STANDARD OPERATING PROCEDURE

# Machine Lubrication SOP

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| **Document no.** | SOP-MNT-006 |
| **Revision** | 1.0 |
| **Owner** | Maintenance Manager |
| **Effective date** | September 15, 2026 |
| **Review cycle** | Every 12 months |

## 1. Purpose

To make sure every lubrication point on covered equipment receives the correct lubricant, in the correct quantity, on schedule, to reduce wear and prevent lubrication-related failures.

## 2. Scope

Applies to scheduled lubrication routes on production and facility equipment, including grease points, oil reservoirs and gearboxes. One-time lubrication performed during a repair or PM task on other equipment is covered by those SOPs.

### Definitions

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|---|---|
| **Lube route** | A defined sequence of lubrication points visited on a schedule, often grouped by area or frequency. |
| **Lube chart** | The reference showing the correct lubricant type and grade for each point on a piece of equipment. |
| **Oil analysis** | Laboratory testing of a lubricant sample to check for contamination, wear metals and remaining useful life. |
| **Re-lubrication interval** | The recommended time or run-hours between applications of grease or oil to a given point. |

## 3. Responsibilities

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| **Lubrication Technician** | Follows the lube route, applies the correct lubricant and quantity, and records completion and any abnormal findings. |
| **Maintenance Planner** | Maintains the lube chart and route schedule in the CMMS and orders lubricants. |
| **Maintenance Supervisor** | Reviews route completion and oil analysis results, and follows up on flagged issues. |
| **Equipment Operator** | Reports leaks, low oil sight glass levels or unusual noise between scheduled lube visits. |

### RACI matrix

| Activity | Lubrication Technician | Maintenance Planner | Maintenance Supervisor | Equipment Operator |
|---|---|---|---|---|
| Maintain the lube chart and route schedule | C | R/A | I | - |
| Perform the scheduled lube route | R/A | I | I | I |

| Activity | Lubrication Technician | Maintenance Planner | Maintenance Supervisor | Equipment Operator |
|---|---|---|---|---|
| Sample and review oil analysis results | R | C | A | - |
| Report and follow up on abnormal findings | R | I | A | C |

R = Responsible, A = Accountable, C = Consulted, I = Informed

## 4. Materials and PPE

### Materials, tools and systems

- Lube chart for each asset
- CMMS with the lube route schedule
- Grease guns and oil transfer containers labeled by lubricant type
- Lubricants specified for each point (grease, gear oil, hydraulic oil)
- Oil sampling kit
- Clean rags and drip pans

### Personal protective equipment

- Safety glasses
- Chemical-resistant gloves
- Coveralls or apron
- Hearing protection near running equipment

## 5. Procedure

| Step | Task | Owner | Done |
|---|---|---|---|
| 5.1 | **Review the lube route for the day**<br>Technician pulls the day's lube route from the CMMS, noting which points are due and any special instructions from the lube chart. | Lubrication Technician | ☐ |
| 5.2 | **Verify the correct lubricant grade**<br>Technician checks the lube chart for each asset to confirm the correct lubricant type and grade before drawing it from storage, since mixing incompatible lubricants can damage equipment.<br>**Warning:** Never mix incompatible lubricant types or substitute a grade not listed on the lube chart. | Lubrication Technician | ☐ |
| 5.3 | **Inspect lubricant condition and level**<br>Technician checks oil sight glasses, reservoir levels and grease fitting condition before servicing, noting any sign of contamination, discoloration or leaking. | Lubrication Technician | ☐ |
| 5.4 | **Clean fittings before applying lubricant**<br>Technician wipes dirt and old grease from each fitting or fill point before connecting the grease gun or opening a reservoir, to avoid introducing contamination. | Lubrication Technician | ☐ |
| 5.5 | **Apply grease or oil per specification**<br>Technician applies the specified lubricant in the quantity and re-lubrication interval called for on the lube chart, avoiding over-greasing bearings.<br>**Checkpoint:** Quantity applied matches the lube chart specification for each point, not a generic amount. | Lubrication Technician | ☐ |

| Step | Task | Owner | Done |
|---|---|---|---|
| 5.6 | **Top up oil reservoirs and check filters**<br>Technician tops up gearbox and hydraulic reservoirs to the correct level and replaces oil filters that are due per the schedule. | Lubrication Technician | ☐ |
| 5.7 | **Pull an oil sample where required**<br>Technician draws an oil sample from designated points on the schedule using a clean sampling kit and labels it for laboratory analysis. | Lubrication Technician | ☐ |
| 5.8 | **Clean up spills and dispose of used lubricant**<br>Technician wipes up any spilled lubricant, places used oil and rags in the designated waste containers, and disposes of them per the site's environmental procedure. | Lubrication Technician | ☐ |
| 5.9 | **Inspect for leaks and seal wear**<br>Technician checks each serviced point for leaks, worn seals or damaged fittings while completing the route, and notes anything needing follow-up repair. | Lubrication Technician | ☐ |
| 5.10 | **Record the completed route**<br>Technician records completion, quantities applied and any abnormal findings for each point on the lube route in the CMMS. | Lubrication Technician | ☐ |
| 5.11 | **Review oil analysis results**<br>Maintenance supervisor reviews returned oil analysis reports for contamination or wear trends and assigns follow-up action if results are outside normal range.<br>**Checkpoint:** Oil analysis results outside normal range trigger a follow-up work order before the next scheduled sample. | Maintenance Supervisor | ☐ |
| 5.12 | **Update the route and lube chart as needed**<br>Maintenance planner updates the lube route or chart when equipment changes, a lubricant is substituted by the manufacturer, or a repeated leak is found. | Maintenance Planner | ☐ |

## 6. Quality checks

- Lube routes are completed on schedule at least 95 percent of the time.
- Quantities applied match the lube chart, with no generic 'grease until full' shortcuts.
- Oil analysis results outside normal range are followed up within the same week.
- No lubricant is applied without first checking the lube chart for that point.

## 7. Records

- Completed lube route log in the CMMS
- Lube chart per asset
- Oil analysis reports
- Follow-up work orders from abnormal findings

## 8. KPIs

- Lube route completion rate
- Oil analysis samples returned outside normal range
- Bearing and gearbox failures linked to lubrication
- Lubricant consumption against baseline

## 9. Common mistakes

- Over-greasing a bearing, which can cause seal failure and overheating.
- Using whatever lubricant is closest instead of checking the lube chart.
- Skipping the leak and seal check because the route is running behind schedule.
- Not following up on an abnormal oil analysis result.
- Leaving fittings dirty before connecting the grease gun, pushing contamination into the bearing.

## 10. Revision history

| Revision | Date | Description | Reviewed by |
|---|---|---|---|
| 1.0 | September 15, 2026 | Initial release | Ilia Pirozhenko |

## Approval

| Prepared by | Approved by | Date |
|---|---|---|
| | | |

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