WEIGH-TRONIX

Quik-Tach QTLTSC, with WI-125, Lift Truck Scale Installation Guide

Overview

Please, always keep safety first in your mind as you install your Weigh-Tronix scale and operate any lift truck. Take all necessary safety precautions as you install the Quik-Tach scale. This includes wearing safety shoes, protective eyewear, and using proper tools.

The Certifiable Quik-Tach Lift Truck Scale is shipped as a precalibrated scale system. Normally, these scales may be installed and expected to function within the requirements of a legal for trade scale by respanning the scale with an accurately known weight. However, if the scale is to be certified as legal for trade, as with all legal for trade scales, it must be tested to be sure it passes the tests required for such systems. If the scale fails to pass these tests within the acceptable margins, adjustments and calibrations must be made. The following steps will help the inexperienced technician minimize the effort to successfully install and calibrate the scale so that it will pass certification tests. Normal installation and testing should be accomplished in less than four hours.

Included in these instructions are

- Unpacking and Inspecting
- Installing the Quik-Tach carriage
- Routing the Signal Cable
- Mounting the WI-125 Digital Indicator
- Making the Power Connections
- Testing Protocol

Unpacking and Inspecting

❒ Inspect the shipping container as soon as it is received. If the container appears damaged, closely inspect the contents.

❒ Open the shipping container. Inside you will find the Quik-Tach carriage, WI-125 indicator with mounting bracket, interface cable, power cable, manuals, three metal shims of different sizes, six spacer plates, isomounts and their hardware.

❒ Inspect the Quik-Tach carriage for damage. Examine the wiring and check the connections to the junction box.

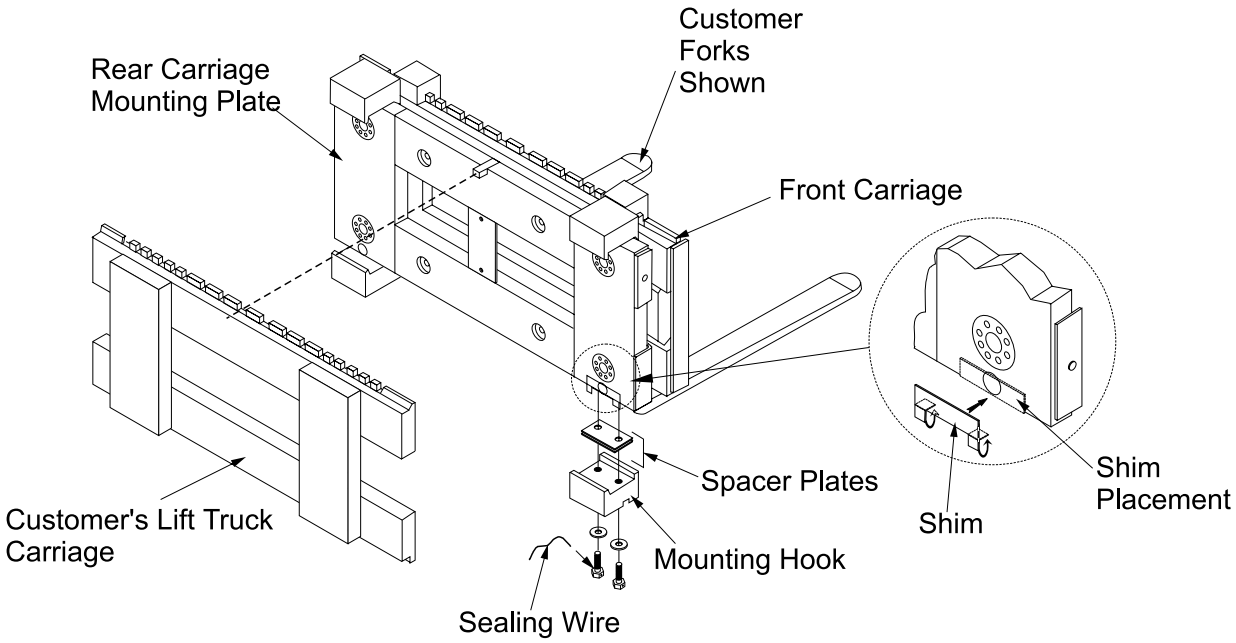


Figure 1

Installing the Quik-Tach Carriage

- ❒ Remove the customer's forks before you mount the Quik-Tach carriage. Check the forks for wear or damage and make any necessary repairs.
- ❒ Clean and inspect the customer's lift truck carriage. **Both the upper and lower sections of the carriage should be flat and not twisted or bent out of shape.** It is especially important that the upper carriage notches are not excessively worn.
- ❒ Remove the two mounting hooks and washers bolted to the bottom of the Quik-Tach carriage (see Figure 1). They secure the scale to the lift truck and will be reattached after the scale is properly positioned.
- ❒ Raise the Quik-Tach carriage to a vertical position on the pallet and drive the lift truck into position.
- ❒ Align the Quik-Tach carriage centering pin with the center notch in the customer's lift truck carriage. The rear face of the scale carriage must be against the customer's lift truck carriage and the top mounting blocks of the scale carriage must be over the top of the customer's lift truck carriage lip and seated firmly in place.
- ❒ Raise the carriage and back the lift truck away with the Quik-Tach scale in place.
- ❒ Raise the carriage to a convenient height for remounting the two mounting hooks. Make certain the customer's carriage is clean where the hooks will be positioned. Attach the mounting hooks and tighten the bolts. The torque spec for these bolts on a 5,000 lb system is 70 foot pounds. The torque spec for these bolts on a 10,000 lb system is 125 foot pounds. Thread the safety wire through the holes in the bolt heads and twist it and tuck it up inside the mounting hooks.

  NOTE #1: (See Figure 2) Make sure the bosses on the Quik-Tach carriage make contact with the customer's lift truck when both forks are seated. If there is more than .030" gap between the Quik-Tach and the

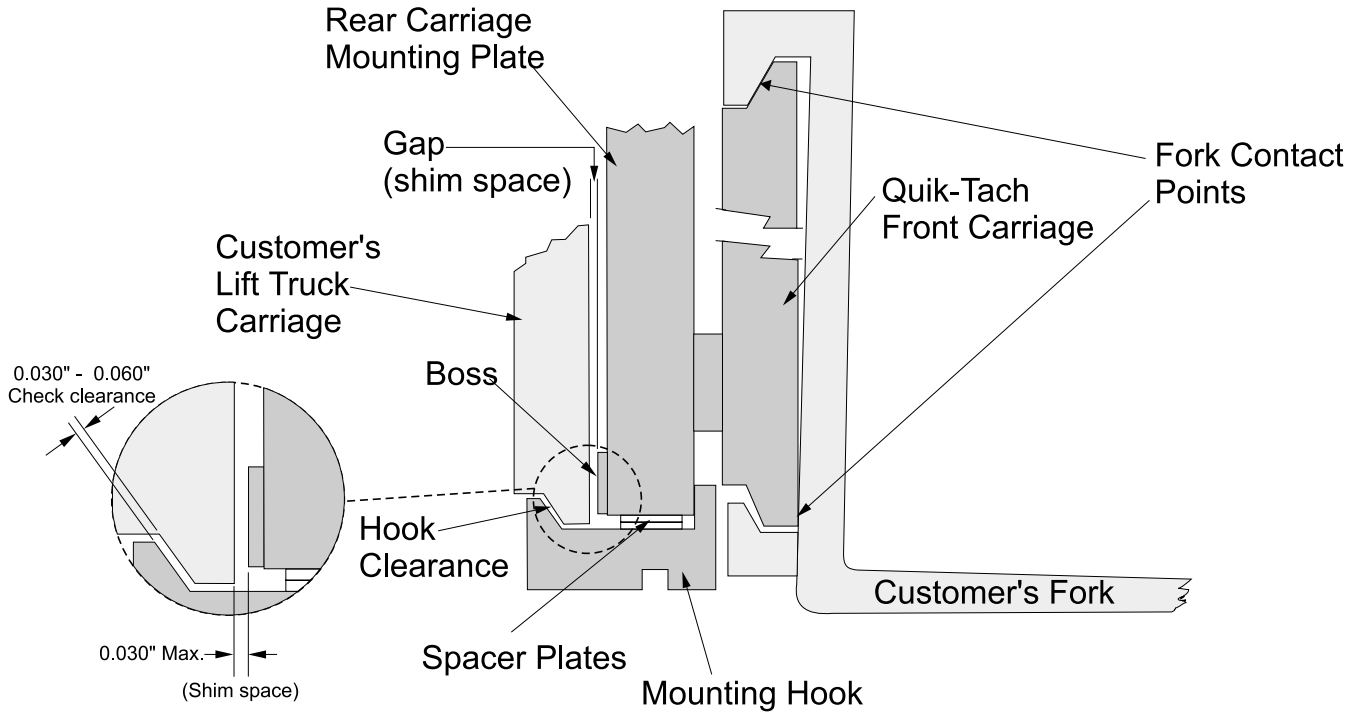


Figure 2

customer's lift truck carriage (see Figure 2) when the forks are seated, use the included shims as needed to close the gap on either end, then bend over the tabs to hold them in place as shown in Figure 1. There are three shim thicknesses. If you have to stack more than two shims on either end, your carriage is bent and needs to be fixed or replaced.

NOTE #2: There must be 0.030" to 0.060" space between the customer's lift truck carriage and the mounting hooks of the Quik-Tach scale. See Hook Clearance in Figure 2. These parts must not touch or the scale won't weigh correctly. Use the spacer plates as needed to be sure this space exists. Also be sure that the customer's lift truck forks contact the scale only at the positions shown in Figure 2. Repair or replace the forks if they are bent or have protrusions which contact the face of the scale.

❒ Mount the forks on the Quik-Tach scale carriage in the same way they attach to the regular lift truck carriage and move the forks into the positions they will be used during normal operation. Make sure all carriage components are firmly and safely in place.

Routing the Signal Cable

Refer to Figure 3 for cable routing. The signal cable has two connectors, both of which are 12 pin.

❒ Position the end with the longer, straight end between the uprights and over any side-shifter cylinder hoses.

❒ Plug the 12 pin connector into the junction box fitting and tighten the collar. Check for proper signal cable clearance as the side shifter is moved back and forth.

These instructions are for a specific sytle of lift truck. Your model may differ.

Two mounting brackets are supplied with the signal cable kit.

❒ Mount the smaller bracket to the existing mounting block located under the **center** of the front tie bar. Mark and drill the two mounting holes in the bracket and cut off the excess length of the bracket. Bolt this bracket in place.

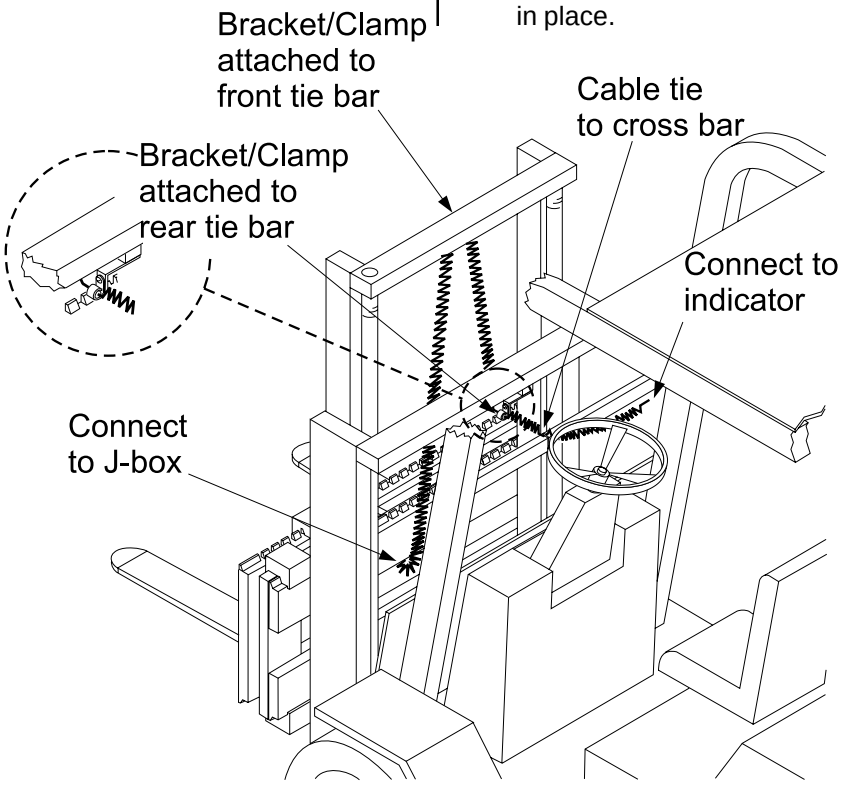


Figure 3
Routing the Signal Cable

❒ With the forks in the fully lowered position, pull the signal cable towards this bracket and adjust the length until the slack is out of the cable. Place the clamp over this spot on the cable and attach it to the mounting bracket.

❒ Raise the forks to full height and back down again. Watch the cable as the carriage moves and adjust the cable length if necessary.

❒ To find the proper cable length for the second cable clamp position, again raise the forks to full height. Pull the cable towards the rear tie bar until the slack is gone. Place the cable clamp over this spot on the cable.

❒ Mount the second bracket to the existing mounting block under the **center** of the rear tie bar. Mark and drill the mounting hole in the second bracket and cut off the excess bracket length. Mount the bracket to the tie bar and secure the cable clamp to this second bracket.

❒ Check the cable as the carriage is moved fully up and down. Adjust the cable length if necessary.

❒ Tilt the uprights forward and back. Allow enough cable for this movement and secure the cable to the **center** of the crosspiece in front of the steering wheel with a cable tie. Route the cable out of the way towards the right leg of the overhead guard and cable tie it at this point.

Mounting the WI-125 Indicator

Inside the shipping box you will find a two-conductor power cable, User's and Installation manuals, weight capacity stickers, isomounts and their hardware.

❒ Determine the best location for the indicator. The indicator tilt position is adjustable. You may pick the best viewing angle for your operators now or after mounting the indicator.

❒ Hold the indicator bracket in position and mark the mounting holes onto the mounting surface. Centerpunch these locations.

❒ Drill and tap holes for 1/4" - 20 threads. Install the isomounts in these holes.

Signal cable pinouts and connector are shown in Figure 4 on the next page.

- ❒ Place the indicator bracket on the isomounts and install the supplied lockwashers and nuts.
- ❒ Attach the 12-pin connector end of the signal cable to the indicator. Note the alignment pin and slot in the connectors. Plug them together and tighten the collar.
- ❒ Tuck and tie the excess signal cable out of the way.

Making the Power Connections

Power cable pinouts and connector are shown in Figure 4 on the next page.

Attention

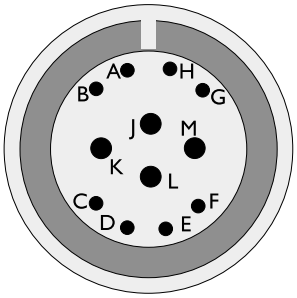
Improper power connections may void the warranty.

- ❒ Disconnect the ground wire from the battery terminal of the lift truck before performing any electrical work.
- ❒ Plug the 2-conductor power cable into the two pin connector on the indicator. Tighten the collar and first route the cable up to secure it to the leg of the overhead guard—then down the leg of the overhead guard. Cable tie the power cable to leg of the overhead guard.
- ❒ Route the power cable from the weight indicator to the desired power source connection point. If possible, run the power cable through existing holes and channels so that it will be out of the way and cannot be damaged by any of the lift truck's moving parts.
- ❒ Disconnect the ground wire from the battery terminal of the lift truck before performing any electrical work.
- ❒ Also, make sure to fuse the power lead with a 10 amp in-line or spare accessory fuse (if available) near the connection point.
- ❒ Connect the white power cable as close as possible to the battery's positive voltage terminal without attaching it directly to the battery terminal. In other words, the first place the positive terminal is connected to is where you should tap in with the white power cable for the indicator.
- ❒ Connect the black ground cable as close as possible to the battery's negative terminal without attaching it directly to the battery. In other words, the first place the negative terminal is connected to is where you should tap in with the black ground cable for the indicator. The chassis may not provide the proper ground potential.
- ❒ Reconnect battery power and check to see that the indicator powers up.
- ❒ Raise the forks a few inches off the floor and zero the indicator by pressing the **ZERO** key. Place a known test weight on the forks and make sure the indicator displays the correct weight.

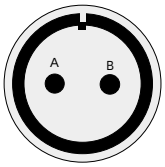
Your scale is now installed and ready for use. Lift trucks will experience a 12% to 14% reduction in lifting capacity with the Quik-Tach scale installed. Contact your lift truck representative for the new capacity of your lift truck and particular option setup. If you have any problems during installation of your Quik-Tach lift truck scale, please contact your local Weigh-Tronix representative.

Junction Box Connections

Be sure you do not open the junction box without sufficient reason*. If you break the seal you will need to have the system recertified before you can use the system again as a legal-for-trade system.*



A = -Signal Output
B = +Excitation
C = +Signal Output
D = -Excitation
E = -Sense
F = +Sense
G = Chassis Ground
H = Chassis Ground
J = Pitch
K = +5v
L = Roll
M = GND



A=Power=White
B=Neutral=Black

Figure 4
Signal and Power Cable Pinouts and Connectors

The four weigh bars are connected to the junction box (J-box) at the factory. Figure 5 shows an illustration of the J-box.

Figure 5
J-Box PC Board

Testing Protocol

It is best to use full capacity weight when calibrating. A minimum of 60% of capacity is recommended.

Your scale should be ready to use without calibration; however, respanning with a known test weight and recalibration may be necessary.

1. Lift a load near the capacity of the lift truck several times to exercise the scale.
2. Check the scale span by lifting an accurately known load with the lift truck. If the weight reading is correct, go to Step 3.

   If the weight reading is incorrect, the scale should be respanned by following these steps:

   a. Press the round, yellow **UP ARROW** key twice—"*1*" is displayed

   b. Press and hold the **MENU** key until "***set up***" appears

   c. Press **MENU** again—"***adjust***" appears

   d. Press **SELECT**—"***acquire***" appears

   e. Press **MENU**—"***fit***" appears

   f. Press **MENU**—"***adjusts***" appears

   g. Press **SELECT**—"***span***" appears.

   h. Press **SELECT** again—a number appears and you may now enter in the known weight of your test load using the yellow **UP ARROW** and **UNITS** keys. Follow the example below:

Span Adjustment

To enter the weight of 4500:

1. Press the yellow **UP ARROW** key 4 times—***4*** is displayed
2. Move over the 4 by pressing the **UNITS** key—***40*** is now displayed
3. Press the yellow **UP ARROW** key 5 times—***45*** is displayed
4. Move over the 45 by pressing the **UNITS** key—***450*** is now displayed
5. Since the third number is a zero, press the **UNITS** key to accept it—***450*** is now displayed
6. Move over the 450 by pressing the **UNITS** key—***4500*** is now displayed

   i. After keying in your load weight, press **SELECT**—"***busy***" is displayed momentarily, followed by "***span***"

   j. Press **MENU**—"***accept***" is displayed

   k. Press **SELECT**—"***no***" is displayed

   l. Press **MENU**—"***yes***" is displayed

   m. Press **SELECT**—"***accept***" is displayed

   n. Press **MENU**—"***end***" is displayed

   o. Press the **G/N** key to return to weighing mode. Calibration is complete.

3. Unload the scale, zero the indicator by pressing the **ZERO** key and weigh the known weight again. If the weight reading is still incorrect, respan the indicator by following steps “a” through “o” above.

4. Check the scale for load shift sensitivity (cornering error).
   a. Lift one-half of net capacity in one quadrant of the pallet and record the weight.
   b. Move the weight to each of the other four quadrants, recording the displayed weight each time.
      - A new, certifiable installation should have the same weight reading in every corner of the pallet.
      - An older installation should have scale readings within 5 lbs in each corner.
   c. If the scale requires cornering, refer to the *Service Manual* for recalibration instructions

5. Check the scale for tilting sensitivity
   a. Lift a known weight (at least half of net capacity) with the scale,
   b. Tilt the scale through the expected range of operation. The scale should be allowed to settle in several tilted positions.
   c. If the weight displayed is incorrect, refer to the *Service Manual* for recalibration instructions.

6. Check the scale for linearity.
   a. Zero the scale and lift one-half of net scale capacity.
   b. Load additional known weights until the total weight is near net scale capacity.
   c. If the scale does not accurately display both weighments (within 5 lbs at full capacity), refer to the *Service Manual* for recalibration instructions.

Weigh-Tronix
1000 Armstrong Dr.
Fairmont, MN 56031 USA
Telephone: 507-238-4461
Facsimile: 507-238-4195
e-mail: industrial@weigh-tronix.com
www.wtxweb.com

Weigh-Tronix Canada, ULC
217 Brunswick Blvd.
Pointe Claire, QC H9R 4R7 Canada
Telephone: 514-695-0380
Facsimile: 514-695-6820

WEIGH-TRONIX
Weighing Products & Systems

12/11/00 125LTC_i.P65 PN 29610-0019e2 Printed in USA