

UCI/Dynamic Hardness Tester

Non-Destructive!



Features:

- Non-Destructive hand held hardness tester
- Combines UCI and Leeb hardness testing in one state of the art device
- Test steel with min thickness of .08" and unlimited max thickness
- Blazing fast test results
- Rockwell, Brinell Vickers conversions shown on display
- Large Memory w/USB Output
- Choice of manual UCI probes; 1kg, 2kg, 5kg & 10kg
- Optional Motorized Probes: .30kg, .80kg, & 1kgf
- Available Impact Devices(Leeb) D, DC, D+15, G & DL

PHT-6000 Series

"Ultrasonic Contact Impedance" is based on a 136 degree diamond at the end of a vibrating rod being depressed into the test surface at a fixed load. The difference in Ultrasonic vibration frequency is then calculated into a hardness value. The UCI test procedure is slower than the Dynamic Impact style, however the "UCI" method of hardness testing is portable, easy and accurate. It also has its own advantages when utilized for certain testing applications. UCI testers are not restricted to large mass items like dynamic type testers. These units can test metals as thin as 1mm and at a hardness value as low as 20HRC (75HB). They also excel at performing hardness tests on larger, harder metals as well. Another reason for the rise in popularity is due to the fact that the UCI method is categorized as "Non-Destructive". That translates into less scrap parts/ lower mfg costs due to necessary inspections.

"Dynamic Impact" is based on the Leeb principle of hardness, developed by Dietmar Leeb in the 1970's. A spring loaded impact body is thrust to the test surface, effecting rebound. The speed of both the initial thrust and the rebound is measured in a non-contact mode. This is calculated as a Leeb hardness value and then automatically converted to Rockwell C, B, Brinell, Vickers and Shore Values. It has effectually brought easy, fast and accurate results to portable hardness testing.

UCI / Dynamic Hardness Tester

UCI

SCALES-UCI	MEASUREMENT RANGE	TOLERANCE
ROCKWELL C	20-70 HRC	+/- 1.5 HRC
ROCKWELL B	41-99 HR	+/- 1.5 HRB
ROCKWELL A	61-85 HRB	+/- 1.5 HRA
BRINELL	76-618 HB	+/- 3% HB
VICKERS	80-1599 HV	+/- 3% HV

LEEB

SCALES-UCI	MEASUREMENT RANGE	TOLERANCE
ROCKWELL C	25-67 HRC	+/- 1.5 HRC
ROCKWELL B	59-99 HRB	+/- 1.5 HRB
BRINELL	85-651 HB	+/- 10 HB
VICKERS	83-976 HV	+/- 12 HV
SHORE	26-99HS	+/- 10HL
Leeb	170-960HLD	+/- 6HL

Can also test in the following scales:
 HRN15 - HRN30 - HRN45 - HRT15 - HRT30 - HRT45
 HRF - HK - HD.

UCI hardness tester w/manual probe

MODEL NO.	DESCRIPTION	MODEL NO. DESCRIPTION APPLICATION NOTES
PHT-6001	UCI Hardness Tester w/1kgf Probe	For use on polished surfaces. Below Ra 125µin
PHT-6002	UCI Hardness Tester w/2kgf Probe	For use on smooth surfaces. Below Ra 200µin
PHT-6005	UCI Hardness Tester w/5kgf Probe	For use on machined surfaces. Below Ra 400µin
PHT-6010	UCI Hardness Tester w/10kgf Probe	For use on rough surfaces. Below Ra 600µin

UCI hardness tester w/motorized probe

MODEL NO.	DESCRIPTION	MODEL NO. DESCRIPTION APPLICATION NOTES
PHT-6030	UCI Hardness Tester w/.30kgf Probe	Best for checking coating layer hardness; Finished thin parts
PHT-6080	UCI Hardness Tester w/.80kgf Probe	Best for smooth bearing type surfaces
PHT-6100	UCI Hardness Tester w/1kgf Probe	Best for machined surfaces

Specifications:

- **Hardness Range:** HRC:20-70, HRB: 55-100, HB: 100-739, HV: 100-2970
- **Scale Selection:** Rockwell C (HRC); Rockwell B (HRB); Rockwell A (HRA); Brinell (HB); Vickers (HV); Leeb (HLD) and many more
- **Tolerance:** +/- 3.0% deviation of average from the reference value of the test block with a minimum of 5 tests
- **Display Type:** LCD Color Screen w/Backlight, adjustable brightness
- **Language Selection:** English, German, Chinese, Spanish, etc.
- **Data Logger:** Letters, Numerals
- **Data Memory:** 2000 groups of measured data ; 20 groups of calibration data
- **Statistical Software:** Supplied-can be saved in Word or Excel
- **Data Output:** USB - cable supplied
- **Power Supply:** Rechargeable Lithium Battery: Voltage-4.2V, 4800mAh
- **Auto Power Off:** 5 minutes
- **Recharging Time:** Approx. 8 hours
- **Battery Usage:** Approx. 6 hours (no backlight)
- **Net Weight(base unit):** 2lbs (w/probe)
- **Gross Weight** 12 lbs
- **Unit Dimensions** 7.0 x 3.1 x 1.1" (160x80x30mm)
- **Gross Dimensions** 13.7 x 17.7 x 5.9" (350x450x150mm)

UCI/Dynamic Hardness Tester

Manual UCI Probe Specifications:

PROBE TYPE/MODEL	PHT-6001	PHT-6002	PHT-6005	PHT-6010
LOADING FORCE	1kgf (10N)	2kg (20N)	5kg (50N)	10kg (98N)
PROBE DIAMETER	22mm	22mm	22mm	22mm
LENGTH	154mm	154mm	154mm	154mm
OSCILLATING ROD DIAMETER	2.4mm	2.4mm	3mm	3mm
SURFACE ROUGHNESS REQUIREMENTS $\mu\text{m}=\text{Metric}$ $\mu\text{in}=\text{Inch}$	$R_a < 3.2 \mu\text{m}$ ($R_a < 125 \mu\text{in}$)	$R_a < 5 \mu\text{m}$ ($R_a < 197 \mu\text{in}$)	$R_a < 10 \mu\text{m}$ ($R_a < 393 \mu\text{in}$)	$R_a < 15 \mu\text{m}$ ($R_a < 590 \mu\text{in}$)
MIN WEIGHT OF TEST SAMPLE	0.3kg (.66lbs)	0.3kg (.66lbs)	0.3kg (.66lbs)	0.3kg (.66lbs)
MINIMUM THICKNESS OF SAMPLE	2mm (.08")	2mm (.08")	2mm (.08")	2mm (.08")



Motorized UCI Probe Specifications:

PROBE TYPE/MODEL	PHT-6030	PHT-6080	PHT-6100
LOADING FORCE	.30kg (3N)	.80kg (8N)	1kgf (10N)
PROBE DIAMETER	46mm	46mm	46mm
LENGTH	198mm	198mm	198mm
OSCILLATING ROD DIAMETER	3.7mm	3.7mm	3.7mm
SURFACE ROUGHNESS REQUIREMENTS $\mu\text{m}=\text{Metric}$ $\mu\text{in}=\text{Inch}$	$R_a < 3.2 \mu\text{m}$ ($R_a < 125 \mu\text{in}$)	$R_a < 5 \mu\text{m}$ ($R_a < 197 \mu\text{in}$)	$R_a < 8 \mu\text{m}$ ($R_a < 314 \mu\text{in}$)
MIN WEIGHT OF TEST SAMPLE	0.3kg (.66lbs)	0.3kg (.66lbs)	0.3kg (.66lbs)
MINIMUM THICKNESS OF SAMPLE	2mm (.08")	2mm (.08")	2mm (.08")



INDENTATION DEPTH (μm)

HARDNESS	.30KG MOTORIZED	.80KG MOTORIZED	1 KG MOTORIZED	1 KG MANUAL	2 KG MANUAL	5 KG MANUAL	10 KG MANUAL
800HV	4	5	7	7	10	15	22
600HV	4	5	8	8	11	18	25
500HV	5	6	9	9	12	19	27
300HV	6	8	11	11	16	25	35
100HV	10	13	19	19	27	43	61

UCI / Dynamic Hardness Tester

IMPACT DEVICES	D/DC/DL	D+15	C	G
IMPACT ENERGY	11Nmm	11Nmm	3Nmm	90Nmm
MASS OF THE IMPACT BODY	5.5g	7.8g	3.0g	20g
	DL: 7.3g			
TEST TIP				
* <i>Hardness</i>	1600HV	1600HV	1600HV	1600HV
* <i>Diameter</i>	3mm	3mm	3mm	5mm
* <i>Material</i>		Tungsten carbide	Tung carbide	
IMPACT DEVICE				
* <i>Diameter</i>	20mm	20mm	20mm	30mm
* <i>Length</i>	147/86mm	162mm	141mm	254mm
* <i>Weight</i>	75/50g	80g	75g	250g
MAX. HARDNESS OF SAMPLE	940HV	940HV	1000HV	650HB
PREPARATION OF SURFACE				
* <i>Roughness class ISO</i>	N7	N7	N5	N9
* <i>Max. roughness depth Rt</i>	10 mm	10 mm	2.5 mm	30 mm
* <i>Average roughness Ra</i>	2 mm	2 mm	0.4 mm	7 mm
MIN. WEIGHT OF SAMPLE				
* <i>Of compact shape</i>	5kg	5kg	1.5kg	15kg
* <i>On solid support</i>	2kg	2kg	0.5kg	5kg
* <i>Coupled on plate</i>	0.1kg	0.1kg	0.02kg	0.5kg
MIN. THICKNESS OF SAMPLE				
Suggested min. Thickness Range	12mm	10mm	10mm	12mm
* <i>Min. thickness of layers</i>	0.8mm	0.8mm	0.2mm	—
INDENTATION OF TEST TIP				
With 300 HV				
* <i>Diameter</i>	0.54mm	0.54mm	0.38mm	1.03mm
* <i>Depth</i>	24 m m	24 m m	12 m m	53 m m
With 600 HV				
* <i>Diameter</i>	0.45mm	0.45mm	0.32mm	0.90mm
* <i>Depth</i>	17 m m	17 m m	8 m m	41 mmC
With 800 HV				
* <i>Diameter</i>	0.35mm	0.35mm	0.30mm	—
* <i>Depth</i>	10mm	10mm	7mm	—



SPECIAL APPLICATION IMPACT DEVICES

Impact Device D Part No. PHT1800-100

Universal standard device.

Use for the majority of hardness testing assignments

Impact Device DL Part No. PHT1800-115

Needle front section .109" diameter x 1.96" length
Measurements in extremely confined spaces

Impact Device G Part No. PHT1800-125

Enlarged test tip: For use on solid heavy components such as; rough castings and forgings. Brinell only.

Impact Device DC Part No. PHT1800-120

Extremely short impact device

Used for very confined spaces such as holes, cylinders, internal measurements

Impact Device D+15 Part No. PHT1800-110

Slim front section with coil set back.

Hardness measurements in grooves, recessed surface.

Impact Device C

A reduced energy impact device for measuring the hardness of Case Hardened Steel only. Applies a small superficial indentation.

Weight: 2.6oz²

Part No. PHT1800-130

Probe Support Stand MET-1000



Small Cylinder Support Ring (8-22mm diameter)
Part No. PHT6000-521

Large Cylinder Support Ring (16-80mm diameter)
Part No. PHT6000-531

Deep Hole Probe Cap (5.53mm diameter/15.5 deep)
Part No. PHT6000-541



UCI/Dynamic Hardness Tester

Optional Test Blocks for 6000 Series

NIST Certified Test Block Kit

Part No. 900330-9410

Includes: 1pc HRC 20's
1pc HRC 40's
1pc HRC 60's



Aluminum/Brass Rockwell Blocks

PART NO.	DESCRIPTION	SHAPE	RANGE	COMMENTS
900330-9414AH	Rockwell B	Square	80's	Made in USA Aluminum
900330-9414AL	Rockwell B	Square	50's	Made in USA Aluminum
900330-9418H	Rockwell E	Square	90's	Made in USA Aluminum
900330-9418L	Rockwell E	Square	60's	Made in USA Aluminum
900330-9414BH	Rockwell B	Square	80's	Made in USA Brass
900330-9414BL	Rockwell B	Square	50's	Made in USA Brass



Leeb Test Blocks

PART NO.	DESCRIPTION	SHAPE	RANGE	COMMENTS
PHT1300-01	Leeb "D" Test Block	Round	750-800(HRC 50's)	Phase II std.
PHT130001-CERT	Leeb "D" Test Block	Round	750-800(HRC 50's)	NIST Certified
PHT1300-02	Leeb "D" Test Block	Round	590-670(HRC40's)	Phase II std.
PHT130002-CERT	Leeb "D" Test Block	Round	590-670(HRC40's)	NIST Certified
PHT130003-CERT	Leeb "D" Test Block	Round	490-570(HRC20's)	Phase II std.
900330-9414BL	Leeb "D" Test Block	Round	490-570(HRC20's)	NIST Certified
PHT1100G-01	Leeb "G" Test Block	Round	480-670	For use with "G" impact devices
PHT1100G-01C	Leeb "G" Test Block ASTM Certified to Brinell	Round	480-670 (HB200's)	For use with "G" impact devices



Brinell Test Blocks

PART NO.	DESCRIPTION	SHAPE	RANGE	COMMENTS
900355-1000/150	3000kg	Round	150-250	Phase II std. (Steel)
900355-1000/250	3000kg	Round	250-500	Phase II std. (Steel)
900355-3010	3000kg	Rectangle	Low	Aluminum (USA)
900355-3020	3000kg	Rectangle	High	Aluminum (USA)
900355-3030	3000kg	Rectangle	100-200HB	Steel (USA)
900355-3040	3000kg	Rectangle	250-350HB	Steel (USA)
900355-3050	3000kg	Rectangle	500+HB	Steel (USA)



Ultrasonic Hardness Tester 7

New! Mini-MET's

Standard Accessories:

- Base Instrument
- Calibrated Test Blocks
- Custom Carry Case
- Battery Charger
- Operation Manual

Specifications:

- Easy To Read Menu Operation
- Large LCD Display w/ Back Light
- USB Interface
- Automatic Mean Value
- Data Archive Capacity

Specifications:

Tolerance: +/- 3%

Minimum Thickness of sample: .040"

Materials: steel & cast steel, alloy tool steel, stainless steel, aluminum, brass, bronze, wrought copper alloy.

Battery type: NiMH Re-Chargeable

Operating temperature: 5-104 degrees F

Weight: 650g



Meets ASTM1038-10 specifications



Non-Destructive Hardness Testing!

MODEL	SCALES	PRESSURE FORCE	MEASUREMENT RANGE
MET-HRC15	Rockwell C	50N (5kgf)	20-70 HRC
MET-HRC50	Rockwell C	50N (5kgf)	20-70 HRC
MET-HB50	Brinell	50N (5kgf)	75-650 HB
MET-HB15	Vickers	10N (1.5kgf)	75-1000 HV

MET-MINI

Designed to test specific material in a chosen scale, the new PHASE II miniature ultrasonic hardness testers are capable of measuring surface hardness of metals with flat, thin, round or large surfaces. Accurate measurements of steels and aluminum are easily attained with these compact instruments. "

Portable Hardness Tester



Meets ASTM A956 specifications

Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



CHECK PAGE 15 FOR OPTIONAL IMPACT DEVICE PROBES

PHT-1800

PHT-1800C

w/NIST Certified Test Block

PHT-1840 - W/DL IMPACT DEVICE

PHT-1850 - W/G IMPACT DEVICE

State of the art, digital tester is designed to test the hardness of large hard metal parts. Loaded with useful functions only found on high priced models the PHT-1800 is clearly setting a new industry standard by being the most accurate, economically priced hardness tester on the market today. Fast test speeds coupled with memory and output, this unit is a hands down winner whether you are out in the field or in the QC shop. The PHT-1800 can perform tests that easily convert to the most popular hardness scales, including Rockwell, Brinell, Vickers, Shore, etc. Meets ASTM A956 specifications

Operation:

- Load the impact body
- Place the impact body on your test piece
- Push the button to begin testing and obtain reading

Standard Accessories:

- Base instrument
- Impact device D
- Calibrated test block
- Custom carry case
- Cleaning brush
- Operation manual

Optional accessories:

- Impact devices; DC, D+15, DL, G, C
- Special support rings
- Mini Printer

Functions:

- Easy to use keypad operation
- Auto identification of Impact Device

- Large LCD display with back light

- USB Output

- Automatic conversions to:
Brinell, Rockwell B & C,
Vicker and Shore

- Automatic mean value as well as Min & Max values

- Battery Indicator

- Memory capacity (100 groups)

Specifications:

- Accuracy: +/- 0.5% HL

- Measuring range: 200-960 HL

- Materials: steel & cast steel, alloy tool steel,
stainless steel, grey cast iron,

- Spheroidal iron, cast aluminum, brass,
bronze, wrought copper alloy.

- Battery type: AA alkaline (4)

- Operating temperature: 5-104 degrees F

- Dimensions: 150 x 74 x 32mm

- Shipping Weight: 10 lbs.

Portable Hardness Tester With Color Screen

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Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



Meets ASTM A956 specifications



Operation:

- Load the impact body
- Place the impact body on your test piece
- Push the button to begin testing and obtain reading

Standard Accessories:

- Base instrument
- Impact device D
- Calibrated test block
- Custom carry case
- Cleaning brush
- Operation manual

Optional accessories:

- Impact devices; DC, D+15, DL, G, C
- Special support rings

Functions:

- Easy to use keypad operation
- Auto identification of Impact Device

- Large LCD display with back light
- USB Output
- Automatic conversions to: Brinell, Rockwell B & C, Vicker and Shore
- Automatic mean value as well as Min & Max values
- Battery Indicator
- Memory capacity (100 groups)

Specifications:

- Accuracy: +/- 0.5% HL
- Measuring range: 200-960 HL
- Materials: steel & cast steel, alloy tool steel, stainless steel, grey cast iron,
- Spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy.
- Battery type: AA alkaline (4)
- Operating temperature: 5-104 degrees F
- Dimensions: 150 x 74 x 32mm
- Shipping Weight: 10 lbs.

CHECK PAGE 16 FOR OPTIONAL IMPACT DEVICE PROBES

PHT-1900

State of the art, digital portable hardness tester is designed to test the hardness of large hard metal parts. Clean crisp display shows the incredible functions that can only be found on this new portable hardness tester such as auto-probe detection, auto direction detector, single and multi-point calibration make the new 1900 the most versatile portable hardness tester in the industry.

10 New RUGGED Aluminum Body Hardness Tester.



The PHT-2100 can perform tests that easily convert to the most popular hardness scales, including Rockwell, Brinell, Vickers, Shore, etc.

CHECK PAGE 16 FOR OPTIONAL IMPACT DEVICE PROBES

Meets ASTM A956 specifications

PHT-2100

Our new rugged "extruded aluminum" frame portable hardness tester is suited for rough environments such as mining facilities, pipeline, bridge and tower inspections, etc and is packed with features typically found on high end models only. This new leeb hardness tester is designed to test the hardness of large hard metal parts. Loaded with useful functions only found on high priced models the PHT-2100 is clearly setting a new industry standard by being the most accurate, economically priced hardness tester on the market today. Fast test speeds coupled with memory and output, this unit is a hand's down winner whether you are out in the field or in the QC shop.

Designed to test large hard parts: Example: Tool steel should be close to 1" thick of solid material

Operation:

- Load the impact device
- Place the impact device on your test piece
- Push the button to begin testing and obtain reading

Standard Accessories:

- Base instrument
- Impact device D
- Calibrated test block
- Custom carry case
- Cleaning brush
- Operation manual

Optional accessories:

- Impact devices; DC, D+15, DL, G, C
- Special support rings convex/concave surfaces

Functions:

- Easy to use keypad operation
- Auto identification of Impact Device
- Large LCD display with back light

- USB Output
- Automatic conversions to: Brinell, Rockwell B & C, Vicker and Shore
- Automatic mean value as well as Min & Max values
- Battery Indicator
- Memory capacity (100 groups)

Specifications:

- Accuracy: +/- 0.5% (referred to L=800,
- Repeatability accuracy: +/- 4L units) L=Leeb
- Measuring range: 200-960 HL
- Materials: steel & cast steel, alloy tool steel, stainless steel, grey cast iron, spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy
- Battery type: AA alkaline (2)
- Operating temperature: 5-104 degrees F
- Dimensions: 150 x 74 x 32mm
- Weight: 245 grams

Economy Hardness Tester 11



Meets ASTM A956 specifications



Operation:

- Load the impact body
- Place the impact body on your test piece
- Push the button to begin testing and obtain reading

Standard Accessories:

- Base instrument
- Impact device D ("DL" PHT-1740) ("G" PHT-1750)
- Calibrated test block
- Custom carry case
- Cleaning brush
- Operation manual
- USB cable

Functions:

- Easy to use push button operation
- Large LCD display with back light
- Automatic conversions to: Brinell, Rockwell, Vicker and Shore
- Automatic mean value
- Data storage capacity

Specifications:

- Accuracy: +/- 0.5% HL
- Measuring range: 200-960 HL
- Materials: steel & cast steel, alloy tool steel, stainless steel, grey cast iron, spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy.
- Battery type: AAA alkaline (2)
- Operating temperature: 5-104 degrees F
- Dimensions: 108 x 62 x 25mm
- Shipping Weight: 11 lbs.

Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



CHECK PAGE 16 FOR OPTIONAL IMPACT DEVICE PROBES

PHT-1700

Loaded with features, this economically price hardness tester is capable of measuring the surface hardness of a broad variety of metals on flat and round surfaces. This instrument comes complete with the universal D impact device, calibrated test block and rugged carry case.

PHT-1740

Same base instrument as the PHT-1700 but comes supplied with the "DL" impact device for testing of gear teeth, grooves and other confined applications. See page 15.

PHT-1750

Same base instrument as the PHT-1700 but comes supplied with the "G" impact device for testing of large castings and rough porous parts. See page 15.

12 Portable Hardness Tester w/ Printer



The PHT-3500 can perform tests that easily convert to the most popular hardness scales, including Rockwell, Brinell, Vickers, Shore, etc.



Meets ASTM A956 specifications

Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



Operation:

- Load the impact body
- Place the impact body on your test piece
- Push the button to begin testing and obtain reading

Standard Accessories:

- Base instrument
- Impact device D
- Calibrated test block
- Custom carry case

- Cleaning brush
- Operation manual

Optional accessories:

- Impact devices; DC, D+15, DL, G, C
- Special support rings

Functions:

- Easy to use keypad operation
- Auto identification of Impact Device
- Large LCD display with back light
- USB Output
- Automatic conversions to: Brinell, Rockwell B & C, Vicker and Shore
- Automatic mean value as well as Min & Max values
- Upper/Lower Limit Setting w/Alarm
- Battery Indicator
- Memory capacity (500 groups)

Specifications:

- Accuracy: +/- 0.5% HL
- Measuring range: 200-960 HL

- Minimum Thickness: < 0.5" (Steel)
- Materials: steel & cast steel, alloy tool steel, stainless steel, grey cast iron,
- spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy.
- Battery type: 6V NiMH Rechargeable
- Battery charger: 9V/500mA
- Continuous working period of about 150 hours (With backlight off, no printing)
- Printing paper: width is (57.5±0.5)mm, diameter is 30mm
- Communication interface: USB1.1
- Operating temperature: 5-104 degrees F
- Dimensions: 212 x 80 x 32mm
- Shipping Weight: 12 lbs.

CHECK PAGE 15 FOR OPTIONAL IMPACT DEVICE PROBES

PHT-3500

State of the art, digital tester is designed to test the hardness of large hard metal parts. Loaded with useful functions and a built in mini-printer the PHT-3500 is clearly the industry leader for fast accurate hardness testing with advanced thermal printing capabilities. Meets ASTM A956 Specifications

Mini-Integrated Hardness Tester

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Technical Specifications:

- **Dimensions:** 6.10" x 2.36" x 1.49" (155 X 60 X 38mm)
- **Impact Device:** D/DL
- **Impact Energy:** 8 Ft-Lbs (11nm)
- **Test Tip:** Tungsten Carbide
- **Measuring Accuracy:** +/- 0.8% (Corresponding To +/- 1 Hrc At Hrc=58)
- **Max. Hardness Of Sample:** 980hv
- **Shipping Weight:** 11 lbs.
- **Impact Direction:** Any Angle
- **Operating Temperature:** 32 To 122 Degrees F (0 To 50 Degrees C.)
- **Min. Weight Of Sample:** 11 lbs / 5kg
- **Min. Radius Of Curved Surface:** 1.2in (30mm) (With Support Rings:11mm)
- **Power Supply:** 3.6V Lithium Rechargeable Battery



Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



PHT-3300

PHT-3340 W/ DL IMPACT DEVICE

The PHASE II hardness tester, Model No. PHT-3300 is an advanced integrated hardness tester distinguished by its very compact size, high accuracy, wide measuring range and simplicity of operation. It is suitable for testing the hardness of all metals and widely applied in many areas of industry.

The PHT-3300 as with all Leeb hardness testers, is designed to test very large hard parts. Steel should be close to 1" thick of solid material. Softer metals need even more mass.

The PHT-3300 hardness tester combines the universal impact device D and a data processor in a single unit. It automatically computes all Vickers, Brinell, Rockwell and Shore hardness values. USB output enables this new model to print any of it's memory from up to 500 groups. The impact direction can be set so that the accurate values can be achieved at any angle, even upside down! Statistical mean value is automatically provided.

The measuring method of the PHT-3300 is defined as "the quotient of the impact body's rebound velocity over its impact velocity". Optional accessories include various support rings to meet the requirements of specialized convex or concave applications. MEETS ASTM A956-12 SPECIFICATIONS.

14 Gear Teeth Hardness Tester

For Testing in Tight Spaces



PHT-1740



PHT-1840



PHT-3340



Meets ASTM A956 specifications

Standard Accessories:

- Base Instrument
- Impact device DL
- Calibrated Test Block
- USB Output Cable & Software
- Carry Case
- Operation Manual

Optional Accessories

12 Piece Ring Set for Tough Radii
PHT1500-300



Double-Sided Test Block
PHT1300-05



NIST Certified Test Block
PHT130001-CERT



PHT-1740

This dedicated unit is designed to test gear teeth and other difficult to access applications. The 1740 is an economically priced hardness tester that is loaded with the same features found on the base 1700 version. The 1740 hardness tester is capable of measuring the surface hardness of a broad variety of metals on flat and round surfaces. This instrument comes complete with a dedicated DL impact device, calibrated test block and rugged carry case.

PHT-1840

This dedicated unit is designed to test gear teeth and other difficult to access applications. The 1840 is loaded with the same features found on the base 1800 version which includes memory, USB output and software for downloading to your PC. The 1840 hardness tester is capable of measuring the surface hardness of a broad variety of metals on flat and round surfaces. This instrument comes complete with a dedicated DL impact device, calibrated test block and rugged carry case.

PHT-3340

This integrated unit is designed to test gear teeth and other difficult to access applications. The 3340 hardness tester is capable of measuring the surface hardness of a broad variety of metals on flat and round surfaces. This instrument comes complete with a dedicated DL impact device, calibrated test block and rugged carry case.

Portable Hardness Testers

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For Testing Porous Castings and Very Rough Surfaces



PHT-1850

PHT-1750

Meets ASTM A956 specifications

Standard Accessories:

- Base instrument
- Impact device G
- Calibrated test block
- Custom carry case
- Cleaning brush
- Operation manual



Specifications:

- **Accuracy:** +/- 0.5% HL
- **Measuring range:** 200-960 HL
- **Materials:** steel & cast steel, alloy tool steel, stainless steel, grey cast iron, spheroidal iron, cast aluminum, brass, bronze, wrought copper alloy.
- **Battery type:** AA alkaline (4)
- **Operating temperature:** 5-104 degrees F
- **Dimensions:** 150 x 74 x 32mm
- **Shipping Weight:** 20 lbs.

Operation:

- Load the impact body
- Place the impact body on your test piece
- Push the button to begin testing and obtain reading

Functions:

- Easy to use keypad operation
- Auto identification of Impact Device
- Large LCD display with back light
- Automatic mean value as well as Min & Max values
- Battery Indicator
- Memory capacity (100 groups)

IMPACT DEVICE	G
IMPACT ENERGY	90 Nmm
MASS OF THE IMPACT BODY	20g
TEST TIP	
* Hardness	1600HV
* Diameter	5mm
* Material	Tungsten Carbide
IMPACT DEVICE	
Diameter	30mm
Length	254mm
Weight	250g
MAX HARDNESS OF SAMPLE	650HB
PREPARATION OF SURFACE	
* Max. roughness depth Rt	30 µm
* Average roughness Ra	6.3 µm
PREPARATION OF SURFACE	
* Of compact shape depth Rt	15kg
* On solid support	5kg
* Coupled on plate	0.5kg
INDENTATION OF TEST TIP WITH 300 HV	
* Diameter	1.03mm
* Depth	53 µm
WITH 600 HV	
* Diameter	0.90mm
* Depth	41 µm

PHT-1750/1850

Hardness Testing for Rough Surfaces

Incorporates the "G" impact device mated to the popular PHT-1700 & 1800 portable hardness testers. This combination allows the user to test large rough surface parts and readout in the Brinell hardness scale.

IMPACT DEVICES	D/DC/DL	D+15	C	G
IMPACT ENERGY	11Nmm	11Nmm	3Nmm	90Nmm
MASS OF THE IMPACT BODY	5.5g	7.8g	3.0g	20g
	DL: 7.3g			
TEST TIP				
* <i>Hardness</i>	1600HV	1600HV	1600HV	1600HV
* <i>Diameter</i>	3mm	3mm	3mm	5mm
* <i>Material</i>		Tungsten carbide	Tung carbide	
IMPACT DEVICE				
* <i>Diameter</i>	20mm	20mm	20mm	30mm
* <i>Length</i>	147/86mm	162mm	141mm	254mm
* <i>Weight</i>	75/50g	80g	75g	250g
MAX. HARDNESS OF SAMPLE	940HV	940HV	1000HV	650HB
PREPARATION OF SURFACE				
* <i>Max. roughness depth Rt</i>	10 mm	10 mm	2.5 mm	30 mm
* <i>Average roughness Ra</i>	2 mm	2 mm	0.4 mm	7 mm
INDENTATION OF TEST TIP				
With 300 HV				
* <i>Diameter</i>	0.54mm	0.54mm	0.38mm	1.03mm
* <i>Depth</i>	24 m m	24 m m	12 m m	53 m m
With 600 HV				
* <i>Diameter</i>	0.45mm	0.45mm	0.32mm	0.90mm
* <i>Depth</i>	17 m m	17 m m	8 m m	41 mmC
With 800 HV				
* <i>Diameter</i>	0.35mm	0.35mm	0.30mm	—
* <i>Depth</i>	10mm	10mm	m7mm	—

"DC" Impact Device

Very short impact device for those confined areas, i.e. inside bores for internal measurements. Conforms to the D measuring range.

Weight: 1.8oz

Fits PHT-2500 only.

Part No. PHT1800-120

"D" Impact Device

Universal standard unit. Will handle the majority of hardness testing applications.

Weight: 2.6oz

Part No. PHT1800-100

"D+15" Impact Device

Very narrow contact area with a set back measurement coil. This device is used to measure hardness in grooves and recessed surfaces.

Weight: 2.8oz

Part No. PHT1800-110

"G" Impact Device

This device has an enlarged test tip, and an increased impact energy range (approx. 9 times the D, 72 ft.-lb.). Can be used on lower quality finishes for measuring hardness in the Brinell range only (max. 650 HB). Designed to be used with heavy components such as heavy castings and forgings.

Weight: 8.8oz

Part No. PHT1800-125

"DL" Impact Device

This model features a needle front section with a diameter of 4mm and a length of 50mm. It is suitable for testing in extremely confined spaces, the base of grooves and on special components such as gear wheels. For use on steel and cast steel only!

Weight: 3.0oz

Part No. PHT1800-115

"C" Impact Device

A reduced energy impact device for measuring the hardness of Case Hardened Steel only. Applies a small superficial indentation.

Weight: 2.6oz^a

Part No. PHT1800-130



Leeb Test Blocks and 12 pc. Ring Set

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- PHT1300-01 HIGH RANGE HLD Test Block (STD with all "D" type Impact Devices)
- PHT1300-02 - MIDDLE RANGE HLD Test Block
- PHT1300-03 - LOW RANGE HLD Test Block
- PHT1100G-01 HLG Test Block (for use with "G" Impact Device)
- PHT1300-05C Double Sided HLD Test Block
- PHT 1300-01-Cert NIST Certified HIGH RANGE HRC
- PHT1300-02-Cert NIST Certified MIDDLE RANGE HRC
- PHT1300-03-Cert NIST Certified LOW RANGE HRC



**12pc Universal Support Ring Set
PHT1500-300**
This kit comes complete with 6-concave rings, 5 convex rings and 1- small stand for difficult to test round or curved parts.