

# Porta-Tronic

## Portable Scales

INSTALLATION GUIDE  
Version 2.0





# **GSE Porta-Tronic Installation Guide**

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# 1. Introduction

The scale must not be loaded beyond its capacity. Avoid areas where the scale might receive damaging side impacts from wheels, forklift tines, etc., or shock damage from falling objects.

## 1.1 Tools Needed

- ◆ 1/2" wrench
- ◆ Small screwdrivers (regular and Phillips)

## 1.2 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.

## 1.3 Installation

1. Set the scale or cart on its wheels in an upright position and lock wheel brake(s).
2. Mount the column to the base or cart with hardware provided.
3. Mount the indicator to the top of the column with hardware provided.
4. Connect the load cell cable to the indicator. Refer to the table below for wiring color codes.

**Note: Casters with grease nipples should be serviced regularly, especially when the scale is used in a wash-down environment.**

|                | <b>Celtron LOC/LE</b> | <b>HBM PW12</b> | <b>Home Run Cable</b> |
|----------------|-----------------------|-----------------|-----------------------|
| (+) Excitation | Green                 | Blue            | Red                   |
| (-) Excitation | Black                 | Black           | Black                 |
| (+) Signal     | Red                   | White           | Green                 |
| (-) Signal     | White                 | Red             | White                 |
| (+) Sense      | Blue                  | Green           | Blue                  |
| (-) Sense      | Brown                 | Gray            | Brown                 |
| Shield         | Clear or Yellow       |                 |                       |

# 2. Calibration

1. If the indicator and Porta-tronic were calibrated at the factory, the scale is now ready for use. If the indicator came separately, the scale must be calibrated to the indicator. Refer to the indicator's manual for calibration instructions.
2. 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.
3. 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.

4. After each corner has been checked and calibrated, make a final check of your calibration.

## ***3. Legal for Trade***

When the Porta-Tronic is used in a legal-for-trade application, sealing of the scale platform is done using one of two methods.

- ◆ If a lead wire seal is required, loop the wire through the two holes provided on either end of the summing box. Add the seal wire after calibration and corner adjustments.
- ◆ If a foil seal is acceptable, apply the foil seal to the outside of the summing box or to the access plate enclosing the summing box.

## ***4. Troubleshooting***

### **4.1 Load Cell Testing**

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

### **4.2 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.

### **4.3 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.

### **4.4 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 tests good, an insulation problem is suspected.

## 4.5 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 Table 1 on page 3.

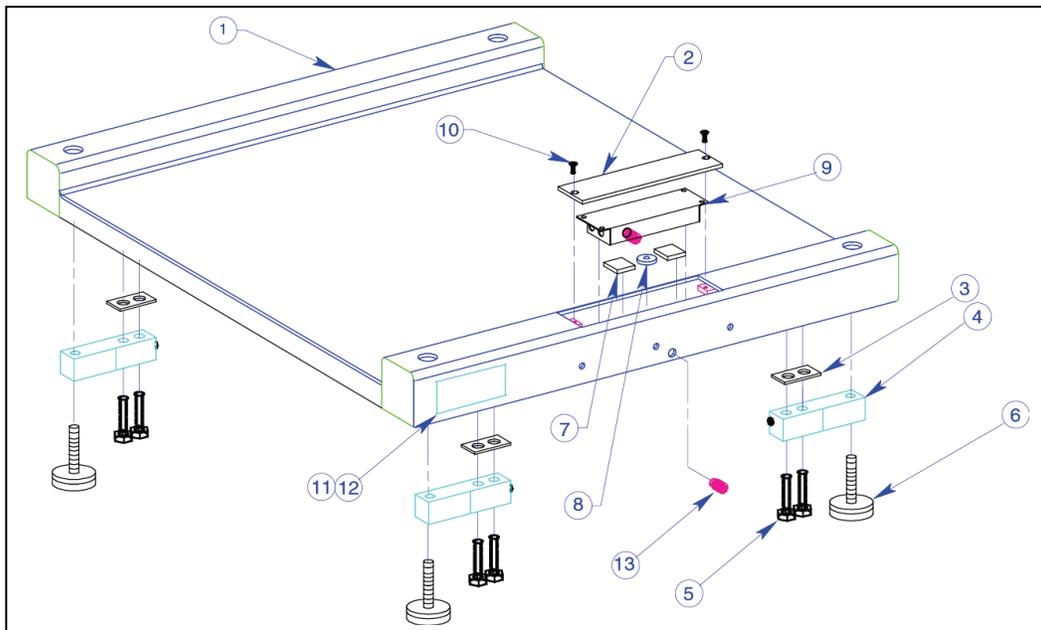
1. Unbolt the defective load cell, and then remove leveling load foot from the load cell.
2. Disconnect load cell cable from junction box and attach a chase wire to the load cell cable.

**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 **Error! Reference source not found.**
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 1.

**Table 1: Load Cell Part Numbers**

| Size               | Load Cell Capacity | Part Number | Platform           |
|--------------------|--------------------|-------------|--------------------|
| 19 x 25<br>24 x 30 | 500 lb             | E0-50459    | PT 800 / PT 820 CS |
|                    | 1K                 | E0-50460    |                    |
|                    | 2K                 | E0-50460    |                    |
| 19 x 25<br>24 x 30 | 500 lb             | E0-50459    | PT810 / PT 830 SS  |
|                    | 1K                 | E0-50460    |                    |
|                    | 2K                 | E0-50462    |                    |



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