

Portable Non-Destructive Metal Testing Instruments



Hardness Testing Solutions

equotip®



Equotip Live Leeb D



Equotip Piccolo / Bambino 2



Equotip 550 Leeb



Equotip 550 Portable Rockwell

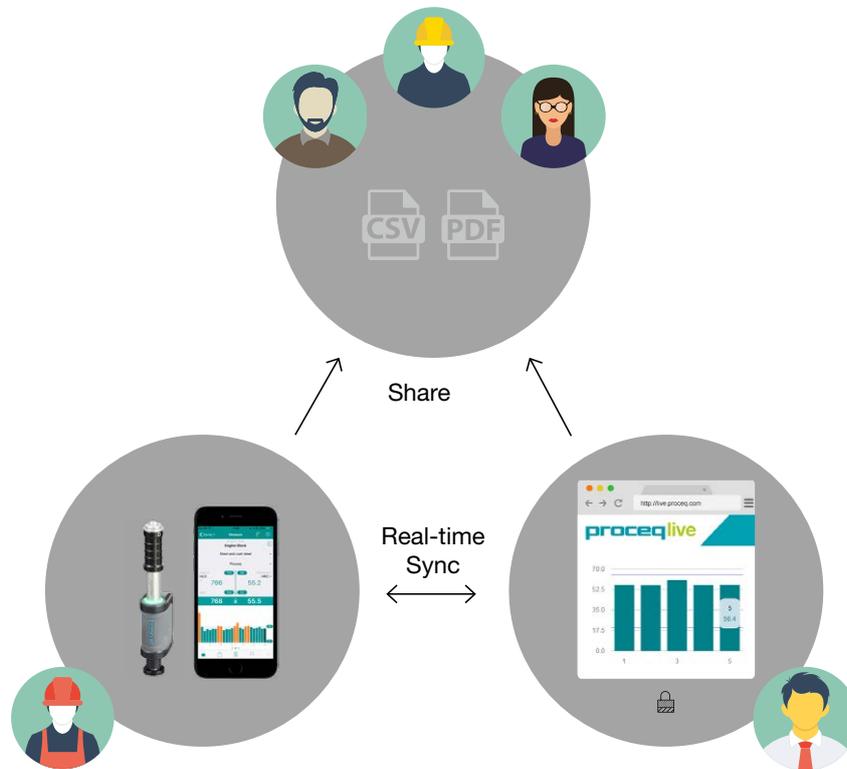


Equotip 550 UCI

Test method	Principle		Standards		Measuring time		Native scale		Available scales		Combination with methods			
	<p>Leeb (dynamic): Measurement of an impact body's velocity propelled by spring force against the surface of the test piece</p>		ASTM A956, ISO 16859, DIN 50156		Less than 1 sec		HL		HB, HV, HRA, HRB, HRC, HS, MPA		Portable Rockwell, UCI			
	<p>Portable Rockwell 50 N (static): Measurement of the indentation depth of a diamond forced into the test piece</p>		DIN 50157		Up to 5 sec		µm, µinch		HB, HV, HRA, HRB, HRC, HR15N, HR15T, HMMRC, MPA		Leeb, UCI			
	<p>UCI (Ultrasonic Contact Impedance): Measurement of the frequency shift, which correlates to the indentation depth of the Vickers indenter</p>		ASTM A1038 DIN 50159		~1 sec		HV (UCI)		HB, HV, HRA, HRB, HRC, HR15N, HR15T, MPA		Leeb, Portable Rockwell			
	Standards		ASTM A956, ISO 16859, DIN 50156		DIN 50157		ASTM A1038 DIN 50159							
	Measuring time		Less than 1 sec		Up to 5 sec		~1 sec							
Native scale		HL		µm, µinch		HV (UCI)								
Available scales		HB, HV, HRB, HRC, HS, MPA		HB, HV, HRB, HRC, HS, MPA ¹⁾		HB, HV, HRA, HRB, HRC, HS, MPA		HB, HV, HRA, HRB, HRC, HR15N, HR15T, HMMRC, MPA		HB, HV, HRA, HRB, HRC, HR15N, HR15T, MPA				
Combination with methods		-		-		Portable Rockwell, UCI		Leeb, UCI		Leeb, Portable Rockwell				
Applications	Probes		D		D		DL		D DC DL S E G C		50 N		Adjustable HV1 – HV5	
	Thin objects										•			
	Light objects								•		•		•	
	Objects with limited accessibility				•		• •						•	
	Polished objects								•		•		•	
	Small round objects ²⁾		•		•		• •		• •		•		•	
	Mid-size objects		•		•		•		• • • •		•		•	
	Very hard objects								• •		•		•	
	Large objects		•		•		•		• • • •		•		•	
	Large cast objects								•					
Display unit	Display		iOS device		Monochrome 4-digit		7" color Touchscreen Unit (800x480 pixels)							
	Memory		iOS device		32 KB (~ 2'000 readings) ¹⁾		Internal 8 GB flash memory (> 1'000'000 measurements)							
	Data connection		Bluetooth, WiFi		USB, free software		USB, Ethernet, free software							
	Power supply		Rechargeable AAA battery (> 8 h lifetime)		Built-in battery (> 16 h lifetime)		Exchangeable battery (> 8 h lifetime)							
	Platform		iOS device		Integrated unit		Modular concept, IP 54							
User interface	Languages		Multi-language		Language independent		Multi-language and timezones							
	Personalization		Logbook		-		User profiles, user views							
	User guidance		On-screen help		-		On-screen hints, wizards, electronic manual							
	Reporting		Proceq cloud		PC software ¹⁾		PC software, direct reporting, custom reports							
Accessories	Measurement accessories		13 Support rings		14 Support rings		16 Support rings		3 Special feet, clamp with 3 special supports		1 Special foot			
	Verification tools		4 Test blocks		7 Test blocks		16 Test blocks		3 Test blocks		3 Test blocks			

¹⁾ Equotip Piccolo 2 only ²⁾ Equotip Leeb Impact Devices in combination with correct support rings

Built for Internet of Things (IoT) and Industry 4.0



The most intuitive portable Leeb hardness tester



Equotip Live Leeb D Impact Device

- Ultra portable wireless device perfect for confined spaces on-site
- Multiple users can share same impact device / Use multiple impact devices with the same app
- Multi-color LED-ring with status indication

Equotip App and Proceq Live cloud

- Clean user interface and logbook for full data traceability
- Continuous online backup to prevent data loss
- Secure web platform live.proceq.com
- Centralized report template and profile management



Equotip® – The Industry Standard since 1975

Equotip® is the most established and trusted brand for portable hardness testing using dynamic Leeb, Portable Rockwell and UCI hardness testing principles. The instruments are developed, designed and manufactured in Switzerland.

The **Equotip 550** is the most versatile all-in-one solution for portable hardness testing using dynamic Leeb, Portable Rockwell and UCI. The Equotip Touchscreen Unit offers an intuitive interface for increased efficiency and high user experience.



Guiding Wizards



Combined Methods

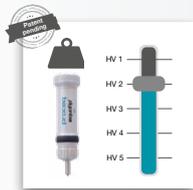


Custom Reports

The Leeb principle is the fastest and easiest method to determine the hardness. With the seven different impact devices and 16 support rings the Equotip 550 Leeb covers a wide range of applications. New features such as wizards, reporting, mapping and many more makes the use even more convenient and cost efficient than ever before.



The **Equotip 550 Portable Rockwell** is a static hardness measurement solution which is highly appreciated for applications on thin or light samples. Furthermore, it can be used on almost all materials without special adjustments, which also makes it popular to use as a reference method for other measurement principles. A wide variety of accessories makes it very versatile.



The **Equotip 550 UCI** is very well suited for applications where the accessibility is limited, such as welds, HAZ or difficult surface structures. UCI measurements are fast and easy and with our world premiere, the adjustable test load from HV1 to HV5 (patent pending), a wide range of applications can be covered with only one UCI probe.

The **Equotip Piccolo / Bambino 2** integrate the display and impact device in one unit following the Leeb hardness principle. Automatic recognition of the impact direction and self diagnostics make the metal hardness test incredibly easy.



Test Block Portfolio

Extensive range of precise hardness test blocks available with different hardness levels for regular verification.

Accessories

Unique measuring clamp, support feet and rings are available allowing tests to be carried out on various test sample geometries.



Equotip® 550 Touchscreen Unit Built for Demanding Environments

Touchscreen Features

For simplified and improved usability on high resolution display



Personalized Screens

Arrange the view according to your needs

Elaborated User Interface

Designed by industry experts for smooth operation



Special housing optimized for robustness

Ergonomically designed and shock-absorbing rubberised housing. Protection against dust and water splashes (IP 54).



Connectors and circuits protected against dust and voltage spikes

Specifically designed protective rubber caps for all connectors, meeting the directives for low voltage safety and electromagnetic compatibility (EMC).



Scratch-resistant solid touchscreen

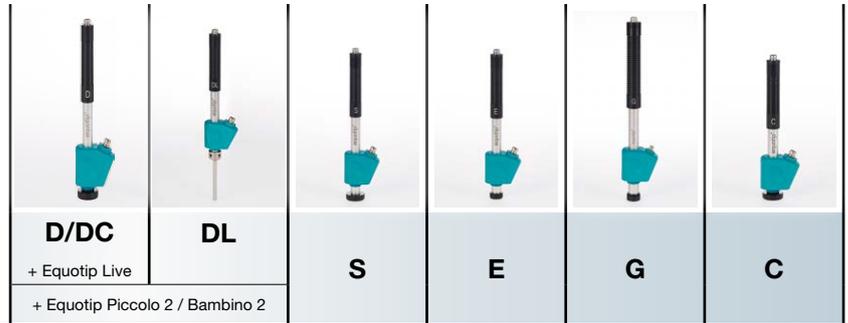
Durable and scratch-resistant touchscreen thanks to Gorilla® Glass Technology. Less reflection on screen thanks to optional antiglare foil.



Functional in wide temperature range

Operates in temperatures from -10°C to +50°C (14°F to 122°F) and in humidity up to 95 %.

Equotip® Leeb Impact Devices



Impact energy	11 Nmm	11 Nmm	11 Nmm	11 Nmm	90 Nmm	3 Nmm
Indenter	Tungsten carbide 3 mm	Tungsten carbide 2.8 mm	Ceramics 3 mm	Polycrystalline diamond 3 mm	Tungsten carbide 5 mm	Tungsten carbide 3 mm
Scope	Most commonly used probe. For the majority of applications.	Narrow indenter (probe) tip for measurement on hard reach areas or spaces with limited access.	For measurements in extreme hardness ranges. Tool steels with a high carbide content.	For measurements in extreme hardness ranges. Tool steels with high carbide content.	Large and heavy components, e.g. casts and forged parts.	For surface hardened components, coatings, thin or impact-sensitive parts.
Test blocks	<500 HLD ~600 HLD ~775 HLD	<710 HLDL ~780 HLDL ~890 HLDL	<815 HLS ~875 HLS	~740 HLE ~810 HLE	~450 HLG ~570 HLG	~565 HLC ~665 HLC ~835 HLC

Measuring Range	Steel and cast steel	Vickers Brinell Rockwell	HV HB HRB HRC HRA HS	81-955 81-654 38-100 20-68	80-950 81-646 37-100 21-68	101-964 101-640 22-70 61-88 28-104	84-1211 83-686 20-72 61-88 29-103	90-646 48-100	81-1012 81-694 20-70
		Shore Rm N/mm ²	HS σ1 σ2 σ3	30-99 275-2194 616-1480 449-847	31-97 275-2297 614-1485 449-849	340-2194 615-1480 450-846	283-2195 616-1479 448-849	305-2194 618-1478 450-847	30-102 275-2194 615-1479 450-846
	Cold work tool steel	Vickers Rockwell	HV HRC	80-900 21-67	80-905 21-67	104-924 22-68	82-1009 23-70	*	98-942 20-67
	Stainless steel	Vickers Brinell Rockwell	HV HB HRB HRC	85-802 85-655 46-102 20-62	*	119-934 105-656 70-104 21-64	88-668 87-661 49-102 20-64	*	*
	Cast iron lamellar graphite GG	Brinell Vickers Rockwell	HB HV HRC	90-664 90-698 21-59	*	*	*	92-326	*
	Cast iron, nodular graphite GGG	Brinell Vickers Rockwell	HB HV HRC	95-686 96-724 21-60	*	*	*	127-364 19-37	*
	Cast aluminium alloys	Brinell Vickers Rockwell	HB HV HRB	19-164 22-193 24-85	20-187 21-191	20-184 22-196	23-176 22-198	19-168 24-86	21-167 23-85
	Copper/zinc alloys (brass)	Brinell Rockwell	HB HRB	40-173 14-95	*	*	*	*	*
	CuAl/CuSn-alloys (bronze)	Brinell	HB	60-290	*	*	*	*	*
Wrought copper alloys, low alloyed	Brinell	HB	45-315	*	*	*	*	*	
Test Piece Requirements	Surface preparation	Roughness grade class ISO 1302		N7				N9	
		Max. roughness depth R _a (µm / µinch)		10 / 400				30 / 1200	
		Average roughness R _a (µm / µinch)		2 / 80				7 / 275	
	Minimum sample mass	Of compact shape (kg / lbs)		5 / 11				15 / 33	
		On solid support (kg / lbs)		2 / 4.5				5 / 11	
		Coupled on plate (kg / lbs)		0.05 / 0.2				0.5 / 1.1	
	Minimum sample thickness	Uncoupled (mm / inch)		25 / 0.98				70 / 2.73	
		Coupled (mm / inch)		3 / 0.12				10 / 0.4	
		Surface layer thickness (mm / inch)		0.8 / 0.03				0.2 / 0.008	
	Indentation size on test surface	With 300 HV, 30 HRC	Diameter (mm / inch)	0.54 / 0.021				1.03 / 0.04	
Depth (µm / µinch)			24 / 960				53 / 2120		
With 600 HV, 55 HRC		Diameter (mm / inch)	0.45 / 0.017				0.9 / 0.035		
		Depth (µm / µinch)	17 / 680				41 / 1640		
With 800 HV, 63 HRC		Diameter (mm / inch)	0.35 / 0.013				0.30 / 0.011		
		Depth (µm / µinch)	10 / 400				7 / 280		

*Custom conversion curve / correlation

Proceq Flaw Detector 100

Affordable high tech

- An essential tool for inspection, investigation and technique development
- Recognise more with a high pulser voltage
- Broad system bandwidth from 200 kHz to 20 MHz
- Including true top view and DGS flaw sizing technique
- All models have twin axis encoding

Excellent software and reporting

- Wizards and option specific help for fast configurations
- 3D scan plans assist in creating inspection procedures and analyzing the results
- Save and re-use settings
- Seamless connectivity between instrument and PC software
- Lateral wave removal functionality for TOFD

Rugged and compact

- Lightweight for single hand operation
- Robust IP 66 housing
- Protected connections: 2x USB, 1x Ethernet



Upgrade anytime,
anywhere on-site

UT

TOFD

PA 16:16

PA 16:64



Special upgrade:
Export raw data
in CSV format

Zonotip Thickness Gauge Ordering Information

The **Zonotip** measures the thickness of a wide range of materials, including ferrous and non-ferrous metals, polymers, composites, glass, ceramics, epoxies and more.

The **Zonotip+** also includes a smaller single-element transducer which is suitable for measuring in areas where access is limited. Characterize the output signals and minimize false readings from non-relevant echoes in the A-Scan mode with the Zonotip+.



Ordering Information

356 10 001	Equotip 550
356 10 002	Equotip 550 Leeb D
356 10 003	Equotip 550 Leeb G
356 10 004	Equotip 550 Portable Rockwell
356 10 005	Equotip 550 UCI
356 10 020	Equotip 550 Portable Rockwell & UCI Kit
356 10 021	Equotip 550 Portable Rockwell & Leeb D Kit
356 10 022	Equotip 550 Leeb D & UCI Kit
356 00 600	Equotip Portable Rockwell Probe 50N*
352 10 001	Equotip Piccolo 2 Hardness Tester, unit D
352 20 001	Equotip Bambino 2 Hardness Tester, unit D
358 99 002	Rental Unlimited of Equotip Live Leeb D (Additionally requires: 358 10 001 Equotip Live Leeb D Kit)
792 10 000	Proceq Flaw Detector 100 (Lemo)
792 20 000	Proceq Flaw Detector 100 (BNC)
790 10 000	Zonotip
790 20 000	Zonotip+



Probe can be connected directly to PC (software included)

Service and Warranty Information

Proceq is committed to providing complete support for each testing instrument by means of our global service and support facilities. Furthermore, each instrument is backed by the standard Proceq 2-year warranty and extended warranty options for electronic portion.

Standard warranty

- Electronic portion of the instrument: 24 months
- Mechanical portion of the instrument: 6 months

Extended warranty

When acquiring a new instrument, max. 3 additional warranty years can be purchased for the electronic portion of the instrument. The additional warranty must be requested at time of purchase or within 90 days of purchase.

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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