



***Vibtech's state-of-the-art shaft to shaft
Laser Alignment service is designed to:***

- *Reduce Downtime*
- *Increase Productivity*
- *Increase Machine Reliability*
- *Increase Bearing Life*
- *Extend Seal Life*
- *Lengthen Coupling life*
- *Lower Parts Costs*
- *Lower Hydro Costs*

Laser Alignments

Many vibration problems, premature bearing failures, and generally poor machine histories can be directly attributed to misalignment. Experts in machine condition monitoring and vibration analysis estimate that well over 50% of all vibration problems are due to this condition. The term "misalignment" generally encompasses drive sheave or sprocket misalignment, bearing misalignment, or shaft/coupling misalignment.

The accuracy with which two shafts are aligned is directly related to the life of bearings, shaft couplings, and other components such as gears and mechanical seals. Bearing manufacturers, when estimating 100% life expectancy for their bearings, base their calculations on properly (accurately) aligned equipment.

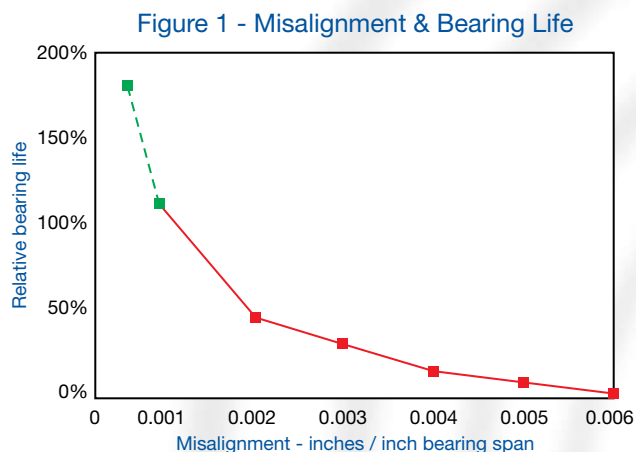
Figure 1 clearly illustrates the drastic reduction in bearing service as the degree of misalignment increases.

Our trained alignment professionals will take care to ensure that proper alignment includes any appropriate compensations for operating conditions. The most common adjustment is allowing for thermal growth of the various components in the machine as the equipment changes in temperature.

The results of precision alignments are dramatic and yield immediate results.

- Machines become more energy efficient since less power is consumed fighting friction due to misalignment.
- Bearings no longer rely on lubrication to reduce contact friction, but "float" on a lubricant film.
- Couplings no longer flex but pass purely torsional loads.
- Downtime decreases as the Mean Time Between Failure rate increases.

By dramatically improving machinery condition, inexpensive laser alignments can be one of the most cost effective ways to stretch the maintenance dollar.





Vibtech Analysis Ltd.

On-Site Balancing

When your equipment seems to be running rough, or needs bearing replacements too often, call us. We will put our expertise to work for you to troubleshoot your machine, isolate the real problem, and if required, balance it.

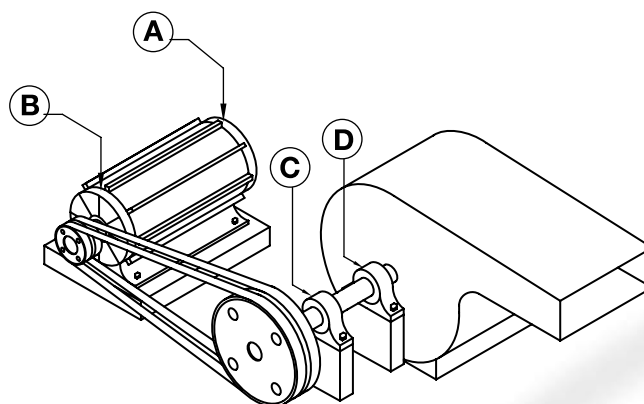
We have learned that when our customers ask to have a machine balanced, what they are really saying is, "Make it run smoother". With this in mind, our analysts tackle each job

to meet this goal. The whole machine is checked and analyzed for problems such as poor belt drive, misalignment, bearing condition, looseness, mountings, unbalance, lubrication effectiveness and much more. In most instances we correct the problem immediately.

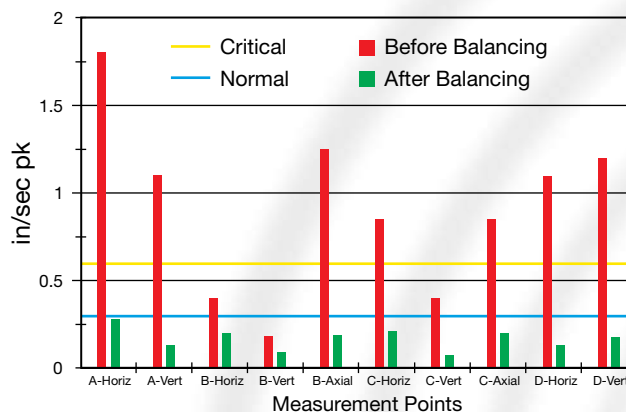
If the root cause lies outside of the scope of corrective work normally provided by Vibtech, we will provide you with specific written recommendations.

On-site machine balancing offers:

- *Less Downtime than Shop Balancing*
- *increase Productivity*
- *Troubleshoots Entire Machine*
- *Reduces Wear on Machine Components*
- *Lowers Vibration Levels*
- *Isolates 'Root Cause' of Problem*
- *Lower Total Repair Costs*



Typical Fan - Measurement Points



Typical Fan - Overall Vibration Levels