

THE 3 KEY COMPONENTS OF VIBRATION ANALYSIS—AND WHY THEY MATTER

Vibration analysis is one of the most powerful tools in predictive maintenance, but to use it effectively, you need to understand its **three key components: Frequency, Amplitude, and Phase**. Each one tells a different part of the story—and together, they provide a full picture of machine health.

1. Frequency

Frequency identifies **what** is wrong. It tells you the **type of defect**—whether it's unbalance, misalignment, bearing wear, gear issues, or electrical faults. Each defect has a unique frequency signature.

2. Amplitude

Amplitude tells you **how bad** the defect is. It measures the **severity** of the vibration, helping you prioritize which machines need immediate attention and which can be scheduled for later repair.

3. Phase

Phase helps determine **where** the problem is. By comparing the timing of vibration at different points, phase analysis can pinpoint whether the issue is coming from a particular component, mounting location, or structural resonance.

Understanding and applying all three components enables more accurate diagnostics, better decision-making, and fewer unplanned failures.

Don't just measure vibration—interpret it.