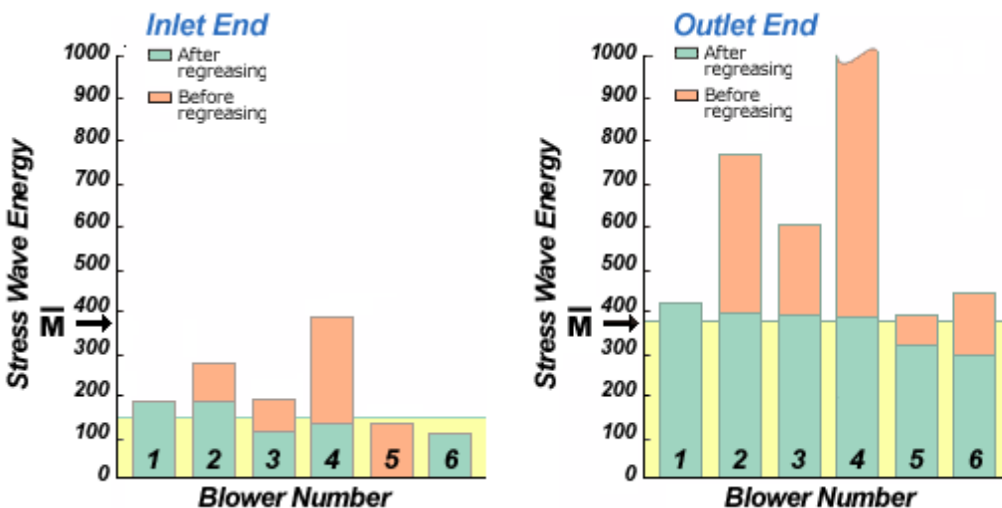


Detecting Low Grease Levels

Preventing damage from poor lubrication



Stress Wave Analysis (SWAN™) technology is a highly effective instrumentation technique for detecting low grease levels. SWAN detects and measures damage levels well below the levels required to excite vibration sensors and before significant damage has occurred to activate metal chip detectors in lubrication systems. This technology makes it possible to determine the probability of a failure and even determine which machine parts are being affected by a defect.

This case history illustrates the ability of Stress Wave Analysis to detect low grease levels in operating machinery bearings. Six axial fan blowers were tested by taking Stress Wave Energy (SWE) measurements at the inlet and outlet end of each blower.

An initial survey of these machines showed an abnormally large spread of SWE readings from units that were kinematically identical to one another. Spectral Analysis of the associated Stress Wave Pulse Train (SWPT) data did not indicate the presence of localized surface defects in the bearings, so lubrication problems were suspected.

Therefore, all bearings were regreased prior to repeating the SWE survey. As shown in Figure 1, the bearings that read highest before regreasing showed the largest decrease in SWE after regreasing.

In addition, after regreasing, no bearing read significantly above the mean value for its group (inlet versus outlet end of the blower).

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