

Assembly Bench Height Adjustment For Multiple Users

1.0 Objective & Quality Standard

The objective of this procedure is to ensure that the assembly bench height is adjusted to the correct ergonomic position for each user, minimizing strain and maximizing productivity. The quality standard requires that the bench height be set so that the user's elbows are at a 90-degree angle when hands are resting on the work surface, with a tolerance of ± 5 mm from the calculated ideal height.

This SOP applies to all adjustable assembly benches in the production area and must be followed whenever a new user begins work or when a user reports discomfort. Consistent bench height adjustment reduces fatigue, prevents repetitive strain injuries, and maintains uniform work quality across shifts.

2.0 Required Tools & Gauges

- Adjustable assembly bench with height adjustment mechanism (crank or pneumatic)
- Digital tape measure or laser distance measurer (accuracy ± 1 mm)
- Ergonomic height reference chart (printed and laminated)
- User height measurement tool (stadiometer or fixed wall scale)
- Spirit level (300 mm length, accuracy 0.5 mm/m)
- Adjustable stool or anti-fatigue mat (if required)
- Personal protective equipment (PPE) as per section 3.0

3.0 Safety & Material Handling

- Wear safety glasses and closed-toe shoes during bench adjustment to protect against pinch points and falling tools.
- Ensure the bench is clear of all tools, parts, and debris before adjusting height to prevent items from falling.
- Use two hands when operating the height adjustment crank or lever to maintain control and avoid sudden movements.
- Do not stand directly under the bench during adjustment; position yourself to the side to avoid injury if the mechanism slips.
- Report any damaged or malfunctioning height adjustment mechanisms immediately to the supervisor and tag the bench as out of service.

4.0 Step-by-Step Procedure

1. Measure the user's standing height using the stadiometer or wall scale. Record the measurement in centimeters to the nearest 1 mm.
2. Refer to the ergonomic height reference chart to determine the recommended bench height range based on the user's height. The chart provides a starting point; final adjustment will be verified by elbow angle.
3. Clear the bench surface of all items. Place the spirit level on the bench surface and verify that the bench is level in both directions. If not level, adjust the bench feet or shim as needed before proceeding.

4. Using the height adjustment mechanism, raise or lower the bench to the recommended height from the chart. Turn the crank or operate the lever smoothly and steadily.
5. Have the user stand in front of the bench with their feet shoulder-width apart and arms relaxed at their sides.
6. Ask the user to place their forearms on the bench surface, keeping their upper arms vertical. Observe the angle at the elbow. The ideal angle is 90 degrees (forearm parallel to the floor).
7. Use the digital tape measure to measure the distance from the floor to the bench surface. Compare this measurement to the recommended height from the chart. The actual height must be within ± 5 mm of the calculated ideal.
8. If the elbow angle is not 90 degrees, adjust the bench height in small increments (5 mm at a time) and recheck the angle. Repeat until the correct angle is achieved.
9. Once the correct height is set, lock the adjustment mechanism securely. Verify that the bench does not move when slight downward pressure is applied.
10. Instruct the user to perform a trial assembly task (e.g., placing a component) to confirm comfort and reach. If the user reports any discomfort, repeat steps 6-9.
11. Record the final bench height (in cm) and the user's name on the bench adjustment log sheet attached to the bench. Include the date and time of adjustment.
12. If the user requires an anti-fatigue mat or adjustable stool, provide it and ensure it is positioned correctly before they begin work.

5.0 Verification & Defect Reporting

1. After adjustment, verify that the bench height is within ± 5 mm of the calculated ideal height using the digital tape measure. If out of tolerance, repeat the adjustment procedure.
2. If the bench height cannot be adjusted to within tolerance due to a mechanical issue, tag the bench with a red 'Out of Service' tag and report the defect to the maintenance team via the ShopDocs QA module.
3. If the user reports persistent discomfort after adjustment, escalate to the supervisor and document the issue in the ShopDocs QA module for ergonomic review.
4. All bench adjustment logs must be reviewed weekly by the shift lead to ensure compliance and identify any recurring issues.
5. Any missing or damaged adjustment log sheets must be replaced immediately, and the bench must be re-inspected before use.

Regulatory Disclaimer: This document is a generic quality assurance template. The end-user assumes all liability for validating all dimensional tolerances, testing procedures, and engineering specifications against actual production requirements before deployment.