

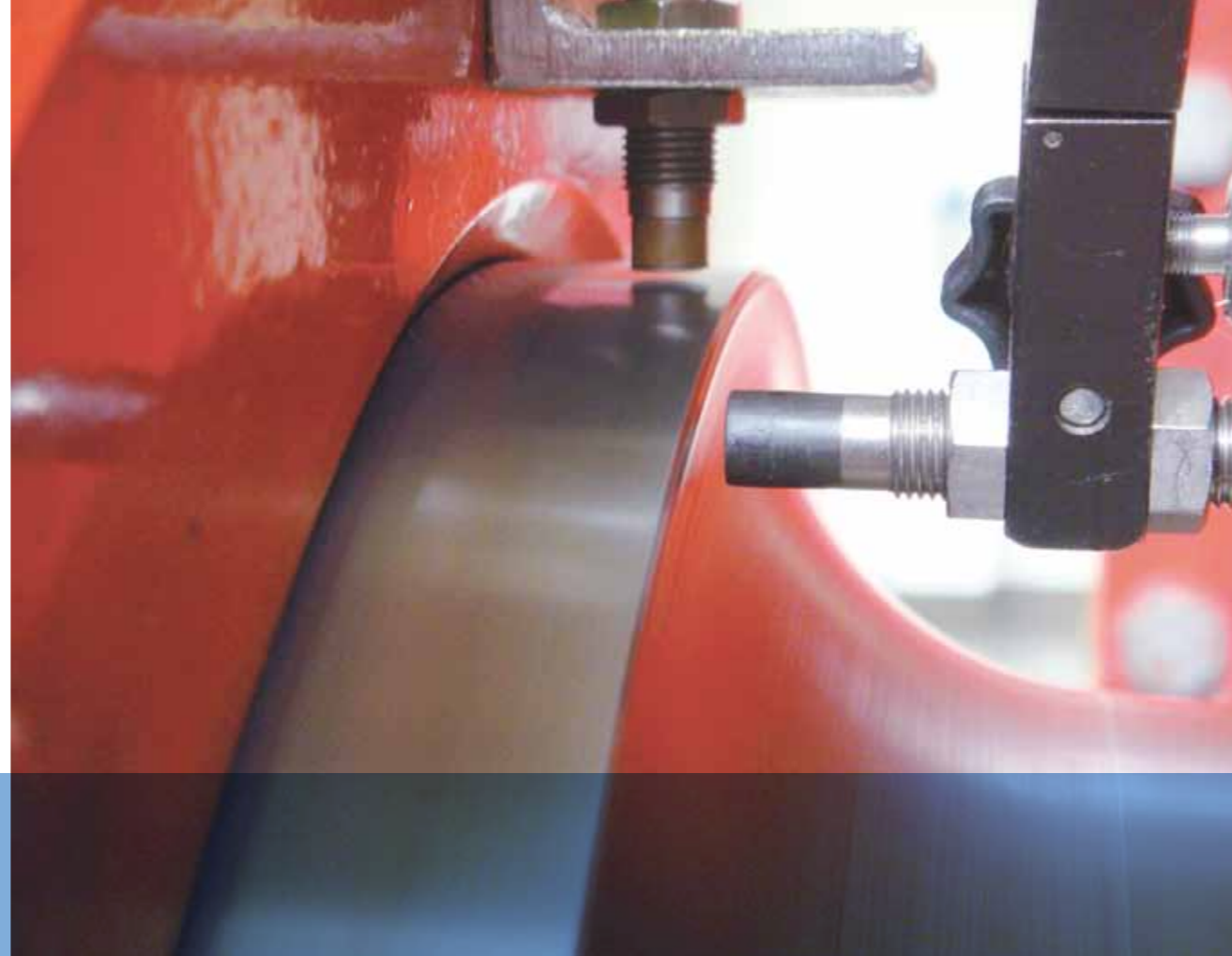
vibro-consult ag

**The company for
measurement and
vibration analysis**

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The Challenge

Electricity in general and electricity generation in particular are increasingly important factors in our society and the cornerstones of our prosperity.

Due to Switzerland's geographical position, hydro-power was developed early on and quickly became a large contributor to the country's energy production. Nothing has changed in this respect and the future energy policy still relies on this environmentally friendly source of energy.

Changes in the electricity market are also changing the requirements for hydropower plants. Of more importance is...

... **the high availability (start readiness and operation)**

... **the flexible operation (timetable)**

... **the use of power limits**

... **the automatic, remote controlled and safe operation**

... **continuous monitoring**

Since its foundation, Vibro-Consult assists the power plant operators with measurement and vibration control technology in achieving these goals.

VC Fingerprint- Measurement

The VC-Fingerprint Measurement (machine diagnostics via vibration analysis) is a valuable tool which helps the power plant meet the above mentioned requirements

VC-Fingerprint Measurement is focused on achieving the following:

- **understanding and assessing the operational behaviour of the group throughout the entire load range**
- **documenting the current status**
- **finding out the causes of abnormal behaviour of the group and giving recommendations to eliminate weaknesses**
- **establishing customised settings for the vibration monitoring by taking into account the safety requirements, the operational behaviour, the standards and the operational situation**

In the case of failure, comparative data is available, which leads to mechanical, electrical and hydraulic modifications to the system and thus speeds up the search for causes.

VC-Balancing

Balancing (reduction of mechanical imbalance) is a very efficient method of reducing vibrations. This is all about using appropriate balancing masses to...

... **improve the smooth running of the machine significantly**

... **reduce undesirable rotational forces, that unnecessarily compromise the pedestal, the foundation, the structure of the rotor and casing, pipelines, etc. and can lead to damage**

... **prevent the distortion of the shaft and thus reduce the risk of coming into contact with stationary parts**

This process enables both the operationally smooth energy production and increases the service life of the machine.

VC -Layout of the correct vibration monitoring to protect the machine

To correctly and properly protect a machine (turbine generators, pumps or converter), a good knowledge of the machine is required on the one hand and experience in using the correct layout, on the other.

This requires taking into account both the protection requirements of the machine (technical layout) as well as the customer requirements relating to operation.

Since its foundation, Vibro-Consult has successfully equipped over 250 hydropower machines using vibration monitoring systems and has evaluated over 1000 machines diagnostically.

The customer is able to benefit from Vibro-Consult's experience. From the moment of investigation up to the commissioning of the monitoring system, including the on-site instruction and training.

The choice of vibration monitoring is done on a needs-driven and vendor-independent basis.

This allows us to guarantee a reliable and safe vibration monitoring.

The Company

The Company Vibro-Consult AG was founded in 1988. It is an independent SME with extensive knowledge and experience in the area of measurement and vibration technology.

Our customer base is mainly active in Switzerland. From small industries, power companies to international corporations. These customers set up and operate hydropower plants, nuclear power plants, transformer stations, large industrial machinery etc.

The extensive know-how of Vibro-Consult in the "vibration analysis for hydropower machines" field is the basis for failure analysis, assessments of machine vibrations, balancing and the implementation of turnkey vibration monitoring systems