Belt-Way Scales

In Motion Weighing Solutions

ROLL-R Scale Installation Guide

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INTRODUCTION

The ROLL-R scale is designed for use on portable crushing and screening equipment and other non-CEMA conveyors. It incorporates load cells and a speed sensor into a low-profile and easy-to-install unit. The Roll-R has (3) frame width options and can be either Model 100 or Model 200 capacity. The Roll-R connects to the Belt-Way integrator.

THIS DOCUMENT DOES NOT REPLACE THE BELT-WAY MANUAL.

REFER TO THE BELTWAY MANUAL FOR INTEGRATOR INSTALLATION AND CALIBRATION INSTRUCTIONS!

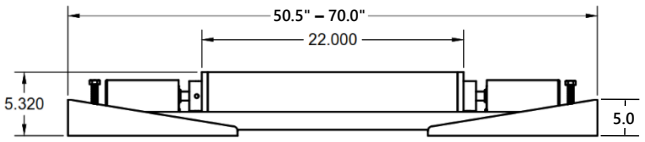
ROLL-R Part Numbers and Dimensions

ROLL100-XX-Y or ROLL200-XX-Y

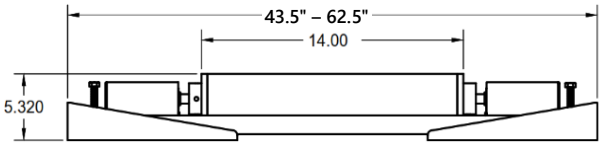
Where:

XX = Power Supply (AC, DC, or NPS (None)

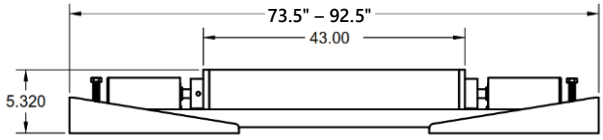
Y = N (Narrow), S (Standard), or W (Wide



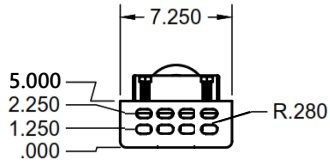
ROLL-R-100-N or ROLL-R-200-N (Narrow)



ROLL-R-100-W and ROLL-R-200-W (Wide)



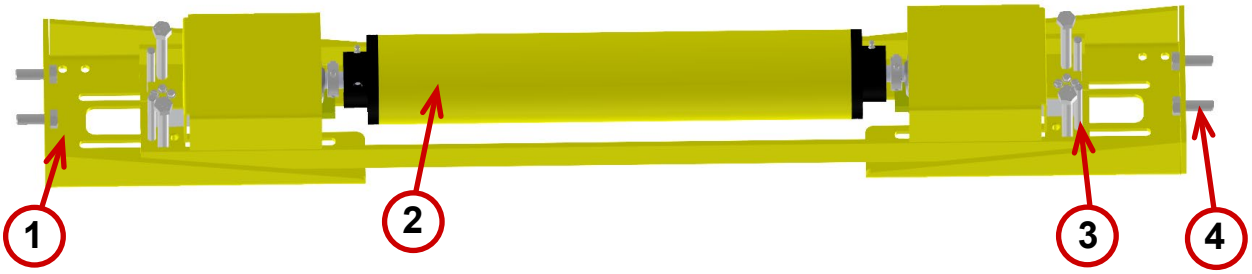
SIDE VIEW



BOTTOM VIEW

What is in the Box

1. (2) Conveyor Frame Mounting Brackets
2. Roll-R scale frame (34”,42”, or 64” wide)
   Includes speed roller and (2) load cells (100 kg or 200 kg)
   All components have 50 ft. of cable
3. (8) Leveling/Locking Bolts, Nuts, and Washers (3/8-16 x 4 in)
4. (4) Frame Mounting Bolts, Nuts, and Washers (1/2-13 x 1-1/2 in)



INSTALLATION PROCEDURE

STEP 1: Identify the Installation Position on the Conveyor

The Roll-R scale consists of a single flat weigh roller mounted on load cells. The scale must be installed so the belt makes continuous contact with the weigh roller. The scale is sensitive to changes in belt tension and should be installed where the belt has enough sag to allow the scale to feel the difference between the empty and loaded belt.

There are two ways to install the scale:

- **Between two existing idlers**

  This method may be easier in most cases as there is no need to remove or modify existing idlers. This is **NOT** recommended if the idlers are less than 48” apart. We suggest a minimum idler spacing of 24” on either side of the Roll-R scale.

- **In place of an existing idler**

  This method is recommended if the existing idlers are close together or the belt is very tight. The idler needs to be completely removed and replaced by the Roll-R scale. The maximum idler spacing before and after the scale should be 48 inches. It is important for the belt to keep its trough shape. Longer spacing could allow the belt to flatten out too much.

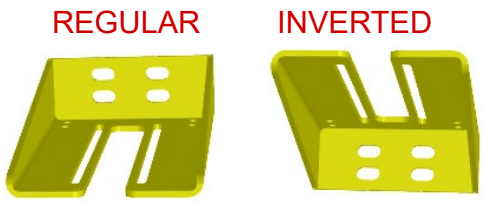
Other installation requirements:

- Do not install the scale under a Magnet.
- Do not install the scale near the head or tail pulley
- Do not install the scale within 8 feet of a loading point.
- Do not install the scale near curves in the conveyor.
- Do not install the scale on a section of the conveyor that flips upside down for transport.

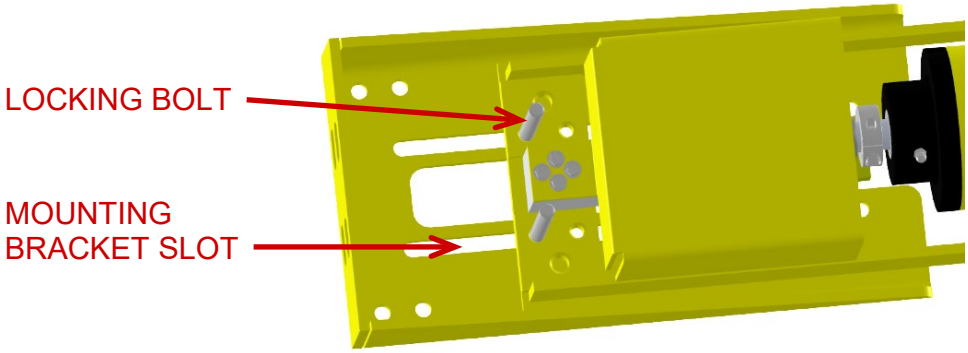
INSTALLATION PROCEDURE, CONT.

STEP 2: Drill Mounting Holes in the Conveyor Frame

1. Use the mounting brackets as a drill template.
2. The bracket can be inverted to raise the scale higher if needed.
3. Make sure the bracket has several inches of clearance above the return side of the belt.
4. Carefully measure to get the brackets at the same position on both sides of the frame.



5. Position the brackets as high up on the frame as possible to minimize leveling.
6. You can temporarily clamp the brackets to the frame and set the roller assembly on the brackets to make sure the locking bolt holes align with the mounting bracket slots.

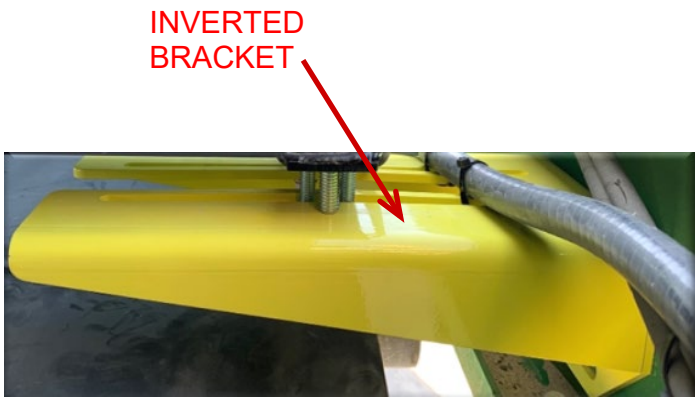


7. Drill two holes on each side of the conveyor.

   NOTE: They must be large enough to pass the 1/2-13 mounting bolts.

STEP 3: Attach the Mounting Brackets

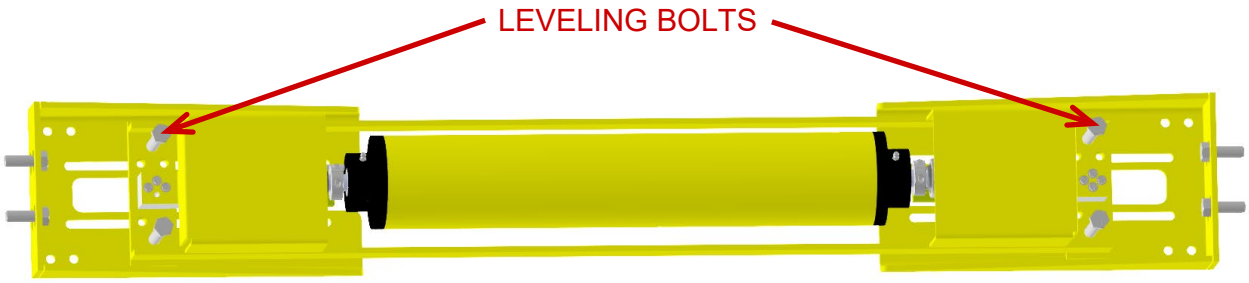
1. Use the 1/2 in bolts to secure the mounting brackets to the conveyor frame.



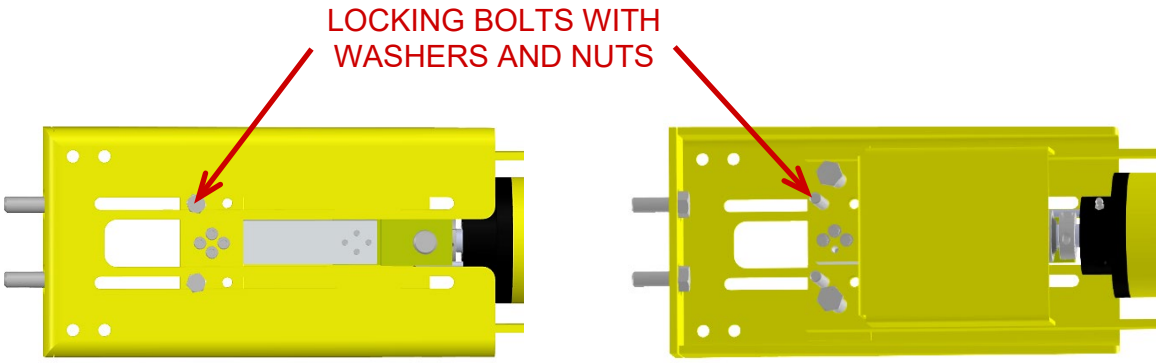
INSTALLATION PROCEDURE, CONT.

STEP 4: Attach the Scale Assembly to the Mounting Brackets

1. Thread the (4) leveling bolts into the roller frame and then set the roller frame on the mounting brackets.



2. Install (4) locking bolts with washers and nuts. **DO NOT FULLY TIGHTEN THEM YET!**



Bottom View **Top View**

3. Tighten the leveling bolts to raise the roller until it makes good contact with the belt.
   - **3a.** The roller should not force the belt up off of the surrounding idlers. String-line the flat rollers if possible. The belt tension can have a significant impact on the scale.
   - **3b.** Make sure there is some sag in the belt before and after the scale.
   - **3c.** Hand-tighten the locking nuts to hold the frame in place.
   - **3d.** The final adjustment will be made after the scale is connected to the integrator.

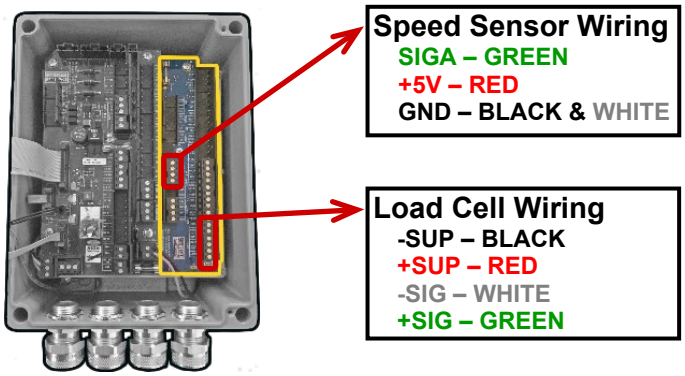
INSTALL THE INTEGRATOR

Important! Refer to the Belt-Way Scales, Inc. Conveyor Belt Scale Product Manual for further instructions. To download the manual, scan the QR code.

Connecting the Integrator

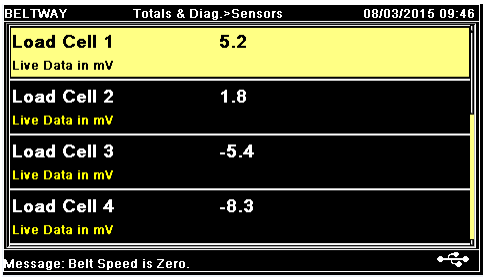
Carefully route the speed sensor and load cell cables to the integrator.

Connect the cables as shown.



Power the Integrator and Check the mV Signal from Load Cells

Navigate to **Main Menu > Totals & Diagnostics > Diagnostics > Sensors**



The mV signal will vary depending on the scale capacity, belt width, and belt tension.

- The Model 100 should show **1 to 1.6 mV** on each load cell.
- The Model 200 should show **.5 to .8 mV** on each load cell.

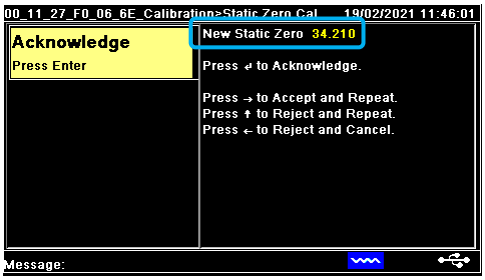
If both load cells are higher than the expected range, you should lower the roller frame slightly and recheck the mV signal.

If both load cells are close to the recommended range, then perform a static zero with the belt stopped.

Navigate to **Main Menu > Calibration > Zero Calibration > Static Zero Cal.**

Press **Enter** several times to complete the calibration.

The zero should be **20-40 pounds**.



Change Speed Sensor Parameters

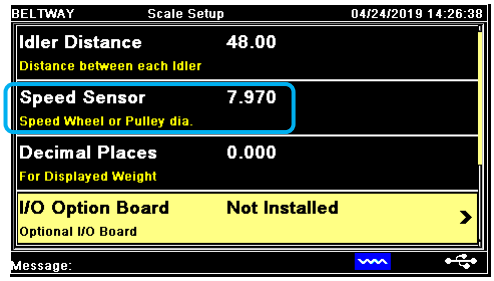
Follow all **Setup Wizard** / **Scale Setup** procedures

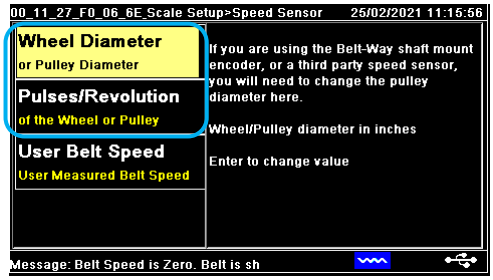
Navigate to **Main Menu > Scale Setup > Speed Sensor**

Change the Speed Sensor settings as follows:

Wheel Diameter = **4.0 inches**

Pulses / Revolution = **10**





CALIBRATION

Perform Zero Calibration and Material Test Calibration

- Run the belt empty.
  If the belt is variable speed, then test the belt at several different speeds.
- Make sure the weight roller is always in contact with the belt.
  If the belt pulls away from the weigh roller enough to stop turning, the belt speed will revert to 0 and the scale will not work.
- Adjust roller height and belt tension as needed to keep the belt on the roller.
- Perform the **Length and Zero** or **Zero Calibration** as described in the manual.
- When the zero is being held properly, perform a **material test** as described in the manual.

IMPORTANT! A material test is essential for accurate weighing.

It is not possible to calibrate with test weights.

The scale should be calibrated by material test each time the machine is moved or whenever the belt or idlers are adjusted.

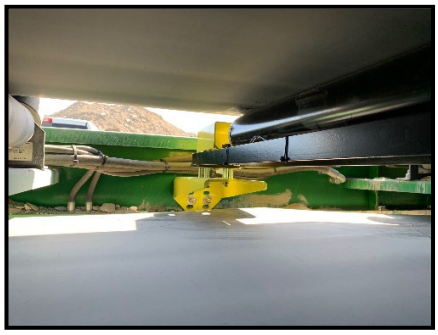
Application Examples

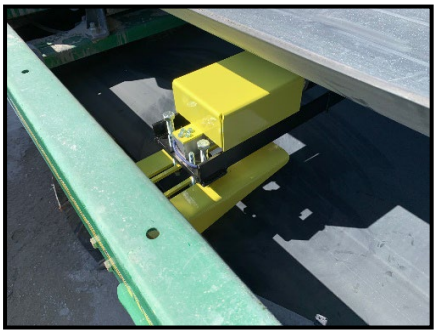
Tracked Conveyor

Sandvik Crusher

Metso Crusher

McCloskey Screen View





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