

MOTION METRICS™

LoaderMetrics™ Gen 2 helps mines avoid costly downtime with AI tooth detection

Productivity is king at mines, making equipment downtime one of the costliest problems our customers face. **Weir Motion Metrics™** provides a range of solutions that pay for themselves by reducing crusher, shovel, and loader downtime caused by G.E.T. components.

Features

- ✓ **Missing Tooth Detection**
- ✓ **Blind Spot Reduction**
- ✓ **Compatible with All Loader Types**

WEIR

Mining technology for a sustainable future

The Significance of a Tooth

When a loader is digging hard or poorly blasted material, the force required to excavate the material is extremely high, which can cause bucket teeth to break off during operation. The broken tooth could then be mixed with ore and loaded on to a truck, and transported to a crusher. Teeth, made of hardened steel and weighing over 100lbs, are too hard for the crusher to break and could potentially cause it to jam. Removing a tooth from a crusher can be a very dangerous procedure that requires several hours of crusher downtime and results in significant financial losses.

Case 1:

A Canadian Gold Mine Calculates a Loss of \$430K USD Per Incident

Given an ore grade of 0.05oz/ton and gold prices averaging \$1,290/troy oz, a gold mine with a single crusher capable of handling 40ktpd, will process \$2.58M USD worth of ore per day.

A missing or broken tooth incident that jams a crusher can result in **4 hours or longer of downtime**, which translates to **productivity losses of 6.6kt** which equals to **\$430k USD per incident**. This does not take into consideration the safety risks associated of retrieving a jammed tooth from a crusher.

Case 2:

A South American Iron Mine Significantly Improves Performance with Motion Metrics™ Missing Tooth Detection System

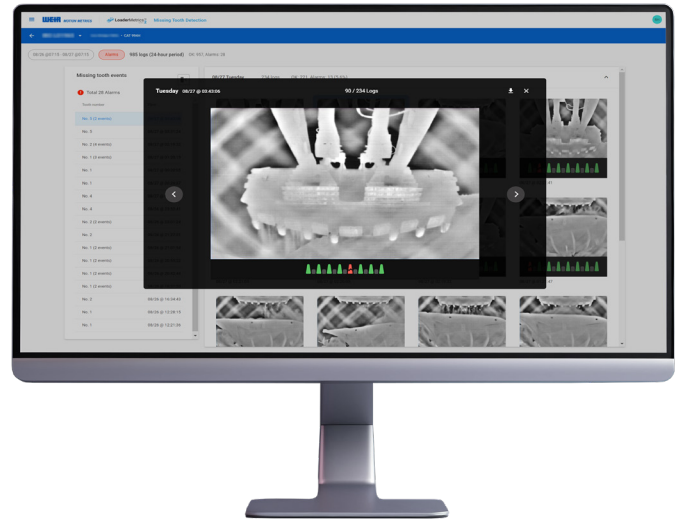
An iron mine in South America employing 32 shovels and **loaders lost 83 teeth in the crusher in one year**. This resulted in approximately **400 hours of downtime**, almost five hours per missing tooth, as well as a loss of 2.2 million tons in production. With iron from this mine having a grade of approximately 67%, and iron prices then averaging \$96.84/ton, the mine lost \$142.7 Million in one year. **After Motion Metrics' missing tooth detection installation, 94% of missing teeth were detected resulting in a production gain of \$134.1 Million/year.**

LoaderMetrics™ Gen 2

Reduce Production Loss Caused by Tooth Breakage and Increase Operator Awareness

Mines often face costly crusher jams due to broken G.E.T. (Ground Engaging Tools) components. According to several studies at various copper mines in the US, Chile, and Kazakhstan, missing G.E.T. components can cause more than five days (over 120 hours) of crusher downtime per year.

LoaderMetrics™ Gen 2 AI-powered bucket tooth monitoring and blind spot reduction system boosts productivity and safety across all loader types. With integrated Missing Tooth Detection and Blind Spot Reduction, it helps to prevent unplanned crusher downtime, loader damage and accidents, delivering substantial annual cost savings.



LoaderMetrics™ Gen 2 delivers fast alerts to the operator and operations staff while event logs are saved securely to the cloud.

KEEP YOUR CRUSHER UP AND RUNNING WITH AI ALERTS FROM WEIR MOTION METRICS™

Features

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- ✓ **Blind Spot Reduction**
- ✓ **Compatible with All Loader Types**

Value To The Customer

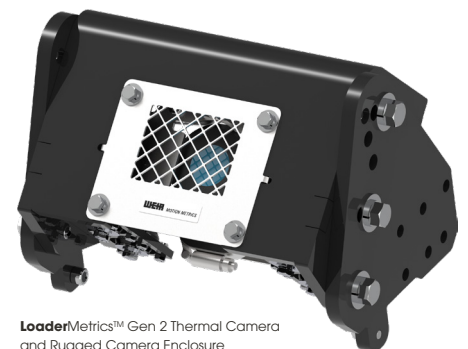
Over the course of a year, LoaderMetrics™ detected **12 missing loader teeth** at a Chilean copper mine and helped the site **avoid about 50 hours of downtime**.

Design and Construction

We build our hardware in Canada to meet or exceed military standards for temperature, shock, vibration, and dust. The **LoaderMetrics™** thermal camera is ruggedized with a hardened enclosure, which itself is well protected from falling debris inside a specially-designed steel mounting bracket. Weir Motion Metrics hardware is field-proven and well supported by field and remote service technicians to ensure you don't miss a thing.

Safety

Researchers found that incidents involving crushers are the second most common cause of fatalities caused by stationary machinery at U.S. mines. Jammed crusher incidents always present a serious safety issue for any mine due to the tremendous amount of stored kinetic energy.



LoaderMetrics™ Gen 2 Thermal Camera and Rugged Camera Enclosure

Weir Motion Metrics mitigates the main culprits of crusher obstructions by providing industry-leading smart G.E.T. monitoring for teeth and lip shrouds.

MOTION METRICS™

Our helpful representatives
are present everywhere
you do business.

mm.sales@mail.weir

A world map with a teal color scheme. Numerous small white circles are placed across the map to indicate the locations of Weir's representatives. These circles are concentrated in North America, Europe, Africa, and Australia, with a few scattered locations in Asia and South America.

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Mining technology for a sustainable future

global.weir

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