

 Wilson®

RH2150

Rockwell Hardness Tester

Celebrating
100 YEARS
Wilson
Hardness



ADVANCED. EFFICIENT. RELIABLE.

 **BUEHLER**
Strong Partner, Reliable Solutions

Wilson® Rockwell® 2150



The *Ultimate*
Rockwell
Hardness Tester

Continuing the Wilson Legacy



The Wilson RH2150 Rockwell hardness tester is the next generation Rockwell hardness tester.

The Wilson RH2150 uses the concept of the world famous Wilson RB2000 which is trusted by hundreds of customers worldwide and takes it to the next level.

With newly developed features, the Wilson RH2150 meets today's testing requirements in quality control and research environments.

Perfect fit for Today's Testing Labs

With the new Wilson RH2150, a complete new user interface was developed for the standalone configuration. Advanced statistical calculations, results graphing and easy test programmability streamline the testing process. Verification reminders trigger automatically to ensure compliance with verification requirements.

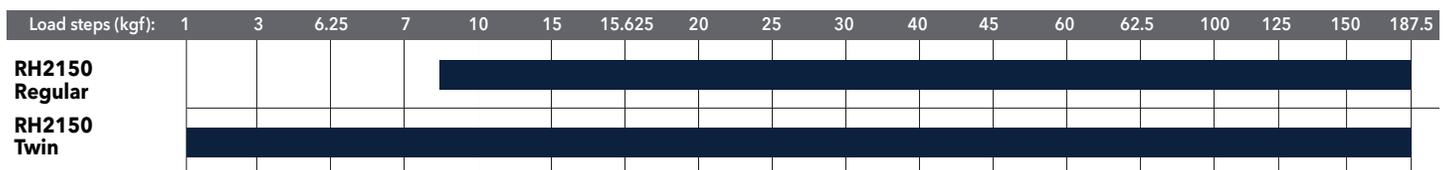
For results export, a USB slot is available to export the desired results as csv and/or txt file on a USB memory device.

For further advanced programmability and export functions, our famous and reliable DiaMet™ software can be configured to have all the flexibility you need.



RH2150 Series Available in Two Load Ranges

The Wilson RH2150 is available in two load configurations. The RH2150 Twin has the complete loadrange, including superficial and regular Rockwell scales as well as Brinell depth loads up to 187.5kgf. The RH2150 Regular includes regular Rockwell scales as well as Brinell depth loads up to 187.5kgf.



Trusted Results - Intuitive Operation

The Wilson RH2150 hardness tester is designed for high volume production labs and production floor Rockwell testing, as well as supporting worldwide research facilities with its vast amount of testing scales. The RH2150 is available in two different sizes, with a vertical capacity of 10 and 14 inch (254 and 356mm respectively). It is fully protected from outside influences with sheet metal casing and a loadcell protection. The intuitive user interface aligns with our DiaMet™ software - making it simple to learn and easy to use. A DiaMet™ package is available to have all advanced features of DiaMet™.

- Auto-stop clamping device holds down the sample and secures it during the testing.
- The adjustable LED workspace illumination highlights the test location to ensure clarity and full visibility.
- Indenter extensions are optionally available in several sizes to enable testing also on hard to reach test locations (only usable with clamping device)
- Standard 0.75 in(19mm) pin anvils are shared with the Wilson RB2000 and R574 testers to simplify accessories in a lab
- The operator panel can be adjusted on the frame or taken off completely to put aside the machine if needed - ensuring full flexibility and an ergonomic test process
- USB connection for easy data output to memory drives
- In conjunction with the clamping device, the external footswitch can be used in multiple ways:
 - clamping and manual start
 - clamping and automatic start
 - manual release after test
 - automatic release after test
- Rockwell Fast Mode, achieving test results in seconds

Clamping

- The innovative clamping device secures the part on the tester and provides stability during testing

Bright LED Workspace

- Illumination highlights the Test location

Indenter Extensions

- Indenter extensions with the dedicated cover provides more testing capabilities on more complex shapes

Industrial Control Buttons

- Rigid control buttons for automatic testhead movement and test initiation



Advanced Functionality for Today's Industries

The global expertise of Buehler is strong as it now includes more than a century of experience from companies such as Wilson Instruments, Wolpert and Reicherter. With the design and manufacturing of the RH2150 tester, the DiaMet software and test blocks all in-house by Buehler, system integration is guaranteed. Smart software functions help the user with standards traceability.

Aerospace



The trend toward tighter manufacturing tolerances and more advanced heat treatment processes for the automotive and aerospace industries require hardness testing systems to be durable while maintaining precise control during critical test data generation. The system and its interfaces must be easy to use, yet flexible enough to meet the increasing demands in the industry.

Automotive



The Wilson RH2150 delivers exceptional performance packaged in a reliable, easy to use system that offers superior accuracy and repeatability against low training requirements. With the DiaMet automation package, this testing platform is capable of performing full automatic test cycles for heat treatment applications, such as Jominy testing.

Heat Treatment



Powerful and Easy to Use Interface

Intuitive

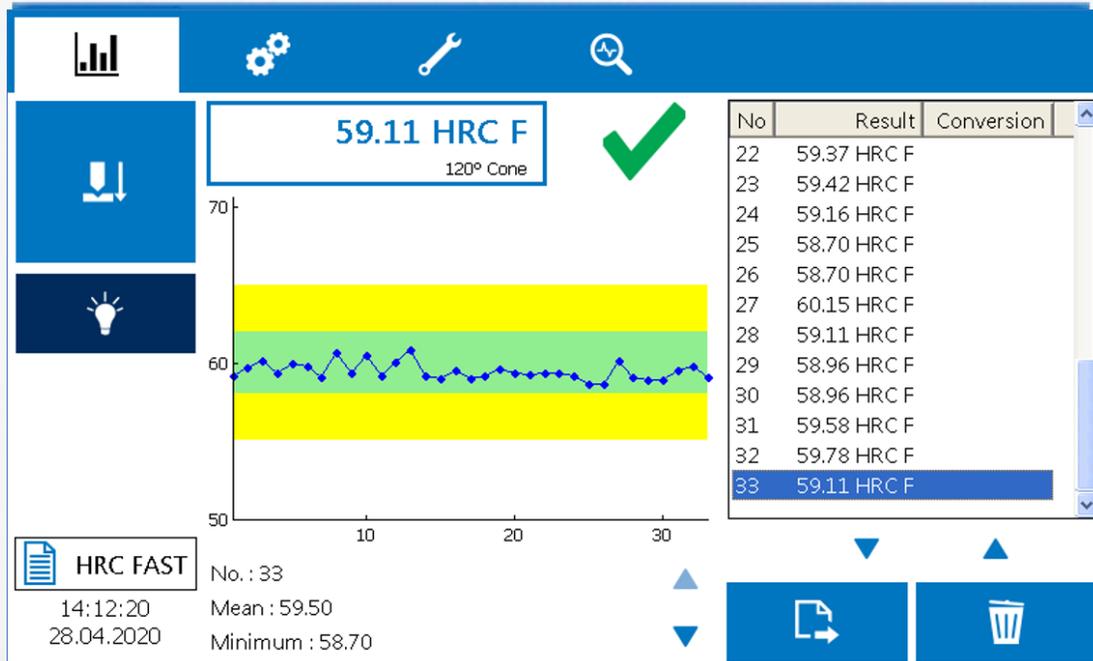
Easy Icon based tab structure simplifies navigation

Programmability

Program and save your test setup, for quick scale selection

Rockwell Fastmode

Special Rockwell testcycle in just a few seconds



Tolerance Indicator

Clear visualization of measurement result boundaries

Export Formats

One button export of results as .txt and/or .csv file

DiaMet™ - Hardness Testing Made Easy



Navigation within the DiaMet™ Software is made easy by its clean design and is supported by simple and intuitive gestures. Virtual tabs on top of the screen let you navigate between Home, Program, Testing and Reporting. Comprehensive feedback is shown on the status bar, which make interactions clear and efficient. Being designed for touch panel use, with an entirely new look and feel, DiaMet is simple, useful, and smart to work with, easy to operate by touch, mouse or keyboard. DiaMet will perform your hardness test as fast as possible. Quick Start will enable you to perform your test after just two clicks after starting the software.

Expert Control & Evaluation Software

DiaMet Basic is optionally available to control the Wilson RH2150. DiaMet is the intuitive software solution for hardness testing and simplifies test program creation as well as test execution and reporting. By ordering the DiaMet Basic option, you will get DiaMet pre-installed and configured on our DiaMet workstation, including a 24" LED touchscreen.

Program Explorer

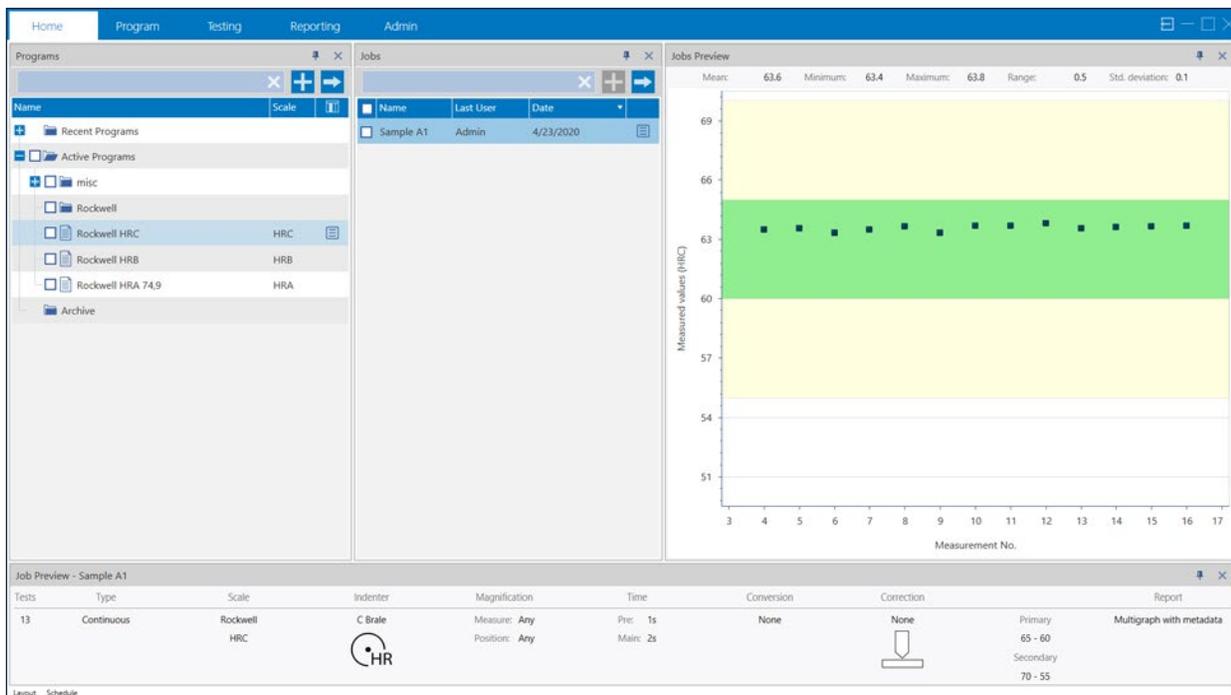
Easy test program management

Tab Interface

Use only what you need and flexibly arrange the UI

MetaData Input

Enter all necessary test and part information for reference



Tolerance Indicator

Primary and secondary tolerances available - direct visualization

Export Formats

Export results as pdf, Word, Excel or text files

Touch Optimized

Use a stylus or your finger tips to navigate or do the test



Technical Specifications

	Wilson RH2150
Test Load range	1-187.5 kgf (9,81 - 1838,7 N)
Test load type	Closed loop
Indenter holder	Snap grip
Available indenters	Rockwell: Rockwell diamond cone 120°, 1/16", 1/8", 1/4", 1/2" carbide ball indenters Brinell: 1mm, 2.5mm, 5mm and 10mm ball indenters
Rockwell test procedures ISO 6508-1, ASTM E18	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Plastic testing Ball indentation ISO 2039-1	HB5: 49N, 132N, 358N, 961N
Plastic testing Ball indentation ISO 2039-2	HRR, HRL, HRM, HRE
Rockwell carbon testing Ball indentation DIN 51917	HR2.5: 7
	HR5: 7, 20, 40, 60, 100, 150
	HR10: 20, 40, 60, 100, 150
Brinell depth testing (non-standardized) HBW-T	HBW-T2.5: 6.25, 15.625, 31.25, 62.5, 187.5
	HBW-T5: 25, 62.5, 125
	HBW-T10: 100
Machine control	7" User Interface for data tracking, statistics, indirect verification, data export via USB or ethernet, physical start and stop buttons
Z Axis	Automatic Z axis drive, physical up and down movement buttons
Clamping device (optional)	Unique clamping hat to hold samples in place before and during testing, clamping force 55 kgf (121lbs)
Workspace illumination	White LED for proper indent positioning
Maximum Specimen Height	254 mm [10 in]; 356 mm [14 in]
Maximum Specimen Weight	50 kg (centered on anvil)
Depth from Center line	200 mm
Anvil	63mm flat anvil with 19mm pin, more anvils optional as well as T-slot table
Operating Temperature Range	10° to 38°C [50° to 100°F]
Humidity	10% - 80% non-condensing
Machine Dimensions (D x W x H)	600mm [28in] x 350mm [21in] x 1260mm [39.2in] (size 1) or 1360mm [41.2in] (size 2)
Accessory (optional)	Flat anvils, V anvils, Jack rest, indenter extensions 2", 4" and 6" (only with clamping device)
Machine Net Weight	125 kg (275lbs)
Power Supply	110 - 240V / 50 - 60Hz

Application Cases for the Wilson® RH2150

The Wilson RH2150 series is a very versatile Rockwell hardness tester that can be placed on the production floor as well as in the R&D lab. Due to its many accessories, the tester is capable of testing many different kind of parts and components as pointed out in this section.

Bar Components



VariRest sample support (for size 1 RH2150 tester),
cylindron anvils not included. Part No. - WHVRETEX

Shafts usually have several machined and heat treated surfaces that need to get tested with Rockwell scales. The challenge is to reach the position where the hardness test needs to be performed. Therefore special indenter extensions (2", 4" and 6") were developed to be able to reach those surfaces. This is an extended feature of the clamping device.



Anvil shallow, clamping device, indenter extension 2".
Part No. - 900007388, W2100CL, and W2100E2

Stock materials or long bar components are often tested with Rockwell scales. Thus, the material needs to sit stable on the tester in order to measure reliable results. A VariRest is a flexible option for such tasks, since the complete fixture can be adjusted in order to support all kind of different geometries.

A simple solution for cylindrical components is the use of a V anvil combined with the clamping device for the RH2150. The clamping device ensures the component is securely fixed before and during the test.



V Anvil standard and clamping device.
Part No. 900030797 and W2100CL

Shafts



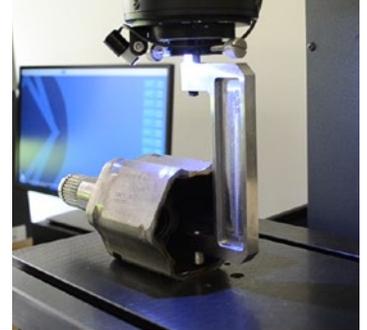
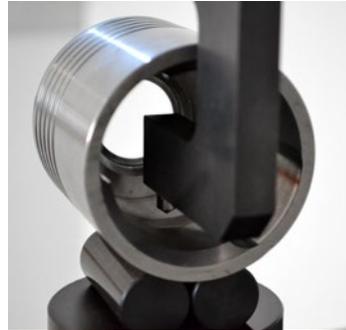
Cylindron Anvil for cylindrical parts from 50mm to 203mm in
diameter. Part No. - 900007147

Special Components



Testing of springs or shells using a gooseneck anvil with mandrels of different diameters. Gooseneck anvil with 0.25" [6,35mm] mandrel. **Part No - 900007803**

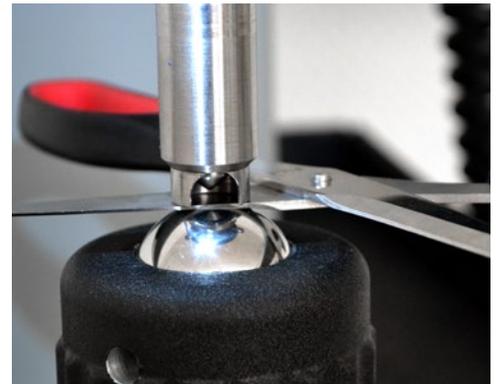
Some test pieces are challenging to test due to size or shape. Innovative adapters and anvils allow the Wilson RH2150 to solve these special testing tasks.



Gooseneck indenter adapters for internal testing of e.g. cylinders or shafts. **Part No - W2100G5**



Anvil for ball testing. Therefore the indenter needs to perfectly align with the center of the anvil. **Part No - 900001371**



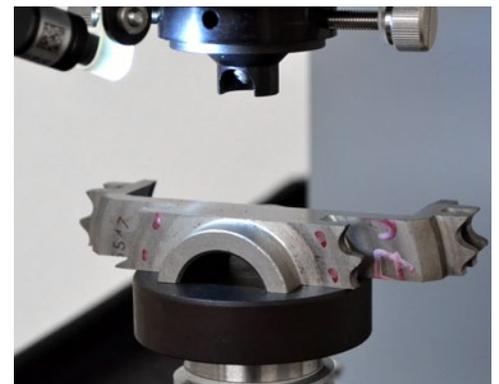
Eyeball anvil. This anvil is used to align slightly tapered samples such as blades. **Part No - 900007088**



V Anvil shallow 1" [25mm] stem height for small cylindrical parts, such as valves and pins. **Part No 900007195**



T slot table 13.3" x 11" [340mm x 280mm] for large parts. 12mm slot width, removable center plate for anvil mount. **Part No - W2100C02**



The standard 2.5" [63mm] flat anvil is included with the main unit. **Part No - 900001236**

System Configurations

Select the Main Unit with the needed vertical capacity as well as the scales selection - regular or regular & superficial Rockwell scales.

Main Unit



Part Number	Description
W2101R	Size 1 - 10in [254mm] - with regular Rockwell scales, 10-187.5 kgf
W2102R	Size 2 - 14in [356mm] - with regular Rockwell scales, 10-187.5 kgf
W2101T	Size 1 - 10in [254mm] - with regular and superficial Rockwell scales, 1-187.5 kgf
W2102T	Size 2 - 14in [356mm] - with regular and superficial Rockwell scales, 1-187.5 kgf

Every tester includes a 63mm flat anvil, as well as a 1/16" ball indenter

Additional Accessories

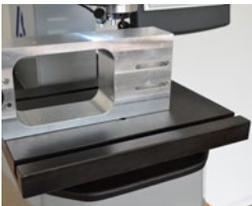
Auto Clamping Device



Clamping device with auto-stop function, clamping force ca. 60kgf (130lbs)

W2100CL

T-Slot Table



13.3in x 1in [340x280mm] T slot table, 12mm slot width, with bore pattern for spindle adaption

W2100C02

Foot Switch



Footswitch for external test cycle start, intelligent trigger logic

W2100FS

Gooseneck Adapter

For internal testing on rings and tubes (excl. Indenters)



Max. internal reach diameter is 9.5mm
 Min inside diameter is 14mm
 Max. outside diameter with Min. inside diameter at Max. internal reach is 45mm
 Available Rockwell Diamond indenters are
 900001459 (A scale)
 900001460 (N scale)

W2100G2

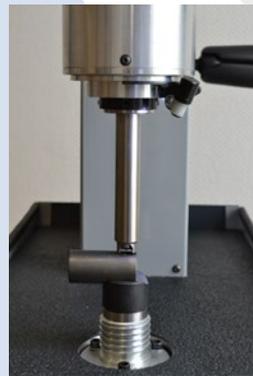
Software Options



DiaMet basic software option, start testcycle by software and manage & export test data, program generation, statistics etc., incl. DiaMet workstation and 24" FullHD monitor

W1001R31

Indentor Extension



Indentor extension 2" [50mm], only in combination with clamping device W2100CL

W2100E2

Indentor extension 4in [100mm], only in combination with clamping device W2100CL

W2100E4

Indentor extension 6in [150mm], only in combination with clamping device W2100CL

W2100E6



Max. internal reach diameter is 26mm
 Min inside diameter is 35mm
 Max. outside diameter with Min. inside diameter at Max. internal reach is 130mm
 Available Rockwell Diamond indenters are
 All standard Rockwell indenters (cf. Table)

W2100G5



Rockwell Accessories

Rockwell® Indenters

All indenters fit on Wilson Rockwell® R574 and RH2150 testers. The indenter shaft length is 11.1mm and 6.34mm in diameter.



Part Number	Description
9100401	Rockwell indenter C scale, 120° diamond cone, ASTM certified
9100402	Rockwell indenter C, D, A, N scales, 120° diamond cone, ASTM certified
9100431	Rockwell indenter C, A, D scales, 120° diamond cone, ISO and ASTM certified
9100432	Rockwell indenter N scales, 120° diamond cone, ISO and ASTM certified
9100434	Rockwell indenter C,A,D,N scales, 120° diamond cone, ISO and ASTM certified
900003405	Rockwell indenter A scale for Carbides, 120° diamond cone, ASTM certified
900002015	Rockwell indenter N scale, 120° diamond cone, ASTM certified
9100405	Rockwell indenter 1/16" WC ball with 4 spare balls, ASTM, ISO and JIS certified
9100406	Rockwell indenter 1/8" WC ball with 4 spare balls, ASTM, ISO and JIS certified
9100407	Rockwell indenter 1/4" WC ball with 1 spare ball, ASTM, ISO and JIS certified
9100408	Rockwell indenter 1/2" WC ball with 1 spare ball, ASTM, ISO and JIS certified
9100422	1/16" Diameter WC Balls, 5 pcs, ASTM, ISO and JIS certified
9100423	1/8" Diameter WC Balls, 5 pcs, ASTM, ISO and JIS certified
9100424	1/4" Diameter WC Balls, 3 pcs, ASTM, ISO and JIS certified
9100425	1/2" Diameter WC Ball, 1 pcs, ASTM, ISO and JIS certified
W2100B2	Brinell indenter 2.5mm WC ball, ASTM, ISO and JIS certified
W2100B5	Brinell indenter 5mm WC ball, ASTM, ISO and JIS certified

Rockwell® Anvils

All anvils fit on testers with 19mm pinhole.

Flat anvil



2.5" [63mm]
900001236

Flat anvil



7.5" [190mm]
W741246

V Anvil Shallow



0.5" [12.7mm] stem
height for cylindrical
parts < 0.25" [6,3mm]
900007388

V Anvil Shallow



1" [25mm] stem
height for cylindrical
parts < 0.25" [6,3mm]
900007195

V Anvil Standard



For cylindrical parts
> 0.25" [6,3mm]
900030797

Anvil Cylindron Jr.



For cylindrical parts
0.25-3" [6-76mm]
900007425

Anvil Cylindron



For cylindrical parts
2-8" [50-203mm]
900007147

Anvil for Ball Testing



For cylindrical parts
1/16"-1" [1,6-25mm]
900001371

Eyeball Anvil



For pieces with
slight taper (to
mount on spindle)
900007088

Pedestal spot Anvil



0.5" [12,7mm] stem
height, 0.27" [7mm]
spot diameter
900007387

Pedestal spot Anvil



1" [25mm] stem
height, 0.27" [7mm]
spot diameter
900007156

Diamond spot anvil



For HR30T scale,
0.39" [10mm] spot
diameter
900007400

Rockwell® Verification Kits

The kits contain recommended indenters and blocks for the dedicated scales.

Part Number	Description
A582143	Rockwell Regular Kit - includes Rockwell C Indenter, 25 HRC, 63 HRC and 80 HRB test blocks
A58239	Rockwell Superficial Kit - includes Rockwell N Indenter, 46 HR30N, 80 HR30N and 70 HR30T test blocks
A582144	Rockwell Twin Kit - includes Rockwell C and N Indenters, 25 HRC, 63 HRC, 80 HRB, 80 HR30N and 70 HR30T test blocks

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