

Standard Operating Procedure (SOP)

Equipment Calibration, Maintenance, and Cleaning

Purpose

This SOP details the **equipment calibration, maintenance, and cleaning steps** necessary to ensure optimal performance and longevity of machinery and tools. It covers systematic calibration processes to maintain accuracy, routine maintenance schedules to prevent breakdowns, and standardized cleaning procedures to uphold hygiene and operational efficiency. Adhering to these steps minimizes downtime, enhances safety, and guarantees consistent results in equipment-dependent operations.

Scope

Applies to all staff responsible for operating, calibrating, maintaining, or cleaning equipment within the facility.

Responsibilities

- **Operators:** Perform daily checks, cleaning, and recordkeeping.
- **Maintenance Staff:** Conduct scheduled maintenance, troubleshooting, and detailed cleaning.
- **Supervisors:** Ensure compliance and maintain documentation.

Definitions

- **Calibration:** The process of configuring an instrument to provide a result within an acceptable range.
- **Maintenance:** Scheduled actions undertaken to prevent equipment failure and extend lifespan.
- **Cleaning:** The process of removing dirt, debris, and contaminants to maintain hygiene and function.

Procedure

1. Equipment Calibration

1. Refer to the manufacturer's manual for calibration frequency and methods for each specific equipment.
2. Gather all necessary calibration tools, standards, or reference materials.
3. Power off the equipment and ensure it is at operating temperature for calibration.
4. Follow step-by-step calibration instructions as provided by the manufacturer.
5. Record calibration results and any parameters adjusted in the **Equipment Calibration Log**.
6. If the equipment fails calibration, tag as "Out of Service" and notify maintenance staff immediately.

2. Equipment Maintenance

1. Review the maintenance schedule to identify equipment due for service.
2. Collect required tools, spare parts, and PPE (personal protective equipment).
3. Disconnect equipment from power sources before starting maintenance.
4. Inspect components for wear, damage, or leaks according to the approved checklist.
5. Replace or repair parts as needed following manufacturer instructions.
6. Lubricate moving parts where applicable.
7. Reassemble equipment and perform a functionality test.
8. Document actions in the **Maintenance Log** and update the service record.

3. Equipment Cleaning

1. Switch off and unplug equipment before cleaning.
2. Wear appropriate PPE (gloves, safety glasses, etc.).
3. Remove dirt, dust, and debris using brushes or vacuum as suitable.
4. Clean surfaces with approved cleaning agents; avoid excessive moisture near electronic parts.
5. Sanitize handles, switches, and controls if required.
6. Wipe dry with a clean lint-free cloth.
7. Inspect for remaining residues or signs of contamination.
8. Log cleaning activity in the **Cleaning Log**.

Documentation

- Maintain records in **Calibration Log**, **Maintenance Log**, and **Cleaning Log** promptly.
- Retain records for a minimum of 2 years or as otherwise required by regulations.

Note:

- Never attempt maintenance or calibration beyond your level of training.
- Use only approved tools, parts, and cleaning agents.
- Report any issues, damage, or deviations immediately to your supervisor.

Revision History

Revision	Date	Description	Author
1.0	2024-06-01	Initial SOP issued	QA Department