Survivor® RT

Rail Scale

Installation Manual

RICE LAKE
WEIGHING SYSTEMS

PN 110876 Rev C

Contents

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1.0 Introduction

The *Survivor RT Rail Scale* is manufactured on-site at Rice Lake Weighing Systems. All railroad track scale production is conducted in-house under the precise guidelines outlined by ISO 9001 standards. All scale components are sandblasted to SSPC-SP6 standards and cleaned to remove grease and oil contaminants. After assembly, all Survivor track scales are painted with a high solids urethane primer, as well as a finish coat of a high solids urethane paint that protects the scale's structural integrity and ensures a long life.

This manual is intended for use by service technicians responsible for installing and servicing rail scales.

This manual 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

Note ***Use these instructions as general installation guidelines unless the engineering drawings furnished with the scale differ from the instructions in this manual. Engineering drawings furnished with the scale always take priority over the general installation guidelines.***

The *Survivor® RT* is a pit-type rail scale, and is available as a truck/track combination scale. This scale is ideal for bulk cement, aggregate, grain, scrap metal and chemical applications. Cars can be positioned anywhere on the scale and a wide range of platform sizes and capacities provide accurate weighments.

Specifications:

- Gross capacity – 80 ton vehicle, 200 ton rail
- Sectional capacity – 50 ton vehicle, 200 ton rail
- Platform lengths up to 112'
- 4′ 9 3/4" profile
- Platform width up to 12'
- Concrete deck - 7"
- Three manholes
- Designed for 115 lb and 132 lb rail
- Longitudinal and lateral checking assemblies
- CSP1-200 K compression load cells
- Conduit hub fittings at each load cell
- Lightning and surge suppression kit
- Pandrol rail clips for deck
- Foster #62 rail clips used on approaches
- Anti-creep angles
- Copper transient bypass cables
- In-bridge conduit runs
- NTEP-Certified, CC#00-019, 00-020A1
- Meets AREMA and Cooper E-80 design specifications

1.1 Safety

Safety Symbol Definitions:

DANGER *Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.*

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

CAUTION *Indicates a potentially hazardous situation that, if not avoided, may 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 you have read and understand the instructions and warnings in this manual. 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. Proper care is your responsibility.

DANGER

Failure to heed may result in serious injury of death.

Some procedures described in this manual are potentially dangerous. These procedures are to be performed by qualified service personnel only.

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

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.

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

1.2 Survivor RT Series Platform Sizes

Model	Platform Size	Capacity
RT-6010	60’ x 10’	400,000 lb
RT-6410	64’ x 10'	400,000 lb
RT-6610	66’ x 10'	400,000 lb
RT-7010	70’ x 10'	400,000 lb
RT-7210	72’ x 10'	400,000 lb
RT-7510	75’ x 10'	400,000 lb
RT-8010	80’ x 10'	400,000 lb
RT-10010	100’ x 10'	400,000 lb
RT11210	100’ x 10'	400,000 lb

Table 1-1. Survivor RT Series Platform Sizes

1.3 Optional Features and Accessories

- Steel or concrete deck
- Approach rail base plates, rail clips, nuts and washers
- Anchor bolts for approach rail plates
- Corrugated sheeting for deck
- Reinforcing rods for deck
- Custom sizes for existing foundations
- Anchor bolts for load cell and check stands
- Grain dumps

1.4 Recommended Tools and Equipment

The following is a list of recommended tools and equipment necessary to assemble and install the scale.

- Two 10 ton bottle jacks, 12" or shorter
- 24 wooden blocks, 6" x 6" x 24" oak
- 24 wooden blocks, 4" x 4" x 24" oak
- 24 wooden blocks, 2" x 4" x 24" oak
- Flat blade screw driver
- Small blade screw driver for adjusting junction box pot.
- #2 Phillips screw driver
- Transit
- Small magnetic level
- Large funnel with 1in opening in bottom
- 24" plastic pipe to attach to above funnel for pouring grout
- 1 5/8" combination wrench
- 1 5/8" socket
- 15/16" socket
- 1 1/4" socket
- 1 1/4" combination wrench
- 1 1/8" socket
- 2" combination wrench
- 2" socket
- 3/8" Allen wrench
- 7/16" socket
- Multimeter
- Pliers
- Torque wrench capable of torquing up to 250 ft lb for 1 1/4" socket & 2" socket
- Fish tape for pulling wires
- Line-up punch for aligning holes
- Large hammer
- Latex caulk for sealing grout forms
- Caulk gun for above caulk
- 1" x 4" wood for building grout forms
- Nails or screws for building grout forms
- Electric drill
- Grout mixing paddle for above drill
- Pry bars

2.0 Installation

DANGER *Crush hazard. Keep hands, feet and other body parts clear when setting weighbridge modules in place. Moving parts can crush and cut.*

2.1 Site Preparation

Foundation pit should be constructed and ready to receive the weight of the scale (see Section 2.1.1). Ensure that the foundation is level and has adequate drainage installed. Power should be run to the site.

2.1.1 Foundation Pier/Slab Cure Period

The concrete foundation must cure in a moist state for at least seven days (three days for high-early concrete). At seven days, standard concrete is approximately 75% of its maximum strength and can handle moderate loads. Loading a slab before it reaches 75% of maximum strength may damage the foundation.

Important *The concrete foundation is ready for scale placement after seven days, but standard concrete does not reach full strength until after a 28-day cure.*

2.2 Load Cell Installation to Foundation

Important *Apply anti-seize to the threads of all bolts used during assembly.*

Do not tighten hardware on base plate until leveling is complete and grouting is cured.

1. Install bottom load cell mount plates, see Figure 2-1.

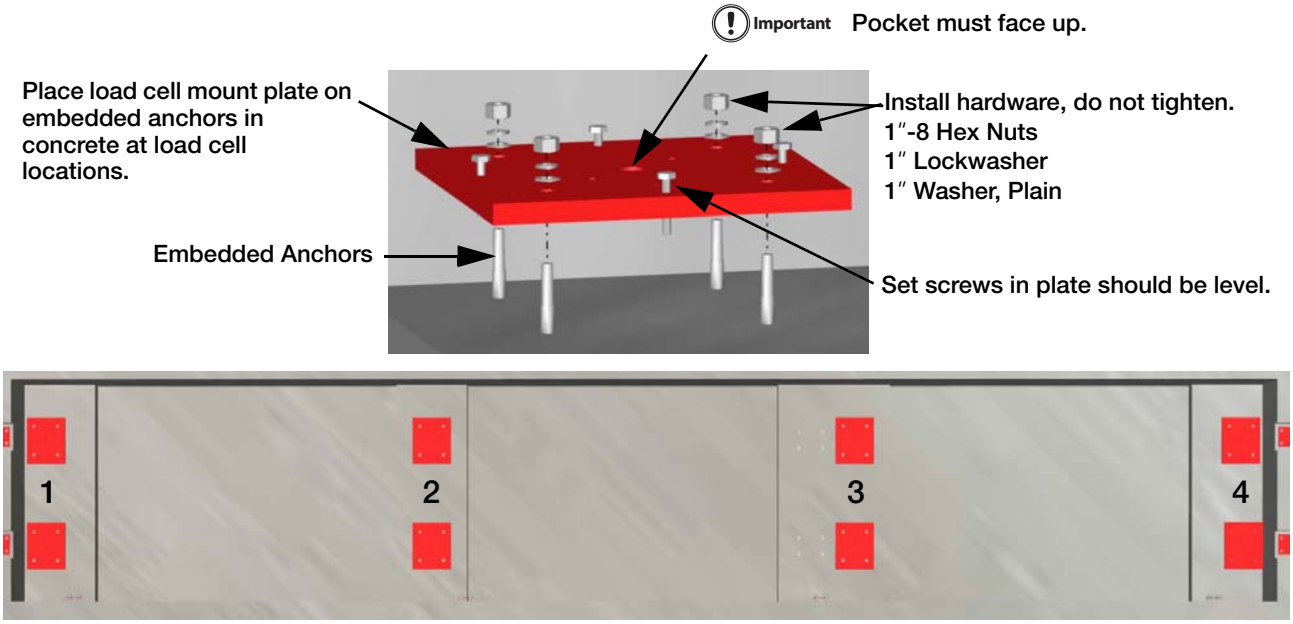


Figure 2-1. Install Load Cell Mount Plates

2. Level the base plates to 0.03″ per foot.

3. Assemble load cell to the load cell base plate.
4. Rotate the load cell so the conduit fitting is accessible.

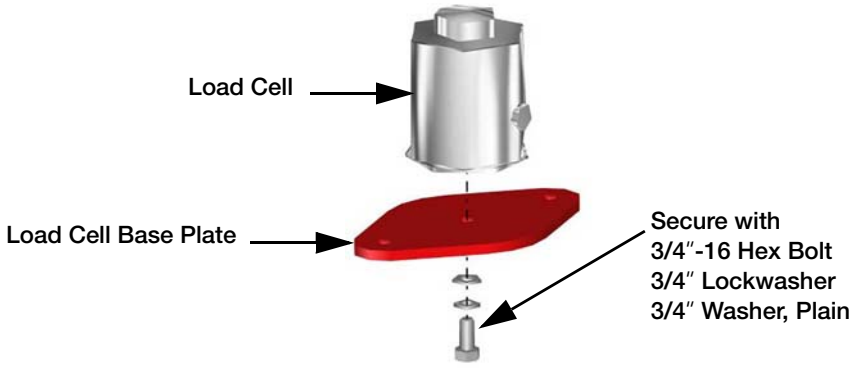


Figure 2-2. Load Cell and Base Plate

5. Attach the load cell assembly from Step 2 to the load cell mount plates installed in Step 1.

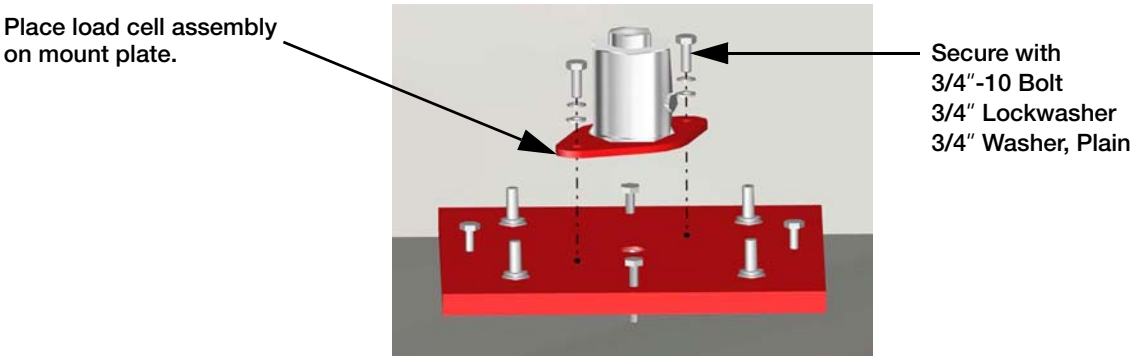


Figure 2-3. Load Cell Assembly to Mount Plate

2.3 Check Rod Bracket Installation to Foundation

1. Set longitudinal checking brackets in place on embedded anchors as indicated on engineering drawings.

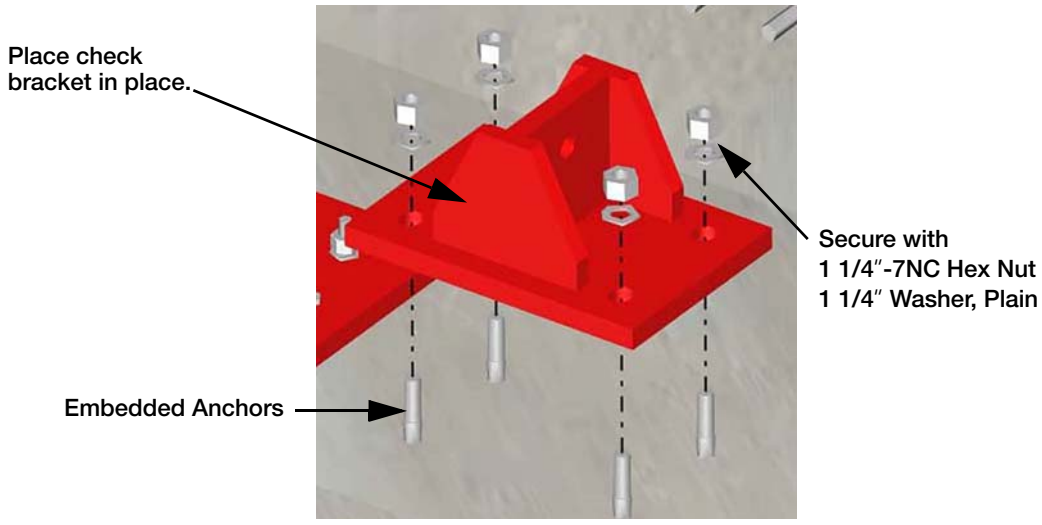


Figure 2-4. Check Rod Bracket on Foundation Base

2. Set latitudinal checking brackets in place on embedded anchors as indicated on engineering drawings.

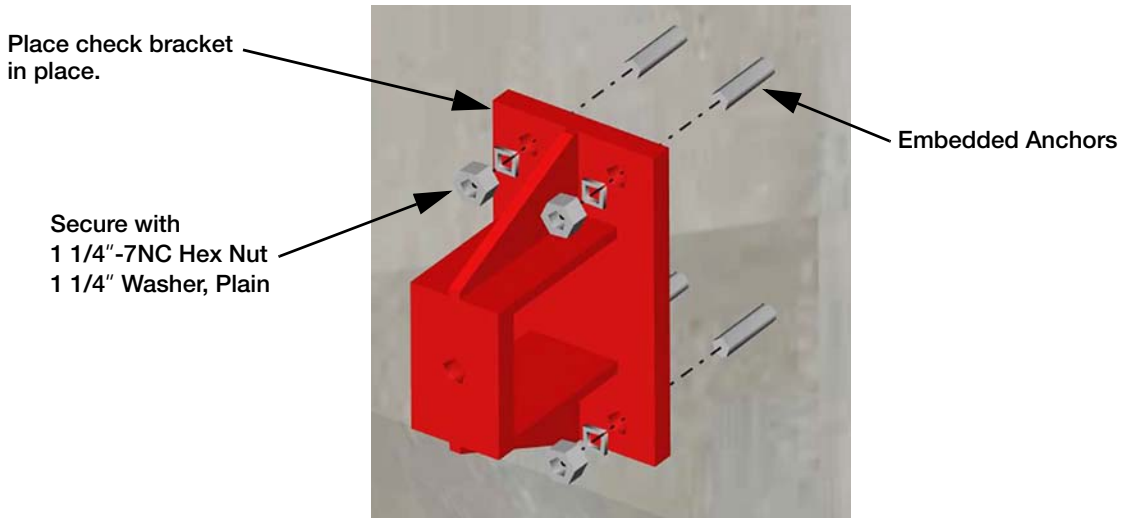


Figure 2-5. Check Rod Bracket on Foundation Side Wall

2.4 Weigh Module Prep and Installation

1. Set module on blocks outside of the foundation for installation of upper load cell plates.

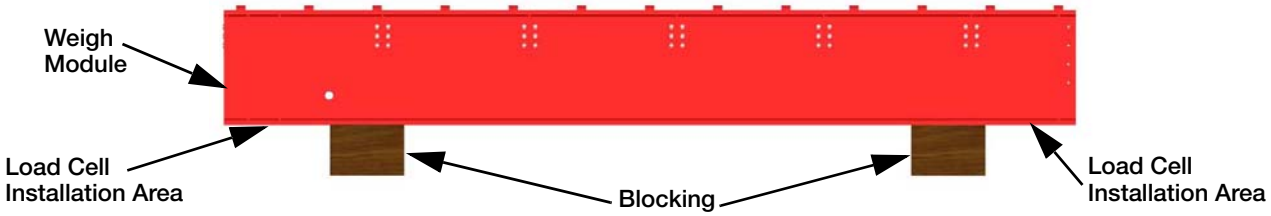


Figure 2-6. Module on Wooden Blocking

Important *Ensure blocking does not block the load cell installation area and is high enough to comfortably install the load cell upper mounting plates.*

2. Assemble the bearing block to the top plate mount, see Figure 2-7 (A).
3. Align the top plate mount to the shim plate, placing the two bearing cushions between the plate.
4. Insert spacer tubes.
5. Insert hardware as shown in Figure 2-7 (B).

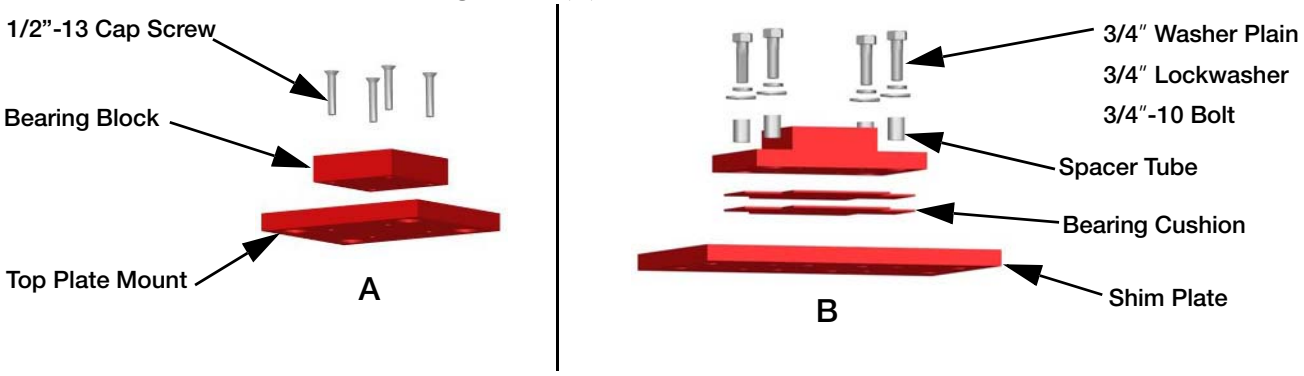


Figure 2-7. Upper Load Cell Mount

6. Assemble the upper load cell mounts to the modules, see Figure 2-8.

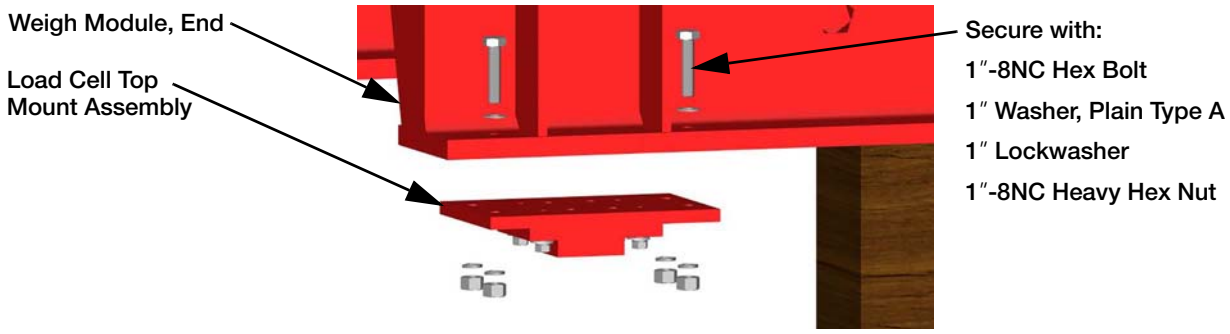


Figure 2-8. Module in Place

Note *Center weigh modules share upper mount assemblies. Install the upper mounts on the inside end of the previous module.*

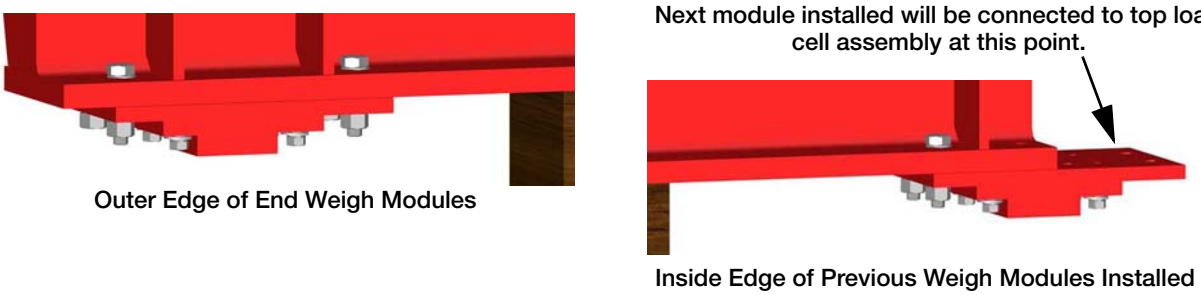


Figure 2-9. Top Load Cell Mount Assembly Placement

7. Install check rod brackets to module as required (see installation print for locations).

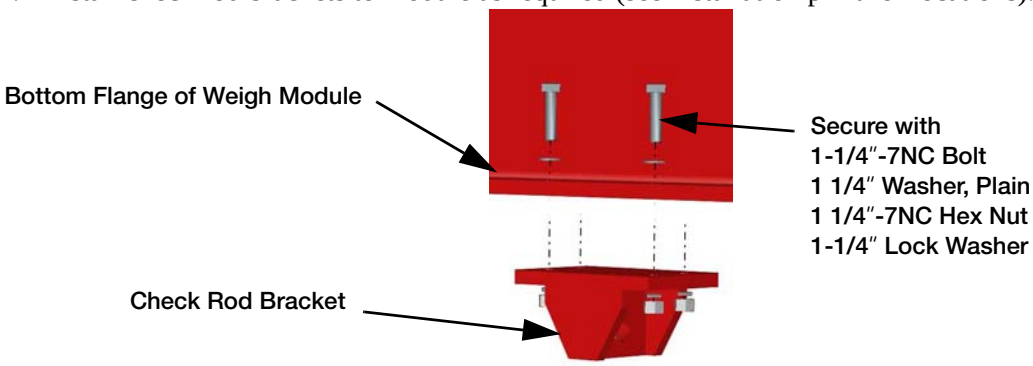


Figure 2-10. Check Rod Bracket on Weigh Module

2.5 Install Weigh Modules in Pit

DANGER *Loads may disengage from crane scale hook and shackle if proper procedures are not followed. A falling load may cause serious injury or death.*

Never lift more than the crane scale's assigned Working Load Limit (WLL) rating.

1. Place blocking in pit around load cell mounts, approximately 16″.
2. Lift first module to the edge of the pit and install lateral check rods. Do not install hardware at this time.

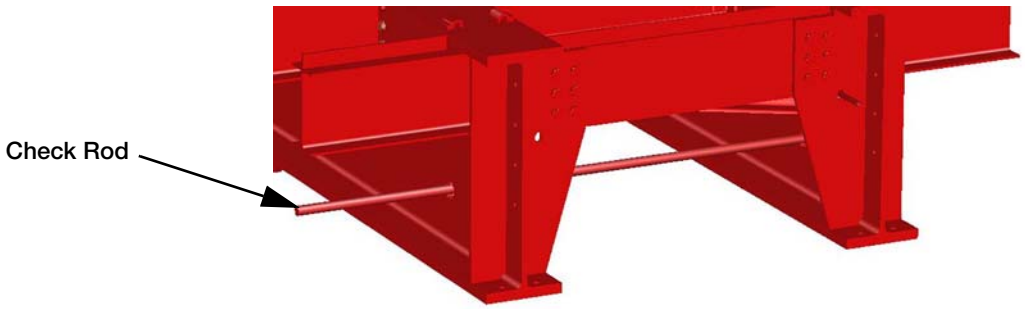


Figure 2-11. Check Rod Installation

3. Set the weigh module in the correct position on the blocking.

CAUTION *Set module as close as possible to the correct position. Modules are heavy and will be difficult to adjust once in place.*

Note *The first module will have the top load cell mount on both ends. All remaining weigh modules will only have the load cell top mount assembly on the end away from previously installed weigh modules. On the last weigh module, the top load cell mount assembly will be the same as the "Outer Edge of End Weigh Module" (Figure Figure 2-9 on page 7), but on opposite end.*

All weigh modules are numbered consecutively in the order of installation.

4. Continue this process with each weigh module section, until all sections are in place.
5. Using two hydraulic jacks, one under each main beam, adjust the height of the end of the first module to the correct height.
6. Adjust the lower load cell mount plate until the load cell just touches the upper load cell mount assembly on the module.

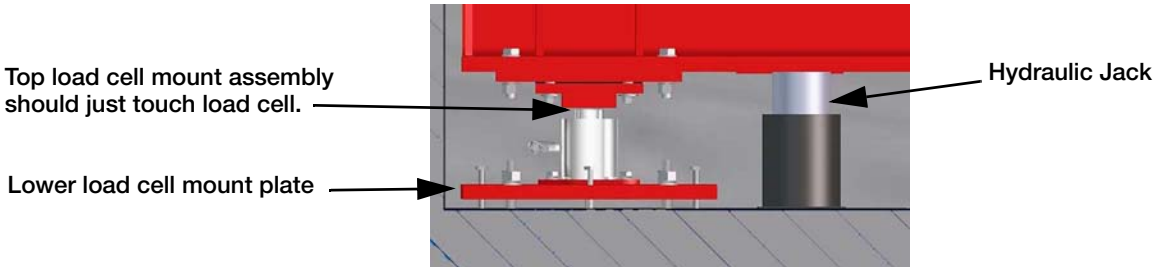


Figure 2-12. Weigh Module Installation and Leveling

7. Use a level to ensure load cell base plate is plumb.
8. Repeat steps 5 through 7 for each weigh module.
9. Install hardware in upper load cell mount assemblies to beams.
10. Install splice plates at each module joint.

Secure with
3/4″-10NC Bolt
3/4″ Washer, Plain
3/4″ Lock Washer
3/4″-7NC Hex Nut

Figure 2-13. Install Splice Plates

11. Install longitudinal check rods into check rods bracket attached to module beams and foundation.
12. Install lateral check rods into check rod brackets on the foundation.

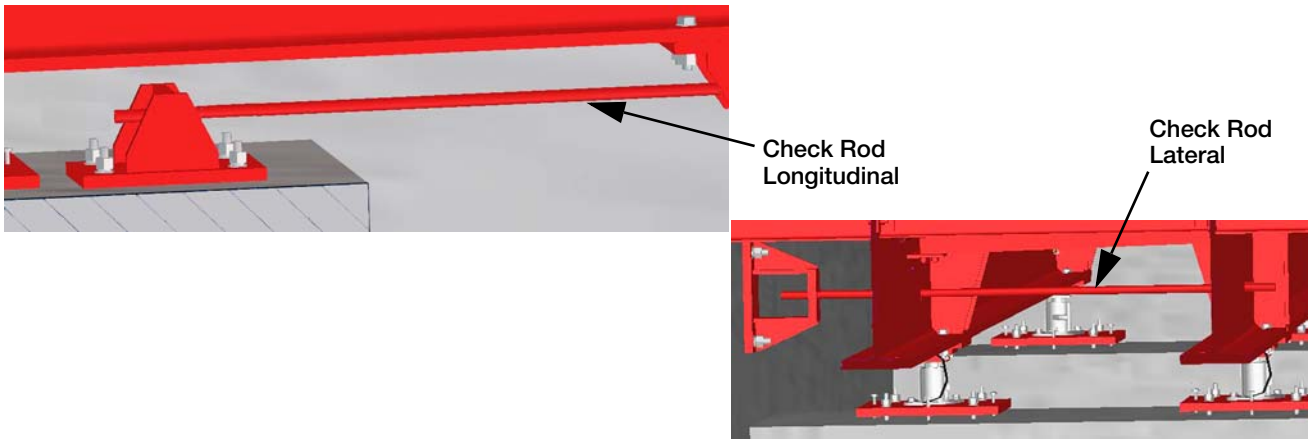
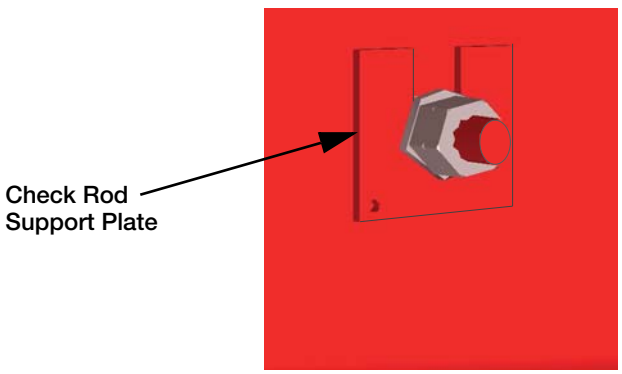


Figure 2-14. Check Rods to Foundation Check Rod Brackets

Note ***Plumb level all check rods when welding spacer plates to the weigh module.***

13. Use jacks to adjust the scale alignment in the pit.
14. Set check rods level with a horizontal plane to within ±1/2°.
15. Install hardware to both ends of all check rods.



Secure with:
1 1/2 ″-6NC Hex Nut
Washer (spherical on module end only)

Figure 2-15. Check Rod Support Plates

16. Weld spacer plates to modules.
17. Check rod brackets to secure.
18. Tighten all hardware at mounts and splice plates, except anchor bolt nuts at load cell base plates.
19. Tighten jam nuts on check rods.
20. Check rod should be tightened on the module and on check bracket end.
21. Install and tack weld concrete coping if required.
22. Weld concrete coping, if required.
23. Check the height of the scale, use load cell mounts to adjust if required.
24. Run wiring from the load cells to the junction box and scale house. See Section 3.0 on page 12.
25. Wire scale to the indicator.
26. Plug in the indicator.
27. Adjust the load cell base plates so that output of all load cells is within 0.03 mV.
28. Build grouting frames and install around load cell base plates.
29. Pour grout in frames to near level with top of the load cell base plate.
30. Install manholes, if required (see installation print for locations).
31. Install concrete support sheets and rebar, if required (see installation print).
32. Install rails, see Section 2.6 on page 10.

2.6 Rail Installation

The following instructions describe the installation of rail sections on the *Survivor RT Rail Scale*.

1. Cut rail sections using 45° mitered rail head cuts at the weigh rail and approach rail transitions.

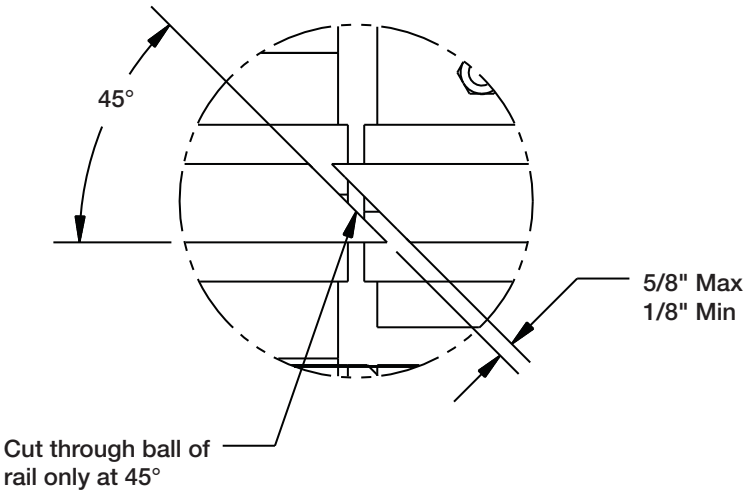


Figure 2-16. Mitered Rail Head Cuts Location

2. Set rail support plates over embedded anchor bolts on the approach foundation.
3. Set weigh rails and approach rails onto the rail support plates.
4. Shim and align rails to match elevation of scale and set the desired grade.

Option: Install jam nuts under approach rail support plates to act as a leveling device.

5. Install rail clips and secure rails in place.
6. Install anti-creep rail anchors.

2.7 Grouting

Prior to grouting, re-check all scale and rail alignment, levels and elevations.

1. Use a 9000 psi epoxy-type grout under the load cell base plates, and grout under the approach.

Note *Do not grout under the longitudinal brackets or side check brackets.*

2. After grout has hardened, tighten/torque nuts on all anchor bolts.

2.8 Concrete Deck

1. Install deck pan.

Figure 2-17. Deck Pan Installed

2. Set manhole frames in desired locations and shim to proper height.

Figure 2-18. Manhole Frame

3. Install rebar and pour concrete.

Figure 2-19. Rebar Installed (Left) and Pouring Concrete (Right)

4. After the concrete hardens, cut deck pan from within manhole frame.

3.0 Junction Box and Grounding

Electrical conduit is pre-installed at the factory and only needs to be connected between the modules and from the modules to the junction box. Following conduit work, load cell cables are routed through each conduit from the load cells to the junction box. All load cell cabling used for this installation comes in the shipping container. The layout pattern for the electrical conduit on a three module truck scale installation is shown in Figure 3-2.

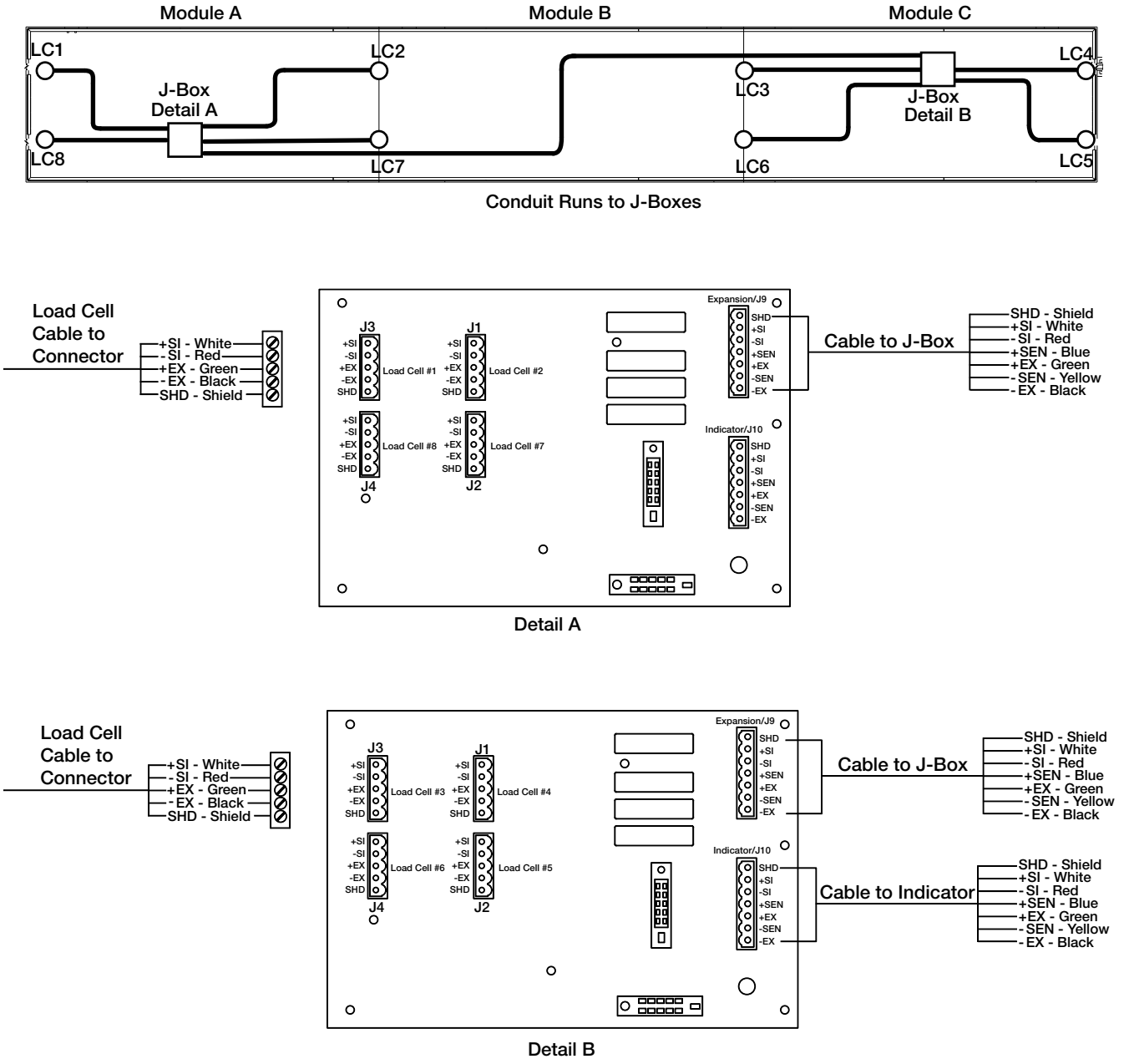


Figure 3-1. Junction Box Wiring and Conduit

3.1 Load Cells to Junction Box

Each load cell is equipped with 30' of load cell cable, sufficient to reach a centrally-located junction box on standard scales. A conduit adapter and a 14" section of 3/4" flexible conduit is supplied for both ends of each load cell cable located at the load cell and at the junction box. The main conduit that runs between these 14"flexible end sections are 3/4" galvanized metal. The conduit is already installed on the deck.

Note

- *Flexible conduit can not come in contact with the ground. Plastic tie wraps are included in the hardware shipping box and should be used to tie up the flexible conduit.*
- *If using a single B module, some of the conduit runs are not used. These conduit runs are used when more than one B modules are installed.*

3.2 Junction Box to Indicator

Fifty eight (58) feet of six-wire homerun cable is supplied for wiring the junction box to the indicator. It is run in 3/4" galvanized metal conduit from the junction box to the indicator. Conduit for this purpose is to be obtained locally. A 30"flexible conduit section and conduit connector is provided where this cable exits the junction box. Do not run any other electrical cables in or near the conduit to the indicator.

3.3 Indicator to Peripherals

All 3/4"conduit for cabling from the indicator to remote displays and other peripheral devices is to be obtained locally. Conduit runs may be buried in a trench or secured above ground. Use separate conduit runs for AC power and DC data lines to avoid interference. As a general guideline, run AC and DC cables in separate trenches if possible. If DC data cables must run in the same trench as AC power lines, separate cables as much as possible (preferably more than 34"apart).

3.4 Single-Point Ground Conductor

A bare 10 gauge solid wire is to be run from the scale frame to the grounding lug on the junction box then underground to the main AC power earth ground. If the DC transient protection board is installed, the ground conductor should also be connected to the transient protection board’s ground lug.

3.5 Junction Box Connections

Each junction box is large enough to hold the summing board, transient protection devices, packaged desiccant and extra load cell cable coiled inside the enclosure. An industrial corrosion inhibitor and desiccant such as the RLWS Industrial Corrosion Inhibitor (PN 16037) should be added to the junction box enclosure before final closure.

IA summing card mounted within the junction box is used to make all cable terminal connections. All terminal pins are clearly marked as to function.

3.6 Electrical Ground Connections

Important *Improper grounding systems are often a cause of corrupted data from ground-loop current flows and costly lightning damage to electronics.*

Always strive for a **single-point grounding** system. Do not drive ground rods at the scale location which establishes separate earth grounds for the scale. These separate earth grounds will not share the same zero reference as the existing earth ground for the AC power system. This difference in electrical potential invites ground-loop current flow between the separate grounds, often corrupting serial data like RS-232, which depends on a stable zero reference.

In addition, a separate earth ground system at the scale can actually invite lightning or power surge damage:

- A minor power line surge should immediately be shunted to ground. If a separate ground system exists at the scale with a lower potential than the main ground, the surge may travel out to the scale ground rod, damaging load cells on its way.
- A nearby lightning ground strike may instantly raise the zero potential of a ground rod at the scale location, while leaving the scale house ground rod unaffected. That lightning surge will now take the easiest path to the lower-potential ground—through the scale wiring and back to the scale house ground, possibly damaging the indicator on its way.

Therefore, the best grounding system for the scale is the same grounding system used for the incoming AC power system. The 120 VAC power source used to power the indicator will be connected to an existing earth grounded rod system at the scale house or other building where the indicator is located. This should consist of a double ground rod system of two 5/8"x 8' copper rods driven 8' deep at the service entrance where the local utility company brings their lines into the building.

The local utility company can test the resistance of the existing ground rods with a clamp-on megohmeter that measures zero resistance. A reading of 3¾ or less is acceptable as a ground. If the test determines that the grounding system is inadequate, the utility company can suggest methods to improve the system. It's crucial that the scale owner authorize and make the recommended improvements to assure an adequate electrical ground. Do not connect the scale to the AC power supply until the grounding system is adequate.

Be certain each load cell grounding strap is securely connected to the top plate and bottom plate of each load cell mount. There should be metal-to-metal contact with no presence of paint or grout. This strap is designed to channel power surges on the deck around—rather than through—the load cell to ground.

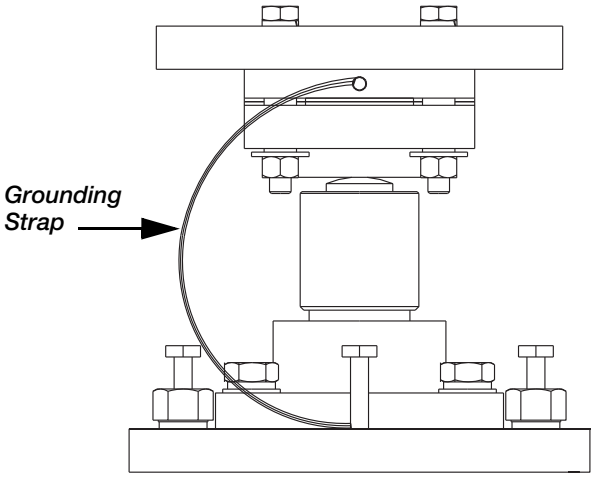


Figure 3-2. Grounding Strap on Load Cell Mount.

These, and all, ground connections must be torqued to a specified value and retorqued at regular service intervals. A thick coating of anti-oxidant grease should be maintained on all ground connections to prevent corrosion.

A separate grounding system conductor must extend uninterrupted from the main service panel ground to the scale to protect load cells and scale wiring from lightning and other transient damage. This ground wire conductor must be an unsheathed #10 copper wire or larger. Run the bare ground wire conductor intact from the AC power ground rod to the scale in a separate trench. Bring the wire up from the trench near the junction box and attach it to the ground lug of the junction box. A #10 bare ground wire is run from the ground lug of the junction box to one of the junction box mounting studs on the scale frame, thus grounding the scale frame to the same single-point ground as the AC power for the indicator.

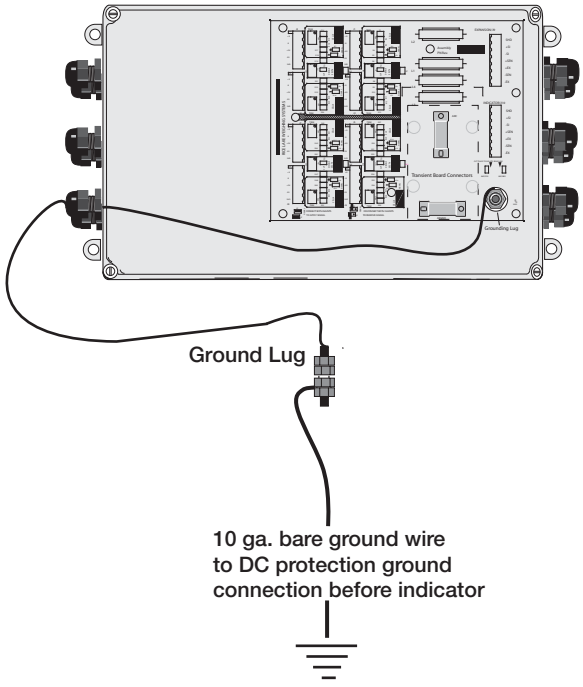


Figure 3-3. Junction Box Ground Wire Connections

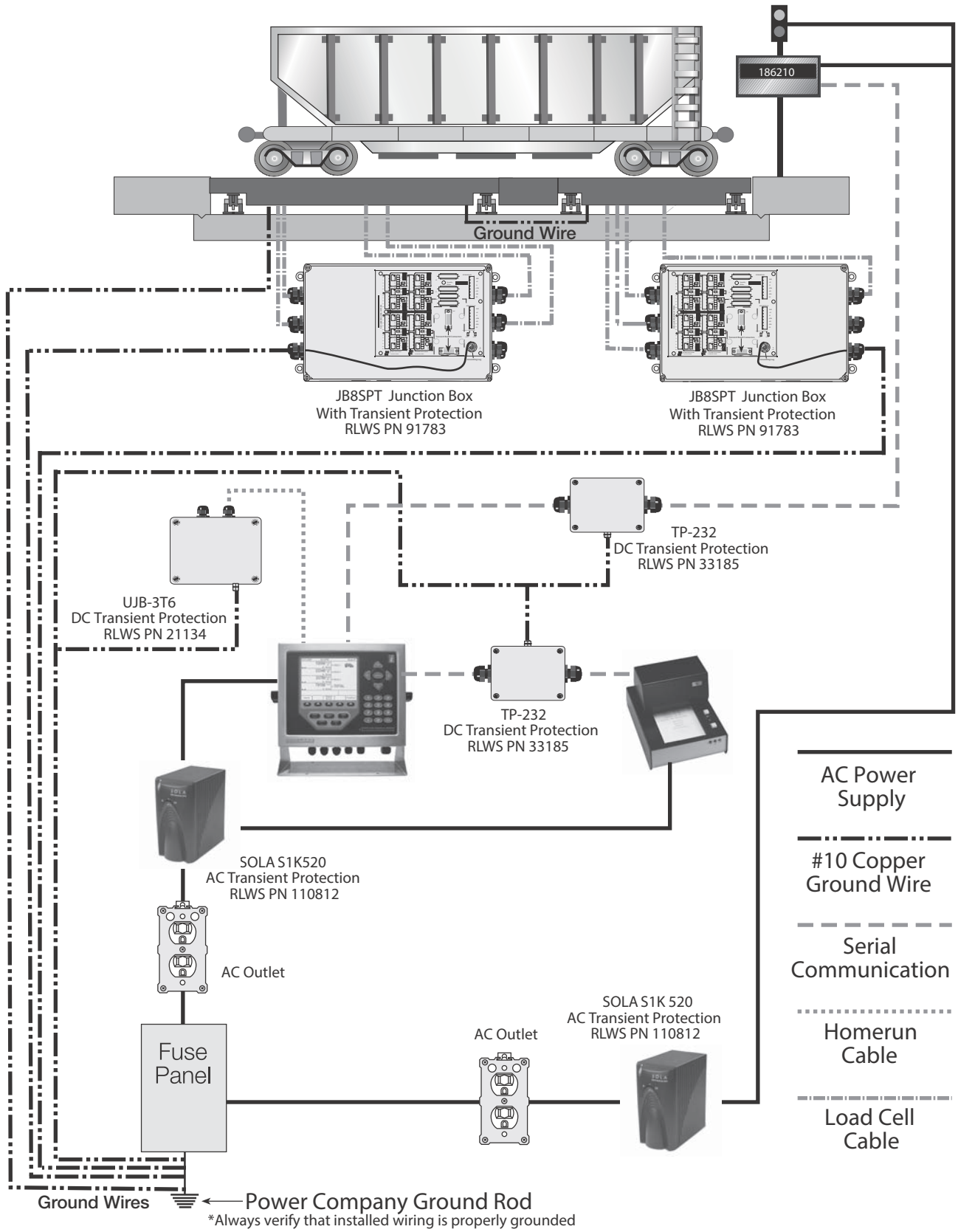


Figure 3-4. Single-Point Grounding Diagram

4.0 Rail Track Grounding

Rice Lake Weighing Systems strongly recommends installation of a grounding system to protect the *Survivor RT Rail Scale* from surges. Rail track scales of all types can be exposed to surges or lightning that may hit the rail at very long distances from the scale. It is recommended that scale sections be isolated from the rail track on both ends of each section. Eight-foot ground rods should be driven between the rails, and a copper wire connected to the rail on each side with a 10-gauge copper wire.

Part Number	Description	Grounding Kit Contents (Qty)
119800	Grounding kit, 115 lb RE Double Draft	110812, UPS Sola S1K520, (1) 119913, 8’ Copper bonded steel ground rod (2) 119916, Ground rod clamp (2) 119917, Pipe clamp, grounding (4) 119920, Copper wire, 10 ga. 25’ (1)
119801	Grounding kit, 115 lb RE Full Draft	
119802	Grounding kit, 132 lb RE Double Draft	
119803	Grounding kit, 132 lb RE Full Draft	

Table 4-1. Grounding Kit Part Numbers

4.1 Ground Rod Locations

Ground rod placement can vary depending on ground hardness; however, 8' ground rods should be installed near the center of the track.

4.2 Grounding System Installation

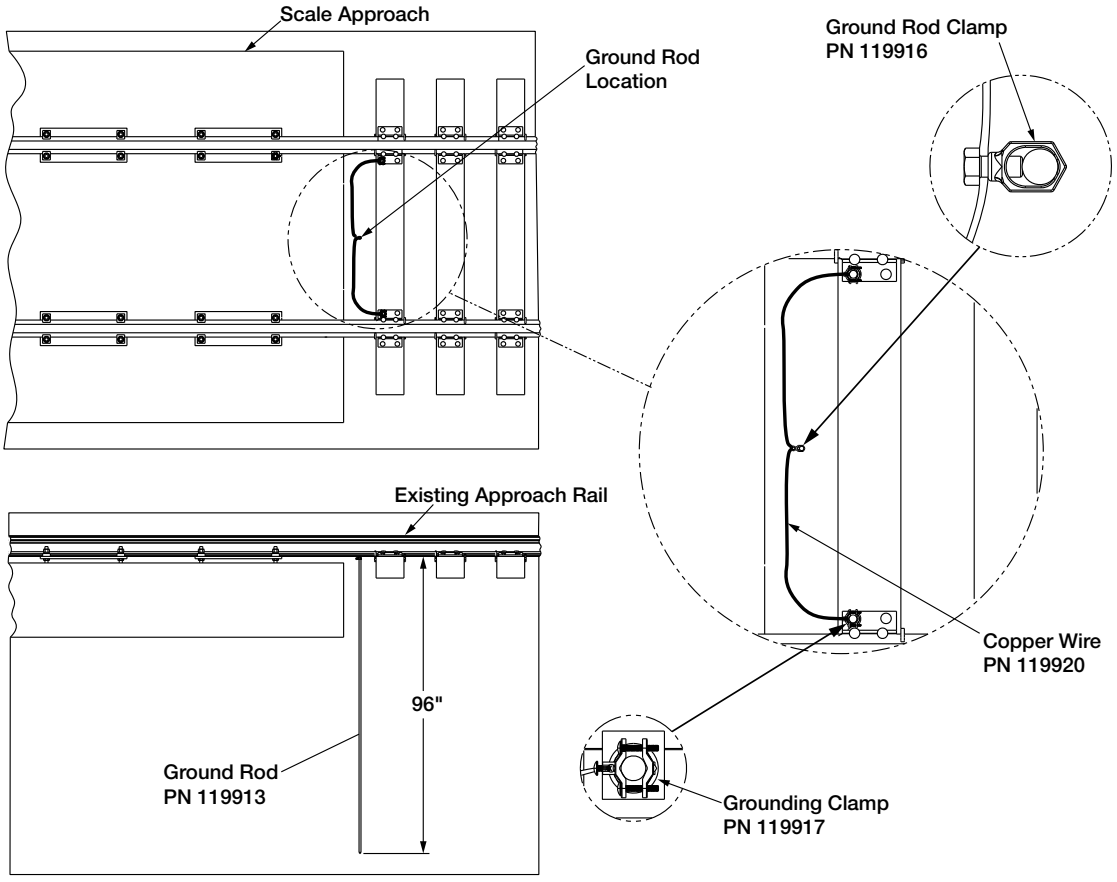


Figure 4-1. Grounding System

1. Install ground rods (purchased separately from the grounding system) near the center of the track. Rods should be driven into the ground so the tip is at the approximate height of railroad tie surfaces.
2. Once rods are installed, ballast can be compacted.
3. Ensure there is a solid ballast foundation under the ties.
4. Install ground rod clamps on ground rods.
5. Install pipe grounding clamps on joint bar bolts.
6. Route 10-gauge copper wire from the pipe grounding clamps to the ground rod clamps and cut to length.
7. Install the UPS (uninterruptible power supply).

5.0 Trimming and Calibration

Important *See the Association of American Railroads (AAR Scale Handbook) at http://www.aar.org. for specifications on rail testing procedures.*

5.1 Overview and Equipment Required

Load Cell Trimming

Individual load cell signal trimming (equalizing the signal output from each load cell) must be done first along each side of the scale so all cells on a side have equal signal output. Adjustments are somewhat interactive, so each side should be done at least twice.

Once that is done, load cell *pairs*—one from each side—are trimmed as paired sections until each sectional output is equal. Adjustments to each section should also be done at least twice.

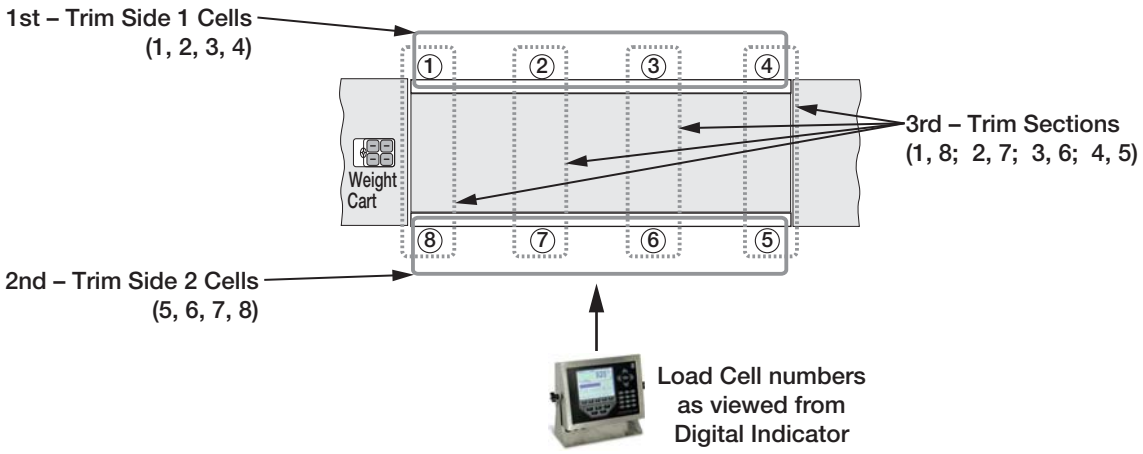


Figure 5-1. Load Cell Trimming Diagram

Equipment Required

Both of these trimming operations can be done using only a weight cart parked in various locations on the scale. Final verification of equal output trimming, however, will require test weights to be placed on the deck in various locations.

5.2 Trimming Individual Cells

1. Connect all load cells to the summing board terminals in the junction box.
2. Connect the main interface cable from the junction box to the indicator.
3. Power up the indicator.
4. Turn all load cell potentiometers (individual and section) in the junction box clockwise until a clicking noise is heard when you continue turning. This eliminates any initial resistance so all signals are at full strength.

5.2.1 Individual Trimming

Side 1

The first objective is to adjust individual load cells along one side of the scale for equal signal output when equal weight is put on those cells. For convenience, that side of the scale will be referred to as Side 1. The trimming weight used will be the loaded weight cart.

1. Park the cart as close as possible to Side 1 being trimmed with the wheels centered over the end load cell mount (No. 1 in Figure 5-2 on page 19). Record the indicator reading. Remember that the scale is still uncalibrated, so the indicator readings are simply arbitrary engineering units rather than weight units.

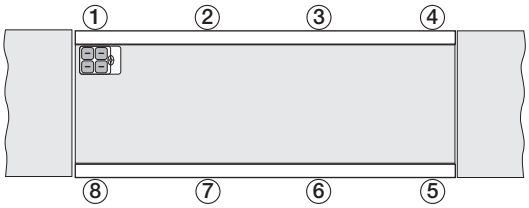


Figure 5-2. Trimming Load Cell Number One

2. Move the cart directly over mount No. 2 and record that reading. Move the cart directly over mount No. 3 and record that reading. Move the cart so the wheels are centered directly over mount No. 4 (the weight cart might need to be turned around so all wheels remain on the scale) and record the reading.

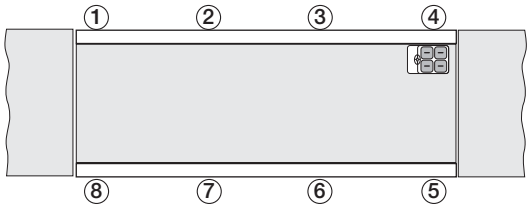


Figure 5-3. Trimming Load Cell Numbers Two, Three, and Four

3. The lowest reading of the four will be the reference cell. This cell's signal cannot be changed. Instead, use the individual cell potentiometers for the other three cells to reduce those signals to match the reference cell. Remember that all potentiometers were turned to full signal (0 resistance) before starting. The signal cannot be increased from any cell—the signal can only be decreased by trimming the potentiometers.
4. Note that the best trim is always the least trim. If one of the four readings differs from the others by more than 5% of the displayed counts, there is probably a mechanical problem with that load cell mount causing the large difference. Find it and correct it before going on. Check for binding, an out-of-level or misaligned link, or similar problems with the load cell and mount. *Do not* try to trim down large signal differences with resistance potentiometers—this will create issues later because of interaction between mounts.
5. Park the loaded weight cart over one of the high-reading cells on Side 1. Turn that cell's individual potentiometer until the displayed reading equals the recorded reference cell reading. Repeat for the other two high-reading cells on side 1.
6. As adjustments are somewhat interactive, repeat the process in steps 1 through 5 until all four cells on Side 1 read within 1% of each other.
7. Move the weight cart to the other side of the scale. Load each cell in turn with the weight cart and record readings on those four cells in the same way. Trim those load cells to the output of the reference cell on Side 1.

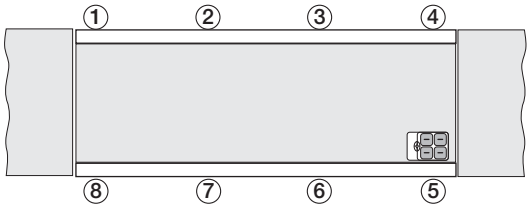


Figure 5-4. Trimming Load Cell Number Five.

8. The reference cell on Side 2 should be the same as the Side 1 readings. Move the weight cart over the cell chosen for the Side 2 reference cell. Adjust the cell's individual potentiometer to equal the final Side 1 readings.

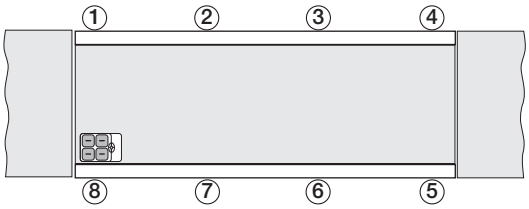


Figure 5-5. Trimming Load Cell Number Eight.

5.3 Trimming Paired Sections

Now that all individual load cells have been trimmed for equal output, pairs of load cells on opposite sides of the scale must be trimmed for equal sectional output. This process is called **section signal trimming**.

1. Park the loaded weight cart in the middle of the scale and directly over an imaginary line connecting an end pair of cells (1 and 8 in the example at right). Record the indicator reading.

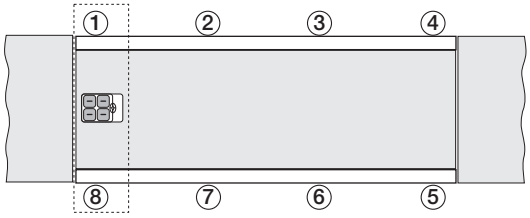


Figure 5-6. Trimming Paired Section 1:8.

2. Move the weight cart directly over the next paired cell section (2, 7 in Figure 5-7) and record the indicator reading.

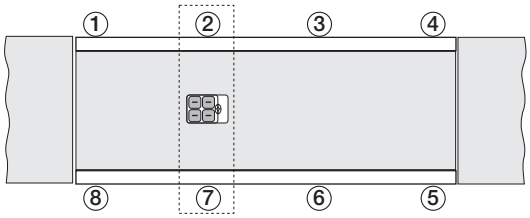


Figure 5-7. Trimming Paired Sections 2:7, 3:6 and 4:5.

Do the same for the last two paired sections (cells 3, 6 and 4, 5).

3. Choose the lowest reading of the four as the reference section, which will not be adjusted. Using the *section* potentiometers, reposition the weight cart on the other three sections in turn and trim the sections to match the reading of the reference section. Recheck section readings a second time as the adjustment made may be somewhat interactive.
4. Place railroad test car on each section for final certification.

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