

Automated Hardness Tests ensure accurate Production and improve Productivity

The sophisticated Equotip 3 Automation Package facilitates the Integration of Hardness Tests into Quality Management Systems

Autonomous Quality Control

Equotip hardness testers help to separate suitable from poor metal parts, and help identify and remove the causes of defects and errors in manufacturing. Autonomy of a test system is useful to improve product quality and efficiency of a plant's production, such as:

- delays / errors between measurement and part analysis
- additional production steps for recording and evaluation
- 'natural' limitations of test speed

Application

When metal parts pass critical production steps, Equotip tests are often used to ensure that the hardness lies within certain limits. Not only do Equotip testers offer quick tests by hand, but Equotip 3 can also be remote-controlled. Production engineers set up the Equotip 3 on the production floor, and quality staff maintains and operates the instrument as part of the production system from the control centre. Device settings and the testing cycle are controlled via the PqRemote software. The measurements are automatically transmitted to the system database. Hardness results are analysed instantaneously and used to decide whether individual parts can be accepted or have to be rejected. Additional follow-up analyses are used to optimize production processes and to identify and rectify sources of error.

Benefits to the Customer

- Accuracy:** The Equotip is famous for consistent hardness readings. Proceq invented the original Leeb HL scale
- Versatility:** full remote control of tester, user-specific data processing, communication through three common interfaces
- Error prevention:** automatic data recording and parts validation reduces human error
- Efficiency and cost reduction:** real-time monitoring, consolidation of data with other quality tests and automated validation vastly increase testing speed

Customer Quote

"As an IT service provider, we aim to provide reliable solutions to address our customers' requirements. The Equotip 3 Automation Package proved to be a very capable programming tool for the systems integration and facilitated the quick implementation of this job."

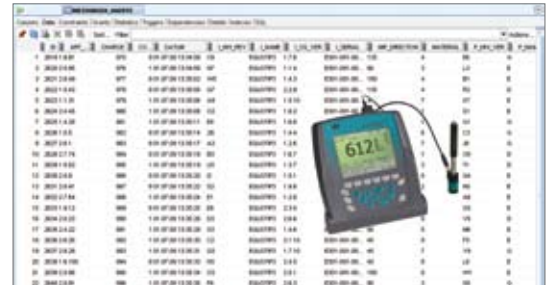
NetCo Professional Service GmbH, Blankenburg, Proceq customer since 2009

Sophisticated Equotip 3 Automation Package Facilitates Integration of Hardness Tests into Quality Management Systems

Equotip 3 communicates with a PC through Ethernet, USB, and RS-232 interfaces. The Equotip 3 indicating device receives commands and transmits data. Commands are 2- or 4-byte ASCII followed by a well-defined number of parameters per command.

The Equotip 3 Automation Package exploits advanced capabilities of the Equotip 3 hardness tester. The Package is used in partly- or fully-automated testing environments to link up measuring stations with quality management systems:

- pass / fail evaluation through Boolean electrical signal or PC,
- remote control of the hardness tester,
- real-time remote access,
- integration into quality management systems,
- integration into the user's own reporting tools,
- migration from Equotip 2 to Equotip 3,
- advanced measurement documentation and display screen shots.



Proceq provides an interface header file and a dynamic-link library (DLL) for programmers operating under a Microsoft Windows operating system. The DLL provides ready-to-use functions to connect the device, send commands, and receive data. Programmers on Linux or other operating system platforms use the product documentation to open the interface. Alternatively, users of the RS-232 interface can make use of terminal programmes, such as Microsoft Hyperterminal.

Ordering Information

Part No.	Description
353 00 091	Equotip 3 Automation Package incl. activation code, Equotip 3 impact device cable 1.5 m 4-pole with automation branch connector, operating instructions, Equotip product CD
353 00 088 (spare part)	Equotip 3 impact device cable 1.5 m 4-pole with automation branch connector

Equotip 3 Hardness Tester

Part No.	Description
353 10 050	Equotip 3 Hardness Tester, basic unit incl. Equotip 3 indicating device, AC adapter, USB cable, Equotip CD, operating instructions, quick reference guide, carrying case, calibration certificate
353 10 100	Equotip 3 Hardness Tester, unit D incl. basic unit 353 10 050, Equotip 3 impact device D with calibration certificate, support rings D6 and D6a, impact device cable, cleaning brush, test block D with calibration certificate, coupling paste
353 10 300	Equotip 3 Hardness Tester, unit G incl. basic unit 353 10 050, Equotip 3 impact device G with calibration certificate, support rings G6 and G6a, impact device cable, cleaning brush, test block G with calibration certificate

Standards and Guidelines applied

- ASTM A956 (2006)
- DIN 50156 (2007)
- DGZfP Guideline MC 1 (2008)
- VDI / VDE Guideline 2616 Paper 1 (2002)
- GB/T 17394 (1998)
- JB/T 9378 (2001)

More instrument details are available on www.equotip.com.

Service and Warranty Information

Proceq is committed to providing complete support for the Equotip 3 Automation Package by means of global service and support facilities.

Subject to change without notice.

All information contained in this documentation is presented in good faith and believed to be correct. Proceq SA makes no warranties and excludes all liability as to the completeness and/or accuracy of the information. For the use and application of any product manufactured and/or sold by Proceq SA explicit reference is made to the particular applicable operating instructions.

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