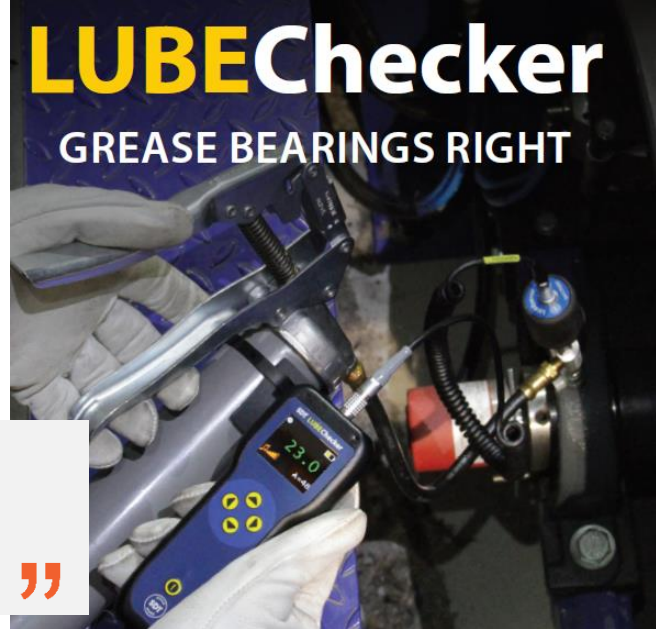


# Case Study

## Partnering with a Service Company to improve lubrication practices at an iron ore mine

“Poor lubrication practices are a leading cause of bearing failure. Implementing an ultrasound solution focused on optimising grease replenishment is the perfect combination for performing lubrication on condition based intervals.”

“We want a simple tool to help our lubrication technicians do their job more efficiently and improve bearing reliability.”



### Client background

The client operates one of the largest iron ore open-pit mines in the world some 14km long. The JIG plant at the mine is the largest of its type in the world. The mine produced 19.9Mt of iron ore in H1 2019.

As part of an asset management and reliability drive, the client invested significantly in upskilling their operations and maintenance staff to perform basic condition monitoring functions as part of their current job process.

Time-based lubrication practices were identified as possible primary root causes of premature bearing failures due to under or over lubrication practices.

The client identified SDT ultrasound technology as the tool to use by their technicians to improve condition-based lubrication.

### Key challenges

- Decrease the general overconsumption of grease.
- Improve knowledge and awareness of:
  - the right types of grease to use on different types of bearings
  - the correct amount and quality lubricant applied at the right place at the right time.
- Improve staff efficiency by making more effective use of lube technicians' time.
- Remove potential errors on handwritten job cards by being able to document and record the amount of grease applied to bearings in a methodical and repeatable manner.
- Reduce machine breakdowns caused by lubrication failures.
- Extend bearing life expectancy.
- Use newer technologies to assist with the day to day running of the lubrication management program.
- Remove the old practice of “the job card says we must grease the bearings”.

### Value add

- The client now has an effective lubrication programme based on best practices and supported by modern technology.
- Their expanded condition monitoring toolset covers a broader range of assets more efficiently, resulting in more machines being monitored and increased data collection intervals.
- There are notable time savings due to combined acoustic and condition monitoring and on essential bearing defect identification.
- Technicians are more confident to perform their work.
- There is a decline in lubrication related failures.
- Future cost reduction due to a more effective condition-based lubrication programme.
- Rotable spare parts management is improved and optimised.

### Martec intervention

JNT Maintenance contacted Martec, the sole distributor for SDT International in Sub-Saharan Africa, to assist with the design of a solution for their client's lubrication programme.

Martec and JNT technical staff in conjunction with the client's Condition Monitoring Engineer investigated their lubrication practices and maintenance philosophy.

The result of the lubrication programme investigation indicated the need for a simple to use technology which lubrication technicians could use to help prevent under or over lubrication.

The SDT Lubechecker was proposed as the best-fit technology solution and 19 lubrication technicians were each equipped with SDT Lubechecker units.

This ultrasound solution is designed to optimise bearing lubrication by intuitively ensuring that bearings receive the right amount of grease at intervals dictated by condition, not run time.



### Tools and technology

- SDT Lube Checker
- Grease Gun adaptor
- Lube Sensor
- Magnetic feet
- Cables
- Carry case
- ISO Level 1 Ultrasound Training
- Lubrication Practice intervention and training