Pro-Weigh 84/SS/FLP – Lo Pro 90 / SS Installation Guide

Version 1.0

SPX GSE scale systems

INTRODUCTION

The scale must not be loaded beyond its capacity. Do not select a site where overweight load would have to maneuver to avoid crossing the platform. Avoid areas where the scale might receive damaging side impacts from wheels, forklift tines, etc., or shock damage from falling objects.

Tools Needed

- Allen wrench (according to base capacity):
  - 1/4" - 1 to 8 k base
  - 3/8" - 10 to 20 k base
  - 9/16" - 30 k+ base
- Calibrated weights
- Flat screwdriver
- Lifting eye bolts (5/8"/11)

Site Preparation

The interface cable between the scale and the indicator must be secured to the floor or wall. It is suggested to run the load cell cable in conduit to protect against crushing, cutting or moisture damage.

In order for the scale to operate properly, it must be level. Either choose a site where the floor is close to this standard to avoid excessive leveling adjustments or modify the floor at the chosen site to meet this standard.

Unpacking

Remove packing material and inspect scale for any visible damage caused during shipment. If damage did occur, notify your freight carrier immediately to register a claim.

Depending on design and packing, some scales are shipped fully assembled. On others, the load feet and the anchor plate option are shipped separately via UPS.

The standard unit includes four plastic caps to cover the leveling adjustment holes.

Installing Load Feet

Screw a load foot into each load cell and turn all the way in until the foot touches the load cell. See ~~Figure 1~~.

Floor Anchor Plate Installation

NOTE: *Floor plates are only needed when the scale is used with ramps.*

For drive-on ramp installations, the scale must be secured to the floor to prevent movement. Two anchor plates, with holes that slightly exceed the foot diameter, are included with ramps.

Lift the scale so that the feet are approximately 1" off the floor. Slide anchor plates under two diagonally opposed load feet. Lower the scale back to the floor and position the plates so that the bolt down holes are accessible from above.

Using the mounting plates as templates, drill pilot holes into the floor for suitable anchor bolts. Bolt the plates to the floor using 1/2" anchor bolts. Recheck foot adjustment and scale levelness after this operation.

Note: The overload stop screws are located next to the top access holes for the load feet . These screws are factory set and MUST NOT be adjusted in the field. Field adjustment may damage load cells and will void any and all factory warranties.

INSTALLATION

Above Floor Installation

- Place the scale base in the area where it is to be used.
- Using the Allen wrench, turn each load foot down until base is approximately 1/4" off of the floor all around. Each load foot has an access hole is located on the top of the base.
- Assure that each load foot is evenly weighted and securely resting on the floor and base is not rocking.

  CAUTION: *If more than 1/2" height adjustment is needed, bottom of load foot must be shimmed. Assure that the load foot bolt is at least halfway in the load cell.*
- At this time, base should be stable and level.
- Secure the load cell cable/conduit to the floor or wall to assure that it has no influence on the weight reading.
- Connect scale base to instrument.

Load Foot Lock

If the scale stays permanently in one place, a jam nut can be used to lock the load feet more securely in place than can be assured by the self-locking feature. ~~See Figure 1~~.

Drive on Ramp

NOTE: *A drive-on ramp should be installed in line with the load cell direction.*

1. Mount anchor plates to the floor as described in the ***Floor Anchor Plate Installation*** section.
2. Now position thew ramp a minimum of 1/8" to maximum 1/4" from base and secure to floor using holes provided on side of ramp and 1/2"x 2 1/2" anchor bolts. ~~See Figure 1.~~

NOTE: *The ramp or pit frame is to serve by design as a moment stop to prevent excess scale movement caused by sudden stops with drive-on vehicles like fork lifts, etc. Therefore, the clearance between scale deck and ramp or pit frame should be just enough to prevent scale contact. In most cases, 1/8" to 3/16" are sufficient. Excess scale movement can cause premature wear of load feet.*

Bump Ramp

NOTE: *Installation of bump ramps is done as the last step of a scale base installation.*

1. Place bump ramp in position, assuring a mini-min. of 1/4" clearance from the scale base to avoid any mechanical contact.
2. Secure bump ramp to the floor, using the mounting holes provided and 3/8" anchor bolts.

Pit

For details of pit construction with a ***GSE*** pit frame, please see pit drawing.

NOTE: *Pit frame must be custom fitted to the scale to assure proper clearance on all sides.*

1. Retract load feet into base frame.
2. Lower scale into pit frame.
3. Assure equal clearance between scale and pit frame all around.
4. Use Allen wrench and turn down load feet until scale deck is level with pit frame.

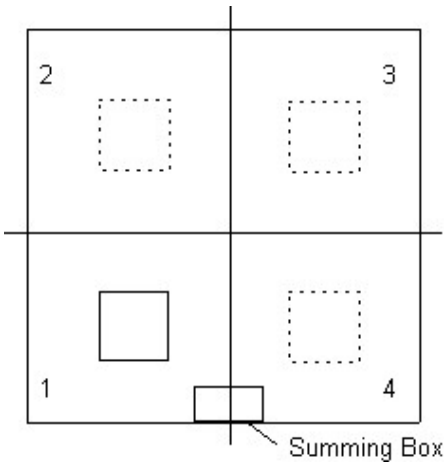
CALIBRATION

1. Connect the load cell from the base to the digital indicator. Refer to **Table 1** for load cell wiring details.
2. Calibrate base to instrument as per instructions supplied with your instrument.
3. After calibration has been completed, take known weight (25% of capacity) and check each corner. Place weight between center of scale and each corner one at a time as shown below. Use the same calibrated weight in each corner.
4. To adjust corner weight readings, use the trim pot designated for that corner which is numbered the same as the corner you need to adjust. See ***Figure* 1**.
5. After each corner has been checked and calibrated, make a final check of your calibration.
6. Enclosed in the scale parts you will find four plastic hole plugs. These are to be placed in the holes directly over the load cell foot.
7. Your ***GSE*** floor scale is now ready for use.

Table 1 : Home Run Cable Connection

Connection	Color
+ Excitation	Red
- Excitation	Black
+ Signal	Green
- Signal	White
+ Sense	Blue
- Sense	Brown
Shield	Clear

Figure 1: Load Cell Positions



Remote Summing Box

The ***GSE*** stainless steel floor scales (specifically the PRO-WEIGH 84 SS is equipped with a remote sealed watertight NEMA 4X summing box, attached to the scale platform by USDA approved flexible conduit. The remote summing box provides relief for the electronics from the harsh environments often found in food processing, pharmaceutical and chemical installations.

Note that the summing box is designed to be wall or column mounted as far above the floor or pit as possible. Also note that proper operation of the scale, particularly in commercial weighing (legal for trade) applications requires that the summing box be mounted in the same area/environment as the scale platform.

The figures on the next page show the installation of a scale platform with a remote summing box. ~~Figure A~~ shows a top-of-floor installation and ~~Figure B~~ shows a pit mounted scale platform.

The homerun cable from the remote summing box is a 6-wire cable, 10 feet in length. Wiring to a ***GSE*** (or other) digital indicator is shown in Table 1.

Mounting Shear Beam Load Cells in Floor Scales

When you are replacing a load cell, pay close attention to the orientation of the load cell in regards to the thread. The ***thread side*** of the load cell ***must*** face the floor to obtain the maximum height adjustment.

TROUBLESHOOTING

Before testing, it is suggested that each load cell be carefully inspected for physical damage.

Testing Zero Balance

Changes in zero balance usually occur if the load cell has been overloaded. Some change may be tolerated depending on the application.

Use a voltmeter set to millivolts. Measure the load cell output under ***no load*** conditions. It should be less than 10% of the full scale output.

Testing Bridge Resistance

Changes in bridge resistance are most often caused by a failure of a compensating element, a broken bridge or burned bridge. Usually failure is the result of an electrical transient such as lightning.

With an ohmmeter, measure the resistance across each pair of input and output leads. The output resistance of the bridge is normally about 350 ohms for single ended beams and canisters and 700 ohms for double-ended load cells. Refer to the calibration certificate shipped with the cell for the actual values. Readings beyond these limits suggest damage and the load cell should be thoroughly inspected.

Testing Resistance To Ground

Electrical leakage is usually caused by water contamination within the load cells or cables. Whether the leakage can be tolerated depends on the application and electronic instrumentation being used. An unstable output is most often caused by contamination.

With a megohmmeter, measure the resistance between all 7 leads tied together (6 live leads and 1 shield) and the load cell body. The reading should be 5000 megohms or more. If the load cell fails this test, remove the ground wire and test with only the 6 live leads. If it test OK, an insulation problem is suspected.

LOAD CELL REPLACEMENT

Should a load cell become damaged due to an overload condition, replacement load cells can be ordered from GSE Scale Systems according to the part numbers in the chart on page **Error! Bookmark not defined.**.

1. Unbolt the defective load cell, and then remove leveling load foot from the load cell.
2. Disconnect load cell cable from junction box and attach a chase wire to the load cell cable.

DO NOT CUT THE LOAD CELL CABLE!

3. Pull the load cell cable out of the formed frame channels. The chase wire will be used to pull the new load cell cable through the formed channel.
4. Install the new load cell by reversing the preceding steps.
5. To verify correct load cell/junction box terminal matching, see the numbers on the terminals inside the junction box and the corner numbering diagram in ***Figure 1: Load Cell Positions***.
6. Position load cell and torque down with a wrench, tighten all mounting bolts to 75 ft./lbs.
7. Route the load cell cables in each corner so that the cable is free from possible contact with the load cell or load foot. Pull cable tight towards junction box, coil up extra length with cable ties and securely store inside channel.
8. Pass end of load cell cable through cable fittings in the NEMA 4X junction box. Corner correction trimming and calibration is necessary after load cell replacement. Follow the calibration instructions on page 3.

Table 2: Replacement Load Cell Wire Color

	HBM	Celtron
+ Excitation	Green	Red
- Excitation	Black	Black
+ Signal	White	Green
- Signal	Red	White
+ Sense	----	----
- Sense	----	----
Shield	Bare Wire	Bare Wire

Back Cover with part number