ELS Series

Elevated Load Cell Stands

Installation Manual

RICE LAKE®
WEIGHING SYSTEMS

February 6, 2023

PN 213042 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
A	April 27, 2022	Initial manual release with the launch of the product.
B	February 6, 2023	Updated dimension charts.

Table i. Revision Letter History

Contents

1.0 Introduction 5
1.1 Overview 5
1.2 Safety 5
1.3 Product Dimensions 6
1.4 ELS Series Weigh Stand Kits 7
1.4.1 ELS Mild Steel Kit Varieties 7
1.4.2 ELS Stainless Steel Kit Varieties 8
1.5 Grounding Straps 9
2.0 Installation 10
2.1 Site Selection 10
2.2 Site Preparation 10
2.3 Unpacking 10
2.4 Width Adjustment 10
2.5 Height Adjustment 11
2.6 Support Brace Installation 12
2.6.1 Conveyor Applications Greater Than 3 Feet 12
2.6.2 Conveyor Applications Less Than 3 Feet 14
2.7 Load Cell Guard Plate 15
2.8 Conveyor Installation 15
2.9 Weigh Stand Installation to the Floor 17
2.10 Overload Bolt Adjustment 18
2.11 Junction Box Installation 19
2.12 Junction Box Wiring 20
2.12.1 Junction Box Expansion 21
2.12.2 Connect to the Indicator 22
2.12.3 Liquid Protection 22
2.13 Replacement Parts 23
2.13.1 Mild Steel Replacement Parts 24
2.13.2 Stainless Steel Replacement Parts 25
3.0 Maintenance 26
3.1 Periodic Maintenance 26
3.1.1 Load Cell Bearing Lubrication 26
3.2 Load Cell Replacement 27
4.0 Specifications 29

1.0 Introduction

1.1 Overview

This manual provides installation instructions and maintenance recommendations on the ELS Series elevated load cell stands. The ELS Series weigh stands are designed to replace existing legs on a conveyor line to create an in-line scale or similar elevated weighing apparatus. The ELS Series offers kits that are available in three different weight capacities (250 lb, 500 lb and 1,000 lb) with each having six available configurations that offer varying height and width ranges.

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

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

1.2 Safety

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.

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

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

1.3 Product Dimensions

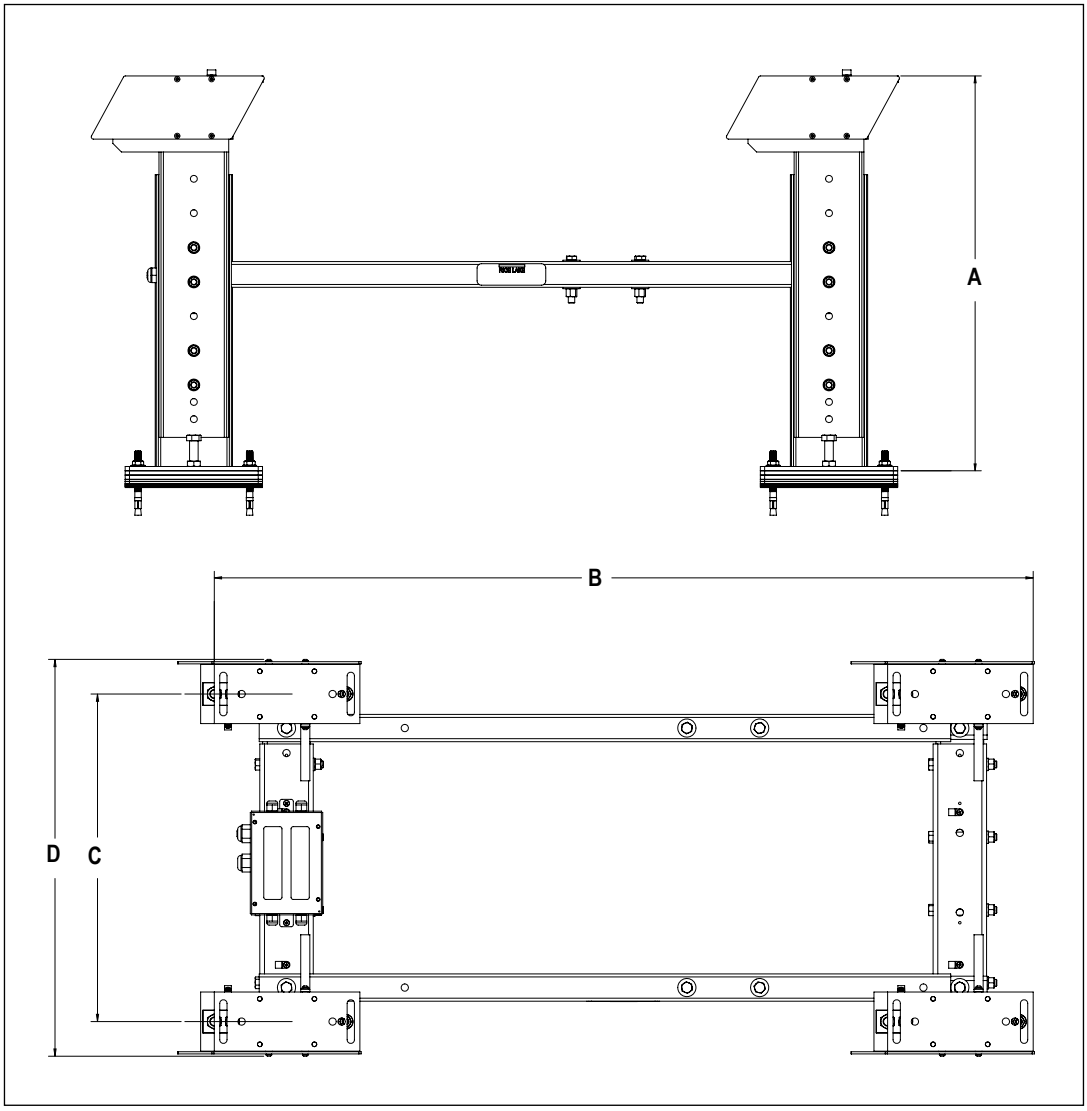

Figure 1-1. Product Diagram

Letter	Kit Variation	Minimum Dimension	Maximum Dimension
A	Small	22 in (55.88 cm)	28 in (71.12 cm)
	Large	29 in (73.66 cm)	36 in (91.44 cm)
B	All	30 in (76.20 cm)	60 in (152.40 cm)
C	Small	17 in (43.18 cm)	24 in (60.96 cm)
	Medium	25 in (63.50 cm)	36 in (91.44 cm)
	Large	37 in (93.98 cm)	54 in (137.16 cm)
D	Small	22 in (55.88 cm)	28 in (71.12 cm)
	Medium	29 in (73.66 cm)	40 in (101.60 cm)
	Large	41 in (104.14 cm)	58 in (147.32 cm)

Table 1-1. Product Dimensions

1.4 ELS Series Weigh Stand Kits

The ELS Weigh Stands come in either mild steel or stainless steel options.

1.4.1 ELS Mild Steel Kit Varieties

ELS-250 Mild Steel Weigh Stands

PN	Description
212655	ELS-250 Kit, 22-28 in Height, 22-28 in Width
212656	ELS-250 Kit, 29-36 in Height, 22-28 in Width
212569	ELS-250 Kit, 22-28 in Height, 29-40 in Width
212660	ELS-250 Kit, 29-36 in Height, 29-40 in Width
212957	ELS-250 Kit, 22-28 in Height, 41-58 in Width
212958	ELS-250 Kit, 29-36 in Height, 41-58 in Width

Table 1-2. ELS-250 Mild Steel Kits

ELS-500 Mild Steel Weigh Stands

PN	Description
212661	ELS-500 Kit, 22-28 in Height, 22-28 in Width
212662	ELS-500 Kit, 29-36 in Height, 22-28 in Width
212663	ELS-500 Kit, 22-28 in Height, 29-40 in Width
212665	ELS-500 Kit, 29-36 in Height, 29-40 in Width
212953	ELS-500 Kit, 22-28 in Height, 41-58 in Width
212954	ELS-500 Kit, 29-36 in Height, 41-58 in Width

Table 1-3. ELS-500 Mild Steel Kits

ELS-1000 Mild Steel Weigh Stands

PN	Description
212666	ELS-1000 Kit, 22-28 in Height, 22-28 in Width
212667	ELS-1000 Kit, 29-36 in Height, 22-28 in Width
212669	ELS-1000 Kit, 22-28 in Height, 29-40 in Width
212670	ELS-1000 Kit, 29-36 in Height, 29-40 in Width
212949	ELS-1000 Kit, 22-28 in Height, 41-58 in Width
212950	ELS-1000 Kit, 29-36 in Height, 41-58 in Width

Table 1-4. ELS-1000 Mild Steel Kits

1.4.2 ELS Stainless Steel Kit Varieties

ELS-250 Stainless Steel Weigh Stands

PN	Description
213276	ELS-250 Kit, 22-28 in Height, 22-28 in Width
213278	ELS-250 Kit, 29-36 in Height, 22-28 in Width
213280	ELS-250 Kit, 22-28 in Height, 29-40 in Width
213282	ELS-250 Kit, 29-36 in Height, 29-40 in Width
213283	ELS-250 Kit, 22-28 in Height, 41-58 in Width
213284	ELS-250 Kit, 29-36 in Height, 41-58 in Width

Table 1-5. ELS-250 Stainless Steel Kits

ELS-500 Stainless Steel Weigh Stands

PN	Description
213292	ELS-500 Kit, 22-28 in Height, 22-28 in Width
213293	ELS-500 Kit, 29-36 in Height, 22-28 in Width
213294	ELS-500 Kit, 22-28 in Height, 29-40 in Width
213295	ELS-500 Kit, 29-36 in Height, 29-40 in Width
213296	ELS-500 Kit, 22-28 in Height, 41-58 in Width
213297	ELS-500 Kit, 29-36 in Height, 41-58 in Width

Table 1-6. ELS-500 Stainless Steel Kits

ELS-1000 Stainless Steel Weigh Stands

PN	Description
213304	ELS-1000 Kit, 22-28 in Height, 22-28 in Width
213305	ELS-1000 Kit, 29-36 in Height, 22-28 in Width
213306	ELS-1000 Kit, 22-28 in Height, 29-40 in Width
213307	ELS-1000 Kit, 29-36 in Height, 29-40 in Width
213308	ELS-1000 Kit, 22-28 in Height, 41-58 in Width
213309	ELS-1000 Kit, 29-36 in Height, 41-58 in Width

Table 1-7. ELS-1000 Stainless Steel Kits

1.5 Grounding Straps

The grounding straps connected to the ELS weigh stands are used to ground the conveyor to the floor. If the system is not properly grounded, static can build up and cause damage to the load cells once the static discharges. The grounding straps protect the load cells by providing an alternate path for the static discharge to travel.

The grounding straps are located on each load cell assembly and connect the load cell top plate to the mounting plate.

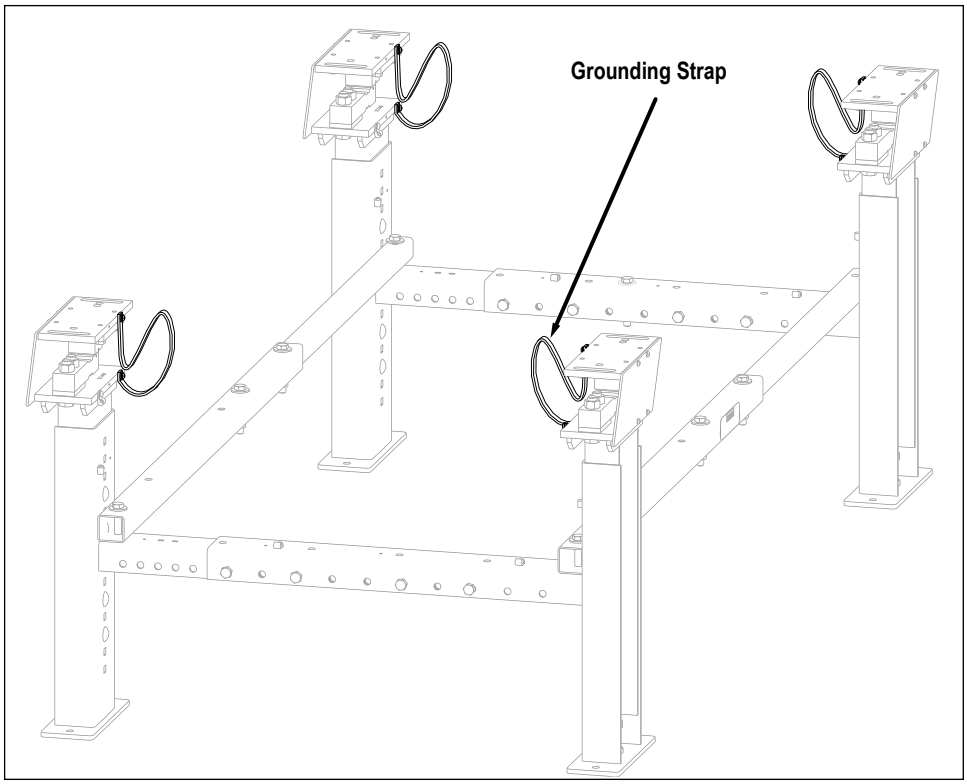

Figure 1-2. Grounding Straps

IMPORTANT: The grounding straps must be connected to the weigh stands at all times.

2.0 Installation

This section provides procedures for the proper installation of the ELS Series weigh stands.

2.1 Site Selection

Select a site where there is no chance of overload weights crossing the platform. Avoid areas where the scale might receive damaging side impacts from wheels or forklift tines, shock damage from falling objects or where water may damage the scale.

The indicator cable must be protected against crushing, cutting and 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 ELS weigh stands must be level within 1/8 of an 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.

IMPORTANT: Ensure the area is clear and free of any debris.

2.2 Site Preparation

To prepare the site for the ELS weigh stands.

1. Remove the existing conveyor, if needed.
2. Remove the existing conveyor stands that will be replaced with the ELS weigh stands, if needed.
3. Clean the site thoroughly to ensure the area is free of any debris.

2.3 Unpacking

Immediately after unpacking, visually inspect the ELS weigh stands to ensure all components are included and undamaged.

If any parts are damaged or missing, notify Rice Lake Weighing Systems and the shipper immediately.

2.4 Width Adjustment

1. Loosen the load cell cable mounting clips.
2. Measure the distance between the center points of the lower conveyor channels. See Figure 2-1 for the center points marked along the conveyor channels.

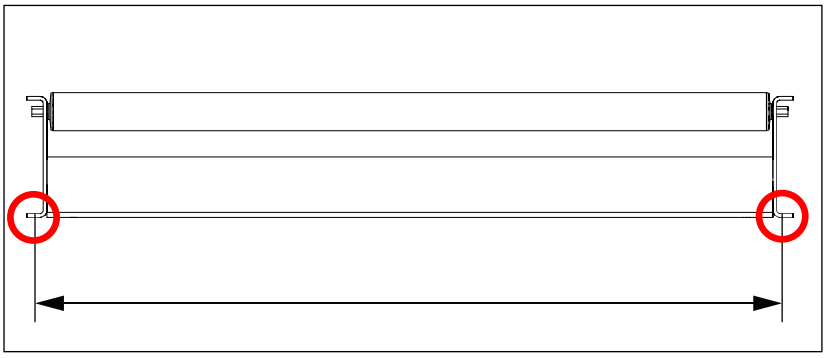

Figure 2-1. Conveyor Channel Measurement Points

3. Remove the bolts from the weigh stand mounts. See Figure 2-2.
4. Adjust the width of the weigh stands to the measurement found in Step 2.

NOTE: The conveyor channels must be centered on the conveyor mount plates. The width of the weigh stands can be adjusted in 1-inch increments.

5. Align the width adjustment of the weigh stand mounts to the nearest overlapping bolt holes.
6. Hold a tubing spacer within the bolt holes inside the width adjustment bar.

7. Install the 3/8-16 x 2-1/2 inch bolts through the outer and inner width adjustment channel and tubing spacers.
8. Attach the lock washer and nut to secure the bolt.

IMPORTANT: Ensure bolts are placed at the overlapping left and right extremes with the others equally between. Each weigh stand must have 4 bolts installed in the width channel. See Figure 2-2.

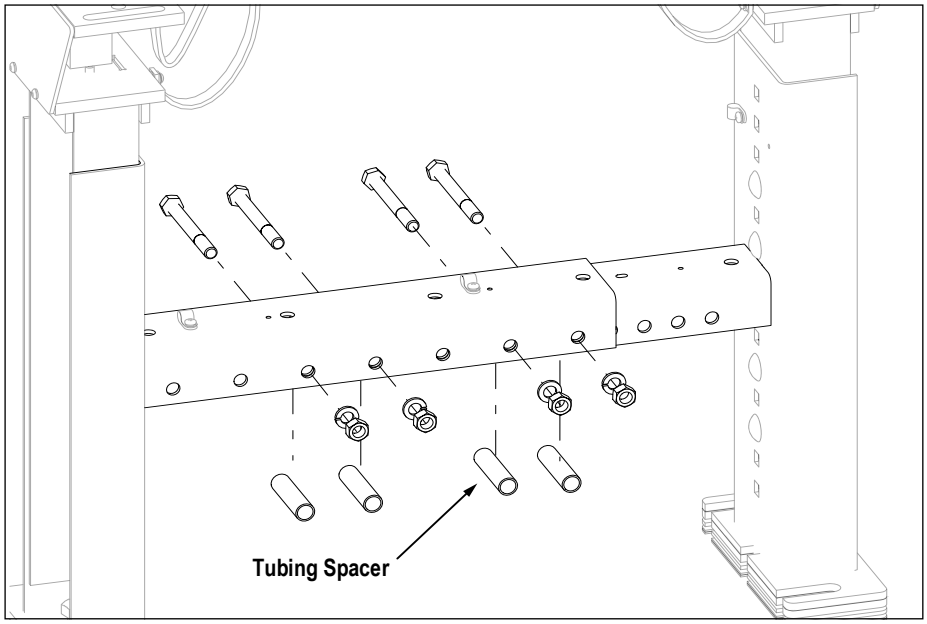

Figure 2-2. Width Bolt and Tubing Spacer Installation

9. Repeat the width adjustment steps for each weigh stand.

2.5 Height Adjustment

The height of the weigh stands needs to be adjusted within an inch less than the needed height of the weigh stands and the existing conveyor. The provided shims allow the weigh stands to be adjusted to the needed height within a 1/16 of an inch. See Section 2.7 on page 15 for shim adjustment.

1. Loosen the load cell cable mounting clips.
2. Measure the height of the old conveyor legs that the weigh stands are replacing.
3. Remove the four 3/8-16 x 1 inch bolts from the weigh stand mounts. See Figure 2-3.
4. Adjust the weigh stand mounts to the 1-inch increments below desired height.

NOTE: The height assembly can be adjusted in 1-inch increments. Shims provide height adjustment within 1/16 of an inch.

5. Insert the 3/8-16 x 1 inch bolts (that were removed in Step 3) through the weigh stand mount height channel.

6. Attach the lock washers and nuts to secure the bolts.

IMPORTANT: Place one bolt in both the top and bottom overlapping extremes and place other bolts equally between.

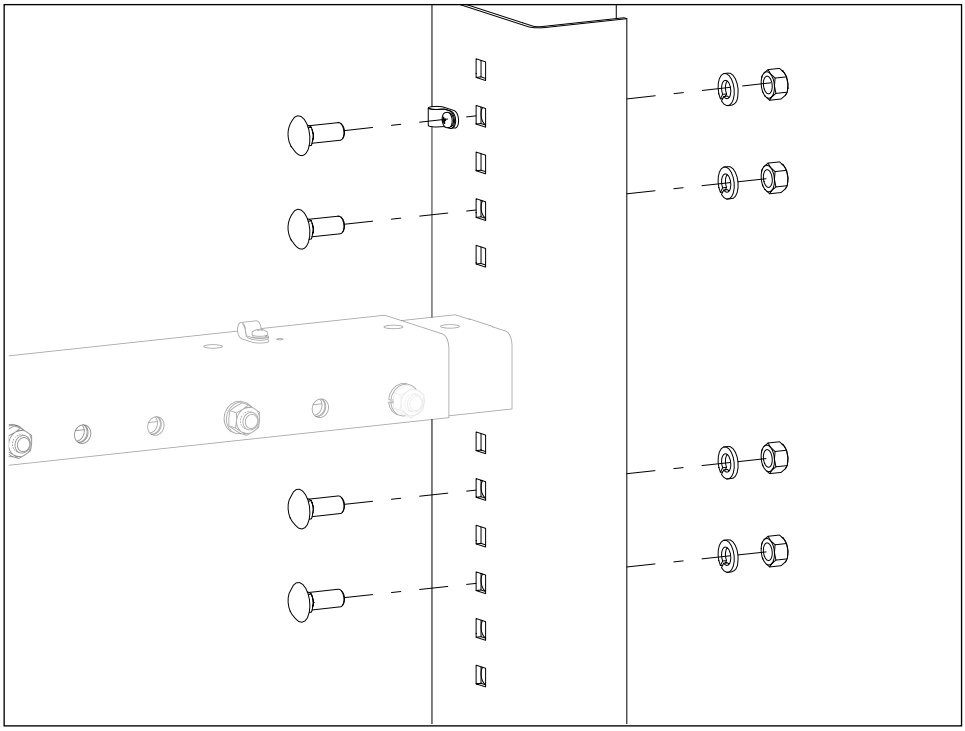

Figure 2-3. Height Bolt Installation

7. Repeat the height adjustment steps for each weigh stand mount.

NOTE: Final height adjustment will need to be done when weigh stands are installed to the floor. See Section 2.7 on page 15.

2.6 Support Brace Installation

The ELS weigh stands require two support braces to be installed to the stands. A support brace is made up of an outer adjustable tubing and an inner adjustable tubing. The load cells must be positioned to the same orientation when installing the support braces on the weigh stands. If the distance between each weigh stand is less than 3 ft, only the outer support brace is needed for the installation of the support brace (Section 2.6.2 on page 14).

2.6.1 Conveyor Applications Greater Than 3 Feet

1. Measure the length of the conveyor frame to determine the length for the support braces.

NOTE: The conveyor needs to overhang weigh stand 3-6 inches at each end.

2. Insert the inner adjustable tubing into the outer adjustable tubing.
3. Align the ends of the support braces to the provided holes on the weigh stands.

NOTE: The load cells must be in the same orientation before installing the support braces on the weigh stands.

4. Install a 3/8-16 x 2-1/2 inch bolts, washers and nuts from the parts kit through the ends of the support braces and the weigh stands.

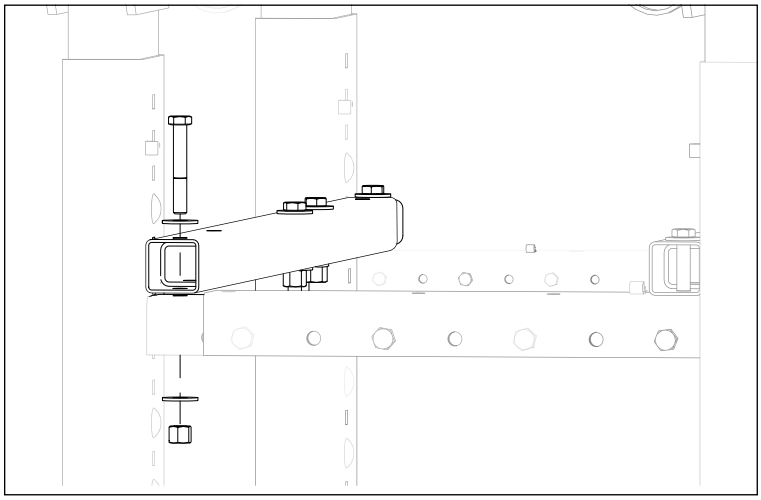

Figure 2-4. Support Brace Stand Attachment

IMPORTANT: The support braces must be installed to the weigh stands so they are touching both the height and width channels.

5. Adjust the length for the weigh stands and support braces to the measured length.
6. See Section 2.6 on page 12 to install the conveyor at this time.
7. Mark drill hole locations on the inner adjustable tubing using provided holes from outer adjustable tubing as a guide.
8. Drill 7/16 inch holes through the inner adjustable tubing.
9. Install two 3/8-16 x 2-1/2 inch bolts provided from the parts kit through holes created for the support brace.

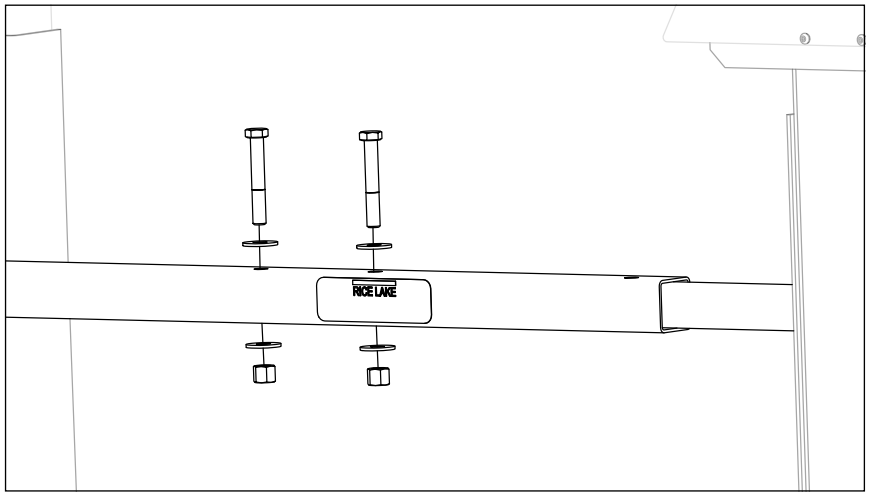

Figure 2-5. Support Brace Assembly

IMPORTANT: Do not exceed a length of 6 feet in length for the support braces.

2.6.2 Conveyor Applications Less Than 3 Feet

1. Measure the length of the conveyor frame to determine the length for the support braces.
2. Attach one end of each support brace to one of the weigh stands.

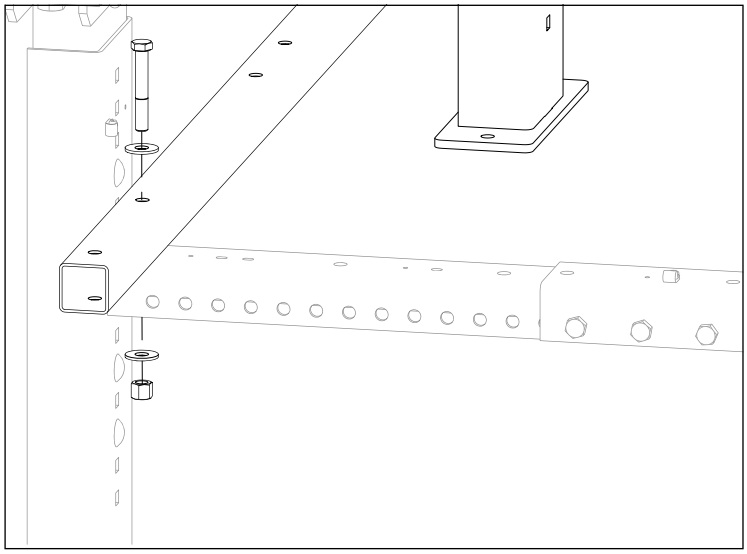

Figure 2-6. Support Brace Install

3. Rest the other sides of the support braces on the other weigh stand.
4. See Section 2.6 on page 12 to install the conveyor at this time.

NOTE: The load cells must be in the same orientation before installing the support braces on the weigh stands.

5. Mark the locations where the bolts will be installed to the other weigh stand.
6. Drill a 7/16 inch through the top and bottom of the support braces.
7. Align the drilled holes of the support braces to the other weigh stand.
8. Install the support braces on the other weigh stand.

2.7 Load Cell Guard Plate

The load cell guards for the ELS Series weigh stands come shipped with two screws installed on the top and bottom sides of the load cell guard plate, protecting the load cell during shipment. Once the screws are removed, the nylon washers from the bottom screws will be installed onto the top side screws, between the mounting plates and the load cell guards. Installing two nylon washers to the top screws allows a clearance between the load cell guards and bottom mount plates.

1. Install the top screws on the load cell guard with the addition of the nylon washers from the bottom screws.

NOTE: The bottom screws and bottom lock washers are no longer needed.

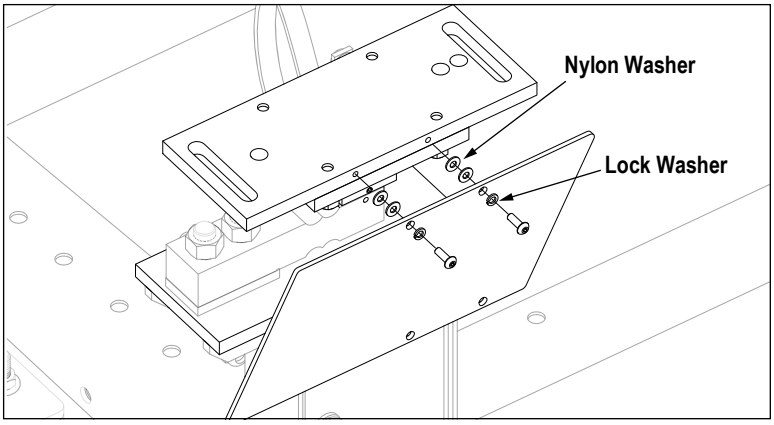

Figure 2-7. Top Screw Install

2. Repeat load cell guard installation for each load cell mount.

2.8 Conveyor Installation

The ELS weigh stands have three holes and two slots on the top of each mounting plate to accommodate existing hole patterns on the conveyor channel.

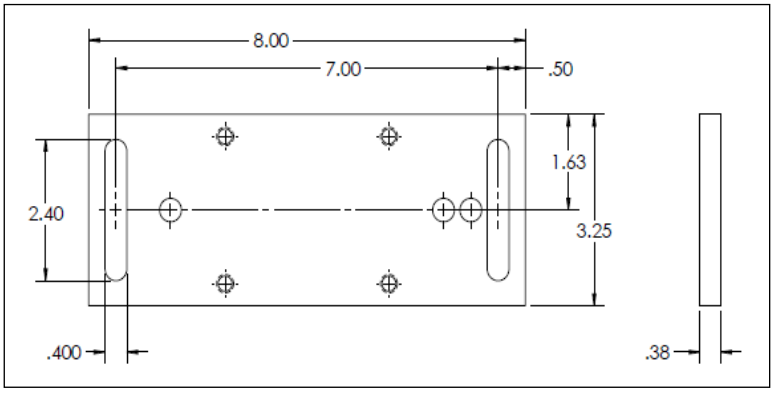

Figure 2-8. Mounting Plate Dimensional Drawing

Before drilling through the conveyor channel, assess the usage of any existing holes when installing the conveyor onto the mount plates.

1. Set the existing conveyor onto the ELS weigh stands with the conveyor channel centered on the mounting plates.

IMPORTANT: The ELS weigh stands must be 3-6 inches inside the ends of the conveyor to prevent load cell damage.

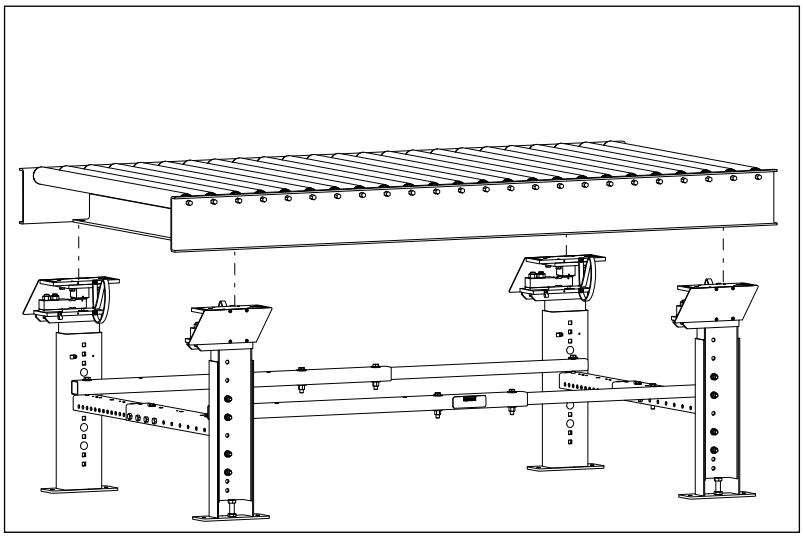

Figure 2-9. Conveyor Placement onto Weigh Stands

2. Align the existing conveyor holes to the bolt holes or slots of the mounting plate.

NOTE: Two bolts must be used per mounting plate, utilizing one option from each end of the mounting plate.

3. Drill holes through the conveyor channel, if needed, to have two attachment points per mounting plate.
4. Install the bolts from the previous conveyor stands through the conveyor channel and the mounting plate.

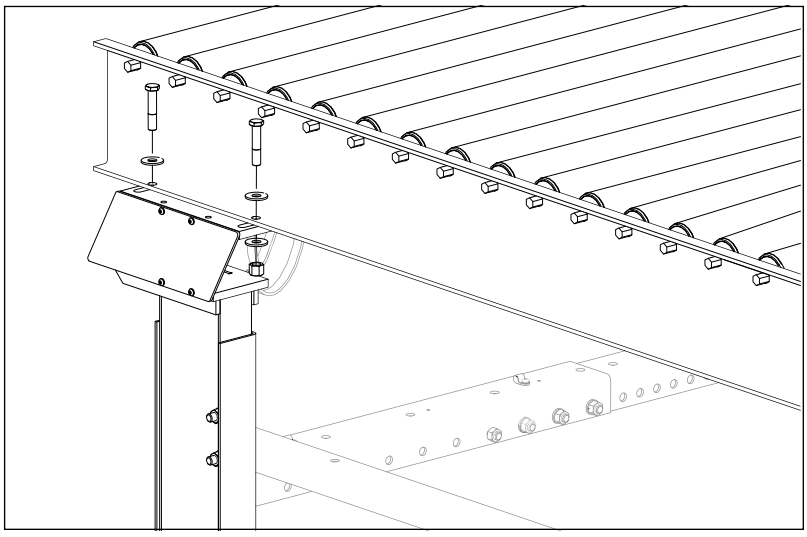

Figure 2-10. Conveyor Installation onto Mounting Plate

5. Repeat Steps 2 through 4 for installing the conveyor on each mounting plate.
6. See Section 2.6 on page 12 to finish installing the support braces

2.9 Weigh Stand Installation to the Floor

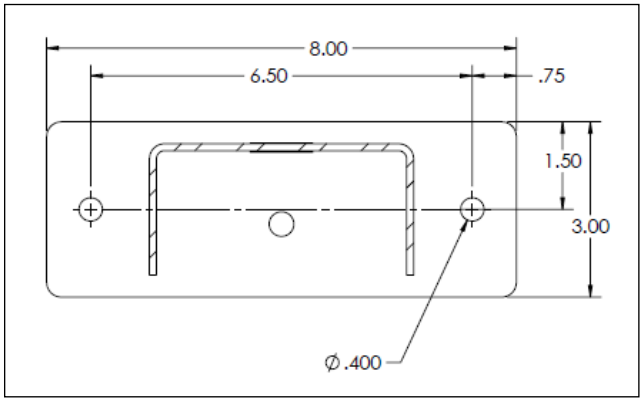

Figure 2-11. Footprint Dimensional Drawing

1. Make final positioning adjustments to the weigh stands.
2. Adjust the jack bolts to level the weigh stands.
3. Install the shims to support needed overall height of the weigh stands, as needed.

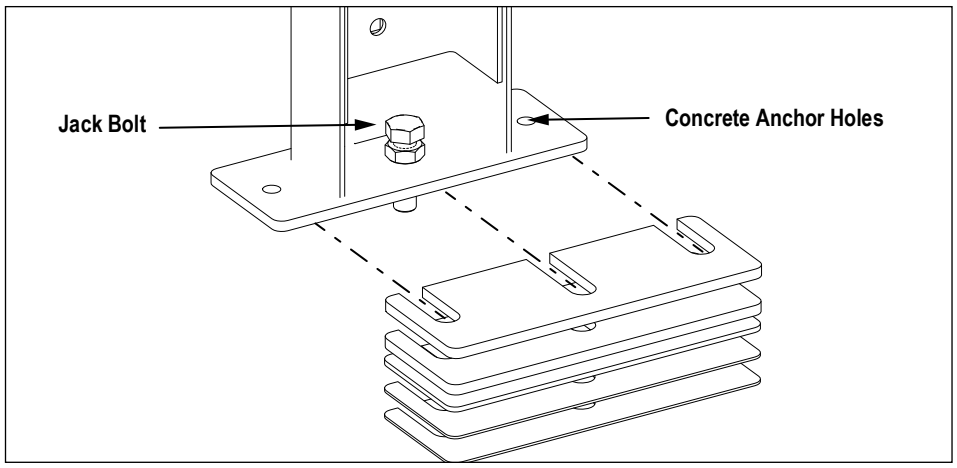

Figure 2-12. Shim Installation

4. Mark where the concrete anchors will be drilled onto the floor.
5. Drill holes through the concrete anchor holes large enough to allow the concrete anchors to be installed properly.
6. Check that the drilled holes for the concrete anchors are free of debris. Use compressed air to blow out holes as needed.

7. Install the concrete anchors through the weigh stand bases and into the drilled holes.

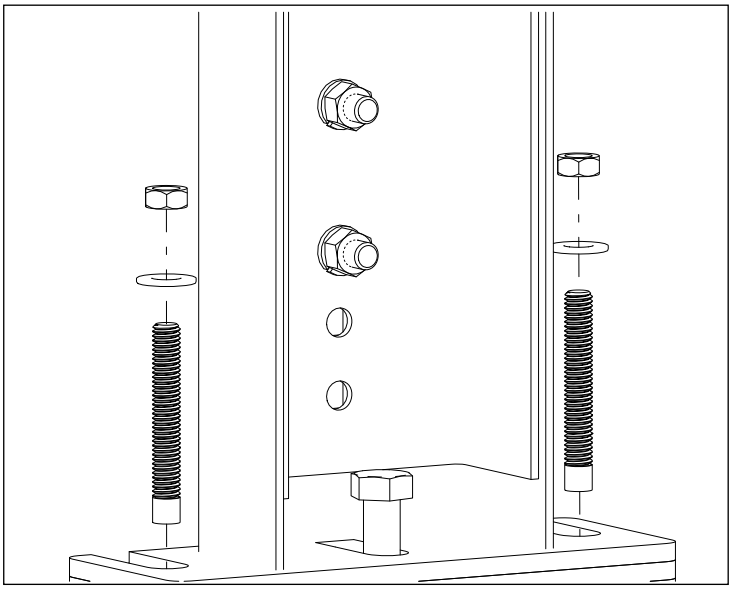

Figure 2-13. Securing ELS Weigh Stands

8. Hand tighten the concrete anchor nuts and washers on to the concrete anchors.
9. Make final leveling adjustments, if needed.
10. Tighten the concrete anchor nuts.

2.10 Overload Bolt Adjustment

1. Remove the load cell guard plates.

NOTE: The load cell guard plates and the hardware need to be saved for a future procedure (Section 2.11).

2. Load the maximum product weight to be weighed on the conveyor above load cell mount. Do not exceed the maximum capacity of the load cell.
3. Hand-turn the overload bolt clockwise until it touches the bottom of the load cell.
4. Slightly turn the bolt counterclockwise, so there is just a paper size gap between the overload bolt and the load cell.

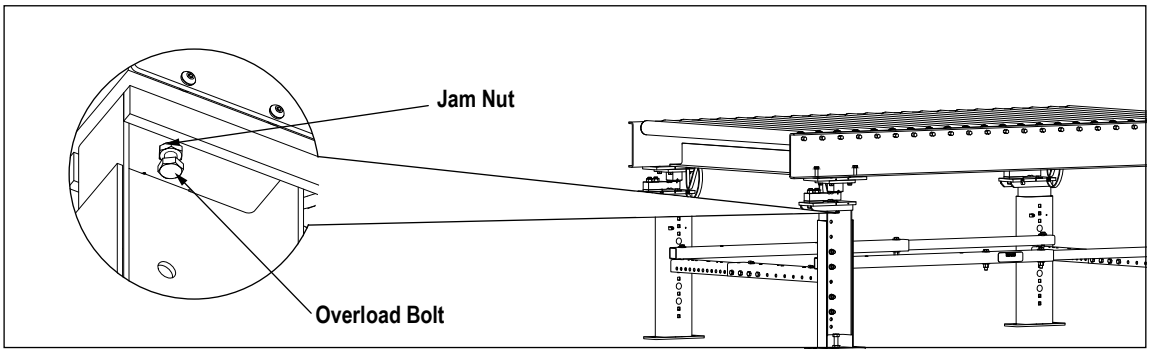

Figure 2-14. Overload Bolt Location

5. Hold overload bolt and tighten the jam nut.
6. Repeat the adjustment steps for each load cell.

NOTE: Turning the overload bolt counterclockwise allows the cell to flex when weight is added, yet still be close enough to provide overload protection.

2.11 Junction Box Installation

1. Verify there are no load cell mounting clips along the width assembly of the ELS Weigh Stand that will obstruct installation on the junction box.
2. Remove the load cell cable mounting clips, if needed.

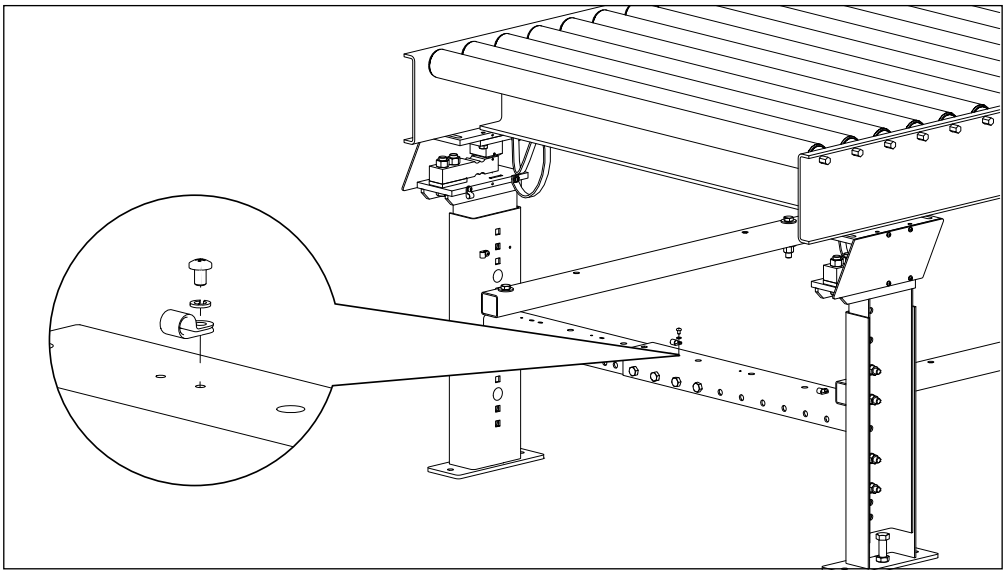

Figure 2-15. Load Cell Cable Mounting Clip Removal

3. Install the junction box onto the ELS weigh stand width assembly.

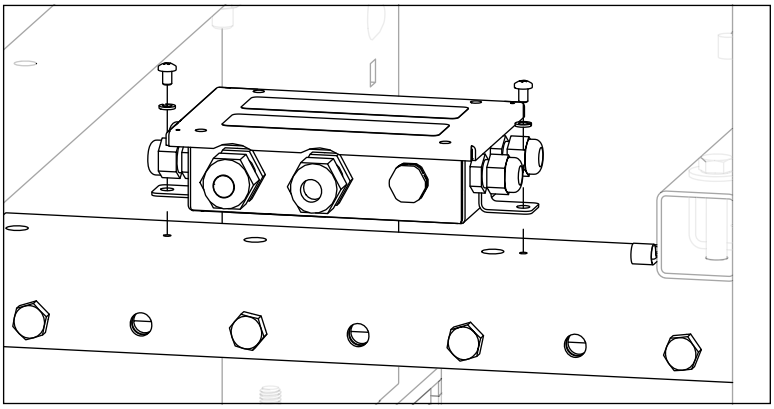

Figure 2-16. Junction Box Installation

2.12 Junction Box Wiring

All TuffSeal® junction box models have been designed to connect and trim up to four load cells per board.

1. Route the load cell wires from the load cell through the load cell cable mounting clips and into the junction box.

NOTE: Do not tighten the load cell cable mounting clips yet.

2. Push in and hold the quick-connect lever of the wire connectors with a small screwdriver.
3. Insert the wires into the appropriate wire openings for each load cell (Table 2-1).
4. Release the screwdriver to allow the spring-loaded gate to close and lock the wire in place.

IMPORTANT: Do not cut load cell cables.

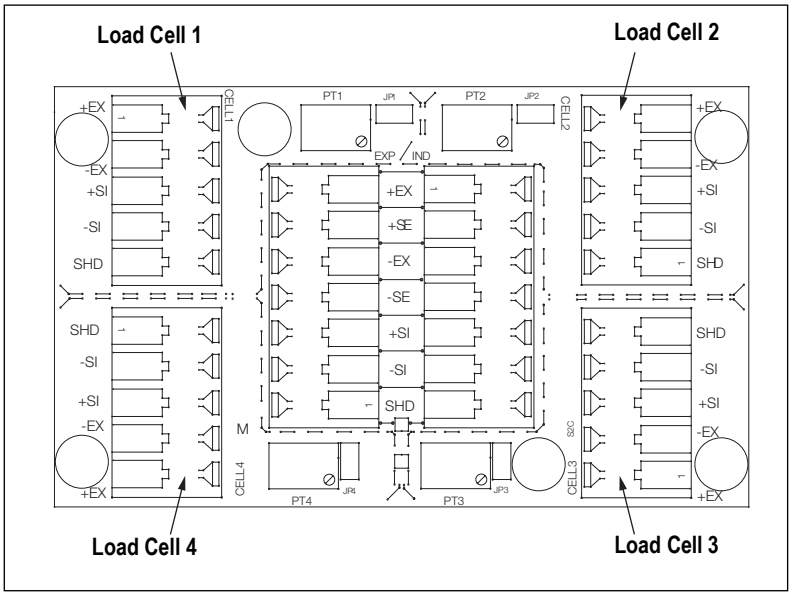

Figure 2-17. Junction Box Board

Cable Code	Designated Color
+Excitation	Red
-Excitation	Black
+Signal	Green
-Signal	White
Shield	Bare

Table 2-1. Cable Color Coding

NOTE: For junction box trimming, refer to TUFFSeal® Installation Manual (PN 184804).

5. Wind each loose load cell cable to securely fit under the weigh stand channel.
6. Put the wound load cell cables under each weigh stand channel.
7. Attach the wound load cell cables to the weigh stand channel using the provided zip ties.

NOTE: The wound load cell cables need to lay flat underneath the weigh stand channel.

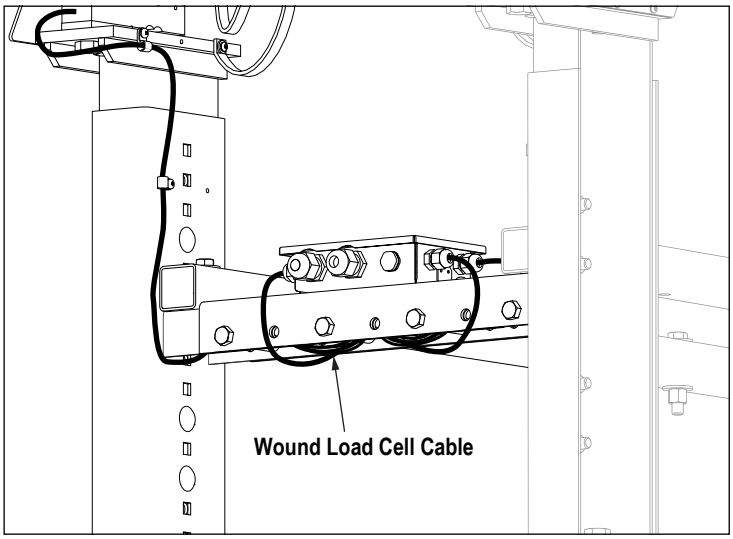

Figure 2-18. Securing the Load Cell Cable

8. Tighten the load cell cable mounting clamps.

2.12.1 Junction Box Expansion

It is possible to use this junction box with other combinations. Use the expansion port on the main board to connect multiple junction boxes in a series to accommodate more than two ELS weigh stands. Contact Rice Lake Weighing Systems for additional details on applications involving more than two weigh stands.

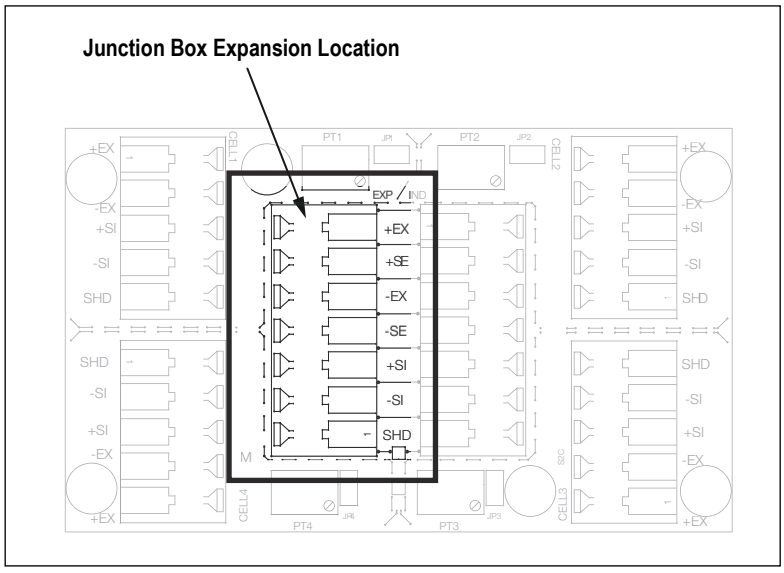

Figure 2-19. Junction Box Expansion Board Location

2.12.2 Connect to the Indicator

The indicator cord grip is used to route the main cable from the junction box to the indicator.

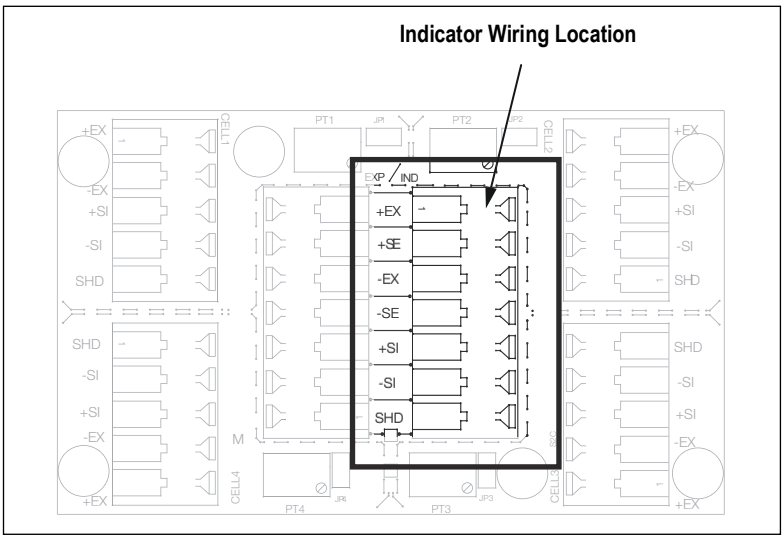

Figure 2-20. Indicator Wiring Board Location

1. Determine the indicator's load cell input connections from the indicator manual (Figure 2-20).
2. Run a cable from the indicator to the junction box through the cord grip.

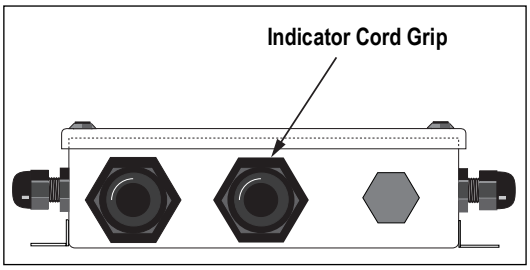

Figure 2-21. JB4SS Junction Box

3. Strip the wire insulation 1/4 in to expose the wire.
4. Push in and hold the quick-connect lever with a small screwdriver.
5. Insert the appropriate wires into the wire openings.
6. Release the screwdriver to allow the spring-loaded gate to close and lock the wires in place.

2.12.3 Liquid Protection

If cables could be exposed to water or other liquids, bend a short downward loop in all cables near the cord grips so any fluids draining down the cables will drip off before reaching the junction box.

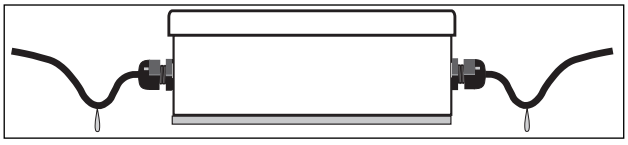

Figure 2-22. Drip Loop Cable

IMPORTANT: All load cell cables need to be safely attached to proper locations to prevent loose wiring. Failure to correctly attach will provide a safety hazard to the environment.

2.13 Replacement Parts

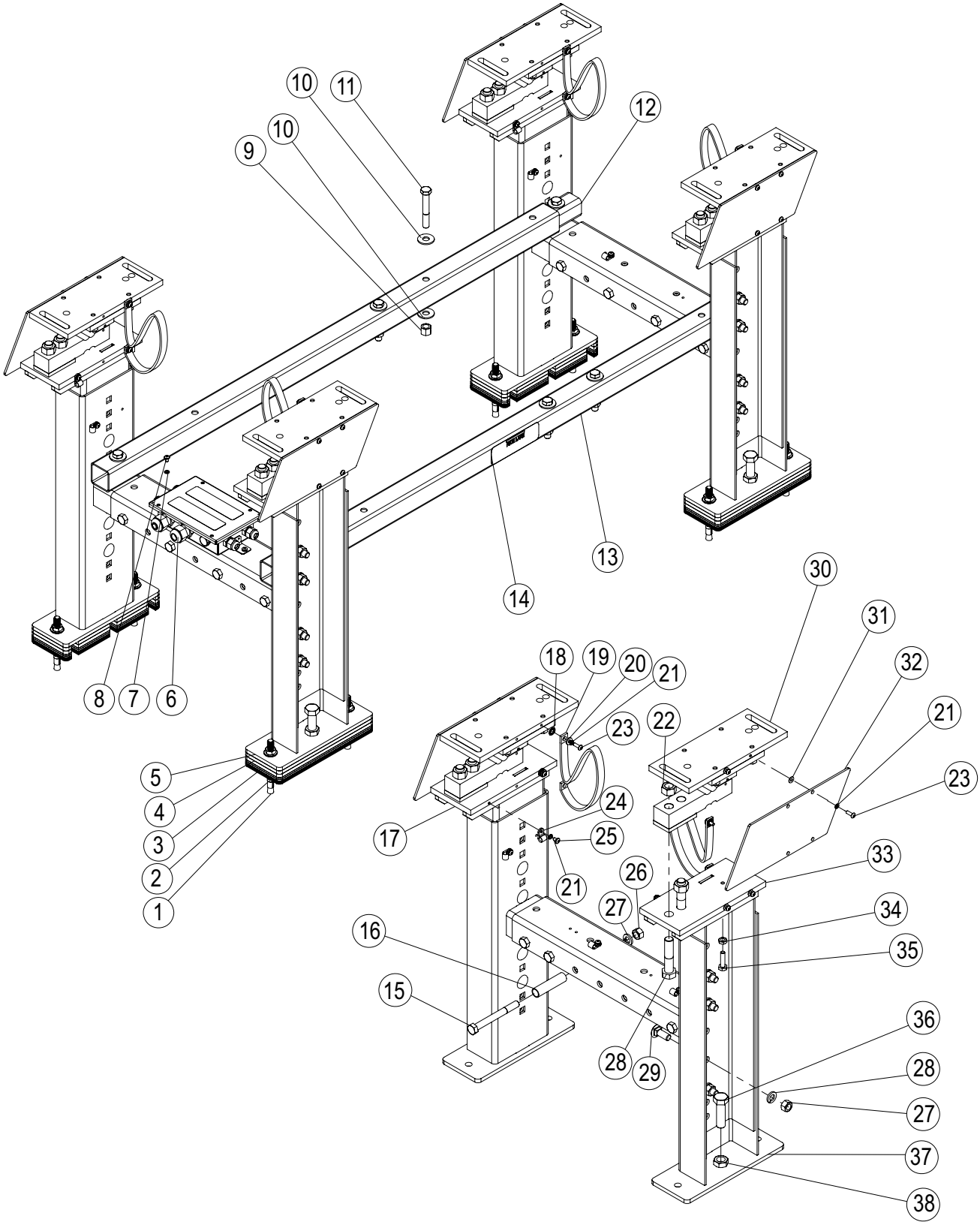

Figure 2-23. Replacement Parts Diagram

2.13.1 Mild Steel Replacement Parts

Item No.	Part No.	Description
1	192309	Anchor, Concrete Wedge, 3/8-16 X 3-3/4, Steel Stud Anchor For Concrete
2	212710	ELS Foot Shim Plt, 1/16 in
3	212709	ELS Foot Shim Plt, 1/8 in
4	212708	ELS Foot Shim, 1/4 in
5	-	ELS Assembly: see Section 1.4.1 on page 7 for mild steel kit variations
6	88956	J-box, JB4SS 4 Channel Signal Trim With Expansion, Nema 4x FM Approved
7	63574	Washer, Split Lock No. 8 SST
8	14857	Screw, Mach 8-32 X 1/4 Phillips Pan Head SST
9	22072	Nut, Lock 3/8-16 Hex Nylon Insert Steel Zinc Plated
10	15162	Washer, Plain 3/8 Hardened Steel Id= 0.406 OD= 0.812 Thickness= 0.051- 0.080
11	151559	Screw, Cap 3/8-16nX 2-1/2 Hex Partially Threaded Zinc Plated
12	212749	Adjustable Tubing, 38.00 in Long, 1-1/4sqx.12 Wall
13	212748	Adjustable Tubing, 38.00 in Long, 1-1/2sqx.08 Wall
14	52342	Label, Serial Tag 4.00 X 1.25
15	151560	Screw, Cap, 3/8-16 X 3-1/2, Hex Head, A307, Zinc
16	212979	Spacer, 9/16 X 2-1/4 Long
17	212711	Upper Leg WLDT, LH, 23-28 in Height
	212782	Upper Leg WLDT, 23-28 in Height, Left
	212783	Upper Leg WLDT, 23-28 in Height, Right
18	31546	Washer, Lock 1/4 Internal Tooth Sst
19	17779	Ground Strap, 14in Tinned Copper Braided
20	25884	Washer, Plain No 8 Type A Steel Zinc Plated Id= 0.183-0.196 Od=0.433-0.453 Thickness= 0.036-0.065
21	63574	Washer, Split Lock No. 8 Sst
22	126991	Nut, Hex 1/2-13 Grade 5 Zinc Plated
23	126981	Screw, Cap 8-32 X 1/2 Socket Button Head Black Oxide
24	201664	Cable Clamp, 3/16 Inch Nylon Black
25	14857	Screw, Mach 8-32 X 1/4 Phillips Pan Head Sst
26	132684	Nut, Hex 3/8-16 Gr5 Zinc
27	15159	Washer, Split Lock 3/8 Steel Zinc Plated
28	15080	Screw, Cap 1/2-13 X 2-1/2 Hex Head Partially Threaded Grade 5 Steel Clear Zinc Plated (Torqued to 75 ft-lb)
29	175171	Carriage Bolt, 3/8-16 X 1.00, Grd 5, Clear Zinc
30	212700	Load Cell Assembly, 250 lb Capacity; Load Cell RL32018 250 lb (PN 189150)
	212701	Load Cell Assembly, 500 lb Capacity; Load Cell RL32018 500 lb (PN 189151)
	212702	Load Cell Assembly, 1,000 lb Capacity; Load Cell RL32018 1,000 lb (PN 189152)
31	30625	Washer, Plain No 8 Nylon Natural Id= 0.171 Od= 0.375 Thickness= 0.032
32	212707	Load Cell Cover Plt
33	212697	Upper Weigh Leg Wldt, Rh, 23-28 in Height
34	14636	Nut, Jam 1/4-20 Hex Steel Zinc Plated Width Across Flats= 7/16 Thickness= 5/32
35	128753	Screw, Cap 1/4-20 X 1 Hex Head Fully Threaded Grade 5 Zinc Plated
36	114014	Screw, Cap 1/2-13 X 1-3/4 Hex Head Grade 8 Steel Zinc Plated
37	212692	Lower Leg Wldt, 18-24 in Width
	212797	Lower Leg Wldt, 25-36 in Width
	212918	Lower Leg Wldt, 37-54 in Width
38	14661	Nut, Jam 1/2-13 Hex Steel Zinc Plated Width Across Flats= 3/4 Thickness= 5/16

Table 2-2. Mild Steel Replacement Parts

2.13.2 Stainless Steel Replacement Parts

Item No.	Part No.	Description
1	192309	Anchor, Concrete Wedge, 3/8-16 X 3-3/4, Steel Stud Anchor For Concrete
2	212710	ELS Foot Shim Plt, 1/16 in
3	212709	ELS Foot Shim Plt, 1/8 in
4	212708	ELS Foot Shim, 1/4 in
5	-	ELS Assembly: see Section 1.4.2 on page 8 for stainless steel kit variations
6	88956	J-box, JB4SS 4 Channel Signal Trim With Expansion, Nema 4x FM Approved
7	63574	Washer, Split Lock No. 8 SST
8	14857	Screw, Mach 8-32 X 1/4 Phillips Pan Head SST
9	22072	Nut, Lock 3/8-16 Hex Nylon Insert Steel Zinc Plated
10	15162	Washer, Plain 3/8 Hardened Steel Id= 0.406 OD= 0.812 Thickness= 0.051- 0.080
11	151559	Screw, Cap 3/8-16nX 2-1/2 Hex Partially Threaded Zinc Plated
12	212749	Adjustable Tubing, 38.00 in Long, 1-1/4sqx.12 Wall
13	212748	Adjustable Tubing, 38.00 in Long, 1-1/2sqx.08 Wall
14	52342	Label, Serial Tag 4.00 X 1.25
15	151560	Screw, Cap, 3/8-16 X 3-1/2, Hex Head, A307, Zinc
16	212979	Spacer, 9/16 X 2-1/4 Long
17	212711	Upper Leg WLDT, LH, 23-28 in Height
	212782	Upper Leg WLDT, 23-28 in Height, Left
	212783	Upper Leg WLDT, 23-28 in Height, Right
18	31546	Washer, Lock 1/4 Internal Tooth Sst
19	17779	Ground Strap, 14in Tinned Copper Braided
20	25884	Washer, Plain No 8 Type A Steel Zinc Plated Id= 0.183-0.196 Od=0.433-0.453 Thickness= 0.036-0.065
21	63574	Washer, Split Lock No. 8 Sst
22	126991	Nut, Hex 1/2-13 Grade 5 Zinc Plated
23	126981	Screw, Cap 8-32 X 1/2 Socket Button Head Black Oxide
24	201664	Cable Clamp, 3/16 Inch Nylon Black
25	14857	Screw, Mach 8-32 X 1/4 Phillips Pan Head Sst
26	132684	Nut, Hex 3/8-16 Gr5 Zinc
27	15159	Washer, Split Lock 3/8 Steel Zinc Plated
28	15080	Screw, Cap 1/2-13 X 2-1/2 Hex Head Partially Threaded Grade 5 Steel Clear Zinc Plated (Torqued to 75 ft-lb)
29	175171	Carriage Bolt, 3/8-16 X 1.00, Grd 5, Clear Zinc
30	212700	Load Cell Assembly, 250 lb Capacity; Load Cell RL32018 250 lb (PN 189150)
	212701	Load Cell Assembly, 500 lb Capacity; Load Cell RL32018 500 lb (PN 189151)
	212702	Load Cell Assembly, 1,000 lb Capacity; Load Cell RL32018 1,000 lb (PN 189152)
31	30625	Washer, Plain No 8 Nylon Natural Id= 0.171 Od= 0.375 Thickness= 0.032
32	212707	Load Cell Cover Plt
33	212697	Upper Weigh Leg Wldt, Rh, 23-28 in Height
34	14636	Nut, Jam 1/4-20 Hex Steel Zinc Plated Width Across Flats= 7/16 Thickness= 5/32
35	128753	Screw, Cap 1/4-20 X 1 Hex Head Fully Threaded Grade 5 Zinc Plated
36	114014	Screw, Cap 1/2-13 X 1-3/4 Hex Head Grade 8 Steel Zinc Plated
37	212692	Lower Leg Wldt, 18-24 in Width
	212797	Lower Leg Wldt, 25-36 in Width
	212918	Lower Leg Wldt, 37-54 in Width
38	14661	Nut, Jam 1/2-13 Hex Steel Zinc Plated Width Across Flats= 3/4 Thickness= 5/16

Table 2-3. Stainless Steel Replacement Parts

3.0 Maintenance

This section provides details to properly maintain the ELS Series weigh stands.

3.1 Periodic Maintenance

The space beneath the weigh stands must be periodically cleaned to prevent debris buildup.

IMPORTANT:Do not attempt to use scales with non-hermetically sealed load cells in washdown applications. Water damage is a common cause of failure in non-hermetically sealed load cells.

Use care with high pressure steam washdowns for hermetically-sealed load cells. Steam will not damage the load cells, but the elevated temperatures may cause incorrect readings until the unit cools to room temperature.

3.1.1 Load Cell Bearing Lubrication

There is a hole located on the bearing block in the load cell assembly that leads to a bearing that allows for movement of the assembly. The bearing needs to be lubricated periodically in order to maintain proper movement and weighing of the load cell assembly. To lubricate the load cell bearing:

1. Remove the load cell guard plate.
2. Apply liquid lubricant into the maintenance screw.

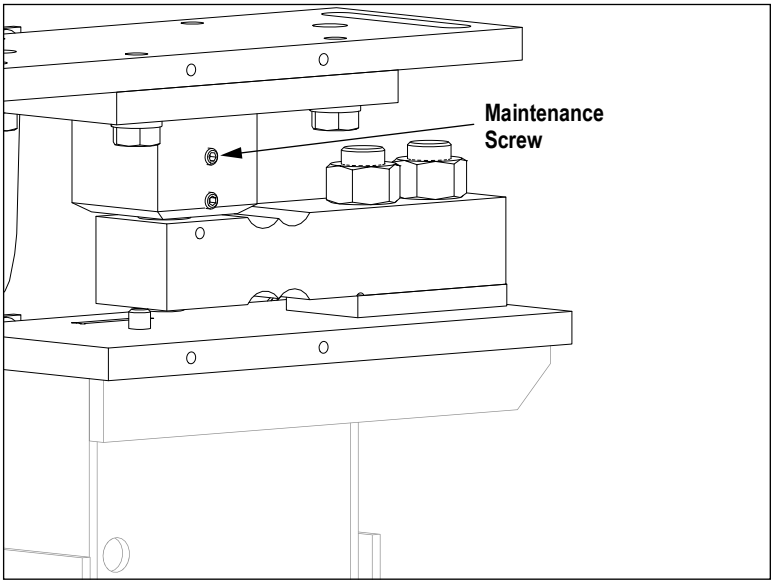

Figure 3-1. Grease Screw Location

3. Re-install the load cell guard plate (Section 2.11 on page 19).
4. Repeat steps for each load cell.

3.2 Load Cell Replacement

Replacement load cells can be ordered from Rice Lake Weighing Systems, please refer to the replacement parts section. See Section 2.13 on page 23.

1. Brace the conveyor using proper equipment.
2. Loosen the load cell cable mounting clips.
3. Open the junction box and disconnect defective load cell cable.
4. Remove the load cell guard plate.
5. Remove the four 5/16-18 x 3/4 inch bolts that connect the bearing block to the conveyor mounting plate.

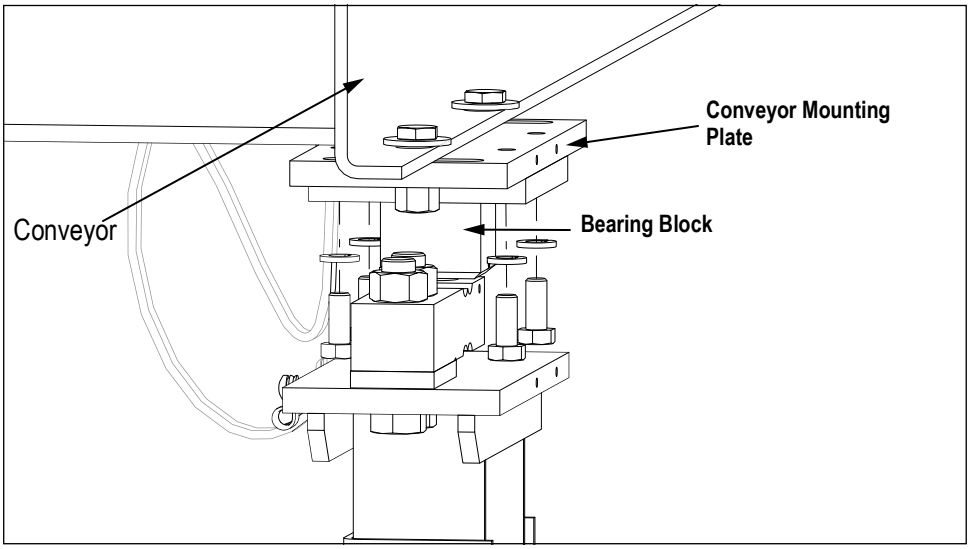

Figure 3-2. Conveyor Mounting Plate Removal

6. Remove the two 1/2-20 x 2-1/2 inch bolts that connect the load cell, load cell spacer and the load cell mount plate.

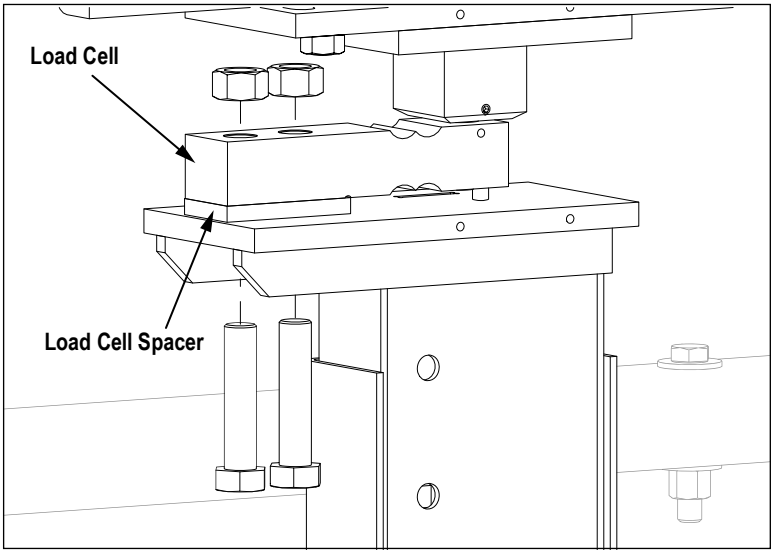

Figure 3-3. Load Cell Removal

7. Remove the load cell and the bearing block.

8. Remove the 1/2-20 x 2-1/2 inch bolt and load cell spacer that connect the bearing block to the defective load cell.

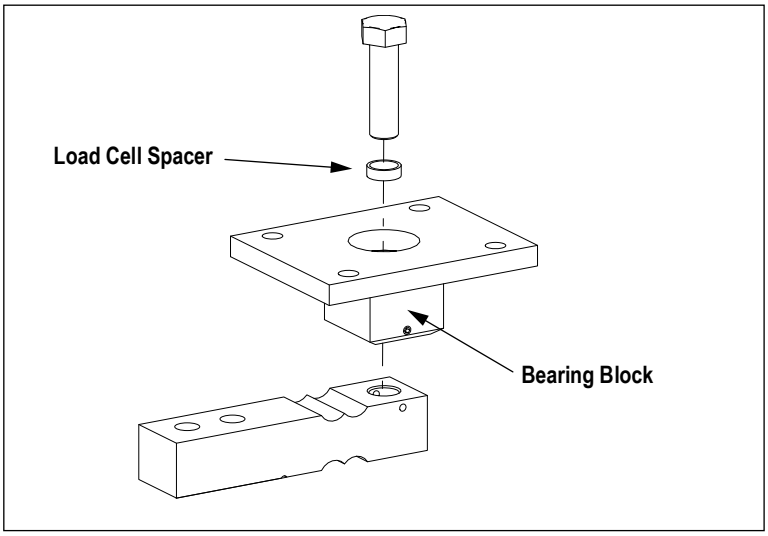

Figure 3-4. Bearing Block Removal

9. Dispose of the defective load cell.
10. Clean any residual thread locker on the 1/2-20 x 2-1/2 inch bolts that connect to the load cell.
11. Reverse the previous steps to install replacement load cell, ensuring they are orientated the same direction.

NOTE: The 1/2-20 x 2-1/2 inch bolts that connect to the load cell need to be torqued to 75 ft-lb. Apply a medium strength thread locker to the 1/2-20 x 2-1/2 inch bolts that connect to the load cell.

12. Put the load cell cable through the load cell cable mounting clips and into the junction box. See Section 2.12 on page 20 for junction box wiring.
13. Tighten the load cell cable mounting clamps.
14. Adjust and tighten the overload bolt. (Section 2.10 on page 18).
15. Re-install the load cell guard plate (Section 2.11 on page 19).

IMPORTANT: Do not cut load cell cables.

NOTE: Corner correction trimming and load cell calibration is necessary after the load cell replacement.

4.0 Specifications

Load cell:

Four RL32018 or RL32018S single-ended beam

250 lb, 500 lb and 1,000 lb capacity

Cable length:

25 ft

Warranty:

Two-year limited

Approvals:

Load cells are FM approved

RICE LAKE®
WEIGHING SYSTEMS

230 W. Coleman St. • Rice Lake, WI 54868 • USA
U.S. 800-472-6703 • Canada/Mexico 800-321-6703 • International 715-234-9171 • Europe +31 (0)26 472 1319