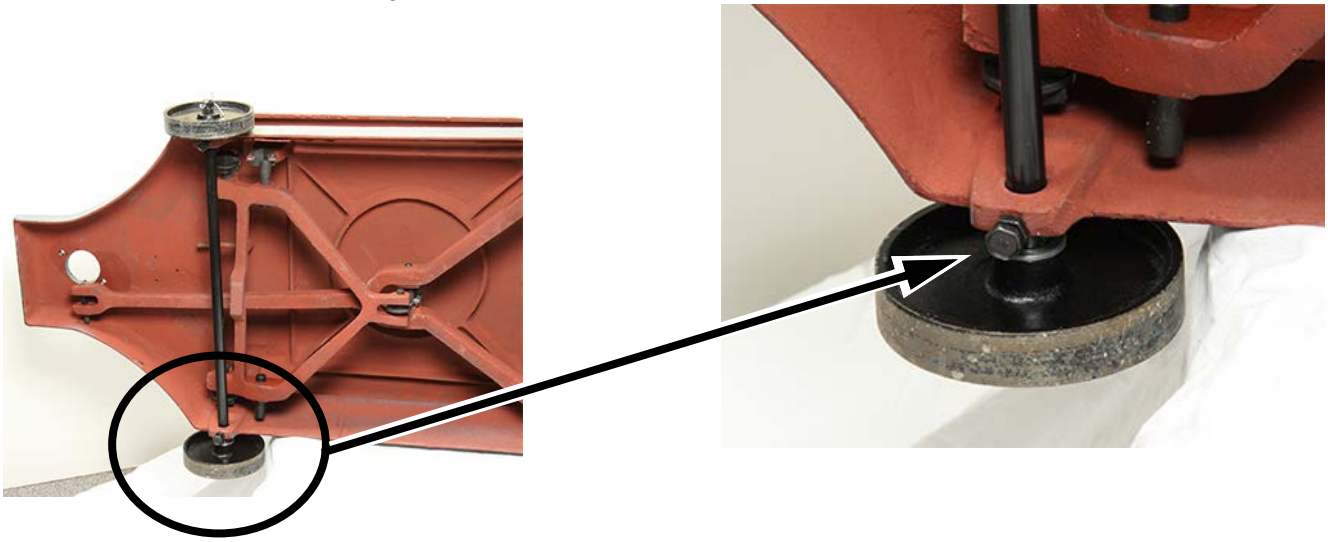


Figure 2-5. Secure Wheel Axle to Frame Using Axle Locking Bolts on Each Wheel

6. Stand the scale base on the floor on its wheels.

Figure 2-6. Place Scale Base on Floor

2.3.2 Attach Pillar to Scale Base

Use the following steps to attach the pillar to the scale base.

1. Screw the pillar rods into the scale base frame approximately three turns. Ensure ample threads are available to place the beam weight rack and beam cap assembly on the pillar.

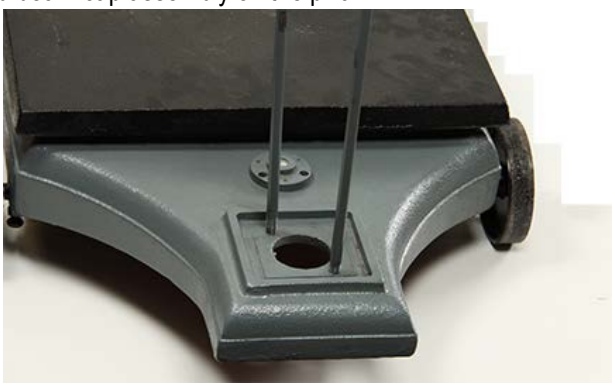


Figure 2-7. Screw Pillar Rods into Scale Platform

2. Place the pillar over the rods with the Rice Lake Weighing Systems logo label facing the scale platform as shown in Figure 2-8.

Figure 2-8. Place Pillar Over Pillar Rods

3. To put the connecting steelyard rod into position inside the pillar, raise the long lever under the scale base and hook the lower end of the rod with loop in the nose iron assembly.

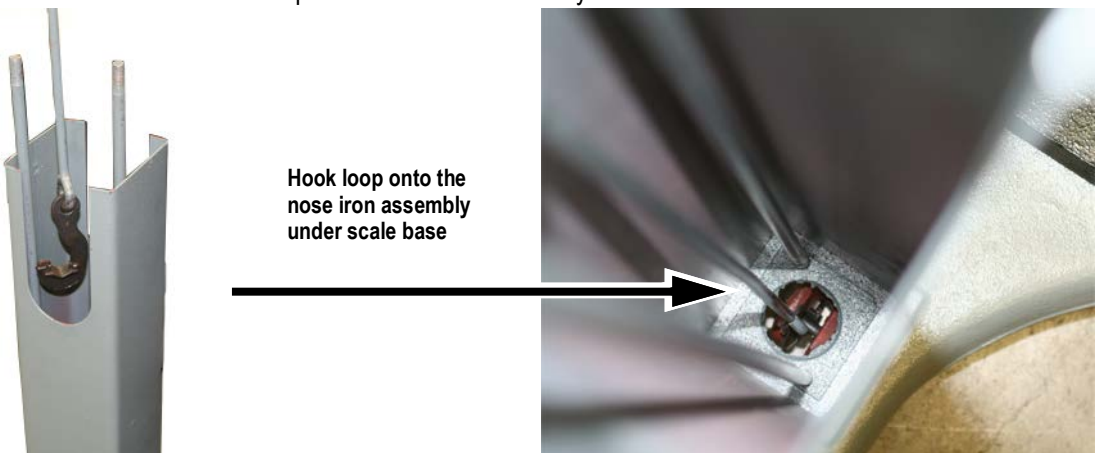


Figure 2-9. Attach Hook to Nose Iron Assembly

4. Temporarily hang the steelyard rod on the cutout in the pillar as shown.

Figure 2-10. Steelyard Hook on Pillar Cutout

IMPORTANT: If assembling the Mechanical to Electronic version of the RL1200, proceed to Section 4.0 on page 18 for further assembly instructions.

5. Place the weight rack on top of the pillar with the hook facing as shown.

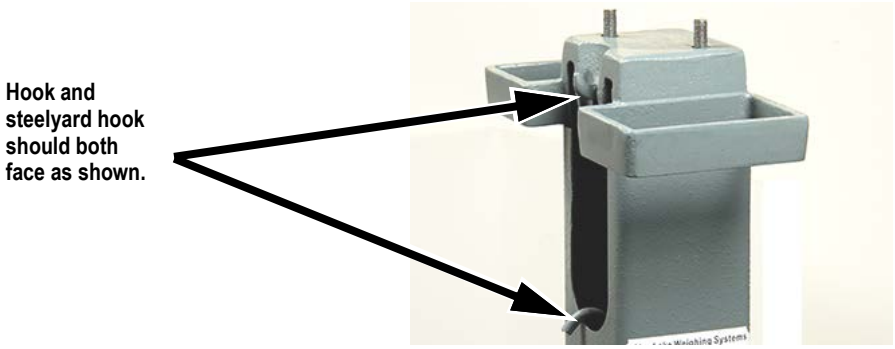


Figure 2-11. Place Weight Rack on Pillar

6. Place the beam cap assembly over the weight rack (facing same direction as hook and steelyard hook) and then secure with acorn bolts and washers.

Figure 2-12. Attach Beam Cap Assembly

7. Attach the two loop clamps onto beam assembly.

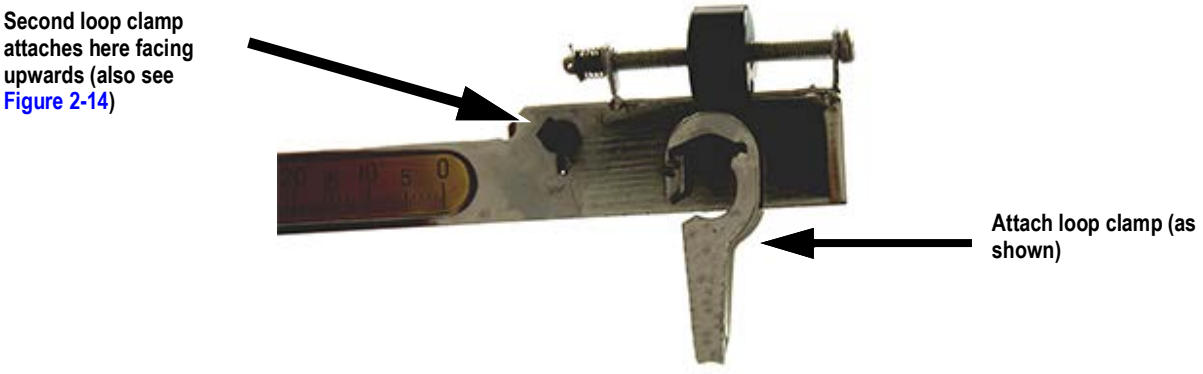


Figure 2-13. Attach Loop Clamps to Beam Assembly

8. Take the beam assembly and put the upper end of the steelyard rod through the lower loop clamp on the beam and hook the upper loop clamp to the hook on the weight rack (not shown).

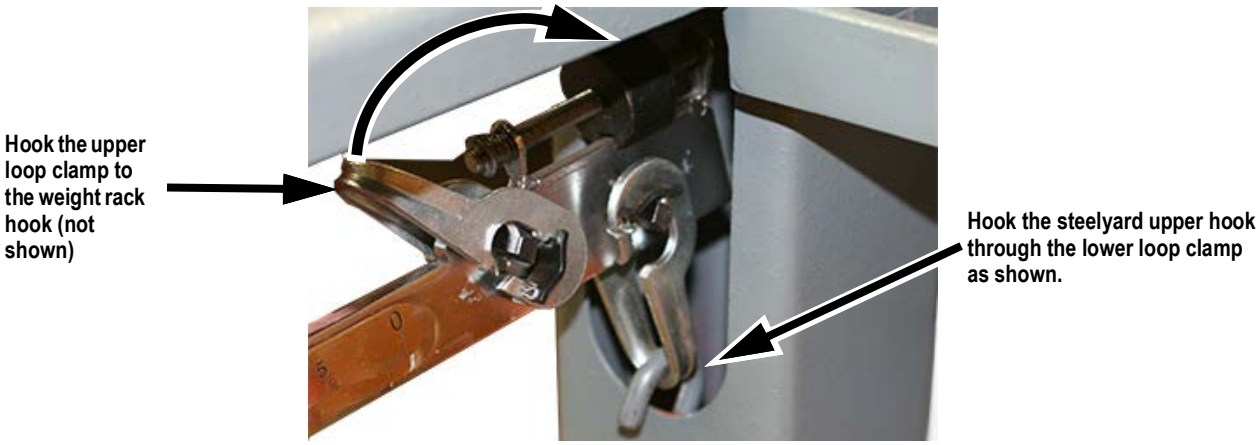


Figure 2-14. Hook Loop Clamps to Beam Assembly and Weight Rack

2.3.3 Trig Loop Assembly

Use the following steps to assemble the trig loop.

1. Insert the trig loop assembly to the end of the beam assembly. The ball handle should face towards the scale base.
2. Place the trig loop mounting plate on top of trig loop assembly prior to attaching to beam cap assembly.

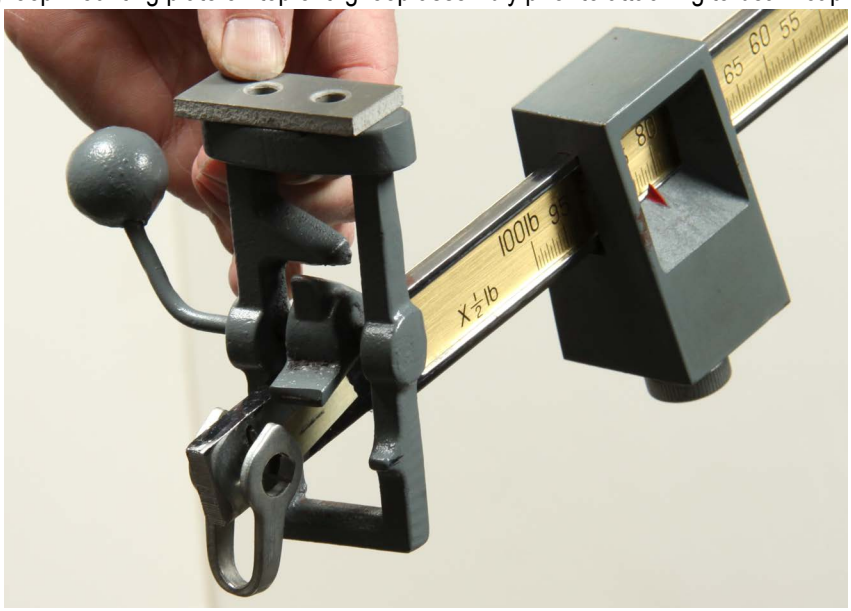


Figure 2-15. Inserting the Trip Loop Assembly to Beam Assembly and Adding the Trig Loop Mounting Plate

3. Use bolts to secure the trig loop assembly to the beam assembly ensuring that trig loop washers are placed between beam cap assembly and the mounting bolts..

Figure 2-16. Secure Trig Loop Assembly with Bolts

4. Ensure the trig loop assembly is centered horizontally. Adjustments can be made by readjusting the beam assembly. The beam must not touch or rub the sides to ensure accurate weighments.
5. Once the trig loop assembly is centered, tighten the beam cap assembly and weight rack to the pillar.
6. Hang the counterpoise assembly from the loop assembly at the tip of the beam.

Figure 2-17. Hanging Counterpoise Assembly

7. Place the scale on a firm, level surface.
8. Set poise(s) at zero and lock. Release the beam lock. Adjust the back balance assembly to bring the beam to a horizontal position with the tip centered in the trig loop.
9. The zero adjustment screw must be turned clockwise to make the beam go up, and counter-clockwise to make the beam go down.

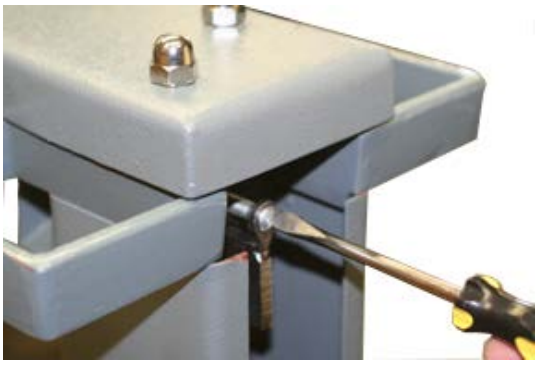


Figure 2-18. Zero Adjustment Location

10. If the beam cannot be vertically centered, weight may be added or removed from the counterpoise assembly as necessary by unscrewing the counterpoise weight and adding iron shot into the cavity.

Figure 2-19. Scale Reading on Zero

11. Hang the counterpoise weights on the weight rack until needed.

Figure 2-20. Add Counterpoise Weights Until Needed

3.0 Operation

Use the following steps to safely and correctly operate the RL1200 platform scale.

1. With no load on the scale platform, position the sliding poise at zero. Unlock the trig loop. The beam should be centered vertically in the trig loop. Adjust the back balance if necessary (see Figure 2-18 on page 15).
2. Lock the beam with the trig loop lock and place the object to be weighed on the platform. Add counterpoise weights to a value slightly less than the estimated object weight. Release the beam lock.
3. The beam should rise to the top of the trig loop. If it does not rise, reduce the amount of counterpoise weights. Move the poise along the beam until the beam balances with the tip centered in the trig loop.
4. When the beam balances, the object weight is the value indicated by the sliding poise, plus the face value of the counterpoise weights used. For example, if there are three pounds of counterpoise weights (equivalent to 300 pounds) and the sliding poise(s) on the beam indicates 54.5 pounds, then the object weighs 354.5 pounds. For a metric example, if there are three 500 gram counterpoise weights (equivalent to 150 kg) and the sliding poise on the beam indicates 10.2 kg, then the object weighs 160.2 kg.
5. After the weight has been determined, lock the beam. Remove the object from the platform. Note the poise may be locked at a desired reading by tightening the poise thumb locking screw if a desired weight is needed repeatedly, such as bagging ingredients.

4.0 Mechanical to Electronic Installation Instructions

The conversion from mechanical to electronic weighing is accomplished by a conversion kit. This kit includes:

- 482 Legend series digital weight indicator
- Load cell plus load cell cable
- Pre-drilled mounting bracket
- All necessary conversion hardware

The conversion kit requires no special tooling or equipment. Assembly requires only ordinary hand tools.

Prior assembly of the RL1200 through Step 4, Figure 2-10 on page 13 still applies.

4.1 Unpacking The Conversion Kit

Parts contained in the conversion kit include:

Item Description	Quantity
Indicator 	1
Indicator base plate 	1
Load cell and load cell cable 	1
Eye bolt 	1
Lock washers 	6
Bolts 	4

Table 4-1. Conversion Kits Parts List

Item Description	Quantity
Locknuts 	2
Long bolt 	1
Long bolt washer 	1

Table 4-1. Conversion Kits Parts List (Continued)

4.2 Indicator and Load Cell Installation

Use the following steps to attach the indicator and load cell to the RL1200.

1. Take the indicator base plate and lay it on its side.
2. Note the orientation of the load cell. Put the 3.5 inch bolt through the long bolt washer and through the top of the indicator base plate. Thread on the locknut to the bottom of the bolt.

Figure 4-1. Set Indicator Base Plate on Side and Attach Load Cell

3. Screw the eye bolt and locknut into the bottom of the load cell until flush. Tighten the locknut.

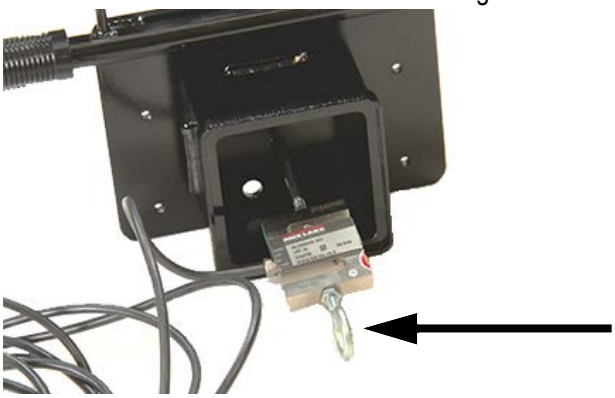


Figure 4-2. Screw Eye-Bolt Into Load Cell

4. Place the indicator base plate on pillar aligning the pillar rods through the base plate holes and handles facing the back of the scale.

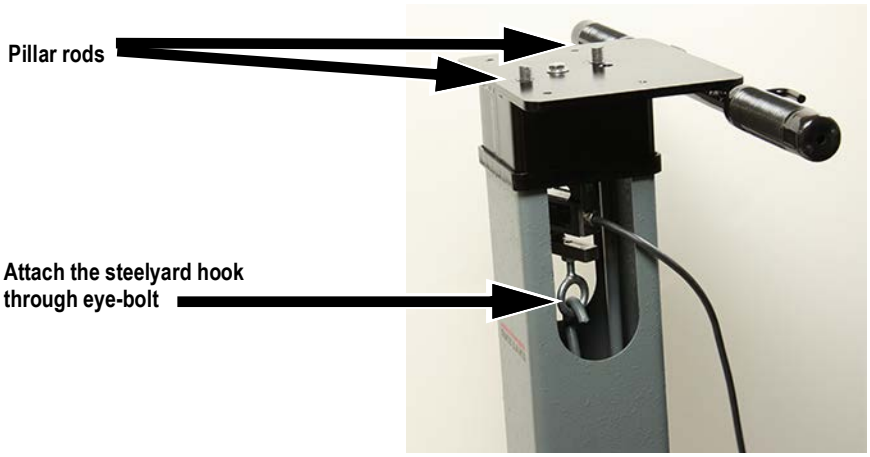


Figure 4-3. Mount Base Plate to Pillar and Attach Steelyard Hook

5. Hook the steelyard hook through the eye-bolt as shown in Figure 4-3.
6. Push the load cell cable inside pillar leaving enough slack inside pillar and draw the cable end up through hole in the base plate.

Figure 4-4. Run Load Cell Cable Through Base Plate and Tighten Base Plate to Pillar

7. Tighten the indicator base plate to the pillar by using lock washers and acorn nuts as shown in Figure 4-4.
8. Run load cell cable through the tilt stand on the indicator.

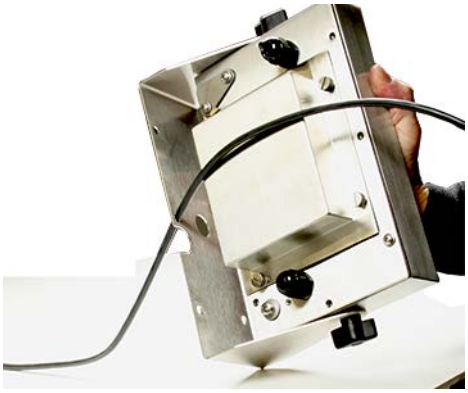


Figure 4-5. Run Load Cell Cable Through Bottom of Indicator Tilt Stand

9. Set indicator on base plate and secure with four bolts and lock washers.

Figure 4-6. Secure Indicator to Base Plate

10. Wrap excess cable around cable hooks on handle.

Figure 4-7. Store Excess Load Cell Cable

11. Connect cable from the load cell through the load cell cable cord grip to connector J1 as shown in Table 4-2.

J1 Pin	Function
1	+SIG
2	-SIG
3	+SENSE
4	-SENSE
5	SHIELD
6	+EXC
7	-EXC
For 6-wire load cell connections, remove jumpers JP3 and JP4	

Table 4-2. J1 Pin Assignments

12. If using a 6-wire load cell cable (with sense wires), remove jumpers JP3 and JP4 on the A/D board before reinstalling connector J1 (see Figure 4-8). For 4-wire installation, leave jumpers JP3 and JP4 on.

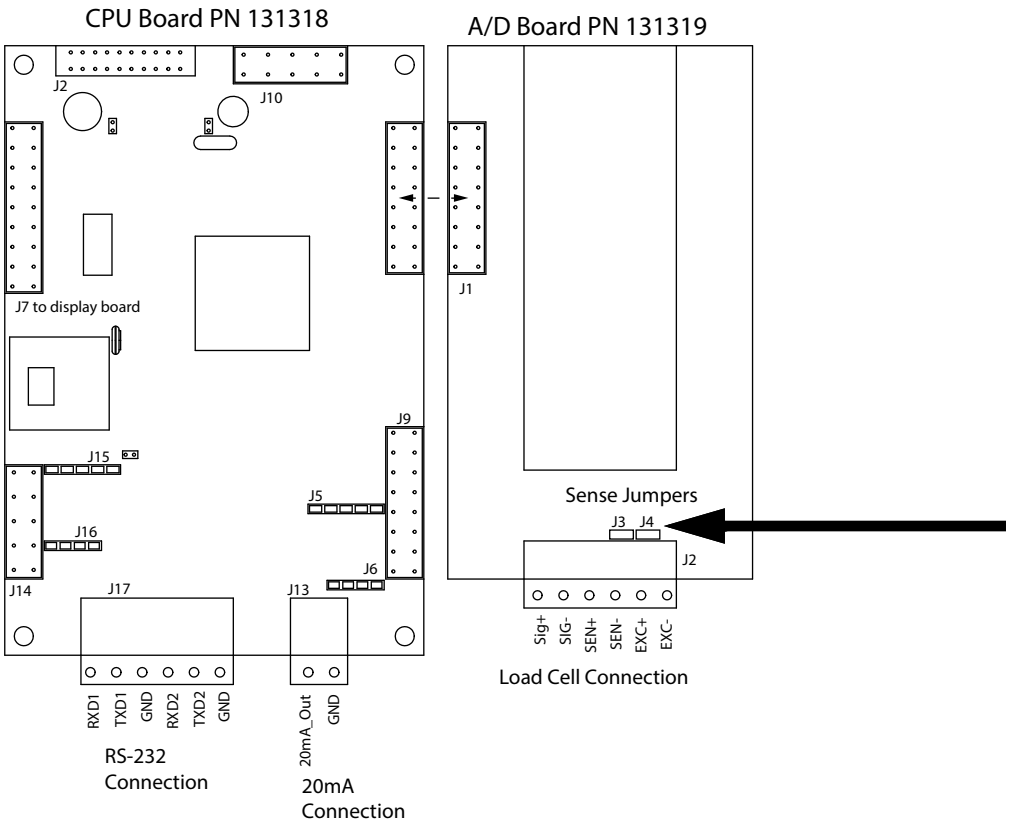


Figure 4-8. 482 Legend Series Indicator Board

4.3 Electrical Grounding

Rolling or wheeling loads onto the scale can build up large static charges that may damage the attached indicator unless it is properly grounded to prevent ESD. This is especially true in dry environments where charges drain off slowly, or if wheeling on materials which already contain a static charge, like rolls of paper or plastic film material that have been recently spooled.

For portable applications, ground by plugging the indicator into a grounded outlet, ensuring that there is no more than 3 Ohms of resistance throughout its length.

IMPORTANT: To prevent ESD damage, the indicator requires a three-prong 120 VAC outlet plug with continuous earth ground. Do not attempt to use the scale with two-prong 120 VAC power without a ground.

If using the scale with an intrinsically safe indicator, refer to FM control documents for proper grounding procedure.

4.4 Final Adjustment, Calibration and Troubleshooting

Final adjustment, calibration and troubleshooting of the 482 indicator can be found in the 482 Technical Manual, PN 165124.

5.0 Appendix

Check frequently for correct balance with no load on the platform, the poise(s) set at zero, and no counterpoise weights applied.

- Keep the beam locked until the load has been applied to the platform.
- Do not overload the scale.
- Do not oil any part of the scale. Keep the scale as clean and dry as possible at all times.
- Make sure the operation of the scale is checked at regular intervals.

5.1 Specifications

Construction:

Cast iron platform, base and levers

Poise:

Steel locking screw provided

Platform Dimensions:

(L x W): 24 x 18 in

Capacity:

1,000 lb

Warranty:

One-year limited

Approvals:

NTEP
CC:93-004

RICE LAKE®
WEIGHING SYSTEMS

230 W. Coleman St. • Rice Lake, WI 54868 • USA USA: 800-472-6703 • International: +1-715-234-9171