REAL-TIME ROLL GRINDER QUALITY MONITORING SYSTEM

For steel and aluminum mills, it is important to monitor the roll grinding process for quality control. The work rolls touch every surface of product that passes through a mill. Therefore, any pattern and lead lines on these rolls is imparted on the strip surface. Grinding chatter can lead to both 3rd and 5th octave mill chatter, which increases mill downtime and shortens the roll life.

The AS-240 GrinderMon system provides real-time feedback for the operator and managers to see the vibration signature being transcribed onto the rolls. Alarm limits can be set to control the acceptable vibration values during the different parts of the grinding cycles.

BENEFITS OF MONITORING THE GRINDING PROCESS

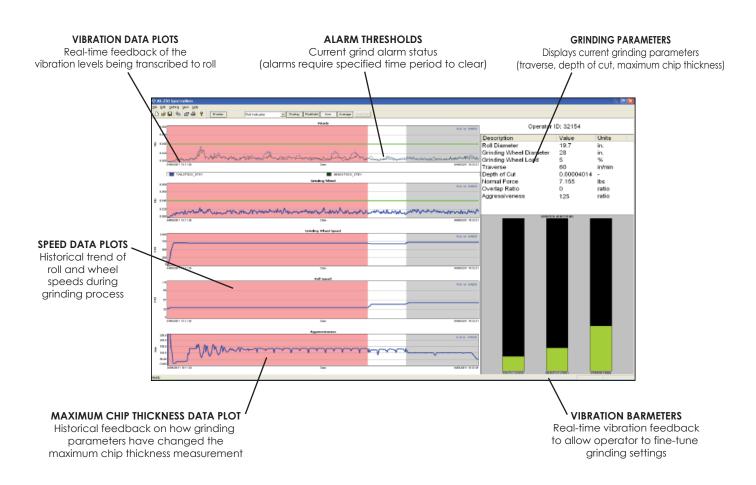
Prevent mill chatter and speed reductions

Improve product quality and finish

Avoid backup roll printing

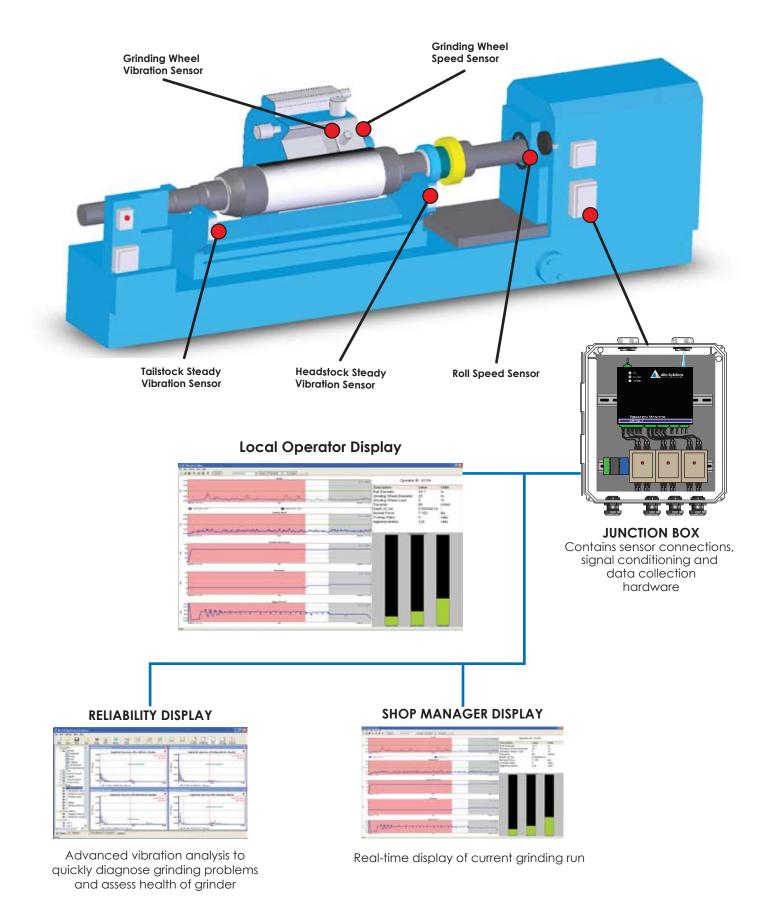
Reduce gage variation

The system interfaces with the grinding controls to get the roll parameters (diameters, depth of cut) and operating parameters (wheel load, traverse, normal force, overlap ratio, and aggressiveness). The data of the grinding process is automatically saved by the roll id and the summary page is printed for quality control documentation.





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ROLL GRINDER QUALITY SYSTEM



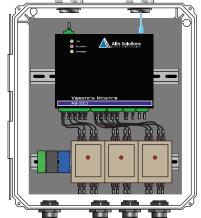
VIBRATION AND SPEED SENSORS Headstock and Tailstock Vibration, Grinding Wheel Vibration, Roll Speed, Wheel Speed

INTERFACES TO GRINDER CONTROLS

Traverse, Depth of Cut,

Overlap Ratio, Wheel Diameter,

Roll Diameter



AS-320 VIBRATION MONITOR





DATABASE AND DATA ARCHIVAL

Store complete grinding process for future troubleshooting and for quality improvement



OPERATOR DISPLAY

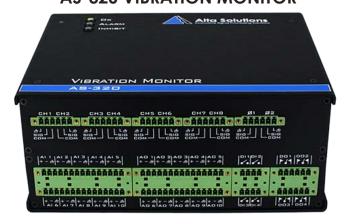
Real-time feedback of grind quality for complete grinding process



REMOTE DISPLAYS

Allows shop manager and reliability staff to manage and provide feedback to grinding process

AS-320 VIBRATION MONITOR





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