
Scale Calibration For Glue Mixing

1.0 Maintenance Objective & Frequency

The objective of this procedure is to calibrate the industrial scale used for glue mixing to ensure accurate weight measurements within $\pm 0.1\%$ of full scale. Proper calibration prevents batch ratio errors that lead to adhesive failure, material waste, and production downtime. This PM is to be performed weekly or whenever the scale is moved, subjected to shock, or after any repair.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect the scale from its power source and apply a personal lockout tagout device.
- **Chemical Safety:** Ensure the scale platform is free of glue residue; wear nitrile gloves and safety glasses when handling cleaning solvents.
- **Manual Handling:** Use two-person lift for calibration weights exceeding 20 kg to prevent back injury.

3.0 Required Tools, Parts & Lubricants

- Certified calibration weight set (NIST traceable) covering 10%, 50%, and 100% of scale capacity
- Lint-free wipes and isopropyl alcohol (99%) for cleaning the scale platform
- Small flathead screwdriver or hex key for accessing calibration trim pot (if analog)
- Digital multimeter (if verifying load cell output)
- Scale manufacturer's service manual for specific calibration menu navigation

4.0 Step-by-Step Maintenance Procedure

1. Perform LOTO: disconnect the scale from its power source and lock out the electrical supply.
2. Clean the scale platform thoroughly with lint-free wipes and isopropyl alcohol to remove any glue residue or debris.
3. Inspect the scale platform, load cell, and all mechanical connections for visible damage, corrosion, or looseness. Tighten any loose fasteners to manufacturer torque specs (typically 5-10 Nm).
4. Reconnect power and turn on the scale. Allow it to warm up for at least 15 minutes to stabilize internal electronics.
5. Zero the scale by pressing the tare/zero button. Verify the display reads 0.000 kg.
6. Place the 10% capacity calibration weight on the center of the platform. Record the displayed value. It must be within $\pm 0.1\%$ of the known weight.
7. Repeat step 6 with the 50% and 100% capacity weights. If any reading deviates beyond tolerance, proceed to step 8; otherwise skip to step 10.
8. Enter the scale's calibration mode per the manufacturer's instructions (typically by holding a specific button sequence or accessing a menu). Use the screwdriver to adjust the calibration trim pot or navigate the digital menu to input the known weight values.

9. After adjustment, repeat steps 5-7 to verify calibration. If still out of tolerance, inspect the load cell and signal conditioning; replace components if necessary.

10. Record the calibration results in the PM log, including date, technician name, weights used, and final readings.

5.0 Verification & Return to Service

1. Perform a final verification by weighing a known intermediate weight (e.g., 25% capacity) to confirm accuracy across the range.

2. Remove all calibration weights and ensure the scale returns to zero.

3. Run a test batch of glue using the scale to measure components. Verify the batch weight matches the recipe within $\pm 0.1\%$.

4. Sign off on the PM work order in ServiceGrid, attaching the calibration log as a note or file.

5. Return the scale to production service and notify the shift supervisor that calibration is complete.

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.