

### Inspection

*Last Revision: January 18, 2017*

[Back to Table of Contents](#)

 **ATCP 92**

#### Procedure

This procedure will assist the inspector while inspecting a vehicle scale.

**\*Note: All vehicle scale installations must comply with ATCP 92.30(3) – Construction Standards.** If you are unsure of your procedures, always ask an experienced inspector before conducting testing.

1. Arrive at the selected business and locate the vehicle scale. Park in an area that does not obstruct the flow of traffic at the site. If the site is attended, contact site personnel and explain that you are going to inspect the scale. If the site is unattended, begin the inspection.
2. Ask for/look for the current license and most recent service company test report. Verify that the license is not expired and record the date for the service company test report. Check the service company test report for accuracy and reporting requirements and note any deficiencies found. (**NOTE: record all notes and indications on the separate “Vehicle Scale Test Worksheet”.**)
3. If able, determine if the scale is used for buying, selling, or both and make a note in WinWam.
4. Visually inspect the indicator for marking requirements and ensure that the indicator is on “zero”. Note any deficiencies found.
5. Begin a visual inspection of the scale (refer to ATCP 92 for exemptions if the scale is portable): approaches, clearances, foundation. Note any deficiencies found.
6. Note whether the scale is electronic, mechanical, or electro-mechanical. Electronic scales will generally have access plates over the load cells. Mechanical and electro-mechanical scales will generally have access covers located in the middle of the scale. If unable to determine, treat the scale as electronic and test accordingly. (**NOTE: some service company test reports will indicate if the scale is electronic or mechanical.**)
7. Determine the number of sections for the scale (if unsure or not able to tell, check the service company test report). If able, determine if the scale is long enough to single-draft weigh all loads going across the scale. If questionable, discuss this requirement with the scale owner.

8. Determine the number of load cells for the scale (if unsure or not able to tell, check the service company test report). Note where load cell #1 is for accurate recording of information (to determine load cell #1: from the main indicator position, load cell #1 is the load cell to the far left, on the opposite side of the scale. The load cells are then numbered going around the scale clockwise. I.E. a 2-section scale would have 4 load cells).
9. Determine if an auxiliary indicator (scoreboard display) is present. If present, check to make sure it is positioned properly and it is operational. If not present, determine if one needs to be installed and note accordingly (also discuss with scale owner if site is attended). Situations where an auxiliary indicator is needed:
  - a. Business prohibits customers/drivers from leaving the vehicle to view the main indicator during the weighing cycle.
  - b. Customer/driver would need to walk more than 100 ft to view the main indicator for weighing or zero balance load.
  - c. Main indicator is unavailable for viewing during weighing (i.e. located in a locked room).
10. Make sure there is a concrete surface under the scale that is the length of the scale and constructed to allow the scale to be well drained.
11. Check that the top edge of each scale wall is framed with a minimum 2" structural steel angle iron coping.
12. Check the clearances around the scale, noting the different requirements for pit scales and above ground scales.
13. For a pit scale, check for an opening that allows access to the pit area of the scale.
14. Check that the approach surfaces are level for the first 10 feet from the scale, and then slope at not more than 1:12 vertical rise: horizontal run (portable scales are exempt from the level requirements, but the approaches must be maintained). Also check that the total length of the approaches (entry/exit) are at least as wide as the scale platform and at least  $\frac{1}{2}$  the length of the scale platform.
15. If there are any noted deficiencies with the visual inspection, determine (if possible) if there are any approved variances for the scale. If so, determine if the scale is compliant with the approved variance(s).
16. Open the rear doors on the test truck and secure in place. Position the test truck to begin the "build-up test". If possible, perform the build-up test on the entrance end of the scale, or the end of the scale where the heaviest loads enter from.
17. While inside the test truck cab, place the gear shift in the "neutral" position and apply the "parking brake". Depress the clutch and engage the "PTO" (release the clutch to fully engage the PTO). Activate the crane power and oil cooler fan.
18. Exit the test truck cab and move to the rear of the test truck.

19. Flip the toggle switch in the back of the truck for the “crane power” to the “on” position. Unchain the locking pins that hold the test cart in place and lay the securing rods flat. Remove the crane control unit and prepare to unload the weights.
20. Begin the “build-up test”. Using the crane, unload the test cart (5,000 lbs) and record the indicated weight. Unload the first row of 4-1,000 lb weights, position them in the test cart, and record the indicated weight (indicator should read 9,000 lbs). Continue unloading the remaining rows of 4-1,000 lb weights, recording the indicated weight after each row, until all weights are in the test cart (total weight should be 25,000 lbs).
21. Begin the “section test” (make sure the test cart gas tank is full or the appropriate amount of error weights are added to the test cart). Move the test cart mid-way between the first section and the second section and record the indicated weight. Move the cart to the second section and record the indicated weight. Repeat this action until you reach the last scale section. **(NOTE: if the range of errors for the “section test” exceeds the absolute value of the maintenance tolerance, the scale fails on range of errors).**
22. Remove the test cart from the scale and verify that the scale returns to “zero” indication.
23. For mechanical and electro-mechanical scales, proceed to the “strain load test” (see step 25). For electronic scales, proceed with the “off-center shift test”. **(NOTE: do not perform the “off-center shift test” if the test cart weight exceeds the load receiving element CLC).** Move the test cart back on to the scale, keeping the inside of the cart wheels nearest the center of the scale over the centerline, away from the load cell you are testing (if the cart is completely on the side of the scale for the load cell you are testing, that applies too much stress on that load cell and the test is not being conducted properly). Position the wheels nearest you in line with the load cell you are testing. Record the indicated weight. Continue down that same side of the scale, testing each load cell and recording the indicated weight for each load cell (when testing the interior load cells [load cells not at the ends of the scale], place the center wheels of the cart in line with each load cell being tested). **(NOTE: if the range of errors for the “strain load test” exceeds the absolute value of the maintenance tolerance, the scale fails on range of errors).**
24. Once you reach the opposite end of the scale from where you started, keep the test cart on the scale and move it to the other side of the scale. Repeat step 23 to test the load cells on the other side of the scale. Record the indicated weight for each load cell. After all load cells have been tested, remove the test cart from the scale and verify that the scale returns to “zero” indication.
25. Begin the “strain load test”. **(NOTE: if the scale is not long enough for the test truck or if the marked scale capacity is less than the total weight of the test truck plus the test weights, move the test cart on to the scale at the end of the scale behind the test truck and skip to step 29, then to step 31).** Back the test truck on to the scale and exit the cab. Record the indicated weight of the test truck only. (Follow steps 26-27 or 28-30 next, depending on the length of the scale).

26. If the scale is long enough to accommodate both units, move the test cart on to the scale behind the test truck and record the indicated weight. Move the test truck off the scale. Move the test cart to the end of the scale behind the test truck in preparation for the “decreasing-load test”.
27. Begin the “decreasing-load test” (perform this test on automatic-indicating scales only). Flip the toggle switch in the back of the truck for the “crane power” to the “on” position. Load the first 3 rows of 4-1,000 lb weights, from the test cart, back into the test truck and record the indicated weight (indicator should read 13,000 lbs). Continue loading the remaining rows of 4-1,000 lb weights, until all weights are back in the test truck. Load the test cart back into the test truck and secure the test cart with the locking pins (indicator should read zero). Flip the toggle switch in the back of the truck for the “crane power” to the “off” position. Close the rear doors and secure.
28. If the scale is not long enough to accommodate both units, move the test truck off the scale and move the test cart on to the scale (to the end of the scale behind the test truck) in preparation for the “decreasing-load test” (“strain load test” will be completed after the “decreasing-load test”).
29. Begin the “decreasing-load test” (perform this test on automatic-indicating scales only). Flip the toggle switch in the back of the truck for the “crane power” to the “on” position. Load the first 3 rows of 4-1,000 lb weights, from the test cart, back into the test truck and record the indicated weight (indicator should read 13,000 lbs). Continue loading the remaining rows of 4-1,000 lb weights, until all weights are back in the test truck. Load the test cart back into the test truck and secure the test cart with the locking pins (indicator should read zero). Flip the toggle switch in the back of the truck for the “crane power” to the “off” position. Close the rear doors and secure.
30. Complete the “strain load test” by backing the truck on to the scale, exiting the cab, and recording the weight of the entire unit (test truck plus test weights only).
31. Return to the test truck cab. Deactivate the crane power and oil cooler fan. Depress the clutch and disengage the PTO. Depress the “parking brake” and place the gear shift into “drive” or “reverse” and move the test truck off the scale (if test truck not on scale, move truck away from the scale).
32. Park the test truck in an area that will not disrupt the flow of traffic at the site and begin the inspection report in WinWam.
33. If the site and device are already in WinWam, select the appropriate device and begin the report. If the site and/or device are not in WinWam, create a new business or new device (whichever is appropriate) and begin the report.
34. In WinWam, verify (for existing devices) or fill in (for new devices) all pertinent and attainable information under the “device” tab and “custom” tab (in “custom” tab, ensure that the “Amanda” license number matches the license number printed on the current, posted vehicle scale license). Under the “attributes” tab, only mark the attributes that were checked (i.e. do not mark “pit condition” if there is no pit). Under the “test” tab, do not

enter any information (if the template is present, delete it). Make notes and record all weight indications from the separate “Vehicle Scale Test Worksheet” in the “notes” section under the “device” tab, NOT in the “inspection notes”. Obtain a signature (if the site is attended), save the inspection and print a “detail report – all attributes”.

35. If the site is attended, leave a copy of the inspection report with the site manager and discuss any deficiencies found. If the site is unattended, leave a report in the scale house if able (if you have a contact person or business, you may choose to drop off or e-mail the report to the business).
36. GPS the scale(s) on site (see [GPS instructions](#) in P&P manual to correctly identify vehicle scales).

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