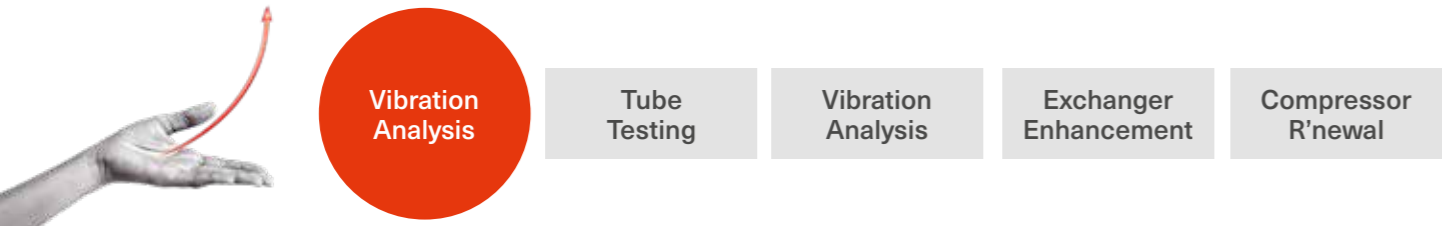


Trane Building Advantage

Vibration Analysis

Trane Building Advantage customized service solutions for building owners address operating performance, energy efficiency, and environment concerns. Vibration analysis is an essential predictive tool that maintains your compressor at the highest level of reliability.



Predictive service for increased Reliability

Our competitive environment calls for greater equipment reliability at lower operating costs. These needs require innovative, proven and practical solutions that can be quickly implemented to produce fast cost savings.

Vibration analysis has become the preferred choice among all non-destructive methods. And it has been established that a vibration signature of a running equipment provides more detailed information on internal components condition than infrared or electrical non-destructive methods.

Benefits of Trane vibration analysis

Every piece of HVAC equipment with rotating components has its own vibration signature. Any change in this signature can be used as an accurate means of identifying developing problems such as bearing wear, shaft imbalacing, and degrading screw compressor rotor tolerance. The monitoring and diagnostics system reliably detects potential defects at

the initial stage of their development and identifies the exact defect type and its severity. Vibration analysis can identify problems long before they become noticeable on the environment.

Risk removal

The Trane vibration analysis allows you to switch from 'run to failure' mode to a more predictive maintenance mode avoiding the high costs involved with emergency repairs and minimizing expenses associated with equipment downtime.

Increasing the operating reliability by improving the Mean Time Between Failure (MTBF) lowers your repair bills.

A complete offer

The Trane vibration analysis is part of Trane Building Advantage program. When associated with oil analysis and Compressor R'Newal, it provides a clear, complete and in-depth path allowing you to attain increased reliability and lower operating costs.

When is the vibration analysis required

- When an oil analysis reveals the presence of wear indicating the start of possible bearing or motor failure. Trane oil analysis determines the type of metallic particles in the oil. When combined with the vibration analysis, failing components are clearly identified.
- Vibration analysis should be performed on a regular basis to build a vibration trend of the equipment and avoid unplanned downtime and costs.

Vibration analysis by Trane

The analysis techniques used by Trane identify a wide range of developing faults such as shaft misalignment, bearing defects, imbalance or motor electrical problems.

Measurement of the compressor overall vibration level only is not sufficient. A narrow band frequency analysis is needed to indicate the specific type of developing problem.

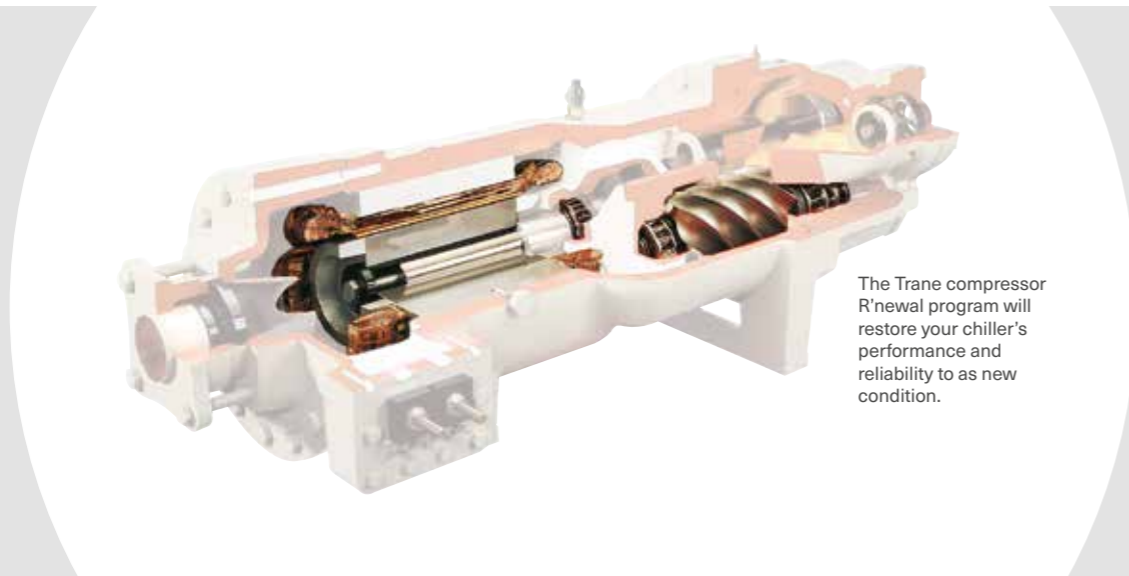
To conduct this type of detailed analysis, it is essential

to know the compressor kinematics. That is the natural frequencies and speed of all the rotating parts of the compressor. Only Trane has this information for its compressors.

Vibration analysis results

Like a doctor who takes care of his patient for an examination, our experts will look after your equipment. They know it perfectly and will deeply and carefully monitor every single essential part. Like stethoscopes, very sensitive sensors are installed in carefully selected places. The smallest deviation or any abnormal behaviour are detected and recorded. Like an electrocardiogram, vibration spectrum of your equipment illustrate its internal condition. These graphs are simply and clearly explained to you. To help you further, we will provide you recommendations in terms of maintenance scheduling.

If the vibration analysis report indicates an imminent compressor fault, then we will advise you how to plan for a scheduled compressor renewal.



The Trane compressor R'newal program will restore your chiller's performance and reliability to as new condition.





Trane Services

The real expertise of a manufacturer



- Systems approach
- Dependable installations
- Energy saving solutions
- Operating cost optimization
- Chiller plant management solutions
- Chilled water production solutions.

At Trane, we are committed to providing a comprehensive portfolio of HVAC solutions throughout your system lifecycle.



Breakdown resolution

No one plans for breakdowns, but when they happen you need the right partner. Our expert Service Engineers use the latest diagnostic tools to guide you through your options to Repair, Renew, Replace or ReThink.



Secure operations

At every point during the lifetime of your equipment - installation, commissioning, maintenance or breakdown - Trane can offer an effective solution with commissioning, first-aid kits and service agreements.



System upgrade

Trane Building Advantage

Trane is committed to bringing the latest technological advantages to our customers through a wide portfolio of solutions which increase the Efficiency, Reliability and Sustainability of their HVAC plants. Our Service Engineers use their expertise together with the latest diagnostic tools to future-proof your system and make it "better than before".



Equipment rental

For special events, exceptional needs or when you want to ReThink HVAC management, Trane Rental Services have the right solution. With our extensive fleet of equipment, we can perfectly match your temporary heating and cooling requirements.



Contact us

With over 1000 of the best trained sales engineers and service technicians in the industry, Trane is in the best position to serve your needs. Just call us and we will help you configure the Trane Free Cooling solution for your HVAC system.



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.eu or tranetechnologies.com.