Standard Operating Procedure (SOP)
Machine Lubrication and Calibration

Purpose: This SOP details the **standard machine lubrication and calibration procedures**, covering routine lubrication schedules, selection of appropriate lubricants, cleaning and inspection before lubrication, calibration techniques to maintain equipment accuracy, documentation of maintenance activities, and safety precautions during the process. The objective is to ensure optimal machine performance, extend equipment lifespan, and prevent breakdowns through consistent and precise lubrication and calibration practices.

1. Scope

Applicable to all staff responsible for the maintenance and calibration of machinery within the facility.

2. Responsibilities

- **Maintenance Team:** Perform lubrication, calibration, cleaning, and inspection tasks as per schedule.
- **Supervisors:** Ensure compliance with SOP, review and sign off maintenance records.
- **Operators:** Report abnormal machine performance and assist during maintenance as required.

3. Definitions

- **Lubrication:** The process of applying lubricants (oils or greases) to machine components to reduce friction and wear.
- **Calibration:** The process of adjusting and verifying equipment to ensure its accuracy according to specified standards.

4. Required Materials and Equipment

- Approved lubricants (per equipment manufacturer's recommendations)
- Cleaning cloths/brushes/solvents
- Personal protective equipment (PPE)-gloves, goggles, etc.
- Calibration tools (e.g., dial gauges, micrometers, calibration weights)
- Maintenance log sheets or electronic records

5. Safety Precautions

1. Ensure machines are switched off and locked out before maintenance.
2. Wear appropriate PPE at all times.
3. Allow hot surfaces/components to cool before starting work.
4. Dispose of used lubricants and cleaning materials according to environmental protocols.

6. Procedure

6.1 Routine Lubrication

1. Refer to the machine's lubrication chart for required intervals.
2. Gather suitable lubricant according to manufacturer's specifications.
3. Clean lubrication points and inspect for leaks, excess build-up, or damage.
4. Apply the lubricant evenly to all required points, avoiding over-application.
5. Wipe off excess lubricant and replace all covers/guards securely.

6.2 Calibration

1. Identify components or systems requiring calibration as per schedule or operational clues.
2. Clean and inspect the calibration points/components for residue or damage.
3. Use the appropriate calibration tool to check equipment accuracy.
4. Adjust settings to bring readings within manufacturer's tolerances.
5. Document all calibration data and any corrective actions taken.

6.3 Cleaning and Inspection

1. Remove debris, old lubricant, or contaminants from all maintenance areas.
2. Examine for wear, corrosion, leaks, or other defects.
3. Report and address any issues found before proceeding with lubrication/calibration.

7. Documentation

- Record all lubrication and calibration activities in the maintenance log.
- Include date, time, personnel involved, observations, and actions taken.
- Supervisor to review and sign off on completed records.

8. Troubleshooting

1. If unexpected wear or error is detected, halt machine and investigate root cause before restarting operations.
2. Refer to manufacturer's manual or seek technical support for unresolvable issues.

9. References

- Manufacturer's operation and maintenance manuals
- Safety Data Sheets (SDS) for lubricants and cleaning materials
- Internal maintenance records

10. Revision History

Revision No.	Date	Description	Approved By
1.0	2024-06-15	Initial release	Maintenance Manager

Note: Adherence to this SOP is mandatory. Failure to comply may result in equipment failure and safety hazards.