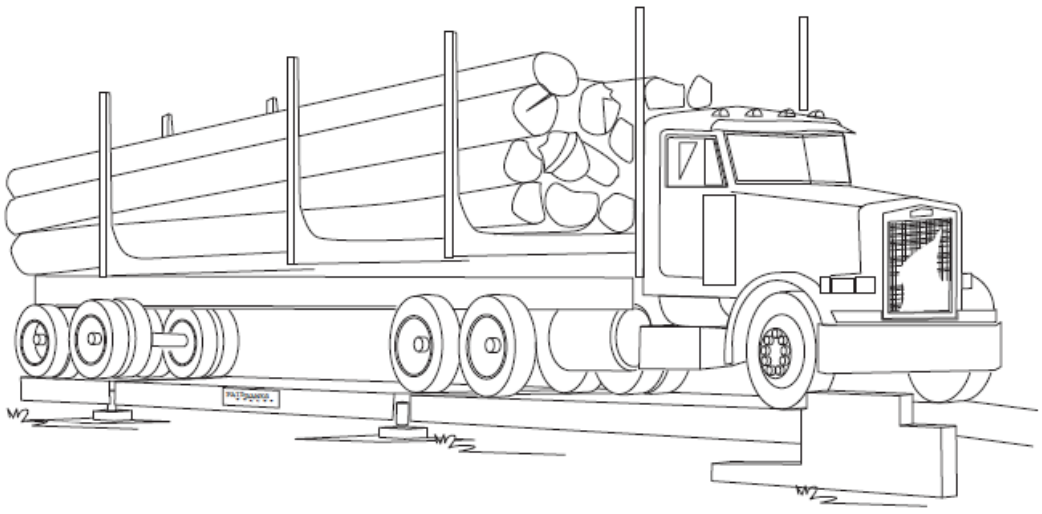
Installation Manual

Talon Series

Cover Plated Scale

6010 Series
6020 Series



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Ammendment Record

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6010 and 6020 Series

Document 51355

Manufactured by **Fairbanks Scales Inc.**

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Revision 5	10/2016	Updated Maintenance > Scale Maintenance, Parts List
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Revision 12	04/2021	Updated: Tool Checklist
Revision 13	06/2021	Updated: Parts
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Disclaimer

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Section 1: General Information

1.1. Introduction

This Instruction manual provides installation instructions for the Fairbanks pit-type Modular Steel and Field-Pour model scales.

For a proper **Talon Scale** installation(s), use the following resources:

- Methods and Procedures FF-2267/101732 (Appendix I)
- The Certified Prints/setting plans supplied with the scale
- This Installation Manual, **51355**

The concrete foundation work must be performed according to the Certified Prints issued for the specific customer and order number. (The name and order number for the particular customer will be on the prints.)

1.2. Description

The Modular Steel Deck and Field Pour truck scales are available in various lengths from 10 to 120 feet, and widths from 10 feet to 12 feet.

The scale is made up of modules of **10'/15'/ 20' or 23'-4"** in length. All modules are assembled and welded at the factory.

The scale should be located so that vehicles can approach and exit the scale as easily as possible. The platform should be visible from the instrument location. Drainage of surface water must be such that water does not collect under the scale. Smooth and level approaches are required at each end of the platform to reduce loading shock and facilitate testing of the scale.

Approaches must conform to the requirements of the law in the state in which the scale is being installed. In the absence of such laws, the approaches must conform to paragraph UR.2.6 of the National Institute of Standards and Technology Handbook 44, which states that the first 10 feet must be level and on the same plane as the scale platform.

1.3. Load Cell Technical Specifications

Capacity	66,000 lbs.	110,000 lbs
Type	4 $^{11}/_{16}$" Stainless Steel Rocker Column (RC Cells)	
Sealing	Glass-to-Metal Connection Points, complete hermetic sealing; cable entry sealed by four (4) water-tight gland bushings	
Material	Stainless Steel	
Rating	NEMA 6P (IP68 / 69K)	
Resistance	1,000 Ohms	
Operating Temperature	-10 to +40°C (-14 to 104°F)	
Output	2.4 mv/v	2.0 mv/v
Combined Error	≤0.02%	
Zero Balance (FSO)	1.0%	
Excitation	5 to 15 VDC	
Ultimate Overload	300%	
Cable Length	15'	
Cable Protection	Stainless Steel Sheathing	
Approvals	NTEP CC# 14-024 Factory Mutual (FM) Approved	

1.4. Platform Specifications

Deck Dimensions	Widths: 10', 11' and 12' Standard Lengths: 10' to 120' Standard — ***Custom sizes also available.***	
Scale Capacity	60 tons to 150 tons	
CLC	90,000 and 100,000	
Sections	2 thru 7	
Deck Construction	Steel	Field Pour Concrete
Module Construction	Structural Steel	
Deck Thickness	HV =1/4" plate HVX 3/8" plate	HV=10" thick HVX=12" thick
Approval	NTEP CC# 96-089 MC# AM-4949	

Section 2: Installation

Installation consists of the following:

- Foundation check, layout, and base plate setting
- Tools, materials, documentation, and a crane
- Setting the modules
- Setting the modules on load cells

2.1. Preparation for Installations -- All Models:

Tools, Equipment, and Materials Required:

☐ Certified Prints

☐ Mobile Crane of sufficient capacity to safely lift and place the weigh bridge modules.*

☐ Four (4) Lifting Chains/Cables with Hooks*

- Equal in length (20 ft.) to safely lift and install the modules.

NOTE: These MUST be requested in advance from the Crane Service Company!

☐ Machinists Levels (Starrett # 134 & 132-6)

☐ Hand Tools:

- Wrenches and Sockets
  - 15/16”
  - 1 1/8”
  - 1 ½”
  - 3/4:” Hex Wrench

☐ Hammer Drill with 5/8" bit, 36" long

☐ Low profile hydraulic jacks (2)

- Hydraulic Jacks that have sufficient capacity plus (+) a safety factor for the model of scale you are installing.
- Recommended Jacks:
  - Enterpac model CUSP50 cylinder
  - Enterpac model P141 pump
  - Enterpac model HB9206Q hose

- Enterpac model A360 coupler
- Enterpac model FZ1630 reducer
- Available at www.enerpac.com

☐ 100' steel tape measure, Stringline and\or chalkline

☐ Prybars

☐ Grease and anti-seize (***see note below***)

NOTE: **Grease** for load cell cups: equal to *Super Lube White Grease* (food grade)

☐ Load cell locating tools, one for each load cell, available for purchase throughCustomer Service.

- Part No. **157069** for 4-3/4"

☐ 4" x 4" x 12' timbers (supplied) for field pour models

2.2. Foundation:

Before installing any part of the scale, the foundation must be checked for accuracy usingFoundation Inspection Field Check List, FF-2267 /101732 (see Appendix I).

1. Layout and position the base plates in the proper locations using the Methods & Procedures and Certified prints. Each base plate must be level and in full contact with the top of the pier. Adjustments can be made by chipping the concrete or grouting (thinly, enough to fill in small imperfections) under the base plates.

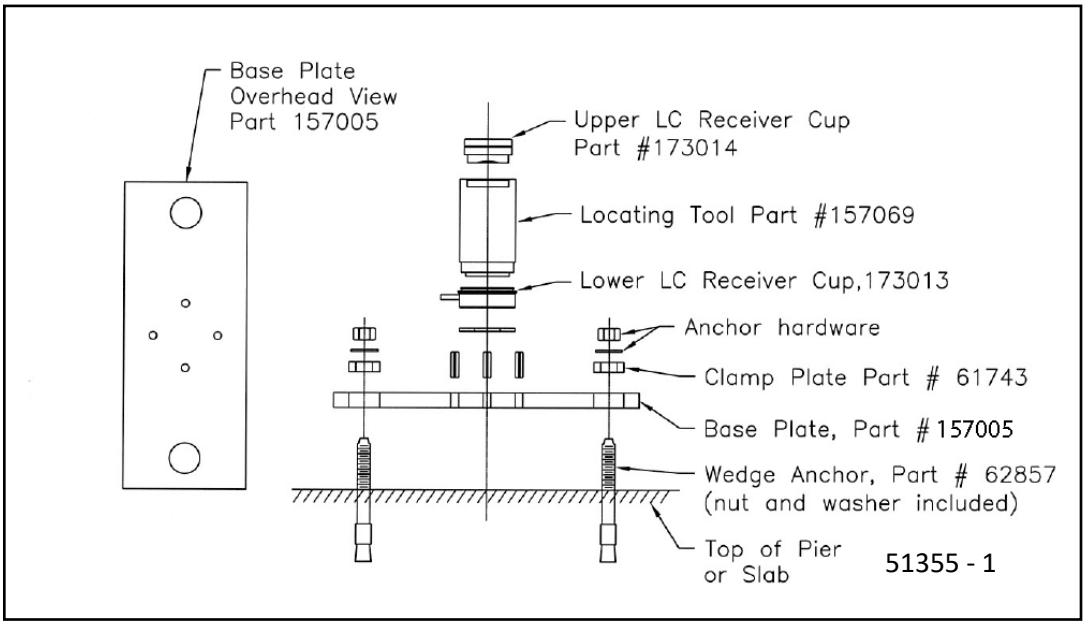
2. Re-check the locations of each base plate against the Certified Prints.

   - Insert four 3/8”" roll pins into each base plate to retain the cup.

3. Put a 3/16" shim on the lower plate, below the lower cup. Lower cups for the load cells have a pin which should be aligned in towards the center line of the scale.

4. Place the upper cup on the edge of the on the edge of the upper foundation next to each base plate.

5. Place the load cell locating tool next to each base plate.

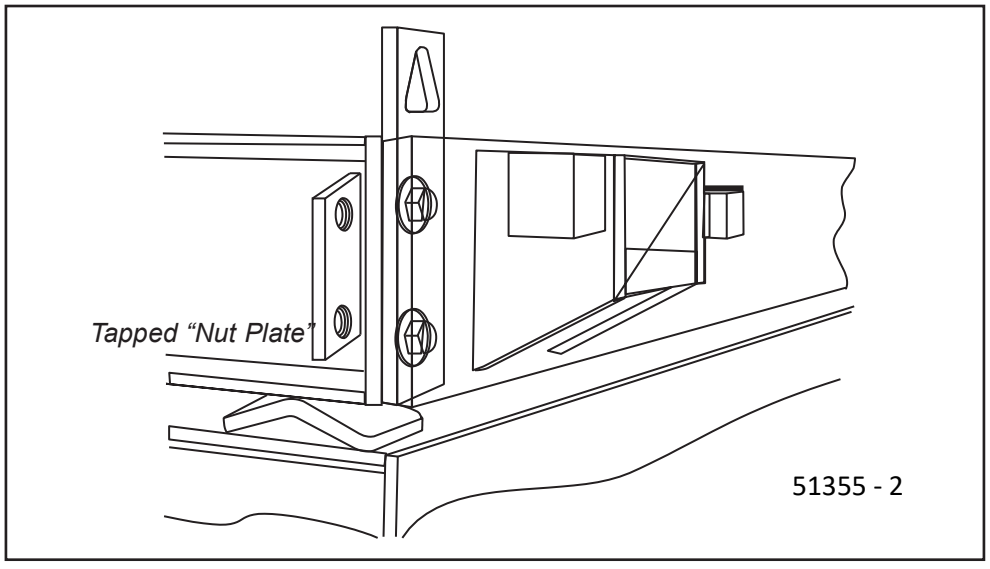


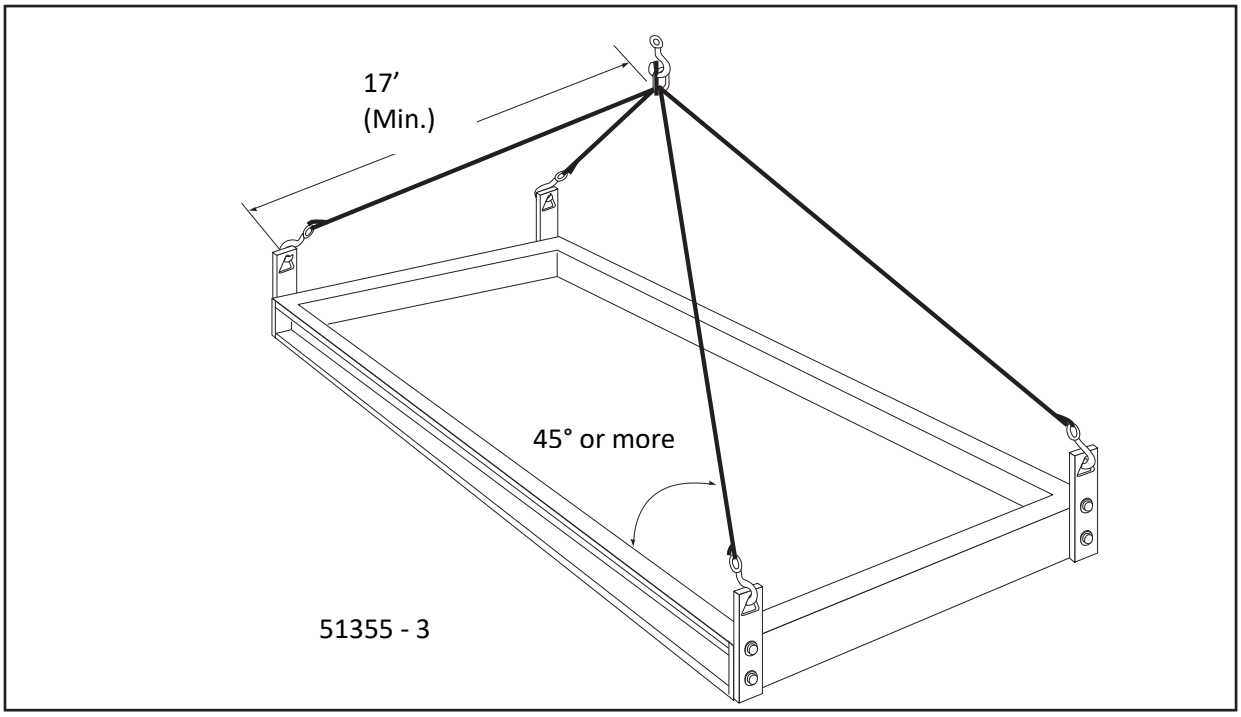
Note: If this is a field pour installation, see **Section 3** of this manual.

2.3. Setting The Modules:

1. Preparing The Modules For Lifting

The Pit style modules must have lifting brackets installed at each corner before they can be lifted. Use only the high-strength bolts provided or parts from the factory. Tighten the bolts as tight as possible.





2. Setting The Center Module:

The center module is always set first. The center module will have four load cells to install; all other modules will have two load cells. The modules must be placed in the proper order and aligned in the foundation so that all modules fit correctly.

These scales do NOT have a left-right orientation and have 'unmarked' ends. The center module may be installed facing either direction as long as it is in the center. The other modules will set upon the center module from either end.

a. Place blocks that will set the modules at a height slightly less than the finished height as safety blocks or for setting modules on.

b. Lift the center module to a location above the four center load cell base plates.

OPTION 1: You may set the module directly on the locating tools and the blocks will act as safety stands.

- Install a Load Cell Bearing Cup with into the upper receiver of each corner, grease will help hold the cup in place.
- Insert the upper end of the locating tool over the upper cup on the module.
- Lower the module while holding the locating tool upright and guiding the bottom of the tool into the lower cup.

- When the center module is set on all four locating tools, keep tension on the cables until the module is centered and straight.
- Use hydraulic jacks to lift the unit slightly and shift the base plates to get the locating tools PLUMB and the top and bottom flanges FLUSH with the sides of the cup.

OPTION 2: Set the modules on the blocks first, then onto locating tools.

- When the module is set on the blocks, keep tension on the cables until the module is properly aligned.
- Use hydraulic jacks to lift the unit slightly, then install the locating tools. Shift the base plates to get the tools PLUMB and FLUSH with the sides of the cup.

c. Measure from each side of each end of the module to the end walls to be certain the module is plumb and square before removing tension.

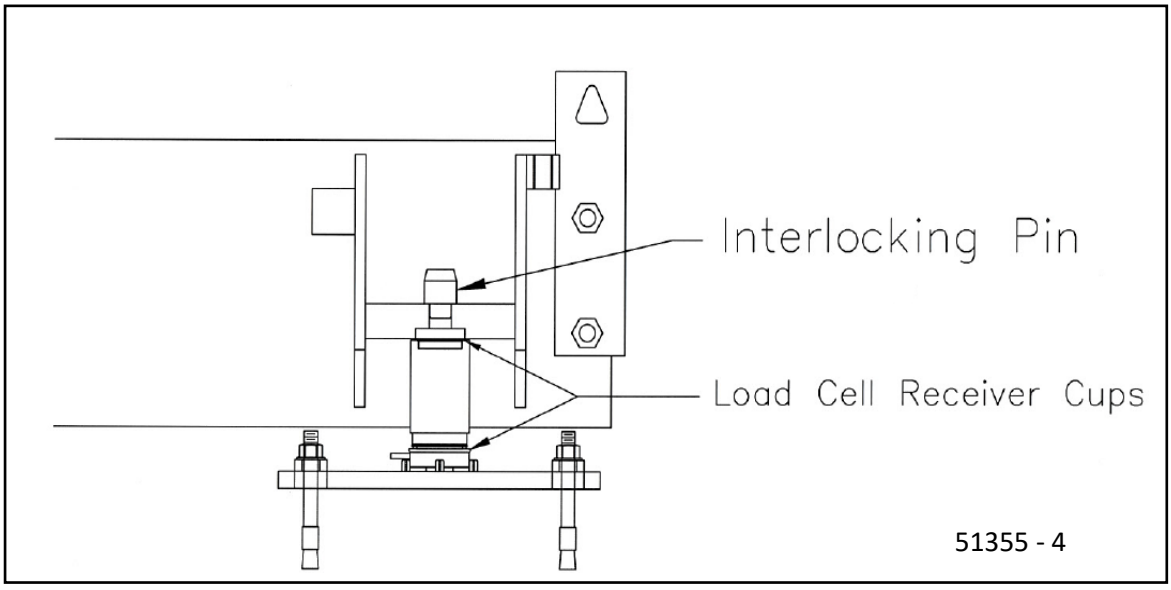
d. Once the tension on the lift cables is released, remove the lifting brackets and/or hooks.

3. Setting End Modules

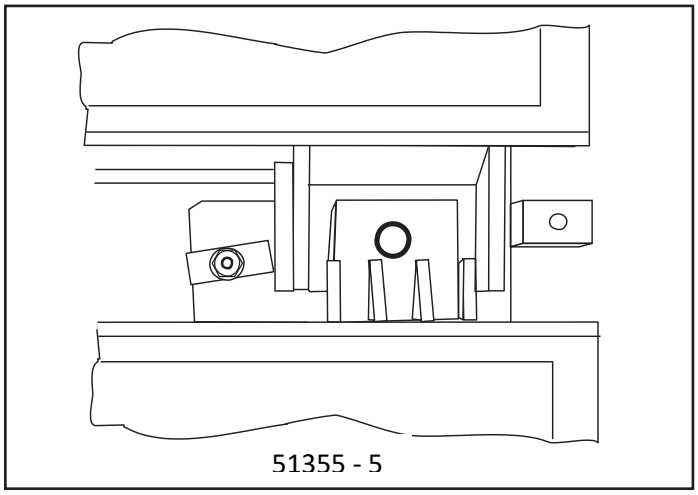
a. Interlocking Pin

- Drive an interlocking pin into each load cell bracket of the center module.

b. Module Placement



- Guide the modules into place with the supporting blocks on the end of the module coming to rest on the center module load cell bracket interlocking pins. Lower the other end of the module onto the load cell locating tools or blocks.

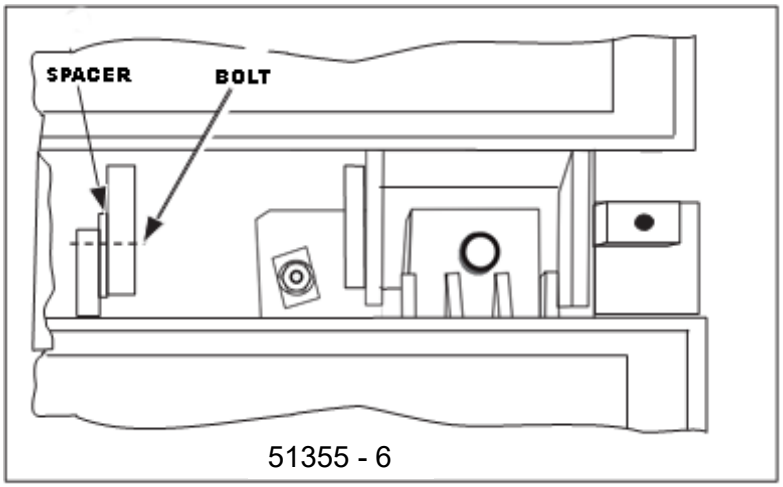


4. Before releasing tension on the cables, check the alignment of the end modules to the center module and to the end wall.

- Ensure end modules are aligned with the center module and the foundation.

5. Connecting the Modules:

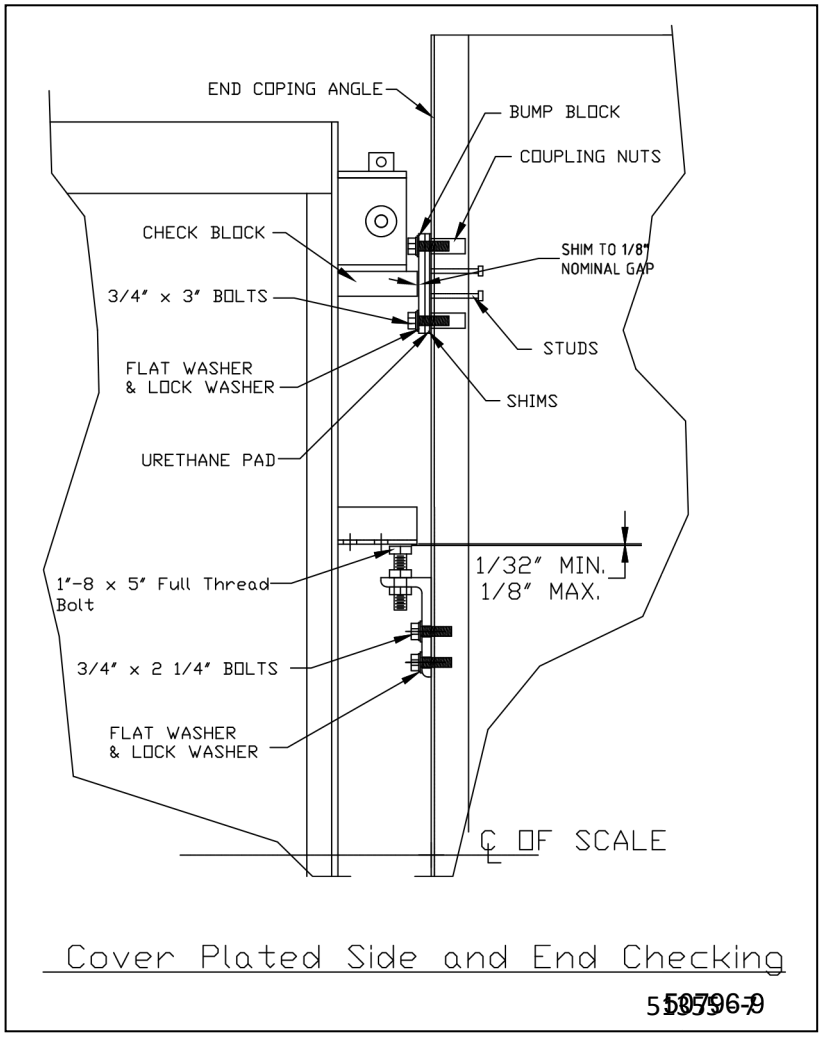
- Bolt the modules' channels together using the ½" x 4" x 6" spacers and 1" x 3" bolts. Insert the ½" x 4" x 6" spacer plates between the channels. The bolts go through the back-to-back channels and the spacer. Snug the bolts, but do not tighten them yet.



6. Checking Adjustment

a. Adjust End Checking

- Use the end checking shims provided to adjust end checking so that they touch and prevent movement.



b. Install the side checking brackets:

- Bolt the brackets onto the end copings per the Certified drawings.
- Set the bolts so that they touch the channels they bump against.

7. Base Plate Completion:

- Check that all locating tools are properly aligned and flush with the receiver cups. Drill the holes for the base plate anchors using a hammer-drill and the 5/8" drill bit. Clean out the holes with compressed air. Tap the anchors into clean holes and tighten the nuts securely.

NOTE: *Field-Pour scales are poured, formed and cured with locating tools in place. Do NOT install load cells until cure strength is reached, typically 28-30 days. Use a core sample to confirm.*

8. Installing Load Cells:

a. Unpack the load cells and mark each calibration certificate with the cell location/position.

b. Starting at one end of the assembled platform, place hydraulic jacks at the corners so the section can be lifted off the locating tool (2 hydraulic jacks may be required).

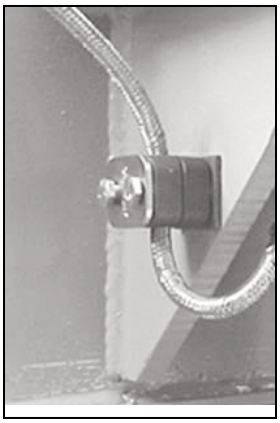
c. Lift the platform so the load cell locating tool can be removed from the upper and lower bearing cups. Once removed, fill both cups with grease, provided with the load cell(s).

CAUTION: ***Always wear eye protection!!***

d. **T**he cell has must be aligned with the flats in the lower cup. Carefully lower the scale (hydraulic jacks) while seating the bottom of the cell into the lower cup.

NOTE: *Anti rotation must be positioned to the **inside** of the scale.*

Check the scale's level and height, particularly at the approaches. Use the load cell shims provided to adjust load cell cups for correct height and to ensure that all cells share the proper amount of load. Center section cells will have up to twice the deadload of end section cells.



e. Once satisfied with height and level, tighten the module-to-module bolts.

- The bolts should be torqued to 690 ft lbs.

f. Load cell cables:

- Route the load cell cables through the holes in the channels to the SSC/PPS mounting bar location in the center. Install the strain relief 'clamps' for load cell cables on the strain relief base that is welded onto the scale.

9. Final Checking Adjustment:

a. Adjust End Checking

- Remove shims on end checking to allow 1/16" to 1/8" clearance.

b. Adjust side checking bolts to allow 1/16" clearance from channel.

Section 3: Field Pour Installation

The Field Pour modules' installation is much the same as the other models, with some minor variations. The basic procedure is to install the foundation for the scale, install the base plates, position and level the shoring, install the platform modules with locator tools in place, pour the deck, cure the concrete, then install the load cells.

3.1. Concrete Specifications:

Use the Certified Prints for all concrete specifications.

3.2. Shoring:

The recommended shoring is made up of the provided 4" x 4" timbers 12 feet long. The "crown" of the shoring timbers should be up. The actual elevation of the timbers will depend on the distance from the foundation floor to the bottom of the modules. Shims should be placed under each end and center of the shoring beams to achieve proper elevation. The shoring timbers should be located equally spaced between the load cells. *See drawing on page 16.*

3.3. Setting the Field Pour Modules:

1. The shoring timbers should be placed before setting scale modules. Using the approach walls as the reference, place the shoring timbers so they will be at the same elevation as the bottom of the weigh bridge. A tight string between the approach walls could be used.
2. Install the modules as outlined in Section 2C of this manual, starting with the center module.
3. Wedge additional shims as required under the end of the shoring timbers to ensure tight contact between the scale frame and the shoring.

****WARNING****

The modules MUST be set on locating tools. Do NOT support load cell bracket with lumber, as this will cause warping.

NOTE: *Plug all weep holes in the module pans before pouring concrete.*

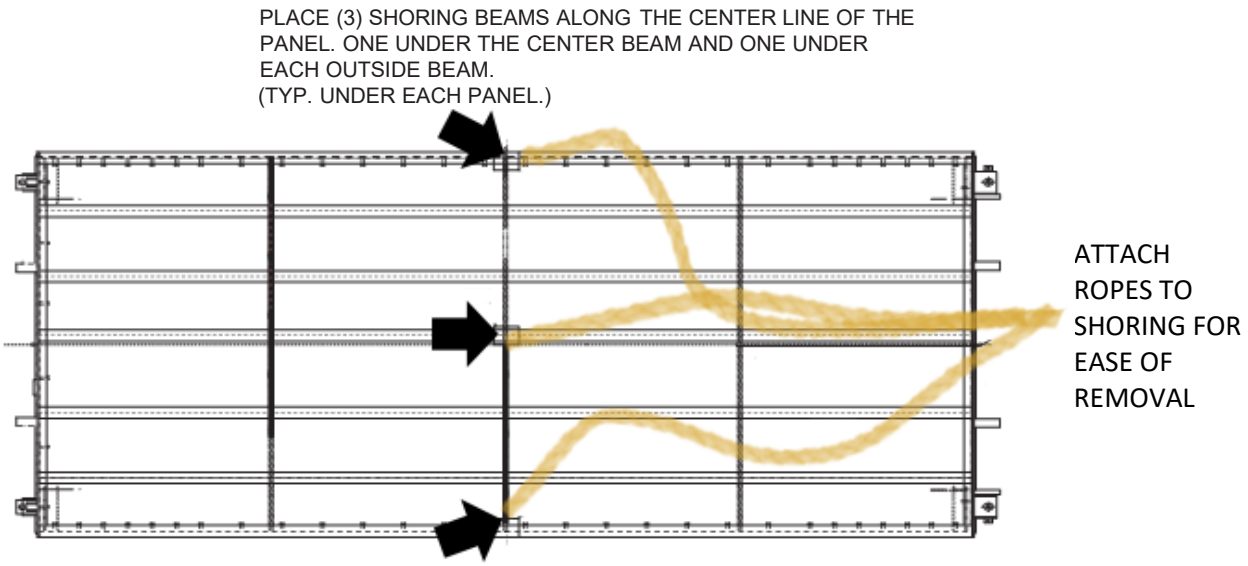
4. Pour the concrete. A spud-type vibrator is required to remove any air bubbles and to work the material into all of the corners.

CAUTION!: *Make sure the edge beams of the scale are straight and not bowed down, or in, before pouring the concrete deck. Do NOT install the load cells before the concrete deck is cured.*

5. A "rough broom finish" is recommended. Crown concrete 1/4" to allow drainage.
   - Allow the concrete to cure until the required minimum strength as specified on the Certified Prints is achieved.

6. After the concrete has cured, remove all of the shoring. The modules will have to be lifted so the shoring can be removed.

Shoring Instructions



NOTE: *IN ORDER TO PREVENT PANEL PAINT FROM STICKING TO THE WOOD SHORING BLOCK,PLACE A PIECE OF TINFOIL ON TOP OF EACH SHORING BLOCK. (BETWEEN BLOCK AND PANEL.)*

CONCRETE POURING & FINISHING INSTRUCTIONS:

1. SHORE UNDER EACH PANEL BEFORE POURING CONCRETE AS DESCRIBED ABOVE. SHORING IS NOT REQUIRED FOR 10' AND 15' PANELS.

2. MASK THE GAPS BETWEEN MODULES WITH DUCT TAPE. IF THE SCALE IS MOUNTED FLUSH WITH THE GROUND (PIT), MASK BETWEEN THE SCALE AND FOUNDATION WALL ALSO.
3. POUR CONCRETE IN EACH MODULE. USE 4000 PSI CONCRETE MINIMUM. NOTE: DO NOT CAST UNLESS TEMPERTURE IS ABOVE 40 DEGREES FAHRENHEIT. USE A VIBRATOR TO ASSURE A THOROUGH FILL. SCRAPE THE EXCESS CONCRETE FROM EACH MODULE WITH A BOWED 2" X 4" 12'-0" LG. THE BOW WILL CROWN THE MODULE AT THE CENTER TO PROVIDE FOR PROPER DRAINAGE.
4. FINISH THE CONCRETE DECK WITH A BULL FLOAT AND HAND TROWEL OR BROOM TO A DESIRABLE FINISH.
5. REMOVE DUCT TAPE AND CLEAN THE EXCESS CONCRETE FROM THE SIDES OF THE SCALE.
6. IN ORDER TO FURTHER INCREASE THE CONCRETE DECK TENSILE CAPACITY, MOIST CURE FOR SEVEN DAYS USING WET BURLAP IN CONJUNCTION WITH POLYETHYLENE SHEETING.
7. DO NOT USE OR CALIBRATE THE SCALE UNTIL THE DECK IS CURED (21-28 DAYS), OR HAS REACHED 4000 PSI MINIMUM.

CAUTION!: *At the time the deck is poured, samples must be taken for later testing. At the end of 14 days, test the first sample. A sample must pass the test at 4,000 psi before the scale can be placed into ervice. A copy of the test report must be retained as part of the customer record in the service center or distributor location, otherwise warranty will be void.*

7. Install the load cells in place of the locator tools.

****WARNING****

Place hydraulic jacks ONLY at the CORNERS of the modules. Hydraulic jacks must be placed on opposite sides to lift the module in a level position. Lifting mid- span or between load cells will cause cracks in the concrete

8. Set end wall checking at 1/8" maximum, 1/16" minimum gap.

- Set side wall checking at 1/16" gap.

Section 4: Electrical Installation

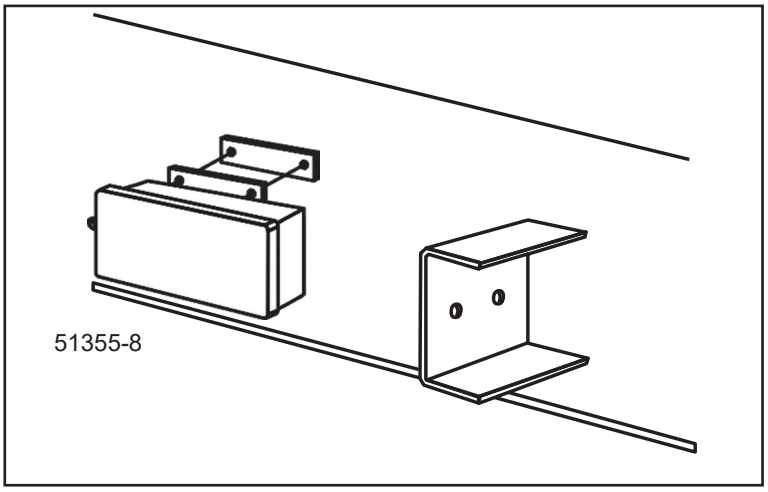
4.1. Balance Box 21912 Installation for Analog Indicators

1. Introduction: Balance box 21912 is intended to be installed at the platform, one box per section.

2. Description: Each Stainless Steel balance box has four (4) terminal blocks to connect two (2) load cells and two (2) cables for connection to the analog instrument. Load cells and sections are adjusted by means of adjusting potentiometers.

3. Installation

a. Boxes: The Junction Box has 'tabs' for bolting to adapters either in the space between modules. Attach the ground wire lug to one of the mounting bolt studs. Tighten securely to provide a good electrical ground.



b. Wiring: Cable used in ALL wiring MUST be a minimum of 18 AWG. Use cable 17204 or an equivalent. The balance boxes are interconnected from TB1 to TB2 beginning at the end section where the interface cable conduit enters the scale. An alternate method if the conduit enters the scale in the middle is to use 14478 Instrument SVP. This will allow separate connections to go in each direction toward the ends of the scale. See Bulletin 50113 for the wiring diagrams.

4.2. Load Cell wiring color codes -- Analog

4 11/16" RC Load Cell Color Code

Color	Description
Blue	(-) Excitation
Red	(+) Excitation
Gray	(-) Signal
Green	(+) Signal
Yellow	Shield

4.3. Analog Wiring

1. Cells to Junction Box

Terminal	TB3	TB4
1	(-) EXC	(-) EXC
2	(+) EXC	(+) EXC
3	Shield	Shield
4	(+) SIG	(+) SIG
5	(-) SIG	(-) SIG

2. Box to Box

Terminal	TB1
1	(-) EXC
2	(+) EXC
3	(+) SENSE
4	(-) SENSE
6	SHIELD
7	(+) SIG
8	(-) SIG

3. Box to Instrument

Terminal	TB2
1	(-) EXC
2	(+) EXC
3	(+) SENSE
4	(-) SENSE
6	SHIELD
7	(+) SIG
8	(-) SIG

- The Full Electronic scales have been designed to provide protection from the effects of moisture.
- The load cells have been calibrated with the cable attached, therefore the cable should NOT be cut.
- The cable is connected directly to the Junction box through a sealed bushing which MUST be tightened with pliers to keep water/moisture out of the box.
- All cabling should have a "drip loop" at the cell or box entry location to help prevent water entry.
- On all boxes, particularly stainless steel, the black plastic fittings have "O" rings that can be forced out of position if the bushing itself is not tight. To prevent this, first tighten the inner nut securing the bushing in the hole, then insert cable and carefully tighten gland with pliers until it is very snug. Do not over-tighten where bushing turns.
- The cover MUST be secured.

NOTE: *Balance Boxes must have one (1) ground rod in the pit for a proper connection.*

CAUTION!: *Make Without adequate ground connections, the surge voltage protection installation is not complete.*

4. Indicator Cable Connection, Balance Box

The two (2) cables from the two (2) center section boxes will enter the 14478Instrument SVP and terminate there. The cable from the indicator will connect at 14478 Instrument SVP as well. Prepare the cable ends in the standard manner. Use Appendix II for wiring instructions of all pit balance boxes. Connect the indicator interface cable to the instrument in the scale house per the instructions in the appropriate indicator service manual.

5. Adjusting cells/sections

Try to install load cells of matching outputs in sections to reduce side-to-side errors. When calibrating, place weights directly over the cell or directly on the section being tested. Adjust the potentiometers for the correct cell or section to compensate for differences.

4.4. Wiring SSCs and PPSs for Intalogix™ Systems

1. Introduction

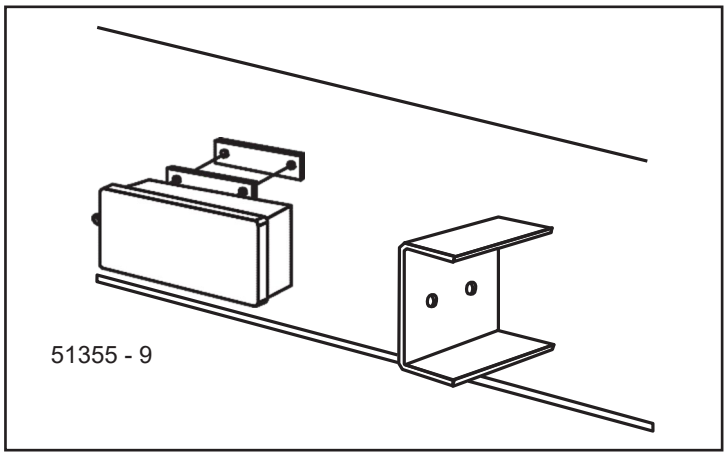
Intalogix™ systems utilize smart sectional controllers (SSCs) and pit power supplies (PPSs) for load cell excitation and signal processing.

2. Description

There is one (1) SSC per section and one (1) PPS for the entire platform (unless the number and resistance of the cells require a second pit power supply). SSC boxes have four (4) terminals two (2) for load cells and two (2) for "inter connecting" to other SSC boxes or terminating to a pit power supply. All cell/section/scale adjustments are made via the Intalogix™ system instrument.

3. Installation

a. Boxes: The Junction box has 'tabs' for bolting to adapters either in the space between modules.



b. Wiring: Cable used in all wiring must be a minimum of 18 AWG. Use cable 17204 or 17246. Use appropriate service manual for the Indicator being installed, or Appendix III to connect PPSs and SSCs.

NOTE: ***Intalogix™ installations utilize a different numbering system for load cells because of digital addressing of the SSCs.***

Number cells as follows: *With respect to the following starting position, face the platform from where the indicator is located. The cell at the upper left (far side) of the platform is Cell_1. The cell positions along the far side will be odd cell numbers, the near side locations will be even cell numbers.*

NOTE: *SSCs have connections for 2 load cells, TB 1 and TB 2. The odd numbered cell should go to TB1 connection, and the even numbered cell to TB2 connection.*

4.5. SSC

Wire cells into each section's SSC per the appropriate manual. Remember, odd numbered cells go to TB 1 location, and even numbered cells go to TB 2 location. Load cell 'drain' wires connect to ground lug on the sectional controller box exterior.

4.6. Grounding, SSCs

Intalogix™ systems must have 2 ground rods in the pit for proper connection. Pit power supplies use a ground separate from the steel and SSC ground rod.

4.7. Indicator-to-PPS Cable Connection

Prepare the cable ends in the standard manner. Use the appropriate manual for wiring instructions of all pit SSCs and power supplies. Connect the indicator interface cable to the instrument in the scale house per the instructions in the appropriate indicator service manual.

Section 5: maintenance

5.1. Scale Maintenance:

1. Check for accumulations of solid material under the scale which may affect the accuracy, i.e., ice, frozen mud, debris.
2. Check to see that the customer has cleaned under the platform regularly.
3. Inspect load cells for damage to the ends/cables, check cups and "O" rings for damage and/or excessive or uneven wear.
4. The load cell bearing cups should be inspected, cleaned and greased at least TWICE per year.
5. Inspect and adjust all check bolts using anti-seize on the threads.
6. Inspect and tighten all connecting and cover plate hardware for proper tightness.

5.2. Mechanical Faults:

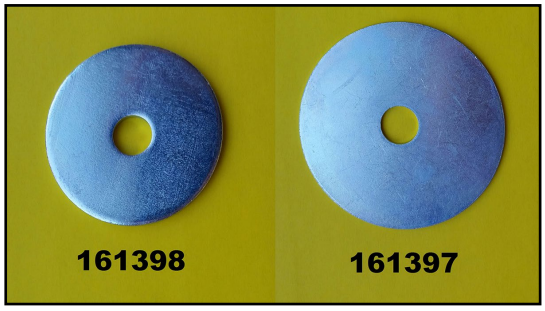
1. Check all clearances around the scale for any obstructions or interference with the free movement of the platform.
2. Check all check bolt clearances both with and without a concentrated load over each section, one at a time.
3. Check all load cells for plumb and level.
4. Inspect the boxes for leaks; the interior should be clean and dry. If there is moisture inside, clean, then dry it out thoroughly. Check that all connections at the terminal blocks are tight.

Section 6: Parts and Parts Replacement

6.1. Parts List

Part No.	Description
54511	3/4" -10 x 1 ½" Hex Bolt (cover plates)
54236	3/4" SAE Washer (cover plates)
54207	High Strength Bolt 1"-8 x 2 1/2" (for lifting brackets)
157005	Load Cell Base Plate
61743	Clamp Bar Washer (base plates)
62857	5/8" x 6" Anchor Bolts (drill-in type)
63310	Interlocking Pin
55010	Ground Rod Kit
81557	Fairbanks Red, 1 Qt.
83056	2" Paint Brush
63959	Spacer ½" x 4" x 6" (module-module)
54269	High Strength Bolt 1" x 3" w/nut (module-module)
54249	Washer 1" (module-module)
***161398**	Shim, upper receiver cup, 1/8" (2.25" OD)
***161397**	Shim, lower receiver cup, 1/16" (2.75" OD)
156264	Anti-Rotation Clip (only)
160622	Anti-Rotation Clip & Hardware Kit
63319	Side check bracket w/bumper bolts (1" x 5")
64208	Shim, longitudinal 1/4"
64209	Shim, longitudinal 1/16"
70045	Box, hardware, checking, consisting of:
	8 each 64208 - Shim, end check, ¼"
	8 each 64209 - Shim, end check, 1/16"
	4 each 64213 - Bumper check block
	4 each 70043 - 8 x 3 urethane check block
	1 each 70094 - Checking hardware kit
79747	Rub Rail PVC End Caps
105297	Rub Rail Plugs

*** See Image (right)**



6.2. Load Cells and Hardware

6.2.1. PR6221/30t C3F (FM Approved)

PART NO.	DESCRIPTION	TYPE
173115 *	**Load Cell, 4 $^{11}/_{16}$" RC, 30t (or 66k), 1000 Ohm, 2.4 mV/V (FM)**	**HV**
161197	Upper & Lower Cup (with anti-rotation pin) kit with gasket	HV
157278	Roll Pin, 3/8" x 1-1/4, Cup Retainer Baseplate	HV
157069	Locating Tool, **4 $^{3}/_{4}$"**	HV
156264	Anti-Rotation Clip (only)	HV
160622	Anti-Rotation Clip & Hardware Kit	HV
157992	Load Cell Boot (1)	HV

***** Includes Lower and Upper Cups

6.2.2. PR6221/50t C3F (FM Approval)

Part No.	Description	TYPE
175115 *	Load Cell, 4 11/16" RC, 50t (or 110k), 1000 Ohm, 2.0 mV/V	HVX
161197	Upper & Lower Cup (with anti-rotation pin) kit with gasket	HVX
157278	Roll Pin, 3/8" x 1-1/4, Cup Retainer Baseplate	HVX
157069	Locating Tool, 4 3/4"	HVX
156264	Anti-Rotation Clip (only)	HVX
160622	Anti-Rotation Clip & Hardware Kit	HVX
157992	Load Cell Boot (1)	HVX

***** Includes Lower and Upper Cups

6.3. Alternate Load Cells

Part No.	Description
183531	RCMF 30t LC, 15ft. cable, with ArmourGuard cable **with** upper & Lower cups
183551	RCMF 50t LC, 15ft. cable, with ArmourGuard cable **with** upper & Lower cups
183530	RCMF 30t LC, 15ft. cable, with ArmourGuard cable – CELL ONLY*****
183550	RCMF 50t LC, 15ft. cable, with ArmourGuard cable – CELL ONLY*****
183528	RCMF Upper Cup – UPPER CUP ONLY
183529	RCMF Lower Cub – LOWER CUP ONLY

IMPORTANT NOTE: *RCFM load cells are **NOT** Factory Mutual Approved at this time. They cannot be used with 2801 ISCs or in any hazardous application.*

***** *When replacing PR6221 cells with RCMF cells, you **MUST** also replace the cell cups.*

6.4. Spare Parts

6.4.1. Recommended Spare Parts

Part No.	Qty	Description
173115	**1**	**Load Cell, 4 $^{11}/_{16}$" RC, 30t (or 66k) (FM)**
175115	1	Load Cell, 4 $^{11}/_{16}$" RC, **50t** (or 110k) **(FM)**
161197	1	Upper & Lower Cup (with anti-rotation pin) kit

6.4.2. Startup / Commissioning Spare Parts

Part No.	Qty	Description
173115	1	Load Cell, 4 $^{11}/_{16}$" RC, 3**0t** (or 66k) **(FM)**
175115	1	Load Cell, 4 $^{11}/_{16}$" RC, **50t** (or 110k) **(FM)**

6.4.3. 2-Year Spare Parts List

Part No.	Qty	Description
173115	1	Load Cell, 4 11/16" RC, 30t (or 66k) (FM)
175115	1	Load Cell, 4 11/16" RC, 50t (or 110k) (FM)
161197	1	Upper & Lower Cup (with anti-rotation pin) kit
79747	1	Rub Rail PVC End Caps
105297	1	Rub Rail Plugs

Capital Spare Parts – Not Applicable

6.5. Load Cells and Load Cell Hardware -- ALL Models

Part	Description
173115 *	Load Cell, 4 $^{11}/_{16}$" RC, 66K (30t),1000 Ohm, 2.4 mV/V PR6221/30t C3F
175115 *	Load Cell, 4 $^{11}/_{16}$" RC, 110K (50t), 1000 ohm, 2mv/v PR6221/50t C3F
161197	Upper & Lower Cup (with anti-rotation pin) Kit with Gasket
157278	Roll Pin, 3/8" x 1-1/4" baseplate
157069	Locating Tool 4 3/4"
157992	Load Cell Boot (1)

* Includes Upper & Lower Cups

6.6. Replacing a Load Cell:

1. Remove power from the instrument.
2. Lift the scale using a proper sized and rated hydraulic jack(s) at the corner(s) closest to the "defective" cell location.
3. Disassemble the strain relief device, then remove the old cell.
4. Check upper and lower receiving cups for damage. Replace as necessary and reapply grease.
5. Insert the new cell into the upper receiving cup and position the anti-rotation pin.
6. Carefully lower the hydraulic jack(s) until the cell is set into the lower cup.
7. Remove the cover of the SSC/Jct box, then loosen the gland bushing to free the cable.
8. Remove the old cell wires and connect new cell wires in the balance Box/SSC. Seal the cover and tighten all gland nuts with a wrench to secure.
9. Test and adjust scale as necessary.

Section 7: Accessories

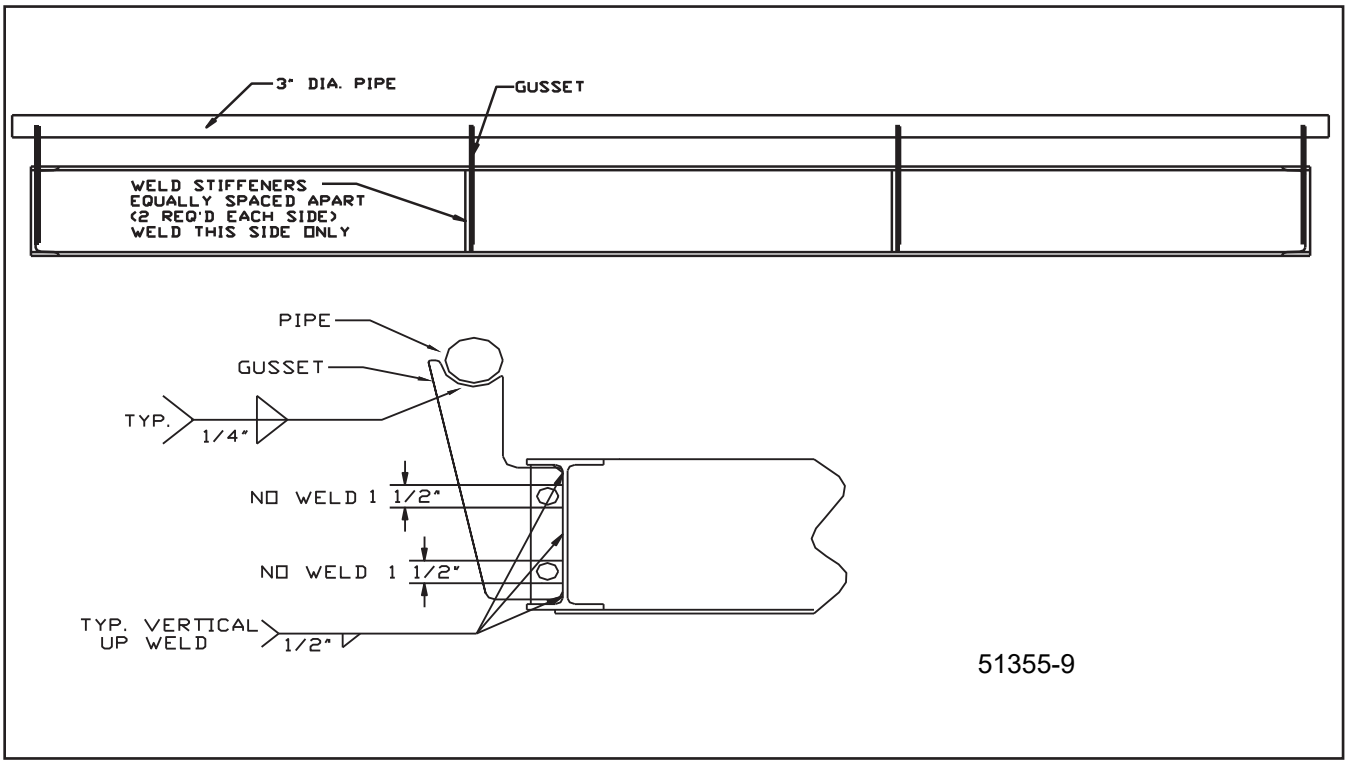
Rub-Rails: These accessories come in Factory-installed and Field-installed types. (*Does not apply to a scale installed in a pit with the deck at grade*)

7.1. Field-Installed Rub Rail Installation

- Use the print with the accessory for actual measurements.
- Clean (remove primer) the areas to be welded for good penetration.
- Weld stiffeners to the side weldments.
- Bolt the gussets to the stiffeners and end weldments.
- Weld pipe to the gussets.
- Clean and paint (paint provided) all weld areas.

**** WARNING ****

Fairbanks does NOT recommend using foundation- or ground-installed guide rails along the sides of a truck scale platform. Damage may occur to the scale if a truck hits the guide rail, transferring damaging forces to the platform and the checking system. Use of this style guide rail will void product warranty



Appendix I: Foundation Check List

Foundation Inspection

FOUNDATION FIELD CHECK LIST

(Field Form)

A Foundation Inspection **should ALWAYS** be performed prior to scale installation and to **confirm** correct foundation construction. If possible this should be done prior to scale shipment.

Tools required:

- ☐ Certified drawings and site plan
- ☐ 100' and 25' steel tapes
- ☐ Laser or builders level if possible
- ☐ 2' to 4' level
- ☐ Hammer and concrete nails
- ☐ String line (construction string)
- ☐ Straight edge for pit foundations (2 x 4, very straight and 4" wider than pit walls
- ☐ Construction paint (up-side-down type, for marking concrete).

Perform the following Foundation Checks. Refer to Methods and Procedures for complete description of each step. Recommended to copy check list and keep in job file. ALWAYS familiarize yourself with the **CERTIFIED** foundation prints for the job you are working on as model numbers and specifications are subject to change.

☐ 1. **Site Plan and Certified Prints** should be thoroughly reviewed to confirm accurate locations to the scale and all extra items (scoreboards, lights, poles, etc.) that are included in the bid or contract.

☐ 2. **Check for truck and crane access**, overhead wires, fences, green concrete, etc.

☐ 3. **Dimensional length and width check**; check all 4 sides and record on chart (other side).

☐ 4. **Diagonal measurements** check to verify that the foundation is square and record on chart (other side). These measurements should be equal, or within 1/2". Greater error could result in the scale not fitting in the foundation.

☐ 5. **Check ALL pier heights** to make sure they are the proper elevation and record on chart (other side). To high and the scale will not fit correctly, to low could result in excessive shimming..

☐ 6. **In pit foundations check walls to verify they are straight.** Straight walls are very important, but are even more critical for modular scales like the Rodan series.

☐ 7. **Verify conduit locations** and pull strings (if needed).

☐ 8. **Verify ground rod locations.**

☐ 9. **Verify that drains and sump openings** are piped correctly and are clear of debris.

☐ 10. **Check the end coping** to ensure they are centerline and that the coping is correct for the scale being installed (10',11' or 12' width, etc). Check all coping, side and end, for hollow areas.

☐ 11. **Verify location of any and all required embeds or pre-installed baseplates** (i.e., Hwy System, RR scales, etc). All of these dimensions will be located on the Certified foundation prints.

☐ 12. **Layout** - To help in locating pre-installed baseplates, embeds, load-cell centerlines, etc., refer to Methods and Procedures section on Layout. **See other side for foundation & Layout charts.**

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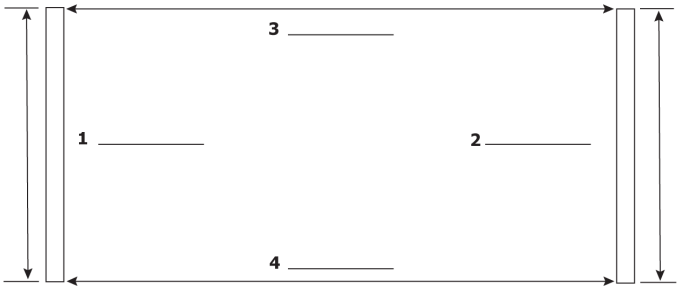
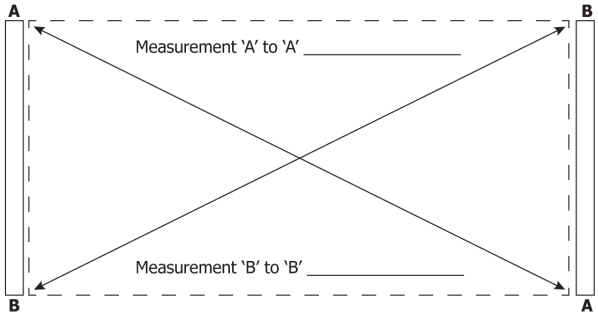
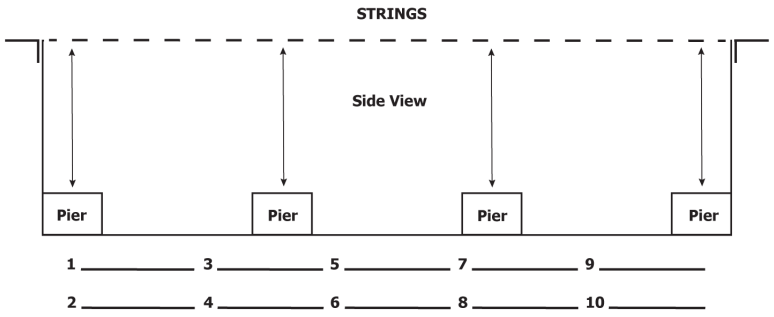


Length & Width Check

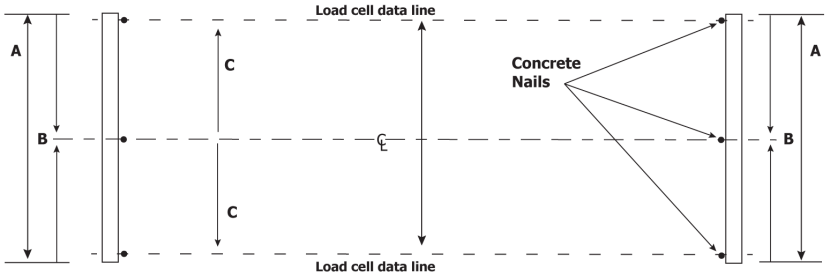
Diagonial Measurements Check





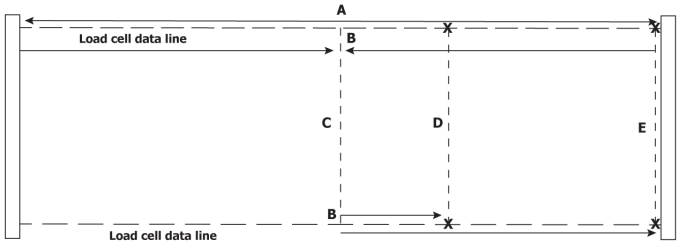
Pier Height Check

Longitudinal Layout



A = Coping Length
B = 1/2 of the coping length OR Centerline
C = Distance from Centerline to load cell data lines

● = Concrete Nails
℄ = Centerline of the Scale



Lateral Layout

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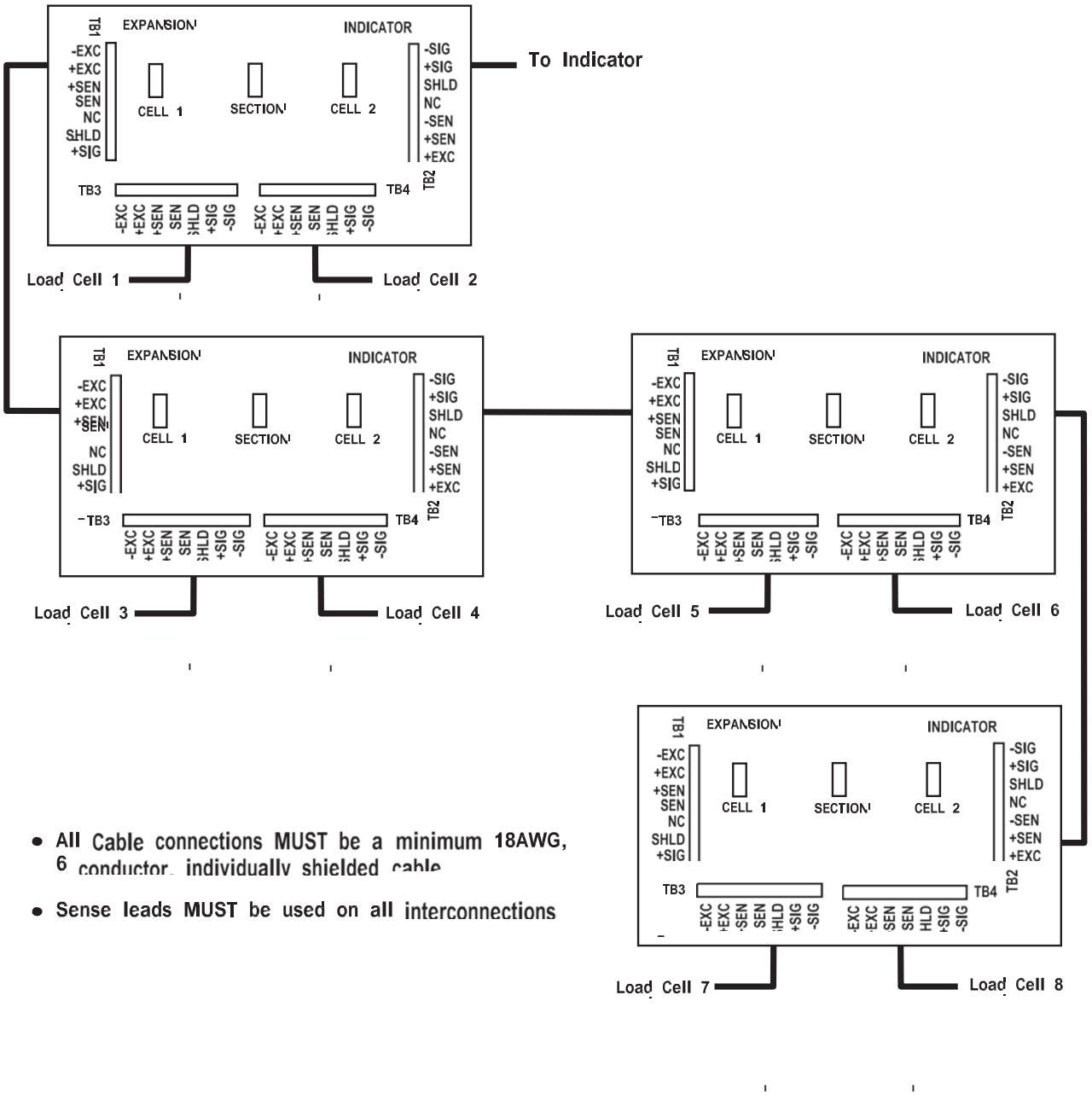
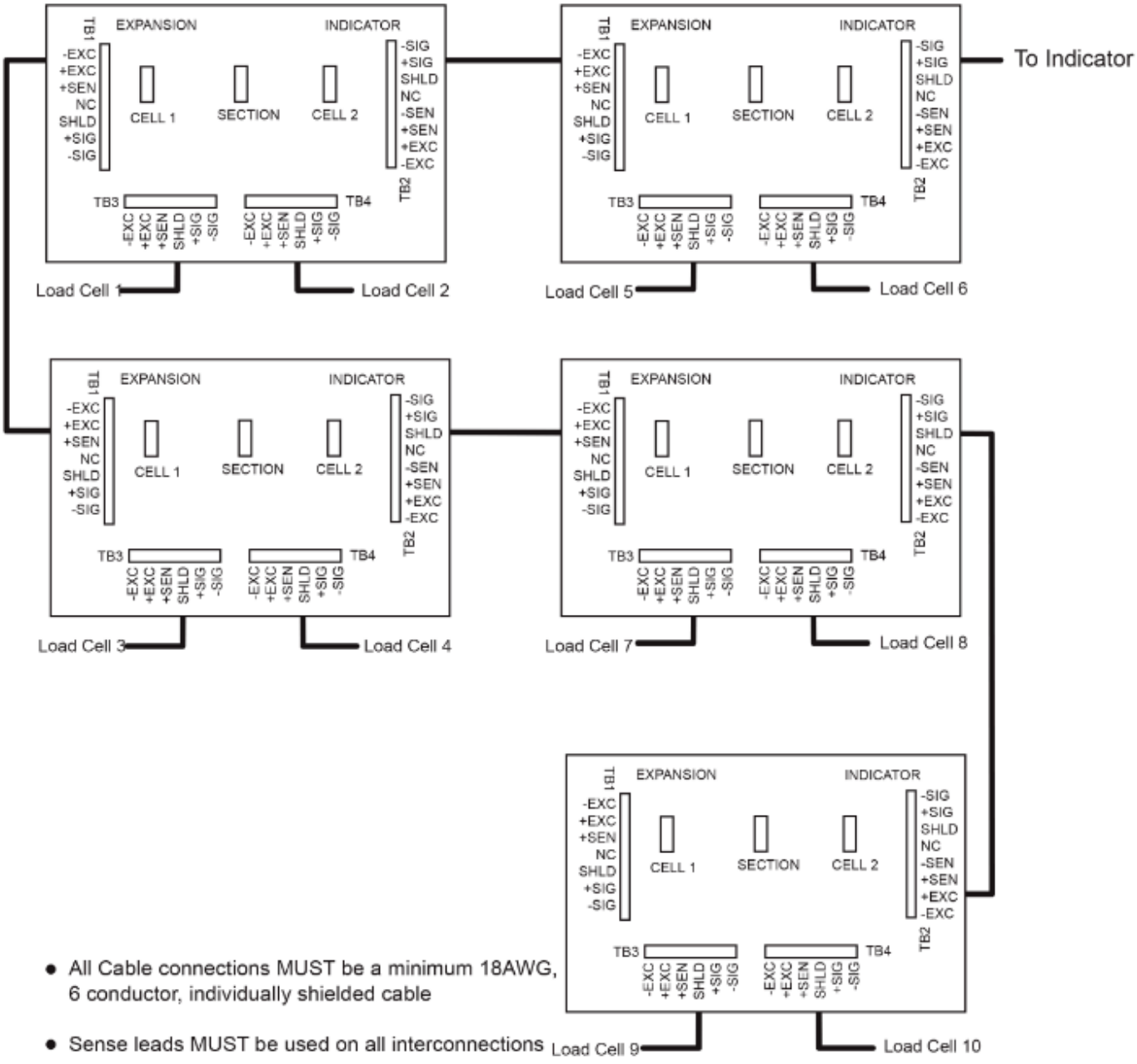
Appendix II: 4-Section Analog Scale



- All Cable connections MUST be a minimum 18AWG, 6 conductor, individually shielded cable
- Sense leads MUST be used on all interconnections

4 Section Analog

Appendix III: 5-Section Analog Scale

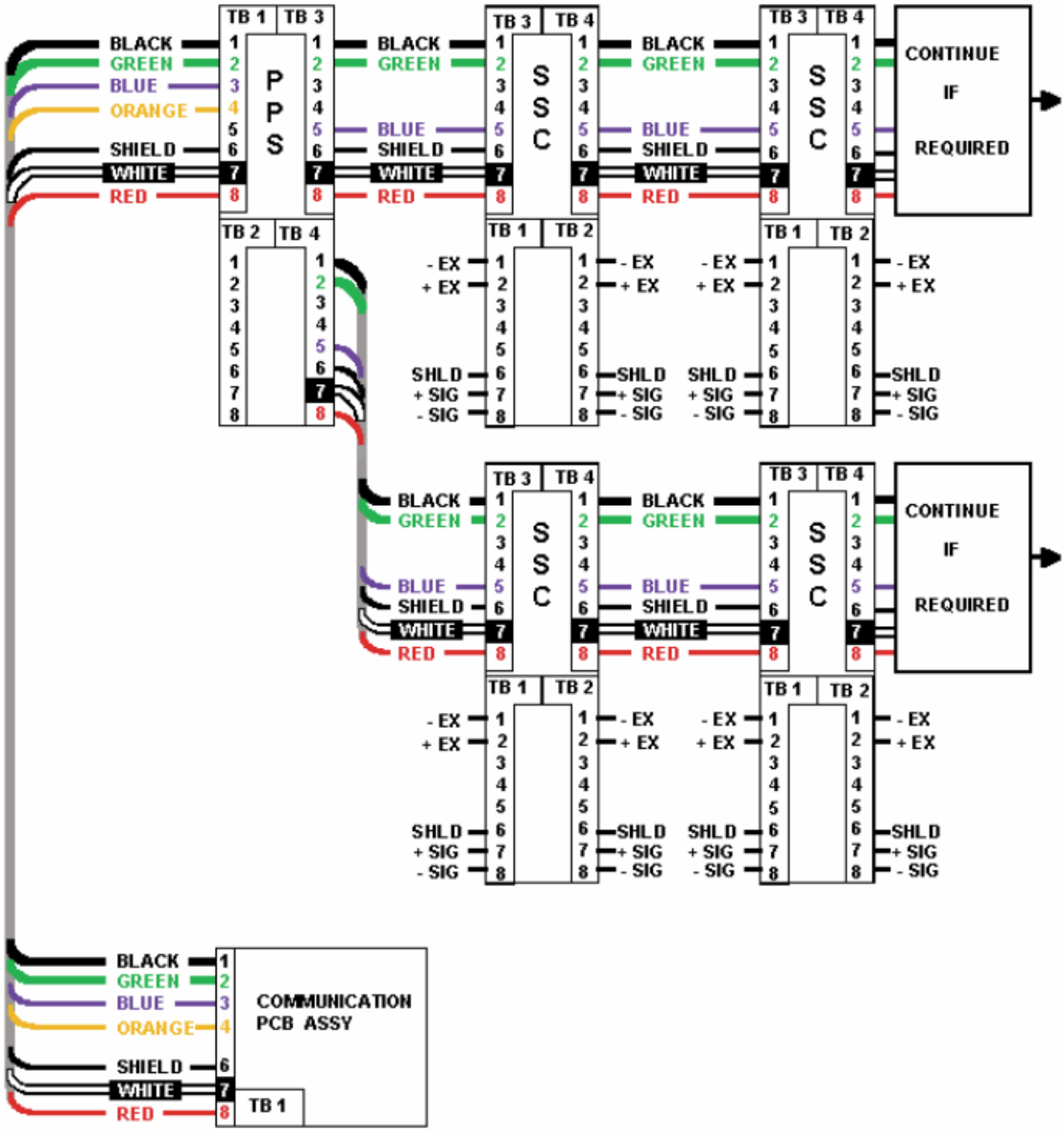


- All Cable connections MUST be a minimum 18AWG, 6 conductor, individually shielded cable
- Sense leads MUST be used on all interconnections

5-Section Analog

51355 - 11

Appendix IV: 4-Section Intalogix Scale



Appendix V: Talon Cover Plated Models

		Talon Cover Plated Scales					
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
FP	10 ft.	6010	10	10	90	60	2
		6010	15	10	90	60	2
		6010	20	10	90	60	2
		6010	23	10	90	60	2
		6010	30	10	90	90	3
		6010	40	10	90	90	3
		6010	47	10	90	90	3
		6010	60	10	90	120	4
		6010	70	10	90	120	4
		6010	75	10	90	150	5
		6010	80	10	90	150	5
		6010	90	10	90	150	5
		6010	100	10	90	150	6
		6010	110	10	90	150	6
		6010	117	10	90	150	6
		6010	120	10	90	150	7
	11 ft.	6010	10	11	90	60	2
		6010	15	11	90	60	2
		6010	20	11	90	60	2
		6010	23	11	90	60	2
		6010	30	11	90	90	3
		6010	40	11	90	90	3
		6010	47	11	90	90	3
		6010	60	11	90	120	4
		6010	70	11	90	120	4
		6010	75	11	90	150	5
		6010	80	11	90	150	5
		6010	90	11	90	150	5
		6010	100	11	90	150	6
		6010	110	11	90	150	6
		6010	117	11	90	150	6
		6010	120	11	90	150	7

Talon Cover Plated Scales							
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
FP	10 ft.	6010	10	10	100	60	2
		6010	15	10	100	60	2
		6010	20	10	100	60	2
		6010	23	10	100	90	2
		6010	30	10	100	90	3
		6010	40	10	100	90	3
		6010	47	10	100	120	3
		6010	60	10	100	120	4
		6010	70	10	100	150	4
		6010	75	10	100	150	5
		6010	80	10	100	150	5
		6010	90	10	100	150	5
		6010	100	10	100	150	6
		6010	110	10	100	150	6
		6010	117	10	100	150	6
		6010	120	10	100	150	7
	11 ft.	6010	10	11	90	60	2
		6010	15	11	90	60	2
		6010	20	11	90	60	2
		6010	23	11	90	60	2
		6010	30	11	90	90	3
		6010	40	11	90	90	3
		6010	47	11	90	90	3
		6010	60	11	90	120	4
		6010	70	11	90	120	4
		6010	75	11	90	150	5
		6010	80	11	90	150	5
		6010	90	11	90	150	5
		6010	100	11	90	150	6
		6010	110	11	90	150	6
		6010	117	11	90	150	6
		6010	120	11	90	150	7

		Talon Cover Plated Scales					
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
FP	12 ft.	6010	10	10	100	60	2
		6010	15	10	100	60	2
		6010	20	10	100	60	2
		6010	23	10	100	60	2
		6010	30	10	100	90	3
		6010	40	10	100	90	3
		6010	47	10	100	90	3
		6010	60	10	100	120	4
		6010	70	10	100	120	4
		6010	75	10	100	150	5
		6010	80	10	100	150	5
		6010	90	10	100	150	5
		6010	100	10	100	150	6
		6010	110	10	100	150	6
		6010	117	10	100	150	6
		6010	120	10	100	150	7

		Talon Cover Plated Scales					
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
SD	10 ft.	6020	10	10	90	60	2
		6020	15	10	90	60	2
		6020	20	10	90	60	2
		6020	23	10	90	60	2
		6020	30	10	90	90	3
		6020	40	10	90	90	3
		6020	47	10	90	90	3
		6020	60	10	90	120	4
		6020	70	10	90	120	4
		6020	75	10	90	150	5
		6020	80	10	90	150	5
		6020	90	10	90	150	5
		6020	100	10	90	150	6
		6020	110	10	90	150	6
		6020	117	10	90	150	6
		6020	120	10	90	150	7

		Talon Cover Plated Scales					
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
SD	11 ft.	6020	10	10	90	60	2
		6020	15	10	90	60	2
		6020	20	10	90	60	2
		6020	23	10	90	60	2
		6020	30	10	90	90	3
		6020	40	10	90	90	3
		6020	47	10	90	90	3
		6020	60	10	90	120	4
		6020	70	10	90	120	4
		6020	75	10	90	150	5
		6020	80	10	90	150	5
		6020	90	10	90	150	5
		6020	100	10	90	150	6
		6020	110	10	90	150	6
		6020	117	10	90	150	6
		6020	120	10	90	150	7

		Talon Cover Plated Scales					
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
SD	10 ft.	6020	10	10	100	60	2
		6020	15	10	100	60	2
		6020	20	10	100	90	2
		6020	23	10	100	90	2
		6020	30	10	100	90	3
		6020	40	10	100	120	3
		6020	47	10	100	120	3
		6020	60	10	100	150	4
		6020	70	10	100	150	4
		6020	75	10	100	150	5
		6020	80	10	100	150	5
		6020	90	10	100	150	5
		6020	100	10	100	150	6
		6020	110	10	100	150	6
		6020	117	10	100	60	6
		6020	120	10	100	60	7

Talon Cover Plated Scales							
		Model	L feet	W feet	CLC Klbs	Cap tons	Sec
SD	11 ft.	6020	10	10	100	60	2
		6020	15	10	100	60	2
		6020	20	10	100	60	2
		6020	23	10	100	60	2
		6020	30	10	100	90	3
		6020	40	10	100	90	3
		6020	47	10	100	90	3
		6020	60	10	100	120	4
		6020	70	10	100	120	4
		6020	75	10	100	150	5
		6020	80	10	100	150	5
		6020	90	10	100	150	5
		6020	100	10	100	150	6
		6020	110	10	100	150	6
		6020	117	10	100	150	6
		6020	120	10	100	150	7
	12 ft.	6020	10	10	100	60	2
		6020	15	10	100	60	2
		6020	20	10	100	90	2
		6020	23	10	100	90	2
		6020	30	10	100	90	3
		6020	40	10	100	120	3
		6020	47	10	100	120	3
		6020	60	10	100	150	4
		6020	70	10	100	150	4
		6020	75	10	100	150	5
		6020	80	10	100	150	5
		6020	90	10	100	150	5
		6020	100	10	100	150	6
		6020	110	10	100	150	6
		6020	117	10	100	60	6
		6020	120	10	100	60	7

Talon Cover Plated Series Truck Scale

Installation Manual
Document 51355

Fairbanks Scales Inc.
www.fairbanks.com