

Grinding retrofits

Locked charge detection system

Prevent a dropped charge and structural damage to your mill



Your challenge

When left sitting idle, the charge inside a mill can solidify, posing significant risk of a dropped charge at start-up.

The Metso solution

A locked charge detection system retrofit featuring:

- **Pinion shaft encoder**
- **Control panel and custom program logic**

Pinion shaft encoder

To measure velocity and positioning

- As the primary measuring device to detect mill start-up acceleration, the encoder is mounted on the pinion shaft
- Connected to the PLC, the encoder provides feedback on the mill position and velocity
- Proper installation and modification procedures for the pinion guard are provided

Control panel and program logic

To identify a locked charge and disengage the clutch

- As the clutch is engaged during mill start-up, the control logic analyzes mill acceleration parameters and determines if start-up should be aborted or continued. This will be indicated on the operator interface
- If the mill starts successfully, the system will disable itself after 180° mill rotation. However, if a locked charge is detected, the system will trip the mill
- Operators will need to take the proper actions to break up the frozen charge. Metso recommends using an inching drive
- The control logic is configured within a PLC located in the locked charge detection system control panel. Both local and remote system controls are configured so that minimal interaction is required during operation

Why Metso services?

- As the OEM of your mill, Metso has the expert knowledge to maximize its life
- With detailed drawings, design expertise and field service personnel, Metso's services are reliable, accurate and timely



Housing for pinion shaft encoder



Exposed pinion shaft encoder



Locked charge detection system screen