TS-20KD-1010
LOW PROFILE CARGO SCALE
INSTALLATION GUIDE

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Description

The Triner Scale Model TS-20KD-1010 Low Profile Cargo Scale with wrap around ramps is designed for dependable daily use and precision built for year after year accuracy. Only three inches high, it is designed to accommodate tugs, aircraft carts, dollies, and pallet jacks.

Technical Specifications

Capacity:	20,000 lb x 10 lb
Platform Size:	10’ x 10’ (2 section)
Overall Height:	3”
Corner Capacity:	50 % of total capacity
Summing Junction:	Signal trim summing card in NEMA 4x stainless steel enclosure
Load Cells:	Six 10,000 lb sheer beam type, 350 ohm, 3 mv/v

Required Installation Equipment

Tape measure
Heavy Hammer
Large pry bar
Hammer Drill
1/2" Concrete Hammer Drill Bit
1/4" Concrete Hammer Drill Bit
3/4" Deep well Socket with extension
1 1/8” Socket with Extension
Level
Cable tie wraps
Roll of tape
Calibration weights

Installation Procedure Outline

If there are any questions about the use or installation of the scale system, please call 800-238-0152.

1. Unpack and lay out all parts. Use the packing list included in this manual to verify that all parts are accounted for. If any parts are damaged or missing please call 800-238-0152.

2. Refer to Figures 1, 2, and 3. Review the drawings carefully as they will help the installation procedure go smoothly without unexpected problems.

3. Orient and install Platform Weldments #1 and #2.

4. Route load cell cables around the scale to a common exit point.

5. Orient and install the approach and side ramps.

6. Connect six (6) load cells to summing junction box.

7. Connect home run cable from the junction box to the digital indicator.

8. Perform corner test with 2,000 lbs of test weight.

9. Calibrate the scale per digital indicator manual.

Weldment #1 Installation

1. Choose an area of concrete where the scale is to be installed. The area should be level and free of debris. Be sure to install the scale so the traffic runs parallel to the center seam (see Figure 1).

CAUTION Never install the scale platform on asphalt or blacktop. It will sink in warm weather and cause errors in the weight reading.

2. Be sure to install Platform Weldment #1 first (See Fig. 1). With a forklift, raise Platform Weldment #1 to a comfortable working height.

3. Using load cells marked 1-4, match the load cells to their respective corners. The corner numbers are stamped into the deck plate between the bolting holes. Bolt each load cell into place **making sure that the arrow on the load cell is pointing up** (see Fig 2.). Securely tighten all bolts.

4. Using load cell stands and spherical washers provided, slide the spherical washers over the 5/8" diameter rod on the load cell stand (see Fig 2.). Make sure to put the concave washer on the bottom and the convex washer on the top.

5. Take one load cell stand (with spherical washers) and slide the 5/8" rod through the hole in the #1 load cell. Make sure the holes in the load cell stand are toward the outside to allow for the installation of the lag bolts. The load cell stand should run diagonally across each corner. Use some tape to temporarily hold the stand in place. Repeat for the remaining three (3) corners.

6. Now that all four load cells stands are properly aligned and secured in place, take the excess bundles of load cell cable and put them on top of the platform to avoid damage.

7. Lower Platform Weldment #1 into the desired position. Once the platform is in position, the tape securing the load cell stands can be removed.

8. Shim the corners with the flat washers provided to level the platform. During shimming, make sure to put the shim washers under the spherical washers. After shimming is complete, make sure each of the four load cell stands have equal pressure against the ground.

9. Drill holes into the concrete with ½" concrete bit to anchor the load cell stands. Install and tighten all anchor bolts, **except the two near the center seam of the scale (see Fig 1).**

CAUTION In the two holes near the center seam (see Fig 1), DO NOT use the nuts or washers. Simply hammer the anchor bolt flush with the top of the load cell stand. This will ensure that the anchor bolt will not touch the bottom of Platform Weldment #2 when it is put in place.

IMPORTANT See the Caution statement above!

Weldment #2 Installation

1. Follow the same basic procedure as previously with Platform Weldment #1.

2. Make sure load cells 5 and 6 are securely fastened to Weldment #2, the load cell stands are properly aligned, and secured with tape. Place the bundles of wire on top of the platform

3. Carefully place platform Weldment #2 into position. The platforms interlock with each other (see Fig 3) with the load arm witting inside the load receiving pocket. Once platform Weldment #2 is in place and properly aligned, shim each corner as needed to achieve level. Make sure each load cell stand has equal pressure against the ground.

4. Drill the remaining holes, with ½" concrete bit, in the load cell stands. Anchor and secure with the ½" anchor bolts.

Run Load Cell Cables

1. One of the side ramps has two notches for the cables to exit (see Fig 1) allowing the cables to exit in the middle of the scale or at one of the corners.

2. Route all load cell cables around the perimeter of the platforms to a common exit point. Use the clips welded to the edge of the platforms to hold the wires off the ground. Use cable ties to secure the wires to the clips. Any excess cable can be stored under the triangular corner attachment of the ramps (see Fig 1).

Ramp Installation

1. Layout all eight ramps around the scale as shown in Figure 1.

2. Make sure there is approximately ½" gap all the way around the scale. Note: If a ramp touches the scale platforms there will be errors in the weight reading.

3. Make sure to place the side ramp with cable exit notches where the load cell cables exit.

4. When all ramps are properly aligned, use ½" concrete bit to drill the holes. Install all anchor bolts and tighten them securely.

Platform to Junction Box Connection

1. Locate an area, approximately 5 feet away from the scale, in which to mount the indicator/summing junction stand. Secure the stand to the ground with four ½" anchor bolts.

2. Mount the junction box to the stand with the hardware provided.

3. Feed the six (6) load cell cables through the ribbon conduit provided. Be sure all six (6) load cell cables are numbered with wire tags.

4. Secure the ribbon conduit to the floor with the ¼" anchors provided.

5. Connect all six load cell cables to their respective terminals on the summing card. Use the color code chart below for reference.

Load Cell	Color Code
+E	Red
-E	Black
+S	Green
-S	White
SH	Bare

Junction Box to Indicator Connection

1. Mount the digital indicator to the indicator stand with the hardware provided.

2. Connect the home run cable to the junction box using the same color codes as above.

3. Make sure to tighten all liquid tight fittings to prevent moisture from entering the junction box.

Corner Adjustment

The scale ships from the factory with pre-adjusted corners. However, if adjustments are needed use the potentiometers to adjust each corner as necessary. It is recommended to use 2,000 lbs of test weight to adjust the corners.

Final Calibration

Calibrate the scale system with a minimum of 5,000 lbs of test weight per the digital indicator manual.

Packing List

Item Description	Qty	Check
Platform Weldment #1 (Female)	1	
Platform Weldment #2 (Male)	1	
15” Side Ramps	3	
15” Side Ramp with Cable Exit Notches	1	
15” or 30” Approach / Exit Ramps (Left)	2	
15” or 30” Approach / Exit Ramps (Right)	2	
Load Cell Stands	6	
Indicator / Junction Box Stand	1	
Digital Indicator with 6’ Home Run Cable	1	
SBS-10K Sheer Beam Load Cells (Numbered 1-6)	6	
6 Load Cell Stainless Steel Junction Box	1	
5’ Ribbon Conduit	1	
¾ - 10 x 2 ¼” Hex Cap Screw	12	
5/8” Spherical Washer Sets	6	
5/8” Flat Shim Washers	12	
¼-20 x 1 Hex Cap Screw	8	
¼” Flat Washer	8	
¼” Lock Washer	8	
¼-20 Hex Nut	8	
½” x 4 ¼” Concrete Anchor Bolts with Washers and Nuts	40	
¼” x 3 ¼” Concrete Anchor Bolts with Washers and Nuts	8	

MK	QTY	DESCRIPTION
1	2	APPROACH / EXIT RAMP RIGHT
2	2	APPROACH / EXIT RAMP LEFT
3	3	SIDE RAMP
4	1	SIDE RAMP WITH CABLE EXIT NOTCHES
5	6	LOADCELL STAND 17" X 3" X .5"
6	6	10K LOADCELL - 350 OHM 3mv/v
7	24	HOLES TO LAG DOWN RAMPS
8		
9		
10		

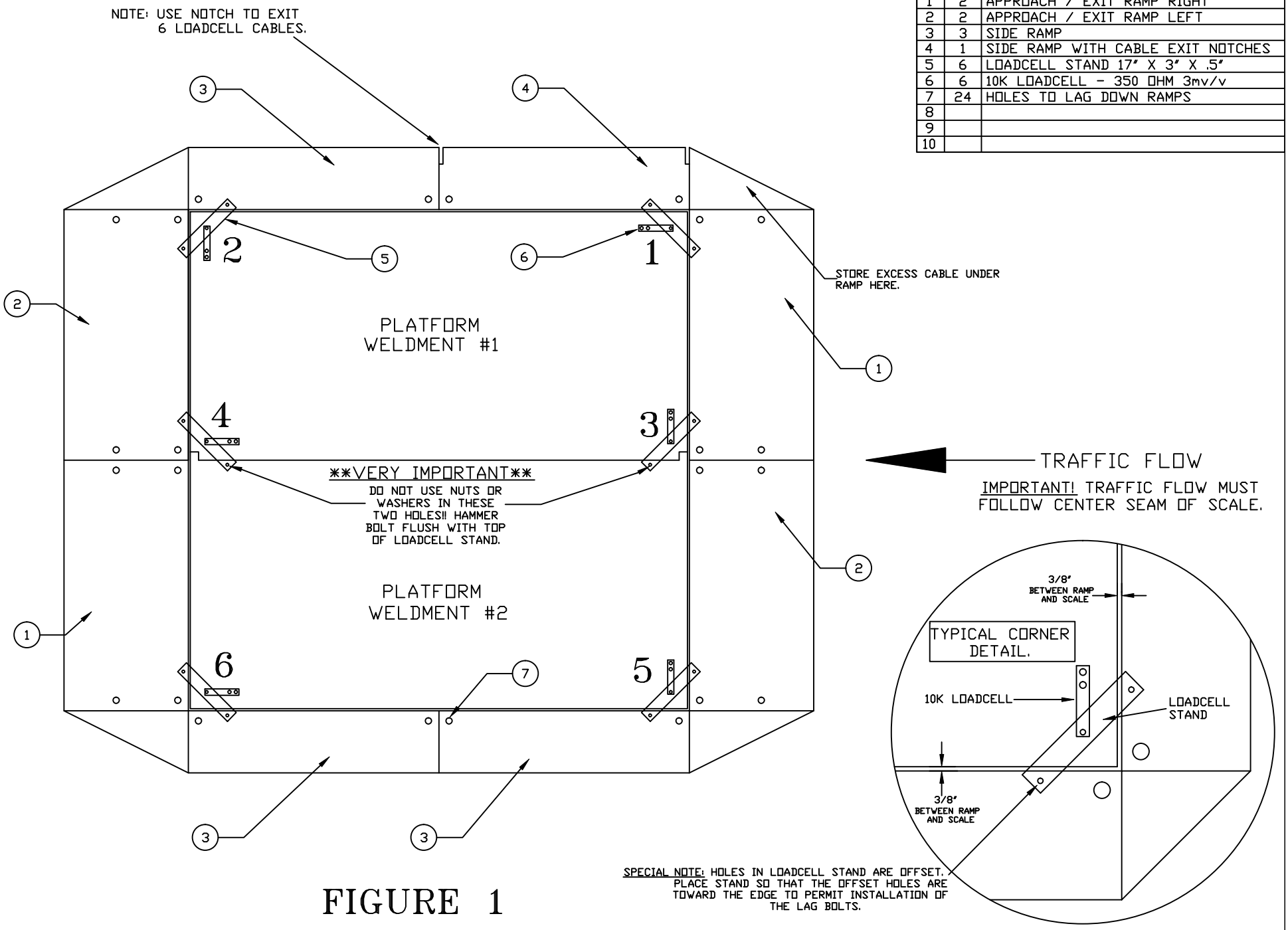

FIGURE 1

MK	QTY	DESCRIPTION
1	6	10K LOADCELL 350 OHM 3mv/v
2	6	LOADCELL STAND 17" X 3" X .5"
3	6	SPHERICAL WASHER SET
4	12	LOADCELL BOLT 3/4-10 X 2 1/4"
5	12	ANCHOR BOLT 1/2-13 X 4 1/2"
6		

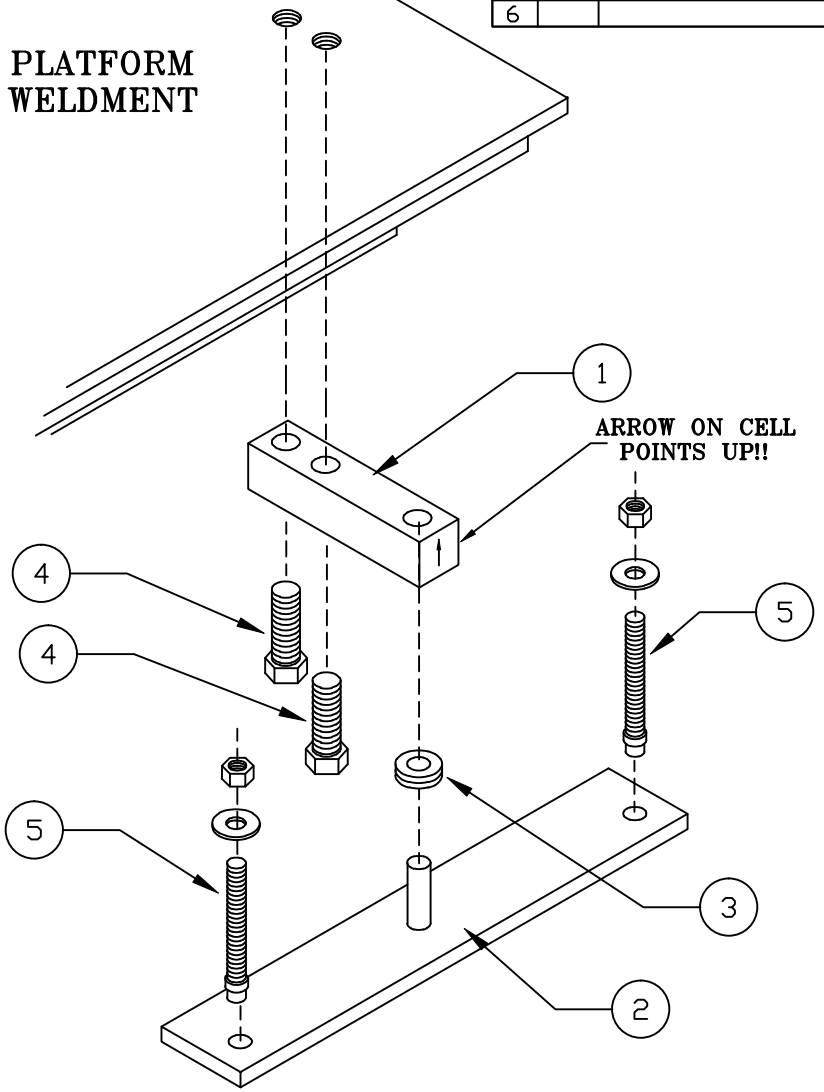

FIGURE 2 CORNER DETAIL

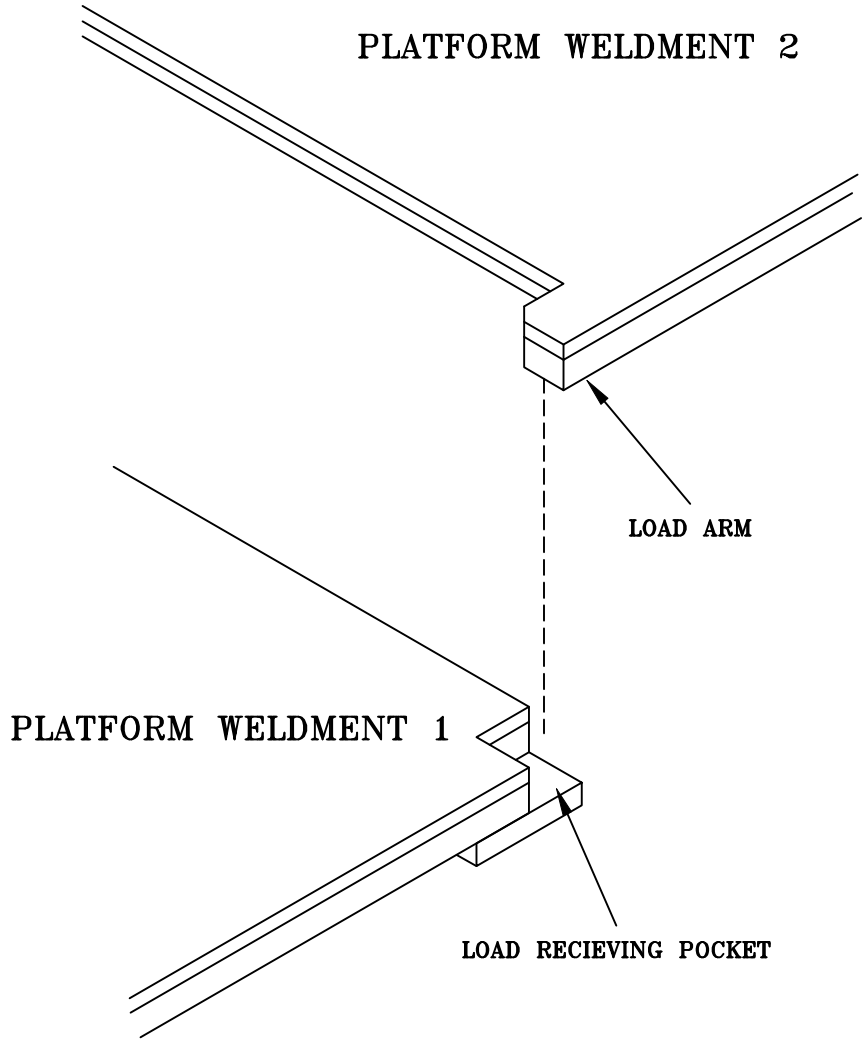

FIGURE 3 CENTER DETAIL