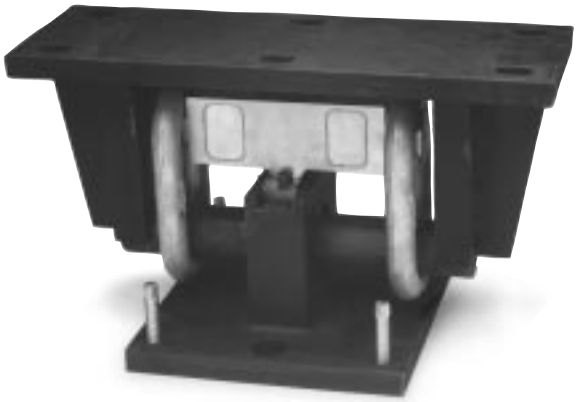
Translink™

Weigh Module

Installation Guide



RICE LAKE WEIGHING SYSTEMS
Industrial Solutions on a Global Scale®

ISO 9001 REGISTERED

25708

Contents

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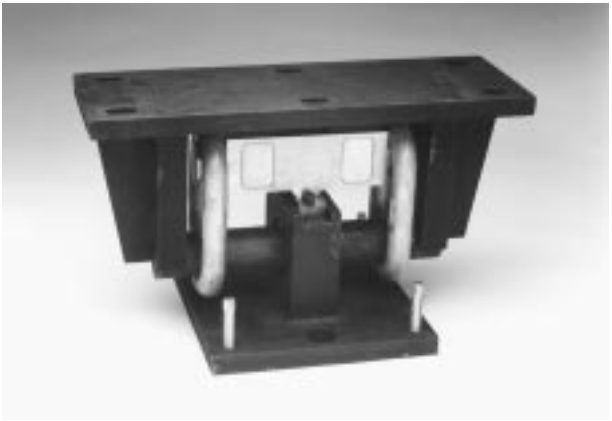


1. Introduction

In this Translink™ manual, you will find a step-by-step approach to installing the load cell mount in an easy, logical manner. You'll find complete information from assembling and installing the components to testing the scale for weighing accuracy. Troubleshooting and replacement parts sections are also included in this manual.

The Translink load cell mount is used for heavy capacity tank and truck weighing applications. The mount is made of fabricated and hardened tool steel in capacities of 25,000 lb to 100,000 lb. The pendulous action of the links allows self-centering of the weighing platform, and the platform has free movement in all directions in the horizontal plane. Install platform bumpers to prevent overtravel.

The mount is compatible with four different tool steel, double-ended shear beam load cells. The RL75040A and the Sensortronics 65040A load cells are environmentally protected styles, whereas the RL75223, RTI 5223, and Sensortronics 65040S load cells are hermetically sealed styles.

The installation should be planned by a qualified structural engineer. Each installation is unique, and this manual is meant to serve only as a general guideline for installation.

Authorized distributors and their employees can view or download this manual from the Rice Lake Weighing Systems distributor site at **www.rlws.com**.

2. Mechanical Installation

2.1 General Installation Guidelines for Translink

1. Unless a good ground is already provided, install a system ground in the pit in close proximity to the junction box. Use at least 1/2" x 8' copper-clad ground rod. The indicator, junction box, weighbridge, and lightening protection devices will be hooked to the system ground. Hook all other devices, such as the printer, to the same AC power supply and ground as the indicator.
2. If the pit fills with water, proper drainage must be provided so that the load cell mounts are not standing in water. Also, drainage loops should be provided on any conduit or cables going to the junction box or load cells.
3. Install bumper bolts between the scale platform and the walls of the pit. Leave about 1/8" clearance or as applicable for temperature changes.
4. The mount must be positioned in the direction of travel (Fig. 2-1).
5. The mounting surface for the base plate and girder chair must be level and parallel so that side loads and bending moments are minimized. The mount assemblies must be plumb and level within ±0.5°.

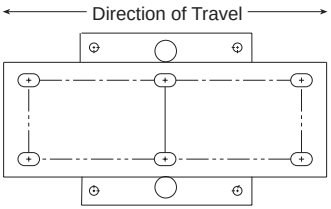


Figure 2-1. Direction of travel (top view)

6. Because the load cell could be damaged during installation, do not use excessive force or slam parts on the load cell.

Warning **When any welding is required on the platform, remove the load cell from the mount so it is not damaged by welding currents or excessive heat.**

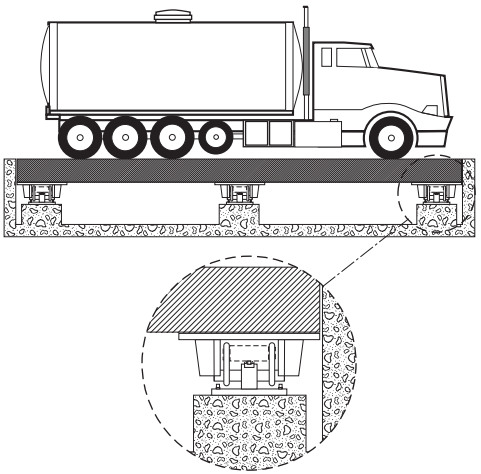


Figure 2-2. Typical configuration showing pier, mount and weighbridge

2.2 Maintaining Scale Height and Center

Whether you are replacing an existing scale or installing all new load cell mounts, you will need to maintain the required final height of your scale system.

- Build up the piers to ensure a minimum of 1/2" gap between each pier and base plate for the final grout. See Appendix on page 8, for load cell mount height.
- Install cribbing to hold up the girder and platform to the required height for normal truck scale operation. Make sure the cribbing is safe, before removing any existing levers or mounts. Place wedges between the platform and the pit's edges to center the platform in the pit.
- Remove the existing levers or mounts and install the new mounts one at a time to continue to maintain the proper height. Remove all old scale parts from the pit as soon as possible to prevent stumbling over them. Installation procedures follow this section.

2.3 Mount and Load Cell Installation Procedures

2.3.1 Assembling and Installing the Components

Wherever the components come in contact with each other, such as the links with the pin, pack well with grease.

When placing parts on the load cell, do not drop or slam parts on the load cell. This sudden force could damage your load cell.

Caution **Do not weld on the girder or platform after the load cell mounts have been installed.**

1. If there is sufficient clearance between the pier and the underside of the platform, place the base place on the pier in approximately its final position. Otherwise, assemble the mount on the edge of the pier (away from the main girder) and then slide it into the final position after assembly.
2. Screw the leveling bolts into the base plate until flush with the bottom of the base. Place the bearing pad on the stand of the base plate. Insert the two tension pins into the top of the stand. Position the load cell on the bearing pad.

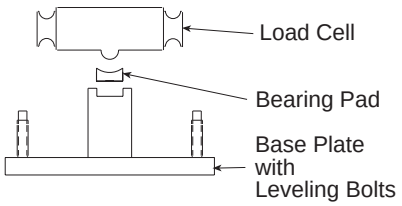


Figure 2-3. Base Plate, Bearing Pad, and Load Cell Assembly

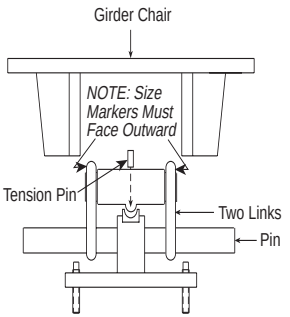


Figure 2-4. Links, Pin, Tension Pin, and Girder Chair Assembly

Load cell models RL75040A and Sensortronics 65040A are shown. Load cell models RL75223 and RTI5223 are slightly different.

3. Attach the two links to each end of the load cell so the raised lettering (size) on each link is facing away from the load cell to avoid any interference. Slide the pin in through the hole of the stand. Position the links on each end of the pin. Place the girder chair on the ends of the pin (Fig. 2-4 on page 3).

4. Slide the load cell mount into place on the pier under the main girder. Align the load cell mount in the direction of travel. (Fig. 2-1on page 2).

2.3.2 Leveling the Mount and Securing the Girder Chair

Leveling is the single most important part of the installation for acheiving high-accuracy weighing.

1. Adjust the leveling bolts equally to bring the top of the girder chair flush with the bottom of the girder. Check to see whether the load cell mount is centered under the girder, and adjust the mount if neccessary.

2. Mark the girder chair hold locations on the girder. See Appendix on page 8, for girder chair mounting hole dimensions. Remove the load cell mount.

3. Use a cutting torch to make the holds in the girder. Be careful not to weaken the structure unduly by making the holes too large.

4. Replace the mount, and bolt the girder chair to the girder (finger tight). Girder chair bolts are not supplied. Recommended girder chair bolt size: 3/4", grade 5 or better.

5. Place shims, if necessary, between the top of the girder chair and the bottom of the girder to level the girder chair within 0.5 degree of horizontal. Using a high-quality bubble level (preferably a machinist's level), level the girder chair in both directions (front to back and left to right). The shims should be as large as possible to distribute the load. If necessary, adjust the leveling bolts to insert the shims.

6. Level the base plate within 0.5 degree of horizontal to achieve a scale accuracy of 0.1% or better. Level the base plate in both directions (front to back and right to left). The base plate should be parallel with the girder chair, and the links should be plumb.

2.3.3 Re-leveling, Securing, and Grouting the Base

1. Remove the cribbing for the particular mount and lower the platform gently so it is resting soley on the mount. Again, adjust the leveling bolts if the deck is not quite level with the top of the pit.

2. Re-level the mount and ensure that the links are hanging plumb. A perfectly level system will minimize side load and bending moments.

3. Install all the other mounts in the system in the above manner before bolting and grouting the base plates. After all the mounts are in place, remove all other cribbing, and remove the platform wedges making sure it is still centered in the pit. If not, then re-wedge and adjust the mounts as necessary. When you are sure that the platform is at the final height and has the proper clearance, anchor the base plates.

4. Drill holes in the concrete pier maintaining the height of the leveling bolts. See Appendix on page 8, for base plate mounting hole locations. Use concrete stud anchors or equivalent to secure the base plate. Use no less than a 7/8"x 7" anchor bolt. Drive each anchor bolt, with the nut and washer on, to firmly set the anchor in place. Tighten the nuts (finger tight).

5. Make a final check to see that the girder chairs and base plates are level, the platform is at the final height, and proper clearance has been maintained.

6. After building a structure around the base plates to contain the grout, pour the liquid ground under the base plates. Use good-quality, non-shrinking grout. Push under the base plate to remove any air pockets.

7. After the grout has hardend (time specified by grout supplier), tighten all girder chair bolts and base plate anchors. Back the four leveling bolts out of the grout. Attach a grounding strap from the girder chair to the base plate. While you are waiting for the grout to harden, you can start hooking up the electrical connections (see Section 3, below).

3. Load Cell Wiring

1. Route the load cell cables so they will not be damaged or cut. Cable should not be routed near heat sources greater than 150°F. Do not shorten any load cell cable. The load cell is temperature complensated with the supplied length of cable. Cutting the cable will affect temperature compensation. Coil and protect excess cable so it will not be mechanically damaged or be sitting in water. It is highly recommended protecting the cables in steel conduit.

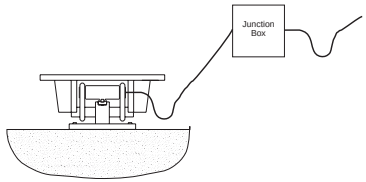


Figure 3-1. Drip loop cabling

2. Provide a drip loop in all cables so that water or other liquids will not run directly down the cables onto either the load cells or the junction box. Attach load cell cable to the dead structure, not the vessel.

3. For better performance, use positive and negative remote sense lines if the wiring running from the junction box to the indicator is longer than 25 feet.

4. Connect cables for load cells to the summing board in the junction box according to the guide shown below and the labels on the terminal strips of the junction box. To verify the wiring scheme, see the certification shipped with each load cell.

Load Cell Wire Colors		
Wire Color	Function	
	Negative Reading	Positive Reading
Red	+EXC	+EXC
Black	–EXC	–EXC
Green	+SIG	–SIG
White	–SIG	+SIG
Gray or Bare	SHIELD	SHIELD

4. Adjustments and Calibration

Note: Proceed with the adjustments and calibration only after the grout under the base plates is completely hardened and all mounts are firmly bolted in place.

1. Your local Weights and Measures regulations will dictate the type of test required, such as section test, corner test, build up, etc.

2. Adjust the junction box potentiometers so that a weight placed anywhere on the platform gives the same reading at each load cell. For more detailed instructions refer to the instructions sent with the junction box.

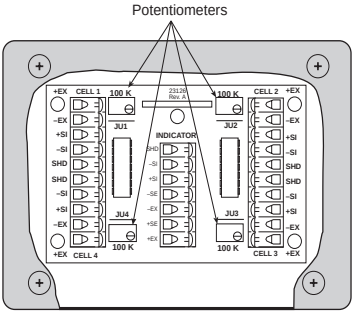


Figure 4-1. Summing board and potentiometers

3. Watch for any unusual readings, which might indicate problems in the installation. Remember, on any adjustment that you make, you should be able to predict the outcome.

4. After you install the bumper bolts, re-test the scale to see that it is weighing properly. If the scale changes calibration, you know the problem is from the bumper bolts, and not from the load cell mounting installation.

Refer to the digital indicator installation manual for specific calibration procedures to use with the particular indicator.

5. Troubleshooting

1. If the system powers up and gives some sort of stable digital readout that varies with the load on the system, any system problems are probably caused by factors other than the load cells. The load cells are often blamed for a malfunctioning system, but 90% of the time, the problem lies elsewhere. Look for mechanical causes for your problem first.

2. If the system can be calibrated but doesn't return to zero, loses calibration, or demonstrates non-linearity or non-repeatability, see the following chart for possible causes and do the following checks.

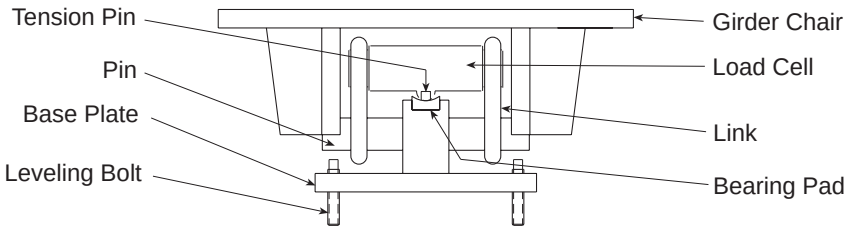
Symptom	Possible Cause
No return to zero	Mechanical binding or debris in seals or under load cells; may have lost system calibration
Non-linearity	Thermal expansion or deflection under load causing binding or side load
Non-repeatability	Loose load cell mount; drifting caused by moisture, load cell overload or shock damage; mechanical binding
Lost calibration	Out of level or plumb; moisture problem; mechanical binding
Drifting readout	Moisture in junction box, cables, or load cell; mechanical binding

6. Maintenance and Replacement Parts

6.1 Replacing a Load Cell

1. Jack up the girder chair and weighbridge away from the pin in the load cell assembly. Jack it high enough only to remove the pin.
2. Remove the pin from the links and pull it through the hold on the stand. Remove the links from the load cell, and remove the load cell.
3. Position the new load cell on the bearing pad. Attach the two links to each end of the load cell. Slide the pin in through the hold of the stand. Position the links on each end of the pin.
4. Lower the girder chair and weighbridge Gently onto the pin so the load cell is not damaged by excessive shock.
5. Check if the load cell mounts are level (see Section 2.33 Re-leveling, Securing, and Grouting the Base, on page 4).
6. Test the scale, and recalibrate if necessary.

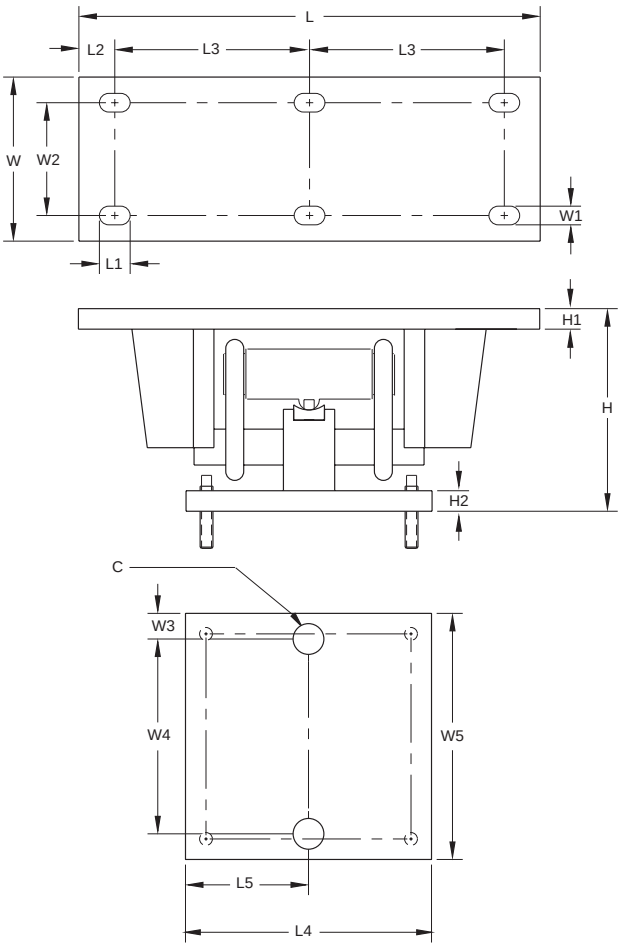
6.2 Replacement Parts



Description	Qty	A*	B*	C*
Translink™ Mount (excluding load cell)		17970	17971	17972
Tension Pin	2	15302	15300	15300
Base Plate	1	18458	18455	18458
Leveling Screw	4	H702-1	H702-1	H702-1
Pin	1	18470	18468	18469
Bearing Pad	1	18452	18453	18453
Link, Weldless End	2	17809	17810	17809
Girder Chair	1	18465	18467	18466
Double-Ended Shear Beam Load Cell	1	(see Load Cell Product Selection Guide for load cell part numbers).		

*A – mount compatible with load cells RL75223/5223 in capacities of 50,000, 65,000 and 100,000 lb each.
*B – mount compatible with load cells RL75040A/65040A in capacities of 25,000 and 40,000 lb each.
*C – mount capatible with load cells RL75040A/65040A in capacities of 50,000, 60,000 and 75,000 lb each.

8. Appendix



DIMENSIONS - INCHES																
Rated Cap.	C	H	H1	H2	L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	W5
*A	1.50	12.93	1.00	1.00	22.50	1.50	1.75	9.50	11.75	5.88	7.75	.91	5.25	1.25	9.25	11.75
*B	1.50	9.88	1.00	1.00	18.50	1.50	1.75	7.50	11.75	5.88	7.75	.91	5.25	1.25	9.25	11.75
*C	1.50	12.82	1.00	1.00	22.50	1.50	1.75	9.50	11.75	5.88	7.75	.91	5.25	1.25	9.25	11.75

*A – mount for load cells RL75223/5223 in capacities of 50,000 to 100,000 lb.
*B – mount for load cells RL75040A/65040A in capacities of 25,000 to 40,000 lb.
*C – mount for load cells RL75040A/65040A in capacities of 50,000 to 75,000 lb.

9. Translink Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS brand load cells properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications. All load cell products are warranted against defects in materials and workmanship for two (2) years. Products marked as "waterproof" are warranted against defects in materials and workmanship relating to moisture ingress.

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 non-conformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Examination of such equipment by RLWS confirms that the non-conformity 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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