



## Automated Digital Hardness Testing System

### No. 3817 / EDP 67756

The No. 3817 Automated Digital Hardness Testing System provides durable, precise results for even the most demanding applications. Capable of measuring all Rockwell, Rockwell Superficial, Vickers and Brinell Scales, it meets or exceeds all major industry standards requirements, offering unsurpassed accuracy, reliability and overall performance.

Easy-to-use and exceptionally precise, this full-featured system offers one-touch automated testing with minimal operator involvement. Overall, the No. 3817 is the ultimate hardness testing solution.

#### Features

- ◆ One-touch automated testing with minimal operator involvement
- ◆ Closed-loop NTEP load cell technology improves repeatability and efficiency, while eliminating conventional weights method
- ◆ Preset dwell times and automatic cylindrical correction for hardness value comply with ASTM E-18 tolerances
- ◆ Hardness numbers are displayed from 1 to 1/100th point on the digital control panel, which is easy to use and to view
- ◆ Built-in electronic conversion charts for cross-referencing hardness scales and approximating tensile strength – no mechanical or electronic adjustments required
- ◆ Meets or exceeds new ASTM and ISO requirements, and meets Direct NIST Traceability requirements
- ◆ RS232C output
- ◆ Detachable clamping device for oversized or irregular parts
- ◆ Self-contained head assembly adaptable for special applications
- ◆ Rigid, modular base assembly
- ◆ Upper and lower limit alarms
- ◆ Fitted tray for indentors and anvils
- ◆ Includes detachable clamping device, direct verification certificate for load, depth, hysteresis and timing, indirect verification certificate for B, C, 30N and 30T scales, operator manual, indenter installation tool, and AC power cable
- ◆ 2-year limited warranty
- ◆ Made in the U.S.A.



#### Specifications

<b>Minor Load</b>	10kg
<b>Minor Load – Superficial</b>	3kg
<b>Major Load</b>	60/100/150kg
<b>Major Load – Superficial</b>	15/30/45kg
<b>Test Force Control</b>	Motorized
<b>Results Display</b>	Digital Readout
<b>Throat Depth</b>	5-1/2"
<b>Maximum Test Height</b>	10" *
<b>Unit Height/Width/Depth</b>	33-1/4" x 8" x 19-3/4"
<b>Weight</b>	185 lbs.

**NOTE:** For listings of test blocks and accessories, refer to the following pages in this section.

\* Requires bench alteration.



### Digital Bench Hardness Tester

#### No. 3816 / EDP 67755

The microprocessor controlled No. 3816 Bench Hardness Tester offers easy, fully automated testing procedures and provides highly sensitive and accurate readings.

The No. 3816 can measure the full regular Rockwell Scales according to ASTM and SAE guidelines. It accommodates all types of hard or soft metals and alloys, in numerous configurations. Overall, the No. 3816 is packed with features and provides excellent value.

The tester is furnished with a diamond indenter, a 1/16" (1.6mm) ball indenter, three certified test blocks, four test tables – 5.87" (149mm) and 2.5" (63.5mm) flat anvils, 5/8" (15.9mm) spot anvil and a standard vee anvil – and an accessory case.

#### Features

- ◆ Automated routines reduce operator involvement and speed measurements
- ◆ Large, easy-to-view LED panel displays proper load setting
- ◆ Programmable scale conversions, dwell times and tester counter
- ◆ Sample averaging is automatically calculated
- ◆ RS232C output
- ◆ Convenient mini-printer for outputting readings
- ◆ Quality castings with large working area



#### Specifications

<b>Minor Load</b>	10Kgf
<b>Major Load</b>	A: 60Kgf, B: 100Kgf, C: 150Kgf
<b>Test Force Application</b>	(Dead weight applies test force)
<b>Test Force Control</b>	Motorized
<b>Results Display</b>	Digital Readout
<b>Throat Depth</b>	6.6" (168mm)
<b>Maximum Test Height</b>	6.69" (169.9mm) **
<b>Unit Height/Width/Depth</b>	28 x 8.9 x 19.6" (711 x 226 x 498mm)
<b>Unit Weight</b>	187 lbs. (85kg)

Description	Catalog No.	EDP No.
Digital Bench Hardness Tester	<b>3816</b>	67755

#### Accessories\*

"C" Regular	<b>PT05245</b>	67944
1/16" (1.6mm) Ball Unit	<b>PT05249</b>	67948
RA Test Block (Rockwell A Scale 80)	<b>PT05069</b>	67897
RB Test Block (Rockwell B Scale 90)	<b>PT05059</b>	67888
RC Test Block (Rockwell C Scale 63)	<b>PT05050</b>	67879
Master Block Set, Rockwell C Scale	<b>PT05272</b>	67969

\* For additional listings of test blocks and accessories, refer to the following pages in this section. \*\* Requires bench alteration.



## Analog Bench Hardness Tester

### No. 3814 / EDP 67754

The No. 3814 Hardness Tester provides reliable Rockwell Hardness values on all types of metal and alloys, hard or soft, and in many shapes. This reliable bench hardness tester has a high quality casting, is ergonomically designed for easy operation and is engineered to ensure accurate results.

It is an ideal basic hardness solution, economically priced to suit a variety of lab, workshop, toolroom and inspection department applications. The No. 3814 conforms to ASTM E-18 standard.

The tester is furnished with a diamond indenter, a 1/16" (1.6mm) ball indenter, three certified test blocks, four test tables – 5.87" (149mm) and 2.5" (63.5mm) flat anvils, 5/8" (15.9mm) spot anvil and a standard vee anvil – and an accessory case.

#### Features

- ◆ Ability to handle Rockwell Scales A through H and K
- ◆ Stable cast iron construction
- ◆ Ideal basic hardness testing for many typical applications



#### Specifications

<b>Minor Load</b>	10Kgf
<b>Major Load</b>	A: 60Kgf, B: 100Kgf, C: 150Kgf
<b>Test Force Application</b>	(Dead weight applies test force)
<b>Test Force Control</b>	Hydraulic Dashpot System
<b>Results Display</b>	Analog – Dial Gage
<b>Throat Depth</b>	6.6" (168mm)
<b>Maximum Test Height</b>	6.69" (169.9mm) **
<b>Unit Height/Width/Depth</b>	30 x 8.5 x 20" (762 x 216 x 508mm)
<b>Unit Weight</b>	267 lbs. (121kg)

Description	Catalog No.	EDP No.
Analog Hardness Tester	<b>3814</b>	67754

#### Accessories\*

Description	Catalog No.	EDP No.
"C" Regular	<b>PT05245</b>	67944
1/16" (1.6mm) Ball Unit	<b>PT05249</b>	67948
RA Test Block (Rockwell A Scale 80)	<b>PT05069</b>	67897
RB Test Block (Rockwell B Scale 90)	<b>PT05059</b>	67888
RC Test Block (Rockwell C Scale 63)	<b>PT05050</b>	67879
Master Block Set, Rockwell C Scale	<b>PT05272</b>	67969

\* For additional listings of test blocks and accessories, refer to the following pages in this section. \*\* Requires bench alteration.



### Test Blocks and Accessories for Hardness Testers

Starrett blocks can be used to test Rockwell, Brinell or Vickers scales. They are available in steel, brass and aluminum. Each block is serialized, with a certificate detailing the environmental conditions used to test the block.

Actual readings are given, with the averages of these readings: min. reading, max reading and a repeatability figure. The blocks are calibrated according to ASTM E-18 standards, ANSI (NCSL) Z540-1, (ISO) 10012-1, ISO/IEC 17025 and Mil-std 45662A.

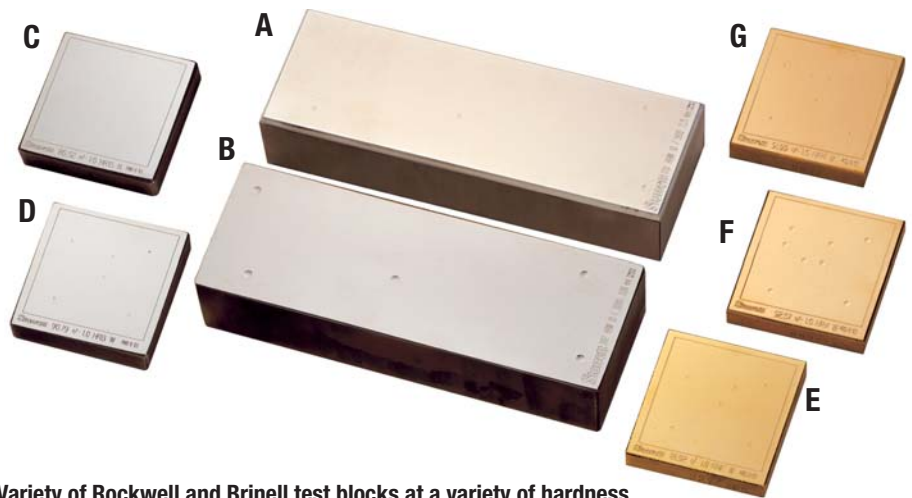
Starrett hardness test blocks are manufactured from square steel or brass plates, as opposed to the more common round bar stock. The use of plate gives a more accurate and consistent surface for inspection. Metallurgical tests have proved that during the production of round bar stock, suspended carbides in the mix migrate to the center of the rod.

The scientific name for this condition is carbide segregation and results in different readings being found in the center of a rod rather than at its outer edges. Some manufacturers remedy this situation by removing the centers from their blocks.

Hardness test blocks are designed to be used only on one side and the indents should be more than .010" from the centers of two indents or no closer to the block's edge than .040".

Calibration kits are also available from Starrett. No facility with a hardness tester in use should be without a calibration kit. These kits come with from 3 to 20 calibrated test blocks and the serialized penetrator that was used to inspect each of the blocks in the set. When a discrepancy is detected in a tester, these kits allow you to determine the direction to proceed to resolve the issue.

† Values expressed are not exact but will range within acceptable limits



Variety of Rockwell and Brinell test blocks at a variety of hardness levels. (A) Aluminum Brinell, (B) Steel Brinell, (C) Vickers, (D) Rockwell, (E) 187.5kg./2.5mm Brinell, (F) Extra-Soft Rockwell and (G) Brass Rockwell.

#### Rockwell Test Blocks

Description †	Part No.	EDP
RC63 Test Block	PT05050	67879
RC60 Test Block	PT05051	67880
RC55 Test Block	PT05052	67881
RC50 Test Block	PT05053	67882
RC45 Test Block	PT05054	67883
RC40 Test Block	PT05055	67884
RC35 Test Block	PT05056	67885
RC30 Test Block	PT05057	67886
RC25 Test Block	PT05058	67887
RB90 Test Block	PT05059	67888
RB80 Test Block	PT05060	67889
RB70 Test Block	PT05061	67890
RB60 Test Block	PT05062	67891
RB50 Test Block	PT05063	67892
RB40 Test Block	PT05064	67893
RB30 Test Block	PT05065	67894
RB20 Test Block	PT05067	67895
RB10 Test Block	PT05068	67896
RA80 Test Block	PT05069	67897
RA70 Test Block	PT05091	67898
RA60 Test Block	PT05092	67899
RF100 Test Block	PT05100	67900
RF90 Test Block	PT05101	67901
RF80 Test Block	PT05102	67902
RF70 Test Block	PT05103	67903
RF60 Test Block	PT05104	67904
RF50 Test Block	PT05105	67905
RE100 Test Block	PT05106	67906
RE90 Test Block	PT05107	67907
RE80 Test Block	PT05108	67908
RE70 Test Block	PT05112	67909
RE60 Test Block	PT05113	67910
RE50 Test Block	PT05114	67911

#### Rockwell Test Blocks

Description †	Cat. No.	EDP
HR30N80 Test Block	PT05115	67912
HG30N70 Test Block	PT05122	67913
HR30N60 Test Block	PT05123	67914
HR30N50 Test Block	PT05124	67915
HR30N40 Test Block	PT05125	67916
HR30T80 Test Block	PT05127	67917
HR30T70 Test Block	PT05128	67918
HR30T60 Test Block	PT05129	67919
HR30T50 Test Block	PT05130	67920
HR30T40 Test Block	PT05177	67921
HR30T30 Test Block	PT05178	67922
HR30T20 Test Block	PT05179	67923
HR30T10 Test Block	PT05180	67924
HR15N90 Test Block	PT05181	67925
HR15N80 Test Block	PT05182	67926
HR15N10 Test Block	PT05183	67927
HR15T90 Test Block	PT05184	67928
HR15T80 Test Block	PT05185	67929
HR15T70 Test Block	PT05186	67930
HR15T60 Test Block	PT05187	67931
HR45T70 Test Block	PT05188	67932
HR45T60 Test Block	PT05189	67933
HR45T50 Test Block	PT05191	67934
HR45T40 Test Block	PT05192	67935
HR45T20 Test Block	PT05193	67936
HR45T10 Test Block	PT05194	67937
HRH90 Test Block	PT05195	67938
HRH80 Test Block	PT05196	67939
HRR Test Block	PT05197	67940
HR30Y Test Block	PT05198	67941
HRM Test Block	PT05199	67942
HR15W Test Block	PT05200	67943

**NOTE:** Contact The L.S. Starrett Co. for additional blocks and accessories.

(Continued on next page.)



**Test Blocks and Accessories for Hardness Testers (continued)**

**Brinell Test Blocks**

3000kg High Brinell Test Block	<b>PT05257</b>	67956
3000kg Low Brinell Test Block	<b>PT05258</b>	67957
500kg High Brinell Test Block	<b>PT05259</b>	67958
500kg Low Brinell Test Block	<b>PT05260</b>	67959



Standard and special anvils.

**Anvils and Table**

Pedestal Anvil	<b>PT05267</b>	67964
2-1/2" Flat Anvil	<b>PT05268</b>	67965
Small "V" Anvil	<b>PT05269</b>	67966
Large "V" Anvil	<b>PT05270</b>	67967
8" Anvil Testing Table	<b>PT05271</b>	67968



PT05272 HRC 3-Block Master Calibration Kit.

**Master Calibration Kits**

Description	Cat. No.	EDP No.
HRC 3-Block Master Calibration Kit	<b>PT05272</b>	67969
HR30N 3-Block Master Calibration Kit	<b>PT05273</b>	67970
HRB 3-Block Master Calibration Kit	<b>PT05276</b>	67971
C&B Scale 20-Block Master Calibration Kit	<b>PT05277</b>	67972
C&30N Scale 6-Block Master Calibration Kit	<b>PT05278</b>	67973



Penetrators: (A) 1/2" Ball Unit, (B) 1/4" Ball Unit, (C) 1/8" Ball Unit, (D) 1/16" Ball Unit and (E) Diamond Cone or "C" Regular. (F) Vickers/Knoop and (G) Newage-type indenter styles are also shown – contact Starrett for further information.

**Penetrators**

"C" Regular	<b>PT05245</b>	67944
Indentron	<b>PT05246</b>	67945
Versitron	<b>PT05247</b>	67946
"N" Regular	<b>PT05248</b>	67947
1/16" (1.6mm) Ball Unit	<b>PT05249</b>	67948
1/8" (1.7mm) Ball Unit	<b>PT05250</b>	67949
1/4" (6.4mm) Ball Unit	<b>PT05251</b>	67950
1/2" (12.7mm) Ball Unit	<b>PT05252</b>	67951
1/16" (1.6mm) Carbide Ball, with Certification	<b>PT05253</b>	67952
1/8" (1.7mm) Carbide Ball, with Certification	<b>PT05254</b>	67953
1/4" (6.4mm) Carbide Ball, with Certification	<b>PT05255</b>	67954
1/2" (12.7mm) Carbide Ball, with Certification	<b>PT05256</b>	67955
Heavy Load, Vickers 5kg Load	<b>PT05261</b>	67960
Heavy Load Indentor	<b>PT05264</b>	67961
Min. Brinell 2 1/2mm Ball	<b>PT05265</b>	67962
Min. Brinell Block 187 1/2kg, 2-1/2mm Ball	<b>PT05266</b>	67963

**NOTE:** Contact The L.S. Starrett Co. for additional blocks and accessories.



### Portable Hardness Tester with Integrated, Multi-functional Features

#### No. 3811 / EDP 67184

The Starrett 3811 is an advanced, integrated hardness tester featuring a very compact size, high accuracy, a wide measuring range and simplicity of operation. It is ideal for testing the hardness of all metals in many areas of industry.

The 3811 combines the universal impact device D and a data processor designed into a single unit. With the ability to “plug and play” optional impact devices, this unit can effectively test almost any combination of material, size and shape.

It automatically computes at Vickers, Brinell, Rockwell and Shore hardness values. Statistical mean value is automatically provided.

#### Features

- ◆ Compact size, lightweight
- ◆ Power-packed at a very affordable price
- ◆ Built-in D impact probe with internal tungsten carbide test tip (optional probes also available)
- ◆ Back lighting, with LCD readout
- ◆ Utilizes new Leeb measuring method
- ◆ Battery operated
- ◆ Highly accurate and archives data
- ◆ Parts can be checked at any angle



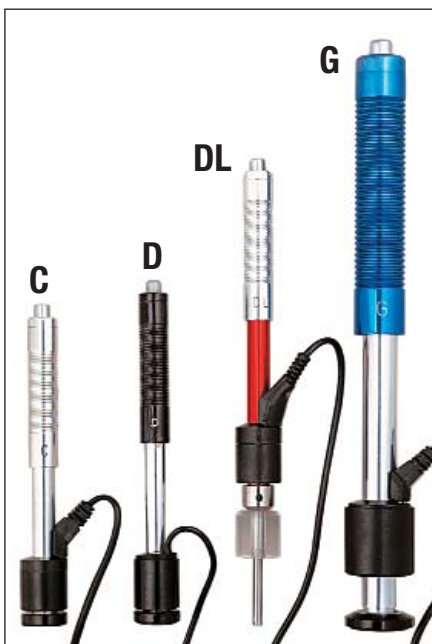
**No. 3811**  
Portable Hardness Tester.

- ◆ Furnished in handsome, rugged carry case with calibrated test block and manual
- ◆ Extended memory of up to 500 groups
- ◆ Error modification function
- ◆ Automatic shut off

#### Specifications

<b>Dimensions</b>	2-1/2" W x 1-1/8" D x 6-1/2" L (64 x 29 x 165mm)
<b>Impact Device</b>	D (built-in)
<b>Impact Energy</b>	8 ft.-lbs. (11 Nmm)
<b>Test Tip</b>	tungsten carbide
<b>Measuring Accuracy</b>	±0.8% (corresponding to ±1 HRC @ HRC=58)
<b>Maximum Hardness of Sample</b>	980HV
<b>Weight</b>	8.1 oz (28.6g)
<b>Impact Direction</b>	Any angle
<b>Operating Temperature</b>	32° – 122° F (0 – 50° C)
<b>Minimum Weight of Sample</b>	11 lbs./5kg (< 5kg – 0.1kg coupled on solid support)
<b>Minimum Thickness of Sample</b>	0.2" (5mm) (coupled: 0.12"/3mm)
<b>Minimum Thickness of Layers</b>	0.32" (0.8mm)
<b>Minimum Radius of Curved Surface</b>	1.2" (30mm) (with support rings: 0.43"/11mm)

Coupling paste is available for testing thin or small parts weighing less than 2.4 lbs. (2kg)



Optional Remote Impact Devices.

Style	Part No.	EDP	Applications
<b>D+15</b>	<b>PT28247</b> (not shown)	67281	Very narrow contact area with a set backed measurement coil. Measures hardness in grooves and recesses. Weight: 80g
<b>C</b>	<b>PT28250</b>	67284	Reduced impact energy probe (2 ft.-lb.) for measuring hardness of coatings, surface hardened, thin wall or impact sensitive components. Applies superficial indentation. Weight: 75g
<b>G</b>	<b>PT28249</b>	67283	Enlarged test tip and increased impact energy range (72 ft.-lb – approx. 9 times the D). For lower quality finishes measuring in the Brinell range only (max. 650 HB). Designed for components like heavy castings, forgings. Weight: 250g
<b>DL*</b>	<b>PT28248</b>	67282	Needle front section with 4mm diameter and 50mm length. Ideal for testing in confined spaces, the base of grooves and special components like gear wheels. Steel/Cast steel



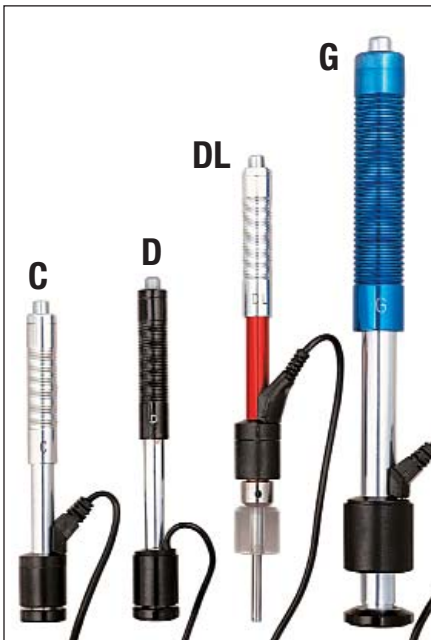
**Technical Data for  
Starrett Hardness  
Impact Devices**



**Technical Data**

Impact Devices		D/DC/DL	D+15	C	G
<b>Impact Energy</b>		11 Nmm	11 Nmm	3 Nmm	90 Nmm
<b>Mass of the Impact Body</b>		5.5g	7.8g	3.0g	20g
<b>Test Tip</b> DL: 7.3 g	Hardness	1600 HV	1600 HV	1600 HV	1600 HV
	Diameter	3mm	3mm	3mm	5mm
	Material	Tungsten carbide			
<b>Impact Device</b>	Diameter	20mm	20mm	20mm	30mm
	Length	147/86mm	162mm	141mm	254mm
	Weight	75/50 g	80 g	75 g	250 g
<b>Max. Hardness of Sample</b>		940 HV	940 HV	1000 HV	650 HB
<b>Preparation of Surface</b>	Roughness class ISO	N7	N7	N5	N9
	Max. roughness depth Rt	10µm	10µm	2.5µm	30µm
	Average roughness Ra	2µm	2µm	0.4µm	7µm
<b>Min. Weight of Sample</b>	Of compact shape	5kg	5kg	1.5kg	15kg
	On solid support	2kg	2kg	0.5kg	5kg
	Coupled on plate	0.1kg	0.1kg	0.02kg	0.5kg
<b>Min. Thickness of Sample</b>	Coupled	3mm	3mm	1mm	10mm
	Min. thickness of layers	0.8mm	0.8mm	0.2mm	—
<b>Indentation of Test Tip with 300 HV</b>	Diameter	0.54mm	0.54mm	0.38mm	1.03mm
	Depth	24µm	24µm	12µm	53µm
<b>Indentation of Test Tip with 600 HV</b>	Diameter	0.45mm	0.45mm	0.32mm	0.90mm
	Depth	17µm	17µm	8µm	41µmC
<b>Indentation of Test Tip with 800 HV</b>	Diameter	0.35mm	0.35mm	0.30mm	—
	Depth	10µm	10µm	7µm	—

**Application and  
Hardness Ranges for  
Starrett Hardness  
Impact Devices**



**Optional Impact Devices**

Material	HRC	HRB	HB	HV	HSD
<b>Impact Device – D, DC Measuring Range 200-900†</b>					
Steel	20.0-67.9	59.6-99.5	80-647	80-940	32.2-99.5
C.W. Tool Steel	20.4-67.1			80-898	
Gray Cast Iron			93-334		
Nodular Cast Iron			131-387		
Cast Aluminum			30-159		
Brass		13.5-95.3	40-173		
Bronze			60-290		
Copper			45-315		
<b>Impact Device – D+15, Measuring Range 300-900† (not shown)</b>					
Steel & Cast Steel	19.3-67.9		80-638	80-937	33.3-99.3
<b>Impact Device – C, Measuring Range 350-950†</b>					
Steel & Cast Steel	20.0-69.5		80-683	80-996	31.9-99.6
<b>Impact Device – G, Measuring Range 300-750†</b>					
Steel & Cast Steel		47.7-99.9	90-646		
Gray Cast Iron			92-326		
Nodular Cast Iron			127-364		
<b>Impact Device – DL, Measuring Range 300-900†</b>					
Steel & Cast Steel	20-68	37-100	80-650	80-940	30-97

† Leeb Measuring Range



### Digital Durometer

#### No. 3805A

The No. 3805A is a lightweight, ergonomically designed, reasonably priced durometer engineered to perform at the highest level of accuracy.

Capable of measuring hardness in Shore A values, the most popular scale, the portable durometer is ideal for fast, convenient testing of rubber, PVC, leathers, vinyl, acrylic and other similar materials. Contact is made with a 35° blunt point, ensuring superior accuracy.

#### Features

- ◆ Accurate and repetitive deviation of 20-90 HA <math>\pm 1</math> grade
- ◆ Resolution of .1HA
- ◆ Measuring range of 0-100HA
- ◆ Conforms to ASTM D-2240, ISO 7619 standards
- ◆ Large, easy-to-read LCD display
- ◆ Automatic Off
- ◆ Ability to allow averaging and to lock in peak value
- ◆ Weighs only 8.2 ounces (233 grams)
- ◆ Compact size of 6.40 x 2.56 x 1.12" (163 x 65 x 28mm)
- ◆ 4 AAA batteries, supplied with the tester
- ◆ Supplied with rubber test block RBR-63



Inspecting rubber o-ring for deterioration.

**NEW**

Description	Catalog No.	EDP No.
Durometer, in Fitted Case	<b>3805A</b>	12265
Accessories		
Rubber Test Block, Shore A 27-30, Red	<b>RBR-30</b>	68197
Rubber Test Block, Shore A 61-63, Clear	<b>RBC-63</b>	68198
Rubber Test Block, Shore A 90-94, Black	<b>RBB-94</b>	68199
Set of 3 Blocks (1 ea: RBR-30, RBC-63, RBB-94)	<b>SRB-3</b>	68200

### Ultrasonic Thickness Gage

#### No. 3812 / EDP 67668

The No. 3812 Ultrasonic Thickness Gage is a menu driven, multifunctional tester with basic measurement capabilities. This gage is designed to measure the thickness of metallic and non-metallic materials such as aluminum, titanium, plastics, ceramics,

glass and any other good ultrasonic wave conductor, as long as it has parallel top and bottom surfaces. The No. 3812 will accurately display readings in either inch or millimeter after a simple calibration to a known thickness or sound velocity.



Measuring a wall thickness that would be difficult to gage with conventional hand tools.

**NOTE:**  
Also available, Coupling Gel in 4 oz. bottle.  
Order No. PT28287  
EDP No. 67666.

#### Specifications

Display Type	4-Digit LCD
Minimum Display Unit	0.001" (0.01mm)
Measuring Range	0.04-8.0" in Steel w/Standard Probe
Display Accuracy	0.001" (0.01mm)
Sound Velocity Range	3280-32805 ft/s (1000-9999m/s)
Operating Temperature	32°-122° F.
Ultrasonic Pulse Frequency	5MHz
Update Rate	4Hz
Power Supply	1.5V AAA Alkaline Batteries (2)
Battery Life	Approx. 250 Hours/Pair
Power Consumption	Working Current < 20mA
Dimensions	4-1/4" x 2-3/8" x 1"
Weight	4.7 oz.



## Portable Surface Roughness Tester

**No. 3800 / EDP 67182**

The Starrett No. 3800 Surface Roughness Tester is an economical, small, hand-held instrument for measuring surface texture conforming to traceable standards. It can be used on the shop floor in any position including horizontal, vertical and in-between.

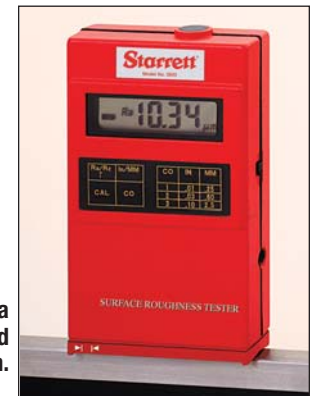
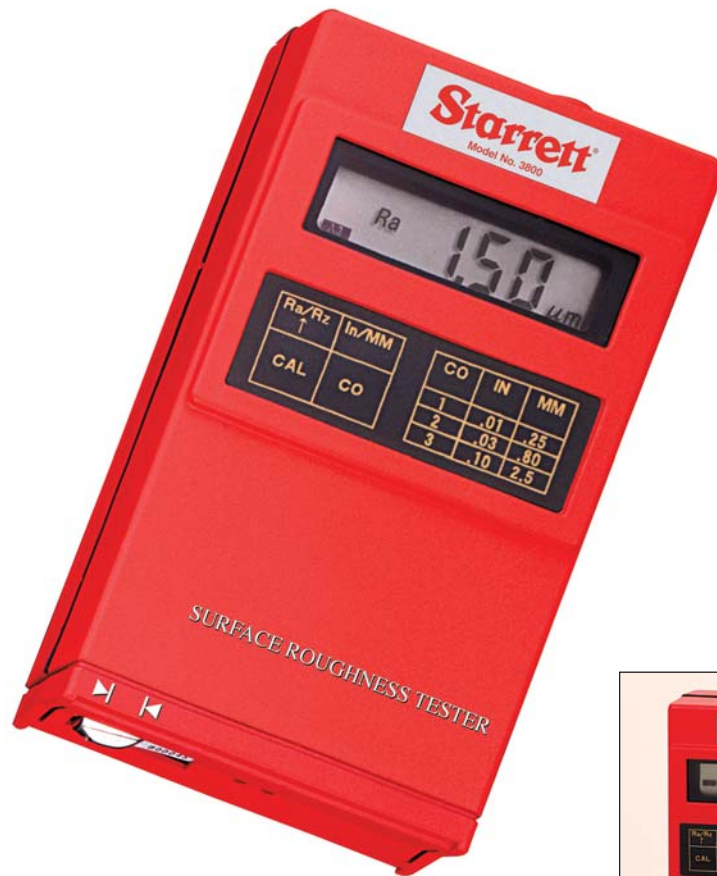
The easy-to-use No. 3800 operates on numerous surfaces including flat, outer cylinder, outer cone, grooves, and recesses greater than 3-1/4" x 1-1/4" (80 x 30mm), making it ideal for a wide range of applications like inspection departments, quality control, on the shop floor during machining, during assembly and on site.

The No. 3800 determines both roughness parameters **Ra** and **Rz** within a wide measuring range plus the piezo-electric pick-up stylus with diamond tip assures very reliable measurement within tolerances that conform to ISO class 3. Roughness parameter Ra is computed to conform to ISO and Rz is computed to conform to DIN.

The large, easy-to-read LCD display shows either roughness parameter Ra or Rz at the touch of a button, combined with the selected cutoff length. External calibration of the roughness values is provided by a special CAL button, which makes adjustment very easy. A beep signal informs the user about each individual measurement status when ready.

### Features

- ◆ Very affordable
- ◆ Handles basic roughness needs
- ◆ Simple to use
- ◆ Convenient, pocket-sized
- ◆ Vivid LCD display
- ◆ Measures Ra or Rz
- ◆ Battery powered or line cord
- ◆ Adjustable cutoff values
- ◆ Diamond tracer tip
- ◆ Comes with carrying case, charger, roughness standard and manual



Measuring surface texture of a steel bar. Results are obtained at the touch of a button.

### Specifications

<b>Roughness Parameter</b>	Ra (ISO), Rz (DIN)
<b>Measuring Range</b>	Ra: 0.05 - 10.0µm / Rz: 0.1 - 50µm
<b>Cutoff Lengths</b>	0.0009", 0.03", 0.09"
<b>Filter</b>	RC analog
<b>Tracing Length</b>	0.23" (6mm)
<b>Tracing Speed</b>	0.04"/second (1.0mm/second)
<b>Accuracy</b>	Conform ISO Class 3
<b>Pick-up Stylus</b>	Piezo-electric
<b>Tracer Tip</b>	Diamond, radius 10µm + -2.5µm
<b>Operating Temperature</b>	32-104° F (0-40° C)
<b>Power</b>	3.6v / 2xNiMH batteries
<b>Charger</b>	PV DC
<b>Contact Force on Probe</b>	<1.8 ozf (<1.6 gf)
<b>Static Measuring Force on Sensor Stylus</b>	<0.06 ozf (<1.6 gf)
<b>Dimensions</b>	4.9" x 2.8" x 1.0" (125 x 73 x 26mm)
<b>Weight</b>	7 oz. (200 g)