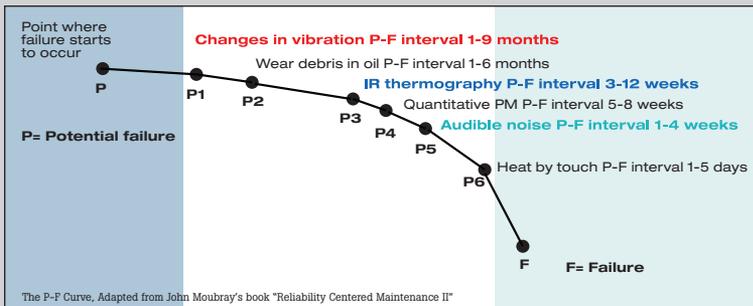


Mechanical vibration: Where do I start, and what is the benefit?

White Paper



Vibration remains one of the earliest indicators of a machine's health

Vibration can identify problems before other symptoms—heat, sound, electrical consumption, lubricant impurities. Over half of unplanned downtime is attributed to mechanical failures. While many things can impact the life of a machine, once the first signs of failure appear a machine generally has a matter of months before failing completely. Vibration testing provides a way to determine where the machine is on the failure curve and react appropriately.

Benefits of vibration testing

Here are a few of the typical benefits enjoyed by customers in all industries:

- **Predictability** - Studies have shown that vibration testing can provide early warnings of impending machine failure, giving maintenance staff time to schedule required repairs and acquire needed parts.
- **Safety** - Having information about machine health enables operators to take faulty equipment offline before a hazardous condition occurs.
- **Revenue** - Well-maintained machines have fewer unexpected and serious failures, helping to prevent production stoppages that cut into the bottom line. Running machinery until failure often results in more expensive repairs, overtime, and forced purchases. 25 years of documented savings show a 20:1 benefit-to-cost ratio for vibration testing programs.
- **Increased maintenance efficiency** - When machine health is being tracked, maintenance can be scheduled by need, not just by hours of operation.
- **Reliability** - Monitored machinery has fewer unexpected or catastrophic failures. Anticipate problem areas before failure and prioritize repair actions.
- **Reduction in costs** - Reduce spare parts inventories and extend the life of existing equipment.

- **Peace of mind** - A better understanding of machine health builds confidence in maintenance schedules, budgeting, and productivity estimates.

Why vibration testing is not widely applied?

Generally speaking, only companies with extremely high downtime costs and extreme safety concerns begin reliability programs. The common objections to starting such a program include:

- Significant investments for initial setup and training.
- Change in maintenance culture from preventive maintenance to predictive.
- Full time resources to learn and perform vibration analysis.
- Years for maintenance teams to be trained and get proficient in understanding vibration analysis.



Fluke 810 redefines mechanical troubleshooting

For years technicians struggled to decipher machine vibration—an early sign of mechanical trouble—using a dowel, a screwdriver, or a stethoscope. The only alternatives were to turn to expensive consultants, complex vibration analysis tools or full predictive maintenance programs that take time, money and manpower to implement. Many maintenance teams simply need fast and actionable answers.

With the press of a button, the Fluke 810 Vibration Tester measures your rotating equipment and quickly delivers a diagnosis of the mechanical problem, its severity and location, all with no prior machine history. This revolutionary new way for quick troubleshooting gives you immediate, actionable answers to help you make the right decisions and put control of your maintenance program back in your hands.

With the Fluke 810, you can:

- **Diagnose your data with powerful and proven diagnostic technology**
The technology and the rule base behind the Fluke 810 were initially developed for the US Navy to be used in aircraft carriers. The diagnostic engine was designed to mimic the thought process of an experienced human analyst. This technology has been used by the US Navy with proven results for over 30 years. Now this tech-

nology is embedded as part of the Fluke 810. With the Fluke 810 you gain confidence by knowing the machine's condition – from Slight to Moderate to Serious to Extreme. You can quickly review the data, and send a machine condition report to the planners to generate a work order.

- **Get your vibration program up and running with minimal training**
Easier measurement procedures combined with vibration diagnosis enables maintenance teams with minimal training and experience to use vibration to evaluate machine health and determine required maintenance. With the Fluke 810, you can focus on the most common mechanical faults: imbalance, misalignment, wear, and looseness (which accounts for 80-90% of mechanical faults in a typical plant). Quickly test your motors, pumps, fans, blowers, compressors, belts, gearboxes and other common machines.
- **Lower your upfront and ongoing program costs**
Extensive setup, trending, analysis, and on-site experts are not needed to get machine condition answers. Viewer software is included for free to review data on your PC and export reports in .pdf format. No upgrade fees or expensive annual maintenance support programs are needed. You will enjoy Fluke's rugged hardware and durability for years. Everything needed comes in the package with no extras to buy later.



With this revolutionary way of mechanical troubleshooting, even small organizations can afford and enjoy the benefits of vibration testing

Many facilities don't have the time and resources to develop a reliability team, yet they struggle with mechanical breakdowns. The good news is that the recent advances in vibration testing have enabled programs that can diagnose common machine faults without the need for prohibitively expensive equipment and expert operators. With the advances in sensor, recording, and analysis technology, vibration analysis is now within the reach of everyone. Even smaller organizations can benefit from vibration testing by using the Fluke 810 and reduce their consulting costs by putting the expertise in the technician's hands.

Fluke. *The Most Trusted Tools in the World.*

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