

Translink

Weigh Module

Installation Manual



RICE LAKE[®]
WEIGHING SYSTEMS

PN 25708 Rev A

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1.0 Introduction

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 allow self-centering of the weighing platform, and the platform has free movement in all directions in the horizontal plane. Install platform bumpers to prevent over-travel.

The mount is compatible with four different tool steel, double-ended shear beam load cells. The RL75040 and the Sensortronics 65040A load cells are environmentally protected, the RL75223 and the RTI 5223 load cells are hermetically sealed.



Manuals can be viewed or downloaded from the Rice Lake Weighing Systems website at www.ricelake.com/manuals

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

1.1 Safety Section

Safety Symbol Definitions:



Indicates a potentially hazardous situation that, if not avoided could result in death or serious injury, and includes hazards that are exposed when guards are removed.



Indicates a potentially hazardous situation that, if not avoided may result in minor or moderate injury.



Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

General Safety



Failure to heed may result in serious injury or death.

Before attempting to operate this unit, make sure every individual who operates or works with this unit has read and understands the following safety information.

Do not operate without all shields and guards in place.

Do not use for purposes other than 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.

2.0 Installation

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 lightning 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 up with water, proper drainage must be provided so that the load cell mounts are not standing in water. 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.

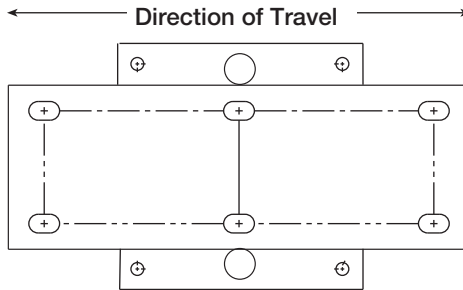


Figure 2-1. Direction of Travel

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 $\pm 0.5^\circ$.



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

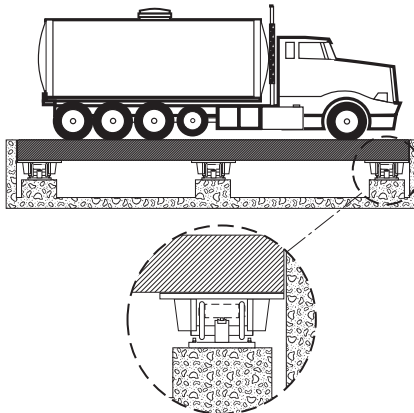


Figure 2-2. Typical Configuration

2.1 Maintaining Scale Height and Center

Whether replacing an existing scale or installing all new load cell mounts, the required final height of the scale system must be maintained.

1. Build up the piers to ensure a minimum 1/2" gap between each pier and base plate for the final grout. See Section 6.3 on page 9.
2. 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.
3. Place wedges between the platform and the pit's edges to center the platform in the pit.
4. Remove the existing levers or mounts and install the new mounts one at a time to continue to maintain the proper height.
5. Remove all old scale parts from the pit as soon as possible to prevent stumbling over them.

2.2 Mount and Load Cell Installation Procedures

2.2.1 Assembling and Installing the Components



Note Check the packing list to make sure all the parts are on site.

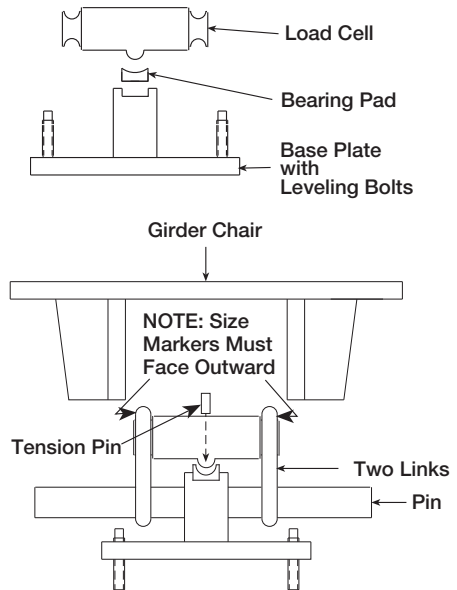


Important When placing parts on the load cell, do not drop or slam parts on the load cell. This sudden force could damage your load cell.

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

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 plate on the pier in its final position. If not, 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.
3. Place the bearing pad on the stand of the base plate.
4. Insert the two tension pins into the top of the stand. Position the load cell on the bearing pad.
5. 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.
6. Slide the pin in through the hole of the stand.
7. Position the links on each end of the pin.



8. Place the girder chair on the ends of the pin. See Figure 2-3.
9. Slide the load cell mount into place on the pier under the main girder.
10. Align the load cell mount in the direction of travel. See Figure 2-1.

2.2.2 Leveling the Mount and Securing the Girder Chair

Leveling is the single most important part of the installation for achieving 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 necessary.
2. Mark the girder chair hole locations on the girder. See Section 6.3 on page 9. Remove the load cell mount.
3. Use a cutting torch to make the holes in the girder. Be careful not to weaken the structure by making the holes too large.
4. Replace the mount. Bolt the girder chair to the girder (finger tight). Girder chair bolts are not supplied, recommended 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° 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 needed, adjust leveling bolts to insert the shims.
6. Level the base plate within 0.5° 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, the links should be plumb.

2.2.3 Re-leveling, Securing, and Grouting the Base

1. Remove the cribbing for the particular mount and lower the platform gently so it is resting solely 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 loads and bending moments.
3. Install all the other mounts in the system 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 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 Section 6.3 on page 9. 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. Finger tighten the nuts.
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 grout 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 hardened (time specified by grout supplier), tighten all girder chair bolts and base plate anchors. Back the four leveling bolts out of the grout.
8. Attach a grounding strap from the girder chair to the base plate. While waiting for the grout to harden, start hooking up the electrical connections. Section 3 on page 5.

3.0 Load Cell Wiring



Important

Do not shorten any load cell cable. Cable length is temperature-compensated and matched to the load cell output.

1. Route the load cell cables up and out of the way so they will not be damaged or standing in water. Route the cables, conduit, and junction box in an orderly, traceable manner to allow for tests. Rice Lake highly recommends protecting the cables in steel conduit.
2. Provide drip loops in the cable or conduit so that water will not run directly down onto the load cell or junction box.

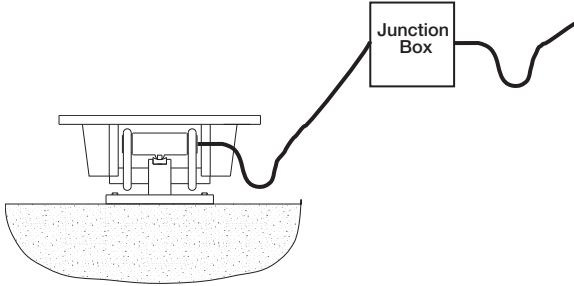


Figure 3-1. Drip Loop

3. To prevent signal problems, use remote sense lines if the wires from the junction box to the indicator is longer than 25'.
4. Connect load cell cables 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.

Load Cell Wire Color	Function
Red	+EXC
Black	-EXC
Green	+SIG
White	-SIG
Gray or Bare	Shield

Table 3-1. Load Cell Wiring

4.0 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.*

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

1. 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.
2. Watch for any unusual readings, which might indicate problems in the installation. On any adjustment made, the outcome should be predictable.
3. After the bumper bolts are installed, retest the scale to see that it is weighing properly. If the scale changes calibration, the problem is from the bumper bolts, and not from the load cell mount installation.

Refer to the indicator installation manual for specific calibration procedures.

5.0 Troubleshooting

If the system powers up and gives a readout, but is weighing erratically:

- Check to make sure that the wiring connections are correct.
- Look for mechanical or environmental factors. The electronic components of a modern load cell weighing system are extremely durable and accurate, rarely requiring service. Always look for mechanical causes first.

If the scale won't return to zero:

- Check for binding problems with the supporting structure.
- Check for debris under the load cells.

If the system doesn't read in a linear pattern throughout its range:

- Look for a mechanical reason. Some part of the support structure may be flexing under load and causing either a binding problem or a sideways load on the load cells.

If the system doesn't repeat with repeated application of the same load:

- Check the functioning of the indicator first. Disconnect the load cell cable at the indicator and attach a simulator to the input of the indicator. If the indicator repeats exactly (Zero to Full Scale) with the simulator input, the indicator is OK.
- Check for loose load cell mounts.
- Look for moisture problems in cables or the junction box, especially if the readout drifts and is unstable.

If the system loses calibration:

- There may be moisture problems causing the system to drift.
- The load cell mounts may have shifted out of level or plumb. Check also for mechanical binding with support structures.

Symptom	Possible Cause
Poor Zero Return	Mechanical binding or debris under the load cells; may have lost system calibration
Non-linearity	Deflection under load causing binding or side load
Non-repeatability	Loose load cell mount; moisture problems
Lost Calibration	Out of level or plumb; moisture problem; mechanical binding
Drifting Readout	Moisture in junction box, cables, or load cell

Table 5-1. Troubleshooting

6.0 Maintenance

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 hole of the stand.
3. Remove the links from the load cell, and remove the load cell.
4. Position the new load cell on the bearing pad.
5. Attach the two links to each end of the load cell.
6. Slide the pin in through the hole of the stand.
7. Position the links on each end of the pin.
8. Lower the girder chair and weighbridge gently onto the pin so the load cell is not damaged by excessive shock.
9. Check if the load cell mounts are level. See Section 2.2.3 on page 4.
10. Test the scale, and recalibrate if necessary.

6.2 Repair Parts

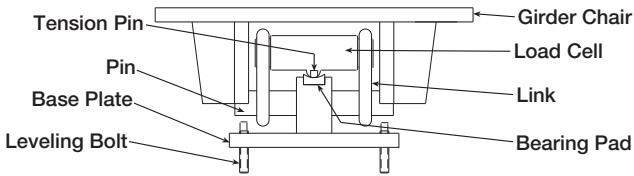


Figure 6-1. Translink Mount Assembly

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	65430	17810	65430
Girder Chair	1	18465	18467	18466
Double-Ended Shear Beam Load Cell	1	See Load Cell Product Selection Guide for load cell part numbers.		

Table 6-1. Translink Mount Parts List

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 RL75040/65040A in capacities of 25,000 and 40,000 lb each.

C – mount compatible with load cells RL75040/65040A in capacities of 50,000, 60,000 and 75,000 lb each.

6.3 Dimensions

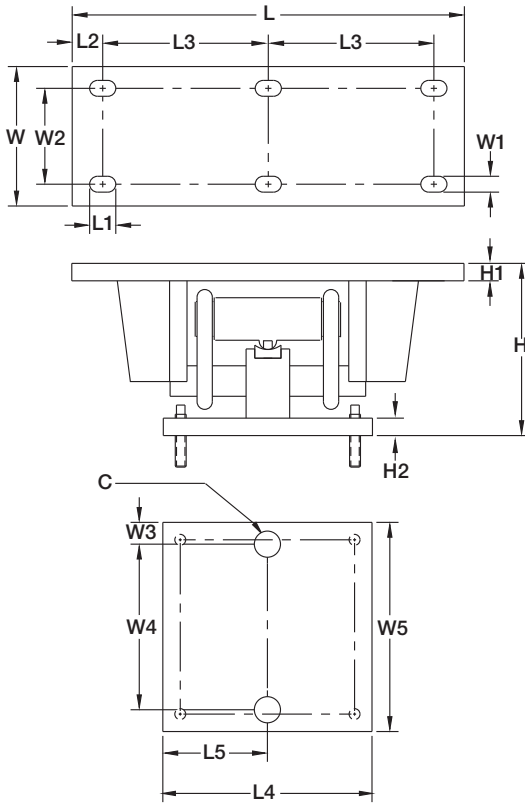


Figure 6-2. Translink Dimensions

	C	H	H1	H2
A	1.50	12.93	1.00	1.00
B	9.88	1.00	1.00	1.50
C	12.82	1.00	1.00	1.50

Table 6-2. Rated Capacity

	L	L1	L2	L3	L4	L5	W	W1	W2	W3	W4	W5
A	22.5	1.50	1.75	9.50	11.75	5.88	7.75	0.91	5.25	1.25	9.25	11.75
B	18.5	1.50	1.75	7.50	11.75	5.88	7.75	0.91	5.25	1.25	9.25	11.75
C	22.5	1.50	1.75	9.50	11.75	5.88	7.75	0.91	5.25	1.25	9.25	11.75

Table 6-3. Dimensions in Inches

A – mount for load cells RL75223/5223 in capacities of 50,000 to 100,000 lb.

B – mount for load cells RL75040/65040A in capacities of 25,000 to 40,000 lb.

C – mount for load cells RL75040/65040A in capacities of 50,000 to 75,000 lb.



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