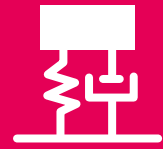


# Machinery dynamics & acoustics



**Your partner for all questions regarding noise and vibration, measurement technique and signal analysis. We solve problems on site worldwide.**

We offer services in machinery dynamics and acoustics and solve all problems regarding noise and vibration. Additionally, we perform root cause analyses and develop customized measurement systems. We offer our services worldwide. Our team's vast experience includes hearing aids, household appliances, construction machines, vehicles of all kinds, turbo machinery, paper machines as well as ship engines. A large stock of measurement equipment enables us to perform experiments in the laboratory, at the customers' test facilities or in the field.



- Machinery dynamics
- Acoustics
- Customised measurement and test systems, solutions for analysing signals and data
- Root cause analysis
- Customised training courses in vibrations and acoustics

[Contact us](#)

## Machinery dynamics

Our experience ranges from turbo machinery through domestic appliances to paper machines.

- Measurement and diagnosis of vibrations
- Experimental modal analysis
- Operational deflection shape analysis
- Rotor dynamics
- Balancing
- Flow induced vibrations
- Pipe vibrations
- Optimisation of kinematic processes
- Development of measures to solve dynamic problems
- Development and design of passive, adaptive and active vibration absorbers
- Design of machine foundations and machine insulation

# Machinery dynamics & acoustics

- Measurement and assessment of vibrations of buildings
- Model-based simulation of machines and processes
- Fault correction
- Strain measurement
- Torque measurement (static and dynamic)
- Power measurement
- Acceptance tests and assessment of vibration levels in line with common standards
- Assistance and consulting in noise and vibration problems on site and during product development
- Analysis of signals to solve complex dynamics problems and evaluate big data volumes

## Acoustics

Our experience ranges from hearing-aid devices to marine engines.

- Measurement of sound pressures and sound power according to common standards
- Localisation of sound sources
- Noise control
- Sound insulation
- Machinery acoustics
- Acoustics of pipes and silencers
- Room acoustics
- Special-purpose acoustics (e.g. for hearing-aid devices)
- Preparation of recommendations and counter measures

## Customised measurement and test systems, solutions for analysing signals and data

- Measurement techniques and analysis of signals
- Adaptive and active systems (e.g. vibration absorbers)
- Control and instrumentation
- Customised measurement and test systems:
  - Method development
  - Evaluation of hardware
  - Programming of software for measurements, evaluation and reporting
  - Training and support

## Root cause analysis

- Systematic analysis of the reasons leading to a failure
- Consideration of all aspects such as operation, manufacturing, assembly, selection of material, coating, joining technology, heat treatment, structural mechanics and dynamics
- Development of measures for avoiding failures in the future

## Customised training courses in vibrations and acoustics

**Contents:** Basic principles of machinery dynamics, acoustics, measurement technique and signal analysis – customised to your needs.

**For:** Engineers, technicians, commissioning and maintenance personnel, project managers.

# Machinery dynamics & acoustics

**Objectives:** Raising awareness for dynamics and acoustics problems and ability to correctly describe and localise these problems.

## Experience

Our experience covers nearly all fields of mechanical engineering:

- Railway vehicles
- Cable cars
- Elevators
- Road vehicles
- Construction machines
- Fans and compressors
- Turbo chargers
- Centrifugal pumps and hydraulic turbines
- Internal combustion engines
- Reciprocating compressors
- Screw compressors
- Gear boxes
- Steam generators
- Heat exchangers
- Heat pumps
- Ventilation flaps
- Valves
- Electrical machines
- Machine tools
- Injection moulding machines
- Papermaking machines
- Textile machinery
- Assembly plants
- Food processing machines
- Packaging machines
- Machines for semiconductor production
- Mechanical watches
- Hearing-aid devices
- Medical devices
- Domestic appliances

