

Countertop Support Bracket Placement QC

1.0 Objective & Quality Standard

The objective of this procedure is to verify that all countertop support brackets are positioned, aligned, and fastened in accordance with the approved cabinet engineering drawings. Proper bracket placement ensures uniform load distribution, prevents countertop sagging or cracking, and maintains the structural integrity of the finished assembly.

Acceptable tolerances: bracket centerline must be within ± 2 mm of the specified location from the cabinet face frame or side panel edge. Fastener torque must be within the range specified by the bracket manufacturer (typically 2.5–3.5 Nm for #8 screws into particleboard). All brackets must be level within 0.5 mm across the bearing surface. No bracket shall be missing, loose, or visibly deformed.

2.0 Required Tools & Gauges

- Digital caliper (0–150 mm range, 0.01 mm resolution)
- Torque screwdriver with bit set (calibrated, range 1–6 Nm)
- Machinist's level (150 mm length, 0.02 mm/m sensitivity)
- Steel ruler (300 mm, 0.5 mm graduation)
- Approved cabinet engineering drawing or QC template showing bracket locations
- Red tag and marker for defect identification
- Clean, lint-free cloth

3.0 Safety & Material Handling

- Wear safety glasses to protect against debris or accidental tool slips during inspection.
- Handle cabinets and brackets with clean, dry hands or nitrile gloves to avoid transferring oils or dirt.
- Place cabinets on a stable, level work surface or assembly cart to prevent tipping during measurement.
- Do not lean on or place heavy objects on unsupported countertop areas during inspection.

4.0 Step-by-Step Procedure

1. Retrieve the approved cabinet engineering drawing or QC template for the specific cabinet model being inspected.
2. Visually inspect the cabinet interior to confirm all required support brackets are present and no brackets are missing. Count the number of brackets against the drawing.
3. Using the steel ruler, measure the distance from the front face frame edge to the centerline of each bracket. Record the measurement. Acceptable deviation is ± 2 mm from the specified location.
4. Using the digital caliper, measure the distance from the side panel edge to the bracket centerline. Record the measurement. Acceptable deviation is ± 2 mm from the specified location.

5. Place the machinist's level across the top bearing surface of the bracket. Verify the bubble is centered within the vial. If the bubble touches the line, the bracket is out of level. Acceptable tilt is 0.5 mm over the bracket width.
6. Select the appropriate bit for the fastener head (typically Phillips #2 or square #2). Set the torque screwdriver to the manufacturer's specified torque (e.g., 3.0 Nm). Test each fastener by applying torque in the tightening direction. If the fastener moves before the torque setting clicks, it is loose and must be tightened to the correct torque.
7. Inspect each bracket for visible deformation, cracks, or corrosion. If any damage is found, flag the bracket for replacement.
8. Verify that the bracket is oriented correctly (e.g., not upside down or backwards) per the drawing. Confirm that any alignment tabs or slots engage properly with the cabinet panel.
9. Wipe the bracket and surrounding area with a clean, lint-free cloth to remove any debris or dust that could affect countertop fit.
10. Record all measurements and observations on the QC checklist or in the ShopDocs QA module. Sign and date the checklist.

5.0 Verification & Defect Reporting

1. If any bracket is missing, out of position by more than ± 2 mm, out of level by more than 0.5 mm, or has a loose fastener, attach a red tag to the cabinet with the defect description and date.
2. For loose fasteners: re-torque to the specified value using the calibrated torque screwdriver. Re-verify torque after adjustment.
3. For mispositioned brackets: remove the bracket, fill old screw holes with wood filler or dowels, and reinstall the bracket at the correct location per the drawing. Re-verify all measurements.
4. For damaged brackets: remove and replace with an identical bracket from approved stock. Re-verify placement, level, and torque.
5. Log all defects and corrective actions in the ShopDocs QA module for root cause analysis and continuous improvement tracking. Include the cabinet serial number, defect type, and resolution.
6. If the same defect appears on more than 5% of cabinets in a batch, escalate to the production supervisor for process review and potential fixture or training adjustments.

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.