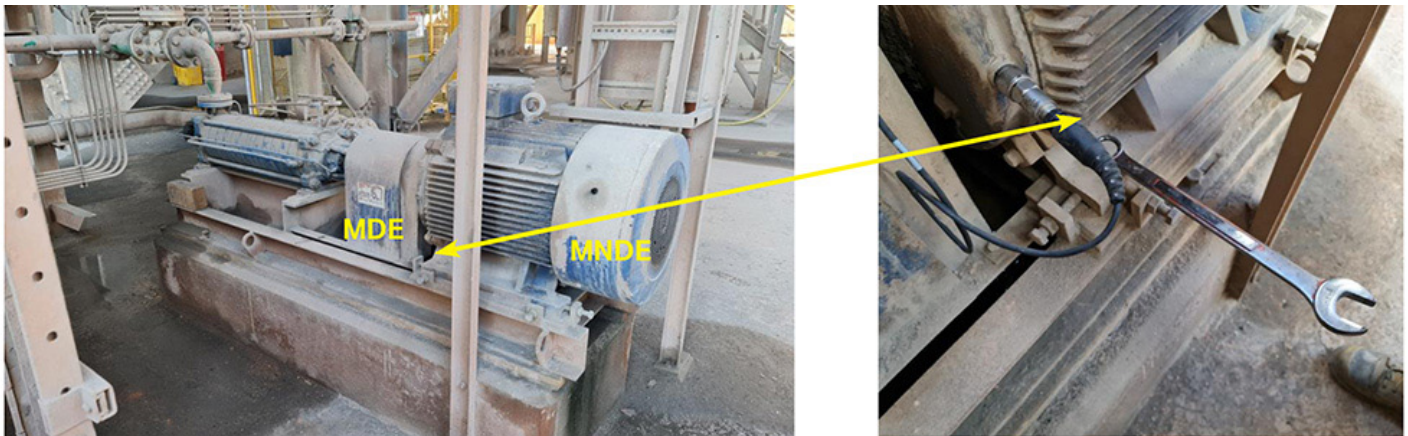


In mechanical systems, "soft foot" refers to a condition where a machine's base or foundation is not completely level or flat, causing one or more of its feet to be slightly elevated or out of contact with the surface. This condition can create an uneven load distribution, leading to various issues such as misalignment, vibration, reduced equipment performance, and potential damage to the machine.

In the images below, MDI shares a classic case of soft foot:



The motor was showing high vibration levels at the second harmonic and twice line frequency at 100 Hz. The customer suspected structural looseness was the problem, so ODS analysis was planned for the motor and pump, in addition to a bump test to check the natural frequency.

Before starting the job, MDI decided to carry out a soft foot dynamic test. They utilized a CTC AC292 compact, multipurpose accelerometer and magnet mounted it to the bearing housing. The analysis confirmed it was a soft foot fault. After adjustments were made, there was a massive drop in vibration levels from 11.7 mm/s to 1.9 mm/s:

