

Temperature Controller Calibration for Glue Pot

1.0 Maintenance Objective & Frequency

The objective of this procedure is to calibrate the temperature controller of the hot melt glue pot to ensure the adhesive is maintained at the correct application temperature. Accurate calibration prevents adhesive charring, reduces nozzle clogging, and ensures consistent bond strength. This PM is to be performed every 6 months or whenever the controller is replaced or suspected of drift.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect the glue pot from the main power supply at the disconnect switch. Apply a personal lock and tag.
- **Thermal Hazard:** Allow the glue pot to cool to below 50°C (122°F) before accessing the tank or controller. Verify temperature with an infrared thermometer.
- **PPE:** Wear heat-resistant gloves, safety glasses, and long sleeves. Ensure adequate ventilation to avoid adhesive fumes.

3.0 Required Tools, Parts & Lubricants

- Certified reference thermometer (Type K thermocouple with digital readout, accuracy $\pm 0.5^{\circ}\text{C}$)
- Small flathead screwdriver (for potentiometer adjustment)
- Infrared thermometer (for initial cooldown verification)
- Clean lint-free cloth
- High-temperature thermal paste (if thermocouple well is used)
- ServiceGrid mobile device or paper work order

4.0 Step-by-Step Maintenance Procedure

1. Perform LOTO as per Section 2.0. Confirm glue pot is cool and power is isolated.
2. Remove the access cover to the temperature controller. Identify the controller model and locate the calibration trim pot(s) (typically marked ZERO and SPAN or OFFSET and GAIN).
3. Clean the glue pot tank surface where the reference thermocouple will be placed. Apply a small amount of thermal paste to the probe tip for optimal thermal contact.
4. Secure the reference thermocouple to the glue pot tank wall, as close as possible to the controller's own sensor. Use a clamp or high-temperature tape to hold it in place.
5. Reconnect power to the glue pot (remove LOTO only for this step). Set the controller setpoint to a mid-range operating temperature (e.g., 150°C if range is 100-200°C). Allow the system to stabilize for 15 minutes.
6. Read the actual temperature on the reference thermometer. Compare it to the controller display. Calculate the offset:
Offset = Reference Temp - Controller Temp.

7. If the offset is greater than $\pm 2^{\circ}\text{C}$, adjust the ZERO (or OFFSET) trim pot using the small screwdriver. Turn clockwise to increase the controller reading, counterclockwise to decrease. Adjust by half the offset value as a starting point.
8. Allow the system to stabilize for another 10 minutes. Recheck the reference vs. controller reading. Repeat adjustment if necessary until the difference is within $\pm 1^{\circ}\text{C}$.
9. If the controller has a SPAN (GAIN) adjustment, verify accuracy at a second temperature point (e.g., 200°C). Adjust SPAN if the error changes significantly between low and high setpoints.
10. Once calibration is within tolerance, turn off the glue pot and allow it to cool. Remove the reference thermocouple and clean the tank surface. Reinstall the controller access cover.

5.0 Verification & Return to Service

1. Remove LOTO and restore normal power to the glue pot. Set the controller to the standard production setpoint (e.g., 170°C).
2. Allow the glue pot to reach setpoint and stabilize for 10 minutes. Verify the controller reading with the infrared thermometer on the tank wall (within $\pm 3^{\circ}\text{C}$ is acceptable for production).
3. Run a test bead of adhesive on a scrap substrate. Confirm proper flow, no charring, and consistent viscosity.
4. Document the calibration results (before/after readings, adjustments made) in the ServiceGrid work order. Mark the PM as 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.