Reliability and condition monitoring solutions for the mining industry
Why partner with Bently Nevada?

We have earned your trust. For six decades the Bently Nevada product line has supported the most demanding applications in multiple industries. And even as we protect and monitor your machinery, we constantly strive to refine and improve our offerings—and help enable your success.

We design and deliver solutions for all of your monitoring needs—including sensors, distributed and rack-based monitors, software, and supporting services—with the following goals:

- More than 240 international patents issued, including over 150 in the U.S.
- More than 360 international patents pending, including over 95 in the U.S.
- Over 85,000 3500 Series monitoring systems installed globally
- Over 4 million sensor monitoring points
- Services support globally
- Over 1,000 System 1® software users worldwide

Industry challenges

Mining is an indispensable part of the global economy and makes modern life possible. Everything from the titanium and aluminum that allows an airplane to be both lightweight and incredibly strong, to the fuels for nuclear and fossil-fired power plants, to the copper in the wires that make up our communications infrastructure—all of these and many more find their origins in mining. It is even responsible for an increasingly important share of our petroleum needs thanks to tar sands mining and extraction technologies.

Today, the demand and corresponding prices for the raw materials we remove from the ground are at all time highs, meaning mining operators can sell everything they can produce at premium prices. Capacity has become more essential than ever before. Consequently, a mining operation’s reliance upon its machinery has never been more important. Downtime is more expensive. Uptime is more valuable. Operators need to know if they can push machinery to its design capacity and beyond while remaining safe and maximizing the balance between useful life and capacity. And, as always, operators need to remain safe—for their families, for their communities, and for the environment.

Reliability: the key to a successful future

Unreliable assets have enormous consequences. What if your assets could consistently operate at or above their rated capacities, for a greater percentage of total hours each year, all while spending less money on maintenance? That’s exactly what today’s best companies have discovered how to do. Industry studies show that the average facility spends approximately 5% of its Replacement Asset Value (RAV) on maintenance each year. In comparison, best performers spend 60% less—just 2% of RAV—while enjoying better uptime, efficiency, and profitability. It’s not about simply spending less on maintenance; it’s about working differently—working smarter—to achieve more reliable mining operations.

Benefits with Bently Nevada

Closing the gap between your reliability “goals” and what you are actually obtaining from your efforts typically involves the following three categories:

- Processes: Bently Nevada can help customers assess their goals, identify the reliability gaps in their current operations, and then implement the appropriate corrective actions.
- Tools: Our Bently Nevada product line is world-renowned for unsurpassed quality in machinery condition monitoring. Everything needed to address the assets in mining operations is available, from sensors to continuous monitoring systems to portable data collectors and analyzers. And, it’s all brought together in a unified platform for asset condition monitoring and diagnostics—System 1® software. We also assist customers in integrating and using their already installed tools, such as computerized maintenance management systems (CMMS) and reliability software.
- People: Reliability is about more than just technologies and processes. Armed with even the most sophisticated tools and effective strategies, companies can fail to reach their reliability goals unless they are able to successfully change the way they work. Reliability is a company-wide effort that touches operations, maintenance, planning and scheduling, purchasing, management, and engineering. Bently Nevada is able to help customers change the way they work by addressing the organizational culture issues that keep companies mired in ineffective processes, helping them transform their businesses and balance sheets.

Because Bently Nevada is able to fully address each one of these, we are able to help you solve the whole problem—not just bits and pieces. Our tailored condition monitoring solution can help you close the gap.

Condition monitoring

While condition monitoring may not be the only element in a successful reliability program, it is nonetheless an essential part. For years, we’ve been taught that the older an asset is, the more likely it will fail. As such, many mills have evolved elaborate and finely tuned maintenance schedules based on calendar intervals or running hours. There’s just one problem with that approach: it’s only valid for about 16% of the assets in most facilities.

In other words, if you’ve applied this strategy to the majority of your equipment, most are getting “maintained” when they don’t need to be. That’s wasteful, and it’s one of the major reasons that many companies are overspending on maintenance.

Today we understand that the probability of an asset failure is often highest just after it has been placed in service or undergone maintenance. Following this “infant mortality” period, its probability of failure becomes constant and does not rise linearly over time. This means that running hours and calendars are poor “predictors” of failure for many assets. So how do you know when such assets will fail if the time-based intervals can’t be trusted? By measuring the condition of the asset using vibration, temperature, efficiency, oil chemistry/particulates, and other physical parameters. In other words, condition monitoring.

This approach results in corrective maintenance only when the condition indicates the asset is failing. Further, failure progression can often be trended quite accurately, allowing maintenance intervention at exactly the right time—not too soon, not too late. And, condition data can be remarkably precise, indicating not just that the asset is failing, but exactly what is wrong, even identifying root cause.

Different assets, different approaches

Not all assets are created equal. Some, such as trucks and haulers, blowers, gearboxes and compressors are critical to operations. Others, such as small pumps, fans, motors and equipment with spare or backup units installed, are less critical. And still others have less impact on safety or production, with only maintenance costs as the primary consideration. As such, a variety of condition monitoring products and approaches are required.
You can rely on us

For more than 50 years, we’ve been supplying condition monitoring solutions to machinery-intensive industries. We also bring two decades of experience conducting reliability improvement projects. Customers turn to us for a simple reason: lasting value. Our solutions demonstrate their worth, day in and day out. We combine the highest quality products and responsive customer support with a service team that takes the time to understand the uniqueness of your plant, your personnel, and your goals.

Our products can be found in many of the world’s mining sites. Today, many of those same sites are turning to Bently Nevada for a more comprehensive solution to their needs, moving beyond just machinery protection instrumentation on a few assets to plant-wide strategies and systems for improved environmental compliance, safety, asset production, quality and reduced operation and maintenance costs.

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**Bently Nevada service menu**

**Implementation services**

Get it right the 1st time
- Ensure your assets are protected and monitored when you’re ready to startup
- Avoid costly delays and rework
- One source to design, plan, manage, and execute the installation
- Avoid startup trips due to improper installation and configuration

**Key benefits**

Up to $1M/day
- Avoided cost from lost production, secondary process & equipment damage

100% Service work guarantee
- 1 year warranty standard on all service work

**Proactive support**

Keep your system healthy and optimized
- Prevent instrumentation related false trips
- Prevent and minimize potential data loss events
- Keep up to date and compliant with the best technologies available
- Access the expert support you need when you need it most

80% Industry-wide machinery alarms & events are due to instrumentation

>90% Typical reduction in non-actionable alarms & events

**Asset health and consulting**

Actionable insights you can trust
- Understand your asset health to optimize outage and maintenance planning
- Plug in to our global network of machinery experts with remote monitoring
- Professional OEM agnostic machinery diagnostics when and where you need it
- Custom analytic development and tuning to pinpoint specific conditions

100% ROI
- A single machine save often results in complete monitoring contract payback and more

5-10X Cost reduction for well planned maintenance outage vs unplanned reactive outage

**Cybersecurity**

Stay ahead of evolving cyber threats
- Ensure your system is up to date and protected as threats continually evolve
- Identify and mitigate cybersecurity risks to your operation
- Keep your system both secure and accessible with advanced security technologies and architectures leveraging data diodes and database replication

29%
- Patch management can reduce your attack surface up to 29%

243 days
- Average time before detection that a system is compromised

**Training and education**

Critical skills that amplify your machinery management capabilities
- Enable your personnel to operate and maintain your monitoring and protection systems
- Enable your operation to maximize the value of your system leveraging expert product and application training and knowledge

400+
- Customer courses delivered each year in 10 languages and over 45 global locations

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System 1 – One Platform, Endless Possibilities

Improve Equipment Reliability, Uptime and Efficiency

System 1 represents Bently Nevada’s flagship condition monitoring solution that seamlessly integrates with our industry leading products including online and portable devices. System 1 provides scalability by adapting to the condition monitoring requirements at your facility, as well as flexibility by connecting to any Bently Nevada's field devices.