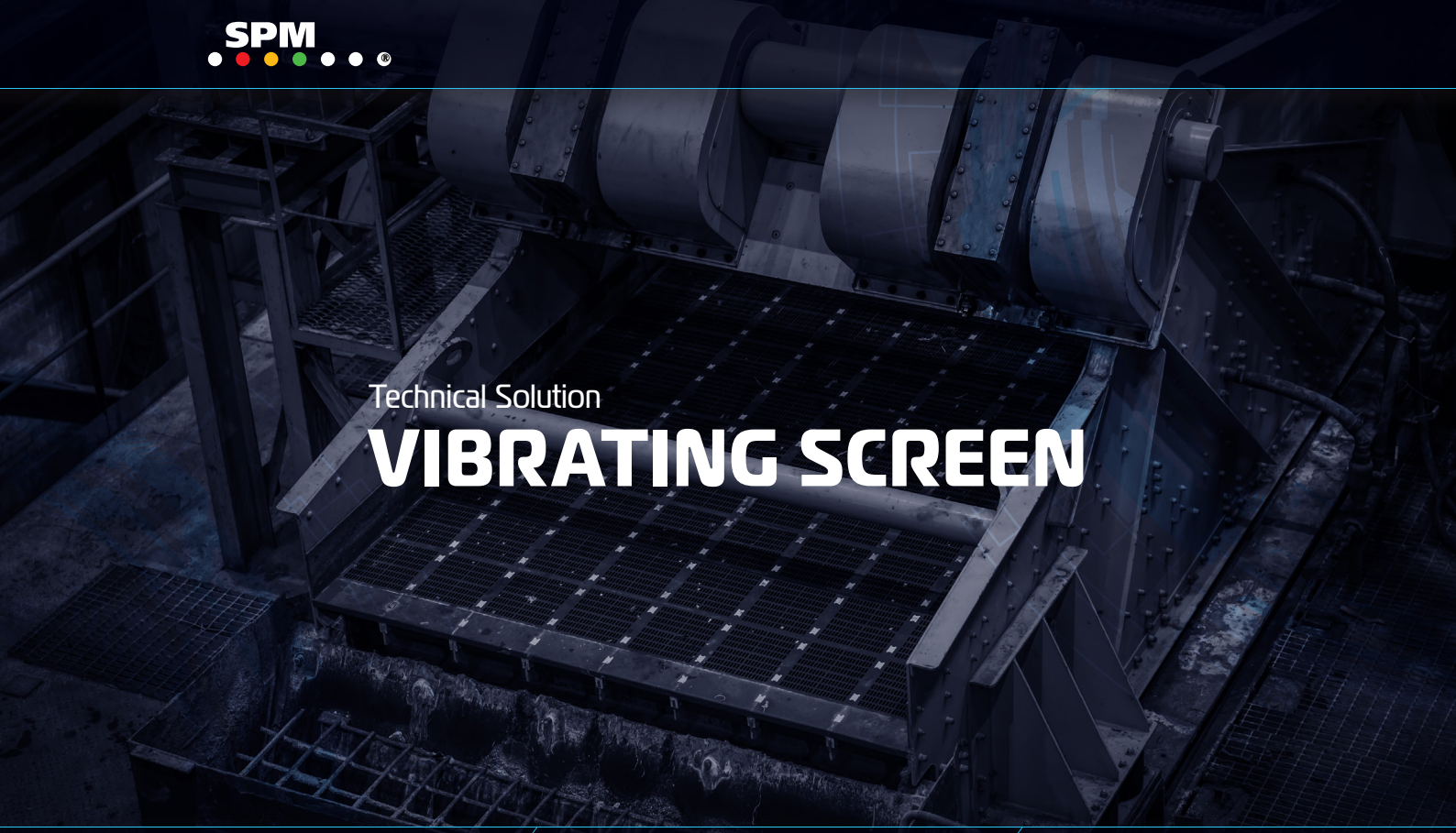


Technical Solution

VIBRATING SCREEN

Process optimization | Mining | Vibrating screen

Maximized screening efficiency for smart mines

For mining operators, productivity, safety, and environmental impact are ongoing challenges. At the heart of a mineral processing operation, the vibrating screen is a critical piece of equipment, the performance of which can influence all these factors.

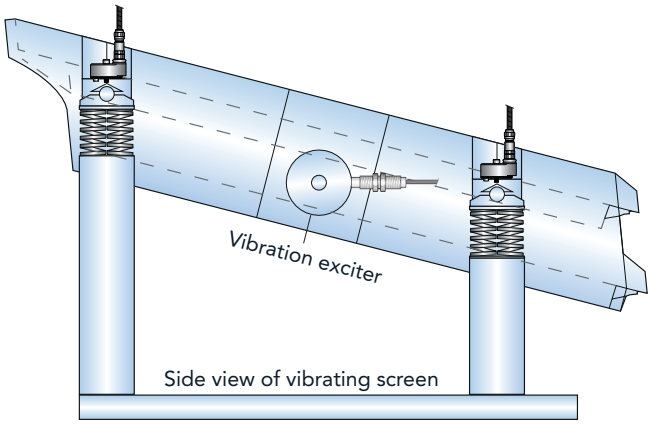
For optimal screening performance, uniform movement of the screen corners is crucial. The motion of the corners in relation to each other highly impacts throughput and production rates. SPM's vibrating screen performance monitoring solution is a process optimization tool for visualizing screen motion. It provides insight into the dynamics of the screening process and enables operators to optimize its efficiency.

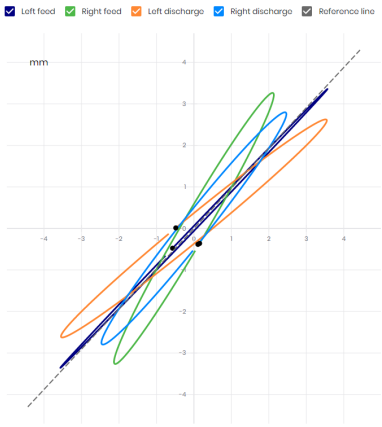
The screen performance monitoring solution detects unfavorable screening conditions that can cause various problems, including:

- plugging and blinding
- mechanical stress
- excessive energy consumption
- process capacity losses

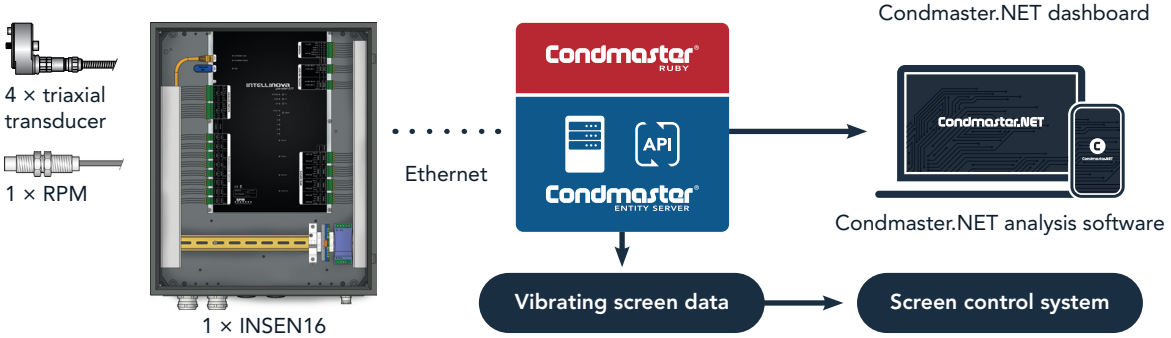
A well-functioning vibrating screen limits the rate of wear, extending its working life, and also reduces downtime costs for manual cleaning of the screen decks. The screen performance monitoring solution provides a clear picture of the screen's orbital motion of the four corners. It also measures the maximum deviation across all corners, providing important information about potential structural stress. The solution is useful for finding out if the screen performs at full capacity and is an excellent aid to help maintenance and production personnel to troubleshoot and get the most out of this essential piece of equipment.

Screen performance monitoring is an impactful complement to our high-performance machine condition monitoring solutions, designed to reduce maintenance costs and maximize equipment uptime.





Condmaster.NET dashboard



Unique, data-driven optimization of the screening process

The screen performance monitoring solution collects vibration data from each corner of the screen, using vibration measurements with patented HD condition monitoring technology. Measuring results are displayed as easily understood orbit plots and trend graphs in a clear and visually appealing web-based dashboard.

The hardware installation is straightforward and robust. A single triaxial vibration transducer with sealed connectors and cable protection conduits is installed in each corner of the screen, and an inductive proximity switch on the exciter shaft. The transducers are connected to a high-performance, sixteen-channel Intellinova Parallel EN measuring unit. The remaining four channels can be used to monitor other parameters. For service providers or plants with multiple screens, a portable monitoring solution is also available.

Orbit data is stored in the Condmaster analytics and diagnostics software database, locally or in the cloud, from where it can be integrated into process control systems or remote data centers via REST API or OPC UA.

The monitoring solution requires:

- a sixteen-channel Intellinova Parallel EN online system
- four triaxial vibration transducers
- one inductive proximity switch
- a Condmaster software license
- a subscription to the custom dashboard presenting orbit data

Condition monitoring and process optimization – a winning combination

Taking advantage of high-resolution process data ties in perfectly with condition monitoring. Combining the benefits of condition-based maintenance with those achieved through process optimization is a winning strategy. A well-designed, well-implemented condition monitoring program paired with successful optimization of critical processes brings out the best in both assets and production, thus enabling plants and operations to leverage new opportunities for increased profitability and business growth. With over fifty years of experience, SPM Instrument has the technologies, equipment, and expertise to offer efficient and flexible solutions for all types of industries.

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