



BUILDING

Testing building materials is a wide and very important sector all over the world. HIRA Testing Equipment Co. provides reliable and convenient testing devices for safer and stronger building structures.

With developing of structure technologies buildings are longer and more functional. We are following technologic developments and applying all to our devices.

The Building section consists of detecting the deformations of various materials such as concrete, cement, metal, rock, asphalt, soil, etc. You will find sufficient types of Hydraulic Testing equipment that conform to various standards as well as accessories such as grips, fixtures and load cells.

Our product range for test on steel includes universal hydraulic machines to perform tensile, compression and flexural tests on metallic materials.



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HİRA TESTING EQUIPMENT



UNIVERSAL TESTING MACHINES

STANDARDS: EN ISO 15630-1, EN ISO 6892-1, EN ISO 7500-1

Universal Hydraulic Tensile Test Machine (600/1000 kN capacity) is designed to test the ferrous materials for structural values such as yield strength and tensile strength. Apart from tensile tests, Universal Test Machines can also be used for compression tests up to the capacity of the machine.

To Test Core samples up to 100 mm upper platen must be ordered separately.

Maximum security is maintained on 600kN/1000 kN capacity Universal Test Machine by limit switch on the lower grip as well as the safety check valves on the hydraulic system. Hydraulic power unit works silently.

0-40 mm flat and 8-32 mm round samples can be tested on 600 kN capacity frame and 0-40 mm flat and 8-40 mm round samples can be tested on 1000 kN capacity frame with a user friendly hydraulic jaws that comply with standards.

Load cell is used to measure stress. Strain measurement is done by the electronic displacement transducer built in the machine.

Tests can be done fully automatic by digital control unit or computer. Machine complete the test with the set pace rate and turns to start position automatically.

The distance between the grips can be set by motor driven hand set system. The system is controlled by a hand up/down system. With open front hydraulic wedge grips user can load specimen easily.



HYDRAULIC GRIPS

Hydraulically operated grips, completely stop the possibility of sample sliding from the grips enabling for correct and definite strain measurements. Hydraulic grips are very safe and user friendly. The hydraulic grips has an independent hydraulic power unit with a working pressure of 400 bars.

600 kN capacity Machine is supplied with 8-32 mm round samples grip set and 1000 kN capacity Machine is supplied with 8-40 mm round samples grip set.

Jaw faces for flat samples should be ordered separately.



HYDRAULIC POWER PACK AND DIGITAL DATA ACQUISITION & CONTROL SYSTEM

Hydraulic Power Pack

Hydraulic Power Unit is designed to control the machine and processing of data from load-cell and displacement transducers which are fitted to the machine.

Controller unit has a simple and compact configuration.

Very silent power pack can load the specimen between 2mm/min - 18mm/min with an accuracy of $\pm 5\%$. Safety valve (maximum pressure valve) is used to avoid machine overloading.

All the operations of Graphic Display are controlled from the front LCD display and function keys 2 analogue channels are provided for load-cells and displacement transducers.

It has easy to use menu options. It displays all menu option listings simultaneously, allowing the operator to access the required option in a seamless manner to activate the option or enter a numeric value to set the test parameters. The digital graphic display is able to draw stress vs. strain graph.

Dual Pumps

The dual pumps are formed by two groups;

1. Grip pump with dual stage pump
2. Piston pump to make tensile and compression tests

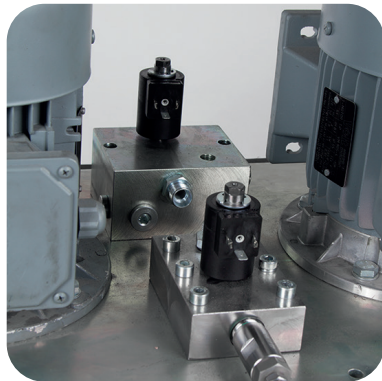
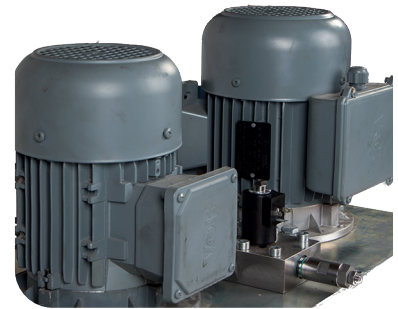
HİRA Test HR-B6000 & HR-B1000 tensile testing machine consist of two independent pumps working in one oil tank system.

One pump is controlled with digital readout unit with 3 phase controlled with and inverter to make test, other runs with a pedal to supply pressure to the grips. Grip pump has dual stage pump inside. On the dual stage pump, a high delivery, low pressure gear pump is used for rapid approach, for quick gripping the rebar while a low delivery, high pressure radial piston pump is used for 400 bar grip pressure.

Two Motors

The motor which drives the main pump in an AC motor and it is controlled by motor inverter. The variation in the oil flow is executed with the variation of the rotation speed of the motor.

The motor which drives the grip pump in an AC motor and it is controlled by a manual pedal. The maximum pressure of the grips can be monitored by a 0-600 bar manometer fitted to the end of the pipe of upper and lower grip connection.

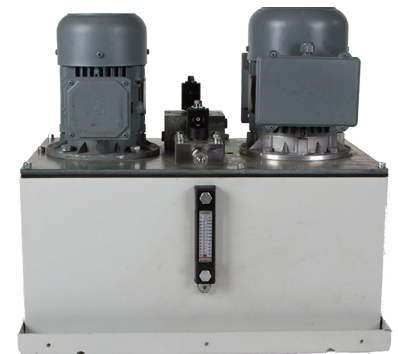


Two Distribution Blocks

Two distribution blocks are used to control the oil flow direction supplied by the pumps, the following parts are fitted to the distribution block; Solenoid valve, Safety valve (max. pressure valve), Transducer and High pressure radial piston pump for main pump to make the test and Solenoid valve, Safety valve (max. pressure valve), low pressure gear pump and High pressure radial piston pump for grip pump.

Oil Tank

The tank includes enough oil to fill the mechanism which pushes the piston up during the test. The level and oil temperature can be seen on the indicator fitted to the tank. It has 60 L capacity. Hydraulic motor oil, number 46, must be used.



Digital Data Acquisition & Control System

The unit is designed to control the machine and processing of data from load-cells and displacement transducers which are fitted to the machine.

All the operations of the unit is controlled from the front panel consisting of a LCD display and function keys.

The unit has easy to use menu options.

Digital graphic display unit loading rate of the time of Testing and load values can be monitored.

Digital graphic display is able to draw real-time "Load vs. Time".



HR-B8002

HİRA TESTING EQUIPMENT



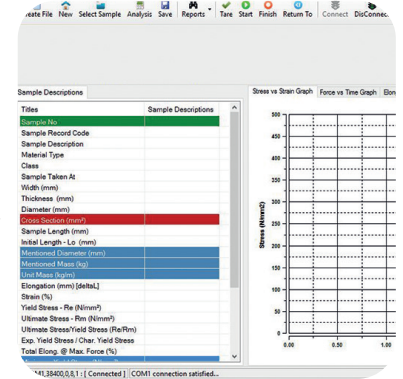
Software

Sample, company, laboratory and test values can be entered in the programme.

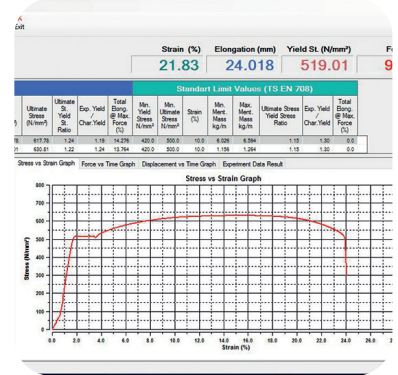
Stress-Strain, Load-time graphic, test reports and sample reports can be taken.

Software provides test data, results, and the Stress-Strain graphs can be seen at LCD screen.

The Universal Testing machine can be controlled (Start, Stop commands) by a computer with the software free of charge. This software provides data acquisition and management for compression, tensile and splitting tensile test throughout the test execution. The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Therefore, test parameters can be set and details about the test carried out such as client details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.



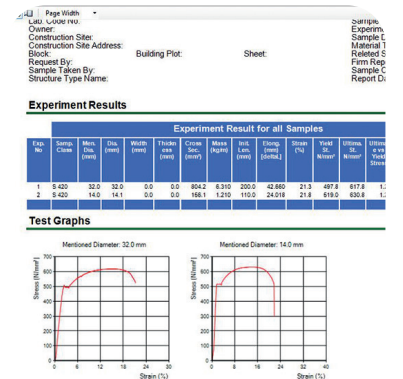
Universal Test Software is developed for testing tensile strength of Reinforcing Rubbed Steel Bars and Welded fabric for the Reinforcement and Prestressing of Concrete. The software includes control of machine, data acquisition, saving them and preparing reports. The software accepts sample's weight, length, diameter and gauge length as input, and then the user can give start test command to the machine. The samples calculated diameter gives user a perspective about the density of rebar prior to the test. The software continuously updates load, stress and elongation percentage till the break point. The software is prepared as making at least 3 samples for each diameter. This gives user a total report about all the batch. The report includes all standard limits and one can easily check whether the sample can be acceptable. These limits are minimum yield, minimum tensile, minimum break elongation value, Tensile per yield ratio etc. Software can be performed in Turkish and English.



Test results, graphics and properties of 12 different specimens can be saved in one folder. Old test folders can be reviewed and be edited easily. Advanced Graphic User Interface Software.

User can highlight all 12 different specimen curves in different colors on the graphics.

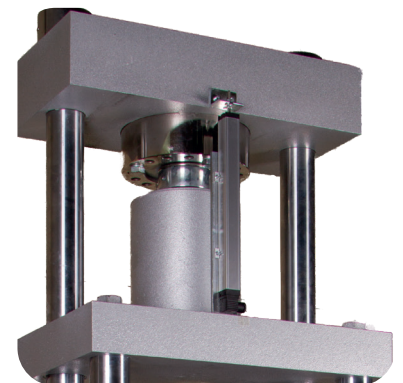
Frequently used information like name and location of the laboratory, type and dimensions of mostly used specimens are held in memory and can be written automatically by right clicking on information boxes and selecting frequently used text in menu.



User can access any data of previously completed tests and use in his/ her new report since most of the tests have same structure and properties.

Main Features

- Can make test with displacement control.
- Real time display of test graph.
- 2 analog channels (one for load cell, one for displacement transducer)
- 10 data per second sample rate for each channel
- Multi-language support (Turkish and English)
- 2 different unit system selection; SI and metric
- Real-time clock and date
- RS-232 serial port connection with the device
- Free of charge PC software for the test control and advanced report generation



Technical Specifications:

Product Name		Universal Testing Machine			
Product Code		HR-B6000	HR-B6000/60Hz	HR-B1000	HR-B1000/60Hz
Capacity		600 kN		1000 kN	
Test Speed		2mm/min - 18mm/min		2mm/min - 18mm/min	
Load Measurement Accuracy		± %1		± %1	
Displacement Measurement Resolution		0,01 mm		0,01 mm	
Columns Diameter	Lower	50 mm		60 mm	
	Upper	70 mm		80 mm	
Vertical Test Distance	Tension	Minimum 70 mm		Minimum 70 mm	
		Maximum 300 mm		Maximum 320 mm	
	Compression	Maximum 110 mm		Maximum 110 mm	
Distance Between Columns		460 mm		480 mm	
Piston Stroke		150 mm		200 mm	
Maximum Pressure	Grips	400 bar		400 bar	
	Load	200 bar		320 bar	
Weight		1950 kg		2150 kg	
Height		2600 mm		2600 mm	
	Max. stroke	2750 mm		2800 mm	
Power Supply		220 V, 50 Hz, 1ph	220 V, 60 Hz, 1ph	220 V, 50 Hz, 1ph	220 V, 60 Hz, 1ph

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-B6000/1	600 kN capacity Universal Testing Frame	66x70x260	1800	---
HR-B1000/1	1000 kN capacity Universal Testing Frame	76x80x260	2000	---
HR-B8000	Hydraulic Power Pack and Digital Data Acquisition & Control System	70x45x100	150	220 V, 50 Hz, 1 ph
HR-B8000/60Hz	Hydraulic Power Pack and Digital Data Acquisition & Control System	70x45x100	150	220 V, 60 Hz, 1 ph
HR-B8001	Hydraulic Power Pack	70x45x100	148	220 V, 50 Hz, 1 ph
HR-B8001/60Hz	Hydraulic Power Pack	70x45x100	148	220 V, 60 Hz, 1 ph
HR-B8002	Digital Data Acquisition & Control System	---	---	220 V, 50-60 Hz, 1 ph
HR-B8003	Software	---	---	---
HR-G0975	Computer & Printer	---	---	---
HR-G0975/1	Usb to com port Converter	---	---	---
HR-G0979	Thermal Printer	---	---	---
HR-B6005	Jaw faces for flat samples	---	---	---
HR-B6006	Jaw faces for round samples	---	---	---



REBAR CUTTING MACHINE

Rebar Cutting Machine is with hydraulic system and with spring system return.

Along the ease of transport in short distances thanks to its wheels, it is suitable for construction sites thanks to their durable structures against heavy conditions such as dust and heavy work.

It consumes low power, can conduct cutting operations in low bar pressures, it is silent, safe and environment friendly.

The control type is comfortable; it requires less maintenance and has a long product life.

When compared to machines with the same capacity but different systems, it is much economic. As the hydraulic oil tank of the machine is threaded and disassembled, its assembly is very easy (during parts change and renewal).

Hydraulic Oil Tank capacity is 20 lt.

Supplied complete with Allen Key and 2 pieces Spare Blade Set.

Technical Specifications:

Product Code	Product Name	Engine Power (kW)	Dimensions (cm)	Weight (kg)	Power Supply
HR-B9000	Rebar Cutting Machine	3	64x133x75	352	380 V, 50 Hz

Strength of Steel	Piece	Sample Dia. (mm)
45 kg/mm ²	1	Ø 38
45 kg/mm ²	2	Ø 26
65 kg/mm ²	1	Ø 36
65 kg/mm ²	2	Ø 22
85 kg/mm ²	1	Ø 32
85 kg/mm ²	2	Ø 20

Spare Parts & Accessories:

Product Code	Product Name
HR-B9000/1	Allen Key
HR-B9000/3	Spare Blade Set. 2 pieces



HR-B9000

AUTOMATIC CORE-ROCK COMPRESSION TESTING MACHINE

STANDARDS: EN 12390-3, 12390-4; BS 1881, ASTM C39

The HİRA Automatic 600 kN Capacity Compression Testing Machine has been designed for reliable and consistent testing of core and rock samples. Machine confirms all EN, ASTM and BS standards written above. These also meet the requirements of CE norms for the safety and health of the operator.

A compression test determines behavior of materials under crushing loads. The specimen is compressed and deformation at various loads is recorded.

Testing machines are supplied with EN compression platens as standard. Machines also comply with the ASTM C39 standard when used together with suitable platens.

Tests can be performed by either Digital Readout Unit or on a computer with using free Software.

The Automatic Core-Rock Compression Testing Machine allow inexperienced operators to perform the tests. Once the machine has been switched on and the specimen is positioned and centered by the help of centering apparatus.

The only required operations are;

- Setting test parameters, including pace rate (only required when the specimen type is changed).
- Pressing the START button on the control unit
- The machine automatically starts the rapid approach, when the specimen touches the upper platen the rapid approach is ended and starts loading at the pace rate that selected by user and stops once the specimen fails.



The Automatic Core-Rock Compression Testing Machines consist of;

- Load Frame,
- Automatic Hydraulic Power Pack,
- Digital data acquisition & control system,
- Distance Pieces, Ø 165x30 mm, Ø 165x50 mm and Ø 165x80 mm,
- Upper Platen (with ball seating assembly) Ø165 mm,
- Lower Platen Ø165 mm,
- Loading Cylinder Assembly & Limit Switch for safety,
- Front and Rear Protective Doors for safety.

Core-Rock Compression Load Frame

Load Frame is 600 kN Capacity.

The dimensions of the 600 kN Load Frame allow the testing of concrete and rock samples up to its capacity.

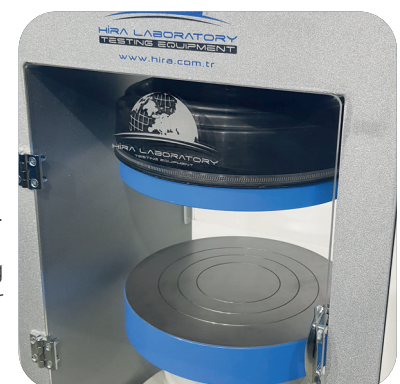
The load frame provides the stability needed for accurate and repeatable test results over the years of operation. The machine's hydraulic power pack, control and read out units are positioned on the right hand side of the load frame for easier accessibility, increased productivity and for safer operations.

Upper Platens/Lower Platens

Upper Platen (with ball seating assembly) Ø 165 mm and Lower Platen Ø 165 mm.

The platens enable the testing of a wide variety of cylinder or similar samples.

- Manufactured from high quality steel, which is then hardened, smoothed and finished.
- The roughness value for the surface texture of the auxiliary platens is $\leq 3.2 \mu\text{m}$.
- Ø 165 mm Upper Platen (with ball seating assembly) and Lower Platen have centering rings on the lower platens for proper centering of 100 mm and 150 mm cylinder samples.





Distance Pieces

Distance pieces are used to reduce the amount of vertical clearance between the upper platen and the lower platen. Supplied with \varnothing 165x30 mm, \varnothing 165x50 mm and \varnothing 165x80 mm distance pieces.

HR-C8166 HR-C8167 HR-C8168

Loading Cylinder Assembly & Limit Switch

The Load Frame has a single acting up stroking ram. The diameter of piston changes with regard to the capacity.

The maximum ram stroke is 50 mm, a limit switch is fitted to prevent over travel of the ram which cuts the power to the pump for safety.

At the end of the test process to start a new test the piston returns to default position.

There is a low friction coaxial PTFE seal between the cylinder and the piston fitted to the cylinder.



HYDRAULIC POWER PACK AND DIGITAL DATA ACQUISITION & CONTROL SYSTEM

Hydraulic Power Pack

Automatic Hydraulic Power Pack, dual stage, controlled by digital readout unit is designed to supply the required oil to the load frames for loading.

Controller unit has a simple and compact configuration.

Very silent power pack can load the specimen between 1 kN/sec. to 20 kN/sec, with an accuracy of $\pm 5\%$. A Rapid approach pump is supplied as standard. Safety valve (maximum pressure valve) is used to avoid machine overloading.

Maximum working pressure of the system is 400 bar.



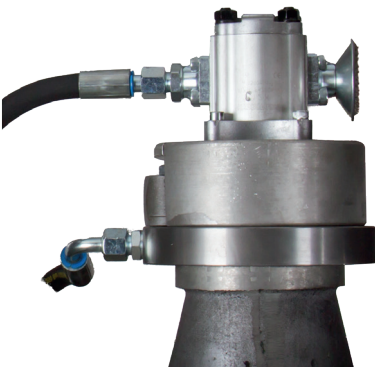
HR-C8000

Dual Stage Pump

The dual stage pump is formed by two groups;

1. Low pressure gear pump
2. High pressure radial piston pump

On the dual stage pump, a high delivery, low pressure gear pump is used for rapid approach, while a low delivery, high pressure radial piston pump is used for test execution. The rapid approach facility shortens the time interval from piston start until the upper platen touches to the specimen. This excellent feature helps to save a lot of time when a large number of specimens are going to be tested.



Motor

The motor which drives the dual pumps in an AC motor and it is controlled by motor inverter. The variation in the oil flow is executed with the variation of the rotation speed of the motor.



Distribution Block

A distribution block is used to control the oil flow direction supplied by the dual stage pump, the following parts are fitted to the distribution block; Solenoid valve, Safety valve (max. pressure valve), High Precision Pressure Transducer, Low pressure gear pump and High pressure radial piston pump.

High Precision Pressure Transducer

The HİRA range of Automatic Machines can be upgraded with option High Precision Pressure Transducer special calibration Class 1 starting from 1% of the full range.

This unique performance enables the machines to be used for a considerable number of applications including:

- Early age (2 or 3 days) compression strength tests
- Flexural and splitting tests by using proper accessories
- Mortar (Cement) compression tests by using proper accessories
- Core Testing



Load Cell

600 kN Load Cell can be used for load measurements instead of High Precision Pressure Transducer.

These property allows high accuracy at very low sample failures. (Class 1 at 6 kN to 600 kN)

The user can choose Load Cell or Transducer in the order stage.



Oil Tank

The tank includes enough oil to fill the mechanism which pushes the ram during the test. The level and oil temperature can be seen on the indicator fitted to the tank. It has 25 L capacity. Hydraulic motor oil, number 46, must be used.

HİRA TESTING EQUIPMENT



Digital Data Acquisition & Control System

The unit is designed to control the machine and processing of data from load-cells and pressure transducers which are fitted to the machine.

All the operations of the unit is controlled from the front panel consisting of a LCD display and function keys.

The unit has easy to use menu options.

Digital graphic display unit loading rate of the time of Testing and load values can be monitored.

Digital graphic display is able to draw real-time "Load vs. Time".



HR-C8002

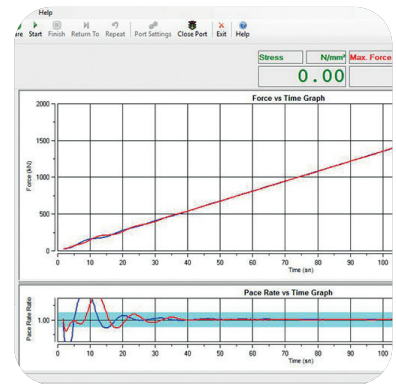
Software

Sample, company, laboratory and test values can be entered in the programme.

Load-time graphic, test reports and sample reports can be taken.

Software provides test data, results, and the load-time graphs can be seen at LCD screen.

The Automatic Core-Rock Compression machine can be controlled (Start, Stop commands) by a computer with the software free of charge. This software provides data acquisition and management for compression, tensile and splitting tensile test throughout the test execution. The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Therefore, test parameters can be set and details about the test carried out such as client details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.



Software can be performed in Turkish and English.

Test results, graphics and properties of 24 different specimens can be saved in one folder. Old test folders can be reviewed.

User can highlight all 12 different specimen curves in different colors on the graphics.

Frequently used information like name and location of the laboratory, type and dimensions of mostly used specimens are held in memory and can be written automatically by right clicking on information boxes and selecting frequently used text in menu.



User can access any data of previously completed tests and use in his/ her new report since most of the tests have same structure and properties.

Main Features

- Pace rate control from 1 kN/sec to 20 kN/sec depending on piston size.
- Can control 2 frames (optional)
- Can make test with load control.
- Real time display of test graph.
- Analog channels for different frame load cells
- RS-232 serial port connecting for computer interface
- LCD display
- 2 different unit system selection; kN and kgf
- Multi-language support (English and Turkish)
- 2 different unit system selection; SI and Metric
- Real-time clock and date
- Free of charge PC software for the test control and printout the test report.

Technical Specifications:

Product Code	HR-R6000
Capacity (kN)	600
Roughness (µm)	≤ 3.2
Ø Lower Platen (mm)	165
Ø Upper Platen (mm)	165
Max. Vertical clearance (mm)	330
Piston diameter (mm)	150
Piston Stroke (mm)	50
Horizontal clearance (mm)	230
Oil Capacity (lt)	25
Max. Working Pressure (bar)	400
Power (W)	750

Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button
- Software controlled maximum load value
- Front and rear transparent durable Plexiglas guards

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-R6000	600 kN Automatic Core-Rock Compression Testing Machine	71x38x91	450	220 V, 50-60 Hz, 1 ph
HR-R6000/1	600 kN Load Frame	35x30x91	350	---
HR-C8000	Hydraulic Power Pack and Digital Data Acquisition & Control System	36x38x91	100	220 V, 50-60 Hz, 1 ph
HR-C8001	Hydraulic Power Pack	36x38x91	98	220 V, 50-60 Hz, 1 ph
HR-C8002	Digital Data Acquisition & Control System	---	---	220 V, 50-60 Hz, 1 ph
HR-C8003	High Precision Pressure Transducer	---	---	---
HR-C8004	Software	---	---	---
HR-C8165	Distance Pieces	Ø 16,5 x 2,5	---	---
HR-C8166	Distance Pieces	Ø 16,5 x 3	---	---
HR-C8167	Distance Pieces	Ø 16,5 x 5	---	---
HR-C8168	Distance Pieces	Ø 16,5 x 8	---	---
HR-G0975	Computer & Printer	---	---	220 V, 50-60 Hz, 1 ph
HR-G0975/1	Usb to com port Converter	---	---	---
HR-G0979	Thermal Printer	---	---	---



HİRA TESTING EQUIPMENT

CYLINDER CAPPING EQUIPMENT

STANDARDS: TS EN 12390-3, ASTM C31, C192, C617, AASTHO T23, T126

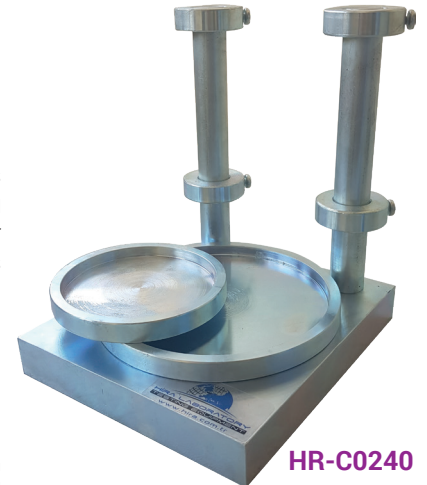
This heavy-duty vertical Cylinder capper is used in applying capping compound to Ø75, Ø100 and Ø150 mm concrete test cylinders in preparation for compression tests.

The vertical Capper simplifies the capping process by ensuring the plane, end surfaces are at right angles to the axis of the cylinder. The upright is used as a guide for positioning the cylinder. Molten capping compound is poured into the mold (plate); then the cylinder is placed on the capping material. After the compound is set, the capped cylinder is removed for testing. All types of capping compounds can be used with this apparatus.

Supplied complete with base plates for Ø100 and Ø150 mm cylinder specimens.

Base plates for Ø 75 mm cylinder specimens should be ordered separately.

Concrete Cylinder Carrier (Cradle-Type) is plated to resist rust. Used to carry Ø150 mm concrete cylinders in field or laboratory. Concrete Cylinder Carrier should be ordered separately.



HR-C0240

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)
HR-C0240	Cylinder Capping Equipment	21x19x24	12

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (mm)	Weight (kg)
HR-C0240/1	Cylinder Capping Frame	200x200x320	5
HR-C0240/2	Base Plate	Ø 75x20	1
HR-C0240/3	Base Plate	Ø 100x20	1,5
HR-C0240/4	Base Plate	Ø 150x20	2
HR-C0249	Concrete Cylinder Carrier	Ø 165x450	1



HR-C0249



HR-C0249 with sample

MELTING POT

STANDARDS: EN 12390-3, 12390-1, 12504-1; ASTM C31, C192, C617, C39, C42; AASTHO T23, T126

Used for Melting Capping Compound (Sulphur + Graphite).

The apparatus consists of a 3,5 lt capacity aluminum cast container, covered by a special made steel resistance, stone wool insulator and thermostatic control heating system to keep the temperature constant in the range of 40 to 350 °C.

Supplied with scoop.

Sulphur and Graphite should be ordered separately.

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-C0245	Melting Pot	35x40x30	9	220 V, 50-60 Hz, 1 ph



HR-C0245

Spare Parts & Accessories:

Product Code	Product Name
HR-G0914	Sulphur, 1 kg
HR-G0915	Sulphur, 25 kg
HR-G0912	Graphite, 1 kg
HR-G0913	Graphite, 25 kg
HR-G0739	Ladle, Stainless



HR-G0739



HR-G0912



HR-G0914

UNBONDED CAPPING PADS AND RETAINERS

STANDARDS: ASTM C1231

Used for compression tests on concrete cylinder samples, as an alternative method to the sulphur capping and grinding machine.

Two Steel Capping Retainers are applied on the two flat surfaces of the cylinder.

Two Neoprene Pads are put between them, for a better load distribution.

The Neoprene Pads are available in two models.

- 60 Shore hardness pads for expected strength from 10 to 48 MPa.
- 70 Shore hardness pads for expected strength over 48 MPa.

The system is not applicable for expected strength lower than 10 MPa.



Technical Specifications:

Product Code	Product Name	Hardness	Sample Dimensions (mm)
HR-C8800	Capping Retainers (Pack of 2)	---	100x200
HR-C8801	Capping Retainers (Pack of 2)	---	150x300
HR-C8802	Capping Retainers (Pack of 2)	---	160x320
HR-C8805	Neoprene Pads (Pack of 2)	60 Shore	100x200
HR-C8806	Neoprene Pads (Pack of 2)	60 Shore	150x300
HR-C8807	Neoprene Pads (Pack of 2)	60 Shore	160x320
HR-C8810	Neoprene Pads (Pack of 2)	70 Shore	100x200
HR-C8811	Neoprene Pads (Pack of 2)	70 Shore	150x300
HR-C8812	Neoprene Pads (Pack of 2)	70 Shore	160x320

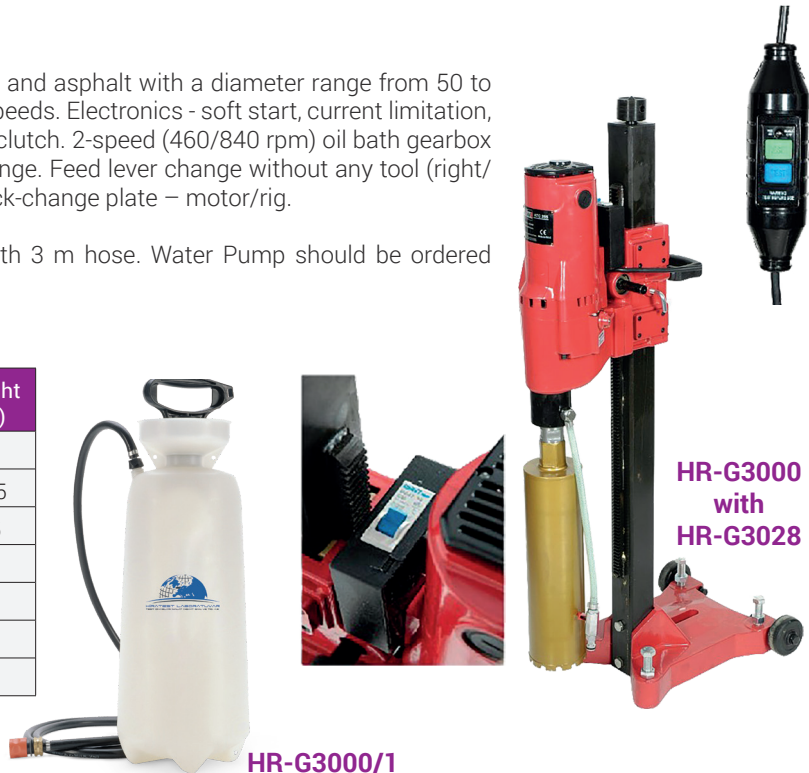
CORE DRILLING MACHINE

For shock-free drilling in concrete, natural stone and asphalt with a diameter range from 50 to 255 mm. The machine is equipped with 2 load speeds. Electronics - soft start, current limitation, thermal overload protection. Mechanical safety clutch. 2-speed (460/840 rpm) oil bath gearbox – optimal speed adjustment in the entire drill range. Feed lever change without any tool (right/left side). Feed lever – drilling in tight areas. Quick-change plate – motor/rig.

Water Pump is 15 lt capacity. It is supplied with 3 m hose. Water Pump should be ordered separately.

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (mm)	Weight (kg)
HR-G3025	Core Bit	Ø 50x400	2
HR-G3026	Core Bit	Ø 54,74x400	2,25
HR-G3027	Core Bit	Ø 75x400	2,5
HR-G3028	Core Bit	Ø 100x400	3
HR-G3029	Core Bit	Ø 150x400	5
HR-G3030	Core Bit	Ø 200x400	8
HR-G3000/1	Water Pump	---	---



Technical Specifications:

Product Code	Product Name	Power input	Drilling dia. (mm)	Rated speed (rpm)	Weight (kg)	Power Supply
HR-G3000	Core Drilling Machine	2600 W	50-255	460/840	25,2	220 V, 50-60 Hz, 1 ph

HİRA TESTING EQUIPMENT

MASONRY SAW (SPECIMEN CUTTING MACHINE)

STANDARDS: EN 12390-3, 12504-1, ASTM C42, D4543

The Universal Cutting Machines have been developed to cut and prepare concrete, rock or natural stone cores or other type test specimens.

Special "V" block clamp assembly allows specimens to be held during cutting operation.

The machine is supplied complete with circulation water pump and Cutting Blade.

Special clamp assembly should be ordered separately.

If 220 V Power Supply is required please mention at time of order.



HR-C0250 with HR-C0250/1 & HR-C0280

Technical Specifications:

Product Code	HR-C0250	HR-C0250/220	HR-C0255	HR-C0255/220	HR-C0260	HR-C0270
Product Name	Masonry Saw (Specimen Cutting Machine)					
Blade Diameter (cm)	35		45		60	35
Cutting Depth (cm)	12,5		17,5		25	13
Cutting Length (cm)	47		42		50	180
Engine Power	3 hp - 380 V	3 hp - 220 V	4 hp - 380 V	4 hp - 220 V	5.5 hp - 380 V	4 hp - 380 V
Water Pump Power	0.37 hp - 220 V		0.37 hp - 220 V		0.37 hp - 220 V	0.37 hp - 220 V
Weight (kg)	110		135		165	185
Dimension (cm)	110x66x125		110x71x135		122x81x150	210x70x150

Spare Parts & Accessories:

Product Code	Product Name	Diameter (mm)
HR-C0250/1	Cutting Blade	350
HR-C0255/1	Cutting Blade	450
HR-C0260/1	Cutting Blade	600
HR-C0280	Clamp for Concrete Cutting Machine	---



HR-C0250/1 with HR-C0280

PULL OUT TEST APPARATUS

The device is used for determining the bond strength between anchored reinforcing steel bar (rebar) and concrete and for checking anchorage performance in-situ.

Manuel Rebar Pull-Out Force Testers have Hydraulic Jack (Piston), 700 bar Hydraulic Hand Pump, High Pressure Hose and Connection apparatus.

Digital Rebar Pull-Out Force Testers have Battery Operated Digital Readout Unit, Pressure Transducer, Hydraulic Jack (Piston), 700 bar Hydraulic Hand Pump, High Pressure Hose and Connection apparatus.

Rebar Pull-Out Force Testers have a steel hydraulic cylinder.

HR-C0290 and HR-C0295 are supplied complete with Special Jaw Set (8-10/12-14/16-18/20-22/24-26/28-30/30-32) which allows user to test anchorage rebar with different diameters. These jaws are made of high strength steel.

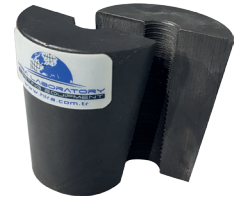
HR-C0292, HR-C0297, HR-C0293 and HR-C0299 are supplied complete with Special Jaw Set (8-10/12-14/16-18/20-22/24-26/28-30/30-32/36-40) which allows user to test anchorage rebar with different diameters. These jaws are made of high strength steel.



HR-C0290



HR-C0291/2
HR-C0291/3
HR-C0291/4



HR-C0291/7

Technical Specifications:

Product Code	Product Name	Rebar dia. (mm)	Stroke (mm)	Dimensions (cm)	Weight (kg)
HR-C0290	Manuel Pull Out Test Apparatus	Ø 8 to 32	50	80x35x32	50
HR-C0295	Digital Pull Out Test Apparatus	Ø 8 to 32	50	80x35x32	50
HR-C0292	Manuel Pull Out Test Apparatus	Ø 8 to 40	50	80x40x32	60
HR-C0297	Digital Pull Out Test Apparatus	Ø 8 to 40	50	80x40x32	60
HR-C0293	Manuel Pull Out Test Apparatus	Ø 8 to 40	50	80x43x32	75
HR-C0299	Digital Pull Out Test Apparatus	Ø 8 to 40	50	80x43x32	75

Spare Parts & Accessories:

Product Code	Product Name
HR-C0290/1	Hydraulic Hand Pump
HR-C0290/2	Hydraulic Jack (Piston). 30 ton capacity.
HR-C0292/2	Hydraulic Jack (Piston). 60 ton capacity.
HR-C0293/2	Hydraulic Jack (Piston). 100 ton capacity.
HR-C0290/3	High Pressure Hose, 1 m
HR-C0295/1	Battery Operated Digital Readout Unit
HR-C0295/2	Pressure Transducer
HR-C0291	Special Jaw Set, Ø 8 to 32 mm
HR-C0294	Special Jaw Set, Ø 8 to 40 mm
HR-C0291/1	Jaw Set for Ø 8-10 mm
HR-C0291/2	Jaw Set for Ø 12-14 mm
HR-C0291/3	Jaw Set for Ø 16-18 mm
HR-C0291/4	Jaw Set for Ø 20-22 mm
HR-C0291/5	Jaw Set for Ø 24-26 mm
HR-C0291/6	Jaw Set for Ø 28-30 mm
HR-C0291/7	Jaw Set for Ø 30-32 mm
HR-C0294/2	Jaw Set for Ø 36-40 mm
HR-C0291/9	Jaw Seat for HR-C0291
HR-C0294/1	Jaw Seat for HR-C0294



HR-C0295



PULL-OFF TESTER DRC

STANDARDS: EN 1015-12, EN 1348, ASTM C1583, ASTM D4541, BS 1881 Part 207, DIN 1048 Part 2

The LDV Pull-Off Tester provides a quick and easy way to determine the adhesion force between two different surfaces/materials. The Pull-Off tester is generally used to check the adhesion of different kind of materials (i.e. plastic, synthetic, fabric and others), fixed to concrete surfaces.

The Pull-Off test can be run on site without the need for installing or preparing any equipment during the casting process or while the part is being made.

The test consists in gluing a metal plate to the part being tested: the plate is then pulled off the part, using a top support complete with extraction system coupled to a load cell.

The pull off force is shown on the instrument's digital display. The peak value is logged.

Thanks to its versatile attachment system, the LDV Pull-Off tester can be used for testing the adhesion of mechanical components (anchors) and components which are larger than conventional plates, using support extenders.

The extended point of support makes it possible to test elements which are larger than normal adhesion plates.

Shear tests apply a traction force to a strip of composite material along its length, thus distributing tangential stresses across the interface between the reinforcement and the substrate as specified by ASTM D 905.

As indicated in the CNR document, the test is particularly valuable in determining the quality of adhesion.

The application can be considered acceptable if at least 80% of the tests (both, if only two are run) register a peak force at failure of no less than 24 kN.

The Pull-Off tester for shear testing composite structures includes a position-adjustable lower contrast plate and the anchor plates for the material being tested (LDV-S).

The instrument consists of a lower support which is bolted to the substrate to which the material being tested by the SHT Pull-Off tester is affixed.

Fields of Application

- Any application in which the adhesion between two different materials is to be measured;
- Checking restoration work on damaged concrete structures;
- Work using carbon fibre.

The instrument can be used with bitumen, cement, mortar, plaster, plastics and fabrics.

Technical Specifications:

Product Name:	Pull Off Tester
Load Cell:	TC4 25KN with DFI - A/D16 bit reader
Accuracy:	± 0,020 %
Linearity:	± 0,015 %
Working Temperature:	0 - 50°C
Max. Force:	2,5 tons
Filters:	digital, programmable, peak and zero force function
Display:	digital, 5 divisions
Battery Life:	1 year without recharging
Calibration:	digital
Dimensions:	150x150x145 mm
Dimensions with package:	260x230x145 mm
Weight:	1,2 kg
Weight with package:	4 kg

Spare Parts & Accessories:

Product Code	Product Name
HR-C0310	Pull Off LDV Tester
HR-C0315	Pull Off LDV-T Tester
HR-C0320	Support Shear Test LDV-S

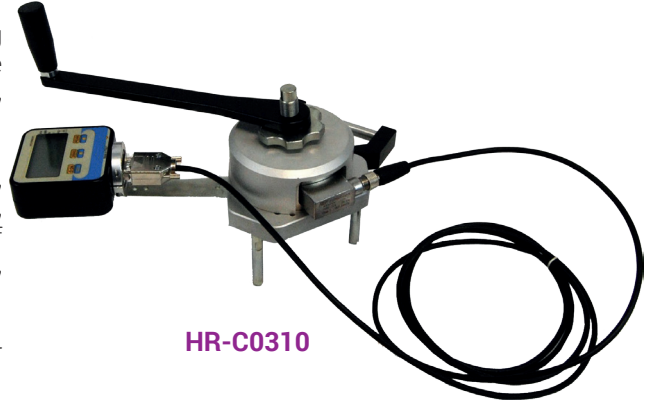
Reading system with DaTa 500 connection

The result is displayed either by the removable external force reader, which facilitates display when the test position is difficult to access, or by connecting the pull-off tester to the DaTa 500 reader with the cable included in the kit.

Pull Off LDV is supplied complete with Contrast Support, Loading Cell (25 o 50 kN) and Removable Display System, Adjustable Ball Traction Handles, Support Extensions, Pull-off Plate D50, Calibration Report, User Manual and Rigid Carry Case.

Pull Off LDV-T is supplied complete with Contrast Support, Loading Cell (25 o 50 kN) and Removable Display System, Adjustable Ball Traction Handles, Support Extensions, Pull-off Plate D50, Calibration Report, User Manual, Rigid Carry Case, Lower Contrast Plate and (L 200 x 50) Shear Test Plate.

Support Shear Test LDV-S is supplied complete with Lower Contrast Plate and (L 200 x 50) Shear Test Plate.



HR-C0310

PULL-OFF TESTER

STANDARDS: EN 1015-12, EN 1348, EN 1542, EN 13693, EN 14496, ASTM C1583, ASTM D4541, ASTM D7522, ASTM D7234, BS 1881 Part 207, DIN 1048 Part 2

Pull-Off Tester is used to evaluate the bond strength of two layers of concrete or the adhesive strength of surface coatings (e.g. cement plaster, lime, wall plaster etc.) on its support.

Supplied complete with Carrying Case.

Battery operated Pull-Off Tester has Seat ball assuring Axial/Central Load Application.

To perform the test a common electric drill is required.

All accessories should be ordered separately.



HR-C0330

Technical Specifications:

Product Name:	Pull Off Tester
Product Code:	HR-C0330
Load Capacity:	10 kN
Resolution:	10 N
Working Range:	0,10 to 10 kN
Accuracy:	better than \pm % 1
Repeatability:	better than \pm % 1
Hand Wheel rounds:	60 with mechanical round/counter
Dimensions:	21x26x17 cm
Weight:	3,5 kg

Spare Parts & Accessories:

Product Code	Product Name
HR-C0330/1	Drill bit with centering point to obtain, \varnothing 50 mm test surface
HR-C0330/2	Drill bit with centering point to obtain, \varnothing 20 mm test surface
HR-C0330/3	Metal ring (dinking die), \varnothing 50x25 mm high, for fresh plaster, to EN 1015-12
HR-C0330/4	Aluminium Test Disc, \varnothing 50 mm
HR-C0330/5	Aluminium Test Disc, \varnothing 20 mm
HR-C0330/6	Square Aluminium Test Plate, 50x50mm, conforming to EN 1348
HR-C0330/7	Stainless Steel Disc \varnothing 50x20 mm thickness, conforming to EN 1015-12
HR-C0330/8	Adhesion Silicon and Gun

HİRA TESTING EQUIPMENT

SEMI-AUTOMATIC PULL-OFF TESTER

STANDARDS: EN 1015-12, EN 1348, EN 1542, EN 13693, EN 14496, ASTM C1583, ASTM D4541, ASTM D7522, ASTM D7234, BS 1881 Part 207, DIN 1048 Part 2

Pull-Off Tester is used to evaluate the bond strength of two layers of concrete or the adhesive strength of surface coatings (e.g. cement plaster, lime, wall plaster etc.) on its support.

Semi-Automatic Pull-Off Tester is DC Controlled with voltage regulator.

Calibration Certificate is optional.

All accessories should be ordered separately.



HR-C0335

Technical Specifications:

Product Name:	Pull Off Tester
Product Code:	HR-C0335
Load Capacity:	10 kN
Load Speed:	15-250 N/sec.
Digital Indicator:	kN or Newton
Battery:	Up to 75 tests
Charge Unit:	230 V, 50 Hz
Power Supply:	220 V adapter or Battery (optional)
Weight:	8,5 kg

Spare Parts & Accessories:

Product Code	Product Name
HR-C0330/1	Drill bit with centering point to obtain, Ø 50 mm test surface
HR-C0330/2	Drill bit with centering point to obtain, Ø 20 mm test surface
HR-C0330/3	Metal ring (dinking die), Ø 50x25 mm high, for fresh plaster, to EN 1015-12
HR-C0330/4	Aluminium Test Disc, Ø 50 mm
HR-C0330/5	Aluminium Test Disc, Ø 20 mm
HR-C0330/6	Square Aluminium Test Plate, 50x50mm, conforming to EN 1348
HR-C0330/7	Stainless Steel Disc Ø 50x20 mm thickness, conforming to EN 1015-12
HR-C0330/8	Adhesion Silicon and Gun

AUTOMATIC PULL-OFF TESTER

STANDARDS: EN 1015-12, EN 1348, EN 1542, EN 13693, EN 14496, ASTM C1583, ASTM D4541, ASTM D7522, ASTM D7234, BS 1881 Part 207, DIN 1048 Part 2

Pull-Off Tester is used to evaluate the bond strength of two layers of concrete or the adhesive strength of surface coatings (e.g. cement plaster, lime, wall plaster etc.) on its support.

Automatic Pull-Off Tester is DC Controlled with touch screen.

Calibration Certificate is optional.

All accessories should be ordered separately.



HR-C0345

Technical Specifications:

Product Name:	Pull Off Tester
Product Code:	HR-C0345
Load Capacity:	10 kN
Load Speed:	15-250 N/sec.
Digital Indicator:	kN or Newton or Mpa
Battery:	Up to 99 tests
Charge Unit:	230 V, 50 Hz
Power Supply:	220 V adapter or Battery (optional)
Weight:	15 kg

Spare Parts & Accessories:

Product Code	Product Name
HR-C0330/1	Drill bit with centering point to obtain, Ø 50 mm test surface
HR-C0330/2	Drill bit with centering point to obtain, Ø 20 mm test surface
HR-C0330/3	Metal ring (dinking die), Ø 50x25 mm high, for fresh plaster, to EN 1015-12
HR-C0330/4	Aluminium Test Disc, Ø 50 mm
HR-C0330/5	Aluminium Test Disc, Ø 20 mm
HR-C0330/6	Square Aluminium Test Plate, 50x50mm, conforming to EN 1348
HR-C0330/7	Stainless Steel Disc Ø 50x20 mm thickness, conforming to EN 1015-12
HR-C0330/8	Adhesion Silicon and Gun

CONCRETE (SCHMIDT) TEST HAMMER

STANDARDS: EN 12504-2, 13791; ASTM C 805; BS 1881:202

The quality of concrete is mainly judged by its compressive strength directly affecting the load-bearing capacity and durability of concrete structures.

Spring impact energy 2,207 Nm (Joule). Suitable for finished concrete structures and buildings having strength resistances from 10 to 70 N/mm².

This concrete test hammer, has aluminum frame, and thanks to its very accurate manufacture processing and selected components ensures high precision test results in the time.

Supplied complete with calibration curve chart in N/mm² (Mpa) values, abrasive stone and carrying case.

Calibration Anvil, Used for the verification of the calibration of the hammers.

For more information on the Calibration Anvil, see Calibration Anvil, Model HR-C7000.

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)
HR-C7010	Concrete (Schmidt) Test Hammer	35x18x10	2 kg
HR-C7000	Calibration Anvil	15x15x23	16 kg



HR-C7010

MECHANICAL TEST HAMMER (MADE IN ITALY)

STANDARDS: EN 12504-2, ASTM C 805; BS 1881:202

The Rebound Hammer for concrete allows for an analysis of on-site concrete quality in order to estimate the mechanical characteristics of the material. Investigations with the Rebound Hammer are based on the surface "hardness" measurement of material expressed in terms of the "Rebound Index."

Investigations with the Mechanical Rebound Hammer falls under the category of Non Destructive methods, as implementation of the testing, in addition to not causing damage to structures and building function, involves relatively low costs.

The Mechanical Rebound Hammer is supplied with a rubberised plastic handle which facilitates manoeuvrability at work sites and protects it from possible accidental shock. The Mechanical Test Hammer is entirely made in Italy.

The Rebound hammer method field of application is mainly directed toward evaluation of the following properties:

- Concrete uniformity checks in different parts of the structure.
- Estimation of the mechanical characteristics of the concrete through the use of correlation curves.
- Evaluation of changes in concrete properties over time.
- Verification of concrete characteristics on-site during the testing phase.

The above-mentioned applications can therefore be summarized by stating that rebound hammer tests are to be used to estimate concrete compressive strength of already built structures.

Mechanical Test Hammer is supplied with Abrasion Stone, Plastic Case for Stone, Plastic Grid 30x30 cm, Pencil, Fenolftaleina 100ml, Paper Note, Operating Manual, Calibration Report and Soft Bag.

Technical Specifications:

Product Name:	Mechanical Rebound Hammer
Product Code	HR-C7020
Impact Energy	2.207 Nm
Measuring Range of Compressive Strength	5 to 120 N/mm ²
Dimensions (mm)	70x70x300
Dimensions with Package (mm)	300x150x400
Weight (kg)	1,3
Weight with Package (kg)	4



HR-C7020



HR-C7020

DIGITAL CONCRETE TEST HAMMER (MADE IN ITALY)

STANDARDS: EN 12504-2, ASTM C 805; BS 1881:202

The Digital Concrete Test Hammer for concrete allows for an analysis of on-site concrete quality in order to estimate the mechanical characteristics of the material. Investigations with the Rebound Hammer are based on the surface "hardness" measurement of material expressed in terms of the "Rebound Index."

Investigations with the Digital Rebound Hammer falls under the category of Non Destructive methods, as implementation of the testing, in addition to not causing damage to structures and building function, involves relatively low costs.

The Digital Test Hammer is entirely made in Italy.

The Rebound hammer method field of application is mainly directed toward evaluation of the following properties:

Concrete uniformity checks in different parts of the structure.

Estimation of the mechanical characteristics of the concrete through the use of correlation curves.

Evaluation of changes in concrete properties over time.

Verification of concrete characteristics on-site during the testing phase.

The above-mentioned applications can therefore be summarized by stating that rebound hammer tests are to be used to estimate concrete compressive strength of already built structures.

Digital Rebound Hammer is supplied with Abrasion Stone, Plastic Case for Stone, Plastic Grid 30 x 30 cm, Pencil, Fenolftaleina 100ml, Paper Note, Operating Manual, Calibration Report, SD Card, Rechargeable Feeder and Carrying Case.



HR-C7040



HR-C7040

Technical Specifications:

Product Name:	Digital Test Hammer
Product Code	HR-C7040
Impact Energy	2.207 Nm
Measuring Range of Compressive Strength	5 to 120 N/mm ²
Memory	2 GB
Screen	LCD 64x128
Connection	USB & SD Kart
Power Supply	5 x LR6 Rechargeable Battery
Working Temperature	-10 + 60 °C
Dimensions (mm)	65x80x320
Dimensions with Package (mm)	420x280x180
Weight (kg)	1,4
Weight with Package (kg)	5

PROCEQ (SCHMIDT) TEST HAMMERS

STANDARDS: EN 12504-2, 13791; ASTM C 805; BS 1881:202

The Concrete Test Hammers are the most widely used portable NDT measuring instruments for a rapid assessment of the condition of a concrete structure.

ORIGINAL SCHMIDT

The classic Original Schmidt Hammer that became the basis of every major rebound hammer testing standard worldwide. Includes the NR and LR versions to record the rebound values directly on registration paper.

Type N/L: The benchmark against which all rebound hammers are compared and the basis of every international rebound hammer standard. Available with different impact energies allowing customers to test a wide variety of materials and types of structure.

Type NR/LR: Ever popular version with impact values recorded as a bar chart on registration paper for ease of control. Greatly simplifies the calculation of the rebound value and in checking the uniformity of the object under test. One roll of paper can record up to 4'000 impacts.

Original Schmidt Hammers are supplied with Impact Device, Carrying Case, Grinding Stone, Operating Instructions and Calibration Certificate.

Type NR and LR additionally with 3 rolls of registration paper.



HR-C7015

Technical Specifications for ORIGINAL SCHMIDT

ORIGINAL SCHMIDT				
Type	Type N	Type NR	Type L	Type LR
Product Code	HR-C7015	HR-C7017	HR-C7019	HR-C7021
Impact Energy	2.207 Nm		0.735 Nm	
Measuring Range of Compressive Strength	10 to 70 N/mm ²		10 to 70 N/mm ²	

Spare Parts & Accessories:

Product Code	Product Name
HR-C7017/1	Rolls of registration paper (5 packages) for Type NR/LR

SILVER SCHMIDT

The SilverSchmidt is a unique integrated concrete test hammer featuring true rebound value calculated from the quotient of the impact velocity and rebound velocity to provide maximum accuracy.

ST: Standard model. Hammerlink software provided for performing firmware upgrades and selecting statistics presets only. Useful memory limited to the last 20 series.

PC: Full Hammerlink software functionality. Extended memory usage. Download to PC. User defined custom curves.

Type N: Standard impact energy. Test object should have minimum thickness of 100 mm (3.9") and be firmly fixed in the structure.

Type L: Low impact energy. Suitable for brittle objects or structures less than 100 mm (3.9") thick.

Intuitive User Interface

The language independent user interface is simple to use and provides all of the functionality necessary for a rapid assessment of the structure. Practically every command can be activated either directly or in two consecutive steps.



HR-C7023

Data Acquisition and Processing

Pre-programmed statistical methods in accordance with all of the major standards assures an error free, rapid determination of the rebound value.

Reduced dispersion and direct conversion to compressive strength based on validated curves, regional curves or user defined curves bring improved accuracy to compressive strength estimates.

All data is automatically saved and the last 20 series may be reviewed in the data list.

Hammerlink – Data Analysis made simple

The Windows based software Hammerlink unlocks the full capabilities of the SilverSchmidt PC version, making it an even more powerful instrument for structural assessment.

Hammerlink features:

- Extended memory usage
- Rapid uniformity testing with the summary view
- User defined conversion curves (polynomial and exponential)
- User defined statistical methods
- Printouts
- Export to third party software

Extending the range to fresh Concrete

The mushroom plunger in combination with the SilverSchmidt PC Type L hammer extends the lower measuring range down to approximately 5 MPa (725 psi).

This coupled with the SilverSchmidt's inherent angle independency makes it the perfect tool for early strength applications such as determining when to remove formwork in tunnel linings.

SilverSchmidt Hammers are supplied with Impact device, carrying case, grinding stone, operating instructions and calibration certificate.

Technical Specifications for SILVER SCHMIDT

SILVER SCHMIDT				
Type	Type ST/N	Type PC/N	Type ST/L	Type PC/L
Product Code	HR-C7023	HR-C7027	HR-C7025	HR-C7029
Impact Energy	2.207 Nm		0.735 Nm	
Measuring Range of Compressive Strength	10 to 100 N/mm ² (1'450 to 14'500 psi)		10 to 100 N/mm ² (1'450 to 14'500 psi)	

Features

Product Name:	Silver Schmidt	Original Schmidt
Display	Integrated Digital Display	Mechanical Display
Memory	400 series of 10 measurements (PC N and PC L versions only)	---
Connections	USB interface to PC	---
Standards	EN 12504-2, EN 13791, ASTM C805	EN 12504-2, EN 13791, ASTM C805

The Schmidt Concrete Test Hammers can be applied on all concrete structures such as bridges, buildings, retaining walls, barrages and many more. But they are also the perfect instruments to test in tunnels (e.g. the formwork stripping strength which is the concrete compressive strength f_c to be achieved before removal of the formwork).

CALIBRATION ANVIL

STANDARDS: EN 12504-2, ASTM D5873, C805

Used for the verification of the calibration of the hammers.

The EN 12504:2 Specification requires obligatory the use of the anvil for the hammer tests.

The Standard specifies; before a sequence of tests on a concrete surface, take and record readings using the steel reference anvil and check to ensure that they are within the range recommended by the manufacturer. If they are not, clean and/or adjust the hammer.

After tests, take readings using the steel anvil, record them and compare them with those taken prior to the test. If the results differ, clean and/or adjust the hammer and repeat the test.

Made of hardened steel according to the standards.



HR-C7000

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)
HR-C7000	Calibration Anvil	Ø 15x23	16

ULTRASONIC PULSE VELOCITY AND PULSE ECHO TESTING OF CONCRETE

STANDARDS: EN 12504-4, ASTM C 597-02, BS 1881 Part 203, ISO 1920-7:2004

Structural defects cause serious damages and collapses. Ultrasonic testing provides information on the strength and uniformity of concrete, rock, composites, ceramics, wood, epoxy, refractory materials and can be used to detect and localize voids, pipes, cracks and defects.

The pulse velocity in a material depends on its density and its elastic properties which in turn are related to the quality and the compressive strength of the concrete. It is therefore possible to obtain information about the properties of components by sonic investigations.

Proceq offers the most versatile instrument for ultrasonic testing of concrete.

Ultrasonic Pulse Velocity - Pundit Lab

Measurement performance; Optimized pulse shaping, automated transmission settings for optimum performance and a range of new, more powerful transducers ensure accurate, stable measurements.

Integrated waveform display; Allows analysis of the received signal and manual triggering directly on the instrument.

On-line data acquisition; Full remote control of all transmission parameters, data logging function and functionality that turns your PC into an oscilloscope.

USB interface and data analysis software; Data analysis and export to third party programs.

Open interface; Control Pundit Lab using third party software such as LabVIEW. Pundit Lab consisting of: Display unit, 2 transducers (54kHz), 2 BNC cables 1.5 m, couplant, calibration rod, battery charger with USB-cable, 4x AA(LR6) batteries, data carrier with software, documentation and carrying case.

Ultrasonic Pulse Velocity - Pundit Lab Plus

Integrated gain stage; Removes the need for an external amplifier when using exponential transducers and long cables.



HR-C7050

HİRA TESTING EQUIPMENT



Compressive strength measurement; Conversion curves for strength estimation can be created in the software and uploaded to the instrument to give instant strength estimations on site.

Combined estimates with rebound hammer; SONREB curves may also be uploaded onto the instrument for improved compressive strength estimates in combination with rebound hammer measurements.

Time stamp; A real time clock has been integrated to provide a time stamp to every measurement recorded.

Review list; Saved measurements may be reviewed directly on site without the need for a PC connection.

Pundit Lab Plus consisting of: Display unit, 2 transducers (54kHz), 2 BNC cables 1.5 m, couplant, calibration rod, battery charger with USB-cable, 4x AA(LR6) batteries, data carrier with software, documentation and carrying case

Pundit Link Analysis Software

The Windows based software Pundit Link, developed by Proceq SA, unlocks the full capabilities of the Pundit Lab, providing the user with:

- Waveform visualization and analysis turning your PC into an oscilloscope
- Interactive adjustment of trigger point
- On-line data acquisition
- Full remote control of the instrument instrument including programmable data logging functionality
- Export of data to third party applications
- (Pundit Lab+ only) creation of conversion curves for compressive strength (exponential, polynomial).
- (Pundit Lab+ only) creation of SONREB curves for combined (ultrasonic/rebound value) estimates of compressive strength



HR-C7050

Technical Specifications

Product Code	HR-C7055	HR-C7050
Product Name	Ultrasonic Pulse Velocity and Pulse Echo Testing of Concrete	
	Pundit Lab	Pundit Lab Plus
Transit Time Range	0.1 – 9999 µs	
Resolution	0.1 µs	
Energising Pulse	125 V, 250 V, 350 V, 500V, AUTO	
Tx Frequency Range	24 kHz – 500 kHz	
Transit Time	Yes	
Pulse Velocity	Yes	
Path Length	Yes	
Surface Velocity	Yes	
Crack Depth	Yes	
Memory	> 500 readings	
Power Supply	Mains/Battery(>20h)/USB	
IP Classification	IP42	
Integrated Gain Stage	1x, 10x, 100x	1x, 2x, 5x, 10x, 20x, 50x, 100x, 200x, 500x, 1000x
Compressive Strength	---	Yes
SONREB Method (Ultrasonic plus rebound hammer for compressive strength)	---	Yes
Time Stamp for Measurements	---	Yes
Measurement Review List on Instrument	---	Yes

CONCRETE COVERMETERS

The Professional Multi-detectors can be used to locate live cables and wooden sub-constructions as well as ferrous and non-ferrous metals.

The automatic calibration eliminates errors and the LED luminous ring displays results in conjunction with the Centre Finder scale.

Complete with 1 x 9 V 6LR61 (block) battery and Protective Bag.



HR-C7070



HR-C7075

Technical Specifications:

Product Code	Product Name	Maximum Detection Depth			Dimensions (mm)	Weight (kg)
		Steel	Copper	Copper Wiring		
HR-C7070	Concrete Covermeter	100 mm	80 mm	50 mm	101x342x174	0,29
HR-C7075	Concrete Covermeter	120 mm	80 mm	50 mm	85x200x32	0,27

PROFOMETER PM-600 – ADVANCED CONCRETE COVER METER – ENTRY LEVEL MODEL

STANDARDS: BS 1881 Part 204, DIN 1045

The Profometer PM-600 is an Advanced Cover Meter for the precise and non-destructive measurement of concrete cover and rebar diameters and the detection of rebar locations using the eddy current principle with pulse induction as the measuring method.

Based on the new generation Profometer Touchscreen unit, the instrument offers real time control over the measurement procedure directly on site. The high resolution color display allows best possible measuring and analysis of the statistical data for an entire working day (battery lifetime > 8h).

The instrument comes along with a Universal Probe including a spot probe especially suited for areas with congested rebar arrangement such as columns, girders and slabs over columns.

Lightweight IP 67 universal probe with detachable scan cart and spot functionality for measurements where space is limited.



PM-600

Features

- 1-Layer Neighboring Rebar Correction (NRC)
- Visual assistance for scanning speed and signal strength control
- Settings directly accessible on the measurement screen
- Graphical display of measured values and minimum cover set
- Change settings before and after storage
- 11 Languages and timezone supported
- PC Software; Profometer Link to download saved data to a PC for analysis and export to third party applications
- Connections; USB host / device and Ethernet
- Measurement Modes; Rebar location, diameter estimation and cover measurement and Data acquisition

Applications

- Locate rebars before drilling, cutting and coring
- Spot check of rebar cover
- Measurements on rough surfaces with scan cart

Technical Specifications:

Product Code	PM-600
Product Name	Profometer - Advanced Concrete Cover Meter
Cover Measuring Range	Up to 185 mm (7.3")
Cover Measuring Accuracy	± 1 mm to ± 4 mm (0.04" to 0.16")
Measuring Resolution	Depending on diameter and cover
Path Measuring Accuracy on Smooth Surface	± 3 mm (0,12 inch) + 0.5 to 1.0 % of measured length
Display	7" color rugged touchscreen unit (800 x 480 pixels) with dual core processor
Diameter Measuring Range	Cover up to 63 mm (2.50 inch), Diameter up to 40 mm (# 12)
Diameter Measuring Accuracy	± 1 on single rebar
Memory	Internal 8 GB Flash memory
Regional Settings	Metric and imperial units and multi-language supported
Battery	3.6 V, 14.0 Ah
Battery Lifetime	> 8h (in standard operating mode)
Operating temperature	-10°C – 50°C
Humidity	< 95 % RH, non-condensing
IP Classification	Touchscreen IP54, Universal Probe IP67
Directives	CE certification
Dimensions	250 x 162 x 62 mm
Weight (of display device)	1525 g (incl. Battery)
Power Input	12 V +/-%25 / 1,5 A

PROFOMETER PM-630 AL – ADVANCED SCAN CONCRETE COVER METER

STANDARDS: BS 1881 Part 204, DIN 1045

The Profometer PM-630 AL is an Advanced Cover Meter is a sophisticated instrument extending the application range of the Profometer PM-600 with the Line and Area Scan Modes and an extensive choice of statistical views.

Based on the new generation Profometer touchscreen with universal probe and scan cart. Enhanced correction factor for maximum cover accuracy on congested rebar arrangements. Dedicated functionalities for mapping concrete cover and for reporting one layer rebar arrangements.

It is especially suited to measuring large areas, long lines or when comprehensive reporting is required. For example when inspecting tunnels, retaining walls, concrete slab soffits, bridge slabs or dams.

The instrument offers real time control over the measurement procedure directly on site. The high resolution color display allows best possible measuring and analysis of the statistical data for an entire working day (battery lifetime > 8h).



PM-630 AL

Features

- 2-Layer Neighboring Rebar Correction Artificial Intelligence (NRC AI)
- Cover calibration
- Zoom in to scale rebars according to your needs
- Display with cover curve or signal strength curve
- Signal strength spectrum for further evaluation
- Visual assistance for scanning speed and signal strength control
- Settings directly accessible on the measurement screen
- Graphical display of measured values and minimum cover set
- Change settings before and after storage
- 11 Languages and timezone supported
- PC Software; Profometer Link to download saved data to a PC for analysis and export to third party applications
- Connections; USB host / device and Ethernet
- Measurement Modes; Rebar location, diameter estimation and cover measurement and Data acquisition, One layer scans, tomographic view, advanced statistics

Applications

- Locate rebars before drilling, cutting and coring
- Spot check of rebar cover
- Measurements on rough surfaces with scan cart
- Measuring wide areas over long distances
- Conformity check of new buildings
- Fire resistance assessment

Technical Specifications:

Product Code	PM-630 AI
Product Name	Profometer - Advanced Scan Concrete Cover Meter
Cover Measuring Range	Up to 185 mm (7.3")
Cover Measuring Accuracy	± 1 mm to ± 4 mm (0.04" to 0.16")
Measuring Resolution	Depending on diameter and cover
Path Measuring Accuracy on Smooth Surface	± 3 mm (0,12 inch) + 0.5 to 1.0 % of measured length
Display	7" color rugged touchscreen unit (800 x 480 pixels) with dual core processor
Diameter Measuring Range	Cover up to 63 mm (2.50 inch), Diameter up to 40 mm (# 12)
Diameter Measuring Accuracy	± 1 on single rebar
Memory	Internal 8 GB Flash memory
Regional Settings	Metric and imperial units and multi-language supported
Battery	3.6 V, 14.0 Ah
Battery Lifetime	> 8h (in standard operating mode)
Operating temperature	-10°C – 50°C
Humidity	< 95 % RH, non-condensing
IP Classification	Touchscreen IP54, Universal Probe IP67
Directives	CE certification
Dimensions	250 x 162 x 62 mm
Weight (of display device)	1525 g (incl. Battery)
Power Input	12 V +/-25 / 1,5 A



PROFOMETER PM-650 AL – ADVANCED CROSS-SCAN CONCRETE COVER METER

STANDARDS: BS 1881 Part 204, DIN 1045

The Profometer PM-650 AL extends the measuring modes of the Profometer PM-630 AL with the unique Cross-Line Mode and further analysis functions. The Cross-Line Mode allows users to measure the rebar of the first and second layer typically arranged in a rectangular mesh.

Advanced cover meter based on the new generation Profometer touchscreen with universal probe and scan cart. Enhanced correction factor for maximum cover accuracy on congested rebar arrangements. Dedicated functionalities for mapping concrete cover and for reporting any 2D rectangular rebar arrangement.

Features

- 2-Layer Neighboring Rebar Correction Artificial Intelligence (NRC AI)
- Cover calibration
- Zoom in to scale rebars according to your needs
- Display with cover curve or signal strength curve
- Signal strength spectrum for further evaluation
- Visual assistance for scanning speed and signal strength control
- Settings directly accessible on the measurement screen
- Graphical display of measured values and minimum cover set
- Change settings before and after storage
- 11 Languages and timezone supported
- PC Software; Profometer Link to download saved data to a PC for analysis and export to third party applications
- Connections; USB host / device and Ethernet
- Measurement Modes; Rebar location, diameter estimation and cover measurement and Data acquisition, One layer scans, tomographic view, advanced statistics
- Two layers scans, tomographic view, advanced statistics

Applications

- Locate rebars before drilling, cutting and coring
- Spot check of rebar cover
- Measurements on rough surfaces with scan cart
- Measuring wide areas over long distances
- Conformity check of new buildings
- Fire resistance assessment
- Investigation of unknown structures
- Complete, 2D and 3D imaging of rebar layout



PM-650 AL

Technical Specifications:

Product Code	PM-650 AL
Product Name	Profometer - Advanced Cross-Scan Concrete Cover Meter
Cover Measuring Range	Up to 185 mm (7.3")
Cover Measuring Accuracy	± 1 mm to ± 4 mm (0.04" to 0.16")
Measuring Resolution	Depending on diameter and cover
Path Measuring Accuracy on Smooth Surface	± 3 mm (0,12 inch) + 0.5 to 1.0 % of measured length
Display	7" color rugged touchscreen unit (800 x 480 pixels) with dual core processor
Diameter Measuring Range	Cover up to 63 mm (2.50 inch), Diameter up to 40 mm (# 12)
Diameter Measuring Accuracy	± 1 on single rebar
Memory	Internal 8 GB Flash memory
Regional Settings	Metric and imperial units and multi-language supported
Battery	3.6 V, 14.0 Ah
Battery Lifetime	> 8h (in standard operating mode)
Operating temperature	-10°C – 50°C
Humidity	< 95 % RH, non-condensing
IP Classification	Touchscreen IP54, Universal Probe IP67
Directives	CE certification
Dimensions	250 x 162 x 62 mm
Weight (of display device)	1525 g (incl. Battery)
Power Input	12 V +/-25 / 1,5 A

CRACK DETECTION MICROSCOPE

The Measuring Microscope is a precision hand-made product, suitable for measuring cracks in concrete, thread pitch, print characters, etc.

This high definition microscope is further enhanced by having its own adjustable light source for darkened conditions.

Current codes of practice, state that calculated maximum crack widths should not exceed certain values. BS 8110: Part 2 for concrete permits a crack width of 0.3mm which is 15 divisions on the scale for most types of environment.

The image is focused by turning a knurled knob on the side of the instrument, and the eyepiece scale can be rotated through 360 degrees to align with the direction of the crack, pitch, etc., under examination.

Ease of use, strong construction and compact size just 130mm in height makes this instrument ideally suited for harsh environments.

The 4 mm width of measurement has a lower scale, divided into 0,2 mm divisions, which are subdivided into 0,02 mm divisions.

Comes complete in its own sturdy wooden pocket size case.

Technical Specifications:

Product Code	Product Name	Magnification	Weight (kg)
HR-C7125	Crack Microscope	X35	0,600



HR-C7125

CONCRETE WATER IMPERMEABILITY TESTERS

STANDARDS: EN 12390-8

Concrete Water Impermeability Testers are used to determine the depth of penetration of the water into the hardened concrete specimens (impermeability) under known time and pressure.

The system can test 150x150x150 mm, 200x200x200 mm cube or 100x200 mm, 150x300 mm cylinder specimens.

3 or 6 specimen capacity models are available.

Pressure to the sample, up to 8 bar with 0,2 bar precision is generated by way of compressed air applied to the integral water tank and controlled by a pressure regulator; with a pressure gauge.

The penetration of water is measured through the burettes supplied complete with the system. The system comprises impermeability gaskets for every cell.

The apparatus has to be fitted with the suitable air compressor with maximum working pressure of bar.

The Air Compressor should be ordered separately.

Technical Specifications:

Product Code	Product Name	Specimen Capacity	Dimensions (cm)	Weight (kg)
HR-C0300	Concrete Water Impermeability Tester	3 pieces	50x160x180	125
HR-C0305	Concrete Water Impermeability Tester	6 pieces	50x160x180	165

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-G0825	Air Pressure Pump, 8 bar, 25 lt	60x30x60	30	220 V, 50-60 Hz, 1 ph



HR-C0300



HR-G0825