Measuring hydro turbines
Innovative solutions for installation, overhaul and maintenance of hydro turbines

- Shaft static plumbness
- Shaft runout
- Thrust bearing levelness and flatness
- Bore alignment
Traditional methods for the geometry measurement of hydro turbines, such as gauges and plumb lines, require time-consuming preparations. Compromises with the accuracy and repeatability of measurement results are commonly necessary.

With the ROTALIGN® Ultra laser alignment platform, PRUFTECHNIK offers a state-of-the-art, versatile measurement system for the assembly and maintenance of hydro turbines. With innovative measurement methods, the system covers many requirements for turbine geometry and eliminates lengthy preparations.

Results management is also greatly simplified using the reporting function within the powerful ALIGNMENT CENTER PC software.
Levelling and surface flatness during assembly
A flexible system for many measurement tasks

ROTALIGN® Ultra is the platform for a wide range of applications, such as determining straightness and surface flatness, vertical alignment, rotary axial alignment and much more.

The sensors communicate wirelessly with the control unit via Bluetooth®. The self-levelling, highly accurate LEVALIGN® expert laser can be used to measure the level and flatness of large foundations and flanges with great accuracy.

Alternatively, INCLINEO® can also measure the levelness and flatness of components and foundations quickly and easily, along with straightness and orthogonality.
Misaligned bearings tend to distort the shaft. Significant vibration and high bearing temperatures are the result. Larger displacements will even damage the running surfaces of the bearings. This significantly reduces the efficiency of the turbine.

The CENTRALIGN® Standard application can be used to measure vertical and horizontal bores quickly and accurately. Bearing corrections can be monitored in real-time. The flexible modular system allows virtually all bore and shaft diameters to be measured.
Shaft plumbness and runout

The ultimate precision for shafts

The ROTALIGN® Ultra Hydropower application on the ROTALIGN® Ultra platform delivers all important alignment parameters of the shaft assembly. The measurement system does not require any visual connection between the individual measuring points:

- Static vertical alignment of shafts
- Runout of shafts
- Levelling and surface flatness of the thrust and axial bearings
End-to-end turbine alignment
Shorter installation and overhaul time

With over 25 years of experience in developing, manufacturing and applying laser-based measurement systems for industrial applications, PRUFTECHNIK offers a range of specialized systems and services dedicated to serve the complex measurement needs in hydropower plants.

Our comprehensive worldwide sales, service and support network means that we are always close to our customers anywhere in the world.
Overview of applications

Perfection all the way up

- Adjustment of upper, thrust and lower bearings, vertical alignment of turbine shaft
  - Bore alignment with CENTRALIGN® Standard
  - Shaft plumbness with ROTALIGN® Ultra Hydropower
  - Shaft runout with ROTALIGN® Ultra Hydropower

- Assembly of bearing shell with shaft seal
  - Bore alignment with CENTRALIGN® Standard

- Installation of impeller between top and bottom cover
  - Flatness measurement and levelling with LEVALIGN® expert or INCLINEO®

- Assembly of wicket gate with top and bottom cover
  - Surface flatness and levelling with INCLINEO® or LEVALIGN® expert
  - Bore alignment between top and bottom cover with CENTRALIGN® Standard

- Spiral case assembly
  - Levelling with INCLINEO®

- Assembly and adjustment of the outflow pipe
  - Surface flatness and levelling of flange and foundation with LEVALIGN® expert or INCLINEO®
PRUFTECHNIK

Proven technology for all industries

With our products, processes and services for alignment applications, condition monitoring and availability optimization, we help ensure that your machines run smoothly and generate an output of consistently high quality. This also includes systems for automatic process control and quality assurance that are integrated directly in your production process.

PRUFTECHNIK delivers maintenance solutions worldwide

Laser measurement systems and services for optimum alignment of machines and systems.

Vibration measurement systems for machine condition monitoring — including services such as machinery fault diagnosis.

Systems and services for quality assurance and process control in production.

We offer professional services anywhere in the world to support our customers with alignment and condition monitoring.

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