

# application note



## Metal Hardness Testing

# Voith Siemens Hydro Power Generation

Almost all electrical power on earth is produced with turbines of some type. With increasing high speed, power and productivity, the operating conditions become more demanding. Reliability and durability are particularly important features. Proceq's Equotip hardness testing is used to ensure long working lifetimes of turbine components.

Voith Siemens Hydro Power Generation has installed more than 40'000 turbines and generators which represent around one third of the world's installed hydro capacity. Studs, nuts and other wearable parts are used in turbines and generators of hydraulic power plants.

## Application

Suppliers of hydropower equipment, such as Voith Siemens Hydro Power Generation, utilize components that must be capable of withstanding extremely demanding conditions. In turbines and generators, studs, nuts and other wearable parts are required to endure mechanical stress incurred by the rotating elements. Wearing of such parts can lead to catastrophic failures. To ensure operational safety of the power plant over many years, these parts must be highly reliable.

The Bambino 2 with the slim DL probe (pictured above) can be used to ensure that stressed recesses, joints and edges are of the correct hardness, in order to minimize mechanical wearing.

## Customer Quote

"We have been using Equotip for more than one year. We appreciate its portability and easy handling. We achieve a good performance in our incoming and sourcing inspection. The Equotip Bambino 2 offers additional accessibility through the slim DL test tip, which is a unique extra feature."

*Quality Department, Voith Siemens Hydro Power Generation Shanghai (China)*

*- Proceq customer since 2007*

## Profile

### Customer

Voith Hydro is a leader in hydropower equipment and services. As a part of the Voith Hydro Group, the Shanghai operating unit is the Group's largest manufacturing base in the eastern hemisphere. It was established in December, 1994, by Voith, Siemens, and Shanghai Electrical Corporation (SEC).

### Employees

3'000 between Aberdeen, London, Kuala Lumpur and Perth, more than 400 in Shanghai

### Requirements

- Measurements in difficult to access areas
- Accurate hardness profile measurements in order to confirm the quality of the raw material.
- Fast testing of high volume parts

### Proceq Product

Equotip Bambino 2 with DL accessory kit

### Benefits to the Customer

- Portability: low weight, small size
- Versatility: accessibility of DL probe, display of hardness in various scales, testing of very soft and hard materials
- Handling: easy-to-use device with large display
- Robustness: rugged design and long warranty protection

# proceq