RoughDeck®

Low Profile Floor Scale
SS and HE Models

Installation Manual

RICE LAKE®
WEIGHING SYSTEMS

February 4, 2026

PN 16960 Rev D

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Revision History

This section tracks and describes manual revisions for awareness of major updates.

Revision	Date	Description
D	February 4, 2026	Established revision history; Updated replacement parts and accessories

Table i. Revision Letter History

Contents

1.0 Introduction

The RoughDeck® Floor Scales are fully electronic, low profile load receivers. All models use four corner-mounted, FM-approved load cells, with the cells recessed into the frame channels for protection. Also included is a signal-trim summing board enclosed in a stainless steel, NEMA Type 4X junction box for any necessary corner corrections.

Load cell cables are enclosed in conduit through the main channels, and held down with replaceable cable ties near each corner, eliminating the possibility of cable damage in portable applications. Because of the possibility of foot and load cell damage from forklift tines, the scale should always be lifted from above with chains through the eye bolts.

The adjustable feet are used to allow leveling the scale to make up for minor floor irregularities. For permanent installations, two of the four feet can be held in place on the floor with optional floor mounting plates to guard against deck movement.

Other available options include custom frames for pit installations, and access ramps for all sizes and models of the RoughDeck. Decks designed for use in pits can be ordered with holes drilled in the deck directly above each foot for adjusting foot height with a screwdriver from above. See Section 4.4 on page 15 for accessories.

1.1 Model Designations

The model identification label is located on the side of the frame next to the junction box face plate. Include both model number and serial number when ordering replacement parts.

NOTE: A duplicate label is affixed inside the junction box opening.

The following model designations are used to describe the different scale versions:

SS — Stainless steel smooth top scale with IP66 stainless steel load cells, side access junction box.

HE — Stainless steel smooth top scale with IP69K stainless steel load cells, remote access junction box.

1.2 Operating Requirements

The following are basic operating requirements for the RoughDeck floor scale.

Electrical Grounding

For systems where the scale is connected to a 115 VAC circuit, the indicator must be directly connected to an earth ground with a ground interface cable of no more than 3Ω resistance throughout its length.

Load Cell Excitation

Rated Excitation: 10 VDC

Maximum Excitation: 15 VDC

Grade Level Requirements

The supporting surface for the four feet of the scale must be level within 1/4 in. of horizontal.

End Load Capacity

200% full scale at 1,000 lbs

100% full scale at 2,000 lbs and 5,000 lbs

80% full scale at 10,000 lbs

Nominal Scale Height

2K–10K lb (1000–5000 Kg) models: 3.5 in (89 mm)

Safety Definitions:

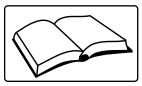
DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.

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.

DO NOT allow minors (children) or inexperienced persons to operate this unit.

DO NOT operate without all shields and guards in place.

DO NOT jump on the scale.

DO NOT use for purposes other then weight taking.

DO NOT place fingers into slots or possible pinch points.

DO NOT use any load bearing component that is worn beyond 5% of the original dimension.

DO NOT use this product if any of the components are cracked.

DO NOT exceed the rated load limit of the unit.

DO NOT make alterations or modifications to the unit.

DO NOT remove or obscure warning labels.

DO NOT use near water.

Before opening the unit, ensure the power cord is disconnected from the outlet.

Keep hands, feet and loose clothing away from moving parts.

2.0 Installation

2.1 Installation Overview

Standard installation of the RoughDeck floor scale consists of the following steps:

1. Select a site
2. Check levelness and smoothness of site
3. Unpack scale
4. Adjust the four feet on the scale
5. Install mounting plates to the floor
6. Connect cable to junction box and indicator
7. Calibrate the unit

Pit installations and access ramps are described in Section 2.6 on page 10 and Section 2.7 on page 11.

2.2 Site Preparation

The scale must not be loaded beyond its capacity, even momentarily. Do not select a site where overweight loads would have to maneuver to avoid crossing the platform. Avoid areas where the scale might receive damaging side impacts from wheels or forklift tines, or shock damage from falling objects. Avoid areas where water may damage a scale not meant for a washdown environment.

The interface cable between the scale and the indicator must be protected against crushing, cutting, or moisture damage. If the chosen site has such potential dangers, some method of protection, such as running the cable in conduit, will be necessary.

In operation, the scale must be level within 1/4 inch. Either choose a site where the floor is close to this standard to avoid excessive shimming, or modify the floor at the chosen site to meet this standard.

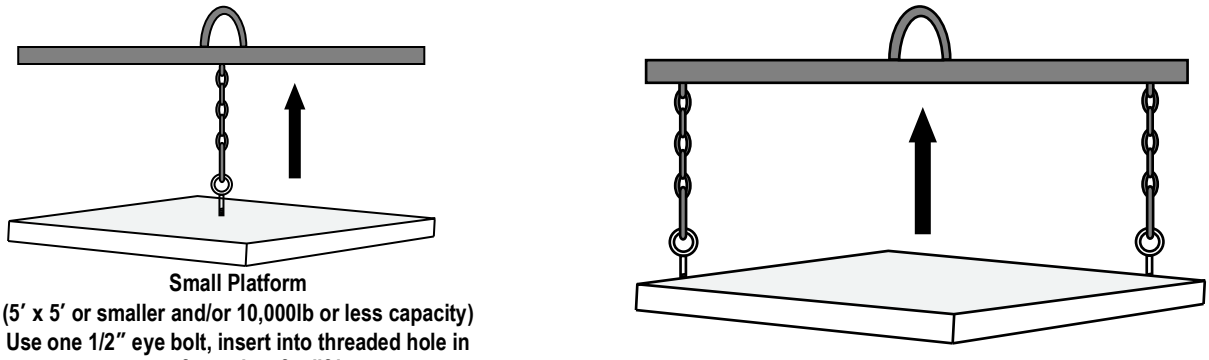
2.3 Unpacking

Remove all packing material and inspect scale for visible damage caused during shipment.

All RoughDeck models have threaded holes in the deck to allow installation of eye bolts with shoulders for use when lifting the scale with chains or using a spreader bar.

IMPORTANT: Lift the scale only with a properly designed spreader bar as shown in Figure 2-1. Lifting force must be vertical to avoid bending the eye bolts.

WARNING: Eye bolts must always be inserted into the top of the scale. Lifting should always occur with the top plate facing up and the eye bolts securely attached through the nuts welded to the bottom side of the top plate. Lifting from the bottom of the plate could cause nuts to break loose and the scale to fall.



Small Platform
(5′ x 5′ or smaller and/or 10,000lb or less capacity)
Use one 1/2″ eye bolt, insert into threaded hole in center of top plate for lifting.

Large Platform
(Larger then 5′ x 5′, and /or more than 10,000lb capacity)
Use two 3/4″ eye bolts, insert into threaded holes in opposite corners of top plate for lifting.

Figure 2-1. Proper Lifting Technique

2.4 Assembly

The following paragraphs present instructions for installing and adjusting the scale feet and mounting plate installation.

2.4.1 Installing and Adjusting Feet

Scale feet are either attached to the load cells and suspended in the corner packaging cones or secured to the bottom of the shipping pallet with the envelope containing the load cell cable, strain relief and manual. Remove all parts from the envelope.

Screw one foot into each load cell and turn all the way in until the foot touches either the load cell or the underside of the deck. Then unscrew each foot three complete turns.

Place a spirit level on the deck. Adjust any *high* corners not in contact with the floor by further unscrewing the feet on those corners until they just contact the floor surface. When all feet are in contact with the floor, check the deck with the spirit level to be sure the scale is within 1/4 inch of level.

2.4.2 Mounting Plate Installation

For permanent applications, the scale should be secured to the floor to prevent sideways movement. Two mounting plates, with holes that slightly exceed the foot diameter, are available as an option for that purpose.

Lift the scale so that the feet are approximately one inch off the floor. Slide mounting plates under two diagonally opposed feet. Lower the scale back to the floor, and position the plates as shown in Figure 2-2 so that the bolt down holes are accessible from above.

Using the mounting plates as templates, drill pilot holes into the floor for suitable anchor bolts. Bolt the plates to the floor using 1/2 inch anchor bolts. Recheck foot adjustment and deck level after this operation.

For installations using access ramps, mounting plates are not necessary as the ramps have built-in mounting plates to secure the scale feet.

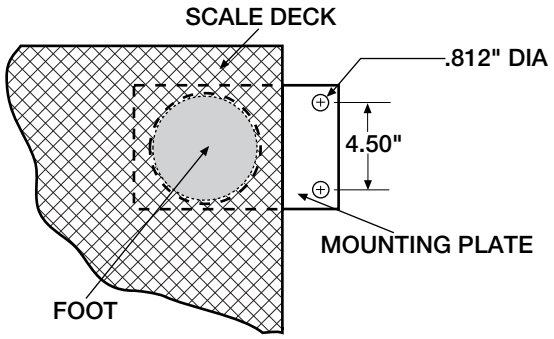


Figure 2-2. Mounting Plate Installation

2.5 Junction Box Connections

The indicator terminal strip is used to connect the main cable to the indicator which is shown in Figure 2-3 Determine the indicator's load cell input connections from the operating manual. Run a cable from your indicator terminal into the junction box and make the connections. The following table shows the correct junction box connections using the cable color code.

Cable Color Code	Junction Box
Red	+ Excitation
Black	- Excitation
Green	+ Signal
White	- Signal
Brown	Shield
Yellow	+ Sense
Blue	- Sense

Table 2-1. Junction Box Connections

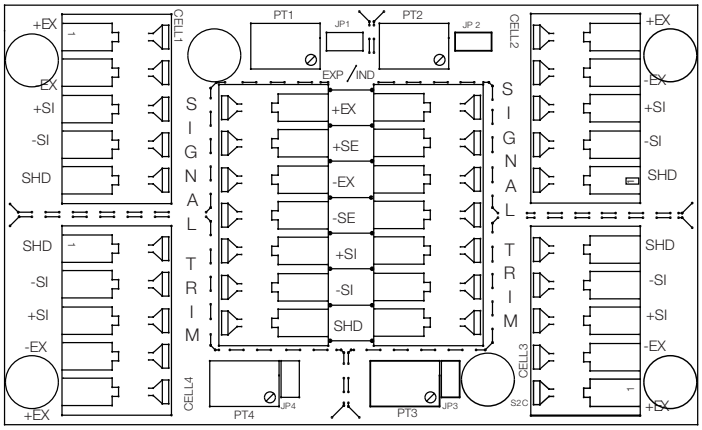


Figure 2-3. Junction Box Indicator Terminal

2.5.1 Electrical Interface to Indicator

Twenty feet of 6-wire cable to connect the scale to the weight indicator is supplied with each scale. The cable must be routed to the indicator in a manner that will protect the cable from damage. Two methods of cable protection in non-washdown applications are shown. When planning cable routing with either of these two methods, leave a loose coil of excess cable under the scale to facilitate future lifting of the scale for servicing or cleaning.

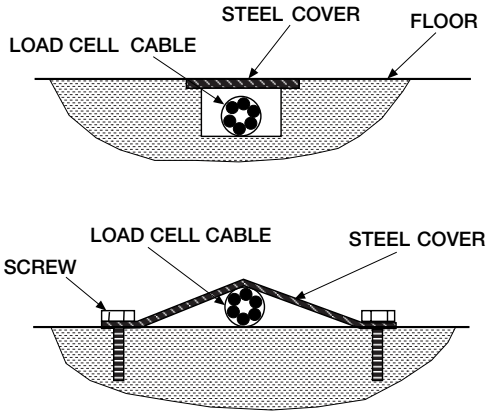


Figure 2-4. Electrical Interface to Indicator

When the interface cable is protected and in its final position, complete connections to the indicator. See indicator installation manual for wiring information. If necessary, trim corners as described in Section 3.2 on page 12.

Check all strain relief fittings for tightness. Slide the junction box assembly into the cutout and secure it with the two #10 x 3/8 inch screws provided.

2.5.2 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 permanent installations where the scale is connected to a 115 VAC circuit, the indicator must be directly connected to an earth ground with a ground interface cable of no more than 3 Ohms of resistance throughout its length.
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.

2.6 Pit Installation

Any of the RoughDeck models can be installed in a shallow pit using the optional RoughDeck Pit Frame. Optional height-adjustment holes are available. The following site considerations and pit frame drawings are meant only as a brief overview of the principles involved with mounting the scale in a floor-level pit. The pit must be installed in a suitable poured-concrete foundation according to standard construction practices.

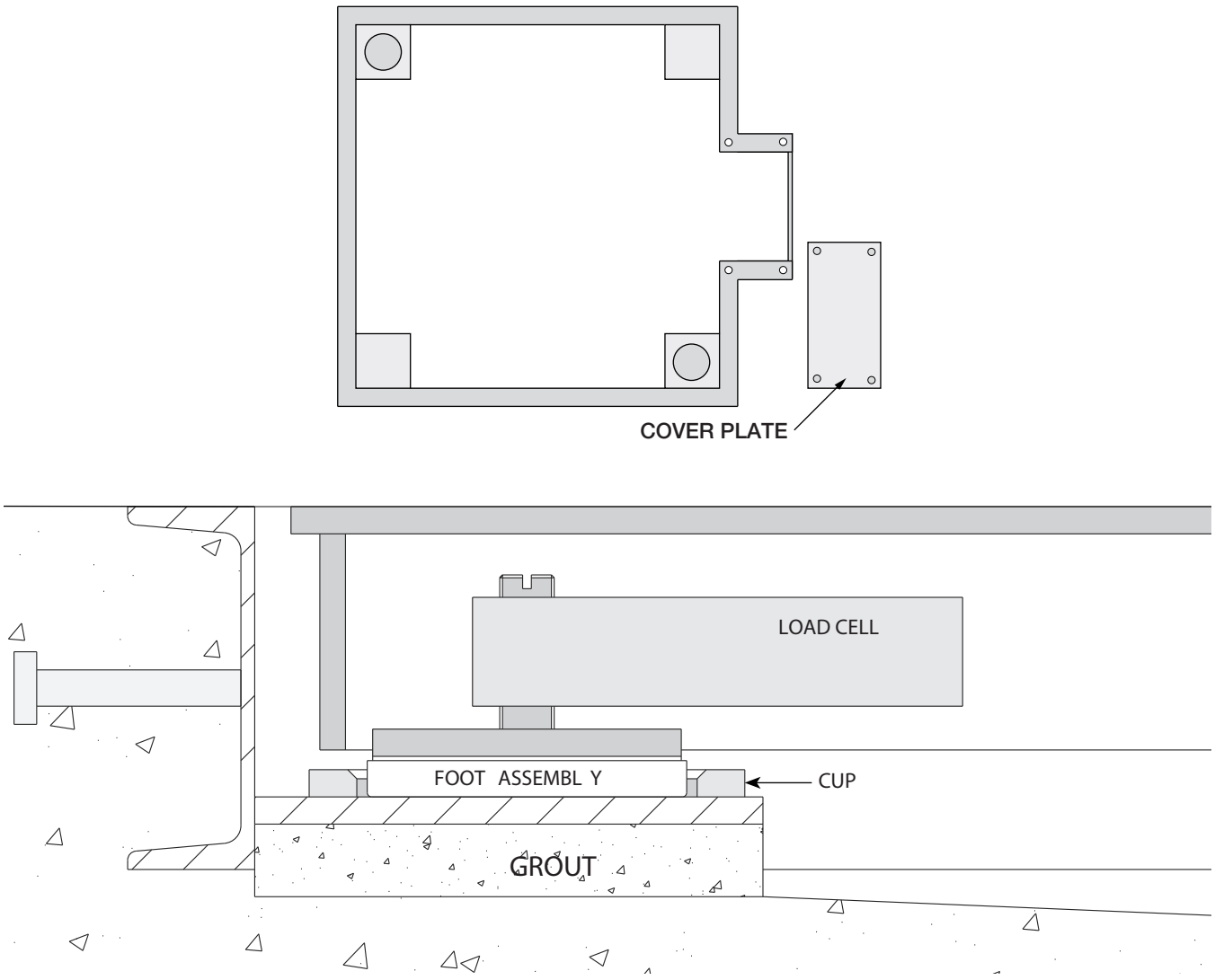


Figure 2-5. Section Showing Installed RoughDeck and Pit Frame

Site Considerations

Debris, floor sweepings, or material spills may accumulate in the pit and interfere with scale operation. You should periodically clean the pit. All RoughDeck models have threaded holes for eye bolts so the scale can be easily lifted from the pit.

Weight overloads, even momentary ones such as driving a loaded forklift over a scale corner, will damage load cells. Plan the pit location out of main traffic areas to prevent such accidental damaging overloads.

2.7 Access Ramps

Access ramps for RoughDeck floor scales are designed to bolt to the floor, with built-in mounting plates that attach to the scale feet. When used with access ramps, side movement of the scale is automatically eliminated, and no other mounting plates are necessary.

Access ramps can only be attached to the scale on one of the two scale sides that are perpendicular to the longitudinal axis of the load cells. For example, the scale shown in Figure 2-6 could have an access ramp on the left side as shown, and/or on the right side. The top and bottom sides, will not accept the ramp mounting plates.

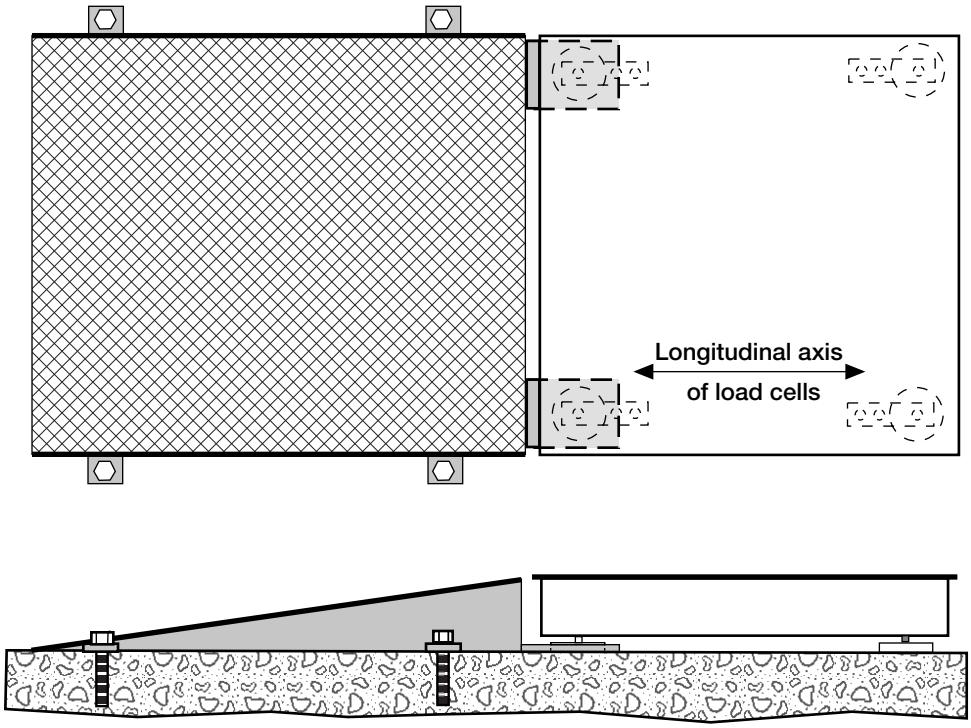


Figure 2-6. Optional Access Ramps

See Section 4.4.2 on page 16 for information about available access ramps.

3.0 Adjustments and Calibration

3.1 Mechanical Adjustments

To accommodate minor floor unevenness, scale feet can be used to adjust scale height up or down a fraction of an inch. Adjust the feet by hand (lift the scale corner slightly with a pry bar) until all feet are contacting the floor equally. No jam nuts are supplied for locking the feet, as there is a slight decrease in accuracy when jam nuts are tightened. If the application requires the feet to be secured, use Teflon tape or Loctite.

CAUTION: When adjusting scale feet, use care to prevent scale foot from bottoming out against the underside of the load cell. Also, the foot stem may be damaged by bending or stripping threads if extended beyond the maximum height adjustment.

When height adjustments are complete, recheck level of the deck with a spirit level. The deck must be level within 1/4".

3.2 Corner Correction

Corner trimming is only necessary after replacing a load cell. To calibrate the scale, the output from each load cell must be matched by adjusting the signals with potentiometers at the junction box. This process is known as trimming.

Remove the junction box cover and identify the correct load cell terminal corresponding to each corner (labeled CELL 1, CELL 2, and so on). See Figure 4-3 on page 15 for scale deck corner numbering.

The indicator must be connected and calibrated approximately, but it need not indicate the exact weight value. A test weight will be required. The recommended test weight for all RoughDeck models is 25% of scale capacity.

With no weight on the scale, zero the indicator. Then turn all four potentiometers (shaded areas of Figure 3-1) to increase the reading until a clicking sound is heard from each potentiometer. This ensures the maximum signal from each load cell.

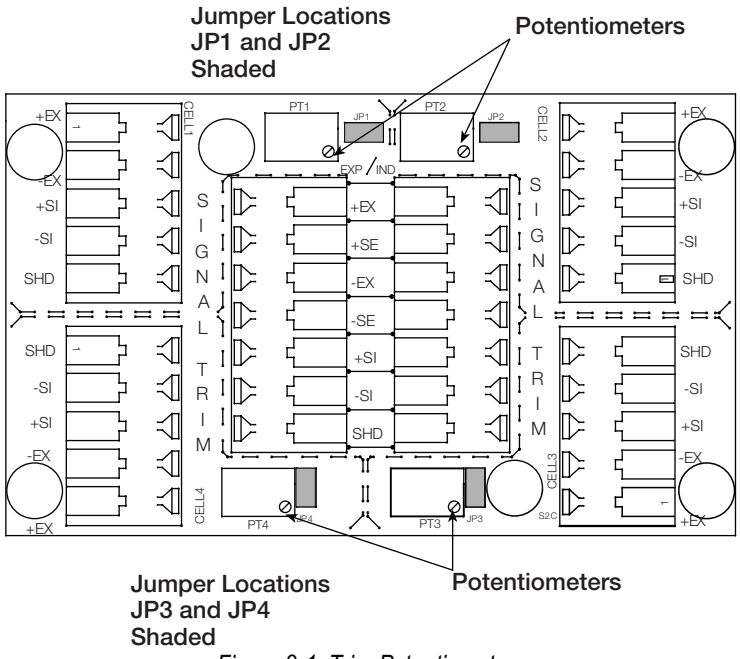


Figure 3-1. Trim Potentiometers

With all potentiometers at full signal, place the test weight over one corner and record the indicated weight. Repeat the process for each of the other three corners. The load cell with the lowest corner reading will be used as a reference point and will not be trimmed.

Next, place the test weight over one of the other three corners and use that cell's potentiometer to adjust the cell output down to the reference cell output. Repeat this procedure with the other two high corners.

Adjustments are somewhat interactive, and adjusting the three higher outputs may affect the reference cell output, especially in smaller scale decks. Rezero the indicator and repeat the test until all corners read within ±.1% of the test weight used.

3.3 Calibration Procedure

Refer to the indicator manual to determine correct calibration procedures.

It is recommended that the scale be "exercised" before calibration to be certain that everything is seated. Load the scale to near capacity two or three times.

Then, with no load on the scale, place the indicator in its calibration mode and perform a zero calibration. Now place test weights on the platform equal to 70% - 80% of the scale's capacity. If several weights are used, they should be evenly distributed around the platform. Perform a span calibration.

Remove the test weights and check the zero reading. Repeat the calibration process if necessary.

4.0 Service Information

4.1 Troubleshooting Guide

Issue	Possible Cause	Solution
System does not operate - no display	Power disconnected.	Check and reconnect.
	Indicator fuse blown.	Replace fuse. Check for cause.
	Interface cable cut or disconnected.	Repair.
	Signal leads incorrectly installed at indicator.	Install according to indicator installation manual
Display stays at zero	Indicator faulty.	*Service indicator*
	Load cell connections faulty.	Check cable connections in junction box and at indicator
Erratic weights	Vibration near scale.	*Remove source of vibration or move scale.*
	Platform not level to within 1/4 inch	Level scale by adjusting feet or shimming if necessary.
	Load cell or cable water damage	Replace
	Debris under load cells or platform	Clean
	Indicator faulty	Use simulator to test indicator for stability. Service indicator.
Consistently high or low weights	Indicator not properly adjusted to zero:	Zero the indicator according to indicator manual.
	Platform binding.	Obtain adequate clearance for free platform movement.
	Indicator not calibrated.	Calibrate according to indicator manual and Section 3.3 on page 12
	Load cells faulty.	Test and replace load cells if necessary.
	Feet touching deck underside.	Adjust feet downward to provide clearance.

Table 4-1. Troubleshooting

4.2 Periodic Maintenance

The space between the platform side and pit frame, and the surface beneath the platform must be periodically cleaned to prevent debris build up. More frequent cleaning of these areas is necessary with scales mounted in pits.

CAUTION: Do not attempt to use scales with load cells that are not hermetically sealed in washdown applications. Water damage is a common cause of failure in non-hermetically-sealed load cells. Use care with high pressure steam wash downs for hermetically-sealed load cells. The steam may not damage the load cells, but the elevated temperatures may cause incorrect readings until the unit cools to room temperature.

4.3 Load Cell Replacement

Lift scale with chains and proper spreader bar and remove foot, then remove defective load cell. Disconnect load cell cable from junction box and cut cable ties. When the cable is freed, pull cable out of the scale frame channels.

Follow the directions given below to install new load cells.

To reset overload stops after load cell installation, place a weight equal to 25% of the load cell capacity on the affected scale corner. Screw in the overload stop until the indicator reading changes. Then back off the overload stop 1/6 turn. Repeat for each corner where the load cell has been changed.

Lay out the four load cells near the corners where they are to be installed. Thread the cable from each load cell through the conduit tubing in the frame and into the junction box according to the wiring diagram in Figure 4-1.

Note that in Figure 4-1 both the scale and the junction box are viewed from the bottom. To verify correct load cell/junction box terminal matching, see the numbers on the terminals inside the junction box and the corner numbering diagram in Figure 4-3.

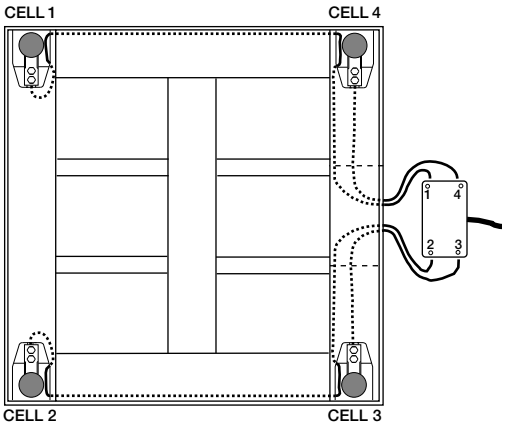


Figure 4-1. Bottom View of Scale

Check that the threaded holes for the load cell screws are free of debris. Use compressed air to blow out holes if necessary. Position load cells with alignment arrows point up toward the deck and loosely install the hex head cap screws provided. If the base is used with a pit frame or access ramp, position the load cell to maintain the dimension shown in Figure 4-2. With the torque wrench, tighten all bolts as follows (outboard bolts first):

- 2K–10K-lb capacities: Torque to 75 ft-lbs.

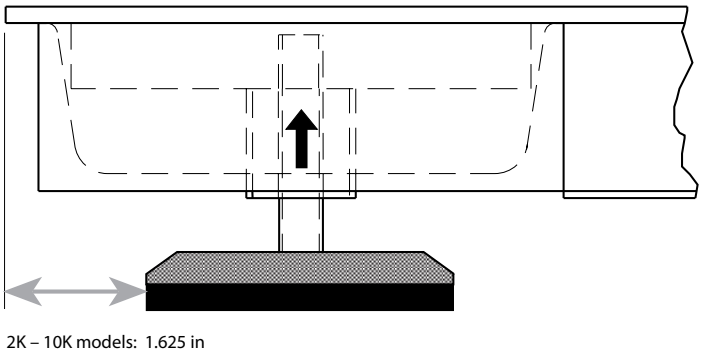


Figure 4-2. Foot Pad - Side View

Route the load cell cables near each corner so that the cable is free from possible contact with each foot. Hold the cable in position with the adhesive-backed cable ties supplied in the hardware kit.

Do not cut load cell cables. Coil extra cable before it enters the junction box, tie with cable ties, and insert the coils into the channel.

After coiling excess cable, pass each individual end of load cell cable through its cord grip in the NEMA Type 4X junction box.

Corner correction trimming and calibration is necessary after load cell replacement. Follow instruction in Section 3.2 on page 12 and Section 3.3 on page 12.

4.3.1 Load Cell Wiring to Junction Box

The four load cells are each wired to their respective terminals in the junction box according to the corner numbering system shown in Figure 4-3, and the coloring code in Table 4-2.

Pull excess cable out of the junction box enclosure and tighten the cord grip dome nuts with a wrench. To be watertight, the nuts must be tightened to the point where the rubber sleeving begins to protrude out of the nut. Finally, pull on each of the four cables to make sure that they do not slip.

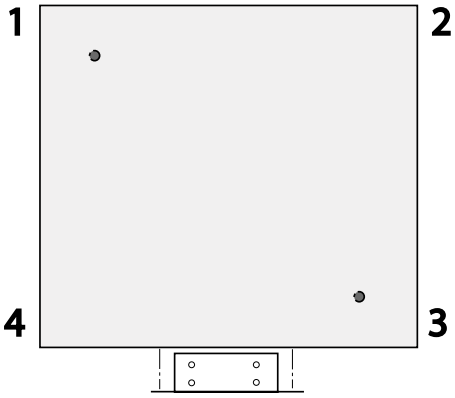


Figure 4-3. Corner Numbering - Top View

Color Cable Code	J-Box Terminal
Red	+ Excitation
Black	- Excitation
Green	+ Signal
White	- Signal
Bare or Clear	Shield

Table 4-2. Load Cell Wiring

4.4 Accessories

The following tables list the pit frames and access ramps for SS and HE model RoughDeck floor scales.

4.4.1 Pit Frames

PN with Junction Box Pocket	PN without Junction Box Pocket	Imperial		Metric	
		Width	Length	Width	Length
232386	232387	2 ft	2 ft	0.61 m	0.61 m
18758	224302	2.5 ft	2.5 ft	0.76 m	0.76 m
18760	224303	3 ft	3 ft	0.91 m	0.91 m
18762	224304	4 ft	4 ft	1.22 m	1.22 m
18764	224305	5 ft	5 ft	1.52 m	1.52 m
18766	224306	4 ft	5 ft	1.22 m	1.52 m
18772	224307	5 ft	7 ft	1.52 m	2.13 m

Table 4-3. RoughDeck SS and HE Pit Frames: 1,000 to 10,000 lb

4.4.2 Access Ramps

PN with Side Rails	PN without Side Rails	Imperial			Metric		
		Width	Length	Height	Width	Length	Height
232388	232389	2 ft	3 ft	3.5 in	0.61 m	0.91 m	89 mm
69178	224116	2.5 ft	3 ft	3.5 in	0.76 m	0.91 m	89 mm
69179	224117	3 ft	3 ft	3.5 in	0.91 m	0.91 m	89 mm
69180	224118	4 ft	3 ft	3.5 in	1.22 m	0.91 m	89 mm
69189	224119	2.5 ft	4 ft	3.5 in	0.76 m	1.22 m	89 mm
69190	224120	3 ft	4 ft	3.5 in	0.91 m	1.22 m	89 mm
69191	224121	4 ft	4 ft	3.5 in	1.22 m	1.22 m	89 mm
69192	224122	5 ft	4 ft	3.5 in	1.52 m	1.22 m	89 mm

Table 4-4. RoughDeck SS and HE Access Ramps: 1,000 to 10,000 lb

5.0 Specifications

End Load Capacity:
200% full scale at 1,000 lb
100% full scale at 2,000 and 5,000 lb
80% full scale at 10,000 lb

Cable Length:
20 ft (6.1 m) for connecting junction box to indicator

Scale Weldment:
AISI304L, glass bead blasted for even appearance

Junction Box:
TuffSeal® JB4SS stainless steel, NEMA Type 4X
junction box with signal trim card

Welding:
Stitch

Threaded Eyebolt:
Hole (1/2-20 NF) located in center of deck for easy lifting

Warranty (limited):
Weldment: Five years
Load cells: Two years
All other components: One year

Approvals:

NTEP
92-001, Class III 5,000 d

Measurement Canada Approved

Measurement Canada
AM-4827, Class III 5,000d

FM APPROVED

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