AS-240 GrinderMon™

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

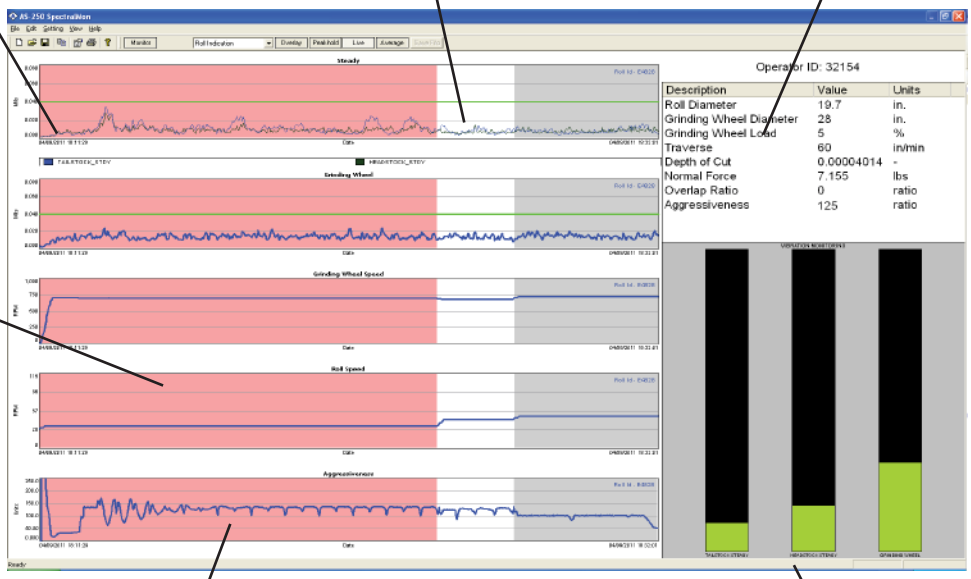
-Reduce gage variation

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.

VIBRATION DATA PLOTS
Real-time feedback of the vibration levels being transcribed to roll

ALARM THRESHOLDS
Current grind alarm status
(alarms require specified time period to clear)

GRINDING PARAMETERS
Displays current grinding parameters
(traverse, depth of cut, maximum chip thickness)



SPEED DATA PLOTS
Historical trend of roll and wheel speeds during grinding process

MAXIMUM CHIP THICKNESS DATA PLOT
Historical feedback on how grinding parameters have changed the maximum chip thickness measurement

VIBRATION BARMETERS
Real-time vibration feedback to allow operator to fine-tune grinding settings

Alta Solutions
Innovative Signal Processing Solutions

AS-240 GrinderMon™

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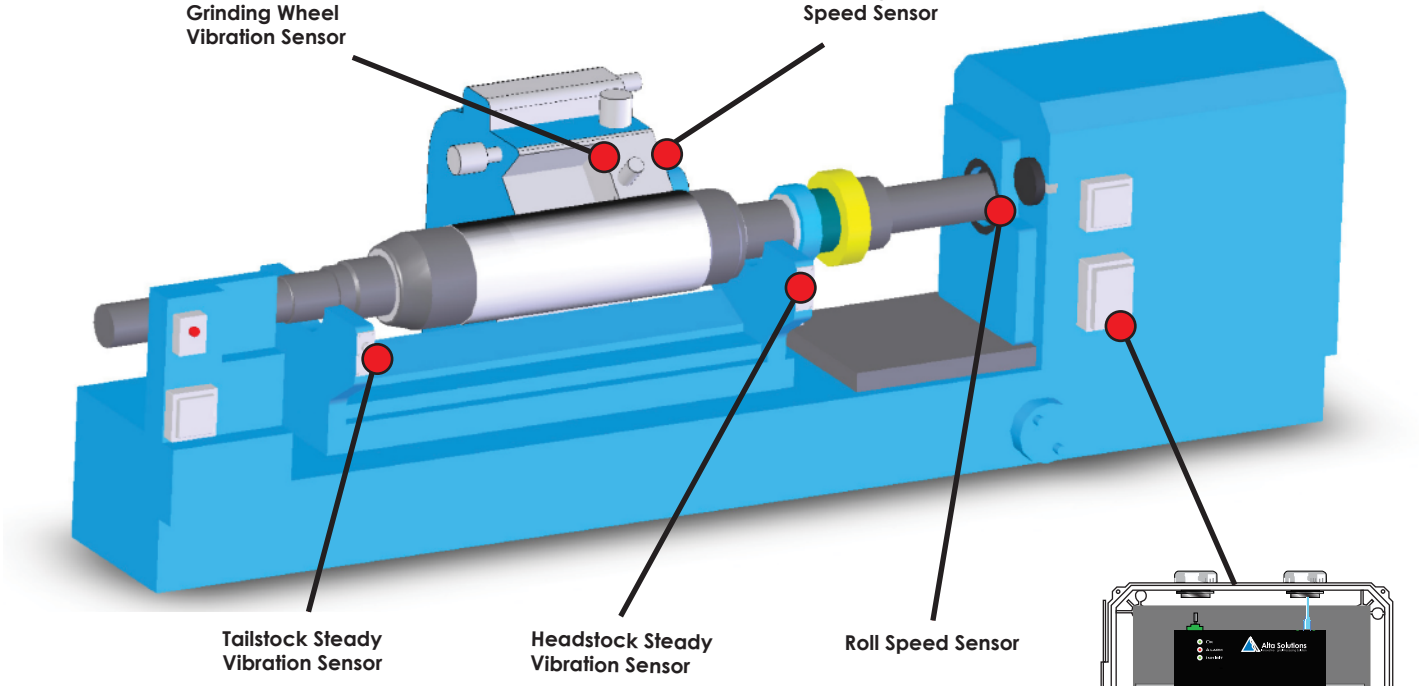
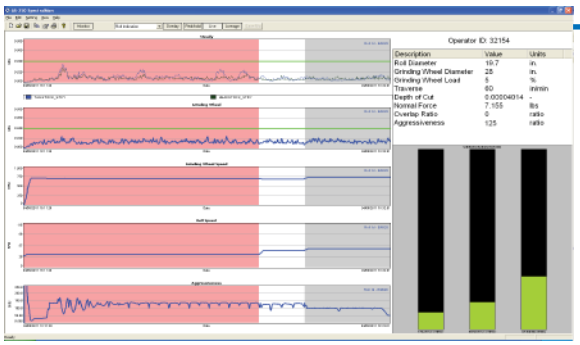
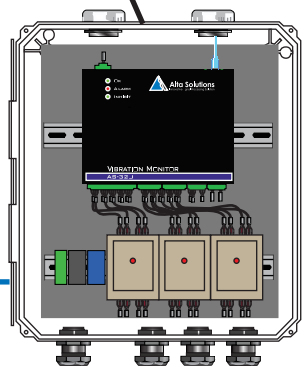


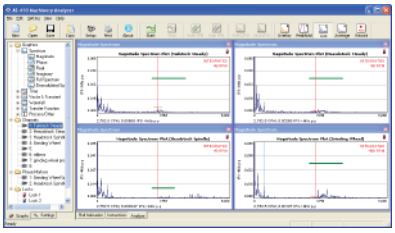
Local Operator Display





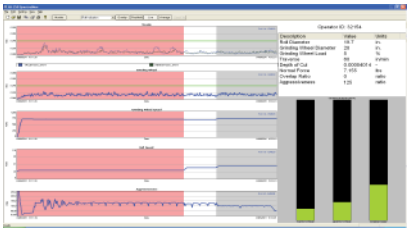
JUNCTION BOX
Contains sensor connections, signal conditioning and data collection hardware

RELIABILITY DISPLAY



Advanced vibration analysis to quickly diagnose grinding problems and assess health of grinder

SHOP MANAGER DISPLAY



Real-time display of current grinding run

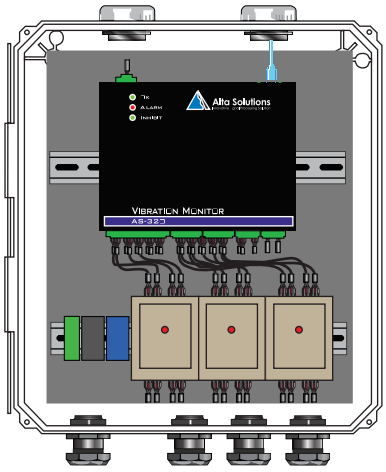
AS-240 GrinderMon™

Real-time roll grinder quality monitoring system

ROLL GRINDER QUALITY SYSTEM

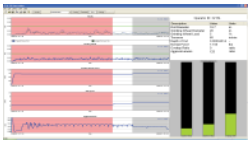
VIBRATION AND SPEED SENSORS
Headstock and Tailstock Vibration,
Grinding Wheel Vibration,
Roll Speed, Wheel Speed

INTERFACES TO GRINDER CONTROLS
Traverse, Depth of Cut,
Overlap Ratio, Wheel Diameter,
Roll Diameter

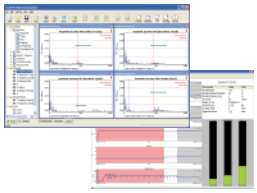


AS-320 VIBRATION MONITOR

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

Alta Solutions
Innovative Signal Processing Solutions

Alta Solutions Incorporated
12580 Stowe Drive Poway, CA 92064, USA
Toll-Free Phone: (877) 258-2765
Email: sales@altasol.com, Web Site: www.altasol.com