



## CICA – Vic / Tas Branch Crane Safety Bulletin #357 March 2024



Greetings all. Today's Bulletin is about proper lubrication which plays a critical role in maintaining the safety, efficiency, and longevity of your mobile crane.

Proper lubrication reduces friction-induced wear or seizing, prevents overheating, and ensures smooth operation of various mechanical components. It can be one of the most cost-effective ways to avoid more expensive damage to your crane and equipment.

### Applicable Australian Standards

The lubrication of mobile cranes must adhere to the following Australian Standards:

- **AS 2550.1-2011:** Safe use of cranes, Part 1: General requirements
- **AS 1418.5-2013:** Cranes, hoists, and winches, Part 5: Mobile cranes
- **AS 2671-2002:** Hydraulic fluid power – General requirements for systems
- **AS 2759-2004:** Steel Wire ropes – Use, operation and maintenance
- **ISO 4406:2021:** Hydraulic fluid power – Fluids – Method for coding level of contamination by solid particles

These standards provide guidelines on lubrication intervals, lubricant specifications, and maintenance practices to ensure optimal crane performance and compliance with regulatory requirements. We've summarised some of the key points below.

### Key Components Requiring Lubrication

These are the mobile crane components that require regular lubrication to maintain operational efficiency:

#### Moving Parts

- Contact surfaces of holes and shafts
- Mechanical friction surfaces
- Pivot points and load-bearing interfaces, like the articulation joint

#### Boom Components

- Boom sliding plates
- Boom foot pin

#### Cylinder Components

- Main luffing cylinder support pin

- Telescopic cylinder interfaces

### Winch and Slewing Mechanisms

- Winch drum gear
- Slewing gear
- Slew bearing

### Prop Shaft

- Universal joints
- Splines and bearings

### Wire Ropes

- Load-bearing wire ropes
- Reeving systems

### Bearings, Gears, and Pulleys

- All load-bearing gears and bearings
- Pulley sheaves and rotation points

### Lubrication Practices

#### Lubrication Intervals

Lubrication schedules should follow the manufacturer's guidelines, typically based on operating hours, environmental conditions, and load factors.

AS 2550.1-2011 recommends routine maintenance at predefined intervals to prevent excessive wear.

#### Selection of Lubricants

Use high-quality lubricants specified by AS 2671-2002 and ISO 4406:2021 for hydraulic systems.

Greases must comply with AS 1418.5-2013, particularly for boom sliding components and slewing mechanisms.

Wire ropes should be lubricated with corrosion-resistant lubricants as per AS 2759-2004.

Using high-quality lubricants suitable for mobile cranes helps extend component lifespan and ensures smooth functionality. This includes checking lubricants in hydraulic systems and engine oil, as these fluids can indicate early signs of wear that may not be visible during a standard inspection.

#### Application Methods

Here are the top 8 key application pointers:

1. Ensure all lubrication materials remain free from contamination.



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2. Avoid mixing greases from different brands, as they may have incompatible properties.
3. Regularly inspect seals within the lubrication system to prevent leaks or contamination.
4. Pressure lubrication methods (such as oil guns or pumps) are preferred over manual smearing, as they facilitate better grease penetration into friction surfaces.
5. Lubrication tasks should only be performed when not lifting a load, preferably, when the crane is completely powered down, (except for centralised electric dry oil lubrication systems).
6. Sodium - based grease is unsuitable for humid environments due to its high absorbency, which may lead to performance degradation.
7. During lubrication, rotate components as necessary to ensure even grease distribution.
8. If lubrication materials become contaminated or degrade before the scheduled replacement interval, they should be replaced immediately to prevent damage to crane components.

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### **Inspection and Maintenance**

Regular inspections must accompany lubrication to detect wear, contamination, or component degradation. AS 2550.1-2011 outlines procedures for:

- Visual inspections before each use
- Detailed inspections at scheduled intervals
- Record-keeping for maintenance logs and compliance tracking

### **StartSafe**

Here's where StartSafe can really help you ensure proper lubrication practices are being adhered to in your mobile crane operations.

It provides structured pre-start checklists and maintenance protocols that help operators verify lubrication levels, inspect hydraulic systems, and identify early signs of component wear.

By integrating StartSafe into daily maintenance routines, crane operators can ensure compliance with Australian Standards while reducing the risk of mechanical failures due to inadequate lubrication.

This proactive approach enhances safety, minimises downtime, and extends the lifespan of critical crane components.

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