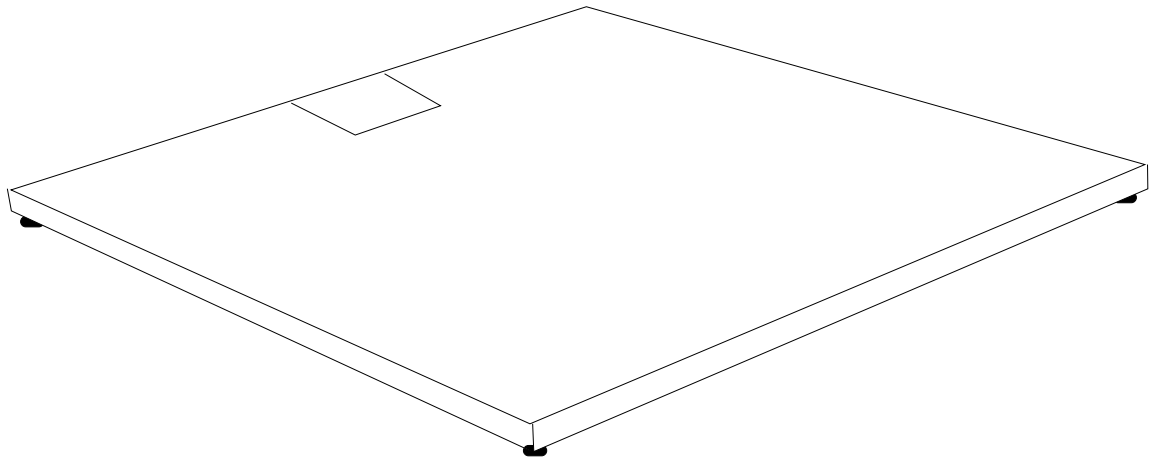


Floor Scale



Amendment Record

FLOOR SCALE

Document #50612

Manufactured by Fancor, Inc.

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Kansas City, Missouri 64106

Issue 1		
Issue 2	11/97	
Issue 3	08/01	Update the procedures.
Issue 4	10/01	Update the Electrical Schematic on page 6.
Issue 5	11/01	Removed brand name references.
Issue 6	01/02	Updated manual.
Issue 7	05/02	Added note on page 16.
Issue 8	12/02	Corrected part number on analog series parts list. Updated note callouts.
Revision 9	03/08	Revised date of load cell(s). Removed references to stainless steel model. Altered image: 21896 MS .

Disclaimer

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Section 1: General Information

INTRODUCTION

The Floor Scale is available in two series.

- The Analog Series using a standard junction box for interfacing to most analog indicators
- The Intalogix™ series using a Quad Multiplexer Box (QMB) for interfacing to an Intalogix™ Technology indicator.

NOTE: *It is the owner's responsibility to document, notify, and follow-up regarding shipping damage with the carrier.*

DESCRIPTION

- The scale platform is shipped in a crate, fully assembled and wired.
- The floor scale sizes range from **30" x 30" to 6' x 8'**.
- The floor scale capacities range from **1K to 10K (lbs)**.
- Both scale types are equipped with a **twenty-five (25) foot** interface cable.
- The junction box is constructed of stainless steel and all models have threaded holes in the decks for attaching eyebolts to facilitate installation and cleaning.

NOTE: *Specifications and sizes are shown in **Appendix II**.*

Section 2: Company Service Information

GENERAL SERVICE POLICY

Prior to installation, ***always*** verify that the equipment satisfies the customer's requirements as supplied, and as described in this manual.



If the equipment cannot satisfy the application and the application cannot be modified to meet the design parameters of the equipment, **the installation should NOT be attempted.**

It is **the customer/operator's responsibility** to ensure the equipment is operated within the parameters of the equipment's specifications and protected from accidental or malicious damage.

WARNING!

Absolutely NO physical, electrical or program **modifications** other than selection of standard options and accessories can be made by customers to this equipment

Repairs are performed by Service Technicians and Authorized Distributor Personnel ONLY!

Failure to comply with this policy voids all implied and/or written warranties

OVERVIEW

Physical Installation Notes

- Check all devices for proper operation. If any error messages occur, refer to Troubleshooting or the proper manual of that device.
- ***Only those charges which are incurred as a result of the equipment's inability to be adjusted to performance specifications may be charged to warranty.***
- No physical alterations (mounting holes, etc.) are allowed during installation.

The installing technician is responsible that all personnel are fully trained and familiar with the equipment's capabilities and limitations before the installation is considered complete.

- All electrical assemblies must be replaced as assemblies or units.
 - Replacement of individual components is not allowed.
 - These components must be returned intact for replacement credit per normal procedures.
- All electronic and mechanical adjustments are considered to be part of the installation, and are included in the installation charge(s).
 - Included is any required computer programming or upgrades.
 - Included are any accuracy and/or operational specification changes.
- The AC receptacle / outlet shall be located near the Indicator and easily accessible.
- Electrical connections other than those specified may not be performed.

Conferring with Our Client

- The technician must be prepared to recommend the arrangement of components which provide the most efficient layout, utilizing the equipment to the best possible advantage.
- The warranty policy must be explained and reviewed with the customer.

Pre-Installation Checklist

The following points should be checked and discussed with the **Area Sales Manager and/or customer**, if necessary, before the technician goes to the site and installs the equipment.

- ✓ Check the customer's application to make certain it is within the capabilities and design parameters of the equipment.
- ✓ If the installation process might disrupt normal business operations, tell the customer and ask that they make ample arrangements.
- ✓ Be sure that the equipment operator(s) are available for training.
- ✓ The service technician reviews the recommended setup with the Area Sales Manager or Area Service Manager, and together they identify all necessary variations to satisfy the customer's particular application.



Unpacking

Follow these guidelines when unpacking all equipment:

- ✓ Check in all components and accessories according to the customer's order.
- ✓ Remove all components from their packing material, checking against the invoice that they are accounted for and not damaged.
 - *Advise the shipper immediately, if damage has occurred.*
 - *Order any parts necessary to replace those which have been damaged.*
 - *Keep the shipping container and packing material for future use.*
 - *Check the packing list.*
- ✓ Collect all necessary installation manuals for the equipment and accessories.
- ✓ Open the equipment and perform an inspection, making certain that all hardware, electrical connections and printed circuit assemblies are secure.
- ✓ Do not reinstall the cover if the final installation is to be performed after the pre-installation checkout.



Equipment Checkout



Position the equipment with these points in mind:

- ✓ Intense direct sunlight can harm the display.
- ✓ Do not locate near magnetic material or equipment/Indicators which use magnets in their design.
- ✓ Avoid areas which have extreme variations in room temperatures. Temperatures outside the Indicator's specifications will affect the weighing accuracy of this product.
- ✓ Do not load the platform if there is any evidence of damage to the platform or supporting structure.

Users' Responsibility

- ✓ All electronic and mechanical calibrations and/or adjustments required for making this equipment perform to accuracy and operational specifications are considered to be part of the installation.
 - They are included in the installation charge.
 - Only those charges which are incurred as a result of the equipment's inability to be adjusted or calibrated to performance specifications may be charged to warranty.
- ✓ Absolutely no physical, electrical or program modifications other than selection of standard options and accessories are to be made to this equipment.
- ✓ The equipment consists of printed circuit assemblies which must be handled using ESD handling procedures, and must be replaced as units.
 - Replacement of individual components is not allowed.
 - The assemblies must be properly packaged in ESD protective material and returned intact for replacement credit per normal procedures.



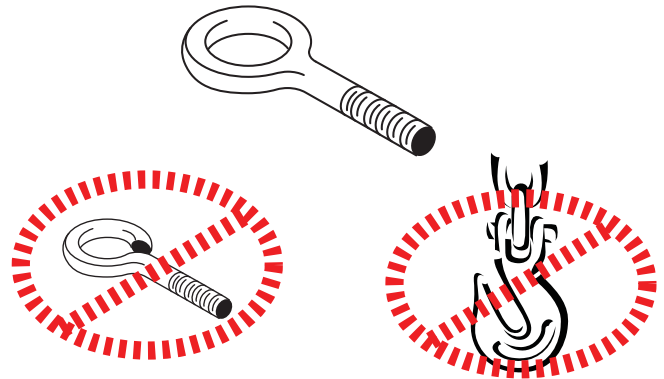
Section 3: Scale Installation

1. Select a location that is flat, solid, level, and one that fully supports the weight of the platform plus a full capacity load.
2. Remove the top of the crate and all packing material.
3. Screw the **two (2) eyebolts** into the threaded adapters in the platform top.
4. Use a forklift or other lifting means, along with chains, cables, or nylon straps to remove the scale from the crate bottom.

TWO TYPES of EYE BOLTS

✓ Closed Gap Eyebolts

- Open Gap Eyebolts (**NOT USED**)
- Lifting Hooks (**NOT USED**)



C A U T I O N

**DO NOT use hooks or unclosed eyebolts.
Failure to use proper lifting tools may result
in personal injury.**

5. Set the scale so that the interface cable exits in a direction where it can be protected.
 - If possible, use a cable protector to reduce 'trip' hazards and to protect the interface cable from being damaged.
6. Level the scale by removing the hole plugs in the corners, then use a screwdriver to turn the threaded 'leg' of the foot assembly.

INSTALLATION, CONTINUED

7. Wire the scale cable to the proper type indicator, as shown in the chart below.
8. Once the scale platform is completely wired to the indicator, calibrate the unit.
 - Follow the appropriate indicator service manual to ensure a good calibration.
 - **Typically, the Load Cells are pre-wired and connected.**

Analog Interface (Junction Box 67171)

WIRE COLOR	FUNCTION	ANALOG INSTRUMENT
Black	(–) Excitation	(–) Excitation
Green	(+) Excitation	(+) Excitation
Yellow	Shield	Shield
White	(+) Signal	(+) Signal
Red	(–)Signal	(–)Signal

Note: Models manufactured before **March 2008** may contain the following load cell parts, and use the **West Coast wiring style**:

- 58902 – 1K, 2.5K
- 12896 – 5K
- 63593 – 10K

Wiring Connections for an Intalogix™ Technology Interface (QMB 15291)

QMB Terminal	WIRE COLOR	FUNCTION	ANALOG INSTRUMENT
1	Green	(–) Excitation	1
2	Red	(+) Excitation	2
3	Black	Ground	3
4	White	D Out	4
5	Brown	D In	5
6	Blue	EOC	6
7	Orange	SCLK	7
8	Yellow	CS	8
9	Violet	Temperature	9
10	Gray/Shield	Chassis	10

Calibration Steps

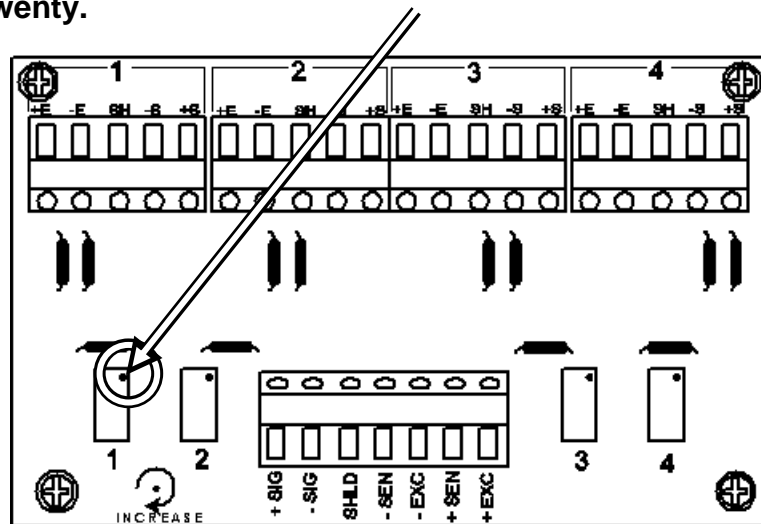
Adjust the analog interface indicator to the platform.

- Install all the corners to within **one (1) division of each other at 25% of rated capacity.**
- Follow the appropriate indicator service manual to ensure a proper calibration.

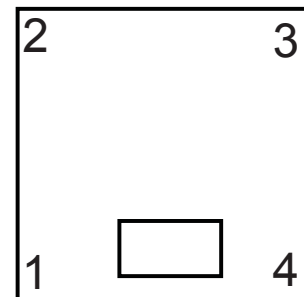
The **Junction Box Assembly (P/N 67171)** has four (4) extended range, multi-turn potentiometers, one for each load cell.

STEPS

1. Center the four **Junction Box Potentiometers** by turning the adjustment screw **counter-clock-wise position** until a clicking sound is heard, then turning each of them back **clock-wise ten (10) turns**.
 - Total number of turns is **twenty**.



2. Identify the platform corner numbers.
3. Place a concentrated weight (**25%** of platform capacity) on corner #1, then move it to #2, #3 and #4, noting the displayed reading on each corner.
4. Identify the lowest reading, and then place the concentrated weight on this corner.



50612-1

If corners **do** require adjustment, complete the following steps:

1. Place the concentrated weight on the corner displaying the lowest weight.
2. Turn the adjustment on the potentiometer clockwise (**CW**) to the displayed weight so it reads the same as the highest reading.
3. Repeat this procedure while rechecking all corners until they are equal.

Important Note: *When moving the weight(s) from corner to corner, **DO NOT zero the scale.** The purpose is to adjust the corners to be the same, and not to perform a correct calibration.*

4. Perform a zero reference check with an unloaded platform,
5. Repeat the corner test to ensure all readings are the same before proceeding.

If 'cornering' the platform is difficult, follow these steps.

1. Note which corner has the highest reading.
2. Turn all potentiometers to the full **counter-clock-wise position** until a clicking sound is heard.
3. Place the weight on the lowest reading corner.
4. Turn the corresponding potentiometer **clock-wise** to read the same as the corner with the highest reading.
5. Repeat each corner to match the one with the highest reading.

If corners **do not** require adjustment, complete the following steps:

1. Remove all weights.
2. Zero the indicator.
3. Perform a final calibration with test weights.
4. Follow the appropriate indicator service manual to ensure a proper calibration.

Section 4: Installing Accessories

Installing Bolt-Down Plates

Bolt down plates are used to keep the scale from sliding or moving when loads are applied. The plates are bolted using anchors at each of the scales feet.

STEPS

1. Place the platform into the correct position.
2. Place the bolt-down plate under the foot. The plate edge extends out from under the scale.
3. Drill **two (2) 7/16"** attachment holes using a hammer drill.
4. Insert anchors with the ***nut and washer already on them.***
5. Tap the anchor into the hole, then tighten the nuts securely.
6. Repeat this process for each plate.

Note: *If ramps are **not** installed and bolt-down plates are needed, then a full set of four bolt-down plates are required.*



Installing Ramps

Each mild steel ramp accessory comes with two integral bolt-down plates and four anchors.

STEPS

1. Place the ramp in position, then lift and set the platform feet into the bolt-down plate holes.
2. Drill the **two (2) 7/16” holes** using a hammer drill. Insert the anchors with the nut and washer already on.
3. Tap the anchor into the hole, then tighten the nuts securely.

IMPORTANT TIPS

- If two ramps are installed, then no other bolt-down plates are needed.
- If only one ramp is installed, then a set of two bolt-down plates are necessary.
- Only two ramps (total) may be installed on opposite sides of a scale platform.

Installing Bumper Guards

Bumper Guards help protect the platform from direct hits from forklift traffic. The guards are slightly higher than the scale and help deflect the forks.

STEPS

1. Place the bumper guard into a position so it protects the platform from non-scale traffic.
 - Place the bumper guard so it does not touch or interfere with the platform’s movement.
2. Drill the **7/16”** fastening holes using a hammer drill.
3. Insert the anchors with the ***nut and washer already on it.***
4. Tap the anchor into the hole.
5. Tighten the nuts securely.

Installing Pit Frames

The pit frame accessory is a one-piece welded unit.

- There are three (3) different type frames with six (6) sizes for each type.
- Two (2) are for the standard duty scale and one (1) is for the heavy capacity.
- The Pit Frame is designed for in-floor, or 'flush', applications.
- Standard duty frames are available in mild steel for all six floor scale sizes

For normal installations, a hole is cut in the concrete, the pit-frame accessory is installed in the hole, then concrete is poured around and under the frame.

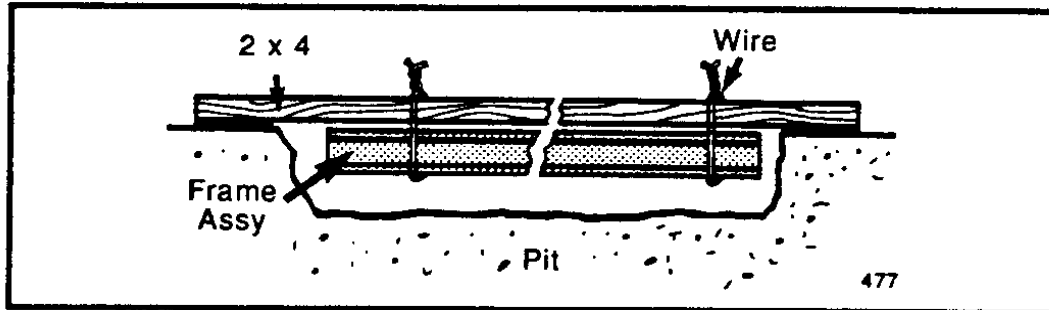
- The concrete work and frame setting is usually done by a contractor, with a scale technician completing the project by setting and installing the scale.
- Once cured, the scale platform is set into the frame and installation can be completed. No additional welding required.

STEPS

1. Place the pit frame in the approximate position it will occupy on the floor.
2. Mark out the position of the hole to be made.
 - The hole ***MUST*** be a **minimum of twelve inches (12") wider** on all sides than the pit frame.
 - The hole will have to be deep enough to accommodate the pit coping, plus the thickness of the pit floor.
 - Use the drawing in **Appendix IV** for measurements.
 - Should pit drainage be required, slope the pit floor to an installed drain while maintaining a level area at each corner.
3. Cut the hole in the concrete floor.
4. Clean up any debris in the way of further installation steps.
5. Set the frame in the hole supported at about the correct height.
6. Set two 2x4 's on edge (longer than the width of the hole) across the opening.

Installing Pit Frames, Continued

7. Use soft wire and make **two (2) loops** by twisting wire around each 2x4 and the frame.



8. With the frame supported by the wire and 2x4's, use a level to set the frame flush with the surrounding floor, level, and at the correct height by twisting or untwisting the wire.

NOTE: Use the drawing in [Appendix IV](#) for measurements, concrete specifications and amounts.

9. Set into place and secure the conduit for the scale cable into the frame opening.
10. Pour the concrete around and under the frame.
11. Level and smooth it with a hand trowel, as needed.
12. If a drain is required, form the pit to place a slope in the pit floor to the drain.
 - See [Appendix IV](#).
 - Allow cement to cure to a **minimum of 2000 psi** before cutting the wire.
13. Pull the cable through the conduit before placing the scale platform in the frame.
14. Level the platform before installing the instrumentation.

Section 5: Parts Replacement

Load Cell Replacement Steps

1. Cycle-down the power to the indicator, then unplug the unit.
2. Remove the platform and junction box access covers.
3. Disconnect the failed load cell cable(s) at the junction box.
4. Loosen the gland bushing, and tie a string or wire to the end of the cable to act as a pull wire.
5. Place wire markers on the cable ends.
 - Masking tape is an effective alternative
6. Disconnect the faulty load cells wires from the terminal block.
7. Lift the platform end with a forklift or heavy pry bar, using wood blocks for safety.
8. Remove the load cell mounting bolts with a **3/4" socket**.
9. Remove the load cell, pulling the cable through the scale while leaving the pull string/wire in the scale.
10. Remove the foot assembly from the old cell, then install it onto the new load cell.
 - Use anti-seize on the threads.
11. Disconnect the pull string/wire from the old cell's cable, then attach to the new cell's cable end.
12. Pull the cable from the new cell through to the junction box.
13. Mount the cell to the scale platform.
 - Torque it to **90 ft/lbs**, using anti-seize on the mounting bolts.
14. Lower the scale to the surface removing the safety blocks.
15. Distribute the scale's weight evenly by all four (4) feet.
16. Connect the load cell wires into the junction box, then tighten the box gland bushing(s).
17. Replace the platform access cover.
18. Replace the box cover and torque all screws to **18-20 in/lbs**.
19. Recalibrate the unit as necessary

Load Cell Specifications

DESCRIPTION	SPECIFICATION
Material	Mild Steel
Resistance	350 Ohm
Rated Output	3mV/V
Safe Overload	150%
Compensated Temperature Range	-10° C to 40° C
Safe Operating Temperature Range	-10° C to 40° C

Junction Box Replacement Steps

1. Remove power to the indicator.
2. Open the platform access cover, then the junction box cover.
3. Loosen all gland bushing nuts.
4. Place wire markers on all the load cell cable ends.
5. Disconnect the load cells' wires from the terminal blocks.
6. Disconnect the homerun wires.
7. Remove the PCB, clean the junction box, then install the new PCB.
8. Reconnect all load cell and home-run wires to the new PCB.
9. Tighten all gland bushing nuts.

IMPORTANT NOTE: Leave the junction box cover **off** until all corner adjustments are completed.

10. Replace the junction box cover, and torque all screws to **18-20 in/lbs.**
11. Replace the platform access cover.
12. Recalibrate the unit as necessary.

Foot Assembly Replacement Steps

1. Lift the platform end with a forklift or heavy pry bar using wood blocks for safety.
2. Remove the hole plug over the foot to be replaced.
3. Using a standard screwdriver, unscrew the foot assembly.
4. Replace with the new Foot Assembly, using anti-seize on the screws attaching to the load cell.
5. Lower the scale to the surface removing the safety blocks.
6. Distribute the scale's weight evenly by all four (4) feet.
7. Replace the hole plug in the access hole.

Section 6: Parts

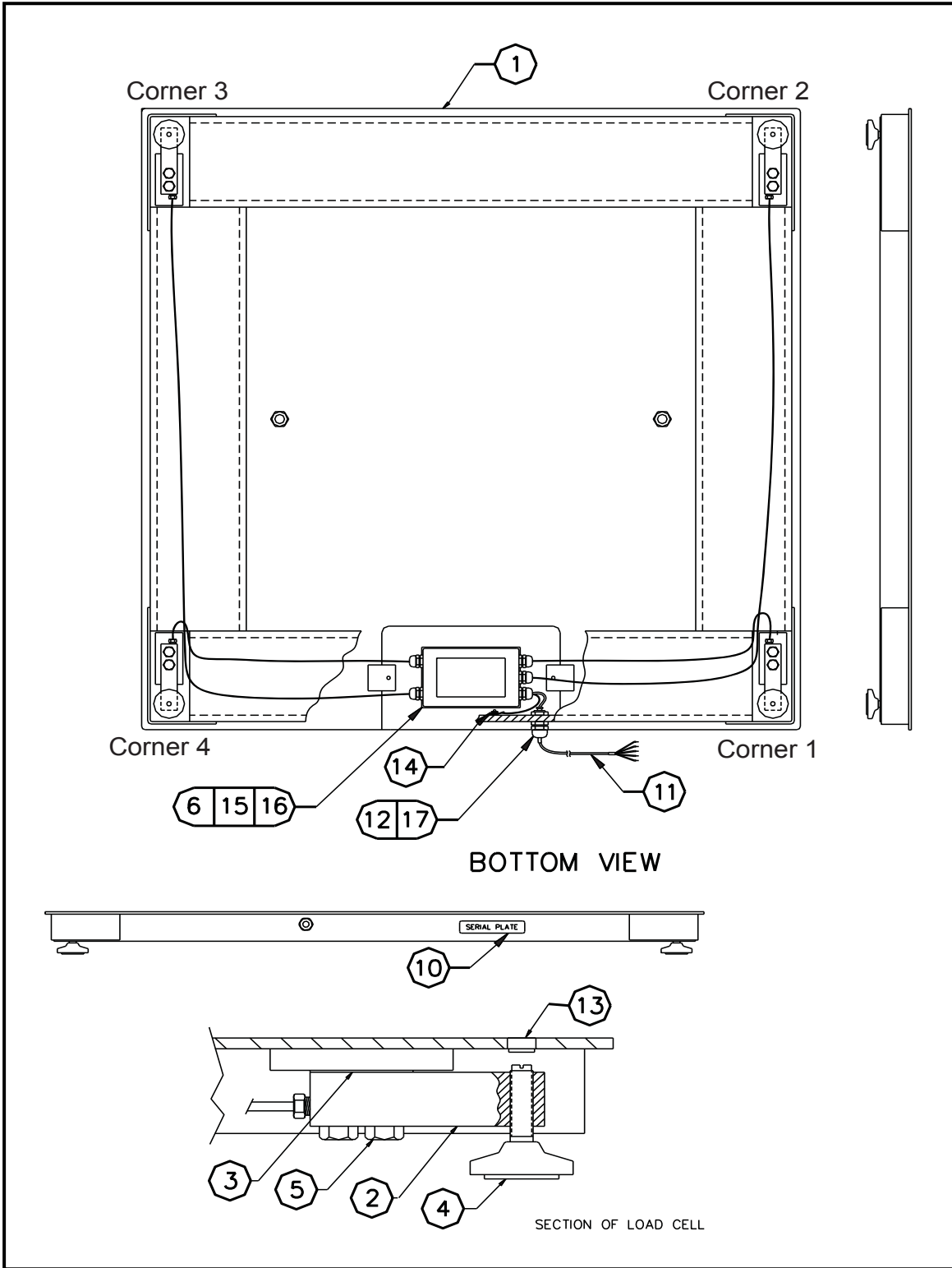
Parts List

ITEM	PART NO.	DESCRIPTION	MODELS
1	----	Platform Weldment	----
2	107003	Load Cell	1K, 2.5K
2	107004	Load Cell	5K
2	107005	Load Cell	10K
3	66754	Load Cell Shim	ALL
4	63913	Foot Assembly	ALL
5	54501	Load Cell Mounting Bolt, ½" – 20 x 1-3/4"	ALL
6	67171M	Analog Junction Box	ALL
*	96141	PCB for Analog Junction Box	ALL
11	12838	Cable Assembly	ALL
12	17543	Liquid Tight Connector	ALL
13	63586	Hole Plug, 5/8"	ALL
14	54203	SS Hex Nut, 10-24 (for ground)	ALL
15	14721	5" Velcro Loop (use with hook)	ALL
16	14722	5" Velcro Hook (use with loop)	ALL
17	11175	Rubber Bushing (for #11 connection)	ALL

See [Appendix I](#) for Analog Load Cell model numbers installed before 03/08.

NOTE: If the complete assembly is required (both the Junction Box and Board), order part number **67171M** as the new style replacement.

Parts Diagram



Appendix I: Load Cells Installed before 03/08

Listed below are the Load Cell Model Numbers installed *before March 2008*:

ITEM	PART NO.	DESCRIPTION	MODELS
2	58925	Load Cell	1K, 2.5K
2	12896	Load Cell	5K
2	63593	Load Cell	10K

Shown below is the Load Cell wiring for models installed before January 2008:

WIRE COLOR	FUNCTION
Black	(-) Excitation
Red	(+) Excitation
Yellow	Shield
Green	(+) Signal
White	(-)Signal

Appendix II: Model Matrix

PRODUCT NO.	SIZE	CAPACITY	PLATFORM WELDMENT
63606	3' x 3"	1000 lbs	63489
63607	3' x 3'	2500 lbs	63489
63608	4' x 4'	2500 lbs	63491
63609	4' x 4'	5000 lbs	63491
63610	4' x 4'	10,000 lbs	63491
63611	4' x 5'	5000 lbs	63523
63612	4' x 5'	10,000 lbs	63523
63613	4' x 6'	5000 lbs	63525
63614	4' x 6'	10,000 lbs	63525
63615	5' x 5'	5000 lbs	63493
63616	5' x 5'	10,000 lbs	63493
63617	5' x 7'	5000 lbs	63495
63618	5' x 7'	10,000 lbs	63495

Appendix III: Accessories

Ramps, Bumper Guards and Pit Frames

SIZE	CAPACITY	RAMP	Bumper Guard	PIT FRAME
3' x 3"	1000 lbs	63751 (3')	72198 (3')	63757
3' x 3'	2500 lbs	63751 (3')	72198 (3')	63757
4' x 4'	2500 lbs	63753 (4')	72194 (4')	63759
4' x 4'	5000 lbs	63753 (4')	72194 (4')	63759
4' x 4'	10,000 lbs	63753 (4')	72194 (4')	63759
4' x 5'	5000 lbs	63753 (4')	72190 (5')	63761
4' x 5'	10,000 lbs	63753 (4')	72190 (5')	63761
4' x 6'	5000 lbs	63753 (4')	72196 (6')	63763
4' x 6'	10000 lbs	63753 (4')	72196 (6')	63763
5' x 5'	5,000 lbs	63755 (5')	72190 (5')	63765
5' x 5'	10000 lbs	63755 (5')	72190 (5')	63765
5' x 7'	5,000 lbs	63755 (5')	72192 (7')	63767
5' x 7'	10000 lbs	63755 (5')	72192 (7')	63767

Bolt-down Plates, Eyebolts and Hole Plugs

SIZE	CAPACITY	BOLT-DOWN PLATES	EYEBOLTS	EYEBOLTS
ALL	ALL	63777 (Set of 4)	70895 (2)	70896 (2)
		63779 (Set of 2)		

Floor Scale

**SERVICE MANUAL
DOCUMENT 50612**

Manufactured by Fancor, Inc.