



MACHINERY ANALYSIS

REMOTE VIBRATION ANALYSIS

A cost effective approach to improve the reliability of your rotating machines

OVERVIEW

- Ideal for production facilities with no vibration experts on site.
- Customers collect the vibration data and send to BETA for analysis (similar process to your oil analysis program). Data collection is simple and painless.
- Our experts analyze the data and prepare maintenance recommendations.
- The program is flexible to suit your needs. For example, you can monitor critical machines monthly, and less critical machines on a quarterly basis.

GETTING STARTED – Four Easy Steps

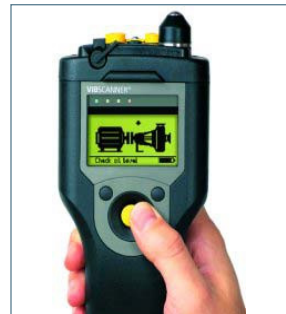
1. You identify equipment to be monitored. If you like, BETA can provide suggestions regarding equipment and how often to monitor.
2. Once you are ready to go, a BETA professional visits your site to help you get started. This includes a short training session on using the data collector, marking the test locations on your equipment and planning your route.
3. We help you collect and email your first set of data to BETA.
4. We can also provide a short seminar to your maintenance, operations, and rotating staff on vibration analysis and machinery troubleshooting.



Collect vibration data and email to BETA for analysis

INSTRUMENT AND DATA COLLECTION

- No need to purchase expensive and complicated vibration software.
- BETA supplies you with the easy to use **Pruftechnik VibScanner**. The VibScanner is a portable handheld collector that captures vibration across a wide frequency range (spectral data) – a key requirement for effective condition monitoring. After a short training session, your operators, field and maintenance personnel are ready to go.
- You collect vibration signatures at pre-defined test points and when the route is completed, you download the data to your computer, and simply email to BETA.
- Collection of off-route measurements can be performed if needed.



Hand held vibration data collector (VibScanner)

EXPERT ANALYSIS AND REPORTING

- You can rely on BETA. With over 40 years of vibration experience, we are global leaders in vibration analysis for compressors, pumps, and rotating equipment.
- Our experts have a proven process to analyze your data. Here's what we do:
 - ✓ Evaluate overall vibration readings, a wide spectrum of frequencies, envelope, and bearing defect vibration readings

- ✓ Track the change in vibration over time and compare to industry standard guidelines
- ✓ Compare results across similar classes of machines
- ✓ Use advanced algorithms to identify emerging problems
- ✓ We also track operating parameters (pressures, temperatures) to correlate vibration levels to operating conditions.
- If a problem is identified, BETA contacts you. We send you alarms or alerts, discuss the situation with you, and include recommendations.
- You get summary reports containing recommendations for, and an overview of, your machinery assets, including a risk-based action summary, so you can focus action where it's needed the most. Detailed machine data can be sent to you on request.
- Should a problem occur, BETA can provide additional troubleshooting support.

MORE . . .

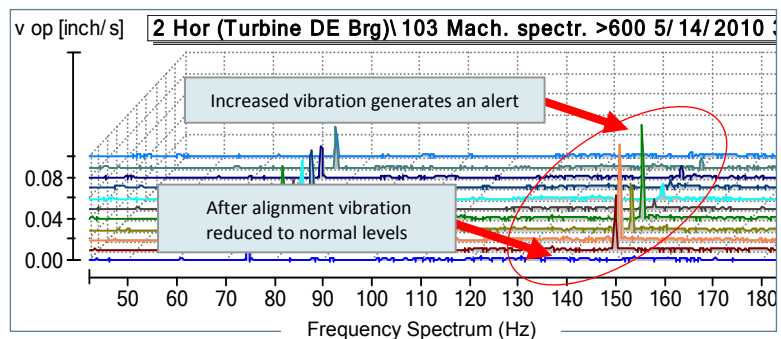
Many customers want to expand the program to include other important predictive reliability techniques (monitoring lube oil, machine performance and machine key indicators, for example). BETA has a popular reliability program that integrates these different approaches. Visit our web site, www.BetaMachinery.com, select Monitoring, and check out our Monitor, Analyze, Optimize (MAO) service.

BENEFITS

- Cost effective
 - ✓ Saves money – no need for certified vibration analysts on site
 - ✓ Saves time – plant personnel can collect data when needed
- No capital investment – a simple monthly or quarterly fee per machine
- Improved equipment reliability, safety, and lower maintenance costs
- Provides excellent results by combining plant personnel knowledge with BETA's vibration expertise.

EXAMPLE

This chart shows the vibration data for a centrifugal pump. Each measurement point is added to the previous trend and the most recent event is on the bottom. As confirmed by the data collected, the pump had a history of low vibration levels. After a mechanical seal change, BETA noticed that the vibration amplitudes at 150 Hz (twice rotational speed) doubled and a 2 times spectrum peak, generating an alert. BETA determined the cause to be a severe shaft misalignment and contacted the customer, recommending hot alignment of the pump and turbine. After the customer performed the alignment; the vibration was reduced to baseline levels and the 2 times spectrum peak was eliminated, significantly extending the mechanical seal life and avoiding costly downtime.



READY?

For more information, or to get started, contact us at 800-561-2382, 403-245-5666, or email MAO@BetaMachinery.com.