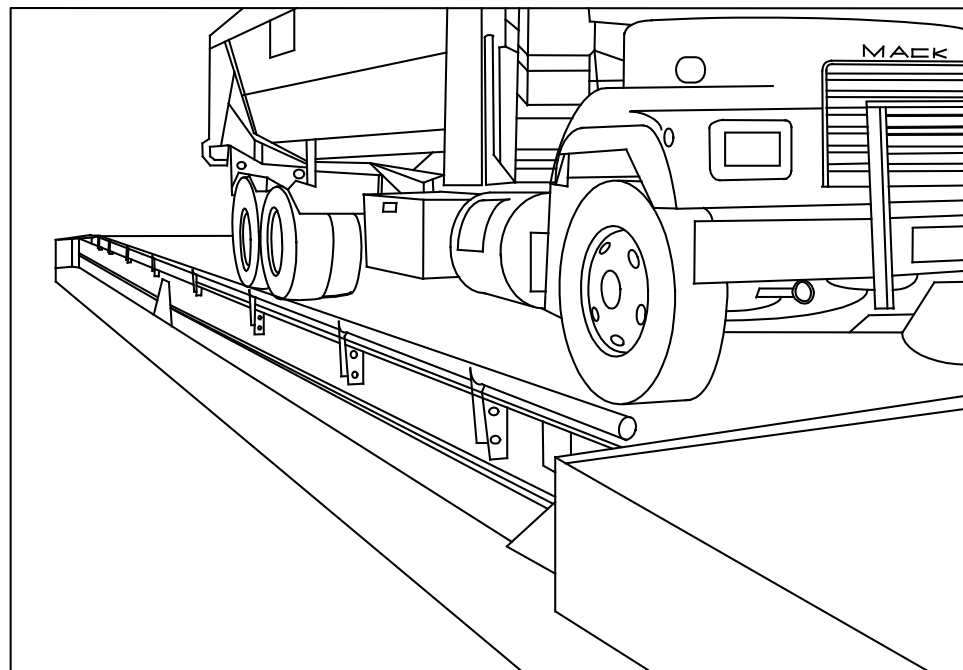




Talon Series

Portable Vehicle Scale





Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

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Amendment Record

Talon Series

Portable Vehicle Scale

Installation Manual

Document 51158

Manufactured by Fairbanks Scales, Inc.
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Kansas City, MO 64106

Created	07/2007	
Revision 0	08/2007	Preliminary release
Revision 1	10/2007	Documentation release
Revision 2	12/2007	Updated drawings
Revision 3	11/2010	New installation instruction on page 9
Revision 4	04/2012	Updated installation process.
Revision 5	12/2012	Updated specification page.

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Section 1: General Information

INTRODUCTION

The **Talon Portable Vehicle Scale** is a uniquely designed truck scale, combining the proven reliability of a hermetically sealed load cell system with the added benefit of an above grade, low profile, portable, steel deck design scale. The Talon Series PV scale uses a **Rocker Column Load Cell System** combined with **Intalogix™ Technology**.

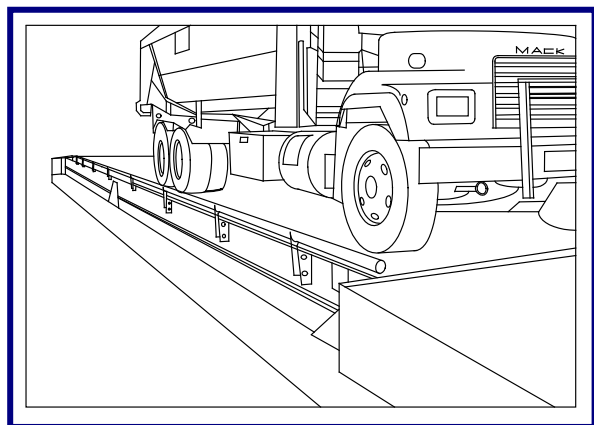
DESCRIPTION

The Talon Weighbridge consists of twenty and twenty-three foot (20' & 23') factory assembled steel deck modules.

- Each module bolts to the adjoining module.
- With the scale installed completely above ground, the load cell system, suspension components and weighbridge are not subjected to the harsh, corrosive environments found in a scale pit.

Rocker Column Load Cell Systems are hermetically sealed cells, constructed entirely from stainless steel.

- A stainless steel sheathing protects the load cell cable.
- Intalogix™ Technology offers the customer outstanding resolution, surge voltage protection, and built-in diagnostics.



SPECIFICATIONS

CLC:	90,000 lbs.
Capacity:	240,000 lbs. for a 4 section scale 300,000 lbs. for a 5 section scale
Load cell data:	
<i>Capacity:</i>	66,000 lbs.
<i>Type:</i>	Rocker column
<i>Environmental:</i>	Stainless steel, hermetically sealed
<i>Bridge resistance:</i>	1000 ohm
<i>Output:</i>	2 mV/V
Construction:	Welded structural steel I-beam
Module Design:	Orthotropic
Module understructure:	Open bottom
Lengths:	60', 70' and 80'.
Width:	10'
Deck plate thickness:	1/4"
Material:	ASTM A-36 steel
Soil bearing:	Recommended 3,000 psf (per square foot)
NTEP CC number:	96-089A2

Section 2: Installation

The **Talon Portable Vehicle Scale** can be set up almost anywhere it's needed.

- The soil bearing under the scale sub-frame must be firm and unyielding. Recommendation of 3000 p.s.f.
- Concrete piers are best at anchoring a solid, level base for the sub-frame. However, the sub-frame may be set on firm level ground, a leveled gravel area or be placed on heavy wood supports.

The scale is **shipped fully assembled** with stands, suspension hardware, with load cells installed.

NOTE: *Always CALL BEFORE YOU DIG.*

1-888-258-0808

Standard practice for onsite construction of earthen ramps for Portable Vehicle scales uses compacted graduated limestone fill, or caliche fill (provided by others). Either of these choices typically will provide a solid non-yielding base if installed and compacted correctly. Concrete berms along the sides of the ramps may be used to keep the material from spreading out during the compacting process, but this is typically not necessary.

INSTALLING A CONCRETE PIER

Site Preparation – All foundation types

1. Help the customer select a site which allows easy access to and from the scale, ensuring enough area for straight and level approaches, and to meet all state and local Weights and Measures regulations.
 - The site needs good drainage away from the scale, elevated enough so the surrounding areas **drain away from the scale site**.
 - Obtain all the necessary permits and licenses prior to beginning construction.
2. Using a transit, sight in and mark with stakes the area where the placement is to occur, and where supports, forms, or concrete are to be built.
 - When constructing forms, make sure they are plumb, square, and level.
 - Place and compact gravel into the base of the forms, if necessary.

Steps to Installing the Pier

3. Cut and position rebar into the form exactly as the schedule details it in the Fairbanks certified foundation prints.
4. The scale is designed so the sub-frame is anchored to the foundation, using expansion anchors which are inserted into the concrete after it has cured.
 - Expansion anchors are recommended because of the flexibility allowed in final positioning of the scale.
 - Use sub-frames for anchor locations.
5. Pour concrete, using a mix to yield a minimum 4000 psi.
6. Vibrate the concrete into position to ensure consistency.
 - All concrete work **MUST** conform to standards set forth by the **American Concrete Institute Code**.
 - Allow concrete to cure several days before erecting the scale.
7. Remove the forms and backfill for proper drainage.
 - A slope away from the scale is recommended.

Allow concrete to cure for *twenty-eight (28) days*, or until a test cylinder indicates the concrete has reached its design strength before allowing traffic on the scale.

INSTALLATION AND RELOCATION PROCEDURES

Talon PV Scales are available in 60', 70', and 80' lengths. This manual was created to cover all of the potential methods for installing a Fairbanks PV Scale. Your installation procedure will vary slightly depending on the style of frame provided and the number of modules in your scale. The following will provide guidance for your particular installation.

THE FIRST STEP will be to determine if you have the full sub-frame style or the pedestal style frame. Using the images below, determine your style of frame. Once you have identified your frame style, use the directions below for either 60' and 70' (3 module installation) or 80' (4 module installation) procedures.

C A U T I O N

Module Assemblies are heavy and awkward to handle.

Exercise extreme care when lifting a module assembly so as to avoid personal bodily harm or damage to any equipment.

When lifting the modules, ensure that the lifting chains are equally loaded, secure, and that an angle of greater than 30 degrees is maintained.

FULL SUB-FRAME STYLE – 3 MODULE (60' & 70') PV SCALE

Installation of Sixty and Seventy Foot (60 & 70') PV Scales

Before you lift any scale module for any reason, ensure all shipping brackets are installed and secure.

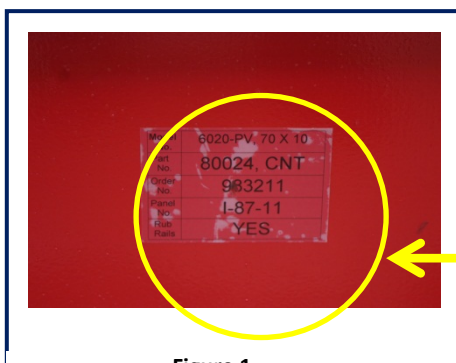


Figure 1

1. Identify the center module. The center module will have load blocks at each end weldment of the module. There is also a decal identifying the center module located on one of the end weldments. See Figure 1.

2. Identify the appropriate location for the center module allowing adequate clearance for the end modules that will be installed to complete the scale.

FULL SUB-FRAME STYLE – 3 MODULE PV SCALE

Installation of Sixty and Seventy Foot (60 & 70') PV Scales, continued

3. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the center module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. Do not stand under the module. Once those shoring timbers are removed, set the center module in the appropriate location. See Figure 2.



Figure 2

4. Identify the left end module. Just like the center module, the left end module will have an identification decal on the end weldment.

5. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the left end module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. Do not stand under the module. Once those shoring timbers are removed, set the left end module assembly so that the end with the load blocks are set onto – and bearing down on – the center module load blocks. Place the end module square with the center module so the two are in-line and the sub-frames are touching. See Figure 3.

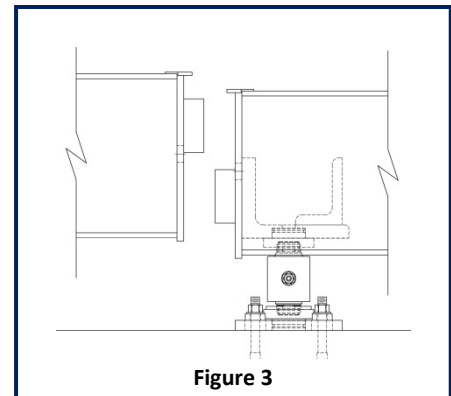


Figure 3

6. Fasten the sub-frame together. Using the two (2) $\frac{3}{4}$ " – 10 x 2 $\frac{1}{2}$ " bolts with nuts and $\frac{3}{4}$ " flat washer, secure the sub-frames together. See Figure 4.

8. Install the module connections. Install the 1 $\frac{1}{8}$ " – 7 threaded rod with nut and washers and secure the modules together. See Figure 4.

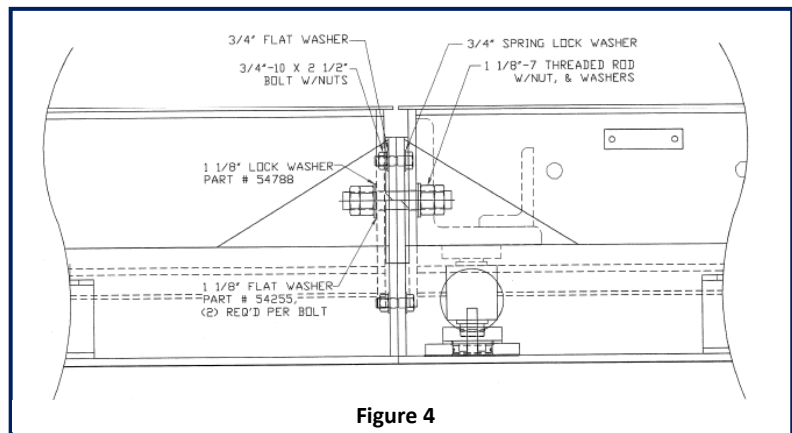


Figure 4

FULL SUB-FRAME STYLE – 3 MODULE PV SCALE

Installation of Sixty and Seventy Foot (60 & 70') PV Scales, continued

8. Identify the right end module as you did with the left end module. This will be the only remaining module.

9. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the right end module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. Do not stand under the module. Once those shoring timbers are removed, set the right end module assembly so that the end with the load blocks are set onto – and bearing down on – the center module load blocks. Place the end module square with the center module so the two are in-line and the sub-frames are touching.

Refer to image in step 3 and 5.

10. Fasten the sub-frame together. Using the two (2) $\frac{3}{4}$ " – 10 x 2 $\frac{1}{2}$ " bolts with nuts and $\frac{3}{4}$ " flat washer, secure the sub-frames together.

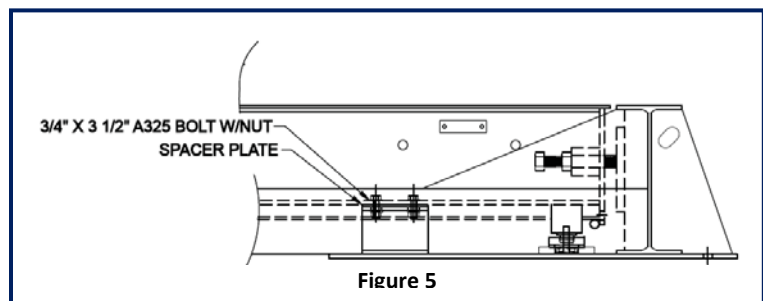
Refer to image in steps 6 and 7.

11. Install the module connections. Install the 1 $\frac{1}{8}$ " – 7 threaded rod with nut and washers and secure the modules together.

Refer to image in steps 6 and 7.

12. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement.

13. Identify the shipping brackets located at each module. There are four (4) shipping brackets per module, with two (2) $\frac{3}{4}$ " x 3 $\frac{1}{2}$ " bolts fastened through the bottom flange of the side beam with spacers and connect the scale to the sub-frame. Remove these shipping brackets.



IMPORTANT: BE SURE TO RETAIN THE BOLTS, WASHERS, SPACERS, AND NUTS IN A SAFE PLACE – YOU WILL NEED THESE TO MOVE THIS SCALE AT A LATER TIME. SCALE CANNOT BE RELOCATED WITHOUT THIS HARDWARE. See Figure 5

At this point in the installation, the modules are fastened together and disengaged from the sub-frame shipping brackets. The scale is now a live deck.

FULL SUB-FRAME STYLE – 3 MODULE PV SCALE

Installation of Sixty and Seventy Foot (60 & 70') PV Scales, continued

14. If installed onto concrete piers or slab, anchor the sub-frame. There will be 4 total anchors, one anchor per corner of the sub-frame.
15. Back off end and side checking bolts to a 1/8" gap for normal operation.
16. Install ground rod.

TO PREPARE SCALE FOR RELOCATION – The above sequence will be reversed.

1. Disconnect scale from grounding system.
2. If anchored, remove anchors.
3. Re-install shipping bracket hardware. Install spacers and two (2) 3/4" x 3 1/2" bolts with washers at the four (4) shipping bracket locations per module.

Refer to image in step 13.

4. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement.

5. Uninstall sub-frame connection hardware. Remove the two (2) 3/4" – 10 x 2 1/2" bolts, nuts and washers.

Refer to image in step 6 and 7.

6. Uninstall module connection hardware. Remove the 1 1/8" – 7 threaded rods, nuts, jam nuts, and washers.

Refer to image in step 6 and 7.

7. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift one end module first, then the other end module and finally the center module.

Refer to image in step 3.

FULL SUB-FRAME STYLE – 4 MODULE (80') PV SCALE

Installation of Eighty Foot (80') PV scales

Before you lift any scale module for any reason, ensure all shipping brackets are installed and secure.

FULL SUB-FRAME STYLE – 4 MODULE PV SCALE

Installation of Eighty Foot (80') PV scales, continued

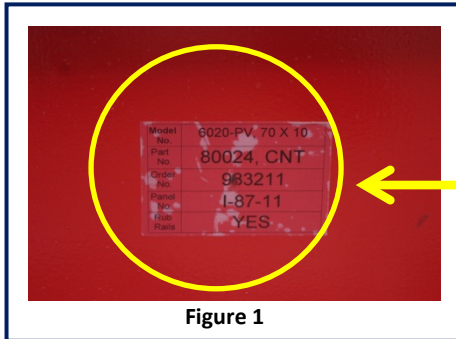


Figure 1

1. Identify the center module. The center module will have load blocks at each end weldment of the module. There is also a decal identifying the center module located on one of the end weldment. See Figure 1.

2. Identify the appropriate location for the center module allowing adequate clearance for the end modules that will be installed to complete the scale.

3. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the center module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. Do not stand under the module. Once those shoring timbers are removed, set the center module in the appropriate location. See Figure 2.



Figure 2

4. Identify the left end module. Just like the center module, the left end module will have an identification decal on the end weldment.

5. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the left end module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. **Do not stand** under the module. Once those shoring timbers are removed, set the left end module

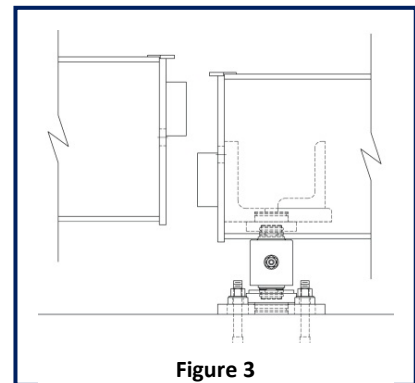


Figure 3

assembly so that the end with the load blocks are set onto – and bearing down on – the center module load blocks. Place the end module square with the center module so the two are in-line and the sub-frames are touching. See Figure 3.

FULL SUB-FRAME STYLE – 4 MODULE PV SCALE

Installation of Eighty Foot (80') PV scales, continued

6. Fasten the sub-frame together. Using the two (2) $\frac{3}{4}$ " – 10 x 2 $\frac{1}{2}$ " bolts with nuts and $\frac{3}{4}$ " flat washer, secure the sub-frames together. See Figure 4.

7. Install the module connections. Install the 1 $\frac{1}{8}$ " – 7 threaded rod with nut and washers and secure the modules together. See Figure 4.

8. Identify the interior module. As with other modules it will have a decal on one end weldment identifying it as the interior module. Interior modules

will have load blocks on both end weldments. They will have a staggered orientation; one end weldment's load blocks will be in a high position, the other in a low position.

9. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the interior module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. **Do not stand** under the module. Once those shoring timbers are removed, set the interior module assembly so that the end with the load blocks are set onto – and bearing down on – the center module load blocks. Place the interior module square with the center module so the two are in-line and the sub-frames are touching.

Refer to image in step 3 and 5.

10. Fasten the sub-frame together. Using the two (2) $\frac{3}{4}$ " – 10 x 2 $\frac{1}{2}$ " bolts with nuts and $\frac{3}{4}$ " flat washer, secure the sub-frames together.

Refer to image in step 6 and 7.

11. Install the module connections. Install the 1 $\frac{1}{8}$ " – 7 threaded rod with nut and washers and secure the modules together.

Refer to image in step 6 and 7.

12. Identify the right end module as you did with the left end module. This will be the only remaining module.

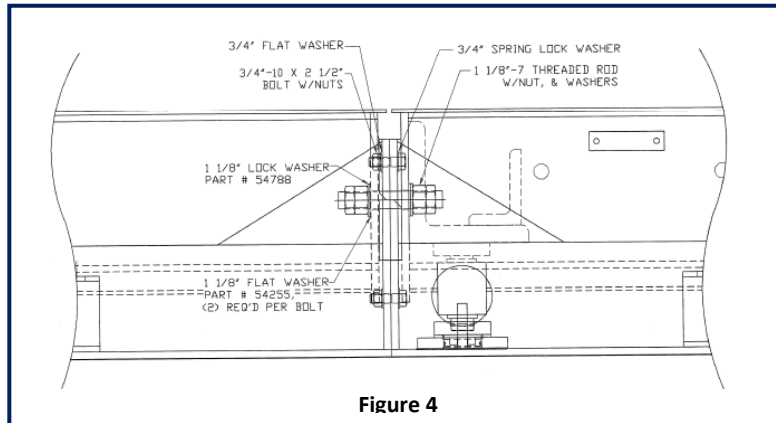


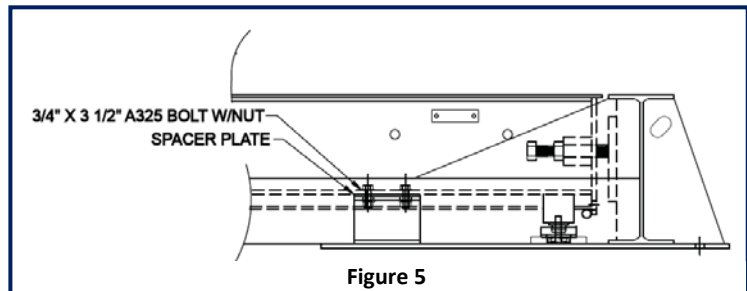
Figure 4

FULL SUB-FRAME STYLE – 4 MODULE PV SCALE

Installation of Eighty Foot (80') PV scales, continued

13. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Lift the right end module and prior to setting the module, **SAFELY** use pry bar to dislodge four (4) shoring timbers located between the scale and the sub-frame structure. **Do not stand** under the module. Once those shoring timbers are removed, set the right end module so the end with the load blocks are set onto – and bearing down on – the interior module load blocks. Place the end module square with the center module so the two are in-line and the sub-frames are touching. Refer to image in step 3 and 5.
14. Fasten the sub-frame together. Using the two (2) $\frac{3}{4}$ " – 10 x 2 $\frac{1}{2}$ " bolts with nuts and $\frac{3}{4}$ " flat washer, secure the sub-frames together. Refer to image in step 6 and 7.
15. Install the module connections. Install the 1 $\frac{1}{8}$ " – 7 threaded rod with nut and washers and secure the modules together. Refer to image in step 6 and 7.
16. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement.

17. Identify the shipping brackets located at each module. There are four (4) shipping brackets per module, with two (2) $\frac{3}{4}$ " x 3 $\frac{1}{2}$ " bolts fastened through the bottom flange of the side beam with spacers and connect the scale to the sub-frame. Remove these shipping brackets.



IMPORTANT: BE SURE TO RETAIN THE BOLTS, WASHERS, SPACERS, AND NUTS IN A SAFE PLACE – YOU WILL NEED THESE TO MOVE THIS SCALE AT A LATER TIME. SCALE CANNOT BE RELOCATED WITHOUT THIS HARDWARE. See Figure 5.

At this point in the installation, the modules are fastened together and disengaged from the sub-frame shipping brackets. The scale is now a live deck.

18. If installed onto concrete piers or slab, anchor the sub-frame. There will be 4 total anchors, one anchor per corner of the sub-frame.

FULL SUB-FRAME STYLE – 4 MODULE PV SCALE

Installation of Eighty Foot (80') PV scales, continued

19. Back off end and side checking bolts to a 1/8" gap for normal operation.
20. Install ground rod.

TO PREPARE SCALE FOR RELOCATION – The above sequence will be reversed.

1. Disconnect scale from grounding system.
2. If anchored, remove anchors.
3. Re-install shipping bracket hardware. Install spacers and two (2) 3/4" x 3 1/2" bolts with washers at the four (4) shipping bracket locations per module. Refer to image in step 17.
4. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement.
5. Uninstall sub-frame connection hardware. Remove the two (2) 3/4" – 10 x 2 1/2" bolts, nuts and washers. Refer to image in step 6 and 7.
6. Uninstall module connection hardware. Remove the 1 1/8" – 7 threaded rods, nuts, jam nuts, and washers. Refer to image in step 6 and 7.
7. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift in this order: right end module first, interior module second, left end module third and the center module last.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules

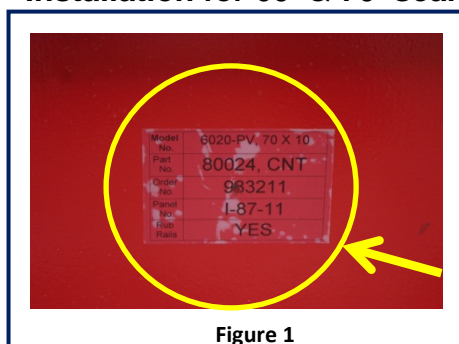


Figure 1

1. Identify the center module. The center module will have load blocks at each end weldment. The center module also features angled slide brackets on either side of the module, these are pre-installed from the factory. There is also a decal identifying the center module located on one of the end weldments. See Figure 1.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

2. Identify the appropriate location for the center module allowing adequate clearance for the end modules that will be installed to complete the scale.

BEFORE YOU LIFT! Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Lift and set the center module in the appropriate position. Be sure that your selected position leaves enough clearance for the complete scale installation. See Figure 2.



Figure 2

3. **IMPORTANT – DO NOT SKIP THIS STEP**

a. Once the center module is set in place, identify the four (4) interior tie-down brackets. These brackets are located at both ends of the module just behind the end weldment. There are two L-shaped bracket assemblies at each end weldment. These L-shaped brackets connect the sub-frame to the scale module. See Figure 3.

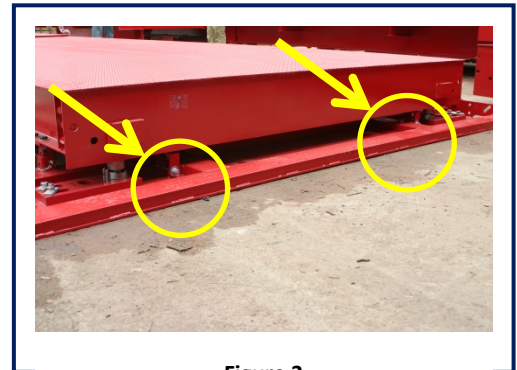


Figure 3

b. Once located, remove the nut and washer from the vertical bolt securing the bracket to the **SCALE**. See Figure 4.



Figure 4

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

c. Once disconnected from the scale module, replace the bolt, washer and nut into the L-shaped bracket for safe-keeping. This bracket should rest in an unsecured position during use. Repeat this process for both ends of the center module. See Figure 5.



Figure 5

4. Identify the left end module. The end modules will have load blocks on one end weldment and a checking assembly at the other. The end modules will also have a decal identifying them as either right or left end modules.

5. Once identified, prepare to lift. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Place the left end module next to the center module such that the load blocks of the left end module is bearing down on the load blocks of the center module. Be sure the two modules are square with each other and aligned on the center line of the scale. See Figure 6.

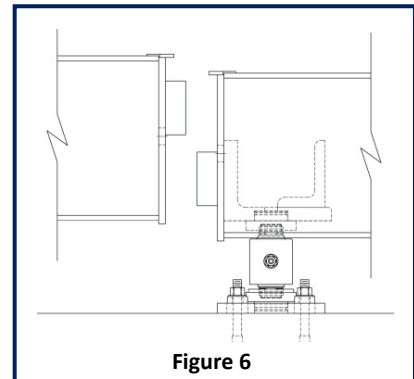


Figure 6

6. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement. See Figures 7 and 8.

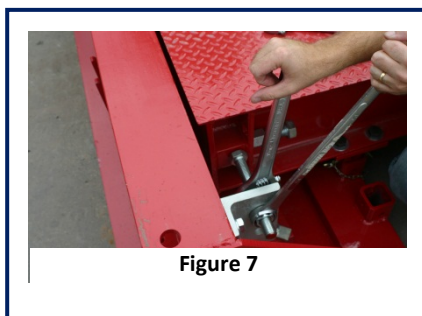


Figure 7

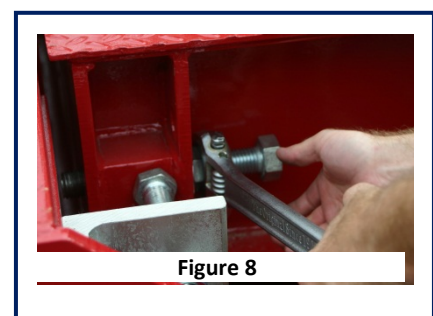


Figure 8

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

- Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping. See Figure 9 and 10.



Figure 9



Figure 10

- Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead. See Figure 11.

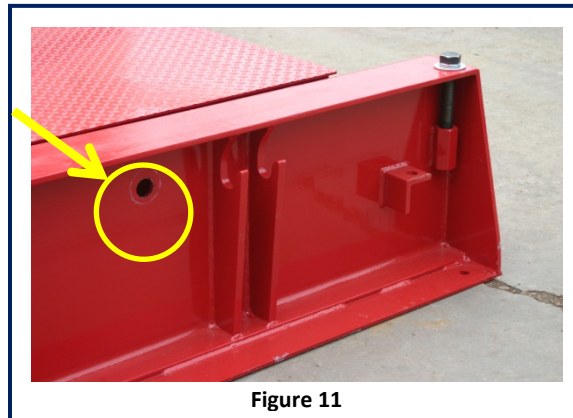


Figure 11

- Install module connection bolts. Insert the 1 1/8" – 7 threaded rod into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. See Figure 12.

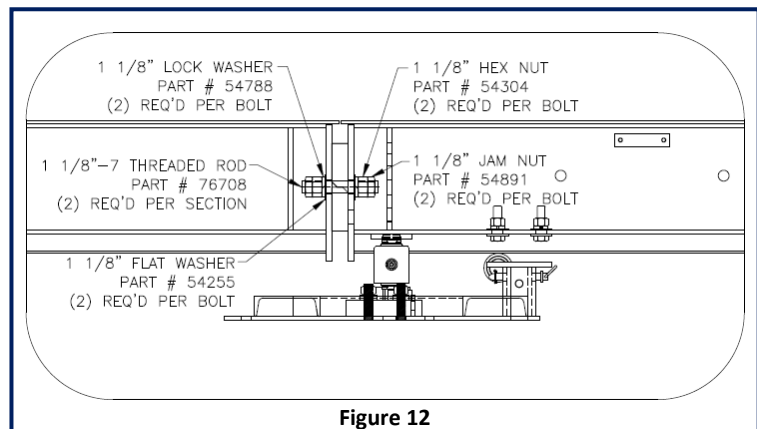


Figure 12

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

10. Prepare to place the right end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Place the remaining right end module next to the center module such that the load blocks of the right end module are bearing down on the load blocks of the center module. Be sure the two modules are square with each other and aligned on the center line of the scale. Refer to image in step 2.
11. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement. Refer to image in step 6.
12. Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping. Refer to image in step 7.
13. Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead. Refer to image in step 8.
14. Install module connection bolts. Insert the 1 1/8" – 7 threaded rod into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. Refer to image in step 9.
15. Locate and remove sectional shipping brackets. At each section, there are side shipping brackets installed through the bottom flange of the side beams from the factory. Locate these shipping brackets and remove the bolts. Each bracket has two bolts connecting the scale to the pedestal frame. Remove all of these bolts and nuts, disconnecting the scale from the shipping bracket. Attach the bolts and nuts to the bulkhead holes provided for safekeeping. See Figures 13, 14, and 15.

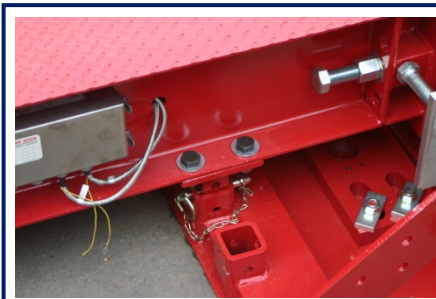


Figure 13



Figure 14

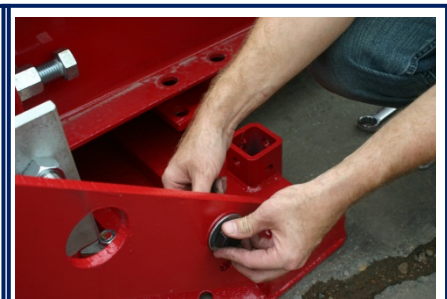


Figure 15

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

16. Remove hinge pin allowing bracket base to slide down, dis-engaging from the scale beam flange. Replace Hinge pin in provided hole perpendicular to original location. See Figures 16 and 17.

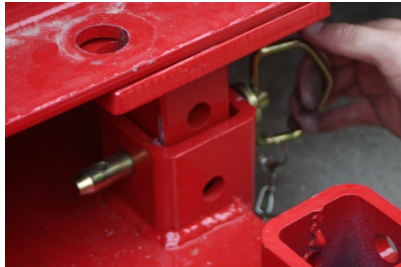


Figure 16



Figure 17

At this point in the installation, the modules are fastened together and disengaged from the pedestal shipping brackets. The scale is now a live deck.

17. The next step involves securing the provided angled anti-slide brackets between each end module and the center module. Each end module will require slide brackets installed on either side of the module.

18. Identify the anti-slide brackets and anti-slide bracket mounting holes located at the sectional pedestals.

19. Each angled anti-slide bracket is secured by three bolts and nuts at the end pedestal and two bolts and nuts at the center pedestal. Secure four (4) angled anti-slide brackets with provided hardware. See Figures 18, 19, and 20.

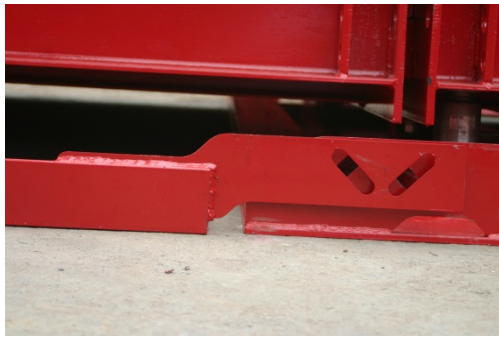


Figure 18

Figure 19



PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

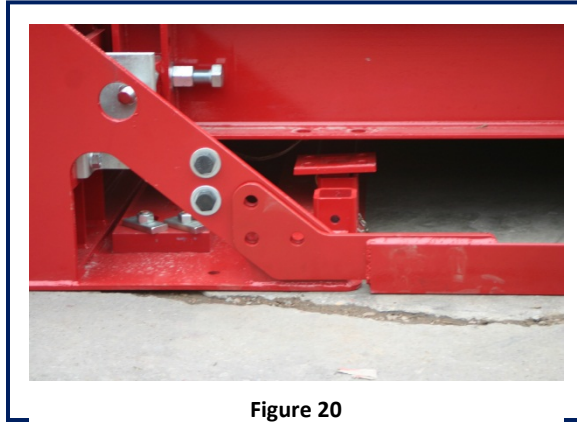


Figure 20

20. Verify load cells are plumb.
21. If installed on concrete base or piers, you are ready to anchor. Check once again that the scale is correctly aligned; the modules are square and in-line with each other. Once it is determined that the scale is square, secure the pedestal sub-frame to the concrete base, or piers with anchors.
22. The final step is to install the provided grounding rods.

TO INSTALL APPROACHES AND RAMPS

The Fairbanks Ramps and Approaches kits can ***only*** be used for the pedestal style sub-frame.

If your installation required Fairbanks ramps and approaches kit, please follow these instructions for assembly. If you are using ramps and approaches, the approaches must be set before the ramps.

1. Ramps and approaches cannot be installed until the scale is set, assembled, and secure.
2. Place the approach bulkhead that will support the approach approximately 9' 6" from the pedestal bulkhead of the scale. This distance is measured from the top flange of the pedestal bulkhead to the top flange of the approach bulkhead (inside to inside). This is an approximate distance; you may need to adjust slightly during the assembly.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

3. To attach approaches, rig lifting equipment to the provided lifting points and lift the approach and set the approach pins into the scale's pedestal bulkhead saddle first. See Figure 1.

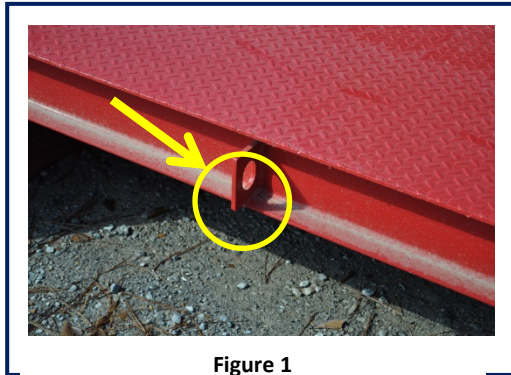


Figure 1

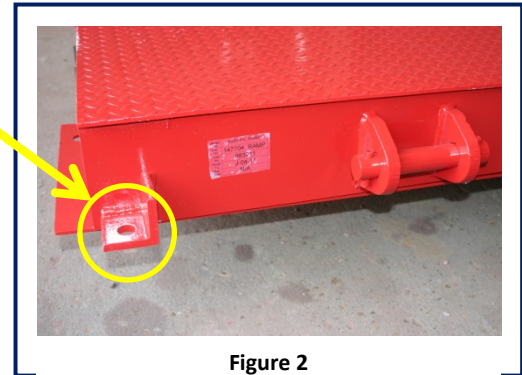


Figure 2

4. Once the approach is connected to the pedestal bulkhead, you can lower the approach to connect with the approach bulkhead. You may need to adjust the approach bulkhead such that the approach pins will slide below the top flange and into the provided saddle.

5. On the scale's pedestal bulkhead and the approach bulkhead, there are angle brackets that will line up with matching integrated angle brackets fixed to the approach. This is a fixture

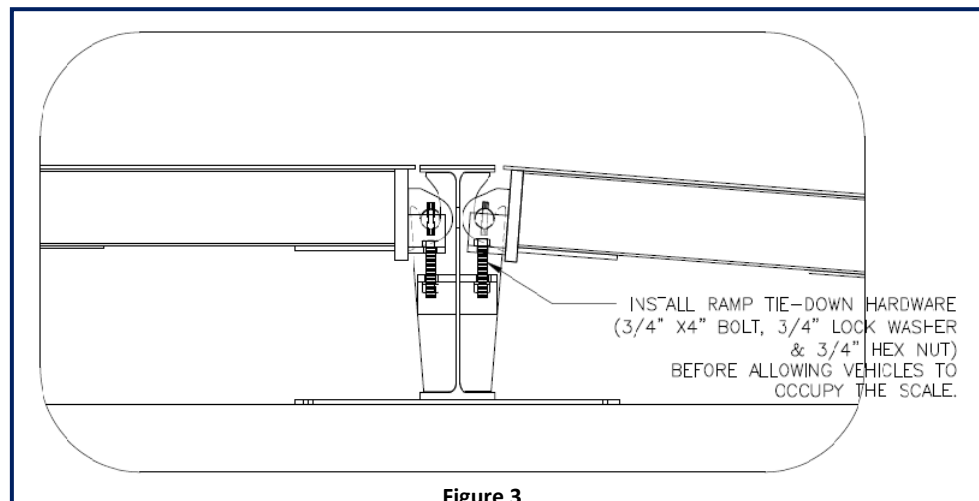


Figure 3

to secure the approach to the bulkheads. Identify those brackets. See Figure 2.

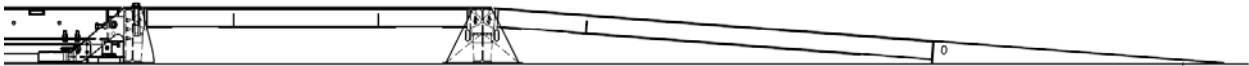
6. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x 4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down. See Figure 3.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

RAMPS

7. Set the ramps pin connection into the approach bulkhead's saddle. Refer to image in step 5.
8. The ramps are supplied with integrated angle brackets that will line up with matching angle brackets fixed to the bulkhead. This is a fixture to secure the ramps to the bulkhead. Identify those brackets. Refer to image in step 5.
9. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x 4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down. Refer to image in step 5.



Complete Assembly

TO PREPARE SCALE FOR RELOCATION – The above sequence will be reversed.

1. Remove ramps first (if applicable). Disconnect connection bolts, washers, and spacers connecting the ramps to the approach bulkhead. Rig lifting equipment to the provided lifting points, lift ramps, and set aside. Refer to image in step 6.
2. Remove approaches (if applicable). Disconnect connection bolts, washers, and spacers connecting the approach to the approach and scale bulkhead. Rig lifting equipment to the provided lifting points, lift approaches, and set aside. Refer to image in step 9.
3. Rig lifting equipment to the provided lifting points on approach bulkhead, lift bulkheads and set aside. Refer to image in step 3.
4. Disconnect scale from grounding system.
5. If anchored, remove anchors.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

6. Disconnect four (4) angled slide brackets from the two (2) end modules and remove from the pedestals. **DO NOT REMOVE** the center module slide angle brackets. Refer to image in step 19.
7. Tighten side and bulkhead checking bolts so they secure the scale and prevent any movement. Refer to image in step 6.
8. At the sectional shipping brackets, remove Hitch pin and raise the bracket base to the bottom flange of the side beam. Re-install the Hitch pin in its original location, securing the bracket base to the bottom flange. Refer to image in step 16.
9. Remove the shipping bracket bolts from the pedestal location (installed for safekeeping during initial set-up) and reinstall two (2) bolts and nuts through the bottom flange and through the sectional shipping bracket base held in place by the Hitch pin. Tighten this hardware. Refer to image in step 15.
10. Disconnect module connection. Remove jam nut, hex nut, and washers from 1 1/8" – 7 threaded rods. Remove threaded rod. Refer to image in step 9.
11. Remove bulkhead shipping bolt from the storage location at the side of the bulkhead (during set-up, bulkhead bolt was installed here for safekeeping). Reinstall bulkhead shipping bolt in original location. Refer to image in step 7.
12. Prepare to disassemble modules for relocation. Begin with the right end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the right end module and set aside.
14. Next, disassemble the left end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the left end module and set aside.

PEDESTAL STYLE SUB-FRAME – 3 MODULE PV SCALE

Installation for 60' & 70' scales with three (3) modules, continued

15. The center module will remain. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the center module and relocate to new position and begin installation steps again for new location.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules



Figure 1

1. Identify the center module. The center module will have load blocks at each end weldment. The center module also features angled slide brackets on either side of the module, these are pre-installed from the factory. There is also a decal identifying the center module located on one of the end weldments.

2. Identify the appropriate location for the center module allowing adequate clearance for the end modules that will be installed to complete the scale. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Lift and set the center module in the appropriate position. Be sure that your selected position leaves enough clearance for the complete scale installation.

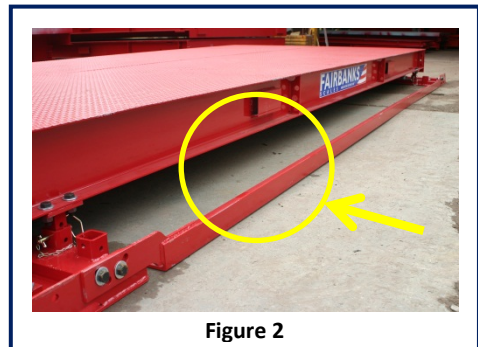


Figure 2

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

3. **IMPORTANT – DO NOT SKIP THIS STEP**

a. Once the center module is set in place, identify the four (4) interior tie-down brackets. These brackets are located at both ends of the module just behind the end weldment. There are two L-shaped bracket assemblies at each end weldment. These L-shaped brackets connect the sub-frame to the scale module.

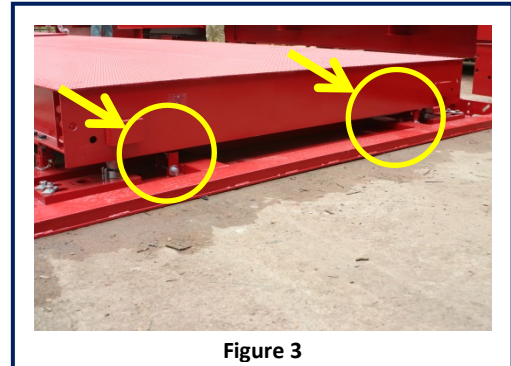


Figure 3

b. Once located, remove the nut and washer from the vertical bolt securing the bracket to the **SCALE**.



Figure 4

c. Once disconnected from the scale module, replace the bolt, washer and nut into the L-shaped bracket for safe-keeping. This bracket should rest in an unsecured position during use. Repeat this process for both ends of the center module.



Figure 5

4. Identify the left end module. The end modules will have load blocks on one end weldment and a checking assembly at the other. The end modules will also have a decal identifying them as either right or left end modules.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

5. Once identified, prepare to lift. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Place the left end module next to the center module such that the load blocks of the left end module is bearing down on the load blocks of the center module. Be sure the two modules are square with each other and aligned on the center line of the scale.

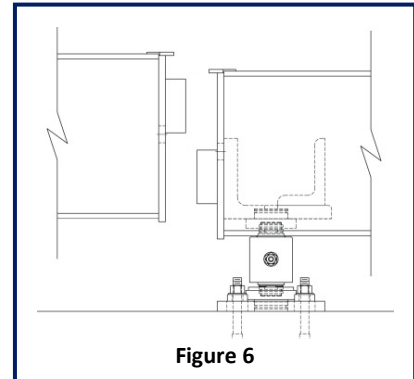


Figure 6

6. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement.

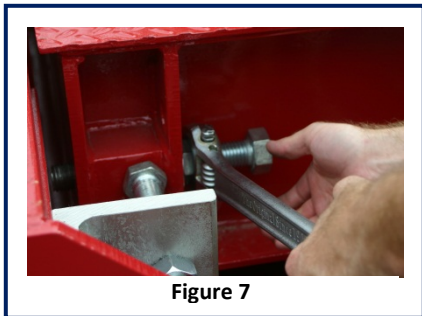


Figure 7

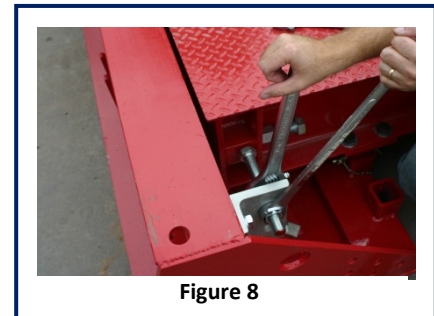


Figure 8

7. Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping.



Figure 10



Figure 9

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

8. Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead.

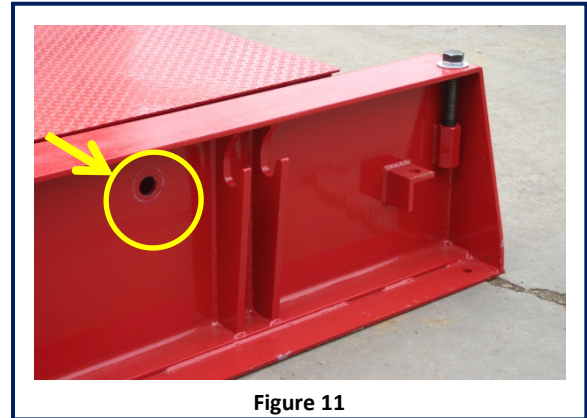


Figure 11

11. Install module connection bolts. Insert the 1 1/8" – 7 threaded rod into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration.

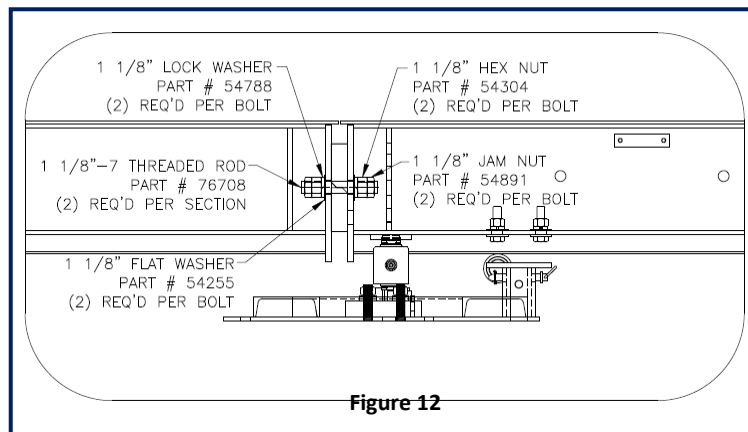


Figure 12

10. Identify the interior module. As with other modules, it will have a decal on one end weldment identifying it as the interior module. Interior modules will have load blocks on both end weldments. They will have a staggered orientation; one end weldment's load blocks will be in a high position, the other in a low position.

11. Prepare to set the interior module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Lift the interior module and set so that the end with the load block is set onto – and bearing down on – the center module load blocks. Be sure the two modules are square with each other and aligned on the center line of the scale. Refer to image in step 2.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

12. Install module connection bolts. Insert the 1 1/8" – 7 threaded rod into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. Refer to image in step 9.

13. Prepare to place the remaining right end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping brackets. Place the remaining right end module next to the interior module such that the load blocks of the right end module are bearing down on the load blocks of the interior module. Be sure the two modules are square with each other and aligned on the center line of the scale. Refer to image in step 2.

14. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement. Refer to image in step 6.

15. Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping. Refer to image in step 7 and 8.

16. Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead. Refer to image in step 8.

17. Install module connection bolts. Insert the 1 1/8" – 7 threaded rod into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. Refer to image in step 9.

18. Locate and remove sectional shipping brackets. At each section, there are side shipping brackets installed through the bottom flange of the side beams from the factory. Locate these shipping brackets and remove the bolts. Each bracket has two bolts connecting the scale to the pedestal frame. Remove all of these bolts and nuts, disconnecting the scale from the shipping bracket. Attach the bolts and nuts to the bulkhead holes provided for safekeeping.

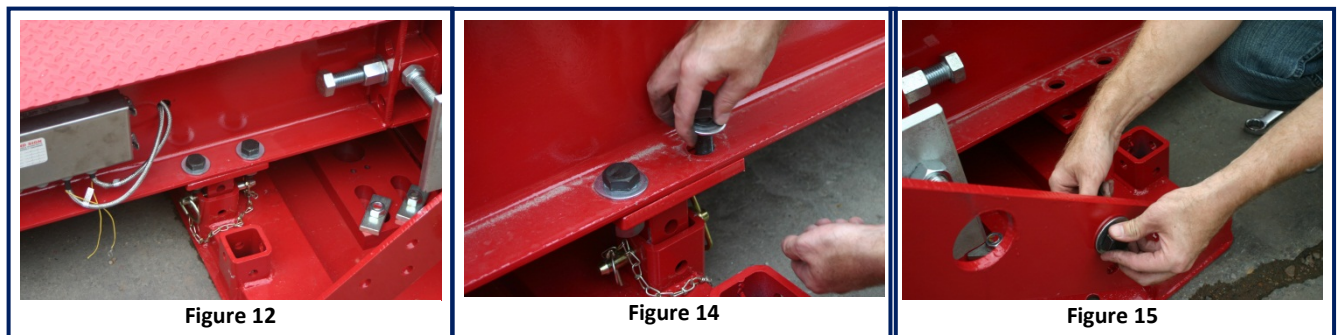


Figure 12

Figure 14

Figure 15

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

19. Remove Hinge pin allowing bracket base to slide down, dis-engaging from the scale beam flange. Replace Hinge pin in provided hole perpendicular to original location.

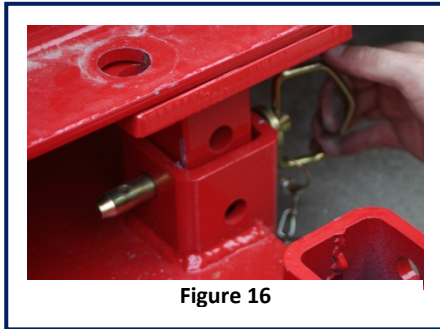


Figure 16



Figure 17

At this point in the installation, the modules are fastened together and disengaged from the pedestal shipping brackets. The scale is now a live deck.

20. The next step involves securing the provided angled anti-slide brackets between each end module and the center module. Each end module will require anti-slide brackets installed on either side of the module.

21. Identify the anti-slide brackets and slide bracket mounting holes located at the sectional pedestals.

22. Each angled anti-slide bracket is secured by three bolts and nuts at the end pedestal and two bolts and nuts at the center pedestal. Secure four (4) angled slide brackets with provided hardware.

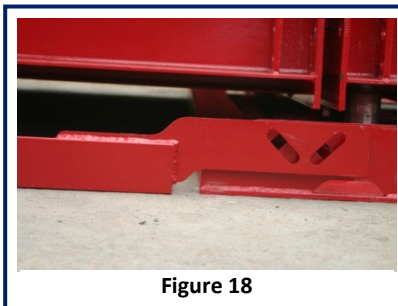


Figure 18

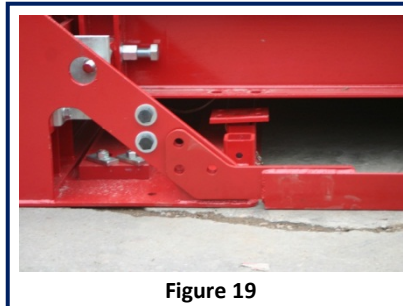


Figure 19

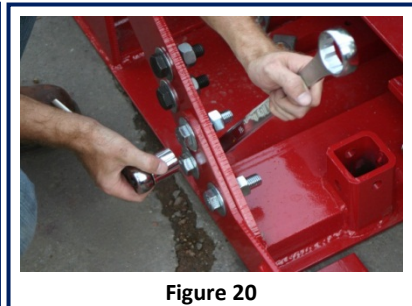


Figure 20

23. Verify load cells are plumb.

24. If installed on concrete base or piers, you are ready to anchor. Check once again that the scale is correctly aligned; the modules are square and in-line with each other. Once it is determined that the scale is square, secure the pedestal sub-frame to the concrete base, or piers with anchors.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

25. The final step is to install the provided grounding rods.

TO INSTALL APPROACHES AND RAMPS

The Fairbanks Ramps and Approaches kits can ***only*** be used for the pedestal style sub-frame.

If your installation required Fairbanks ramps and approaches kit, please follow these instructions for assembly. If you are using ramps and approaches, the approaches must be set before the ramps.

1. Ramps and approaches cannot be installed until the scale is set, assembled and secure.
2. Place the approach bulkhead that will support the approach approximately 9' 6" from the pedestal bulkhead of the scale. This distance is measured from the top flange of the pedestal bulkhead to the top flange of the approach bulkhead (inside to inside). This is an approximate distance; you may need to adjust slightly during the assembly.
3. To attach approaches, rig lifting equipment to the provided lifting points and lift the approach and set the approach pins into the scale's pedestal bulkhead saddle first.



Figure 1

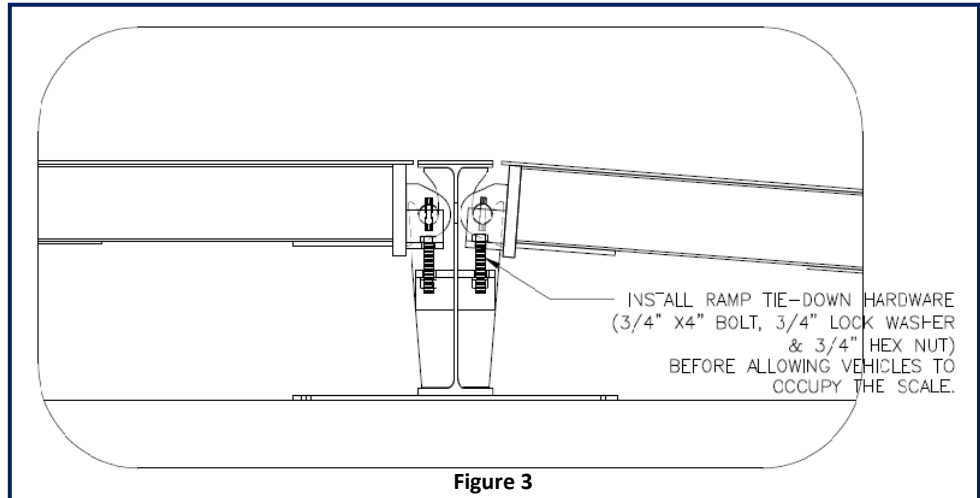
Figure 2

4. Once the approach is connected to the pedestal bulkhead, you can lower the approach to connect with the approach bulkhead. You may need to adjust the approach bulkhead such that the approach pins will slide below the top flange and into the provided saddle.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

5. On the scale's pedestal bulkhead and the approach bulkhead, there are angle brackets that will line up with matching integrated angle brackets fixed to the approach. This is a fixture to secure the approach to the bulkheads. Identify those brackets.



6. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x 4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down.

RAMPS

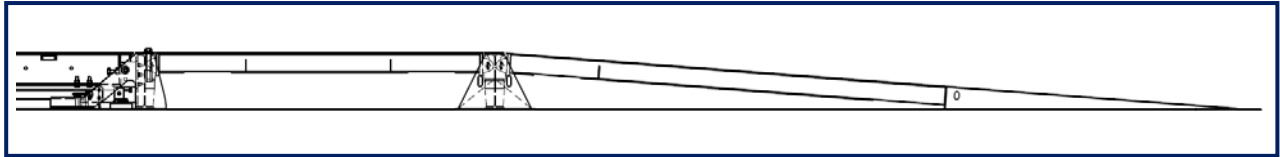
7. Set the ramps pin connection into the approach bulkhead's saddle. Refer to image in step 6.

8. The ramps are supplied with integrated angle brackets that will line up with matching angle brackets fixed to the bulkhead. This is a fixture to secure the ramps to the bulkhead. Identify those brackets. Refer to image in step 3.

9. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x 4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down. Refer to image in step 6.

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued



Complete Assembly

TO PREPARE SCALE FOR RELOCATION – The above sequence will be reversed.

1. Remove ramps first (if applicable). Disconnect connection bolts, washers and spacers connecting the ramps to the approach bulkhead. Rig lifting equipment to the provided lifting points, lift ramps and set aside. Refer to image in step 9.
2. Remove approaches (if applicable). Disconnect connection bolts, washers and spacers connecting the approach to the approach and scale bulkhead. Rig lifting equipment to the provided lifting points, lift approaches and set aside. Refer to image in step 6.
3. Rig lifting equipment to the provided lifting points on approach bulkhead, lift bulkheads and set aside. Refer to image in step 3.
4. Disconnect scale from grounding system.
5. If anchored, remove anchors.
6. Disconnect four (4) angled slide brackets from the two (2) end modules and remove from the pedestals. **DO NOT REMOVE** the center module slide angle brackets. Refer to image in step 22.
7. Tighten side and bulkhead checking bolts so they secure the scale and prevent any movement. Refer to image in step 6.
8. At the sectional shipping brackets, remove Hinge pin and raise the bracket base to the bottom flange of the side beam. Re-install the Hinge pin in its original location, securing the bracket base to the bottom flange. Refer to image in step 19
9. Remove the shipping bracket bolts from the pedestal location (installed for safekeeping during initial set-up) and reinstall two (2) bolts and nuts through the bottom flange and through the sectional shipping bracket base held in place by the Hinge pin. Tighten this hardware. Refer to image in step 18

PEDESTAL STYLE SUB-FRAME – 4 MODULE PV SCALE

Installation for 80' scales with four (4) modules, continued

10. Disconnect module connection. Remove jam nut, hex nut, and washers from 1 1/8" – 7 threaded rods. Remove threaded rod. Refer to image in step 9.

11. Remove bulkhead shipping bolt from the storage location at the side of the bulkhead (during set-up, bulkhead bolt was installed here for safekeeping). Reinstall bulkhead shipping bolt in original location. Refer to image in step 7.

12. Prepare to disassemble modules for relocation. Begin with the right end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the right end module and set aside. Refer to image in step 2.

13. Next, disassemble the interior module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the interior module and set aside. Refer to image in step 2.

14. Next, disassemble the left end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the left end module and set aside. Refer to image in step 2.

15. The center module will remain. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed. Lift the center module and relocate to new position and begin installation steps again for new location. Refer to image in step 2.

RENTAL SCALE INSTALLATION AND RELOCATION PROCEDURES

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

IMPORTANT: Before you lift any scale module for any reason, ensure all shipping brackets are installed and secure.

IMPORTANT: When returning a rental scale, be sure the provided shoring timbers are placed between the scale and sub-frame to prevent any damage.

1. Identify the center module. The center module will have load blocks at each end weldment. The center module also features angled slide brackets on either side of the module, these are pre-installed from the factory. There is also a decal identifying the center module located on one of the end weldments. See Figure 1.



Figure 13

2. Identify the appropriate location for the center module allowing adequate clearance for the end modules that will be installed to complete the scale. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames are secured together with shipping

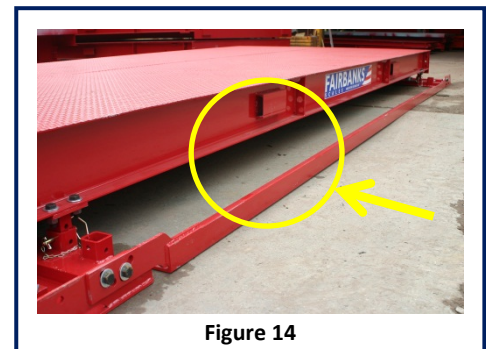


Figure 14

brackets. Lift and set the center module in the appropriate position. Be sure that your selected position leaves enough clearance for the complete scale installation. See Figure 2.

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

3. **IMPORTANT – DO NOT SKIP THIS STEP**

a. Once the center module is set in place, identify the four (4) interior tie-down brackets. These brackets are located at both ends of the module just behind the end weldment. There are two L-shaped bracket assemblies at each end weldment. These L-shaped brackets connect the sub-frame to the scale module. See Figure 3.

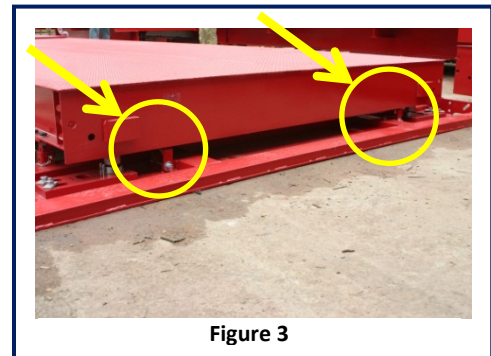


Figure 3

b. Once located, remove the nut and washer from the vertical bolt securing the bracket to the **SCALE**. See Figure 4.



Figure 4

c. Once disconnected from the scale module, replace the bolt, washer and nut into the L-shaped bracket for safe-keeping. This bracket should rest in an unsecured position during use. Repeat this process for both ends of the center module. See Figure 5.



Figure 5

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

4. Identify the left end module. The end modules will have load blocks on one end weldment and a checking assembly at the other. The end modules will also have a decal identifying them as either right or left end modules. Refer to image in step 1.

5. Once identified, prepare to lift. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames are secured together with shipping brackets. Place the left end module next to the center module such that the load blocks of the left end module is bearing down on the load blocks of the center module. Be sure the two modules are square with each other and aligned on the center line of the scale. See Figure 6.

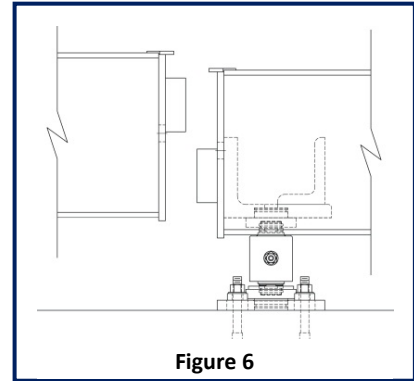


Figure 6

6. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement. See Figures 7 and 8.

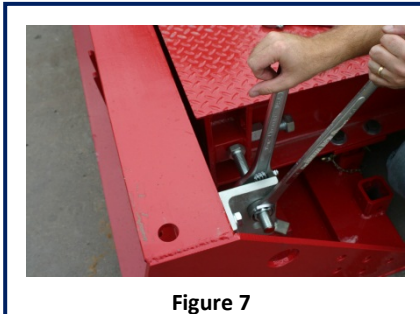


Figure 7

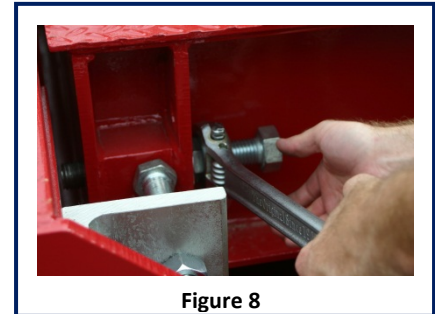


Figure 8

7. Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping. See Figures 9 and 10.



Figure 9



Figure 10

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

8. Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead. See Figure 11.

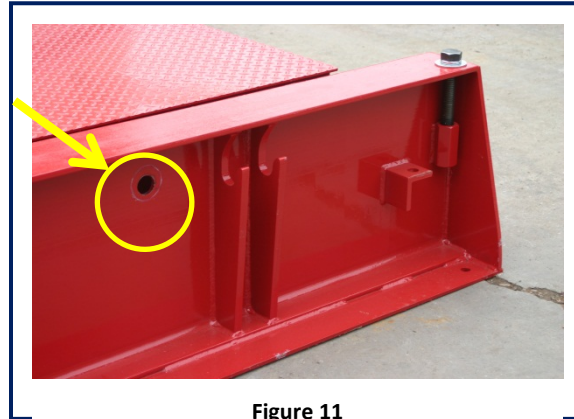


Figure 11

9. Install module connection bolts. Insert the 1 1/8" – 7 threaded rods into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. See Figure 12.

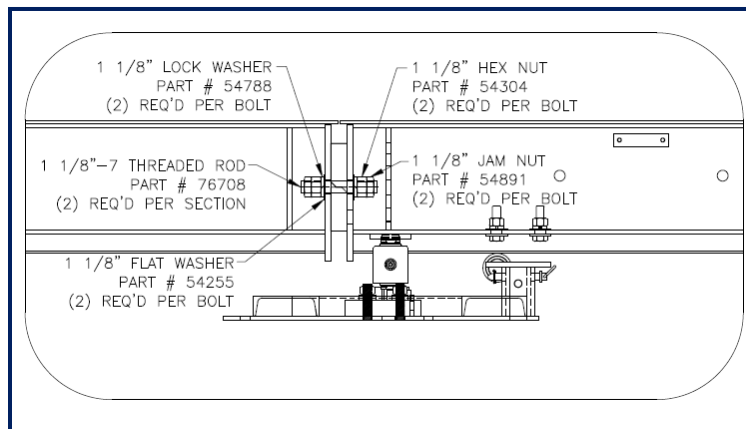


Figure 12

10. Prepare to place the right end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAILS**, the module and sub-frames should be secured together with shipping brackets installed.

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

NOTE: *When delivered, the end modules (both left and right) are supported on the truck with timber shoring. Keep these timbers to shore the end modules when they are re-loaded on the truck to return the scale. Place the right end module next to the center module such that the load blocks of the right end module are bearing down on the load blocks of the center module. Be sure the two modules are square with each other and aligned on the center line of the scale.*

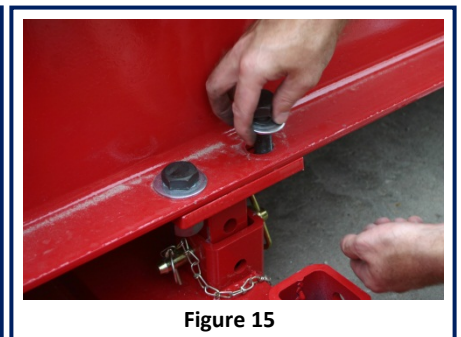
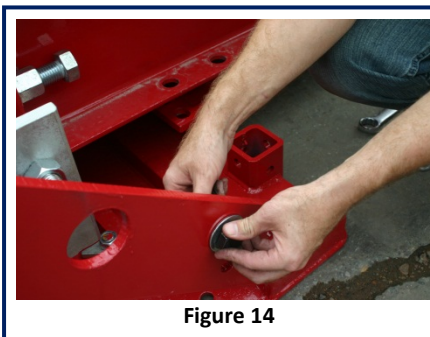
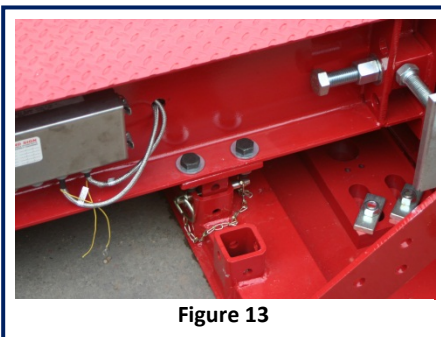
11. Verify that the side checking bolts are tight against the sides of the scale to prevent movement. Be sure the end checking is tight against the end of the bulkhead. Both side and lateral checking must be tight against the scale to prevent movement. Refer to image in step 6.

12. Remove the shipping bolt located at the bulkhead and secure in the storage location provided for safekeeping. Refer to image in step 7

13. Cover bulkhead shipping bolts original location with duct tape to prevent material from migrating into bulkhead. Refer to image in step 8.

14. Install module connection bolts. Insert the 1 1/8" – 7 threaded rods into the module connection gussets and secure with the flat washer, lock washer, hex nut and jam nut as indicated in the illustration. Refer to image in step 9.

15. Locate and remove sectional shipping brackets. At each section, there are side shipping brackets installed through the bottom flange of the side beams from the factory. Locate these shipping brackets and remove the bolts. Each bracket has two bolts connecting the scale to the pedestal frame. Remove all of these bolts and nuts, disconnecting the scale from the shipping bracket. Attach the bolts and nuts to the bulkhead holes provided for safekeeping. See Figures 13, 14, and 15.



PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

16. Remove Hinge pin allowing bracket base to slide down, dis-engaging from the scale beam flange. Replace Hinge pin in provided hole perpendicular to original location. See Figures 16 and 17.

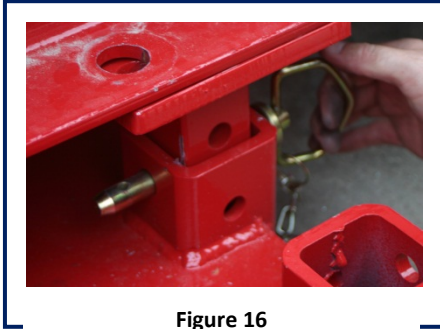


Figure 16

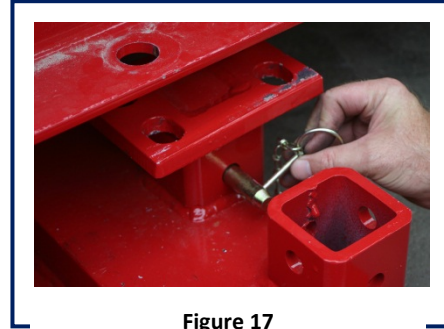


Figure 17

At this point in the installation, the modules are fastened together and disengaged from the pedestal shipping brackets. The scale is now a live deck.

17. The next step involves securing the provided angled slide brackets between each end module and the center module. Each end module will require anti-slide brackets installed on either side of the module.

18. Identify the anti-slide brackets and anti-slide bracket mounting holes located at the sectional pedestals.

19. Each angled anti-slide bracket is secured by three bolts and nuts at the end pedestal and two bolts and nuts at the center pedestal. Secure four (4) angled anti-slide brackets with provided hardware. See Figures 18, 19, and 20.



Figure 18



Figure 19

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

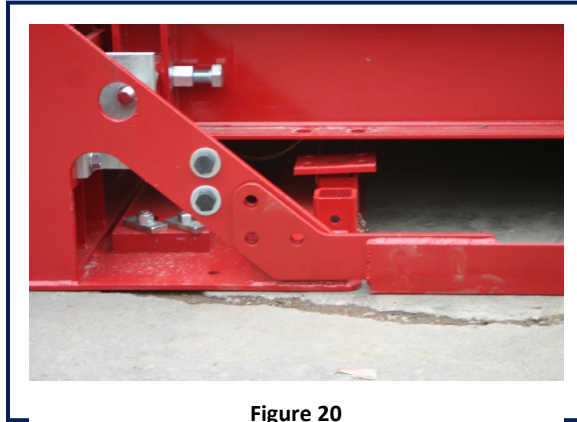


Figure 20

20. Verify load cells are plumb.
21. If installed on concrete base or piers, you are ready to anchor. Check once again that the scale is correctly aligned; the modules are square and in-line with each other. Once it is determined that the scale is square, secure the pedestal sub-frame to the concrete base, or piers with anchors.
22. The final step is to install the provided grounding rods.

TO INSTALL APPROACHES AND RAMPS

If the installation required the Fairbanks ramps and approaches kit, please follow these instructions for assembly. If you are using ramps and approaches, the approaches must be set before the ramps.

1. Ramps and approaches cannot be installed until the scale is set, assembled, and secure.
2. Place the approach bulkhead that will support the approach approximately 9' 6" from the pedestal bulkhead of the scale. This distance is measured from the top flange of the pedestal bulkhead to the top flange of the approach bulkhead (inside to inside). This is an approximate distance; you may need to adjust slightly during the assembly.

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

3. To attach approaches, rig lifting equipment to the provided lifting points and lift the approach and set the approach pins into the scale's pedestal bulkhead saddle first.

See Figure 1.

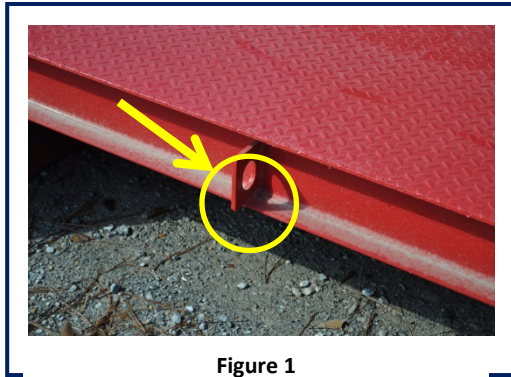


Figure 1

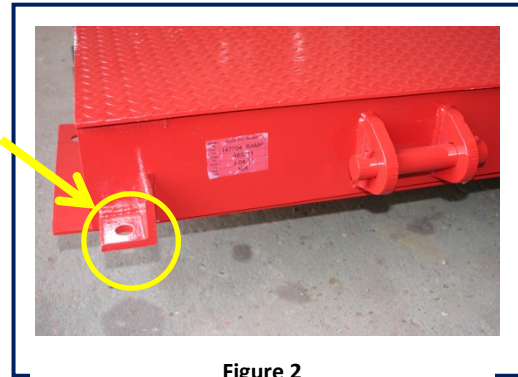


Figure 2

4. Once the approach is connected to the pedestal bulkhead, you can lower the approach to connect with the approach bulkhead. You may need to adjust the approach bulkhead such that the approach pins will slide below the top flange and into the provided saddle.

5. On the scale's pedestal bulkhead and the approach bulkhead, there are angle brackets that will line up with matching integrated angle brackets fixed to the approach. This is a fixture to secure the approach to the bulkheads. Identify those brackets. See Figure 2.

6. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x

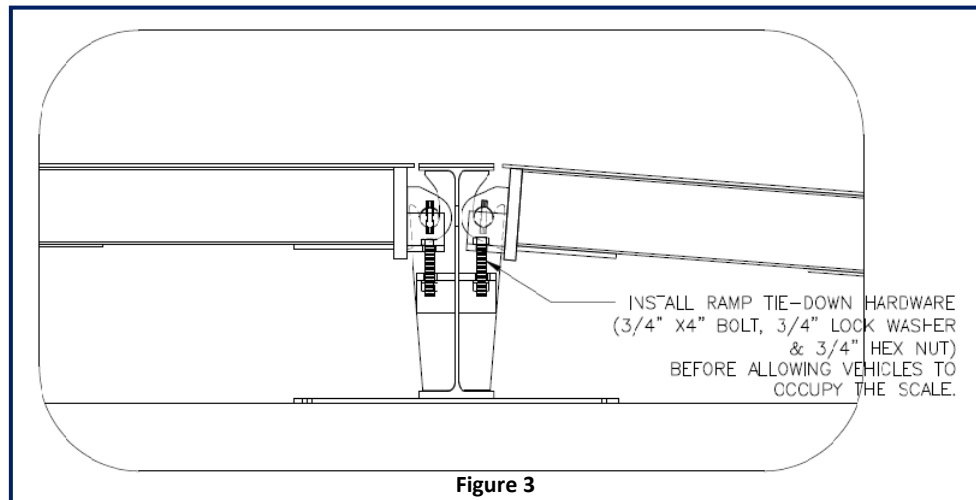


Figure 3

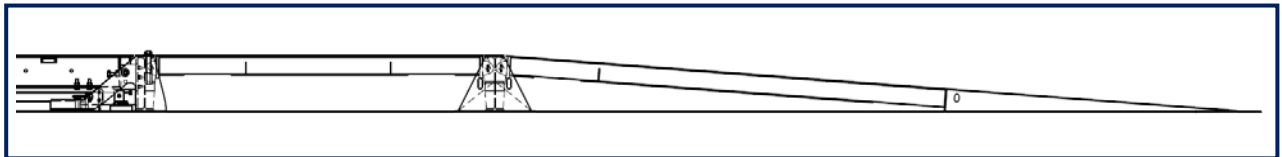
4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down. See Figure 3.

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

RAMPS

7. Set the ramps pin connection into the approach bulkhead's saddle. Refer to image in step 6.
8. The ramps are supplied with integrated angle brackets that will line up with matching angle brackets fixed to the bulkhead. This is a fixture to secure the ramps to the bulkhead. Identify those brackets. Refer to image in step 6.
9. There will be a gap between these two brackets. Install provided spacers (3/4"), two spacers per mounting point, prior to installing bolt to minimize gap. Install 3/4" flat washer to connection bolt, then install 3/4" x 4" full thread bolt with washer through the two angle brackets. Bolt goes from top down. Once bolt is in place, install second 3/4" flat washer, 3/4" lock washer and then hex nut. Tighten down. Refer to image in step 6.



Complete Assembly

TO PREPARE SCALE FOR MOVING, OR TO RETURN YOUR RENTAL SCALE – The above sequence will be reversed.

1. Remove ramps first (if applicable). Disconnect connection bolts, washers and spacers connecting the ramps to the approach bulkhead. Rig lifting equipment to the provided lifting points, lift ramps and set aside. Refer to image in step 6.
2. Remove approaches (if applicable). Disconnect connection bolts, washers and spacers connecting the approach to the approach and scale bulkhead. Rig lifting equipment to the provided lifting points, lift approaches, and set aside. Refer to image in step 6.
3. Rig lifting equipment to the provided lifting points on approach bulkhead, lift bulkheads and set aside. Refer to image in step 3.
4. Disconnect scale from grounding system.
5. If anchored, remove anchors.

PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

6. Disconnect four (4) angled slide brackets from the two (2) end modules and remove from the pedestals. **DO NOT REMOVE** the center module slide angle brackets. Refer to image in step 19.
7. Tighten side and bulkhead checking bolts so they secure the scale and prevent any movement. Refer to image in step 6.
8. At the sectional shipping brackets, remove Hinge pin and raise the bracket base to the bottom flange of the side beam. Re-install the Hinge pin in its original location, securing the bracket base to the bottom flange. Refer to image in step 16.
9. Remove the shipping bracket bolts from the pedestal location (installed for safekeeping during initial set-up) and reinstall two (2) bolts and nuts through the bottom flange and through the sectional shipping bracket base held in place by the Hinge pin. Tighten this hardware. Refer to image in step 15.
10. Disconnect module connection. Remove jam nut, hex nut, and washers from 1 1/8" – 7 threaded rods. Remove threaded rod. Refer to image in step 9.
11. Remove bulkhead shipping bolt from the storage location at the side of the bulkhead (during set-up, bulkhead bolt was installed here for safekeeping). Reinstall bulkhead shipping bolt in original location. Refer to image in step 7.
12. Prepare to load modules for return. Load the right end module first. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames should be secured together with shipping brackets installed. Lift the right end module and prior to placing the module on the truck, set the wooden shoring timbers between the scale and truck's flatbed to support the end module.
13. Next, load the left end module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames should be secured together with shipping brackets installed. Lift the left end module and prior to **SAFELY** stacking the module on the right end module already placed on flatbed, set the wooden shoring timbers to support the end module.
14. The last module to be loaded will be the center module. **BEFORE YOU LIFT!** Safely rig the scale module with the provided lifting points on the side of the scale. **DO NOT LIFT BY SUBFRAME or RUBRAIL**, the module and sub-frames should be secured together with shipping brackets installed. Lift the center module and **SAFELY** stack on truck for final rigging.



PEDESTAL STYLE SUBFRAME – 3 MODULE PV RENTAL SCALE

Installation of 70' rental scales with three (3) modules

15. Safely rig lifting equipment to ramps, approaches and approach bulkheads for loading onto truck.

Section 3: Electrical Installation

DESCRIPTION

The Talon PV Scale is designed to be used with **Intalogix™ Systems**, which utilize **Smart Sectional Controllers (SSC)** and **Pit Power Supplies (PPS)** for load cell excitation and signal processing.

Most applications use **one (1) SSC per section**, and **one (1) PPS for the entire platform**.

- This applies until the number and resistance of the cells require a second pit power supply.

SSC boxes have four (4) terminals.

- Two (2) terminals are used for load cells and two (2) for interfacing to other SSC boxes or terminating to a pit power supply.
- All cell/section/scale adjustments are made using the **Intalogix™ System Instrument**.

INSTALLATION

- **Boxes**

The box has mounting brackets which allow mounting to adapters located inside each load cell access hole of the Talon modules.

- **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 refer to the Appendix for typical wiring information.

- **Smart Sectional Controller (SSC)**

Wire cells into each sections sectional controller per the appropriate service manual. Refer to the Appendix for typical wiring information.

Load Cell Wiring Designations

Color	Description
Black	(-) Excitation
Green	(+) Excitation
Red	(-) Signal
White	(+) Signal
Yellow	Shield

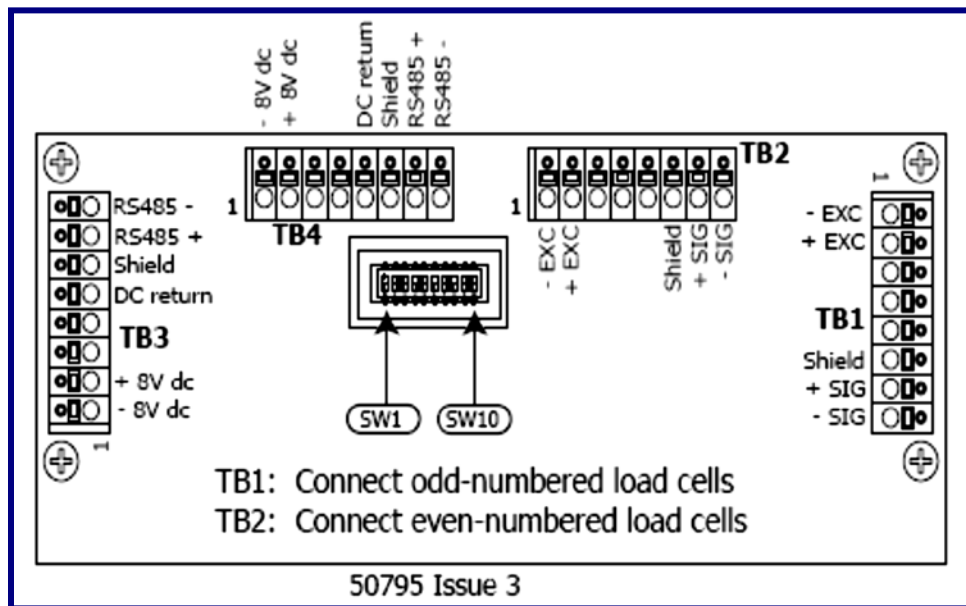
Interconnection Wiring

TB3 or TB4 in SSC	Function	17246 Cable
1	(-) 8.0 volts	Black
2	(+) 8.0 volts	Green
5	DC Return	Blue
6	Shield	Shield
7	RS-485 (+)	White
8	RS-485 (-)	Red

NOTE: On the **17246 Cable** daisy-chain connections, the **Orange** wire is **NOT USED**.

Dip (Address) Switch Setup, SSCs

- In each of the SSC boxes, there is a ten (10) position dip switch labeled **S1**.
 - This switch is used to identify the section in a binary code.
- The switches must be set properly for the scale to operate.



NOTE: Switches 1, 2, 3, 4, are **always OFF**. **Leave these switch settings alone.**

SW 1 position 5 setting

OFF = 350 Ω load cells

ON = 700/1000 Ω load cells

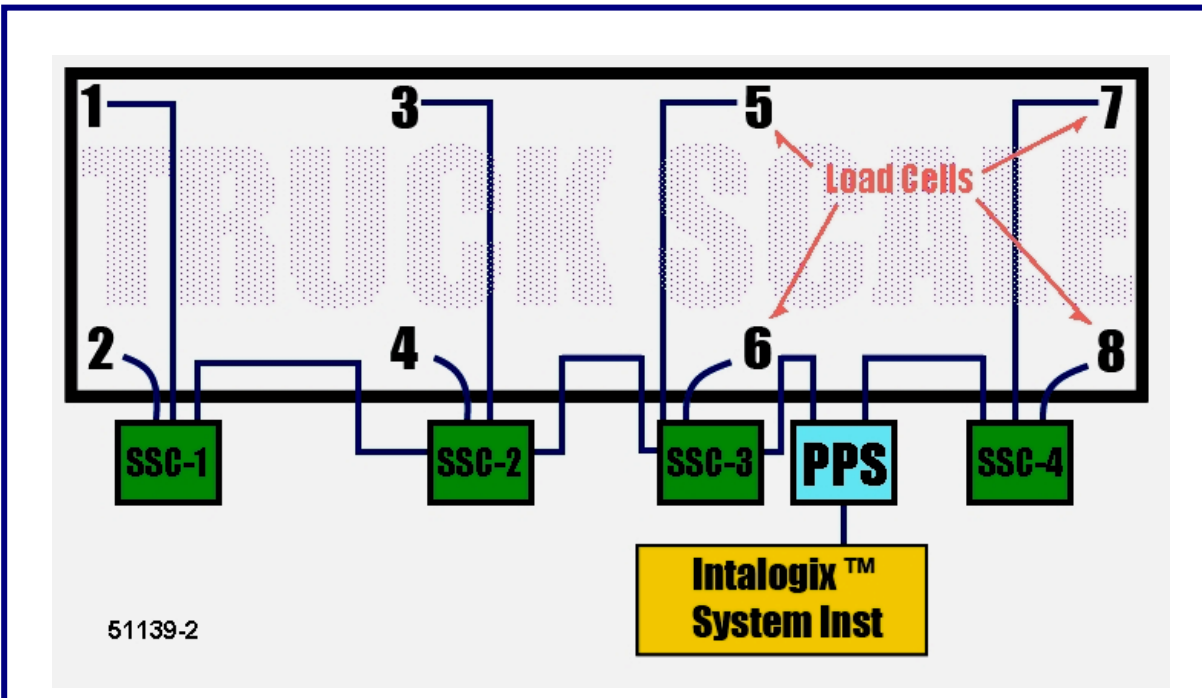
Dip (Address) Switch Setup, SSCs continued

- Switches **6 thru 10** set the Section [Address] Numbers.
- Set the Section Number according to the following chart.
- Each SSC Box will have a unique Section Number entered on the dip switches.

Section Number	Switch Settings				
	6	7	8	9	10
Section 1	On	Off	Off	Off	Off
Section 2	Off	On	Off	Off	Off
Section 3	On	On	Off	Off	Off
Section 4	Off	Off	On	Off	Off
Section 5	On	Off	On	Off	Off
Section 6	Off	On	On	Off	Off
Section 7	On	On	On	Off	Off
Section 8	Off	Off	Off	On	Off
Section 9	On	Off	Off	On	Off
Section 10	Off	On	Off	On	Off
Section 11	On	On	Off	On	Off
Section 12	Off	Off	On	On	Off
Section 13	On	Off	On	On	Off
Section 14	Off	On	On	On	Off
Section 15	On	On	On	On	Off
Section 16	Off	Off	Off	Off	On

Cell Numbering

- Intalogix™ Technology installations use a specific numbering system for load cells because of digital addressing of the SSCs.
- With respect to the following starting position, face the platform where the indicator is located.
- The cell at the **upper-left** (far side) of the platform is **Cell One (1)**.
- The cell positions along the **far side** have **odd cell numbers**.
- The **near side locations** have **even cell numbers**.



Above is an example of a four (4) section cell numberings using SSCs.

SSC Connections

Each SSC has connections for two (2) incoming load cells, labeled **TB1** and **TB2**.

- The **odd** numbered cell goes to **TB1**.
- The **even** numbered cell goes to **TB2**.

Grounding

Intalogix™ Technology systems must have **two (2) ground rods** in the pit for proper connection.

- Pit power supplies one ground for the **weighbridge** and connects the other to the **sectional controller**.
- For accurate operation and protection against damage from lightning strikes, all of the components of the system must be properly grounded.

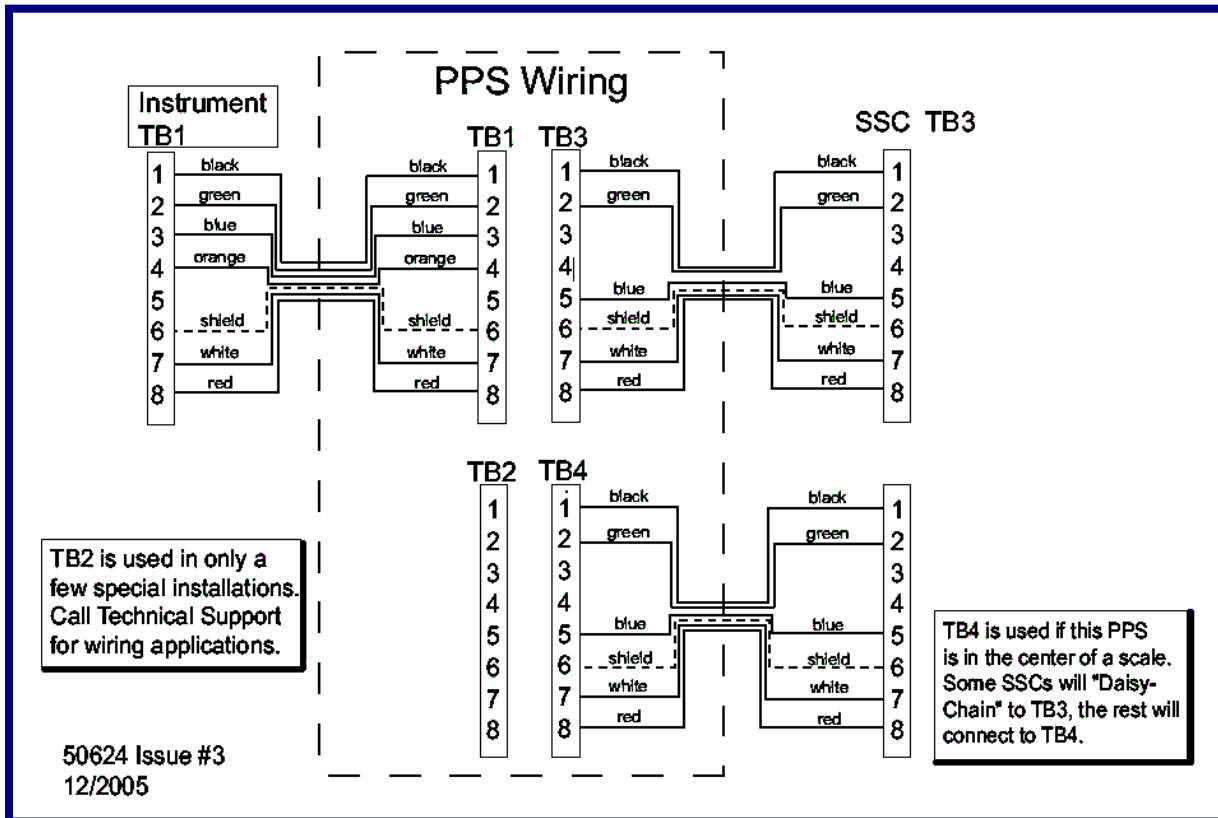
Use the following guidelines to correctly ground the system:

- Use **8 AWG** or larger wire, or **braided ground straps**.
- All ground connections should be **two feet (2')**, or as short as possible.
- The SSCs and PPSs housing attaches in a clean electrical connection **to the platform frame**. The platform frame is then connected to a pit ground rod.
- The insulated **WHITE WIRE** from the PPS connects directly to the separate ground rod **and not to the same rod as the weighbridge**.
- The **117 VAC SVP Unit** connects to a known good ground at the instrument location.
 - Use a voltmeter to test the electrical power source available.
 - The **Neutral-to-Ground** voltage level must be **0.2 VAC or less**.
 - If unsure, or if the testing reveals higher than 0.2 VAC, install a separate ground rod at the **SVP location**, connecting it with braided cable or 8 AWG wire



Indicator to Pit Power Supply Cable Connection

Prepare the cable ends in the standard manner. Use the appropriate manual for wiring the sectional controllers and power supplies. Connect the indicator interface cable to the instrument in the scale house as shown in the service manual.



Connect the **PPS to an SSC** (#1 or any SSC).

- Feed a cable from **SSC #1 TB3** through the bushing for in the **PPS for TB3**.

Connect the wires as shown in this chart.

TB3 SSC#1	TB3 PPS	17246 Cable	Description
1	1	Black	(-) 8.0 volts
2	2	Green	(+) 8.0 volts
5	5	Blue	DC Return
6	6	Shield	Shield
7	7	White	RS-485 (+)
8	8	Red	RS-485 (-)

Indicator to Pit Power Supply Cable Connection, continued

- Wire the PPS to the Instrument.
 - Run the **Home-Run Cable** from the **PPS – TB1** to the **Instrument's TB1**.
 - **Shields** are used for **DC Return** and **MUST BE CONNECTED**.

Connect the wires as shown in this chart.

TB1 PPS	TB1 Inst	17246 Cable	Description
1	1	Black	28 volts, AC
2	2	Green	AC Return
3	3	Blue	20 Volts, DC
4	4	Orange	Enable
6	6	Shield	Shield/DC Return
7	7	White	Transmit
8	8	Red	Receive

Section 4: Calibration

PRELIMINARY CHECKS

- Seat the suspension components. Drive the test truck across the scale stopping and starting several times across the scale. Repeat this procedure **at least three times** to assure that all parts are properly seated.
- Refer to the appropriate technical manual for the particular Intalogix™ Technology Indicator for the setup and calibration procedures.

REPEATABILITY AND RETURN-TO-ZERO PERFORMANCE TESTS

1. **Position the test truck** in the center of the Weighbridge.
2. Note the **weight reading**.
3. Pull the truck off the scale and note the **Return-to-Zero**.
4. **Repeat this procedure** at least three times to assure consistency.
5. If the scale does not repeat the readings (within tolerance), check for mechanical obstructions or binds.
 - Check the scale thoroughly for proper assembly.
 - Check to see the load cells are properly aligned, level and the load is equally distributed on each load cell.
 - Add or remove shims as required to improve deadload distribution.

SECTION TEST AND ADJUSTMENTS

1. Test the section by centering the test load over each section.
 - A weight cart, block weights, rear axles of the test truck.
2. Note the weight indication of each section.
 - Adjusted each sections so the weight indications match within the tolerances set forth by the **National Institute of Standards and Technology's Handbook H-44**.
3. Trim the sections by placing the test load over each section, and then adjusting it as described in the appropriate Intalogix™ instrument service manual.

DIGITAL INDICATOR SPAN CALIBRATION

- Perform the span adjustments, following the appropriate Intalogix™ Instrument service manual.

Section 5: Service & Maintenance

MAINTENANCE INSPECTIONS

- Ensure that the system is maintaining proper ground connections.
- Check module-to-module bolts for tightness.
- Check that the frame has not shifted, and that all bolts are secure.
- Check for movement or washout under any temporary pier structures.
- Check load cells for a level condition.
- Examine load cell cables and module interconnect cables for problems.
- Ensure that the SSCs and the PPSs covers are secure.

LOAD CELL REPLACEMENT

1. **Remove power** from the system at the instrument.
2. **Lift the scale** at the bad load cell location.
3. **Remove** the defective load cell.
4. Apply a small amount of **grease** on the load cell (top and bottom), then install it.
5. Gently **lower the scale assembly**, ensuring proper placement of the load cell.
6. Remove the SSC Enclosure Cover.
7. **Loosen the gland nut.**
8. **Unwire the defective load cell** from the SSC, noting the wire color code.
9. **Wire the new load cell** into the SSC.
10. Tighten the gland nut around the cable.
11. Secure the SSC enclosure latches.
12. **Re-apply power** to the instrument.
13. Check the scale's operation and **calibrate** it as necessary.

SSC BOARD REPLACEMENT

1. **Remove power** from the system at the instrument
2. **Remove the cover.**
3. **Disconnect all wiring**, noting their colors and terminal locations.
4. **Remove the screws** that secure the SSC board.
5. Note the dip switch settings, and **set dip switches for proper address** on new PC board.
6. **Install the new SSC board**, securing it with all the necessary screws.
7. **Connect all the wires** as they were before installing the new SSC board.
8. **Close the box.**
9. **Tighten all gland nuts** with pliers.

PPS BOARD REPLACEMENT

1. **Remove power** from the system at the instrument
2. **Remove PPS cover** and disconnect all wiring
3. Remove screws securing power board
4. **Remove old PCB**, secure ground wire to new PCB
5. **Remake all connections**, install the new PCB and secure all screws
6. **Close the box.**
7. Tighten all gland nuts.

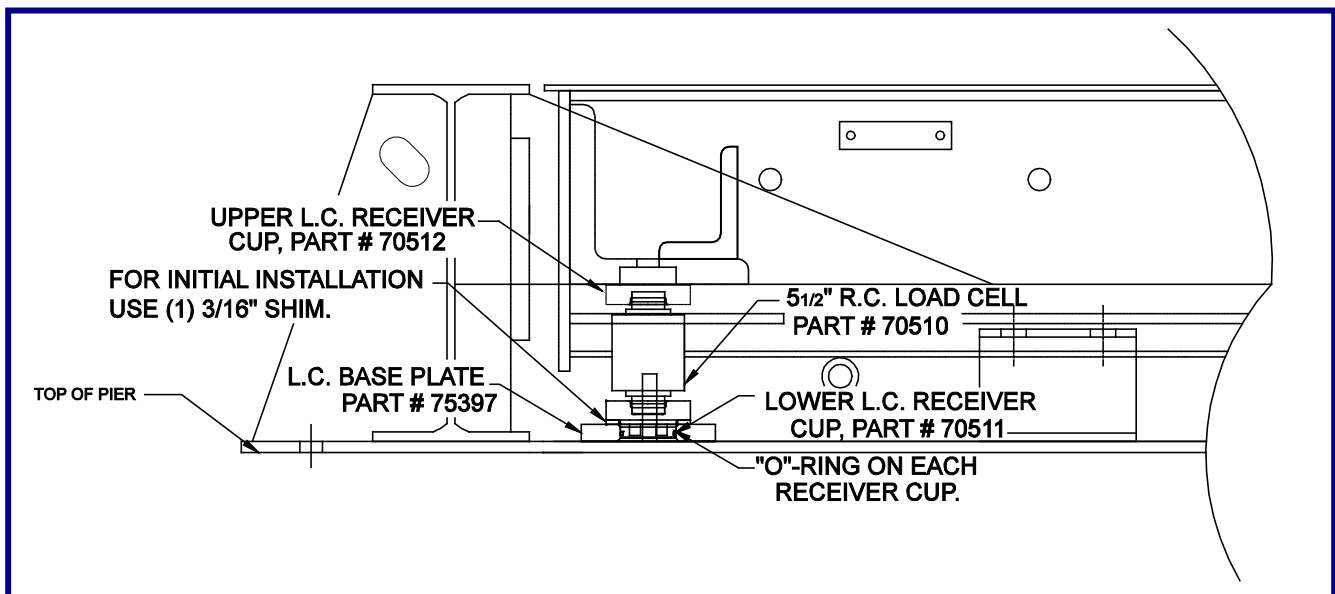
Section 6: Parts

SCALE PARTS LIST

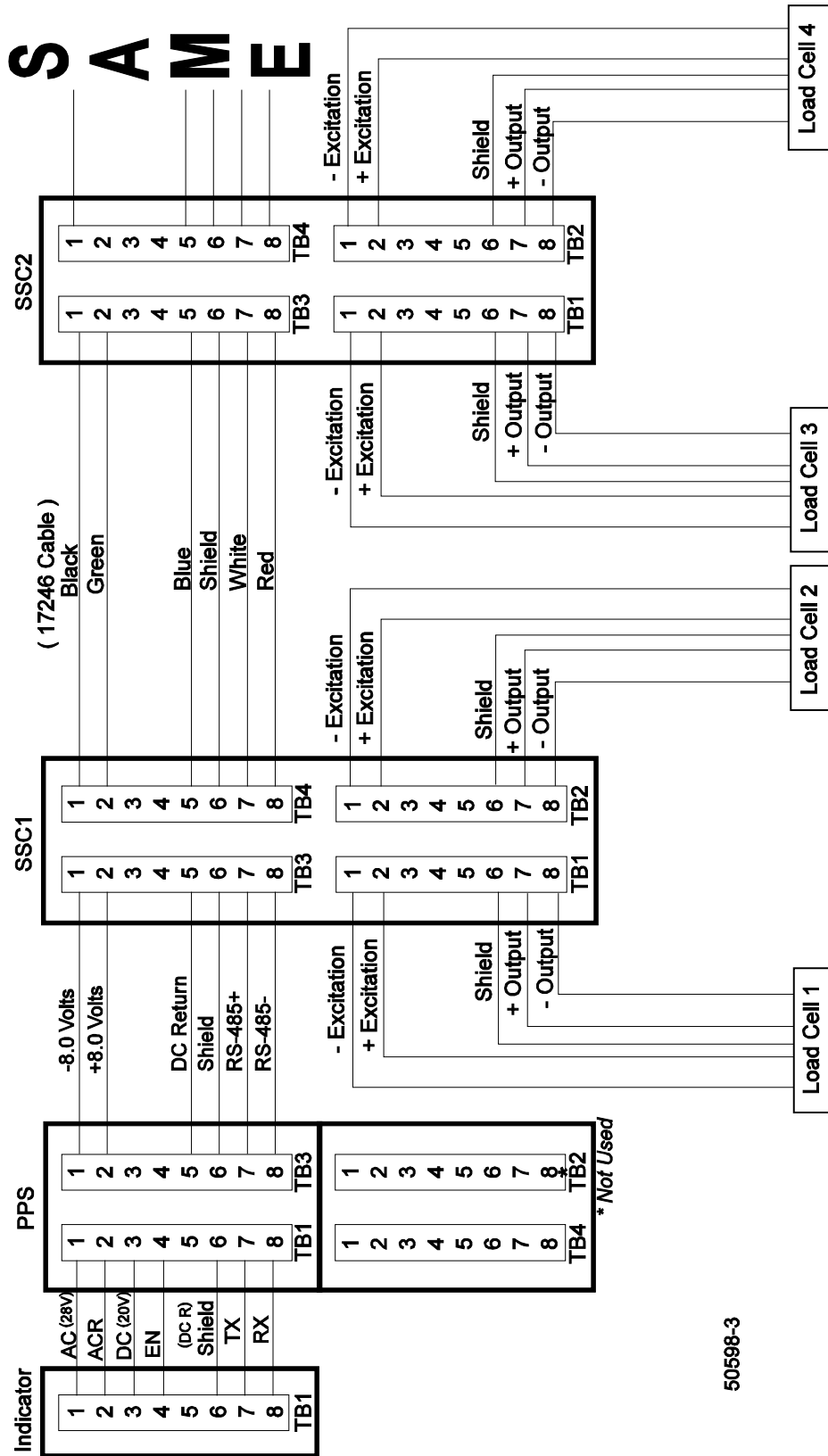
Part No.	Description
75458	1 1/8" x 4 1/2" w/ Nut (module - module)
54788	1 1/8" Lock Washer (module - module)
80955	Load Cell Base Plate
61743	Clamp Bar Washer (Base Plates)
62857	5/8" x 6" Anchor Bolts
55010	Ground Rod Kit

LOAD CELLS AND LOAD CELL HARDWARE

Part No.	Description
80453	Load Cell, 6" RC, 100K, 1000 ohm, 2mv/v
73682	Receiver Cup Shim, 1/16"
64338	Receiver Cup Shim, 1/8"
64334	Receiver Cup Shim, 3/16"
72274	O-Ring, INSIDE of Cup, ANSI #222
64340	O-Ring, OUTSIDE of Cup ANSI #228
70511	LOWER Receiver Cup (w/ anti-rotation pin)
70512	UPPER Receiver Cup
64382	Roll Pin, 1/2" x 2 1/2" Anti-rotation, Base Plate
63981	Anti-Rotation Pin, LOWER Receiver Cup 3/8" x 2 1/2"
71717	Locating Tool 5 1/2"



Appendix I: Wiring



50598-3



Manufactured by Fairbanks Scales, Inc.
821 Locust
Kansas City, MO 64106

www.fairbanks.com

Talon Series

Portable Vehicle Scale

Document 51158