Lazy Susan Bearing Rotation Smoothness Verification

1.0 Objective & Quality Standard

The objective of this procedure is to verify that the Lazy Susan bearing rotates smoothly, silently, and without excessive axial play or binding. The bearing must complete 3 full rotations with no detectable catch, grind, or wobble. Maximum allowable axial play is 0.5 mm measured at the outer edge of the tray. The rotation torque must be between 0.2 N·m and 0.6 N·m when measured with a torque gauge at the tray handle.

2.0 Required Tools & Gauges

- Digital torque gauge (0–1 N·m range, ±0.01 N·m resolution)
- Dial indicator with magnetic base (0–10 mm range, 0.01 mm resolution)
- Feeler gauge set (0.05–1.0 mm)
- Non-marring assembly mat
- Clean lint-free cloth
- Inspection gloves (clean, rubber-grip)
- ShopDocs QA checklist (digital or printed)

3.0 Safety & Material Handling

- Wear clean inspection gloves to prevent oil or dirt transfer to bearing surfaces.
- Place the Lazy Susan assembly on a non-marring mat to avoid scratching finished surfaces.
- Ensure the bearing is free of debris before testing; wipe with a lint-free cloth if necessary.
- Do not force rotation if binding is detected; stop and inspect for obstruction.

4.0 Step-by-Step Procedure

1. Place the Lazy Susan assembly on a clean, level, non-marring mat with the bearing facing upward.
2. Visually inspect the bearing race and ball bearings for any debris, damage, or missing lubricant. Wipe with a lint-free cloth if needed.
3. Mount the dial indicator with magnetic base on the mat, positioning the plunger vertically against the outer edge of the Lazy Susan tray.
4. Zero the dial indicator. Gently lift the tray upward (without tilting) and record the maximum axial play. Acceptable limit: ≤ 0.5 mm.
5. Attach the digital torque gauge to the tray handle or a fixed point on the tray perimeter. Ensure the gauge is aligned perpendicular to the rotation direction.
6. Rotate the tray slowly through one full revolution while reading the torque gauge. Record the peak torque value. Acceptable range: 0.2–0.6 N·m.

7. Repeat the torque measurement for a second and third revolution. All three readings must fall within the acceptable range.

8. Manually rotate the tray through three full revolutions at a moderate speed (approx. 1 revolution per 2 seconds). Listen for any grinding, clicking, or scraping sounds. The rotation must be silent.

9. While rotating, feel for any catch, hesitation, or roughness. The motion must be smooth and continuous with no detectable binding.

10. If any defect is detected (axial play >0.5 mm, torque outside range, noise, or binding), stop the test and mark the assembly for rework.

11. Record all measurements and pass/fail status in the ShopDocs QA checklist. Include operator ID, date, and time.

12. For passing units, place a green acceptance sticker on the bearing housing. For failing units, attach a red tag with defect description and move to the rework area.

5.0 Verification & Defect Reporting

1. Verify that all recorded torque and axial play values are within the specified tolerances. If any value is out of range, the unit fails.

2. If the bearing fails the smoothness or noise test, inspect for debris, misalignment, or damaged bearings. Clean and re-lubricate if necessary, then retest.

3. If the bearing fails after rework, red-tag the unit with a clear description of the defect (e.g., 'Axial play 0.7 mm – bearing race worn') and move to the quarantine area.

4. Log all out-of-tolerance defects in the ShopDocs QA module for root cause analysis. Include photos if possible.

5. Notify the production supervisor of any recurring defect patterns (e.g., three consecutive failures from the same batch) for immediate corrective action.