ROCKWELL TYPE HARDNESS TESTER CV-600A™

Ready-to-test analogue Rockwell type tester with lever system for direct load application

- Basic regular Rockwell type tester offering accuracy, reliability and durability at an extremely affordable price
- Rugged construction, will stand up to the harshest environments
- Direct analogue reading of Rockwell scales HRC, B, A, F
- Accuracy conforms to EN-ISO 6508 and ASTM E-18
- Mechanical test cycle without the need of electricity
- Easy load force selection by robust dial knob
- Oil brake with variable damping by adjustable knob
- Large capacity to accommodate large test specimen
- Standard delivery including accessories ready for testing all scales

Technical specifications

Rockwell scales	A, B, C, F
Hardness resolution	0.5 of a Rockwell unit
Test loads	10kgf preload / 60, 100, 150kgf total load
Display	Dial indicator
Test force application	By force lever
Load duration	Manually set via oil damper
Data output	Non
Accuracy	Conforms to EN-ISO 6508 and ASTM E-18
Specimen accommodation	Vertical space 170mm (6.7") Horizontal space (from centre-line) 165mm (6.5")
Specimen access	External surfaces Cylindrical surfaces down to 3mm diameter
Power supply	Non
Machine dimensions	Width 150mm, depth 485mm, height 700mm
Machine weight	Approx. 85kg

Standard delivery

- Main unit
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Hardness test block ±60HRC
- Hardness test block ±25HRC
- Hardness test block ±85HRB
- Spare balls 1/16" (5 pcs)
- Flat anvil ø 60mm
- Large flat anvil ø 150mm
- V-anvil ø 40mm
- Adjustable feet (4 pcs)
- Spindle protection cover
- Solid accessories case
- CV Instruments certificate
- Installation & user manual

Optional accessories

- Certified test blocks
- Certified indentors & balls

ROCKWELL TYPE HARDNESS TESTER CV-600MA™

Motorized hardness tester for regular Rockwell scales

- Regular Rockwell scales
- Electronic control of load duration (dwell time)
- Motorized testing procedure
- Accuracy, reliability and durability at an extremely affordable price
- Rugged construction, will stand up to the harshest environments
- Accuracy conforms to EN-ISO 6508
- Standard delivery including accessories ready for testing all scales

Technical specifications

Rockwell scales	A, B, C, F
Hardness resolution	0.5 of a Rockwell unit
Test loads	60, 100, 150kgf (10kgf preload)
Display	Dial indicator
Test cycle	Motorized (preload applied manually)
Dwell time	0-30 sec (5 sec. step)
Data output	Non
Accuracy	Conforms to EN-ISO 6508
Specimen accommodation	Vertical space 170 mm (6.7") Horizontal space from centre-line 160 mm (6.3")
Specimen access	External surfaces Cylindrical surfaces down to 3 mm diameter
Power supply	220V 50Hz
Machine dimensions	Width 150 mm, depth 485 mm, height 700mm
Machine weight	Approx. 85kg

Standard delivery

- Main unit
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Spare lamps 6V - 12W (2 pcs)
- Hardness test block ±60HRC
- Hardness test block ±25HRC
- Hardness test block ±85HRB
- Spare balls 1/16" (5 pcs)
- Flat anvil ø 60 mm
- Flat anvil ø 150 mm
- V-anvil ø 40 mm
- Power cable
- Fuse 0.5A (2 pcs)
- Adjustable feet (4 pcs)
- Spindle protection cover
- Solid accessories case
- CV Instruments certificate
- Installation & user manual

Optional accessories

- Certified test blocks
- Certified indentors & balls

ROCKWELL TYPE HARDNESS TESTER CV-600D ™

Bright LCD display with hardness conversion, tolerance check, built-in printer and data-output

- Digital LCD reading of 15 regular Rockwell scales!
- Conversion to all other hardness scales such as Vickers and Brinell
- Menu operated LCD screen with many functions such as GO/NO GO judgement, Conversions, Load cycle indication, Date, Time
- Integrated printer for test result and statistics
- RS-232 data output to Microsoft Hyperterminal, 'Win Wedge' etc
- Accuracy, reliability and durability at extremely affordable price
- Rugged construction, will stand up to the harshest environments
- Accuracy conforms to EN-ISO 6508 and ASTM E-18
- Easy load force selection by robust dial knob
- Large working space accomodates also larger specimen
- Standard delivery including accessories ready for testing
- Electronic software calibration mode

Technical specifications

Rockwell scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Display conversion to	HV, HB, HR scales
Hardness resolution	0.1 of a Rockwell unit
Test loads	60, 100, 150kgf (10kgf preload)
LCD Display	Hardness value, Rockwell scale, Test force indicator, Dwell time, limits with tolerance check GO/NG, number of tests, X-bar average, standard deviation, range R
Data entry	Membrane keypad
Test force application	Automatic main load application
Dwell time	4-99 sec
Data output	Built-in printer and RS-232C
Accuracy	Conforms to EN-ISO 6508 and ASTM E-18
Specimen accommodation	Vertical space 170mm (6.7") Horizontal space (from centre-line) 165mm (6.5")
Specimen access	External surfaces, Cylindrical surfaces down to 3mm diameter
Power supply	220/240V 50Hz
Machine dimensions	227mm x 516mm x 715mm
Net weight	85kg

Standard delivery

- CV-600D main unit
- Built-in thermal printer
- Data-output RS-232C
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Spare balls 1/16" (5 pcs)
- Flat anvil ø 60mm
- Flat anvil ø 150mm
- V-anvil ø 40mm
- Hardness test blocks: ±60HRC, ±40HRC, ±85HRB
- Power cable
- Fuse 1A (2 pcs)
- Adjustable feet (4 pcs)
- Spindle protection cover
- Solid accessories case
- CV Instruments certificate
- Installation & users manual

Optional accessories

- Clamping nose
- Certified test blocks
- Certified indentors & balls
- Pedestal spot anvil ø 10mm

HARDNESS ACCESSORIES CV-600 SERIES ™

Selection of anvils for correct hardness testing

Tips on using an anvil for accurate hardness testing

- To keep the test specimen stable and provide support, always use the smallest anvil possible.
- When using test blocks, a pedestal spot anvil is recommended.
- Always ensure that the anvil's top surface and its supporting contact surface are free of dirt, swarf, oil or corrosion.
- If the indentor or other object has left a mark on the anvil test surface or seat, the anvil will cause false readings and should be replaced.

Testing table large
The ø 150mm table is the most popular work support for large test specimens. The table is screwed onto the elevating screw.
The vertical capacity will be reduced by about 25mm.

Flat anvil
The ø 60mm flat anvil is used to support many flat specimens perpendicular to the indentor.

V-anvil
The standard V-anvil is used with cylindrical shaped rods or tubes of ø 6mm or larger. (Not suitable for thin wall or soft tubing).

Pedestal spot anvil
The ø 10mm spot anvil is used with small parts and sheet metal where not much support is required.
This anvil should be used with test blocks.

Cylindrical anvil
This anvil is designed to support cylindrical work and has a capacity of 50mm to 203mm (2"-8"). A smaller version is also available from 6mm to 76mm (1/4"-3").

Eyeball anvil
Mounted on an elevating screw, this anvil is designed for test pieces that have a slight taper. The ball is clamped into position by a clamping nut which allows the indentor to come into contact with a flat surface.

Clamping protection nose
Device to be mounted on indentor head, to keep the specimen in place by internal spring force, and to protect the indentor against collision.

PREMIUM ROCKWELL TYPE HARDNESS TESTER EW-650 SERIES ™

LCD touch screen, superior functionality, ultra high precision, 3 models available

- Measures all standard Rockwell hardness values
- Superior GR & R results!
- Simultaneous conversion to HV, HB and other HR scales
- Rugged fine casted frame, allowing large dimension work pieces
- ASTM, ISO, JIS compliant
- ESELOAD™ unique motorized load application system, auto selection of main loads depending on HR scale (656 & 657 only)
- Superior depth measuring system through Heidenhain (Germany) transducer
- ESETOUCH™ advanced LCD touch screen & operator panel with user friendly menu operation in multiple languages
- High speed preload, loading and unloading procedure for ultra high efficiency
- ESELIFT™ (657 and 677 only) motorized elevating screw simplifies and speeds up test operation
- Automatic measurement procedure, load / dwell / unload (655 & 656 models)
- ESEMATIC™ fully automatic positioning and measuring procedure (positioning, preload, load, dwell, unload (657 only))
- Storage of 50 test programs and tester settings, allowing you to set up your tester in just seconds
- Alpha numerical data entry
- Continuous automatic "online'' statistics, incl. average of readings etc.
- Storage of 20,000 single hardness values
- Go / No Go mode
- Convex and concave measuring mode
- Calibration date expired (reminder)
- Service mode including electronic linearity calibration, tests counter, maintenance system
- Prints statistics to built–in printer or external printer
- Connects with PC or SPC network via built-in bi-directional USB2 connector

The EW-657 ESEMATIC™ model features standard a fully automatic system for high speed production measurement.

Technical specifications

Rockwell scales	A,B,C,D,E,F,G,K,L,M,P,R,V
Conversion to	HV, HB, other HR scales
Hardness resolution	0.1 or 0.01 of a Rockwell unit
Pre-load	10kgf
Main loads	60, 100, 150kg
Pre-load application	Manual (automatic for 657 ESEMATIC™)
Test load application	Fully automatic
Data output	Built in high speed printer & USB2
LCD Display	Hardness value, conversion value, test force indicator, dwell time, memory contents, all machine settings, go / no go, all statistics
Specimen accommodation	Vertical space 275mm Horizontal space (from centre of elevator) 190mm
Power supply	110/240V, 50 – 60Hz
Machine dimensions	Approx. 940mm x 390mm x 670mm (HxWxD)
Net weight	Approx. 140kg

EW-655 ESETOUCH™	Manual load Manual elavator lead screw
EW-656 ESELOAD™	Automatic load selection Manual elavator lead screw
EW-657 ESEMATIC™	Automatic load selection Manual elavator lead screw/ Full automatic

Standard delivery

- Main unit
- Built-in printer
- Data-output USB2 and RS-232C
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Rockwell testing balls
- Flat testing anvil ø 60mm
- Flat anvil ø 150mm
- V-anvil 40mm
- Hardness test blocks: ± 60 HRC, ±40 HRC, ±85 HRB
- Power cable
- Spare fuse
- Adjustable feet (4 Pcs)
- Spindle protection cover
- Machine cover
- Solid accessories case
- ESEWAY® certificate
- User and installation manual

Optional accessories

- Clamping and indentor protection nose
- UKAS, DKD, ASTM/NIST Certified test blocks
- UKAS, DKD, ASTM/NIST Indentors & balls
- Pedestal spot anvil
- Special support systems for large work pieces

PREMIUM TWIN SCALE ROCKWELL TYPE HARDNESS TESTER EW-670 SERIES ™

LCD touch screen, superior functionality, ultra high precision, 3 models available

- Measures all Standard & Superficial Rockwell hardness values
- Superior GR & R results!
- Simultaneous conversion to HV, HB and other HR scales
- Rugged fine casted frame allowing large dimension work pieces
- ASTM, ISO, JIS compliant
- ESELOAD™ unique motorized load application system, auto selection of main loads depending on HR scale (676 & 677 only)
- Superior depth measuring system through Heidenhain (Germany) transducer
- ESETOUCH™ advanced LCD touch screen & operator panel with user friendly menu operation in multiple languages
- High speed preload, loading and unloading procedure for ultra high efficiency
- ESELIFT™ (677 only) motorized elevating screw simplifies and speeds up test operation
- Automatic measurement procedure, load / dwell / unload (677 only)
- ESEMATIC™ fully automatic positioning and measuring procedure (positioning, preload, load, dwell, unload (676 and 677 models))
- Storage of 50 test programs and tester settings, allowing you to set up your tester in just seconds
- Alpha numerical data entry
- Continuous automatic "online'' statistics, incl. average of readings etc.
- Storage of 20,000 single hardness values
- Go / No Go mode
- Convex and concave measuring mode
- Calibration date expired (reminder)
- Service mode including electronic linearity calibration, tests counter, maintenance system
- Prints statistics to built-in printer or external printer
- Connects with PC or SPC network via built-in bi-directional USB2 connector

The EW-677 ESEMATIC™ model offers standard a fully automatic system for high speed production measurement.

Technical specifications

Rockwell scales	Standard Superficial	A,B,C,D,E,F,G,K,L,M,P,R,V 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Conversion to	HV, HB, other HR scales	
Hardness resolution	0.1 or 0.01 of a Rockwell unit	
Pre-load	3kgf / 10kgf	
Main loads	15, 30, 45, 60, 100, 150kg	
Pre-load application	Manual (automatic for 677 ESEMATIC™)	
Test load application	Fully automatic	
Data output	Built-in high speed printer & USB2	
LCD Display	Hardness value, conversion value, test force indicator, dwell time, memory contents, all machine settings, go / no go, all statistics	
Specimen accommodation	Vertical space 275mm Horizontal space (from centre of elevator shaft) 190mm	
Power supply	110/240 volt, 50 – 60Hz	
Machine dimensions	Approx. 940mm x 390mm x 670mm (HxWxD)	
Net weight	Approx. 140 kg	

EW-675 ESETOUCH™	Manual load Manual elavator lead screw
EW-676 ESELOAD™	Automatic load selection Manual elavator lead screw
EW-677 ESEMATIC™	Automatic load selection Motorized elavator lead screw/ Full automatic

Standard delivery

- Main unit
- Built-in printer
- Data-output USB2 and RS-232C
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Rockwell testing balls
- Flat testing anvil ø 60mm
- Flat anvil ø 150mm
- V-anvil 40mm
- Hardness test blocks: ± 60 HRC, ±40 HRC, ±85 HRB
- Power cable
- Spare fuse
- Adjustable feet (4 Pcs)
- Spindle protection cover
- Machine cover
- Solid accessories case
- ESEWAY® certificate
- User and installation manual

Optional accessories

- Clamping and indentor protection nose
- UKAS, DKD, ASTM/NIST Certified test blocks
- UKAS, DKD, ASTM/NIST Indentors & balls
- Pedestal spot anvil
- Special support systems for large work pieces

PREMIUM CLOSED LOOP ROCKWELL TYPE HARDNESS TESTER EW-6000 SERIES ™

High accuracy and repeatability through closed loop and load cell combined system, 4 models available

- Measures at choice Standard, Superficial or combined Rockwell hardness values
- Superior GR & R results!
- Simultaneous conversion to HV, HB and other HR scales
- Rugged fine casted frame allowing large dimension work pieces
- ASTM, ISO, JIS and other global standards compliant
- Unique closed loop and load cell combined system, guaranteeing that pre- and main load are applied with absolute accuracy, no variety between testers and independence of the operator skills
- Superior depth measuring system through high precision Heidenhain (Germany) glass scale
- No elevating screw, simplifies test operation and enhances accuracy
- Storage of 50 test programs and tester settings, allowing you to set up your tester in just seconds
- Alpha numerical data entry
- Continuous automatic "online'' statistics, incl. average of readings etc.
- Storage of 20,000 single hardness values
- Go / No Go mode
- Convex and concave measuring mode
- Calibration date expired (reminder)
- Service mode including tests counter, maintenance system
- Prints statistics to built-in printer or external printer
- Connects with PC or SPC network via built-in bi-directional RS232C connector

The EW-6000 series model offer standard a fully automatic system with the advantage of a fixed measuring table.
Also available as a MASTER Rockwell configuration for calibration of reference hardness test blocks.

Please ask for availability in your country.

Technical specifications

Rockwell scales	Standard Superficial	A, B, C, D, E, F, G, H, K, L, M, P, R,V 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Conversion to	HV, HB, other HR scales	
Hardness resolution	0.1 & 0.01 of a Rockwell unit	
Pre-load	3kgf / 10kgf	
Main loads	15, 30, 45, 60, 100, 150kg through controlled closed loop system	
Pre-load application	Fully automatic	
Test load application	Fully automatic	
Data output	Built-in high speed printer & RS 232C	
LCD Display	Hardness value, conversion value, test force indicator, dwell time, memory contents, all machine settings, go / no go, all statistics, and many more	
Specimen accommodation	Vertical space 250mm Horizontal space (from centre of elevator shaft) 220mm	
Power supply	110/240V, 50 – 60Hz	
Machine dimensions	Approx. 940mm x 390mm x 670mm (HxWxD)	
Net weight	Approx. 120kg	

EW-6000 R™	Load cell / Closed loop Standard Rockwell
EW-6000 SR™	Load cell / Closed loop Superficial Rockwell
EW-6000 TR™	Load cell / Closed loop Standard & Superficial Rockwell
EW-6000 ESEMASTER™	Load cell / Closed loop Standard & Superficial Rockwell MASTER Rockwell

Standard delivery

- Main unit
- Built-in printer
- Data output RS-232C
- Diamond Rockwell indentor
- Rockwell ball indentor 1/16"
- Rockwell testing balls
- Flat testing anvil ø 60mm
- Flat anvil ø 150mm
- V-anvil 40mm
- Hardness test blocks: ±60 HRC, ±40 HRC, ±85 HRB
- Power cable
- Spare fuse
- Adjustable feet (4 Pcs)
- Spindle protection cover
- Machine cover
- Solid accessories case
- ESEWAY® certificate
- User and installation manual

Optional accessories

- Clamping and indentor protection nose
- UKAS, DKD, ASTM/NIST Certified test blocks
- UKAS, DKD, ASTM/NIST Indentors & balls
- Pedestal spot anvil
- Heavy load testing tables
- Special support systems for large work pieces
- Tester stand with cabinet

MODULAR ROCKWELL SYSTEM CV-6500 ™

Especially designed for "On-Line" testing of large quantities during components production

- High quality hardness testing module especially designed to test large quantities of components during production
- The test head can easily be integrated in the production process due to its new design and slim build
- The system consists of a test head and a separate read out unit that can be installed in a switchboard cabinet
- Available in Rockwell-HRC, Brinell (up to 187.5kg) and Vickers. For the Brinell and Vickers versions a modified test procedure is applied measuring the indentation depth as the optical measuring method is not suitable for quick, automatic testing
- High accuracy plus quick testing guaranteed as the test load is checked and adapted during the entire load cycle
- The test cycle of 30 seconds starts automatically when the sample is ready positioned. Once the test cycle is finished, the system indicates that the sample can be withdrawn
- The test result is valued according to the indicated parameters
- The hardness value can be transferred through RS-232 or TCP/LAN

Technical specifications

Hardness parameter	Rockwell C, other scales available on request
Test load (Rockwell)	10kp Preload, 150kp total load
Hardness Resolution	0.1 HRC unit
Stroke	15mm
Test cycle duration	Approx. 30 Seconds
Power supply	85 - 264V / AC
Dimensions	88mm x 88mm x 750mm + connection box on the side
Mounting options	Tapped holes on the back
Control unit	19"-housing, 3HE
Connection to SPS	Switches
Data output	RS232
Display	Graphic LCD

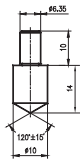
Further information available on request

ROCKWELL TYPE HARDNESS TESTER CV-630™

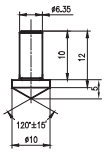
Bench hardness tester with protruding nose for internal tests

- Horizontally protruding nose type machine
- Tests on difficult to reach areas
- Tests on internal surfaces from 40mm diameter with standard indentor and 23mm with short indentor
- Tests on external surfaces down to 3mm diameter
- Automatic test cycle
- Clear matrix backlit LCD
- Data output to printer TA-220
- Easy menu selectable screens for display and control
- Four models of diamond indentors available:

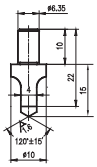
Rockwell load selector



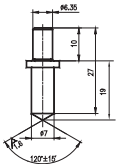
Standard



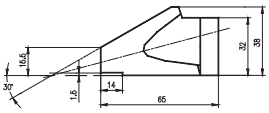
Short



Chisel



Slim



Dimensions of protruding nose

Technical specifications

Hardness parameters	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Hardness resolution	0.1 of a Rockwell unit
Test loads	10kgf preload / 60, 100, 150kgf total load
Display	Matrix backlit LCD
Language	English
Data entry	Membrane keypad, menu driven
Test cycle	Automatic
Load duration	Programmable dwell and recovery times 2-50sec
Data output	RS232 serial port for printer TA-220/computer
Menu features	Hardness tolerance setting (upper/lower limits) Conversions: Vickers, Brinell, Rockwell superficial, Leebs, UTS Statistical data: X-bar, S, R, max, min Automatic curvature correction for cylindrical and spherical surfaces
Standard	EN-ISO 6508, ASTM E-18
Specimen accommodation	Vertical space 250mm (10") Horizontal space (from centre-line) 150mm (6")
Specimen access	External surfaces Cylindrical surfaces down to 3mm diameter Internal surfaces from 40mm diameter with standard indentor and 23mm with short indentor
Power supply	220V or 110V, 50Hz
Machine dimensions	Width 225mm, depth 715mm, height 790mm
Machine weight	100kg

Standard delivery

- Main unit
- Diamond indentor
- Ball indentor 1/16"
- Spare balls 1/16" (5 pcs)
- Fixing screw for indentors
- Flat anvil 70mm diameter
- V-anvil 30mm diameter
- Hardness test block HRC
- Hardness test block HRB
- Power cable
- Certificate
- Manual

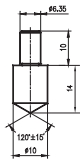
Optional accessories

- Short diamond indentor
- Chisel diamond indentor
- Slim diamond indentor
- Ball indentor 1/8"
- Ball indentor 1/4"
- Ball indentor 1/2"
- Flat anvil 225mm diameter
- Flat anvil 150mm diameter
- V-anvil large
- V-anvil flat
- Support fixtures
- Printer TA-220 with cable
- UKAS certified test blocks

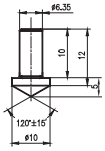
ROCKWELL TYPE HARDNESS TESTER CV-631 ™

Bench hardness tester with protruding nose for internal tests

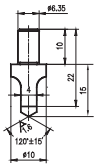
- Automatic load selector
- Horizontally protruding nose type machine
- Tests on difficult to reach areas
- Tests on internal surfaces from 40mm diameter with standard indentor and 23mm with short indentor
- Tests on external surfaces down to approx 3mm diameter (hardness dependant)
- Automatic test cycle
- Clear matrix backlit LCD
- Data output to printer TA-220
- Easy menu selectable screens for display and control
- Four models of diamond indentors available:



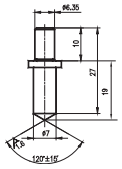
Standard



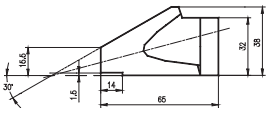
Short



Chisel



Slim



Dimensions of protruding nose

Technical specifications

Hardness parameters	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Hardness resolution	0.1 of a Rockwell unit
Test loads	10kgf preload / 60, 100, 150kgf total load
Display	Matrix backlit LCD
Language	English
Data entry	Membrane keypad, menu driven
Test cycle	Automatic
Load duration	Programmable dwell and recovery times 2-50sec
Data output	USB, RS232 serial port for printer TA-220/computer
Menu features	Upper/lower hardness limits settings and alarm Data statistics: Ave., Max., Min., S.R. Scale conversion: coverts tested value to Vickers, Leebs, Brinell, Rockwell superficial, UTS Curve correction: cylinder and sphere Test force switches automatically Automatic data storage within 500 data groups, Hardness & Strength conversion also for aluminum, alloy aluminum copper and alloy copper
Standard	EN-ISO 6508, ASTM E-18
Specimen accommodation	Vertical space 260mm (10.24") Horizontal space (from centre-line) 150mm (6")
Specimen access	External surfaces Cylindrical surfaces down to 3mm diameter Internal surfaces Cylindrical surfaces down to 23mm diameter
Power supply	220V or 110V, 50Hz
Machine dimensions	Width 225mm, depth 715mm, height 790mm
Machine weight	100kg

Standard delivery

- Main unit
- 120° Cone diamond indentor
- Ball indentor 1/16"
- Spare balls 1/16" (5 pcs)
- Fixing screw for indentors
- Flat anvil 70mm diameter
- V-anvil 30mm diameter
- Test block HRA
- Test block HRB
- Test block HRC (3 pcs)
- Power cable
- Certificate
- Manual

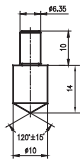
Optional accessories

- Short diamond indentor
- Chisel diamond indentor
- Slim diamond indentor
- Ball indentor 1/8"
- Ball indentor 1/4"
- Ball indentor 1/2"
- Flat anvil 225mm diameter
- Flat anvil 150mm diameter
- V-anvil large
- V-anvil flat
- Support fixtures
- Printer TA-220 with cable
- UKAS certified test blocks

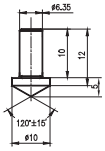
ROCKWELL TWIN TYPE HARDNESS TESTER CV-632™

Bench hardness tester with protruding nose for internal tests, regular and superficial scales

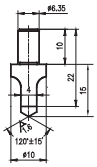
- Horizontally protruding nose type machine
- Tests on difficult to reach areas
- Tests on internal surfaces from 40mm diameter with standard indentor and 23mm with short indentor
- Tests on external surfaces down to approx 3mm diameter (hardness dependant)
- Automatic test cycle
- Clear matrix backlit LCD
- Data output to printer TA-220
- Easy menu selectable screens for display and control
- Four models of diamond indentors available:



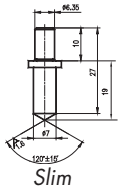
Standard



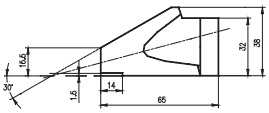
Short



Chisel



Slim



Dimensions of protruding nose

Rockwell & Rockwell Superficial load selector

Technical specifications

Hardness parameters	Rockwell A, B, C, D, E, F, G, H, K, L, M, P, R, S, V Rockwell Superficial N, T, W, X, Y
Hardness resolution	0.1 of a Rockwell unit
Test loads	10kgf preload / 60, 100, 150kgf total load 3kgf preload / 15, 30, 45kgf total load
Display	Matrix backlit LCD
Language	English
Data entry	Membrane keypad, menu driven
Test cycle	Automatic
Load duration	Programmable dwell and recovery times 2-50sec
Data output	RS232 serial port for printer TA-220/computer
Menu features	Hardness tolerance setting (upper/lower limits) Conversions: Vickers, Brinell, Rockwell superficial, Knoops, Leebs, UTS Statistical data : X-bar, S, R, max, min Automatic curvature correction for cylindrical and spherical surfaces
Standard	EN-ISO 6508, ASTM E-18
Specimen accommodation	Vertical space 250mm (10") Horizontal space (from centre-line) 150mm (6")
Specimen access	External surfaces Cylindrical surfaces down to 3mm diameter Internal surfaces from 40mm diameter with standard indentor and 23mm with short indentor
Power supply	220V or 110V, 50Hz
Machine dimensions	Width 240mm, depth 720mm, height 815mm
Machine weight	120kg

Standard delivery

- Main unit
- Diamond indentor
- Ball indentor 1/16"
- Spare balls 1/16" (5 pcs)
- Fixing screw for indentors
- Flat anvil 70mm diameter
- V-anvil 30mm diameter
- Hardness test block HRA
- Hardness test block HRB
- Hardness test block HRC
- Hardness test block HR15N
- Hardness test block HR30N (2 pcs)
- Hardness test block HR30T
- Power cable
- Certificate and manual

Optional accessories

- Short diamond indentor
- Chisel diamond indentor
- Slim diamond indentor
- Ball indentor 1/8"
- Ball indentor 1/4"
- Ball indentor 1/2"
- Flat anvil 225mm diameter
- Flat anvil 150mm diameter
- V-anvil large
- V-anvil flat
- Support fixtures
- Printer TA-220 with cable
- UKAS certified test blocks

ROCKWELL® HARDNESS SCALES™

Scales, loads, indentors and applications

Regular Rockwell scales

Preliminary test force: 98.07N (10kgf)

Scale	Indentor	Test force		Applications
A	Diamond	588,4N	(60kgf)	Case hardened steel, cemented carbide, thin steel sheet, copper
D	Diamond	980,7N	(100kgf)	Case hardened steel, cemented carbide, thin steel sheet, copper
C	Diamond	1471N	(150kgf)	Case hardened steel, cemented carbide, thin steel sheet, copper
F	Steel ball diameter 1/16"	588,4N	(60kgf)	Annealed steel, bearing metal, hard-drawn aluminium alloys, brass, beryllium copper, phospor bronze
B	Steel ball diameter 1/16"	980,7N	(100kgf)	Annealed steel, bearing metal, hard-drawn aluminium alloys, brass, beryllium copper, phospor bronze
G	Steel ball diameter 1/16"	1471N	(150kgf)	Annealed steel, bearing metal, hard-drawn aluminium alloys, brass, beryllium copper, phospor bronze
H	Steel ball diameter 1/8"	588,4N	(60kgf)	Bearing metal, grinding stone
E	Steel ball diameter 1/8"	980,7N	(100kgf)	Bearing metal, grinding stone
K	Steel ball diameter 1/8"	1471N	(150kgf)	Bearing metal, grinding stone
P	Steel ball diameter 1/4"	588,4N	(60kgf)	Extra mild metal (e.g. aluminum, zinc, lead)
M	Steel ball diameter 1/4"	980,7N	(100kgf)	Extra mild metal (e.g. aluminum, zinc, lead)
L	Steel ball diameter 1/4"	1471N	(150kgf)	Extra mild metal (e.g. aluminum, zinc, lead)
R	Steel ball diameter 1/2"	588,4N	(60kgf)	Tin, plastics, cardboard
S	Steel ball diameter 1/2"	980,7N	(100kgf)	Tin, plastics, cardboard
V	Steel ball diameter 1/2"	1471N	(150kgf)	Tin, plastics, cardboard

Superficial Rockwell scales

Preliminary test force: 29.4N (3kgf)

Scale	Indentor	Test force		Applications
HR15N	Diamond 120°	147 N	(15kgf)	Nitrided steel, thin steel plate, tubes and pipes, knive blades, small parts
HR30N	Diamond 120°	294 N	(30kgf)	Nitrided steel, thin steel plate, tubes and pipes, knive blades, small parts
HR45N	Diamond 120°	441N	(45kgf)	Nitrided steel, thin steel plate, tubes and pipes, knive blades, small parts
HR15T	Steel ball diameter 1/16"	147 N	(15kgf)	Soft steel, brass, bronze, tubes and pipes, aluminium alloy
HR30T	Steel ball diameter 1/16"	294 N	(30kgf)	Soft steel, brass, bronze, tubes and pipes, aluminium alloy
HR45T	Steel ball diameter 1/16"	441N	(45kgf)	Soft steel, brass, bronze, tubes and pipes, aluminium alloy
HR15W	Steel ball diameter 1/8"	147 N	(15kgf)	Soft steel, bismuth bronze
HR30W	Steel ball diameter 1/8"	294 N	(30kgf)	Soft steel, bismuth bronze
HR45W	Steel ball diameter 1/8"	441N	(45kgf)	Soft steel, bismuth bronze
HR15X	Steel ball diameter 1/4"	147 N	(15kgf)	Soft metal, plastics, etc.
HR30X	Steel ball diameter 1/4"	294 N	(30kgf)	Soft metal, plastics, etc.
HR45X	Steel ball diameter 1/4"	441N	(45kgf)	Soft metal, plastics, etc.
HR15Y	Steel ball diameter 1/2"	147 N	(15kgf)	Soft metal, plastics, etc.
HR30Y	Steel ball diameter 1/2"	294 N	(30kgf)	Soft metal, plastics, etc.
HR45Y	Steel ball diameter 1/2"	441N	(45kgf)	Soft metal, plastics, etc.