

## TECHNICAL, FIELD SERVICES To Optimize Process Performance

As a leading provider of advanced maintenance services, SMS group has designed, repaired and/or manufactured virtually every piece of equipment—from caster to rolling mill—used in steel and aluminum production. Using this hands-on experience and our technological expertise, our experienced staff of technical, operational and process control experts provides systems services, including field diagnostics and alignment and project management, to help metals producers achieve their productivity and quality goals. Services are available round-the-clock and can be provided as-needed or on a contract basis.

### Diagnostic and alignment services

Our diagnostic services can identify operating problems and failures that result in reduced production or impaired quality. Using their extensive experience measuring vibration, strains, forces, temperature, displacement, pressure and torque, our knowledgeable technical experts can solve onsite operations' problems using proven techniques and state-of-the-art diagnostic tools.

We also provide a broad range of alignment services to optimize caster or rolling mill performance, including: condition-based monitoring; component deflection testing;

▲ Precise oscillator monitoring and diagnostics can increase production

drive train diagnostics; bearing temperature and vibration monitoring; solidification monitoring; laser alignment; stamping-die load analysis; baseline studies; and drive component torque testing.

To insure superior accuracy and precise alignments, we use state-of-the-art analytical diagnostic instruments: 3-D laser contact coordinate measurement system; hand-held vibration analyzers; real-time, in-plant data acquisition systems; permanent drive train diagnostics; roll gap sled and link systems; hand-held electric alignment gauges; mold-to-zone electronic alignment gauges;



▲ Laser measurement system provides accuracy to 0.0004 inches



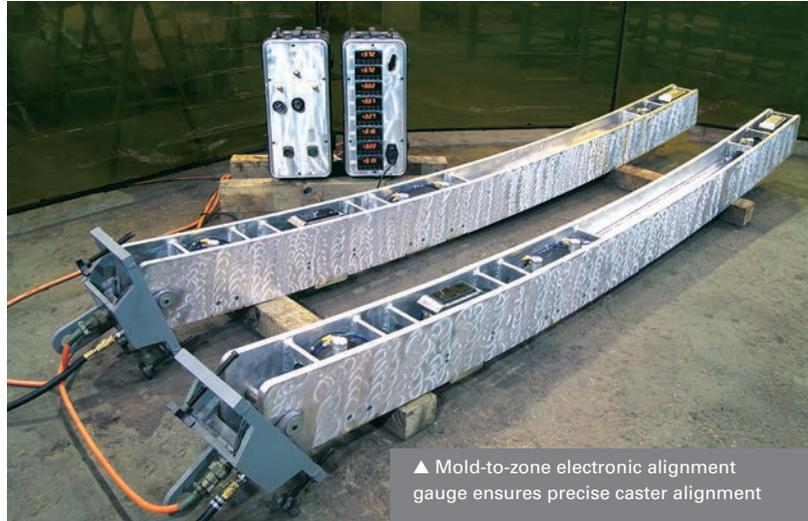
▲ Hand-held vibration monitor diagnoses condition of bearings

strain gauges; and wireless telemetry systems. In order to produce quality products, precise alignment is needed in a variety of operations within the metals industry.

### Integrated Condition Monitoring System

With increasing pressure to increase productivity, product quality and profits, predictive maintenance can harvest untapped value from production assets and help metals producers achieve their goals. Our proprietary Integrated Condition Monitoring System (ICMS) can be a cost-effective way to implement predictive maintenance strategies that reduce downtime, maximize equipment ROI and can provide a competitive advantage.

Our ICMS provides the inputs needed to more effectively operate critical plant equipment. By continuously monitoring equipment performance through a data acquisition system, which can be integrated with existing CMMS systems, it can identify minute changes in



equipment operation long before a problem would be readily apparent. Some of the conditions that can be monitored and analyzed are vibration, temperature, lubrication and motor current signatures.

Using our ICMS, metals producers can reduce downtime, increase component life cycles and reduce energy consumption by optimizing equipment operation. In addition, our ICMS can help make higher quality products faster and more cost effectively and improve bottom-line performance.

### Technical services

Using our extensive experience maintaining rolling mill equipment and every type and make of continuous caster, our knowledgeable technical services team can design equipment modifications, components or complete systems on a turnkey OEM basis. Our equipment

modifications, both large and small, are designed to extend machine component life and reliability, reduce maintenance and increase operating efficiency. Modification or complete system, our project management team can manage project phases from inception through commissioning and schedule and control projects to ensure deliverables are on-schedule, projects are on-budget and products meet requirements.

To learn more about how SMS group can help you optimize your equipment's operation, reduce downtime and improve production, give us a call at +1-412-231-1200.