
Metal Drawer System Fit And Alignment

1.0 Objective & Quality Standard

The objective of this procedure is to ensure that all metal drawer systems are installed with correct alignment, consistent gaps, and smooth operation. Acceptable tolerances: horizontal gap between drawer fronts ± 1.0 mm, vertical alignment within 0.5 mm, and drawer front flushness with cabinet face within 0.5 mm. Drawers must open and close without binding or excessive play.

2.0 Required Tools & Gauges

- Digital caliper (0-150 mm, resolution 0.01 mm)
- Feeler gauge set (0.1 mm to 1.0 mm)
- Straightedge (600 mm length)
- Torque screwdriver (adjustable, 0.5-5 Nm)
- Phillips #2 bit for slide adjustment screws
- Non-marring pry bar or alignment tool
- ShopDocs QA checklist (digital or printed)

3.0 Safety & Material Handling

- Wear cut-resistant gloves when handling metal drawer components to prevent sharp edge injuries.
- Use rubber-grip gloves to avoid transferring oils or dirt to drawer fronts and slides.
- Place drawers on a padded assembly surface to prevent scratching or denting.
- Ensure slides are fully closed before lifting or moving assembled cabinets to avoid slide damage.

4.0 Step-by-Step Procedure

1. Verify the cabinet opening width and height against the drawer specifications using a digital caliper. Record measurements on the ShopDocs checklist.
2. Install the drawer slides on the cabinet sides according to the manufacturer's instructions, ensuring left and right slides are at the same height within 0.5 mm using a straightedge.
3. Attach the drawer slides to the drawer box, ensuring the slides are fully seated and screws are torqued to 2.5 Nm ± 0.2 Nm.
4. Insert the drawer into the cabinet and close it fully. Check that the drawer front is flush with the cabinet face using a straightedge. Gap must not exceed 0.5 mm.
5. Measure the horizontal gap between the drawer front and adjacent cabinet components (e.g., adjacent drawer or door) using a feeler gauge. Acceptable range: 2.0 mm to 4.0 mm.
6. Check vertical alignment of the drawer front relative to adjacent fronts using a straightedge. Deviation must be ≤ 0.5 mm.

7. Open and close the drawer fully three times. Verify smooth operation with no binding, sticking, or excessive noise. The drawer should stop at the fully open and closed positions without bouncing.
8. If the drawer does not align or operate smoothly, loosen the slide mounting screws slightly, adjust the drawer position using a non-marring pry bar, and retighten screws to 2.5 Nm. Recheck alignment and operation.
9. For drawers with soft-close mechanisms, verify that the mechanism engages smoothly and the drawer closes gently without slamming.
10. Inspect the drawer front for any scratches, dents, or finish defects. If defects are found, tag the drawer for rework and record in ShopDocs.
11. Record all measurements and pass/fail status in the ShopDocs QA checklist. Include operator ID and date.
12. If all criteria are met, sign off the checklist and move the assembly to the next station. If any criteria fail, follow the defect reporting procedure in Section 5.0.

5.0 Verification & Defect Reporting

1. After completing the procedure, review all recorded measurements against the tolerances: horizontal gap 2.0-4.0 mm, vertical alignment ≤ 0.5 mm, flushness ≤ 0.5 mm.
2. If any measurement is out of tolerance, attach a red tag to the drawer system with the defect description, date, and operator ID.
3. Move the tagged assembly to the rework area. The rework technician must adjust the slides or drawer position and re-inspect per Section 4.0.
4. If the defect cannot be corrected by adjustment (e.g., damaged slide or drawer box), replace the defective component and repeat the procedure.
5. Log all out-of-tolerance defects in the ShopDocs QA module, including root cause (e.g., misaligned slide, damaged part, operator error) for continuous improvement analysis.
6. For recurring defects (more than 3 in a shift), escalate to the QA Manager for process review and potential retraining or tooling adjustment.

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.