Standard Operating Procedure (SOP)

Machine Calibration and Operational Checks

This SOP details the procedures for **machine calibration and operational checks**, including step-by-step instructions for calibrating equipment, verifying machine accuracy, performing routine inspections, identifying faults, and ensuring optimal performance. The goal is to maintain machinery reliability, enhance safety, and prevent operational downtime by following standardized calibration and checking protocols.

1. Scope

This SOP applies to all relevant machines and equipment requiring calibration and operational checks within the facility.

2. Responsibilities

- **Operators:** Perform daily checks, report issues, and assist with calibration as instructed.
- **Maintenance Personnel:** Conduct calibration, maintain records, and perform diagnostics.
- **Supervisors:** Ensure compliance and keep documentation up-to-date.

3. Required Equipment and Materials

- Calibration tools and reference standards
- Personal Protective Equipment (PPE)
- Operation and maintenance manuals
- Calibration/Inspection logs
- Lockout/Tagout devices (if applicable)

4. Procedure

1. **Preparation**:
    - Read and understand equipment manuals and SOPs.
    - Wear appropriate PPE.
    - Verify that the equipment is properly shut down, if required.
2. **Initial Inspection**:
    - Visually inspect the machine for obvious defects, wear, leaks, or damage.
    - Check for loose or missing parts, and ensure the area is clean.
3. **Calibration**:
    - Follow the manufacturer's or facility-specific calibration procedure.
    - Use certified reference standards and calibration tools.
    - Record baseline readings before adjusting calibration settings.
    - Adjust calibration points as required and document adjustments.
4. **Operational Checks**:
    - Restart the machine as per safety protocol.
    - Run test cycles or verification routines to confirm accuracy.
    - Check operational parameters (e.g., speed, temperature, pressure) against specification.
5. **Routine Inspections**:
    - Conduct and document scheduled inspections (daily, weekly, monthly, as applicable).
    - Monitor for unusual noises, vibrations, or performance deviations.
6. **Fault Identification and Reporting**:
    - If faults are detected, follow the troubleshooting steps outlined in the manual.
    - Report all defects or discrepancies immediately to maintenance or supervision.
7. **Documentation**:
    - Complete calibration and inspection logs with date, time, results, and technician's signature.
    - Attach supporting documents as required (test results, checklists, etc.).

5. Documentation Example

Date	Equipment	Calibration Results	Inspection Findings	Technician	Supervisor Approval

YYYY-MM-DD	Machine A	Within Tolerance	No issues	ABC	XYZ
YYYY-MM-DD	Machine B	Adjusted	Minor belt wear	DEF	UVW

6. References

- Manufacturer's manuals
- Company maintenance policy
- Regulatory standards

7. Revision History

Revision	Date	Description	Approved By
1.0	YYYY-MM-DD	Initial release	XYZ