
Shipping Scale Tare Weight Calibration Verification

1.0 Maintenance Objective & Frequency

The objective of this procedure is to verify and calibrate the tare weight function of the shipping scale to ensure accurate weight readings for outgoing parcels. An incorrect tare offset can lead to overcharging customers or underpaying carriers, directly impacting profitability and compliance. This calibration must be performed weekly or whenever the scale is moved, subjected to a shock load, or after any power interruption exceeding 30 minutes.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Unplug the scale from the AC power outlet. If hardwired, disconnect the circuit breaker and apply a personal lock and tag.
- **No Pneumatic or Hydraulic Isolation Required:** This is a purely electronic/mechanical device. Ensure the scale platform is clear of all debris and parcels before beginning.
- **PPE:** Safety glasses are required when handling calibration weights. Steel-toed boots are recommended if the scale is floor-mounted and weights exceed 10 kg.

3.0 Required Tools, Parts & Lubricants

- Certified calibration weight set (NIST traceable) covering at least 50% of the scale's maximum capacity (e.g., for a 150 lb scale, use a 75 lb weight or combination of weights).
- Clean, lint-free cloth (microfiber recommended).
- Small flathead screwdriver (for accessing calibration trim pot, if applicable).
- Digital multimeter (optional, for verifying load cell output if calibration fails).
- Scale manufacturer's service manual (for specific calibration menu navigation).

4.0 Step-by-Step Maintenance Procedure

1. Ensure the scale is unplugged and the platform is clean. Wipe the platform with a lint-free cloth to remove any dust, adhesive residue, or debris that could affect the tare reading.
2. Plug the scale back in and allow it to warm up for a minimum of 5 minutes to stabilize the internal electronics. Do not place any weight on the platform during this time.
3. Press the TARE or ZERO button to zero the scale. Verify the display reads 0.00 (or 0.0 depending on resolution). If the display does not zero, check for mechanical binding or debris under the platform.
4. Place a known tare container (e.g., an empty cardboard box) on the scale platform. Record the weight displayed. Press TARE to zero out the container weight. The display should return to 0.00.
5. Remove the tare container. The display should show a negative value equal to the weight of the container (e.g., -0.45 lb). If the negative value does not match the original container weight within ± 0.01 lb (or manufacturer tolerance), proceed to calibration.

6. Enter the scale's calibration mode. Refer to the manufacturer's manual for the specific key sequence (commonly holding the TARE and UNITS keys simultaneously for 5 seconds, or pressing a recessed CAL button).
7. When prompted, place the certified calibration weight(s) on the center of the platform. Ensure the weight is stable and not touching any surrounding surfaces. Wait for the display to stabilize (typically 3-5 seconds).
8. Adjust the displayed value using the scale's calibration controls (either via keypad entry or by turning a trim pot with a small screwdriver) to match the exact value of the calibration weight. Confirm the setting (e.g., press ENTER or TARE).
9. Remove the calibration weight. The display should return to 0.00. Re-zero the scale if necessary. Repeat the tare verification test from Step 4. If the tare offset is now correct (within ± 0.01 lb), the calibration is successful.
10. If the tare offset is still incorrect, inspect the load cell for physical damage, corrosion, or loose wiring. Check the load cell output voltage with a multimeter (typical output is 0-30 mV at full scale). Replace the load cell if readings are erratic or out of specification.

5.0 Verification & Return to Service

1. Perform a final verification by weighing three different known weights (e.g., 10 lb, 50 lb, and 100 lb) and confirming the displayed weight is within $\pm 0.1\%$ of the known value or the manufacturer's stated accuracy.
2. Test the tare function with a typical shipping box and contents. Tare the box, add a known weight, and confirm the net weight is accurate. Repeat with a different box to ensure consistency.
3. Record the calibration results in the PM work order in ServiceGrid, including the date, technician name, calibration weights used, and any adjustments made. Attach a photo of the calibration certificate if applicable.
4. Place a calibration sticker on the scale with the date of calibration and the next due date. Remove any outdated stickers.
5. Return the scale to service. Notify the shipping supervisor that the scale is ready for use. If the scale failed calibration and was taken out of service, flag it in ServiceGrid and order a replacement load cell or scale as per the maintenance escalation procedure.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.