2017-2018

BEIJING TIME HIGH TECHNOLOGY LTD.

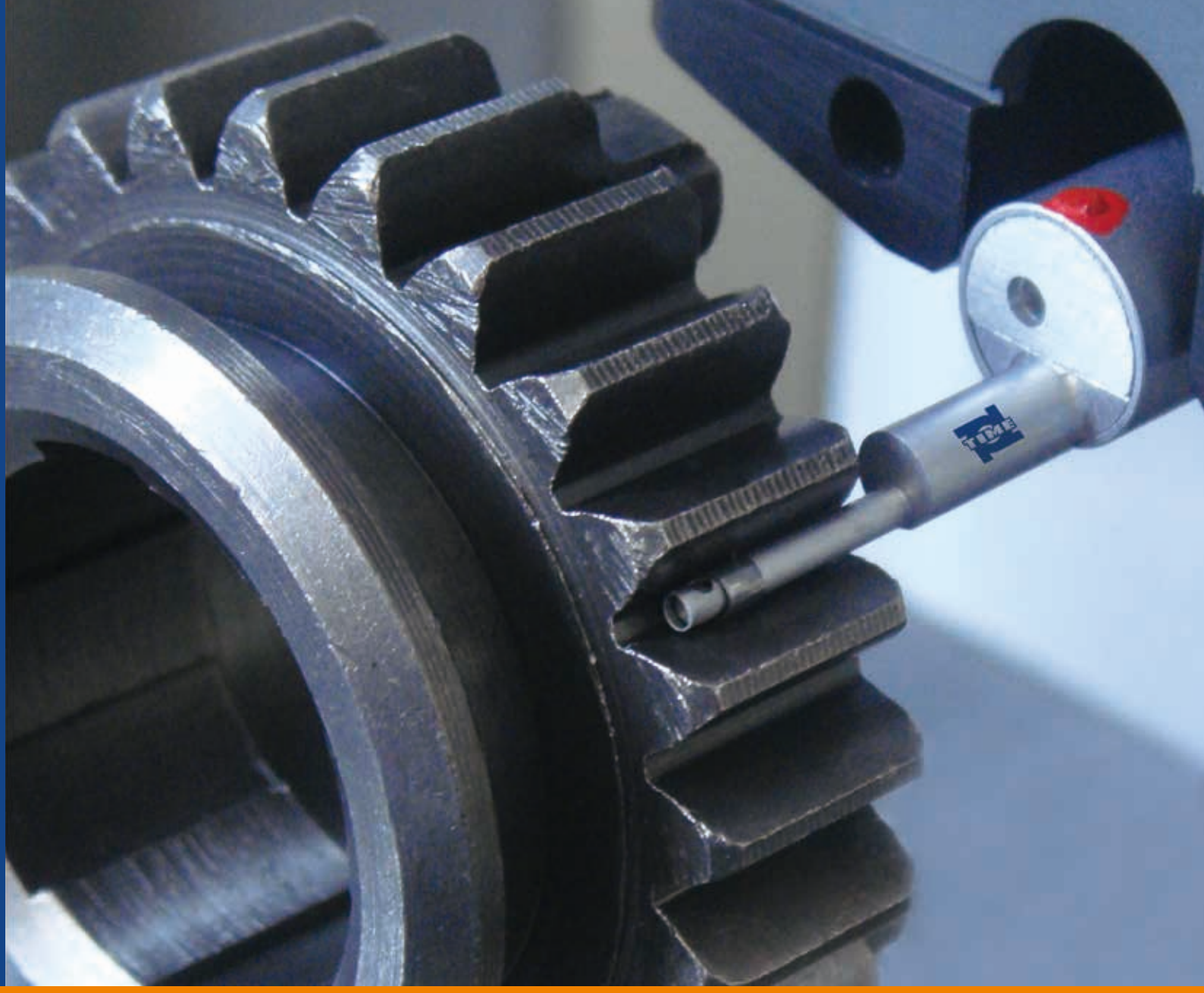
ADD: 28 Shangdi West Road, Haidian District, Beijing 100085, China.

TEL: +86-10-62966798

FAX: +86-10-62985475

WEB: www.tgindt.com

E-mail: export@timegroup.com.cn



TIME

TESTING INSTRUMENTS

BEIJING TIME HIGH TECHNOLOGY LTD.

www.tgindt.com

WHO WE ARE?

●TIME Group Inc. was established in October 1984 by Mr. Peng Weimin and Madam Wang Xiaolan, along with many scientific and technical personnel, one of the earliest established modern high-tech manufacturing enterprises in Beijing Zhongguancun area, the pioneer of the mechanical and electrical industry in China as well.

●After over 30 years of unremitting efforts, TIME Group has now developed into a big high-tech industrial economic entity with several billion yuan of assets, 8 holding companies, more than 30 sales subsidiaries and offices, nearly 2000 staff. Our products are involved in instrumentation, welding equipment, testing machine, robots and other high-tech industries. TIME group builds a state-level technology center and post-doctoral stations, showing our research and development capability.

●TIME Group owns the ISO9001 quality system certification since 1995; Environmental Management System (ISO14001:2004) and Occupational Health Safety Management System certification (OHSMS18001:2001) in 2008.

●Honored as “China's machinery industry 500 enterprises" for 10 consecutive years, "China's top 100 high-tech enterprises", "China’s machinery industry outstanding enterprises", "China's outstanding private technology enterprises", "China’s customer satisfied product ", " Top 100 Enterprises in Beijing ", "China's top 100 influential enterprises in mechanical and electrical industry ", " Zhongguancun’s 20th Anniversary Contribution Enterprise Award "and many other awards, TIME Group becomes the vanguard of the industry.

●Upholding "self-design, work together, create excellence" guidance, TIME Group will always deliver state-of-the-art quality products and technologies that meet and exceed our customers’ requirements in the modern material testing world.

●Testing machines developed and manufactured by Beijing TIME High Technology Ltd. are the best in China and advanced in the World. Our TIME® branded testing machine covers 12 series and nearly hundred products to distinguish from imitations, listed as “Beijing famous brand products”, enjoying the most popularity and sale volume in China.

● Beijing TIME High Technology Ltd., wholly-owned subsidiary of TIME Group Inc., founded in 1984, Beijing China.

● Focused on the research, development, production and sale of testing equipment for over 30 years.

● Manufactured the first Leeb hardness tester in china, the earliest-established, biggest and best testing equipment manufacturers in China, imitated by hundreds in China, surpassed by none.

●While we also provide superior Bench Hardness Tester, Vibration Meter, Ultrasonic Flaw Detector, Concrete Testing Gauge, Colorimeter and Gloss Meter for our customers home and abroad.

PRODUCT LINE

●Our traditional advantage products include Portable Hardness Tester, Surface Roughness Tester, Ultrasonic Thickness Gauge and Coating Thickness Gauge.

EXCELLENT TEAM

● Specialized in research and development of latest testing equipment by over 100 high talent specialists.

● Efficient technician backed by production line to ensure the product's quality and delivery time.

● Professional sale team offer excellent customer service, providing assistance in Marketing, market information, maintenance service, technical support and training for agents and customers.

QUALITY& RELIABILITYOF OUR PRODUCTS

● ISO certificate holder since 1995

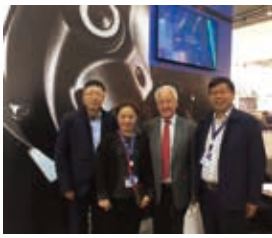
● With CE certificate and 3C certificate

● One of the best and the biggest enterprise among leading 500 machinery industry enterprise in Chinese market

OUR CUSTOMERS AND GLOBAL

- In domestic market, we share more than 90% of concerning product sales.
- In international market, we have nearly 100 agents in more than 60 countries with the best cost performance ratio products and satisfactory services.

MARKET



- TIME's products are applied in a wide range of industries including:
  Steel industry, Military enterprise, petroleum machinery, automobile parts, boiler and pressure vessel, chemical industry, thermal power plant, automobile forging, aerospace, machine tool industry, food industry, scientific institution, academic schools, survey & civil engineering and many more.

- Every year we attend various international exhibitions such as AMTS exhibition in USA, Control exhibition in Germany, MTA exhibition in Singapore etc.

Portable Hardness Tester

A

02. Portable Hardness Tester TIME®5300
03. Portable Hardness Tester TIME®5301
04. Portable Hardness Tester TIME®5302
05. Portable Hardness Tester TIME®5303
06. Portable Hardness Tester TIME® 5310
07. Portable Hardness Tester TIME®5330
08. Portable Hardness Tester TIME®5350
09. Portable Hardness Tester TIME®5100/5102/5104
11. Portable Hardness Tester TIME®5120
12. Portable Hardness Tester TIME®5106
13. Portable Hardness Tester
16. Ultrasonic Hardness Tester TIME®5620

B

Shore Hardness Tester

18. Shore Hardness Tester TIME®5410
19. Shore Hardness Tester TIME®5430
20. Operating stand TH210FJ

Surface Roughness Tester

C

22. Surface Roughness Tester TIME®3100
23. Surface Roughness Tester TIME®3110
24. Surface Roughness Tester TIME®3200/3202
27. Surface Roughness Tester TIME®3210
28. Surface Roughness Tester TIME® 3220
29. Surface Roughness Tester TIME® 3221
30. Surface Roughness Tester TIME®3223
32. urface Form Tester TIME®3230
33. Surface Roughness Tester TIME®3231
34. Surface Roughness Tester TIME®3233
38. TA620/TA630/TA631/TA650

Coating Thickness Gauge

D

41. Coating Thickness Gauge TIME® 2500
42. Coating Thickness Gauge TIME® 2501
43. Coating Thickness Gauge TIME® 2510
44. Coating Thickness Gauge TIME® 2511
45. Coating Thickness Gauge TIME® 2600
46. Coating Thickness Gauge TIME® 2605

E

Ultrasonic Thickness Gauge

50. Ultrasonic Thickness Gauge TIME® 2110
51. Ultrasonic Thickness Gauge TIME® 2130/2132/2134
53. Ultrasonic Thickness Gauge TIME® 2131
54. Ultrasonic Thickness Gauge TIME® 2136
55. Ultrasonic Thickness Gauge TIME® 2170
56. Ultrasonic Thickness Gauge TIME® 2430

F

Vibration Tester

60. Vibration Pen TIME® 7120/7122/7126
61. Vibration Tester TIME® 7212
62. Vibration Pen TIME® 7230
63. Vibration Tester TIME® 7231/7232
64. Vibration Tester TIME® 7240

Bench Hardness Tester

G

66. Rockwell Hardness Tester TH300/320
69. Rockwell Hardness Tester TH500
70. Motorized Rockwell Hardness Tester TIME®6101
71. Digital Rockwell Hardness Tester TIME®6102
72. Digital Double Rockwell Hardness Tester TIME®6103
73. Electronic Brinell Hardness Tester TIME®6201
74. Digital Brinell Hardness Tester TIME®6202
75. Digital Micro Vickers Hardness Tester TIME®6301
76. Digital Micro Vickers Hardness Tester TH710/711
77. Digital Micro Vickers Hardness Tester TH712/713
78. Digital Micro Vickers Hardness Tester TH714/715/716
79. Digital Micro Vickers Hardness Tester TH717
80. Digital Vickers Hardness Tester TH720/721
81. Universal Hardness Tester TH722
82. Digital Vickers Hardness Tester TH723/724
83. Digital Universal Hardness Tester TH725

Metallographic Equipment

H

86. Low Speed Precise Cutting Machine JMQ-12
87. Low Speed Precise Cutting Machine QG-4
88. Low Speed Precise Cutting Machine YMP-1A
89. UniCut Series Manual Cutter
90. Series Manual Cutter UniCut 250
91. Series Manual Cutter UniCut 300
92. Metallographic Cutter UNICUT 400
93. Automatic Cutter AutoCut 230/250
94. Double Speed Metallographic Sample Grinding and Polishing Machine YMP-2B
95. UniPol GP Series Grinder Polisher
96. Semi-automatic grinder polisher GP-1B/GP-2B
97 Automatic Grinder Polisher UniPol GP-1A/2A
98. Automatic Metallographic Sample Mounting Press ZXQ-1
99. AutoPress Series Automated Mounting Press

I

Flaw Detector

101. Ultrasonic Flaw Detector TUD310
103. Ultrasonic Flaw Detector TUD500
104. Ultrasonic Flaw Detector TIME®1150
107. Holiday Detector DJ Series

J

Industrial Borescope

109. USB Video/Picture Capture Endoscope TBS-1160/1161
110. Valued Video Borescope TBS-2486

Concrete Testing Gauge

K

112. Rebar Locator TC100/110
113. Crack Depth Gauge TC200
114. Concrete Thickness Gauge TC300
115. Crack Width Gauge TC410
116. Rebar Corrosion Detector TC600
117. Concrete Test Hammer TC500N
118. Digital Concrete Test Hammer HT225-V

L

Colorimeter & Gloss Meter

120. Color Difference Meter TCD100
121. Precise Color Reader TCR200
122. Precise Color Reader TCR300
124. Single Gloss Meter HP-300
125. Tri-angle Gloss Meter HP-380

M

TIME Micro-Printer

127. TA230

A

Portable Hardness Tester

TIME®5300

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Impact device type D	1
●Test block HLD	1
●Small support ring	1
●Cleaning brush	1
●Charger	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printing paper
●Special impact devices
●Support rings

Features

●Simple menu, easy and convenient to use
●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, and HS) & Conversion of Tensile Strength
●Screen display showing all the important values and information (including values, mean value(MEAN), numbers of measuring(NO.),date, impact direction, materials tested, hardness values and so on)
●7 types of Optional Impact Devices, with auto recognition, universal standard D type included
●High accuracy and wide range options for testing(: including Steel and Cast steel, Forged Steel, Cold Work Tool Steel, Stainless Steel, Gray Cast Iron, Nodular Cast Iron, Cast Aluminum Alloys, Brass (Copper-zinc alloys), Bronze (copper-aluminum/ copper-tin alloys), Wrought Copper Alloys)
●Measuring Direction:Any direction 360° even with probe pointing up
●Indication for charge and easy change for rechargeable battery
●Printer included and test values can be printed directly
●Software calibration
●Auto power off

Technical Specification

Measuring range	(170-960)HLD (17.9-69.5)HRC see page 13
Hardness scale	HL, HB, HRB, HRC, HV, HS
Measuring direction	360°
Tolerance	±6HLD(when HLD=760±30) see page 14
Repeatability	6HLD(when HLD=760±30)
Diameter for printer paper	40mm
Width for printer paper	44.5±0.5mm
Power	12V/600mA
Charging time	2-3.5 hour
Humidity	≤90%
Operating temperature	0℃~40℃
Dimensions (mm)	235×90×47
Weight (g)	615

TIME®5301

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Impact device type D	1
●Cleaning brush	1
●Small support ring	1
●Test block HLD	1
●Charger	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printing paper
●Special impact devices
●Support rings

Features

●Simple menu, easy and convenient to use
●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, HRAand HS) & Conversion to Tensile Strength
●7 types of optional impact devices, with auto recognition. Universal standard D type included
●Matrix LCD display with back-light showing all the important values and information
●Memory of 48-350 groups of data
●Upper /lower limits pre-setting and sound alarm
●RS232 connector meets more needs like storage and further analysis
●Indication for charge and easy change for rechargeable battery
●Printer included and test values can be printed directly

Technical Specification

Measuring range	(170-960) HLD (17.9-69.5) HRC see page 13
Hardness scale	HL,HB, HRA, HRB, HRC, HV, HS
Measuring direction	360º
Tolerance	±6HLD (when HLD=760±30) see page 14
Repeatability	6HLD (when HLD=760±30)
Diameter for printer paper	40 mm
Width for printer paper	44.5±0.5 mm
Power	12V/600mA
Charging time	2-3.5 hour
Humidity	≤90%
Operating temperature	0˚C-40˚C
Dimensions (mm)	234x88x46
Weight (g)	600

TIME®5302

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Impact device type D	1
●Test block HLD	1
●Charger	1
●Cleaning brush	1
●Table support for main unit	1
●Connecting cable	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printing paper
●Special impact devices
●Support rings
●Dataview software

Features

●Simple menu, easy and convenient to use
●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, HRA and HS) & Conversion to Tensile Strength
●7 types of optional impact devices, with auto recognition. Universal standard impact device D included.
●Matrix LCD display with back-light showing all the important values and information
●Memory of 48-350 groups of data
●Measuring Direction:Any direction 360° even with probe pointing up
●Upper /lower limits setting and sound alarm
●Dataview Software as optional accessory
●Indication for charge and easy change for rechargeable battery
●Removable printer included and test values can be printed directly

Technical Specification

Hardness scale	HL, HRC, HRB, HRA, HV, HB, HS
Memory	group(Impact times:32-1)
Measuring range	see page 13
Tolerance	see page 14
Tensile strength U.T.S. range	374~2652 MPa
Standard impact device	D
Optional impact devices	DC/D+15/G/C/DL
Min. Radius of workpiece (convex/concave)	Rmin = 50mm (with special support ring Rmin= 10mm)
Max. workpiece hardness	see page 14
Min. workpiece weight	
Min. workpiece thickness	
Min. thickness of hardened layers	
Power	Rechargeable NiMH Battery,5×1.2V 600mAh
Continuous working time	About 50h (without printing and backlight)
Charging time	2~3.5 hours
Operating temperature	0~40℃
Humidity	90%
Dimensions (mm)	268×86×50
Weight (g)	530 (including impact device and printer)

TIME®5303

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Impact device type D	1
●Test block HLD	1
●Charger	1
●Cleaning brush	1
●Table support for main unit	1
●Connecting cable	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printing paper
●Special impact devices
●Support rings
●Dataview software

Features

●Special system design for roller: one for roller exclusive and another for non- roller hardness testing
●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, HRA and HS)
●7 types of optional impact devices, with auto recognition. Universal standard impact device D included.
●Matrix LCD display with back-light showing all the important values and information
●Memory of 48-350 groups of data
●Upper /lower limits setting and sound alarm
●RS232 interface for further management
●Software calibration
●Connected to printer and test values can be printed directly
●Conform to JB/T 9378-2001, Q/HD SDF006-2003 Standards.

Technical Specification

Measuring range	(30-110) HSD HLD see page 13
Hardness scale	HL,HB, HRA, HRB, HRC, HV, HS
Measuring direction	360°
Tolerance	±6HLD (when HLD=760±30) see page 14
Repeatability	6HLD (when HLD=760±30) see page 14
Power	12V/600mA
Charging time	2 hours (with over-charged protection)
Operating temperature	0°C-40°C
Dimensions (mm)	270x86x47
Weight (g)	530 (including main unit and printer)
Interface	RS 232

Features

- Advanced micro-electronic technology for wide range metal hardness test
- Simple menu, easy and convenient to use
- Conversion of common hardness scales (HL, HV, HB, HRC, HRB, HRA and HS) & Conversion to Tensile Strength
- 7 types of optional impact devices, with auto recognition. Universal standard impact device D included.
- 2.8 inches TFT LCD screen, 240 X 320 dot Matrix, 262K color display with adjustable back-light showing all the important values and information
- Memory of 1000 groups of data
- Upper /lower limits setting and sound alarm
- Transfer to PC via USB in Word & Excel format , with Powerful PC Software included
- Indication for charge and life-long rechargeable Li battery without memory
- Removable printer optional and test values can be printed directly
- Built-in conversion table and HB value can be read directly if D/DC impact device installed

TIME®5310

PORTABLE HARDNESS TESTER

Standard Delivery

- Main unit
- Impact device type D
- Test block HLD
- Small support ring
- Charger
- Cleaning brush
- Thermal printer paper
- TIME certificate
- Warranty card
- Instruction manual

Optional Accessory

- Impact device: DC, D+15, C, G, DL
- Support rings
- Dataview

Technical Specification

Measuring range	(170-960)HLD see page 13
Tolerance and repeatability	tolerance: ±6HLD (790±40HLD) repeatability: 6HLD (790±40HLD)
Measuring direction	360 °
Hardness scale	HL, HB, HRA,HRB, HRC, HV, HS
Display	2.8 inch TFT LCD screen, 240 x 320 dot matrix, 262K color display
Data storage	1000 groups of data
Upper and lower limits setting	(170-960)HLD
Working voltage	3.7V
Charging time	6 hours
Power	12V/500mA
Continuous working time	20 hours
Interface	USB2.0

TIME®5330

PORTABLE HARDNESS TESTER

Features

- ●Simple menu with instruction, easy and convenient to use
- ●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, HRA and HS) & Conversion to Tensile Strength
- ●7 types of optional impact devices, with auto recognition. Universal standard impact device D included.
- ●4.3 inches TFT LCD screen, 480 X 272 dot Matrix, 24 bits true color display
- ●Memory of 2000 groups of data
- ●Upper /lower limits setting and sound alarm
- ●Transfer to PC via USB or RS232 in Word & Excel format , with Powerful PC Software included
- ●Indication for charge and life-long rechargeable battery without memory
- ●Removable printer optional and test values can be printed directly
- ●Built-in conversion table and HB value can be read directly if D/DC impact devices installed

Technical Specification

Measuring range	(170~960)HLD see page 13
Measuring direction	360°
Hardness scales	HL, HB, HRA,HRB,HRC,HV,HS
Display	4.3 inch AMOLED screen, 480×272 dot matrix, 24 bits true color display
Data storage	2000 groups
Upper and Lower limits setting	(170~960)HLD
Working voltage	3.7V
Charging time	Approx 6 hours
Power	12V/500mA
Continuous working time	Approx 12 hours
Interface	RS232 and USB

TIME®5350

PORTABLE HARDNESS TESTER

Standard Delivery

- ●Main unit
- ●Impact device type D
- ●Test block HLD
- ●Small support ring
- ●Charger
- ●Cleaning brush
- ●MicroSD card
- ●Communication cable
- ●TIME certificate
- ●Warranty card
- ●Instruction manual

Features

- ●Simple menu with instruction, easy and convenient to use
- ●Conversion of common hardness scales (HL, HV, HB, HRC, HRB, and HS) & Conversion to Tensile Strength
- ●7 types of optional impact devices, with auto recognition. Universal standard impact device D included.
- ●3.5 inches 320 X 480 dot Matrix LCD screen shows sufficient info with clear image; three different levels of backlight ,meet different situation needs
- ●Memory of 200 groups of data , including the information of the one-time value, average value, date, impact direction, measuring times, material and hardness scales.
- ●Upper /lower limits setting and sound alarm
- ●Transfer to PC via USB or RS232 in Word & Excel format , with Powerful PC Software included
- ●Maximum 32GB capacity MicroSD card can be used to store measured
- ●Removable printer optional and test values can be printed directly
- ●Built-in conversion table and HB value can be read directly if D/DC impact devices installed
- ●Software calibration function

Technical Specification

Measuring range	(170-960)HLD see page 13
Hardness scale	HL,HB,HRB,HRC,HV, HS
Measuring direction	360°
Tolerance	±6HLD(when HLD=760) see page 14
Repeatability	6HLD(when HLD=760)
Power	5V/500mA
Charging time	5 hour
Humidity	≤90%
Operating temperature	0℃~40℃
Dimensions (mm)	149×82×23
Weight (g)	200

TIME®5100/5102/5104

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Test block HLD	1
●USB connecting cable	1
●Cleaning brush	1
●Battery AAA 1.5V	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Support rings

●Dataview software

Features

●Light Mini Unit with simple menu, easy and convenient to use

●Conversion of hardness scales(HL, HV, HB, HRC, HRB and HS)

●USB interface to connect the PC, assisted by Software Dataview TH51X (especially for TH51X series Hardness Test) with both online measurement and offline data analysis mode: curve chart, data sheet, setting of tolerance limit and data report are available.

●Connected to Printer by RS 232 and test values can be printed directly

●Measuring Direction:Any direction 360°

●Automatic identification of impact test direction

●Memory of 270 data in 9 group

●Backlight for convenience in darkness

●Upper /lower limits setting

●AAA 1.5V battery, whose capacity shown in display

●Auto power off

●TIME®5100: integrated with D impact device for the majority of hardness testing requirements

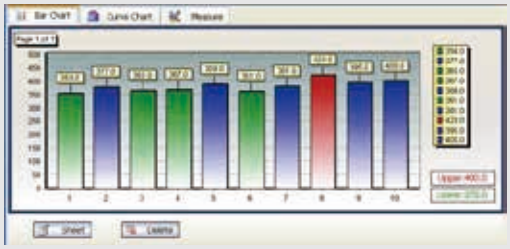
●TIME®5102: integrated with C impact device for hardness testing on thin, light and surface hardened components

●TIME®5104: integrated with DL impact device for hardness testing of deep grooves and tooth surface

Technical Specification

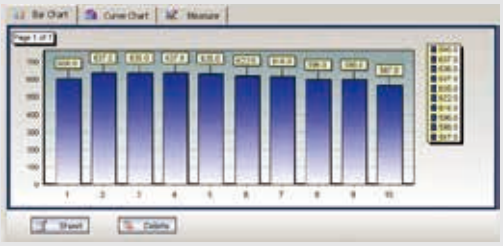
Model	TIME®5100	TIME®5102	TIME®5104
Impact device	D integrated	C integrated	DL integrated
Hardness scales	HLD, HB, HRC, HRB, HV, HS	HLC, HB, HRC, HRB, HV, HS	HLDL, HB, HRC, HRB, HV, HS
Accuracy	±6HLD(760 ±30HLD)	±12HLC	±12HLDL
Memory	270 average readings in 9 group files		
Output	RS 232 to printer	RS232 to printer	RS232 to printer
Min. surface roughness of work piece	1.6μm (Ra)	0.4μm (Ra)	1.6μm (Ra)
Max. work piece hardness	960HLD	960HLC	950HLDL
Min. radius of work piece (convex/concave)	Rmin = 50mm (with support ring Rmin= 10mm)	Rmin=11mm (with support ring)	Rmin = 10mm (with support ring Rmin= 10mm)
Min. work piece weight	2~5kg on stable support 0.05~2kg with compact coupling	0.5~1.5kg on stable support 0.02~0.5kg with compact coupling	2~5kg on stable support 0.05~2kg with compact coupling
Min. work piece thickness coupled	5mm	1mm	5mm
Min. thickness of hardened layers	0.8mm	0.2mm	0.8mm
Indentation depth	Impact devices data	Impact devices data	Impact devices data
Continuous working time	8h (without backlight)		
Power	AAA 1.5V batteries		
Operating temperature	0~40℃	0~40℃	0~40℃
Dimensions (mm)	155×55×25	160×60×25	215×60×25
Weight (g)	180	180	180

Online measurement



Data analysis

Bar chart



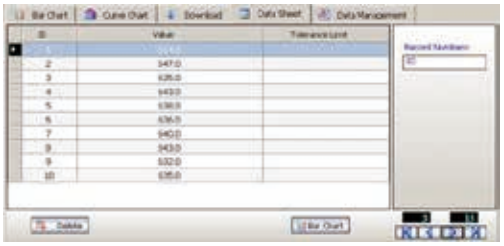
Dataview TH51X is special software for TH51X series Hardness Tester. The data stored in the Hardness Tester TH51X series can be transferred to the PC for further analysis with Dataview TH51X. It has online measurement mode and offline anaalysis mode, data analysis, graphics display and print output functions are all available.

TIME®5100/5102/5104

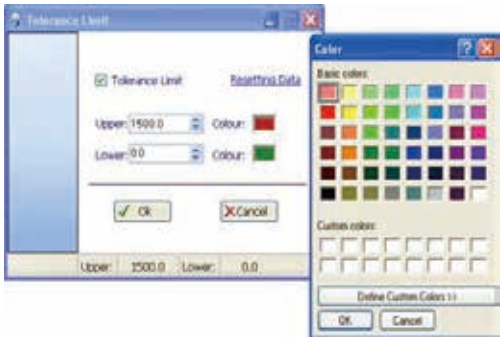
SOFTWARE

Curve chart

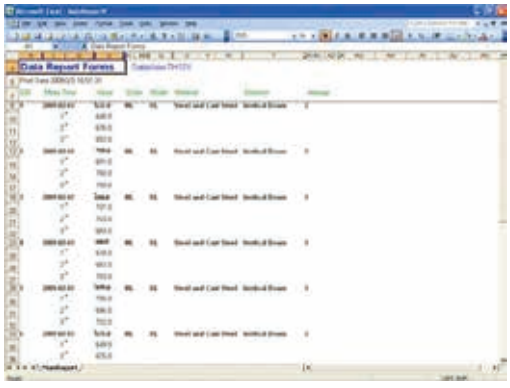
Data sheet



Setting of tolerance limit



Data report



Features

- Light Mini Unit with simple menu, easy and convenient to use
- Universal D type standard impact device for the majority of hardness testing requirements
- Wide range measurements in HLD and conversion among other 6 common hardness scales
- Measuring Direction: Any direction 360°
- Software calibration
- Battery indicator with auto power off in low battery

TIME®5120

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Test block HLD	1
●Charger	1
●Cleaning brush	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Support rings

Technical Specification

Standard impact device	D integrated
Hardness scales	HL,HB,HRA,HRB,HRC,HV,HS
Measuring range	(170~960)HLD
Accuracy	6HLD
Memory	Current value
Min,surface rougjness of workpieces	1.6μm(Ra)
Max.workpieces hardness	960HLD
Min,radius of workpieces	Rmin=50mm (with support ring Rmin=10mm)
workpieces	5mm
Min.thickness of hardened layers	0.8mm see page 14
Indentation depth	24μm
Charging time	2h~3h
Continuous working time	8h
Power supply	Rechargeable Li battery 3.7V
Operating temperature	0~40°C
Dimension (mm)	145×35×30
Weight (g)	130

Features

- Impact device G for Solid components. E.g. heavy castings and forgings.
- Two work modes: either in Individual mode, or in System mode (as the Impact device G for TIME®5200)
- Testing materials, hardness scale, testing direction and measurement times can be chosen
- Conversion among 3 hardness scales: HLG,HB,HRB
- Automatic identification of impact test direction
- Review、delete current measured data & calculate the average values automatically
- Memory of 200 average values
- Transfer to PC via USB in Word & Excel format , with Powerful PC Software included
- Battery indicator with auto power off in low battery or 2 minutes without working

TIME®5106

PORTABLE HARDNESS TESTER

Standard Delivery

●Main unit	1	●Cleaning brush	1
●Test block G	1	●TIME certificate	1
●Mini USB cable	1	●Warranty card	1
●Charger	1	●Instruction manual	1

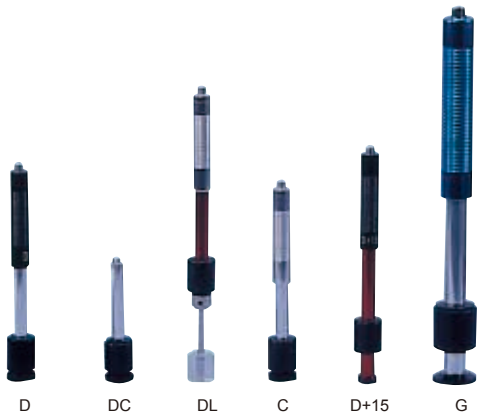
Conversion Table

Material	Hardness scale	Range
Steel and cast steel	HB	90~646
	HRB	47.7~99.9
Grey cast iron	HB	92~326
Nodular cast iron	HB	127~364
Cast aluminum alloys	HB	32~168
	HRB	23.8~85.5

Technical Specification

Impact device	G type
Impact energy	90mJ
Work mode	Used single or system mode
Display	OLED screen, 128x64 dot matrix, brightness adjustable
Measuring range	(200~750)HLG see page 13
Accuracy	±12HLG
Repeatability	12HLG
Measuring direction	360°
Hardness scales	HLG、HB、HRB
Memory	200 average value
Interface	USB
Data output	Transfer data to PC
Operating voltage	3.3V
Operating temperature	0~40℃
Humidity	≤90%
Dimensions (mm)	254 × 50 × 40
Weight (g)	310

Impact Devices for Portable Hardness Tester



Measuring range of TIME Leeb hardness tester

Material	Hardness scale	Impact device					
		D/DC	D+15	C	G	E (imported)	DL
Steel and cast steel	HRC	17.9～68.5	19.3～67.9	20.0～69.5		22.4～70.7	20.6～68.2
	HRB	59.6～99.6			47.7～99.9		37.0～99.9
	HRA	59.1～85.8				61.7～88.0	
	HB	127～651	80～638	80～683	90～646	83～663	81～646
	HV	83～976	80～937	80～996		84～1042	80～950
	HS	32.2～99.5	33.3～99.3	31.8～102.1		35.8～102.6	30.6～96.8
Steel	HB	143～650					
CWT. steel	HRC	20.4～67.1	19.8～68.2	20.7～68.2		22.6～70.2	
	HV	80～898	80～935	100～941		82～1009	
Stainless steel	HRB	46.5～101.7					
	HB	85～655					
	HV	85～802					
GC. iron	HRC						
	HB	93～334			92～326		
	HV						
NC. iron	HRC						
	HB	131～387			127～364		
	HV						
C. Alum	HB	19～164		23～210	32～168		
	HRB	23.8～84.6		22.7～85.0	23.8～85.5		
Brass	HB	40～173					
	HRB	13.5～95.3					
Bronze	HB	60～290					
Copper	HB	45～315					

Tolerance and repeatability

No.	impact device	Hardness value of Leeb standard hardness block	Accuracy of displayed value	Repeatability of displayed value
1	D	790±40HLD 530±40HLD	±6 HLD ±10 HLD	6 HLD 10 HLD
2	DC	790±30HLDC 530±40HLDC	±6 HLDC ±10 HLDC	6 HLDC 10 HLDC
3	DL	894±40HLDL 736±40HLDL	±12 HLDL	12 HLDL
4	D+15	795±40HLD+15 544±40HLD+15	±12 HLD+15	12 HLD+15
5	G	590±40HLG 500±40HLG	±12 HLG	12 HLG
6	E	755±40HLE 508±40HLE	±12 HLE	12 HLE
7	C	851±40HLC 590±40HLC	±12 HLC	12 HLC

Technical specification

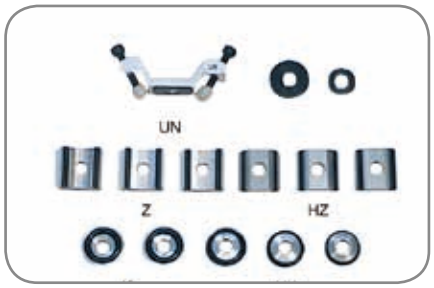
Types of impact device	DC(D)/DL	D+15	C	G	E(imported)
Impact energy Mass of impact body	11mJ 5.5g/7.2g	11mJ 7.8g	2.7mJ 3.0g	90mJ 20.0g	11mJ 5.5g
Test tip hardness Diameter of test tip Material of test tip	1600HV 3mm Tungsten carbide	1600HV 3mm Tungsten carbide	1600HV 3mm Tungsten carbide	1600HV 5mm Tungsten carbide	5000HV 3mm Diamond
Impact device diameter Impact device length Impact device weight	20mm 86(147)/ 75mm 50g	20mm 162mm 80g	20mm 141mm 75g	30mm 254mm 250g	20mm 155mm 80g
Max. hardness of sample	940HV	940HV	1000HV	650HB	1200HV
Roughness of sample surface:	1.6μm	1.6μm	0.4μm	6.3μm	1.6μm
Minimum weight of sample: Measure directly Need support firmly Need coupling tightly	>5kg 2~5kg 0.05~2kg	>5kg 2~5kg 0.05~2kg	>1.5kg 0.5~1.5kg 0.02~0.5kg	>15kg 5~15kg 0.5~5kg	>5kg 2~5kg 0.05~2kg
Min. thickness of sample Coupling tightly Min. depth of layer thickness for surface	5mm ≥0.8mm	5mm ≥0.8mm	1mm ≥0.2mm	10mm ≥1.2mm	5mm ≥0.8mm

Size of tip indentation

Hardness 300HV	Indentation diameter	0.54mm	0.54mm	0.38mm	1.03mm	0.54mm
	Depth of indentation	24μm	24μm	12μm	53μm	24μm
Hardness 600HV	Indentation diameter	0.54mm	0.54mm	0.32mm	0.90mm	0.54mm
	Depth of indentation	17μm	17μm	8μm	41μm	17μm
Hardness 800HV	Indentation diameter	0.35mm	0.35mm	0.35mm	___	0.35mm
	Depth of indentation	10μm	10μm	7μm	___	10μm
	D: General test. DC : Testing hole or inner of cylinder. DL : Test slender narrow groove or hole.		D+15 : Test groove or reentrant surface.	C : Test small, light, thin parts and surface of hardened layer.	G : Test large, thick, heavy and rough surface cast steel.	E : Test super high hardness Material.

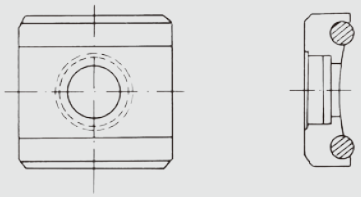
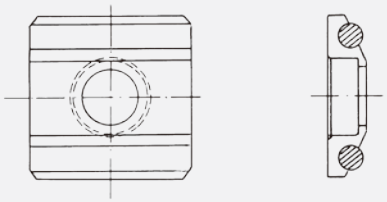
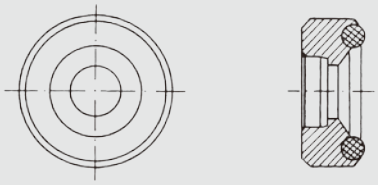
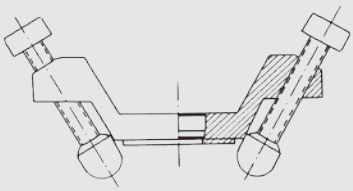
Optional Support Rings

Function: they are used for tested surface whose curvature radius is less than 30mm (D, DC, D+15, C,E Impact devices) or less than 50mm (G impact device) .



K HK

Support Rings

No.	Type	Sketch of non-conventional supporting ring	Remarks
1	Z10-15		For testing cylindrical outside surface R10～R15
2	Z14.5-30		For testing cylindrical outside surface R14.5～R30
3	Z25-50		For testing cylindrical outside surface R25～R50
4	HZ11-13		For testing cylindrical inside surface R11～R13
5	HZ12.5-17		For testing cylindrical inside surface R12.5～R17
6	HZ16.5-30		For testing cylindrical inside surface R16.5～R30
7	K10-15		For testing spherical outside surface SR10～SR15
8	K14.5-30		For testing spherical outside surface SR14.5～SR30
9	HK11-13		For testing spherical inside surface SR11～SR13
10	HK12.5-17		For testing spherical inside surface SR12.5～SR17
11	HK16.5-30		For testing spherical inside surface SR16.5～SR30
12	UN		For testing cylindrical outside surface, radius adjustable R10～∞

Standard Delivery

●Main unit	882-121
●2Kgf manual probe HP-2k	882-321
●Probe silicone cap	882-711
●Probe cable	882-801
●USB cable	882-851
●Accessories box	882-901
●TIME certificate	1
●Warranty card	1
●Instrument manual	1

Technical Specification

Product name	Ultrasonic hardness tester
Model	TIME-5620
Code#	#882-121
Loading force	2Kgf(optional: 1Kgf, 5Kgf, 10Kgf)
Measuring range	HB: 85-650;HV 80-1599; HRC 20-70;HRB: 41-100; HRA: 61-85.6 HS: 34.2-97.3;Mpa: 255-2180N/mm
Measuring accuracy	HV:±3%HV; HRC:±1.5HRC; HB:±3%HB
Indenter	136°vickers diamond indenter
Measuring direction	Support 360°
Data storage	To save 1000-groups of measuring data and 20-groups of calibration data
Hardness scale	HV、HB、HRC、HRA、HRB、MPa
Data display	Loading force, testing-times, testing result, average, maximum, minimum, deviation and conversion scale.
Hardness indication	LCD display
Operating environment	Temperature:-10℃~50℃; humidity: 30%~80%R.H
Operating voltage	DC 4.8V
Dimensions (mm)	160x80x31
Weight (g)	500g（without probe）

Features

- ●Perfect accuracy, within±3% HV, ±1.5HR, ±3%HB
- ●Least destructive microscopic indentation——only high-power microscope can observe the indentation
- ●Quick measurement——result in 2 seconds
- ●Large LCD display——directly showing measurement result, loading force, counts, maximum, minimal, average values and deviation.
- ●2 year warranty on tester (Probe not included)
- ●Memory of 1000 groups data
- ●Simple calibration——save 20 groups calibration data to improve calibration efficiency.

TIME®5620

ULTRASONIC HARDNESS TESTER

B

Shore Hardness Tester

Features

- Digital durometer for Shore D hardness testing of hard rubber, plastic and such substances
- Pocketsize model with integrated probe
- Standards: DIN 53505, ASTM D 2240, ISO 7619, JIS K7215
- RS232 data output
- Operating stand optional
- Bright & clear LCD display
- 300 hours continuous use with standard batteries
- Automatically switch off
- Battery low indication and alarm

TIME®5410

SHORE HARDNESS TESTER

Standard Delivery

●Main unit	1
●AC-DC power adapter	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

- RS232 communication cable
- Operating stand TH210FJ

Operation stand TH210FJ

Technical Specification

Test scale available	Shore D
Standards	DIN53505, ASTMD2240, ISO 7619, JIS K7215
Display	Hardness result, Average value, Max. value(Peak value lock), Battery indication
Data output	RS232
Measuring range	0-100HD
Measurement deviation	Within 20~90 HD, tolerance≤±1HD
Display resolution	0.2 HD
Operating temperature	0~40℃
Power supply	Built in 3.7V rechargeable battery
Dimensions (mm)	173× 56×42
Weight (g)	230

With the operation stand, users can get good measurement accuracy and repetitiveness. Constant measurement force, to eliminate the errors caused by artificially applied different force.

The operation handle evenly applies the force to the sample; adjust the testing height to meet the measurement of different sample thickness.

Features

- Digital durometer for Shore A hardness testing of soft rubber, plastics and such substances
- Built-in sensor ensures good stability.
- 1.3 inch OLED screen, 128X64 dot matrix.
- Two testing modes: real-time testing and Peak-value-lock testing
- 200 groups of average peak values can be stored.
- USB interface to connect with PC
- Software optional to manage the testing data output in Word or Excel for analysis.
- Pre-set upper/lower limits and out-of-limit alarm
- Automatically power off

TIME®5430

SHORE HARDNESS TESTER

Standard Delivery

●Main unit	1
●Button batteries 1.5V (only for TIME®5430)	3
●Power adapter (only for TIME®5430)	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

- RS232 communication cable
- Operation stand
- Software

TH220FJ

Technical Specification

Model	TIME®5430
Test scale available	Shore A
Standards	DIN53505,ASTM D2240,ISO 7619,JIS K7215
Display	Hardness result, Average value, Max value (Peak value lock), Battery indication
Data output	RS232
Measuring range	0~100HA
Tolerance	±1HA
Display resolution	0.1HA
Power supply	Built in 3.7V rechargeable battery
Operating temperature	0~40℃
Continuous working time	20 hours
Dimensions (mm)	166×56 ×42
Weight (g)	230

With the operation stand, users can get good measurement accuracy and repetitiveness,constant measurement force, eliminate the errors caused by artificially applied different force.

The operation handle evenly applies the force to the sample; adjusts the testing height to meet the measurement of different sample thickness.

Standard Delivery

●Operating stand	1
●Handle	1
●Weight	1
●Connecting rod	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Features

- ●With the operating stand, users can get good measurement accuracy and repetitiveness
- ●Constant measurement force eliminates the errors caused by artificially applied different forces
- ●The operation handle evenly applies the force to the sample; adjust the testing height to meet the measurement of different sample thickness

Technical Specification

Model	TH210FJ
Max. thickness of sample(mm)	80
Max. diameter of working table(mm)	Ø116
The Max. lifting displacement(mm)	24
Max. touch distance between pressure foot and working table(mm)	0.05
Dimensions (mm)	420×200×170
Weight (g)	22000

TH210FJ

OPERATING STAND

C

Surface Roughness Tester

Standard Delivery

- Main unit
- Specimen Ra
- Charger
- TIME certificate
- Warranty card
- Instruction manual

Features

- Pocket-size unit with artistic design, easy and convenient to use
- Two OLED dot matrix indicators: one on the front display and the other on top cover display
- Calibration function
- Battery indicator with alarm when in low battery

TIME®3100

SURFACE ROUGHNESS TESTER

Technical Specification

Roughness parameter	Ra, Rz
Measuring range(μm)	Ra: 0.05-6.5 Rz: 0.1-50
Cut-off lengths(mm)	0.25, 0.8, 2.5
Evaluation lengths(mm)	1.25, 4.0, 5.0
Tolerance	±15%
Repeatability	< 12%
Power	3.7 V Li battery
Operating temperature:	0~40°C
Humidity:	< 90%
Dimension (mm)	116 x 86 x 30
Weight (g)	200

TIME®3110

SURFACE ROUGHNESS TESTER

Standard Delivery

●Main unit	1
●Specimen Ra	1
●Charger	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Various Ra specimen with Ra values: 0.1μm, 0.2μm, 0.4μm, 0.8μm, 3.2μm

Features

●Pocket-size unit with economical price, widely used in production lines, workshops and labs.

●Wide measuring range suitable for most materials, and applicable for flat, outer cylinder and sloping surface

●Ragged design device with a long lifetime, while keeping the accurate and reliable data results

●Both Ra and Rz measurement range

●All calculated measurement results shown on its LCD back-lit display hardly after tested

●Indicator and alarm for low battery, out-of-limit values and dysfunction

●Chargeable Li battery and improvement of the circuits function.

●Improvement and Protection for sensor to secure the high accuracy and good stability.

●Conforms to ISO and DIN

Technical Specification

Model	TIME®3110
Roughness parameter	Ra, Rz
Tracing length	6mm
Tracing speed	1.0mm/sec
Cut-off lengths	0.25mm/0.8mm/2.5mm
Evaluation length	1.25mm/4.0mm/5.0mm
Measuring range	Ra: 0.05-10.0μm Rz: 0.1-50μm
Accuracy	±15%
Repeatability	<12%
Filter	RC analogue
Pick-up	Piezoelectric
Radius and angle of the stylus point	Diamond, Radius : 10±2.5μm Angle: 90°(+5° or -10°)
Operating temperature	0~40℃
Humidity	<80%
Storing temperature	-25℃ ~ 60℃
Power	3.6V Li-ion battery
Charger	DC6V, 3 hours (charging time)
Dimension (mm)	110×70×24
Weight (g)	160

TIME®3200/3202

SURFACE ROUGHNESS TESTER

Standard Delivery

●Main unit	1	●Steel support	1
●TS100 standard pickup	1	●Dataview	1
●Roughness test plate Ra	1	●Communication cable	1
●Charger	1	●TIME certificate	1
●Protection nose	1	●Warranty card	1
		●Instruction manual	1

Optional Accessory

●TS110 pickup for curved surface
●TS120 pickup for small holes
●TS130 pickup for deep grooves
●TS140 right-angled pickup
●Measuring platform TA620
●Leveling table TA630/TA631
●Magnetic stand
●Steel adapter (Φ8)
●Steel adapter (L-attachment)
●Printer TA230

Features

●Over dozen measurement parameters applicable for roughness test of various mechanical manufacturing processes in production lines, workshops and labs.
●High accuracy inductive pickup
●Easy operation manual and large LCD display with backlight.
●Pickup stylus position indicator.
●Transfer to PC via RS232 with advanced PC Software TIMESurf for more analyzing management.
●Connected with printer to print the data and graphs on-site.
●Storage and review function for up to 15 groups data and graphs.
●Rk data and graphic are available.
●Digital filter: RC, PC-RC, Gauss, D-P
●Optional delicate accessories for more accurate results and easier operation eg. measuring platform, steel support and so on
●Conform to ISO standard, compatible with DIN, ANSI and JIS standard.
●Top quality Li-ion rechargeable battery.

Technical Specification

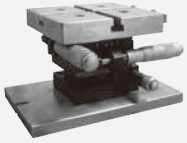
Model	TIME®3200	TIME®3202
Roughness parameters	Ra, Rz, Ry, Rq, Rt, Rp, Rmax, Rv, R3z, RS, RSm, RSk, Rmr,	Ra, Rz, Ry, Rq, Rt, Rp, Rmax, Rv, R3z, RS, RSm, RSk, Rmr, Rpc, Rk, Rpk, Rvk, Mr1, Mr2
Assessed profiles	Roughness profile (R)	
	Primary profile (P)	Primary profile (P)
Measuring system	Metric, imperial	
Display resolution	0.001 μ m	
Data output	RS232	
Pickup measuring range	±20μ m, ±40μ m, ±80μ m	
Cutoff length (L)	0.25mm / 0.8mm / 2.5mm/Auto	
Evaluation length	1~5L (selectable)	1~5L (selectable)
Tracing length	3-7L(selectable)	3-7L(selectable)
Digital filter	RC, PC-RC, Gauss, D-P	
Max. tracing length	17.5mm/0.71inch	
Min. tracing length	1.3mm/0.052inch	
Pick-up	Standard pickup TS100, inductive, diamond stylus radius 5μm, angle of stylus 90°	
Accuracy	≤±10%	
Repeatability	≤6%	
Power	Li-ion battery rechargeable	
Dimensions (mm)	140×52×48	
Weight (g)	440	440

System Diagram

Measuring with steel support and protection nose

Steel support

Protection nose



Leveling table TA630/TA631

Measuring Platform TA620

Steel adapter for connecting to platform (L-attachment)

Steel adapter (Ø8)

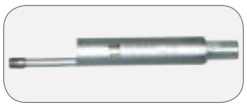
Operation with measuring platform for high accuracy

Operation with Magnetic stand

Printer TA230

Software for TIME®3200/3202

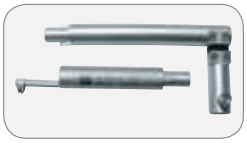
Pickups Optionals



TS100 standard pickup
With skid for roughness test on plane surface, shaft and inner surface of holes with max. depth of 22mm, min diameter 5mm

TS110 pickup for curved surface
Used for roughness testing of curved surface with min curvature radius 3mm, working with measuring platform TA620

TS120 pickup for small holes
Used for roughness testing of small holes with min. 2mm diameter of inner surface, max. depth 9mm



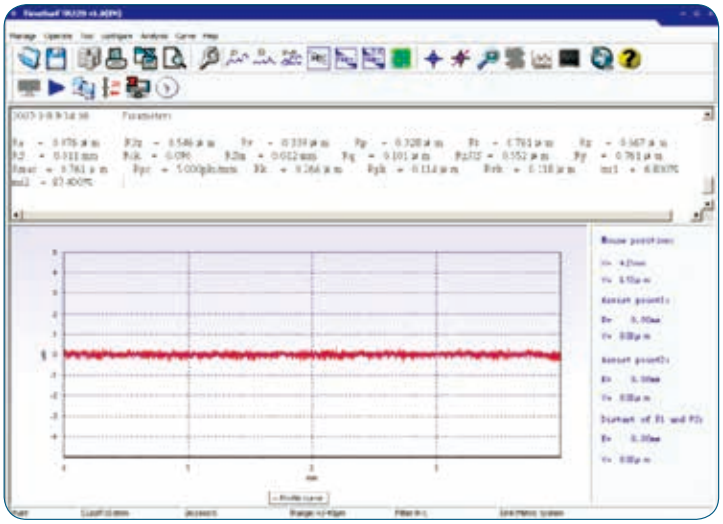
TS140 right-angled pickup
Comprising right-angled pickup and right-angled transmit rod, used for roughness testing of groove and crank with min. width 7.5mm~20mm, and of steps with max. height 2.5mm, working with TA620

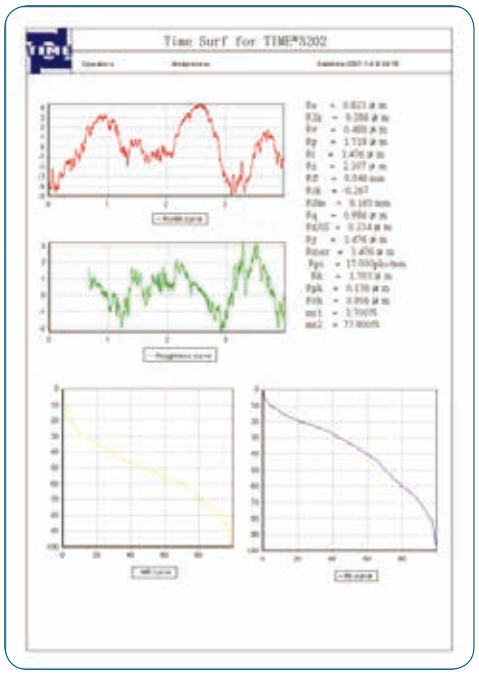
TS130/131 pickup for deep grooves

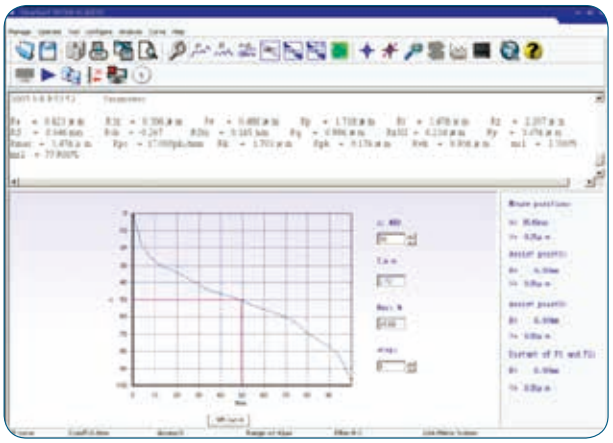
TS130: Used for roughness testing of deep groove with min. width 2mm, max. depth 3mm or of step with max. height 3mm, TS131: Used for roughness testing of deep groove with min. width 3mm, max. depth 10mm or of step with max. height 10mm, working with measuring platform TA620.

TIMESurf for TIME®3200/3202

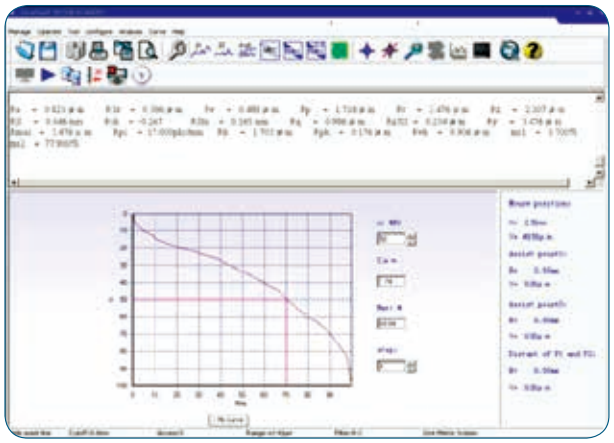
Software works for TIME advanced surface roughness tester TIME®3200/3202 managing, analyzing, printing and searching measured data and graphs



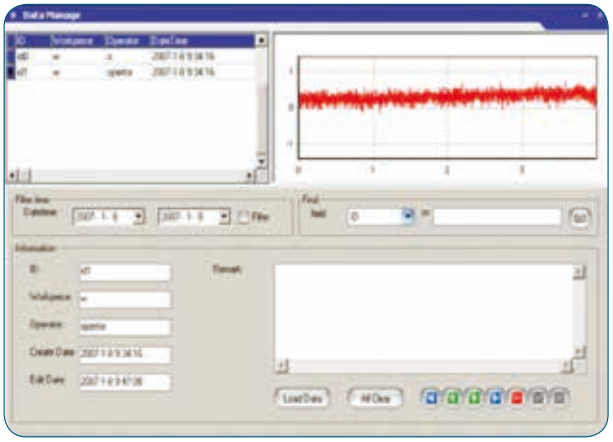




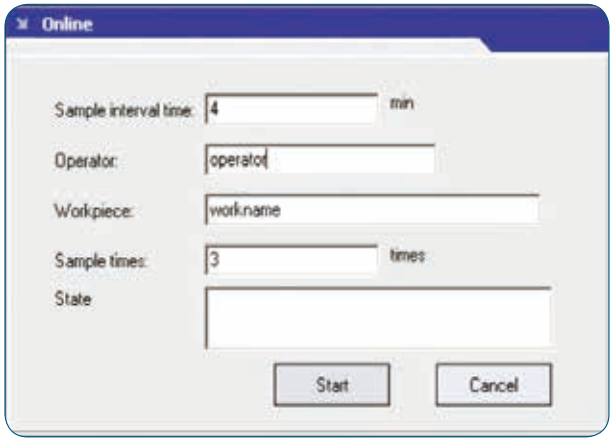
MR curve



RK curve



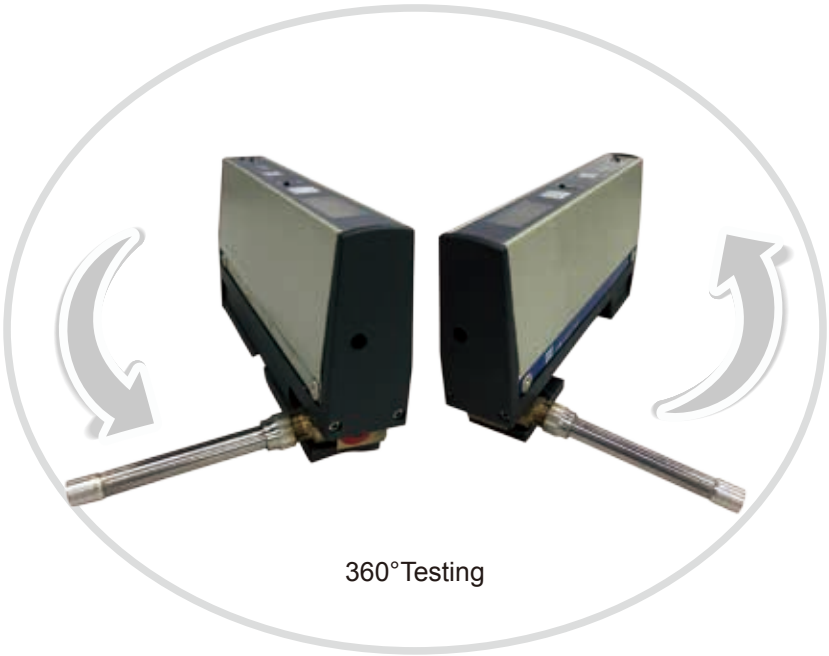
Database management



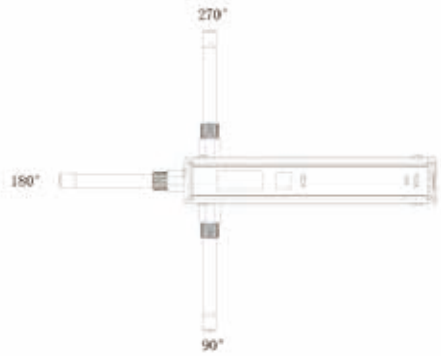
Online measurement

TIME®3210

SURFACE ROUGHNESS TESTER



360°Testing



Pickup testing at 90° , 180° and 270°

Features

- ●Pocket-size unit with economical price, widely used in production lines, workshops and labs
- ●Wide measuring range suitable for most materials, and applicable for both inside and outside cylinder
- ●Ragged design device with a long lifetime, while keeping the accurate and reliable data results
- ●Measurement and conversion among Ra, Rt and Rz
- ●All calculated measurement results shown on its LCD back-lit display hardly after tested
- ●Measuring Direction: any direction 360°
- ●Indicator and alarm for low battery, out-of-limit values and dysfunction
- ●Chargeable Li battery and improvement of the circuits function
- ●Improvement and protection for sensor to secure the high accuracy and good stability.
- ●Data transfer function and calibration function.

Technical Specification

Measuring Range	R a: 0.03μm~6.35μm
	R t: 0.2μm~25.3μm
	R z: 0.2μm~25.3μm
Error	≤±10%
Repeatability	≤6%
Display resolution	0.01μm
Cutoff Length (L)	0.8mm (Filter: RC Filter)
Evaluation length	1L,3L,5L(selectable)
Driver speed	3mm/s
Display	LCD, 3 digital
Interface	RS232
Power	9V alkaline battery
Pickup	Inductive
The max.testing force of pickup	<16mN
Operating temperature	0℃～40℃
Storage temperature	-20℃～65℃

Features

- Integrated design, easy and convenient to use
- Over dozen measurement parameters: Ra,Rp,Rv,Rt,Rz,Rq,Rsk,Rku,Rc,RPc,RSm,Rmr(c),tp, Rmr,Rpm,Rz1max,RzJIS,Rmax,Htp,Rδc,R△q,R△a,Pa,Pp,Pv,Pt,Pz,Pq,Psk,Pku,Pc,PSm,Pmr(c),Pmr,Pz1max,PzJIS, Pδc,P△q,Rk,Rpk,Rvk,Mr1,Mr2,A1,A2
- Touch screen with TFT LCD showing all important data and graphs
- High accuracy inductive sensor probe
- Filtering methods of 2RC, GAUSS
- Compatible with standards of ISO1997, ANSI and JIS2001
- Connected to TIME TA230 printer to print all data and graphs
- RS232 interface and USB interface meeting more needs
- Auto switch off

TIME®3220

SURFACE ROUGHNESS TESTER

Standard Delivery

●Main unit	1
●Standard pickup	1
●Standard sample	1
●Power adapter	1
●Communication cable	1
●Protection sleeve	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Pickup		
Test principle	Inductance type	
Measurement range	400μm	
Stylus tip radius	5μm/2μm	
Stylus tip material	Diamond	
Measuring force	4mN/0.75 mN	
Stylus tip angle	90°/60°	
Radius of skid curvature	45mm	
Maximum drive range	19mm/0.748inch	
Traversing speed	Measuring: Cut off length = 0.08 mm Vt=0.25 mm/s Cut off length = 0.25 mm Vt=0.25mm/s Cut off length = 0.8 mm Vt=0.5 mm/s Cut off length = 2.5mm Vt=1mm/s Returning V=1mm/s	
Accuracy	Less than or equal to ±10%	
Repeatability	≤6%	
Cut-off length	0.08mm,0.25mm,0.8mm,2.5mm, selectable	
Evaluation length	(1~5)L selectable	
Measuring rang and resolution	Measuring range	Resolution
	Automatic	0.001μm,0.008μm
	±50μm	0.001μm
	±200μm	0.008μm
Power	Built-in Li battery	
Power adapter	Input: 100 V~240VAC,50/60Hz Output: 9V,3A	
Working environment	Temperature: 0℃~40℃ Humidity: < 90% RH	
Dimensions (mm)	155.4×75×53	
Weight (g)	580	

Features

- Separated design, mini driver easy and convenient to use
- Multi measurement parameters: Ra,Rp,Rv,Rt,Rz,Rq,Rsk,Rku,Rc,RPc,RSm,Rmr(c),tp,Rmr,Rpm,Rz1max,RzJIS,Rmax,Htp,Rδc, R△q,R△a,Pa,Pp,Pv,Pt,Pz,Pq,Psk,Pku,Pc,PSm,Pmr(c),Pmr,Pz1max,PzJIS,Pδc,P△q,Rk,Rpk,Rvk,Mr1,Mr2,A1,A2
- Touch screen with TFT LCD showing all important parameters and graphs
- High accuracy inductive pickup
- Filtering methods of 2RC, GAUSS
- Compatible with standards of ISO1997, ANSI and JIS2001
- Connected to TIME TA230 printer to print all parameters and graphs
- RS232 interface and USB interface meeting more needs
- Auto switch off

TIME®3221

SURFACE ROUGHNESS TESTER

Standard Delivery

●Main unit	1
●Standard pickup	1
●Standard sample	1
●Power adapter	1
●Communication cable	1
●Protection sleeve	1
●Adapter	1
●Magnetic base	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical specification

Pickup		
Test principle	Inductance type	
Measurement range	400μm	
Stylus tip radius	5μm/2μm	
Stylus tip material	Diamond	
Measuring force	4mN/0.75 mN	
Stylus tip angle	90º/60º	
Radius of skid curvature	45mm	
Maximum drive range	19mm/0.748inch	
Traversing speed	Measuring: Cut off length = 0.08 mm Vt=0.25 mm/s Cut off length = 0.25 mm Vt=0.25mm/s Cut off length = 0.8 mm Vt=0.5 mm/s Cut off length = 2.5mm Vt=1mm/s Returning V=1mm/s	
Accuracy	Less than or equal to ±10%	
Repeatability	≤6%	
Cut-off length	0.08mm,0.25mm,0.8mm,2.5mm, selectable	
Evaluation length	(1~5)L selectable	
Measuring rang and resolution	Measuring range	Resolution
	Automatic	0.001μm,0.008μm
	±50μm	0.001μm
	±200μm	0.008μm
Power	Built-in Li battery	
Power adapter	Input: 100 V~240VAC,50/60Hz Output: 9V,3A	
Working environment	Temperature: 0℃~40℃ Humidity: < 90% RH	
Dimensions (mm)	155.4×75×53	
Weight (g)	580	

Features

- Separated design, mini driver easy and convenient to use
- Over dozen measurement parameters: Ra, Rp, Rv, Rt, Rz, Rq, Rsk, Rku, Rc, RPc, RSm, Rmr(c), tp, Rmr, Rpm, Rz1max, RzJIS, Rmax, Htp, Rδc, R△q, R△a, Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Pa, Pp, Pv, Pt, Pz, Pq, Psk, Pku, Pc, PSm, Pmr(c), Pmr, Pz1max, PzJIS, Pδc,P△q
- Touch screen with TFT LCD showing all important parameters and graphs
- High accuracy inductive pickup
- Filtering methods of 2RC, GAUSS
- Compatible with standards of ISO1997, ANSI and JIS2001
- Connected to TIME TA230 printer to print all parameters and graphs
- RS232 interface and USB interface meeting more needs
- Auto or manual switch off

Optional Accessory

- Printer TA230
- Connecting cable
- Dataview

TIME®3223

SURFACE ROUGHNESS TESTER

Standard Delivery

●Main unit	1
●Standard pickup	1
●Driver	1
●Charger	1
●Standard sample	1
●Protection sleeve	2
●Feeler lever	4
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

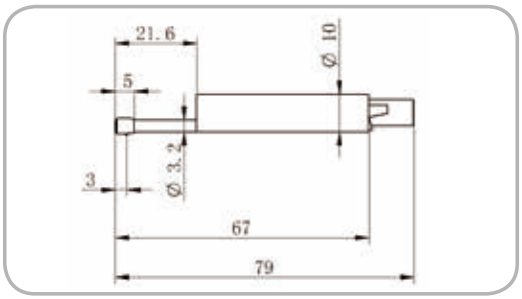
Technical specification

Pick up	Test principle	Inductance type
	Measuring range	400 μm
	Stylus tip radius	5 μm
	Stylus tip material	Diamond
	Measuring force	4 mN
	Stylus tip angle	90°
	Radius of skid curvature	45 mm
	Maximum drive range	19 mm
Measuring range and resolution	Measuring range	Resolution
	±25 μm	0.001 μm
	±200 μm	0.008 μm
Cut-off length	0.08 m, 0.25 mm, 0.8 mm, 2.5 mm	
Evaluation length	1L-5L (selectable)	
Accuracy	±10%	

Pickup for TIME®322X

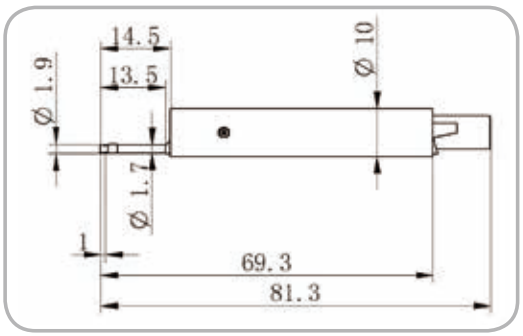
TIME S201 (standard)

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	400µm



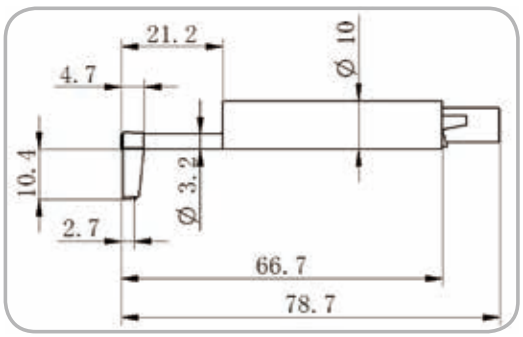
TIME S211 for small hole

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	100µm
Min. diameter of hole:	ø2mm
Max. depth of hole:	13.5mm



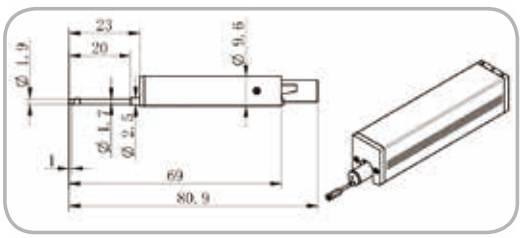
TIME S212 for deep groove

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	400µm
Min. width of groove:	2.5mm
Max. depth of groove:	10mm



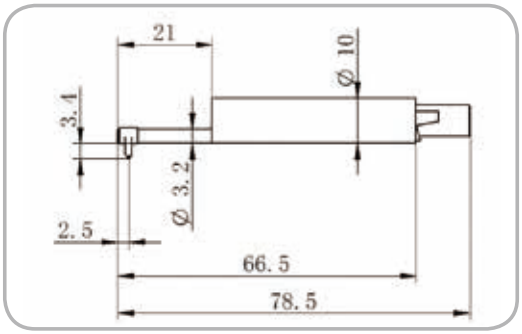
TIME S213 pick up for deep hole

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	400µm
Min. width of hole:	ø2mm
Max. depth of hole:	20mm



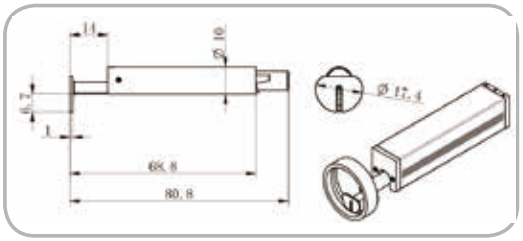
TIME S214 for curved surface

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	200µm



TIME S220 "O" type pick up

Radius for needle point:	5µm
Angle for needle:	90°
Force for needle:	4mN
Measuring range:	200µm
Thickness of lead head:	1mm



Standard Delivery

●Main unit	1
●Pickup	1
●Specimen Ra 3.2	1
●Screwdriver	1
●Transducer supporter	1
●Power adapter 9V/3A	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Features

- ●Integrated design, easy and convenient to use
- ●55 kinds of measurement parameters conform to ISO/DIN/ ANSI/JIS standards for your convenience. High accuracy in the roughness, waviness and primary profile testing of various parts.
- ●LCD displays digital and graphic information
- ●Numerous optional sensors to approach even the most inaccessible places
- ●Transfer to PC via RS232 with advanced PC Software TIMESurf for more analyzing management, and data can be stored in Excel file.
- ●Printer can be connected to print the digital and graphic information
- ●Wide measurement range with the Accuracy 5 % and Repeatability 3%

Optional Accessory

- ●Printer TA230
- ●PC software (TIMESurf for TIME®3230)
- ●RS232 communication cable

TIME®3230

SURFACE FORM TESTER

Technical specification

Assessed profile	R (Roughness), W (Waveness), P (Primary profile)
Measuring range	±400μm, ±25μm
Filtering	RC,PCRC,Gauss,D-P,ISO 13565
Parameters	R: Ra,Rp,Rv,Rt,Rz,Rq,Rsk,Rku,Rc,RS,RSm, Rlo,RHSC,Rpc,Rmr(c),RzJIS,R3y,R3z W: Wa,Wp,Wv,Wt,Wz,Wq,Wsk,Wku,Wc,WS, WSm, Wlo,WHSC,Wpc,Wmr(c),WzJIS P: Pa,Pp,Pv,Pt,Pz,Pq,Psk,Pku,Pc,PS,PSm, Plo,PHSC,Ppc,Pmr(c),PzJIS Rk: Rk,Rpk,Rvk,Mr1,Mr2
Cut-off length	0.08mm,0.25mm,0.8mm,2.5mm,8mm
Max. tracing length	40mm
Analysis graphs	ADC, BAC
Evaluation length	1L-5L
Resolution	0.001μm/50μm；0.016μm/800μm
Tolerance	±5%
Display	LCD
Memory	10 groups of primary data
Data output	RS232,USB
Power supply	Li battery / AC adapter
Dimensions (mm)	409×96×98
Weight (g)	2300

Features

- Integrated design, easy and convenient to use, especially for narrow space down to 1.5mm
- 55 kinds of measurement parameters conform to ISO/DIN/ ANSI/JIS standards for your convenience
- Rectangular driver for 90 angle measurements, even without lead
- High accuracy in the surface roughness, waviness and primary profile testing.
- LCD displays digital and graphic information
- Numerous optional sensors to approach even the most inaccessible places, with or without leads
- Transfer to PC via RS232 with advanced PC Software TIMESurf for more analyzing management, and data can be stored in Excel file.
- Printer can be connected to print the digital and graphic information
- Wide measurement range up to 800 um, with the Accuracy 5 % and Repeatability 3%

Optional Accessory

- Printer TA230
- PC software (TIMESurf for TIME®3230)
- RS232 communication cable

TIME®3231

SURFACE FORM TESTER

Technical specification

Assessed profile	R (Roughness), W (Waveness), P (Primary profile)
Measuring range	±400µm, ±25µm
Filtering	RC,PCRC,Gauss,D-P,ISO 13565
Parameters	R: Ra,Rp,Rv,Rt,Rz,Rq,Rsk,Rku,Rc,RS,RSm, Rlo,RHSC,Rpc,Rmr(c),RzJIS,R3y,R3z W: Wa,Wp,Wv,Wt,Wz,Wq,Wsk,Wku,Wc,WS, WSm, Wlo,WHSC,Wpc,Wmr(c),WzJIS P: Pa,Pp,Pv,Pt,Pz,Pq,Psk,Pku,Pc,PS,PSm, Plo,PHSC,Ppc,Pmr(c),PzJIS Rk: Rk,Rpk,Rvk,Mr1,Mr2
Cut-off length	0.08mm,0.25mm,0.8mm,2.5mm,8mm
Max. tracing length	40mm
Analysis graphs	ADC, BAC
Evaluation length	1L-5L
Resolution	0.001µm/50µm；0.016µm/800µm
Tolerance	±5%
Display	LCD
Memory	10 groups of primary data
Data output	RS232,USB
Power supply	Li battery / AC adapter
Dimensions (mm)	409×96×98
Weight (g)	2300

Features

- Integrated design, easy and convenient to use,especially for narrow spaces down to 1.5mm
- 55 kinds of measurement parameters conform to ISO/DIN/ ANSI/JIS standards for your convenience
- Rectangular driver for 90 angle measurements, even without lead.
- High accuracy in the surface roughness, waviness and primary profile testing.
- LCD displays digital and graphic information
- Numerous optional sensors to approach even the most inaccessible places, with or without leads
- Transfer to PC via RS232 with advanced PC Software TIMESurf for more analyzing management, and data can be stored in Excel file.
- Printer can be connected to print the digital and graphic information
- Wide measurement range up to 800 um, with the Accuracy 5 % and Repeatability 3%
- Adjust angle and lifting height by your choice.
- Full length waving testing with the maximum tracing length up to 50 mm.

Optional Accessory

- Printer TA230
- PC software (TIMESurf for TIME®3230)
- RS232 communication cable

TIME®3233

SURFACE FORM TESTER

Technical specification

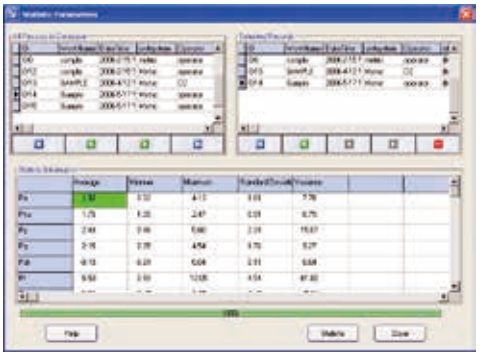
Assessed profile	R (Roughness), W (Waveness), P (Primary profile)
Measuring range	±400μm, ±25μm
Filtering	RC,PCRC,Gauss,D-P,ISO 13565
Parameters	R: Ra,Rp,Rv,Rt,Rz,Rq,Rsk,Rku,Rc,RS,RSm, Rlo,RHSC,Rpc,Rmr(c),RzJIS,R3y,R3z W: Wa,Wp,Wv,Wt,Wz,Wq,Wsk,Wku,Wc,WS, WSm, Wlo,WHSC,Wpc,Wmr(c),WzJIS P: Pa,Pp,Pv,Pt,Pz,Pq,Psk,Pku,Pc,PS,PSm, Plo,PHSC,Ppc,Pmr(c),PzJIS Rk: Rk,Rpk,Rvk,Mr1,Mr2
Cut-off length	0.08mm,0.25mm,0.8mm,2.5mm,8mm,10mm
Max. tracing length	50mm
Analysis graphs	ADC, BAC
Evaluation length	1L-5L
Resolution	0.001μm/50μm；0.016μm/800μm
Tolerance	±5%
Display	LCD
Memory	10 groups of primary data
Data output	RS232,USB
Power supply	Li battery / AC adapter
Dimensions (mm)	409×96×98
Weight (g)	2300

TIMESurf for TIME®3230

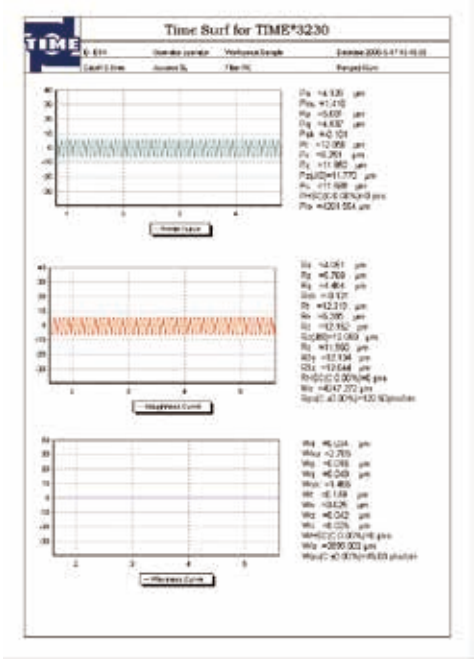
Software works for TIME advanced surface roughness tester TIME®3230 managing, analyzing, printing and searching measured data and graphs

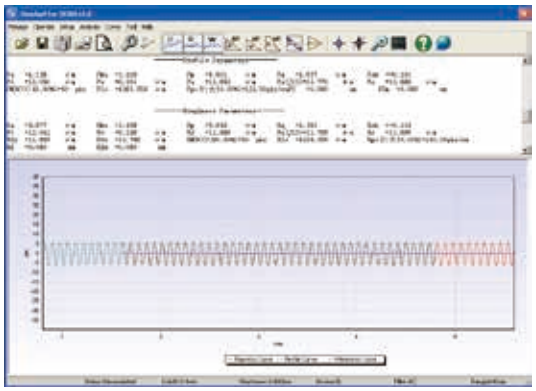
Features

Operator is allowed to perform evaluation of mean value, max. value, min. value, standard deviation and variance by moving mouse. And the calculation results can be stored in a default Excel file or in a Excel file specified by user

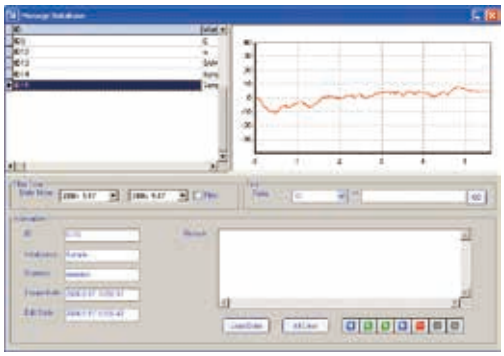


Printing function is designed for operator to make printing report including what is needed about the curves and parameters.

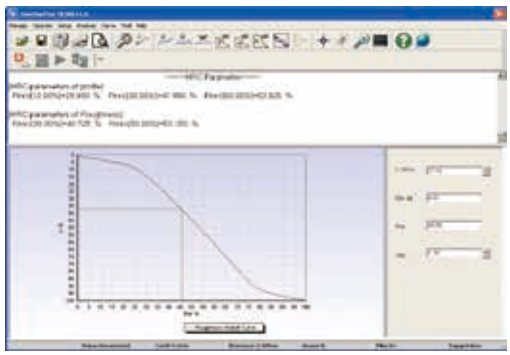




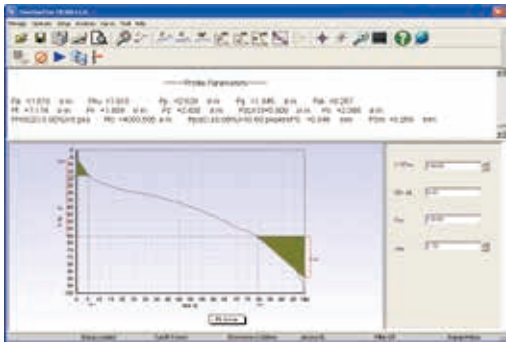
Equipped with powerful data management function. The collected data can be stored as a file or stored in database for user's searching and browse.



Variety of curves are displayed as well as all selected parameters and measured results. And all views (including graphs, figures and any other things) displayed can be printed out with the advanced printing function.



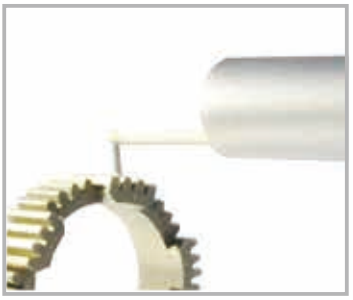
MR curve



RK curve

Pickup for TIME®323X

TIME 3230 standard pickup

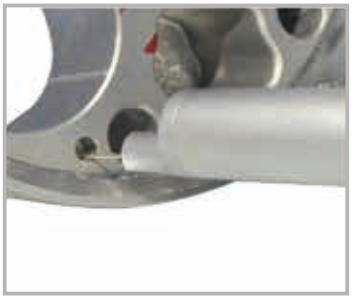


TIME S230V pickup (7mm changeable diameter）

TIME S230U pickup (7mm)

TIME S231 pickup for tooth surface (120° probe)

TIME S232 pickup for small hole (ø1.33)

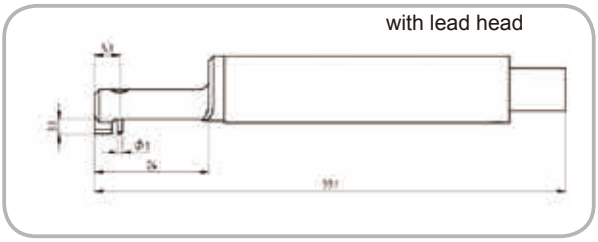


TIME S233 pickup for deep groove (10mm)

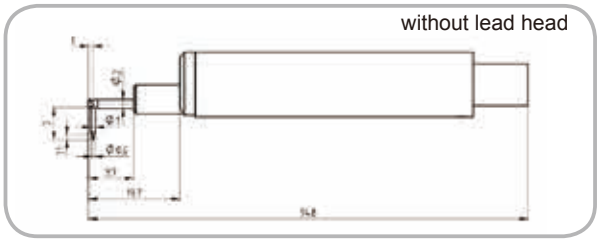
TIME S236 pickup for extra deep groove (20mm)

TIME S238 pickup for super deep groove (30mm)

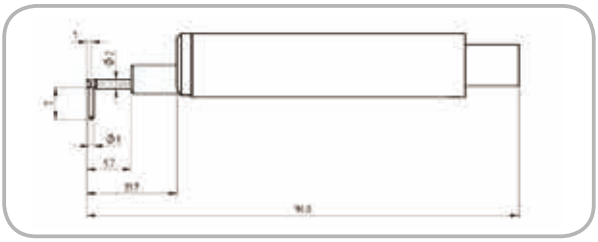
Pickup for TIME®323X



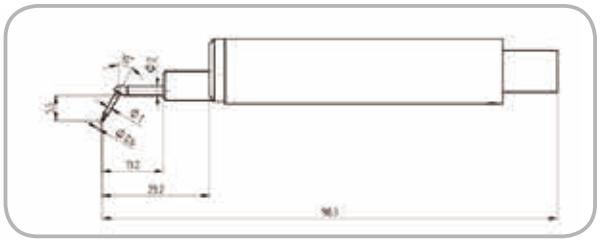
TIME S230 standard pickup



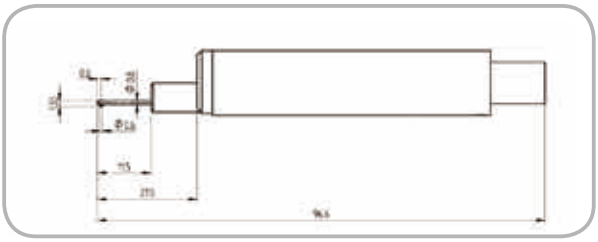
TIME S230V pickup



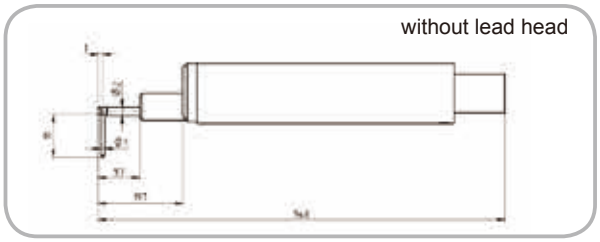
TIME S230U pickup



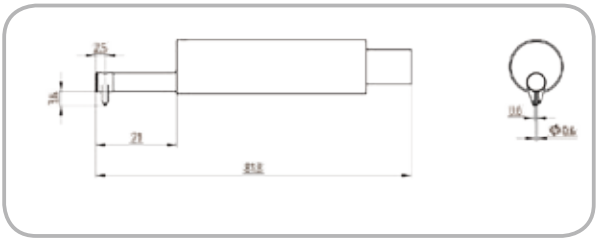
TIME S231 pickup for tooth surface



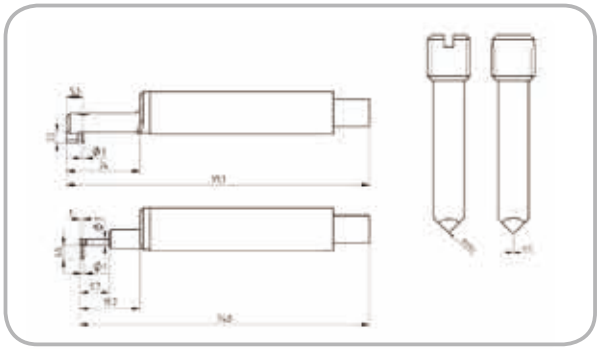
TIME S232 pickup for small hole



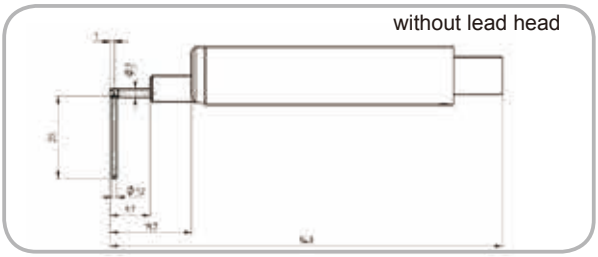
TIME S233 pickup for deep groove



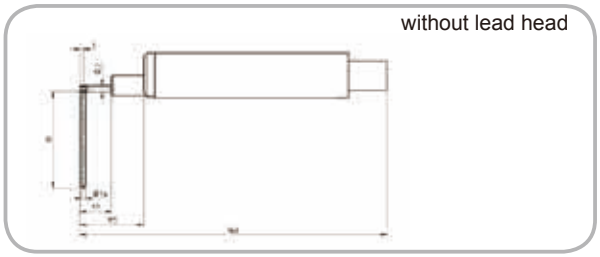
TIME S234 pickup for curved surface



TIME S235 pickup for axe-cutter



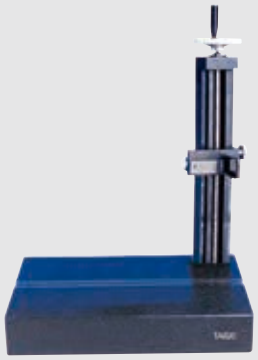
TIME S236 pickup for extra deep groove



TIME S238 pickup for super deep groove

MEASURING PLATFORM

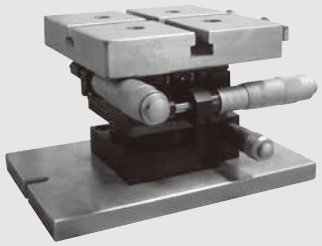
TA620



Specifications:
Dimensions: 400 mm×250 mm×70 mm
Y-axial range: 300mm±1mm

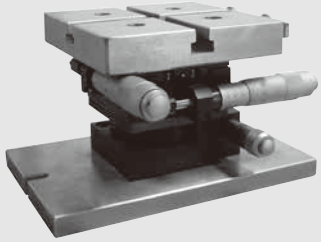
Features:
Elevating the table through screw, and V shape groove is available, it is suitable for testing tiny workpiece to improve the accuracy

TA630



Specificaitons:
X-axial range:±12.5mm;
Y-axial range:±12.5mm;
Rotation: coarse adjustment 360º, fine adjustment ±5º;
Pitching: 0º ~ 5º.

TA631

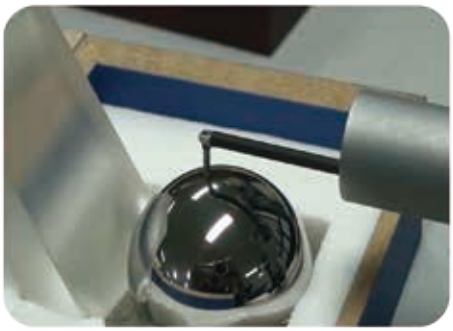


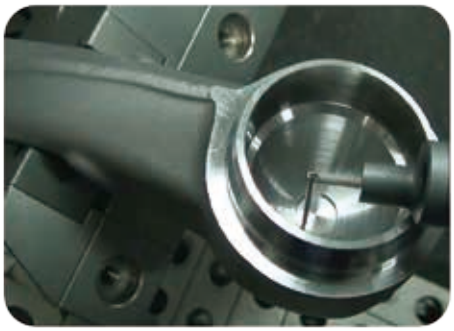
Specifications:
X-axial range:±12.5mm;
Y-axial range:±12.5mm;
Rotation: Coarse adjustment 360º, fine adjustment: ±5º.

TA650

Specifications :
Y-axial range: 300 ± 1 mm
The dimension of measuring platform: 600mm×420 mm×80mm
Adjusting range of leveling table
X-axial direction: ±12.5 mm
Y-axial direction: ±12.5 mm
Rotation: 360º; fine adjustment: ±5º
Pitching: 0º ~ 5º

Applications for TIME®323X





D

Coating Thickness Gauge

TIME®2500

COATING THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Calibration foil set	1
●Substrate	1
●AAA1.5V battery	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●TA230 Printer

Features

●Magnetic induction (F), measuring the thickness of non-magnetic materials (e.g. Paint, plastic, porcelain enamel, copper, zinc, aluminum, chrome etc.) on magnetic materials (e.g. iron, nickel etc.). Zero point calibration and two-point calibration to correct the system error of the probe

●Features two working modes: DIRECT and BATCH & two measuring ways: CONTINUE and SINGLE

●Statistics include the mean, maximum, minimum, test numbers and standard deviation.

●Memory of 500 data

●Deletion of current data, calibrated data, limit data and all data stored.

●Integrated with printer to print the statists values if needed

●Low battery indication and error alarm

●Buzz during operation for indication

●Backlight for the screen

●Auto or manual shutdown

Technical Specification

Probe Types		F	
Measuring methods		Magnetic induction	
Measuring range		0~1250μm	
Display resolution		0.1μm	
Tolerance	Zero point calibration (μm)	± (3%H+1)	
	Two points calibration(μm)	± [(1%~3%) H+1]	
Measuring condition	Min.curvature radius(mm)	convexity 1.5	concave 9
	Min.testing area diameter(mm)	Ø7	
	Critical thickness of substrate (mm)	0.5	
Power		AAA 1.5V Battery (2 pcs)	
Working temperature		0~40℃	
Dimensions (mm)		145×60×28	
Weight (g)		132	

TIME®2501

COATING THICKNESS GAUGE

The instrument is a super mini-gauge,capable of measuring rapidly,nondestructively and precisely the thickness of insulating coatings on non-magnetic metallic base.The instrument adopts the eddy current principle to measure the thickness of insulating coatings on non-magnetic metallic base (enamel,rubber,paint and plastics coatings on the base of copper,aluminum,zinc,tin,etc.) .It can be applied extensively in the testing in the manufacturing,metal processing and chemical industries and commodity inspection.Due to its small size and the integration of the probe and the instrument, it is especially useful in on-the-spot measuring at engineering sites.

Features

- Integrated with Probe N: the eddy current principle to measure the thickness of insulating coatings on non-magnetic materials.
- Zero point calibration and two-point calibration to correct the system error of the probe
- Features two working modes: DIRECT and BATCH & two measuring ways: CONTINUE and SINGLE
- Statistics include the mean, maximum, minimum, test numbers and standard deviation.
- Memory of 500 data
- Deletion of current data, calibrated data, limit data and all data stored.
- Integrated with printer to print the statists values if needed
- Low battery indication and error alarm
- Buzz during operation for indication
- Backlight for the screen
- Auto or manual shutdown

Technical Specification

Type	Working principle	Scope of measurement(μm)	Low limit differentation(μm)	Display value tolerance(μm)	
				Zero point calibration	Two-point calibration
TIME®2501	Eddy current	0-1250	0.1	±(3%H + 1.5)	±[(1%-3%)H + 1.5]

Type	Min.curvature radius of the object to be measurde(mm)		Min.area diameter of the base(mm)	Critical thickness of the base(mm)
TIME®2501	convexity 3	concave 10	Ø5	0.3

Operating environment	
Working temperature	0~40˚C
Humidity	20%~90%
No strong magnetic field	AAA 1.5V Battery (2 pcs)
Pover source	
Dimensions (mm)	145×60×28
Weight (g)	132

TIME®2510

COATING THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Substrate	2
●Calibration foil	1
●AAA 1.5V battery	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printer TA230
●Connecting cable
●Dataview

Printer TA230

Features

●Two principle of operation are adapted: magnetic induction (ferrous) and eddy current (non-ferrous) to take non-destructive measurements
●Zero point calibration and two-point calibration to correct the system error of the probe
●Features two working modes: DIRECT and BATCH & two measuring ways: CONTINUE and SINGLE
●Statistics include the mean, maximum, minimum, test numbers and standard deviation.
●Automatic recognition of substrate.
●Memory of 500 data
●Deletion of current data, calibrated data, limit data and all data stored.
●Integrated with printer to print the statists values if needed
●Low battery indication and error alarm
●Buzz during operation for indication
●Backlight for the screen
●Auto or manual shutdown

Technical Specification

Probe types		F	N
Working principle		Magnetic induction	Eddy current
Measuring range		0-1250 μm	0-1250 μm, 0-40μm (for chrome plate on copper)
Minimum resolution		0.1μm	
Tolerance	Zero point calibration	±(3%H+1) μm	±(3%H+1.5) μm
		H means the thickness of tested piece	
	Two points calibration	±{(1-3)%H+1}μm	±{(1-3)%H+1.5}μm
		H means the thickness of tested piece	
Measuring condition	Min. curvature radius	Convexity 1.5 mm	Convexity 3 mm
	Min. area diameter	Φ7 mm	Φ5 mm
	Critical thickness of the base	0.5 mm	0.3 mm
Operating environment		Temperature: 0℃ - 40℃	
		Humidity: 20%-90%	
		No strong magnetic field	
Power		2 pcs AAA 1.5 V battery	
Dimension		110 x 50 x 23 (mm)	
Weight		100 g	

TIME®2511

COATING THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Substrate	1
●AAA 1.5V battery	2
●Waist pack for main unit	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Features

●Economical model with F probe integrated
●Single point measurement mode
●Easy zero point calibration
●3 adjustable resolutions for different applications
●High speed data collection
●Automatically switch off
●Easy conversion between mm and inch

Technical Specification

Probe types		F		
Measuring methods		magnetic induction		
Measuring range		0 to 1250 μm		
Minimum resolution		1μm	5μm	10μm
Tolerance		±(3%H+1)μm	± (3%H+1.5)μm	± (3%H+10)μm
		H means the thickness of tested piece		
Measuring condition	Min. curvature radius (mm)	Convexity 1.5		
	Min. testing area diameter (mm)	Ø7		
	Critical thickness of substrate (mm)	0.5		
Power supply		Battery AAA (2pcs)		
Working temperature		0~40°C		
Dimensions (mm)		110×50×23		
Weight (g)		100		

TIME®2600

COATING THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Probe	1
●Substrate	1
●Calibration foil	1
●Charger	1
●Printing paper	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Features

- ●Two principles of operation are adapted: magnetic induction (ferrous) and eddy current (non-ferrous) to take non-destructive measurements
- ●6 types of probes are available for different applications
- ●Features two working modes: DIRECT and BATCH& two measuring ways: CONTINUE and SINGLE
- ●Statistics include the mean, maximum, minimum, test numbers and standard deviation.
- ●Memory of 640 data
- ●Two calibration methods for better correction
- ●Integrated with printer to print the statists values if needed
- ●Low battery indication and error alarm
- ●Backlight for the screen
- ●Auto or manual shutdown
- ●Conform to the standards of DIN, ISO, ASTMBS.

Technical Specification

Measuring range	see table in page 43
Probe available	
Tolerance	
Minimum resolution	
Measuring condition	
Standards	DIN,ISO,ASTM,BS
Calibration	Zero and foil calibration
Interface	RS232
Statistic	Number of measurement, mean, standard deviation, maximum and minimum
Data memory	640 readings
Limits	Adjustable with alarm
Power	NiMH rechargable battery
Operating environment	Temperature: 0~40℃
	Humidity: 20%~90%
	No strong magnetic field
Dimensions (mm)	230×86×47

Features

- Magnetic induction (F), measuring the thickness of non-magnetic materials (e.g. Paint, plastic, porcelain enamel, copper, zinc, aluminum, chrome etc.) on magnetic materials (e.g. iron, nickel etc.) .
- Features two working modes: DIRECT and BATCH & two measuring ways: CONTINUE and SINGLE
- Statistics include the mean, maximum, minimum, test numbers and standard deviation.
- Memory of 10000 data
- Adjustment and Correction: the system error can be corrected by basic calibrating method.
- Alarming function: alarming automatically if measuring values out of pre-set limitation
- Battery Indicator: Low battery indicator
- Printing function: measuring value, statistic value can be printed
- Error warning Function: error warning in display during malfunction
- Manual or automatic shutdown.

TIME®2605

COATING THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Probe	1
●Substrate	1
●Calibration foil	1
●Charger	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Probe	F1
Working principle	Magnetism induction
Measuring range	0-1500 μm
Minimum resolution	0.1μm
Tolerance	±(1%H+1)
Measuring condition	Min. curvature radius: 1.5 mm
	Min. area diameter: Φ7 mm
	Critical thickness of the base: 0.5 mm
Operating environment	Temperature: 10℃ - 30℃
	Humidity: ≤75%RH
	No strong magnetic field
Power	Li Battery 1 x 3.7V 2200mAh
Dimension	203.4 x 92.1 x 52.1 (mm)
Weight	400 g (main unit)

Optional Probes and ication Guide

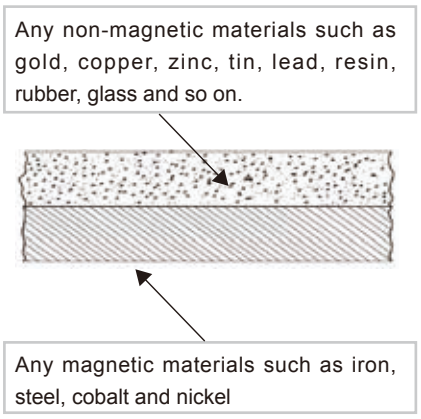
Probe model		F400	F1	F1/90°	F10	N1	CN02
Operating principle		Magnetic induction				Eddy current	
Measuring range (μm)		0-400	0-1250		0-10000	0 to 1250 μm 0 to 40μm (for chrome plate on copper)	10~200
Low range resolution (μm)		0.1	0.1		10	0.1	1
Accuracy	One-point calibration (μm)	±(3%H+1)			±(3%H+10)	±(3%H+1.5)	±(3%H+1)
	Two-point calibration (μm)	±[(1~3)H%+0.7]	±[(1~3)H%+1]		±[(1~3)%H+10]	±[(1~3)%H+1.5]	-
Measuring conditions	Min curvature of the min area (mm)	Convex 1	1.5	Flatten	10	3	Flatten
	Diameter of the min area (mm)	φ3	φ7	φ7	φ40	φ5	φ7
	Critical thickness of substrate (mm)	0.2	0.5	0.5	2	0.3	unlimited

Application of two measuring methods

Magnetic induction (F)

●Coating: non-magnetic material

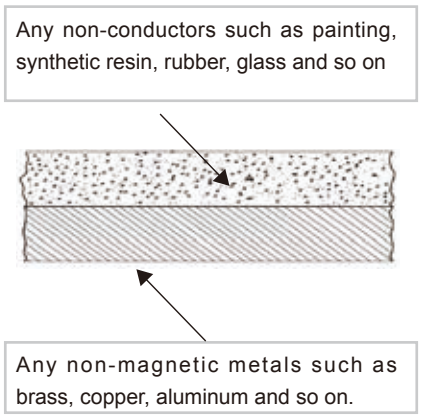
Substrate (base): magnetic material



Eddy current (N)

●Coating: non-conductors

Substrate (base): non-magnetic metals



Reference Table for Probe selection

Substrate / Coatings		Non-magnetism coatings (Organic materials)		Non-magnetism coatings(nonferrous metals)	
		Thickness of coating is more than 100μm	Thickness of coating is less than 100μm	Thickness of coating is more than 100μm	Thickness of coating is less than 100μm
Steel,iron and other magnetism metal	Diameter of tesitng area is more than 30mm	F1 probe:0~1250 μm F400 probe:0~400μm	F1 probe: 0~1250 μm F10 probe:0~10μm	F400probe:0~400 μm F1probe:0~1250μm	F1 probe: 0~1250 F10μm probe:0~10μm
	Diameter of testing are is less than 30mm	F400 probe:0~400μm	F1 probe: 0~1250 μm F400 probe:0~400μm	F400probe:0~400μm	F400 probe:0~400 F1 probe:0~1250μm
Copper,Brass,Aluminum,Zinc, Tin and other metallic	Diameter of testing area is more than 5mm	N1 probe:0~1250μm		N1 probe:0~40μm (For chrome plate on copper)	
Plastic nonmetallic substrate	Diameter of testing are is more than 7mm	-	-	CN02 Probe:10~200μm	

E

Ultrasonic Thickness Gauge

Thickness check of pressure pipelines

Monitoring of wall thickness of vessels easy to corrode such as oilcans

Thickness monitoring of pressure vessels such as boilers

Quality control of forging and casting parts

Routine maintenance of roads and bridges

Corrosion check of ship walls and bottom

Features

- Free conversion between metric and imperial
- Automatic calibration of zero point: automatically correct the system errors
- Automatic non-linear compensation: computer software is used to correct the non- linear errors of the probe for the purpose of improving the accuracy
- The upward and downward adjustment keys enable prompt selection of sound velocity, thickness, and check the thickness memory units
- Prompt indication for coupling state
- Sound velocity can be measured according to the test block's thickness
- Ten thickness values can be stored without loss after turn-off
- Sound velocity of five different materials can be stored directly needless to search in the conversion table
- Low voltage indication and Automatic turn-off
- Oil proof protection for longer service life

TIME®2110/2113

ULTRASONIC THICKNESS GAUGE

Standard Delivery

●Main unit	1
●5PΦ10 probe	1
●Couplant	1
●AAA battery	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●5P 10/90 probe	(1.2~225.0mm)
●SZ2.5P probe	(3.0~300.0mm)
●7PΦ6 probe	(0.75~60mm)

Technical Specification

Measuring range	1.2~225.0mm	
Display type	4-digit LCD	
Minimum display unit	TIME®2110	0.1mm
	TIME®2113	0.01mm
Sound velocity range	1000m/s~9999m/s	
Measuring error	±(1％H+0.1) mm, H is the actual thickness of the object to be measured.	
Power supply	two AAA alkaline cells 1.5V	
Power consumption	working current is smaller than 20mA (3V)	
Range of operating temperature	0℃~ 40℃	
Dimensions (mm)	124×68×27	
Weight (g)	140	

TIME®2130/2132/2134

ULTRASONIC THICKNESS GAUGE

Optional Accessory

- ●Optional transducers
- ●Printer TA230 with cable for TIME®2130
- ●Dataview software for TIME®2130

Standard deliveries

●Main unit	1
●Transducer 5PΦ10/90°	1
●Transducer ZW5P for TIME®2132	1
●Transducer TSTU32 for TIME®2134	1
●Rubber jacket	1
●Couplant	1
●Batteries AA 1.5V	2
●Screwdriver	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

TIME®2130

TIME®2132

TIME®2134

Features

●TIME®2130: Equipped with RS232 interface to connect TA230 printer and PC with optional software. 5PΦ10/90° transducer for normal purpose and optional TSTU32 transducer for casting iron.

●TIME®2132: Anti-high-temperature reaching up to 300°C

●TIME®2134: equipped with TSTU32 transducer for casting iron

●Free conversion between metric and imperial

●Automatic calibration of zero point: automatically correct the system errors

●Gain adjustment, Low voltage indication and Automatic turn-off

●500 test data and 5 sound velocity can be stored, delete and review

●Big LCD screen with back-light and adjustable contrast ratio

●Equipped with the mode to capture the minimum

●Two display modes: current thickness or minimum thickness

●Two point calibration for high accuracy

●Upper /lower limits pre-setting and sound alarm

●Resolution 0.001mm and 0.01mm selectable for your use

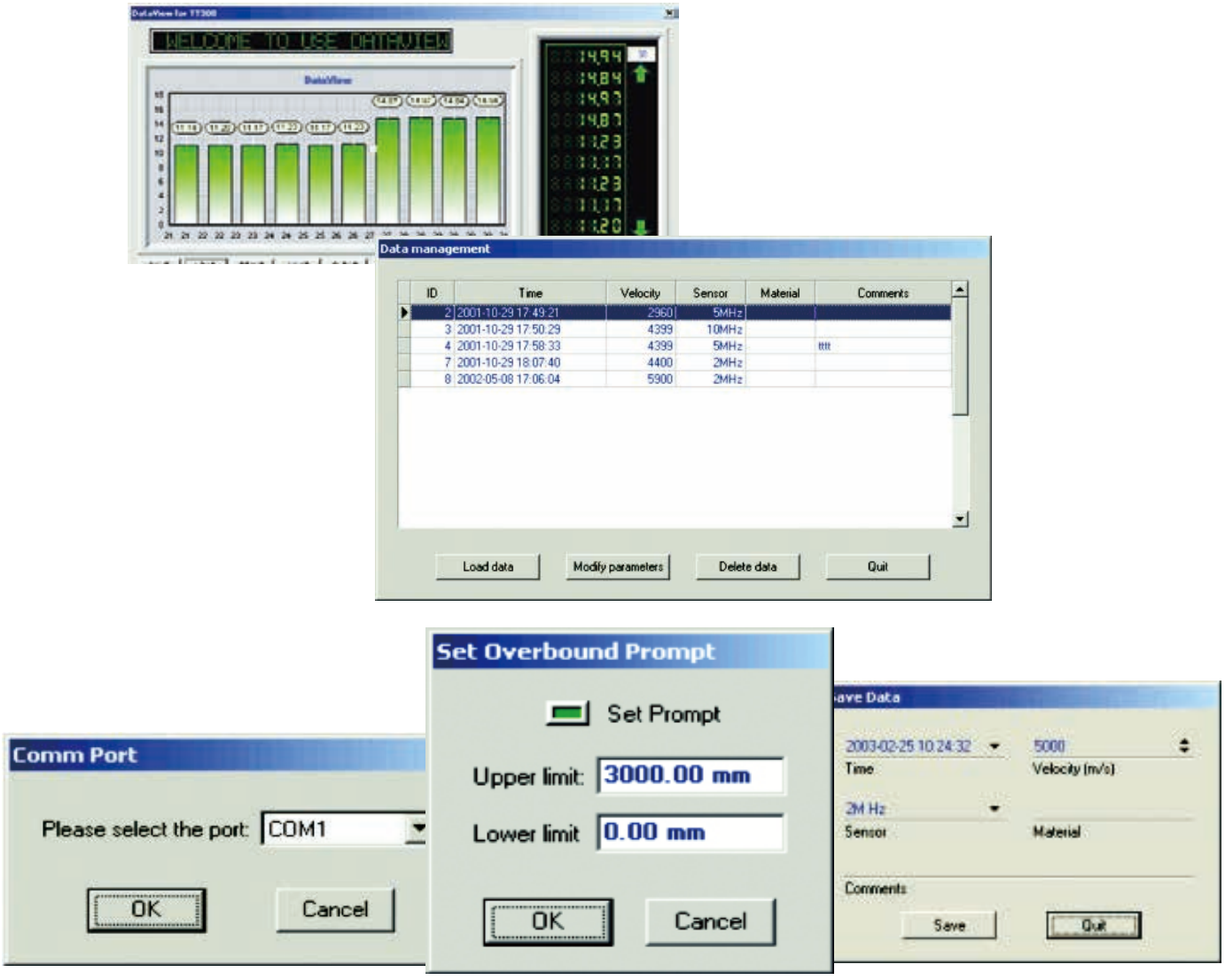
Technical specification

	TIME®2130	TIME®2132	TIME®2134
Measuring range	0.75mm-300.00mm(steel) (depend on probe)	1.2mm-225.0mm (steel) 5.0mm-80.0mm (steel high-temp)	1.2mm-300.00mm 5.0mm-40.0mm (casting iron)
Measuring accuracy	±(1%H+0.1)mm (H means the real thickness)	±(1%H+0.1)mm (H means the thickness of tested piece)	
Lower limits of steel pipes	φ20mm x 3.0mm	φ20mm x 3.0mm	
Display resolution	0. 1mm/0.01mm or 0.01/0.001inch	0. 1mm or 0.01inch	
Data output	RS232 Output for printer or pc	----	
Sound velocity	1000m/s~9999m/s		
Power supply	AA batteries (2pcs) 1.5V		
Battery life	100 hours without backlight		
Sound speed	1000m/s~9999m/s		
Unit scales	mm/inch		
Operating temperature	-10℃~ +60℃	-10℃~ +300℃	-10℃~ +60℃
Dimensions (mm)	152 ×74 ×35		
Weight (g)	370		

TIME®2130/2132/2134

ULTRASONIC THICKNESS GAUGE

Dataview for TIME®2130



Features

- Measure through coated surfaces and eliminate the thickness of the paint using a dual element style transducer in echo-echo mode
- Identify the standard transducer automatically, or preset the transducer frequency manually
- Transducer TSTU17 and TSTU32 are optional to measure various materials
- Connect to TIME TA230 printer or PC via RS232 interface
- Upper /lower limits pre-setting and sound alarm
- Differential mode shows the difference between the test thickness value and the user-setting thickness range.
- Memory of 500 test data
- Resolution 0.001mm and 0.01mm selectable for your use

TIME®2136

ULTRASONIC THICKNESS GAUGE

Standard Delivery

- Main unit
- Transducer 5PΦ10/90°
- Couplant
- Sheath for main unit
- TIME certificate
- Warranty card
- Instruction manual

Optional Accessory

- Communication cable
- Standard plate
- TIME TA230 printer
- Transducer TSTU17
- Transducer TSTU32

Technical Specification

Measuring range(depends on probe)	Transducer 5PØ10/90°: 1.2-200mm (steel in T-E testing mode) 3~20mm(steel in E-E mode) Transducer TSTU32: 5mm~300mm(steel in T-E testing mode)
Display resolution	0.001mm or 0.01mm
Sound speed	1000~9999m/s
Display	Backlight
Measuring accuracy	±1%H＋0.1mm (H means the thickness of tested plate)
Data output	RS232
Calibration plate	4.0mm(steel)
Power	AA batteries 1.5V (2pcs)
Unit scales	mm/inch
Operating temperature	-10~60℃
Dimensions (mm)	152×74×35
Weight (g)	220

Standard Delivery

●Main unit	1
●Transducer 15Pø6	1
●Screw driver	1
●Protection sheath for main unit	1
●Connecting protection sheath	1
●Cover protection sheath	1
●AA battery 1.5V	2
●Couplant	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Communication cable
●Standard test block
●20MHz transducer
●TA230 printer

Features

●Especially suitable for testing thin workpieces while keeping high accuracy
●I-E testing mode and E-E testing mode
●Sound velocity calibration and single point calibration
●Sound alarm and differential mode are available
●Free conversion between metric and imperial
●Up to 500 data can be stored, reviewed and deleted
●Backlight and adjustable contrast
●Result can be print out and transfer to PC

Technical Specification

Measuring range	0.15~20mm
Display resolution	0.001 mm and 0.01 mm selectable
Sound velocity range	1000m/s~9999m/s
Power	AA batteries 1.5V(2 pcs)
Operating temperature	0~40℃
Dimension (mm)	152× 74× 35
Weight (g)	220

TIME®2170

ULTRASONIC THICKNESS GAUGE

Features

- Auto recognition of probe
- Dynamic compensation of measurement error caused by probe change and coupling condition
- Real time display coupling condition
- OLED screen with high contrast and brightness suitable to use in sunlight
- Scanning measuring mode, up to 20 times per second
- I-E testing mode, E-E testing mode and auto mode for option
- Memory of 3000 data: stored in 30 thickness files, 100 thickness values for each file
- Upgrade online, upgrade the firmware of the unit by WIFI or APP
- Dataview available for selection of data store, ZW5P, TSTU32 etc.

TIME®2131

ULTRASONIC THICKNESS GAUGE

Standard Delivery

●Main unit	1
●Bent Probe	1
●Couplant	1
●AA battery	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Measuring range (steel)	5PΦ10, 5PΦ10/90: 1.2-225.0 mm, 7PΦ6: 0.75-60.0 mm, ZW5P: 4.0-80.0 mm, TSTU32: 3.0-300.0 mm
Accuracy (steel)	ZW5P, TSTU32: ±0.10 mm (H<10.00 mm)±(1%H+0.01) mm (H≥10.0 mm) 5PΦ10, 5PΦ10/90, 7PΦ6: ±0.05 mm (H<10.00 mm) ±(0.5%H+0.01) mm (H≥10.00 mm)
Repeatability (steel)	ZW5P, TSTU32: 0.10 mm, 5PΦ10, 5PΦ10/90, 7PΦ6: 0.03 mm
Stability (steel)	ZW5P, TSTU32: 0.10 mm, 5PΦ10, 5PΦ10/90, 7PΦ6: 0.05 mm
Accuracy for wall thickness of curve surface(steel)	±0.1 mm
Sound velocity range (m/s)	508-18699 (m/s)
Accuracy for thickness when change sound velocity	≤±0.5 mm
Accuracy for thickness when change sound velocity	≤±0.5 mm
Resolution	0.1 mm, 0.01 mm, 0.001 mm
Special display	Min. value, Max. Value, Average value
Alarm	Upper, lower limit
Two point calibration	√
mm/inch	√
Indicator for battery power	√
Indicator for coupling condition	√
Memory	6 sound velocity value, 3000 thickness value
Communication	USB or WIFI
Switch off	Auto switch off in 2 minutes if no use
Working environment	Temperature: 0-40℃, Humidity: 90% RH
Memory environment	Temperature: -25-60℃, Humidity: 90% RH
Power	2 pcs AA battery
Working electricity	60 mA (3.0 V)

Features

- ●Two optional transducers: echo-echo transducer and straight transducer
- ●With the function of echo-echo (E-E) measurement and auto gain control (AGC), thickness of substrate is attainable, even with the cover coating
- ●Double crystal lemo probe or high frequency single crystal probe for option
- ●Sound alarm and differential modes are available
- ●Three-color indication and buzz alarm
- ●High frequency scanning technique available
- ●Superior waterproof and dustproof plastic shell
- ●Six languages and presetting auto shutdown function for your convenience
- ●Three colors indication and buzz alarm

TIME®2430

ULTRASONIC THICKNESS GAUGE

Standard Delivery

●Main unit	1
●5PØ10/90° transducer	1
●Batteries AA 1.5V	2
●Couplant	1
●Time certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Optional transducers(next Page)

Technical Specification

Measurement range	0.6mm-508mm
Velocity range	600-16000m/s
Measurement rate	4/s and 20/s in fast mode
Bandwidth	500K-12MHz (-3dB)
Resolution	0.01mm(0.001″), 0.1mm (0.01″)
Velocity calibration range	0.508mm/μs～18.699mm/μs (0.0200 in/μs -0.7362in/μs)
Display	128×64 Graphics LCD monochrome
Battery life	Up to 200 hours (40 hours with backlight on)
Operating temperature	-10℃～50℃
Dimensions (mm)	127x76x32
Weight (g)	230

Connecting Cable

5PØ10 for TIME®211 series

5PØ10/90° for for TIME®211 series, TIME®213 series

7PØ6 for for TIME®211 series, TIME®2130

TSTU32 for TIME®2134

SZ2.5P for for TIME®211 series

ZW5P for TIME®2132

Technical Specification

Transducer	Feature	Testing range	Contacting diameter	Frequency	Tested surface temperature
5PΦ10	Standard straight	1.2~225.0mm(steel)	10mm	5MHz	-10ºC~+60ºC
5PΦ10/90º	Standard angle	1.2~225.0mm(steel)	10mm	5MHz	-10ºC~+60ºC
7PΦ6	Small diameter	0.75~60mm, 15×2.0mm (steel)	6mm	7MHz	-10ºC~+60ºC
ZW5P	High-temperature	4.0-80.0mm(steel)	12mm	5MHz	-10ºC~+300ºC
SZ2.5P	High penetration	3.0-300.0mm(steel)	12mm	2.5MHz	-10ºC~+60ºC
TSTU32	High penetration	5.0~40.0mm (cast iron)	22mm	2MHz	-10ºC~+60ºC

Guideline to standard velocity in materials

Metals (m/sec)				Non-metals (m/sec)			
Aluminum	6320	Nickel	5630	Acrylic resin	2730	Polyamide	2380
Brass	4640	Platinum	3960	Aluminum oxide	8700	Polyethylene	1900
Cast iron	4500	Silver	3600	Ceramic	5631	Polyurethane	1900
Copper	4700	Steel, mild	5900	Diamond	17500	Polystyrene	2400
Cadmium	2800	Steel, low carbon	5850	Epoxy resin	2650	Porcelain	5600
Chromium	6200	Steel, stainless	5790	Glass	5440	PVC	2400
Gold	3240	Tin	3320	Ice	3980	Rubber (butyl)	1900
Inconel	5720	Titanium	6070	Neoprene	1600	Rubber (soft)	1450
Iron	5900	Tungsten carbon	5650	Nylon	2620	Rubber (vulc.)	2300
Lead	2200	Tungsten	5400	Paraffin	2200	Silicone rubber	948
Manganese	4700	Zinc	4170	Perspex	2850	Teflon	1350
Magnesium	6310	Zirconium	4650	Water glass	2350	Water (20°C)	1480

Applications


500℃ Steam Pipe


500℃ Tank


Grey Cast Iron Material

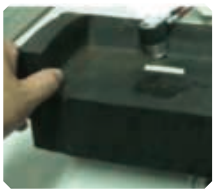

Curved Surface of Stamping Parts


Stainless Steel Valve Glass


Steel Tanker


300℃ Tank


Hull Inspection


60mm Thickness Rubber Tires


Steel/Stainless Steel Composite Pipe


Paint Thickness Test of FRP Pipe Inner Wall


FRP Sulfuric Acid Tank

F

Vibration Tester

TIME®7120/7122/7126

VIBRATION PEN

Standard Delivery

●Main unit	1
●Battery	2
●Protection pocket	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Features

●Prompt testing of vibration on the workshop machines and fast flaw detection of motor, electric fan, pump, compressor and machine tools to guard against mechanical malfunction

●Quick checking of unbalance misalignment, bearings and gears

●Lightweight Compact size with only bottom

●Low energy consumption, keep working for more than 4.5 hours continuously.

●Auto power off

●TIME®7120 for velocity testing

●TIME®7122 for displacement testing

●TIME®7126 for testing of acceleration, velocity and displacement

TIME®7120

TIME®7122

TIME®7126

Technical Specification

Model	TIME®7120	TIME®7122	TIME®7126
Parameters	RMS of vibration velocity (mm/s)	Displacement	Acceleration, Velocity, Displacement
Testing range	Velocity: 0.1mm/s~199.9mm/s	Displacement: 0.01mm~1.999mm (peak~peak)	Acceleration:0.1-199.9m/s^2(peak) Velocity: 0.1-199.9 mm/s (RMS) Displacement: 0.01-1.999 mm (peak-peak)
Frequency range	Velocity: 10Hz-1KHz, Acceleration: 10Hz-1KHz	Displacement: 10Hz~500Hz	Velocity: 10Hz~1KHz Displacement: 10Hz~500Hz Acceleration:10Hz~1KHz
Tolerance	±5%±2		
Display	3½digits LCD		
Power	Two button batteries(LR44 or SR44)		
Battery capacity	Approx. 4.5 hours working continuously		
Operating temperature	0℃~40℃		
Humidity	<85%		
Dimensions (mm)	150×22×18		
Weight (g)	55(including batteries)		

TIME®7212

VIBRATION TESTER

Features

- ●Fast flaw detection of motor, electric fan, pump, compressor and machine tools
- ●Convenient shortcut key combinations for calibration mode
- ●Memory of 100 groups data
- ●Upper /lower limits pre-setting and sound alarm
- ●Integrated with printer to print out all the current readings
- ●With function of time and date setting
- ●High sensitivity with measuring stability
- ●Low battery indication

Standard Delivery

- Main unit
- Sensor
- Magnetic base
- Charger
- TIME certificate
- Warranty card
- Instructuon manual

Optional Accessory

- Needle groupware

Technical Specification

Application field		Motor,compressor,bearing and other rotating machine
Measuring patameters		Acceleration(m/s^2),Velocity(cm/s),Displacement(mm)
Display resolution	Acceleration	0.1m/s^2
	Velocity	0.01cm/s
	Displacement	0.001mm
Tolerance		≤±5%
Testing range	Acceleration	0.1m/s^2 ~ 199.9m/s^2(peak value)
	Velocity	0.01cm/s-19.99cm/s
	Displacement	0.001mm-1.999mm (peak to peak)
Data memory		100 group
Voltage		6V
Charging time		≤132min
Power		Input:220V/AC,50hz Output:12V/DC,600mA
Continuous working time		>16hours
Temperature		0 ~ 40°C
Humidity		90%RH
Dimensions (mm)		230×84×33
Weight (g)		600

Standard Delivery

●Main unit	1
●Protection pocket	1
●Low sensitivity probe	1
●High sensitivity probe	1
●Power adapter	1
●Magnetic base	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Needle groupware
●TA230 printer
●Dataview with communication cable

Features

●Two display modes: digital value mode and spectrum mode
●Large memory function: 100 x 100 measured results (100 testing points, 100 data can be stored in each testing points), 100 spectrograms (each testing point can store one spectrogram)
●Spectrogram can display in real time
●Histogram can be made according to the preset alarm line
●Upper /lower limits pre-setting and sound alarm if test results out of limitation, which leads to spectrum analysis mode automatically
●Connected to PC with advanced software for more analysis needs
●Integrated with printer to print out the testing result
●300 x 200 matrix LCD display with backlight
●Two probes for option: low and high sensitivity probes

Technical Specification

Measuring range	Low sensitivity probe	
	Acceleration	0.1m/s-392m/s (peak)
	Velocity	0.01cm/s-80cm/s (RMS)
	Displacement	0.001mm-18.1mm (peak-peak)
	High sensitivity probe	
	Acceleration	0.1m/s-20m/s (peak)
	Velocity	0.01cm/s-4cm/s (RMS)
	Displacement	0.001mm-0.8mm (peak-peak)
Frequency range	Low sensitivity probe:	
	Acceleration	10Hz-200Hz,10Hz-500Hz, 10Hz-1KHz,10Hz-10KHz
	Velocity	10Hz-200Hz, 10Hz-500Hz,10Hz-1KHz
	Displacement	10Hz-200Hz,10Hz-500Hz
	High sensitivity probe	
	Acceleration	10Hz-200Hz,10Hz-500Hz, 10Hz-1KHz,10Hz-10KHz
	Velocity	10Hz-200Hz, 10Hz-500Hz,10Hz-1KHz
	Displacement	10Hz-200Hz,10Hz-500Hz
Accuracy	±5%	
Power	Li battery (continuous working 20 hours without backlight)	
Temperature	0℃~40℃	
Humidity	≤80%RH	
Dimension (mm)	171× 78.5×28	
Weight (g)	230	

TIME®7230

VIBRATION TESTER

Standard Delivery

●Main unit	1
●Protection pocket	1
●Low sensitivity probe(only for TIME®7231)	1
●High sensitivity probe(only for TIME®7232)	1
●Power adapter	1
●Magnetic base	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Dataview
●Needle groupware
●TA230 printer
●RS232 communication cable

Features

●Two display modes: digital value mode and spectrum mode
●Large memory function: 100 x 100 measured results (100 testing points, 100 data can be stored in each testing points), 100 spectrograms (each testing point can store one spectrogram)
●Spectrogram can display in real time
●Histogram can be made according to the preset alarm line
●Upper /lower limits pre-setting and sound alarm if test results out of limitation, which leads to spectrum analysis mode automatically
●Connected to PC with advanced software for more analysis needs
●Integrated with printer to print out the testing result
●300 x 200 matrix LCD display with backlight
●TIME®7231 equipped with low sensitivity probes, suitable for testing strong vibration
●TIME®7232 equipped with high sensitivity probes, suitable for testing weak vibration
●Conform to ISO 2954, GB/T13824, GB138233 Standards

Technical Specification

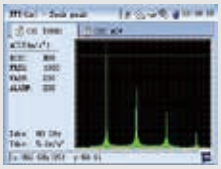
Model		TIME®7231	TIME®7232
Measuring range	Acceleration	1m²/s ~392m²/s (Peak)	0.1m²/s ~20 m²/s (Peak)
	Velocity	0.1cm/s~80cm/s(RMS)	0.01cm/s~4cm/s(RMS)
	Displacement	0.01mm~18.1mm (Peak-Peak)	0.001mm~0.8mm (Peak-Peak)
Frequency range	Acceleration	10Hz~200Hz、10Hz~500Hz、10Hz~1KHz、10Hz~10KHz	
	Velocity	10Hz~200Hz、10Hz~500Hz、10Hz~1KHz	
	Displacement	10Hz~200Hz , 10Hz~500Hz	
Accuracy	±5%		
Power	Li battery (continuous working 20 hours without backlight)		
Temperature	0℃~40℃		
Humidity	≤80%RH		
Dimension (mm)	171× 78.5×28		
Weight (g)	230		

TIME®7231/7232

VIBRATION TESTER

TIME®7240

VIBRATION TESTER



FFT Mode

AVD Mode

Standard Delivery

• Main unit	1
• Vibration probe TSV-03	1
• Magnetic base	1
• Protection sheath for main unit	1
• Power adapter	1
• USB communication	1
• SD memory card(2G)	1
• TIME certificate	1
• Warranty card	1
• Instruction manual	1

Optional Accessory

- Photoelectric keyphasor transducer
- RS232 cable(for printing)
- TPUP-NH thermal printer
- Needle groupware

Features

- Three channels(CH1, CH2 and REV) available, the vibration of any two of the three directions(including X axis, Y axis and Z axis)can be tested.
- Five measuring modes: three parameters measuring (AVD mode), dynamic time domain waveform (TIME mode), dynamic spectrum measurement (FFT mode), data sampling (Sample mode), rotation speed measurement (REV mode).
- The peak value of acceleration, velocity and peak to peak value of displacement are measured.
- Preset the filter's cut-off frequency of pass band, frequency up to 100Hz.
- Dynamic display the vibration frequency and waveform in real time.
- Continuous data sampling last for 20 seconds
- Powerful data memory management: up to 50 points' infinite data, the measured data of each point is stored in files, users can review the vibration parameters, waveform, frequency data sampling and rotation speed.
- Connected with printer to print out measured data, waveform and spectrum chart.
- Photoelectric transducer for high accurate rotation speed
- Self-diagnosis for malfunction: Alarm sets off if test results out of warning line
- Safe and reliable long-life Li battery with self-protect equipment
- Color LCD display, auto shutdown and buzz alarming

Technical Specification

Sensitivity of Acceleration transducer (mVrms/g)	Acceleration (m/s^2)	Velocity(mm/s)	Displacement(μm)
1.0~9.9	1-2,000	1-2,000	10-20,000
10~99	0.2-200	0.2-200	5-2000
Frequency range	Acceleration:5Hz~10000Hz		
	Velocity:5Hz~1000Hz		
	Displacement:5Hz~500Hz		
Rotation Speed	300~60000RPM		
Tolerance	±5%		
Battery	Li battery(continuous working for 8hours)		
Operating temperature	0℃~40℃		
Humidity	≤80%RH		
Dimensions (mm)	223×122×38		
Weight (g)	606		

G

Bench Hardness Tester

Features

- High accuracy, wide measurement range, automatic loading and unloading of major load
- Test results display digitally, and can print automatically and connected to PC.
- High definition Matrix LCD display with back-light
- Optional indenters meet different test requirements: TH300 protruding indenter for ring and groove; TH310 for surface and TH320 for all kinds.
- Conversion of common hardness scales (HLD, HV, HB) & Conversion of Tensile Strength,up to 15 kinds of Rockwell hardness scales.
- Collect statistics includes values, mean value, Maximum, Minimum and Standard Deviation
- Round correction: cylinder and sphere surface
- Upper /lower limits pre-setting and sound alarm
- Comply with GB/T230.2, BS EN10109-2, ASTME-18, ISO6508.2 and other applicable standards.
- Automatic test process
- RS 232/USB data output

Typical application

- Researching institute
- National organization
- University
- Aerospace Industry
- Automobile industry
- Steel industry

TH300/320

ROCKWELL HARDNESS TESTER

Protrudent design for testing in place difficult to reach

Assistant joist

Assistant support

Assistant joist and assistant support as shown below are designed to provide support for hardness testing of long, heavy and big work pieces.

TH300/320

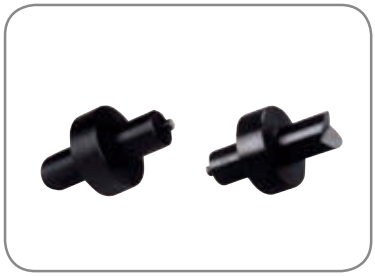
ROCKWELL HARDNESS TESTER

Technical Specification

Model	TH300	TH320
Hardness scales	Rockwell A, B, C,D,E,F, G, H, K ,L, M ,P, R, S, V	Rockwell A,B,C,D,E,F,G,H,K,L,M,P,R,S,V Rockwell superficial15/30/45N,T,W,X,Y
Resolution	0.1Rockwell unit	
Pre-load	98.07N/10kgf	98.07N/10kgf, 29.42N/3kgf
Total load	588.4N/60kgf, 980.7N/100kgf, 1471N/150kgf	588.4N/60kgf, 980.7N/100kgf, 1471N/150kgf, 147.1N/15kgf, 294.2N/30kgf, 441.3N/45kgf
Display	Matrix backlight LCD	
Language	English, French, Germany	English
Operation	Menu selectable, Membrane keypad	
Test process	Automatic	
Load duration	2-50 seconds, can be set, dynamic displayed and stored	
Functions	● Upper / lower hardness limits setting and alarming ● Data statistics : Ave., Max., Min., standard Deviation, ● Convert tested values to HB, HV, HLD and δ_b (Tensile-strength) ● Curvature correction: cylinder and sphere surface	● Upper / lower hardness limits setting and alarming ● Data statistics : Ave., Max., Min., standard Deviation, ● convert tested values to HB, HV, HLD and δ_b (Tensile-strength) ● Curvature correction: cylinder and sphere surface
Data output	RS232	
Tester standard	ISO6508.2 , ASTM E-18	
Testing space	Vertical: 250mm (9.85 〃) Horizontal:150mm (5.91 〃)	Vertical: 250mm (8.66 〃) Horizontal:150mm (6.00 〃)
Work piece size	External surface cylinder: Min.Ø3mm (0.120 〃) Internal surface cylinder: Min.Ø23mm (0.900 〃)	
Power supply	220v/110v, 50Hz, 4A	
Dimensions (mm)	715×225×790	720×240×815
Weight (kg)	100	120

Large Vee anvil

Short diamond indenter
Slim diamond indenter
Flat diamond indenter



Point/Vee anvil

Flat/Vee anvil

Round flat anvil Ø70

Round flat anvil Ø225

Round flat anvil Ø150

Standard Delivery

TH300	TH320
Main unit	Main unit
Test block B	Test block A, B, C
Test block C	Test block 15N
120° cone diamond indenter	Test block 30N
1/16" (1.5875mm) ball indenter	Test block 30T
1/16" (1.5875mm) spare ball	120° cone diamond indenter
Screw for indenter	1/16"(1.5875mm)ball indenter
Round flat anvilØ70	1/16" (1.5875mm) spare ball
Large vee anvil	Screw for indenter
Power supply cable	Round flat anvil
Instruction manual	Large vee anvil
Warranty card	Power supply cable
	Instruction manual
	Warranty card

Optional Accessory

- ●Mini-printer TA230
- ●Data communicating cable
- ●Short diamond indenter
- ●Flat diamond indenter
- ●Slim diamond indenter
- ●1/8"(Ø3.175mm) indenter and spare ball
- ●1/4"(Ø6.350mm) indenter and spare ball
- ●1/2"(Ø12.70mm) indenter and spare ball
- ●Round flat anvil Ø225
- ●Round flat anvil Ø150
- ●Small vee anvil
- ●Flat /vee anvil
- ●Assistant support
- ●Assistant joist

Features

- Rockwell hardness tester TH500 for mechanical project manual testing
- Practical economical solution, wide range measurement and simple operation.
- Wide usage range: hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

Usage Range

- Hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

TH500

ROCKWELL HARDNESS TESTER

Optional Accessory

●Diamond rockwell indenter	1
●Hardness block(HRC high low 2, HRB 1)	3
●Weights(A,B,C)	Each 1
●Manual	1
●1.5875mm ball indenter	1
●Large, medium, “V” shaped testing table	Each 1
●Plastic dustproof cover	1
●Product certificate	1

Technical Specification

Model	Model TH500 manual rockwell hardness tester
Indication of hardness value	Dial
Max height of specimen	170mm
Distance of indenter to outer wall	165m
Preliminary testing force	10kgf(98.07N)
Testing force	60kgf(588N) 100kgf(980N) 150kgf(1471N)
Rockwell scale	HRA,HRB,HRC,HRD,HRE,HRF,HRG ,HRH,HRK
Hardness measuring range	HRA:20-88 HRB:20-100 HRC:20-70 HRD:40-77
	HRF:60-100 HRG:30-94 HRH:80-100 HRK:40-100
Dimension (mm)	463×241×660
Weight (g)	80000

TIME®6101

MOTORIZED ROCKWELL HARDNESS TESTER

Features

- Driving motor with automatic loading and unloading technique
- High accuracy, reliable performance
- Wide usage range: hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

Usage Range

- Hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

Standard Delivery

●Diamond rockwell indenter	1 pc
●φ1.5875mm ball indenter	1 pc
●Testing table (big, medium, "V"-shaped)	TOTAL 3 pcs
●Standard rockwell hardness block	3 pc
●Fuse 2A	2 pcs
●Power cord	1 pc
●Weight A, weight B, weight C	TOTAL 3 pcs
●Level	1 pc
●Horizontal regulating screw	4 pcs
●Screwdriver	1 pc
●Solid spanner	1 pc
●Nylon anti-dust bag	1 pc
●Usage instruction manual	1 pc

Technical Specification

The initial test force	98.07N (10kg); Tolerance: ± 2.0%
The total test force	588.4N(60kg), 980.7N(100kg), 1471N(150Kg); Tolerance: ± 1.0%
The power source	AC220V/110V, 50/60 Hz
Time-delayed control	2-60 seconds, adjustable
The max. height of the specimen	175 mm
The distance from the indenter center to the instrument body	165mm
The overall dimension of the tester:	525×210×730mm
The net weight of the tester	78kg

TIME®6102

DIGITAL ROCKWELL HARDNESS TESTER

Features

- Large newly-designed displaying screen with good reliability, easy to operate and read
- Conversion of common hardness scales
- Transfer to PC for more further management, and connect to printer
- Conform to ISO6508-2 and ASTM E18 standards.

Usage Range

- Hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

The tester conforms to following standard:
ISO6508-2, metallic materials - rockwell hardness test - part 2: verification and calibration of testing machines
ASTM E18, standard test methods for rockwell hardness and rockwell superficial hardness of metallic materials.

Standard Delivery

●Diamond rockwell indenter	1 pc
●ф1.5875mm ball indenter	1 pc
●Testing table (big, meddle, "V"-shaped)	TOTAL 3 pcs
●Standard rockwell hardness block	3pc
●Fuse 2A	2 pc
●Power cable	1 pc
●Weight A,B,C	TOTAL 3 pcs
●Level	1 pc
●Horizontal regulating screws	4 pcs
●Screwdriver	1 pc
●Spanner	1 pc
●Printer operating manual	1 pc
Usage Instruction Manual	1 pc

Technical Specification

The initial test force	98.07N (10kg), Tolerance: ± 2.0%
The total test force	588.4N(60kg), 980.7N(100kg), 1471N(150Kg); Tolerance: ± 1.0%
The power source and the voltage	AC220V/110V, 50/60 Hz
Time-delayed control	2-60 seconds, adjustable
The max. height of the specimen	175 mm
The distance from the indenter center to the instrument body	165mm
The overall dimension of the tester:	520×215×700mm
The net weight of the tester	78kg

Features

- Large newly-designed displaying screen with full function, easy to operate and read
- Conversion of common hardness scales
- Transfer to PC for more further management, and connect to printer
- All hardness scales selectable for Rockwell and superficial Rockwell test
- Dwell time selectable for hardness test
- Review and revise the test values of year, month and date.

Usage Range

- Hardened steel, the tempering steel, steel, steel rolling, annealing cold malleable iron, aluminum alloy, copper and so on.

TIME®6103

DIGITAL DOUBLE ROCKWELL HARDNESS TESTER

Standard Delivery

●Diamond rockwell indenter	1 pc
●φ1.5875mm ball indenter	1 pc
●Testing table (big, meddle, "V"-shaped)	TOTAL 3 pcs
●Weight: No. 1, 2,3,4,5	TOTAL 5 pcs
●Standard rockwell hardness block	TOTAL 3 pcs
●Standard superficial rockwell hardness block	TOTAL 2 pcs
●Level gauge	1 pc
●Horizontal regulating screw	4 pcs
●Screw driver	1 pc
●Spanner	1 pc
●Power cord	1 pc
●Fuse 2A	2 pc
●Anti-dust nylon bag	1 pc
●Usage instruction manual of hardness tester	1 pc

Technical Specification

Rockwell hardness			
Test force	Initial test force(N)	98.07(10kg)	Tolerance±2.0%
	Total test force(N)	588.4(60 kg)	Tolerance±1.0%
		980.7(100 kg)	
		1471(150kg)	
Hardness scale	HRA/B/C/D/E/F/G/H/R/M/P/S/K/L/V		

Superficial rockwell		
Test force	29.42(3 kg)	Allowed Tolerance±2.0%
	147.1(15 kg)	Allowed Tolerance±1.0%
	294.2(30 kg)	
	441.3(45 kg)	
Hardness scale	HR15N/T/W/X/Y; HR30 N/T/W/X/Y; HR45 N/T/W/X/Y	

The power source and the voltage	AC220V/110V, 50/60 Hz
The distance from the indenter center to the instrument body	165mm
Dimension (mm)	551×260×800
Weight (g)	80000 (Approx)

Features

- Combination of the precise mechanical structure, high accurate pressure transducer, microcomputer control unit of electrical circuit system, innovative closed-loop technology to improve its stability and accuracy.
- Load-cell driven system provides precise control of the test force, providing unsurpassed system performance without weight blocks
- Reliable repetition, sensitive and accurate readings and easy operation
- Perfect for laboratories, workshops, tool rooms, inspection labs, etc.
- A wide range of test forces and ball sizes to suit every application

TIME®6201

ELECTRONIC BRINELL HARDNESS TESTER

Standard Delivery

●φ2.5,φ5,φ10mm steel ball indenter	1pc(each)
●Big ,small plane testing table, “V” testing table	1pc(each)
●Standard hardness test block	
●HBW10/3000 (150~250)	1pc
●HBW5/750 (150~250)	1pc
●Spare fuse(2A)	2pcs
●Power cord	1pc
●Usage instruction manual	1copy
●20^{x} reading microscope	1pc
●Dust-proof plastic bag	1pc
●Brinell hardness control table	1pc

Technical Specification

Testing Force	612.9N(62.5kgf)	4900N(500kgf)
	980N(100kgf)	7355N(750kgf)
	1226N(125kgf)	9800N(1000kgf)
	1839N(187.5kgf)	14700N(1500kgf)
	2452N(250kgf)	29400N(3000kgf)
Hardness value range in measure	8~650HB	
Enlargement factor of reading microscope	20times	
Minimum division value of micrometer drum wheel	0.005mm	
Maximum height of sample	220mm	
Distance from indenter’s center to outer wall	135mm	
Power source	AC220V/110V, 50/60 Hz	
Dimension (mm)	753×542×205	
Weight (g)	130000	

Features

- Combination of the precise mechanical structure, high accurate pressure transducer, microcomputer control unit of electrical circuit system, innovative closed-loop technology to improve its stability and accuracy.
- Load-cell driven system provides precise control of the test force, providing unsurpassed system performance without weight blocks
- Reliable repetition, sensitive and accurate readings and easy operation
- Indentation directly measured by the microscope, the diameter, the hardness value,17 different hardness testing comparison tables as well as the HBW range display on the LCD screen
- RS232 interface, printer optional
- Perfect for laboratories, workshops, tool rooms, inspection labs, etc.
- A wide range of test forces and ball sizes to suit every application

TIME®6202

DIGITAL BRINELL
HARDNESS TESTER

Standard Delivery

●φ2.5,φ5,φ10mm ball indenter	1 for each diameter
●Large, small and V-type test stock	1 for each type
●Standard hardness block	
●HBW10/3000 150~250	1
●HBW5/750 150~250	1
●Fuse	2 (2A)
●Power cord	1
●Printer operation manual	1
●Quality certificate	1
●20× microscopic ocular lens	1
●Plastic dust-proof cover	1
●Instruction manual	1

Technical Specification

Testing force	612.9N(62.5kgf)	4900N(500kgf)
	980N(100kgf)	7355N(750kgf)
	1226N(125kgf)	9800N(1000kgf)
	1839N(187.5kgf)	14700N(1500kgf)
	2452N(250kgf)	29400N(3000kgf)
Applicable hardness range	8~650 HBW	
Amplification of reading microscope	20 times	
Minimum division value of micrometer drum wheel	0.00125mm	
Maximum height of sample	225mm	
Distance from indenter's center to instrument body	135mm	
Voltage of power source	AC220V	
Dimension (mm)	789×543×225	
Weight (g)	130000	

Features

- Combination of the precise mechanical structure, high definition optical measuring system, CPU controlling test procedure and photoelectrical sensor technology for accurate result.
- The LCD screen shows measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.
- Presetting dwell time, Vickers or Knoop measuring method, light intensity, and easy operation with setting on the front penal
- Automatic calculation of the hardness value after inputting the diagonal length and automatic loading and unloading technique
- Equipped with hand turret for your convenience
- Conform to GB/T4340, ISO6507, JIS B7725 and ASTME92 standards.

TIME®6301

DIGITAL MICRO VICKERS HARDNESS TESTER

Standard Delivery

●Weights	6 pcs
●Weight axis	1 pc
●Cross testing table	1 pc
●Platelet fixture	1 pc
●Plane-holding fixture	1 pc
●Filament fixture	1 pc
●Screw drivers	2 pcs
●Horizontal regulating screws	4 pcs
●Level	1 pc
●Power cord	1 pc
●Repair fuses (1A)	2 pcs
●10×digital micro eyepiece	1 pc
●Vickers hardness blocks	2 pcs
●The USAGE instruction manual	1 pc

Technical Specification

Testing range	1HV~2967HV
Test force	0.098N(10gf),0.245N(25gf),0.49N(50gf), 0.9807N(100gf),1.961N(200gf),2.942N(300gf), 4.903N(500gf),9.807N(1000gf)
Max height of the specimen	100 mm
Distance between the center point of the indenter and the exterior panel	98 mm
Test force application method	automatic loading and unloading
Amplification of the microscope	400× (for the measurement)
	100× (for the observation)
Dwell time of the test force	0~60s (5 seconds as a unit)
Min graduation value of the testing drum wheel	0.25μm/grid
Power	AC220V/110V, 50/60 Hz
Dimension (mm)	480×305×545
Weight (g)	30000

Features

- Unique and precise design in mechanics, optics and light source for clearer indentation and hence a more precise measurement.
- 20 × lens and a 40 × lens the tester enable a wider measurement field and a broader usage range.
- Equipped with a digital microscope, it shows the measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.
- TH711: equipped with auto turret to prevent maloperation.
- Automatic loading and unloading technique
- Conform to GB/T4340, ISO6507, JIS B7725 and ASTME92 standards.

TH710/711

DIGITAL MICRO VICKERS HARDNESS TESTER

Standard Delivery

●Weights	6 pcs
●Weight axis	1 pc
●A cross testing table	1 pc
●A platelet fixture	1 pc
●A plane-holding fixture	1 pc
●A filament fixture	1 pc
●Screw drivers	2 pcs
●Horizontal regulation screws	4 pcs
●A level	1 pc
●An electric cave	1 pc
●Repair fuses (1A)	2 pcs
●An eyepiece	1 pc
●Vickers hardness blocks	2 pcs
●The usage instruction manual for the product	1 pc

Technical Specification

Testing range	1HV~2967HV	
Test force	0.098N(10gf),0.245N(25gf),0.49N(50gf), 0.9807N(100gf),1.961N(200gf),2.942N(300gf), 4.903N(500gf),9.807N(1000gf)	
Optical system		
Carriage application method:	automatic loading and unloading	
Objective	10ˣ(Observation)	40ˣ(Measurement)
Measuring Eyepiece	10ˣ	
Total Amplification	100ˣ(Observation)	400ˣ(Observation)
Resolution Rate	0.25μm	0.0625μm
Max height of the specimen	100 mm	
Distance between the point of the indenter and the exterior panel	98 mm	
Gross weight: 44kg	Net weight: 30 kg	
Power source	AC220V/110V, 60/50 Hz	
Dimension (mm)	480×305×545	

Standard Delivery

•Main unit	1	•Power cord	1
•Weights	6	•10× numerical microscope	1
•Cross testing table	1	•Vickers hardness block	2
•Platelet fixture	1	•Repair fuses (1A)	2
•Plane-holding fixture	1	•Weight shaft	1
•Filament fixture	1	•Instruction manual	1
•Screw driver	2	•TIME certificate	1
•Horizontal regulation screw	4	•Warranty card	1
•Level	1		

Optional Accessory

- •Knoop indenter
- •LCD device
- •Grinding machine
- •Cutting machine
- •Mosaic machine

Technical Specification

Test Forces	(0.098, 0.246, 0.49, 0.98, 1.96, 2.94, 4.90, 9.80) N(10, 25, 50, 100, 200, 300, 500, 1000) gf
Carriage Control	Loading / dwell/ unloading(automatic)
Amplification of the Microscope	100 ×, 400 ×
Dwell Time of the Test Force	(5-60)s
Min. Graduation Value of the Testing Drum Wheel	0.0625μm
Testing Field	1HV—2967HV
Dimension of the XY Table(mm)	100 × 100
Movement Field of the XY Table(mm)	25 × 25
Max. height of the specimen(mm)	70
Max. width of the specimen(mm)	95
Light source	Cold light source
Power Supply	110V/220V,60/50Hz
Dimensions(mm)	425 × 245 × 490

Features

- •New high-tech product with precise mechanical and photoelectrical technology
- •10 × lens and a 40 × lens the tester enable a wider measurement field and higher accuracy.
- •Equipped with a digital microscope and cold light source, it shows the measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.
- •Camera devices can be connected via RS232 interface
- •Especially suitable for testing the hardness of small, thin and fragile material specimen
- •Knoop indenter optional to measure knop hardness value
- •Conform to GB/T4340, ISO6507, JIS B7725 and ASTME92 standards.
- •TH713: equipped with auto turret to prevent maloperation.

TH712/713

DIGITAL MICRO VICKERS HARDNESS TESTER

Features

- Large LCD screen shows measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.
- Optional LCD devices (composed of CCD measuring device and LCD display screen)
- Especially suitable for testing the hardness of small, thin and fragile material specimen
- Knoop indenter optional to measure knop hardness value
- 10 × lens and a 40 × lens the tester enable a wider measurement field and higher accuracy.
- Testing result printable by built-in printer.
- TH 715: equipped with auto turret to prevent maloperation.
- TH 716: the test force can extend to 19.6N (2000gf)

TH714/715/716

DIGITAL MICRO VICKERS HARDNESS TESTER

Standard Delivery

•Main unit	1	•Power cord	1
•Weights	6	•10×numerical microscope	1
•Cross testing table	1	•Vickers hardness blocks	2
•Platelet fixture	1	•Repair fuses (1A)	1
•Plane-holding fixture	1	•Cable for RS232 interface	1
•Filament fixture	1	•TIME certificate	1
•Screw drivers	2	•Warranty card	1
•Horizontal regulation screws	4	•Instruction manual	1
•Level	1		

Optional Accessory

- Knoop indenter
- Grinding machine
- Cutting machine
- Mosaic machine
- LCD device

Technical Specification

Test Forces	(0.098, 0.246, 0.49, 0.98, 1.96, 2.94, 4.90, 9.80) N(10, 25, 50, 100, 200, 300, 500, 1000) gf
Carriage Control: automatic	Loading / dwell/ unloading(automatic)
Amplification of the Microscope	100 ×, 400 ×
Dwell Time of the Test Force	(5-60)s
Min. Graduation Value of the Testing Drum Wheel	0.0625μm
Testing Field	1HV—2967HV
Dimensions of the XY Table(mm)	100 × 100
Movement Field of the XY Table(mm)	25 × 25
Max. height of the specimen(mm)	70
Max. width of the specimen(mm)	95
Light source	Cold light source
Power Supply	110V/220V,60/50Hz
Dimension(mm)	425 × 245 × 490
Net Weight(kg)	35

Features

- 20 × lens and a 40 × lens the tester enable a wider measurement field and higher accuracy.
- Connected to printer and computer via RS232 interface.
- Easy operation: Auto turret
- The touch LCD screen shows measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.

TH717

DIGITAL MICRO VICKERS HARDNESS TESTER

Standard Delivery

●Weights	6 pcs
●A cross testing table	1 pc
●A platelet fixture	1 pc
●A plane-holding fixture	1 pc
●A filament fixture	1 pc
●Screw drivers	2 pcs
●Horizontal regulation screws	4 pcs
●A level	1 pc
●An electric cave	1 pc
●A 10×numerical microscope	1 pc
●Vickers hardness blocks	2 pcs
●Repair fuses (1A)	2 pcs
●The usage instruction manual for the product	1 pc

Technical Specification

Testing range	1HV~2967HV	
Test force	0.098N(10gf),0.245N(25gf),0.49N(50gf), 0.9807N(100gf), 1.961N(200gf),2.942N(300gf), 4.903N(500gf),9.807N(1000gf)	
Optical system		
Carriage application method:	automatic loading and unloading	
Objective	10ˣ(Observation)	40ˣ(Measurement)
Measuring eyepiece	10ˣ	
Total amplification	100ˣ(Observation)	400ˣ(Measurement)
Resolution Rate	0.25μm	0.0625μm
Max height of the specimen	100 mm	
Distance between the point of the indenter and the exterior panel	98 mm	
Gross weight: 44kg	Net weight: 30 kg	
Power	AC220V/110V, 60/50 Hz	
Dimension (mm)	480×305×545	

Standard Delivery

•Largest test table	1	•10×digital micro lens	1
•V shape test table	1	•Vickers hardness blocks	2
•Screw drivers	2	•Repair fuse(1A)	2
•Horizontal regulation screws	4	•TIME certificate	1
•Level	1	•Warranty card	1
•Power cord	1	•Instruction manual	1

Optional Accessory

•CCD measuring device

•Knoop indenter(for TH720)

Technical Specification

Type		TH720	TH721
Testing force	N	4.903，9.807，19.61，24.52，29.42，49.03，98.07，196.1，294.2	9.807，19.61，24.52，29.42，49.03，98.07，196.1，294.2，490.3
	KGF	0.5，1，2，2.5，3，5，10，20，30	1，2，2.5，3，5，10，20，30，50
Carriage Control		Loading/dwell /unloading(automatic)	
Dwell Time		(0~60)s	
Amplification of the microscope		100×、200×	100×、200×
Min. graduation value of the test drum wheel		0.125μm	
Testing field		1HV~2967HV	
Lens/Indenter switch		with Hand Turret	
Max. Height of the specimen		180mm	
Max. Width specimen		130mm	
Light source		Cold light source	
Power		110V/220V，60/50HZ	
Dimensions(mm)		530×225×630	

Features

•New high-tech product with precise mechanical and photoelectrical technology

•Equipped with a digital microscope and cold light source, it shows the measuring method, test force, diagonal length of indentation, hardness value, dwell time and the times of measurement.

•Especially suitable for testing the hardness of small, thin and fragile material specimen

•Closed-loop control system:CPU control test force to load, dwell and unload, with high accurate pressure transducer sense feedback , the loss of test force automatically compensated.

TH720/721

DIGITAL MICRO VICKERS HARDNESS TESTER

Features

- Suitable for testing the hardness of ferrous, non-ferrous metals, hard metals, carburized layers and chemical treating layers
- Versatile hardness tester for Brinell, Rockwell, Vickers testing
- Different kinds of testing force and indenter can be selected
- Adopt test force transformation framework and optical measuring instruction system
- Equipped with indentation measuring device

TH722

UNIVERSAL HARDNESS TESTER

Standard Delivery

●Diamond rockwell indenter	1
●Diamond vickers indenter	1
●1.5875mm ball indenter	1
●2.5mm ball indenter	1
●5mm ball indenter	1
●Testing table (big, small, “V”)	1
●Standard rockwell hardness block (55~65HRC)	1
●Standard rockwell hardness block(25~35HRC)	1
●Standard rockwell hardness block(HRB)	1
●Standard brinell hardness block	1
●Standard vickers hardness block	1
●Weight 1	1
●Weight 2	1
●Weight 3	1
●Weight 4	1
●Weight 0#	1
●15× micrometer eyepiece	1
●2.5×objective	1
●5×objective	1
●Power cord	1
●Fuse	1
●Lamp 6V,21CP	1
●Lamp 6V,15W	1
●Baffle testing table	1
●Inner lamp head	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Pre- test force(N)	98
Rockwell test force(N)	588,980,1471
Brinell test force (N)	306,613,1839
Vickers test force(N)	294,588,980
Magnification of microscope	37.5×,75×
Max. height of specimens(mm)	180
Distance from indenter's center to outer wall(mm)	200
Machine size(D×W×H) (mm)	560×260×760
Power	AC220V/50Hz
Weght (g)	90000

Standard Delivery

•Screw drivers	2	•10×digital micro lens	1
•Horizontal regulation screws	4	•Vickers hardness blocks	2
•Level	1	•Repair fuse(1A)	2
•Power cord	1	•TIME certificate	1
•Cross testing table	1	•Warranty card	1
		•Instruction manual	1

Optional Accessory

•CCD measuring device

Technical Specification

Type		TH723	TH724
Testing force	N	2.942N, 4.903N, 9.807N, 19.61N, 24.52N, 29.42N, 49.03N	2.942N, 4.903N, 9.807N, 19.61N, 24.52N, 29.42N, 49.03N, 98.07N
	KGF	0.3 kg, 0.5kg, 1kg, 2kg, 2.5kg, 3kg, 5kg	0.3 kg, 0.5kg, 1kg, 2kg, 2.5kg, 3kg, 5kg, 10kg
Carriage Control		Loading/dwell /unloading(automatic)	
Dwell Time		(0~60)s	
Amplification of the microscope		200×、400×	100×、400×
Min. graduation value of the test drum wheel		0.125μm 0.0625μm	0.25μm 0.0625μm
Testing field		1HV~2967HV	
Lens/Indenter switch		with Hand Turret	
Max. Height of the specimen		180mm	
Max. Width specimen		130mm	
Light source		Cold light source	
Power		110V/220V，60/50HZ	
Dimensions(mm)		530×225×630	

Features

•New high-tech product with precise mechanical and photoelectrical technology.

•Equipped with a digital microscope, directly display the measuring method, test force, indentation length, hardness value, dwell time of test force and etc.

•Especially suitable for testing the hardness of small, thin, fragile material specimen.

•Closed-loop control system :CPU control test force to load, dwell and unload, with high accurate pressure transducer sense feedback, the loss of test force automatically compensated.

TH723/724

DIGITAL VICKERS HARDNESS TESTER

Features

- ●Big LCD display shows stable and accurate results
- ●Digital versatile hardness tester for Brinell, Rockwell, Vickers testing
- ●Conversion among different hardness scales
- ●Selection of dwell time and setting of time and date
- ●Storage and printing function
- ●RS232 interface for optional functions

TH725

DIGITAL UNIVERSAL HARDNESS TESTER

Rockwell Hardness

Specifications of rockwell hardness				
Testing force(N)	Initial testing force	98.07(10kg)		Tolerance ±2.0%
	total testing force	588.4(60kg)		Tolerance ±1.0%
		980.7(100kg)		
		1471(150kg)		
Indenter	Diamond cone indenter			
	Φ1.5875mm ball indenter			
Scales	HRA	HRB	HRC	HRD
Max height of samples	175mm			

The technical specification of brinell hardness tester			
Testing force	294.2N(30kg)		Tolerance ±1.0%
	306.5N(31.25kg)		
	612.9N(62.5kg)		
	980.7N(100kg)		
	1839N(187.5kg)		
Indenter	φ2.5mm、φ5mm Ball Indenter		
Scales	HBW1/30	HBW2.5/31.25	HBW2.5/62.5
	HBW5/62.5	HBW10/100	HBW2.5/187.5
Eyepiece magnification	15×		
Objective	2.5×(resolution 0.5μm) 5×(resolution 0.25μm)		
Max height of sample	For 2.5×: max height is 95mm For 5×: max height is 115mm		

Vickers Hardness

Technical specifications of vickers hardness		
Test force	294.2N(30kg)	Tolerance ±1.0%
	980.7N(100kg)	
Indenter	Diamond vickers indenter	
Scale	HV30	HV100
Eyepiece magnification	15×	
Objective magnification	5×(Resolution 0.25μm)	
Max. height of specimen	115mm	

Technical Specification

The power source and the voltage	AC220V/110V, 50/60 Hz
Time-delayed control	0-60 seconds, adjustable
The distance from the Indenter center to the instrument body	165mm
Overall dimension (length×width×height)	551×260×800 mm
The net weight of the tester	80kg (Approx)

Accessories [Packing list]

Accessories kit of main body		
No.	Description of goods	Quantity
1	Diamond cone rockwell indenter	1pc
2	φ1.5875mm steel ball indenter	1pc
3	Large testing table	1pc
4	Medium testing table	1pc
5	“V” shaped testing table	1pc
6	0、1、2、3、4 weight	Total 5-pcs
7	Standard hardness block HRC (high, lower)	Total 2 pcs
8	Standard hardness block HRB	1 pc
9	Level bolt	4-pcs
10	spanner	1-pc
11	Power cable	1-pc
13	Instruction manual	1-copy
14	Quality certificate	1-copy
15	Plastic Anti-dust Bag	1-pc

Accessories kit of microscope			
No.	Description of goods		Quantity
1	Digital eyepiece		1pc
2	Seat of microscope	in harness	1pc
3	Outside light		1pc
4	Inside light		1pc
5	2.5× objective		1pc
6	5× objective		1pc
7	Slipped testing table		1pc
8	Diamond vickers indenter		1-pc
9	φ2.5mm，φ5mm ball indenter		2-pcs
10	Standard vickers hardness block(HV30)		1-pc
11	Standard brinell hardness block（HBW/2.5/187.5）		1-pc
12	Gradienter		1-pc
13	Fuse 2A		2-pcs

H

Metallographic Equipment

JMQ-12

LOW SPEED PRECISE
CUTTING MACHINE

Features

●JMQ-12 low speed precise cutting machine is mainly used to cut small cylindrical, square metal body and electronic circuit board material. The cutting force adopts weight blocks for constant load of automatic cutting; it automatically stops when the cutting is finished. It uses micrometer device to adjust the thickness of the sample cutting for precise cutting, therefore can be used as TEM sample preparation equipment. The rotating speed is controllable; to avoid burning the sample due to overheating, the machine is equipped with a strong cooling system. The diamond cutting disc will bring out the cooling water when cutting to cool the cutting disc and the sample. The surface of the sample after cutting is bright and flat without burns. The equipment has easy operation and maintenance and is an excellent machine for cutting small material and electronic circuit boards.

Main Parameters

Diamond wheel diameter	Φ100×0.7×Φ12.7mm
Cutting capacity	25×25 mm, Φ30mm
The liquid crystal display mode, touch pad control	
Rotating speed of cutting	50~800r/min (stepless)
Power supply	220V, 400W
Dimensions	350×380×290mm
Weight	24 kg

QG-4

LOW SPEED PRECISE
CUTTING MACHINE

Features

- QG-4 multifunctional cutting machine is mainly used for cutting cylinder and irregular samples such as multi-angular shape and convex plate etc. It adopts totally-enclosed structure, which can guarantee the absolute safety of cutting sample. In order to avoid the sample burning the material texture because of over-heating in cutting, it is equipped with strong cooling system, and the sample can revolve in the cutting, which can avoid burning the surface of the sample. It can increase the cutting section and improve the availability of the cutting disc. The machine is excellent equipment for cutting irregular samples, easy to use and maintain.

Main Parameters

Maximum Cutting Section:	65×65mm
Rotating Speed:	2800r/min
Cutting Disc Size:	Φ250×2×Φ32mm
Electromotor:	YSR7132, 1.1kw, 380V, 50Hz
Dimensions:	870×590×1110mm
Weight:	180kg

YMP-1A

LOW SPEED PRECISE
CUTTING MACHINE

Features

- In the metallographic sample preparation, pre-grinding, polishing and grinding are the indispensable procedures. This machine is produced with ABS sewage collection plate and cover and is the latest product with a new and beautiful appearance, which can endure long time and is easy to maintain. Only to change the grinding and polishing disc, it can do coarse grinding, fine grinding, dry grinding, wet grinding, etc. In order to expand preparation demands of different samples, the size of the disc is larger than the same products in the market. There are more choices of different linear velocity on the working range, can increase 20-30% of effective working range, can improve the grinding and polishing quality of samples. This machine rotates steadily with low noise, and therefore it is the ideal equipment for metallographic sample preparation.

Main Parameters

Grinding and Polishing Disc	
Diameter	230mm
Abrasive Paper Diameter	230mm
Rotating Speed	500r/min, 1000r/min
Electromotor	YSD802-8/4, 0.25/0.37kw, 380V
Dimensions	420×623×310mm
Weight	35 kg

UniCut Series Manual Cutter

UniCut 150

UniCut 230A/B

Features

- High torque high power and variable-speed control system, strong power, high efficiency.
- closed-loop control, precision speed control, variable speed range, 500-3000rpm/minute, rotating speed can be customized.
- diamond cutting disk, which applies widely, the cutting surface is level.
- optional angle cutting holder.
- Aluminum alloy base, good stability, easy to use.
- Hard anodic oxidation working table, abrasion resistance.
- Dry or wafering cutting, vacuum cleaner is optional.
- Non-noise design, noise pollution is avoided.
- Apply to various metal materials, circuit board, semiconductor, crystals, ceramic, quartz glass and lithofacies samples precision cutting. The facility is equipped with kinds of specimen holders, which can cut irregular shaped workpieces, it is ideal for industries and science institutions applications.

Standard Delivery

- Tool Accessories box
- Diamond Cutting Blade
- Blade Guard
- Vertical Clamp
- Screed Cutting
- Power Line
- Water Output
- Cutting Fluit
- Open Spanner 15mm
- Open Spanner 24mm
- Inner Hexagon Spanner 5mm

Optional Accessory

- Screed Cutting
- Silicon Cutting Sheet
- Corundum Cutting Sheet
- X axis feed holder 0-30mm
- Geologic Sheet Vacuum Fixture
- Angle Holder
- Vacuum Cleaner

Technical Specification

Tech Data	UniCUT 150	UniCUT 230A	UniCUT 230B
Basic parameter			
Cutting Mode	Manual	Manual/Chop Cutting	Manual/ Table-feed Cutting
Cutting Blade	Φ154x12.7x0.6	Φ230x12.7x1.0	Φ230x12.7x1.0
Speed	500-3000rpm	500-3000rpm	500-3000rpm
Max Cutting Thickness	30mm	50mm	50mm
Y axis travel	50mm	100mm	100mm
Electrical Specification	250W	550W	550W
Cooling Mode	built-in cooling water tank		
Table Dimensions(mm)	290x320	400x450	400x450
Installation Conditions			
Power	Single Phase220V/110V	Single Phase220V/110V	Single Phase220V/110V
Packing Parameter			
Equipment	290x340x230	460x500x350	460x500x350
Packing			

UniCut 250

SERIES MANUAL CUTTER

Optional Accessory

- ●Silicon Cutting Blade
- ●Diamond Cutting Blade
- ●Plastic Water Tank
- ●Vertical Clamp
- ●X Axis Feed Holder
- ●Principal Axis Stepless Speed
- ●Electronic Brake
- ●Strong Magnetic Filter
- ●Exhaust System
- ●Vertical Working Table

Standard Delivery

- ●Accessory Tool Box
- ●Common Water Tank
- ●X Axis Feed Holder
- ●Cutting Fluid
- ●Open End Wrenches,30mm
- ●Allen Key,8mm

Features

- ●The base is cast in one piece from nodular cast iron , which is of good stability.
- ●All electronic components are Schneider Electric, safe and reliable.
- ●304 corrosion-free stainless steel T-slot clamping table, 304 corrosion-free stainless steel quick holder with double parallel vise. Easy to clamp various irregular shaped specimens.
- ●304 stainless steel quick holder, corrosion-free, long life.
- ●Huge totally closed cutting chamber, easy to use.
- ●ABB Electric engine, electronic Brake,main arbor continuously variable are optional.
- ●Apply to cutting ferrous metals, nonferrous metals, thermal treatment workpieces, forge piece, rock, semi-conductor, ceramic, etc. The facility is equipped with kinds of specimen holders, which can cut irregular shaped workpieces, it is ideal for industries and science institutions applications.

UniCut 250,250Y,250XY,250M Manual Cutter

Technical Specification

	UniCUT 250	UniCUT 250Y	UniCUT 250XY	UniCUT 250M
Parameter				
Cutting Mode	Manual	Manual/Y axis Feed	Manual/X+Y Axis Feed	Motor Movement
Cutting Blade	250x32x1.5	250x32x1.5	250x32x1.5	250x32x1.5
Speed (rpm)	●2850	●2850 ○500-3000		
Max Cutting Diameter (mm)	80			
Max Cutting Capacity (mm)	80	80x200	80x200	80x250
Y Axis Range(mm)		200	200	250
X Axis Range (mm)			50	
The Brand of Motor	●Made in China○ABB	●ABB		
Power	2.2KW			
Cooling Mode	Water-cooling			
Installation Conditions				
Electrical Supply	●Three-phase 380V	●Three-phase 380V○Single-phase 220V		

UniCut 300

SERIES MANUAL CUTTER

Optional Accessory

- ●Silicon Cutting Blade
- ●Diamond Cutting Blade
- ●Plastic Water Tank
- ●Stainless Steel Quick Holder
- ●Vertical Clamp
- ●X Axis Feed Holder
- ●Principal Axis Stepless Speed
- ●Electronic Brake
- ●Strong Magnetic Filter
- ●Exhaust System
- ●Vertical Working Table

Standard Delivery

- ●Accessory Tool Box
- ●Common Water Tank
- ●X Axis Feed Holder
- ●Cutting Fluid
- ●Open End Wrenches,30mm
- ●Allen Key,8mm

Features

- ●The base is cast in one piece from nodular cast iron , which is of good stability.
- ●All electronic components are Schneider Electric, safe and reliable.
- ●304 corrosion-free stainless steel T-slot clamping table, 304 corrosion-free stainless steel quick holder with double parallel vise. Easy to clamp various irregular shaped specimens.
- ●304 stainless steel quick holder, corrosion-free, long life.
- ●Huge totally closed cutting chamber, easy to use.
- ●ABB Electric engine, electronic Brake,main arbor continuously variable are optional.
- ●Apply to cutting ferrous metals, nonferrous metals, thermal treatment workpieces, forge piece, rock, semi-conductor, ceramic, etc. The facility is equipped with kinds of specimen holders, which can cut irregular shaped workpieces, it is ideal for industries and science institutions applications

UniCut 300,300Y,300XY,300M Manual Cutter

Technical Specification

	UniCUT 300	UniCUT 300Y	UniCUT 300XY	UniCUT 300M
Parameter				
Cutting Mode	Manual	Manual/Y Axis Feed	Manual/X+Y Axis Feed	Motor Movement
Cutting Blade	300x32x2.0			
Speed (rpm)	●2850	●2850 ○500-3000		
Max Cutting Diameter (mm)	80			
Max Cutting Capacity (mm)	Dia.80	Thickness80xDia.200	Thickness80xDia200	Thickness80xDia250
Y Axis Range (mm)		200	200	250
X Axis Range (mm)			50	
The Brand of Motor	●Made in China○ABB	●ABB		
Power	2.2KW			
Cooling Mode	Water-cooling			
Installation Conditions				
Electrical Supply	●Three-phase 380V	●Three-phase 380V○220V		

UNICUT 400

METALLOGRAPHIC CUTTER

Standard Delivery

- ●Cutting Blade
- ●Cooling Water Box & Cooling Pump
- ●Water Inlet/ Water Outlet
- ●3-phase Power Line & Plug
- ●Specification
- ●Warranty Card
- ●32 Open-end Wrench
- ●8 Hexagon Wrench
- ●Dedicated Coolant Fluid
- ●Power Line
- ●Qualification Certificate
- ●Encasement Invoices

Optional Accessory

- ●Diamond Cutting Blade
- ●Vertical Holder

Features

- ●High quality ballscrew and linear rail, with handwheel driven chop cutting and automatic driven table-feed cutting systems.
- ●All electronic components are Schneider Electric, safe and reliable.
- ●T-slot clamping table, quick holder with double parallel vise. Easy to clamp various irregular shaped specimen

Cutting Material

- ●Ferrous metals, nonferrous metals
- ●Casting, thermal treatment workpieces, forge piece
- ●Semi-conductor, ceramic (must be used with diamond cutting blades)
- ●Other materials

Vertical Clamp

Technical Specification

Description	Specification	Notes
Cutting blade (hole dia. 32mm)	Standard 400mm ultrathin cutting blade	Optional diamond cutting blade
Cutting capacity	Max dia. 120mm for a pole, Max 80x80mm for diamonds	
Rotating speed	2800rpm	
Electrical specification	380V 50/60Hz 3-phase	Optional 3-phase 220V, 440V, 480V
Motor power	5500W	
Dimensions	127L x 100W x217H cm	
Weight	545kg	

AutoCut 230/250

AUTOMATIC CUTTER

Features

- The base is cast in one piece from nodular cast iron , which is of good stability.
- High torque high power and variable-speed control system, strong power, high efficiency.
- 7 inch color HD touch screen, easy to use.
- All electronic components are Schneider Electric, safe and reliable.
- Standard delivery with electronic Brake, safe and reliable.
- 304 corrosion-free stainless steel T-slot clamping table, 304 corrosion-free stainless steel quick holder with double parallel vise. Easy to clamp various irregular shaped specimens.
- 304 stainless steel quick holder, corrosion-free, long life.
- Huge totally closed cutting chamber, easy to use.

- Apply to cutting ferrous metals, nonferrous metals, thermal treatment workpieces, forge piece, rock, semi-conductor, ceramic, etc. The facility is equipped with kinds of specimen holders, which can cut irregular shaped workpieces, it is ideal for industries and science institutions applications

Optional Accessory

- Silicon Cutting Blade
- Corundum cutting blade
- Plastic Water Tank
- 304 Stainless Steel Quick Holder
- Vertical Clamp
- X Axis Feed Holder
- Electronic Brake
- LaserControl NT
- Strong Magnetic Filter
- Exhaust System
- Vertical Working Table

AutoCut 230/250 Automatic Cutter

Standard Delivery

- Accessory Tool Box
- Diamond Cutting Blade
- Common Water Tank
- Principal Axis Stepless Speed
- Cutting Fluid
- Open End Wrenches,30mm
- Allen Key,8mm

Technical Specification

	AutoCUT 230	AutoCUT 250
Parameter		
Cutting Mode	Manual/Auto	Manual/Auto
Cutting Blade	100-230x12.7x1.2	100-250x32x1.5
Rotating Speed(rpm)	500-3000	
Max Cutting Dia.(mm)	70	90
Max Cutting Capacity (mm)	70x200	90x200
Y Axis Range (mm)	200	
Cooling Mode	Water Cooling	
Power	1.2KW	1.8KW
Installation Conditions		
Electrical Supply	Single-phase 220V	

YMP-2B

DOUBLE SPEED METALLOGRAPHIC SAMPLE GRINDING AND POLISHING MACHINE

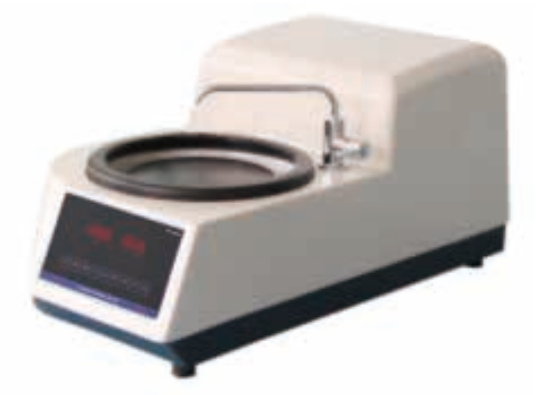
Features

- In the metallographic sample preparation, pre-grinding, polishing and grinding are the indispensable procedures. This machine is produced with ABS sewage collection plate and cover and is the latest product with a new and beautiful appearance, which can endure long time and is easy to maintain. Only to change the grinding and polishing disc, it can do coarse grinding, fine grinding, dry grinding, wet grinding, etc. In order to expand preparation demands of different samples, the size of the disc is larger than the same products in the market. There are more choices of different linear velocity on the working range, can increase 20-30% of effective working range, can improve the grinding and polishing quality of samples. This machine rotates steadily with low noise, and therefore it is the ideal equipment for metallographic sample preparation.

Main Parameters

Grinding and Polishing Disc Diameter	230mm
Abrasive Paper Diameter	230mm
Rotating Speed	500r/min, 1000r/min
Electromotor:	YS7124, 0.55kw, 380V, 50Hz
Dimensions:	757×623×320mm
Weight:	58 kg

UniPol GP Series Grinder Polisher



Single-wheel Grinder Polisher GP-1

Double-wheel Grinder Polisher GP-2

Features

- ●Multiple usage. Metallographic sample coarse grinding, final grinding, coarse polishing & final polishing, it is ideal for metallographic laboratory as well as for industrial or production applications.
- ●Variable speed. Grinder polisher special frequency control of motor speed system, Three level of speed and the time can be preset, stop automatically.
- ●Efficient and low-noise motor and control system. The machine runs quiet and smoothly.
- ●working wheel for Final grinding and surface process can make the surface smooth.
- ●FRP(Fiber Reinforced Plastics) cover, high strength and rust-proof.

GP-1/2 Single/Double Wheel Variable Speed Grinder Polisher

Standard Delivery

- ●Plain-backed grinding paper ring
- ●Splash guard
- ●Anti-dust cover
- ●Plain-backed grinding paper
- ●Polishing cloth
- ●Water inlet/outlet
- ●Power line

Optional Accessory

- ●Diamond Grinding Disk
- ●Magnetic PSA Base
- ●Magnetic Plate
- ●Diamond spray
- ●Diamond suspension
- ●Diamond paste
- ●Alumina Polishing Power
- ●Alumina Suspension
- ●Silica Suspension

Technical Specification

Model	UniPOL GP-1	UniPOL GP-2
The wheel Dia.(mm)	●203 ○230 ○254	
Wheel Speed(rpm)	●100-1000 ○Others can be customized	
Number of wheel	1	2
Motor Power	550W	
Installation Requirements		
Power	Single-phase 220V/110V	
Cooling water/water tank	Must	

GP-1B/GP-2B

SEMI-AUTOMATIC GRINDER POLISHER

GP-1B Semi-auto Grinder Polisher

GP-2B Semi-auto Grinder Polisher

Features

- Multiple usage. Metallographic sample coarse grinding, final grinding, coarse polishing & final polishing, it is ideal for metallographic laboratory as well as for industrial or production applications.
- Variable speed. Grinder polisher special frequency control of motor speed system, Three level of speed and the time can be preset, stop automatically.
- Set a Semi-automatic head, grind and polish 3-6 samples in one time, enhance the efficiency of sampling.
- Efficient and low-noise motor and control system. The machine runs quiet and smooth.
- Working wheel for Final grinding and surface process can make the surface smooth.
- FRP(Fiber Reinforced Plastics) cover, high strength and rust-proof.

Optional Accessory

- Plain-backed paper Ring
- Splash Guard
- Anti-Dust Cover
- Plain-backed Paper
- Polishing Cloth
- Water inlet/outlet
- Power Line

Standard Delivery

- Diamond Polishing Wheel
- Magnetic PSA Base
- Magnetic Plate
- Diamond Spray
- Diamond Suspension
- Diamond paste
- Alumina Polishing Power
- Alumina Suspension
- Silica Suspension

Technical Specification

Model	UniPOL GP-1B	UniPOL GP-2B
Grinder Polisher Data		
Working Wheel Dia. mm	○203 ○230 ●254	
Working Wheel Rotating Speed	100-1000rpm,Others can be customized	
Number of Working Wheel	1	2
Motor Power	550W	
Semihead parameter		
Operation Mode	Semi-auto	
Rotating Speed(rpm)	50-200	
Sample Dia.(mm)	Φ30x3 pieces, Others should be customized	
Pressurization	Spring	
Motor Voltage	90W	
Installation Requirements		
Power	220V5A	
Cooling water/ Water Tank	Must	

UniPol GP-1A/2A

AUTOMATIC GRINDER POLISHER

UniPOL-1A Automatic Grinder Polisher

UniPol-2A Automatic Grinder Polisher

Features

- Multi-usage. Metallographic sample coarse grinding, final grinding, coarse polishing & final polishing, it is ideal for metallographic laboratory as well as for industrial or production applications.
- Variable speed. Grinder polisher special frequency control of motor speed system, Three level of speed and the time can be preset, stop automatically.
- Individual force loading, no need to make virtual sample.
- Cast aluminum base, good stability.
- FRP(Fiber Reinforced Plastics) cover, high strength and rust-proof.

Optional Accessory

- Plain-backed Paper Ring
- Splash Guard
- Anti-dust Cover
- Plain-backed Paper
- Polishing Cloth
- Water inlet/outlet
- Power line

Standard Delivery

- Diamond Polishing Disk
- Magnetic PSA base
- Magnetic plate
- Diamond spray
- Diamond Suspension
- Diamond paste
- Alumina Polishing Power
- Alumina Suspension
- Silica Suspension

Technical Specification

	UniPOL GP-1A	UniPOL GP-2A
Grinder Polisher Parameter		
Working Wheel Dia.(mm)	○203 ○230 ●254	
Working Wheel Rotating Speed	100-1000rpm,Others can be customized	
Number of Working Wheel	1	2
Base	Cast Aluminum	
Motor Voltage	550W	
Grinder polisher Head		
Operation Mode	Full-Auto	
Rotating Speed(rpm)	50-200	
Sample Diameter(mm)	Φ30x6 pieces,Others can be customized	
Pressurization	Pneumatic	
Motor power	90W	
Installation Requirements		
Power	220V5A	
Cooling water/water tank	Must	
Gas Source	Must	

ZXQ-1

AUTOMATIC METALLOGRAPHIC
SAMPLE MOUNTING PRESS

Features

●ZXQ-1 Automatic metallographic sample mounting press is designed for mounting small or irregular shape and those difficult to hold samples, which is former procedure of grinding and polishing. The inlaying operation serves to facilitate the grinding and polishing operations of the specimens and the routine observation of the composition of the material under the metallographic microscope. The machine can do heating and pressing automatically, unload the pressure and stop working when finished. With another press of the key, the machine automatically turns up the sample which can be taken away. Note: It is only adapted for the thermosetting materials (such as urea-formaldehyde molding powder and bakelite powder) with the temperature automatically regulated and controlled.

Main Parameters

Mold Diameters	Φ22mm, Φ30mm, Φ45mm (choose one)
Heater Specification	220V, 650W
Total Electric Power	1000W
Dimensions	380×350×420mm
Weight	50 kg

AutoPress Series
Automated Mounting Press

AutoPress 500

AutoPress 1200

AutoPress 4001

AutoPress 4002

Features

- ●Optimized warming up and cooling system, ultrashort mounting time.
- ●One-key operation, automatically processing warming up, pressing, thermal insulation, pressure maintaining, cooling and unloading.
- ●Operation on 7inch color touch screen, easy-to-easy.
- ●Built-in 20 groups of frequently used data, the data can be user-defined.
- ●Chinese and English interface, it can be switched freely.
- ●4002 two site model design, it can press different size of samples at the same time.
- ●Multiple safety protection.
- ●Smooth thermostabilty High strength shell

Standard Delivery

- ●Black Mosaic Power
- ●Air Water Filter
- ●A Funnel
- ●Water Inlet/Outlet
- ●Power Line
- ●Cooling Water Tank

Optional Accessory

- ●Green Mosaic Power
- ●Red Mosaic Power
- ●Electric Conduction Mosaic Power
- ●Edge Preserving Mosaic Power
- ●Transparent Mosaic Power
- ●Cooling Water Tank

Technical Specification

	AutoPress 500	AutoPress 1200	AutoPress 4001	AutoPress 4002
Basic Parameter				
Operation mode	Auto	Auto	Auto	Auto
Station	1	1	1	2
Pressurization	Pneumatically	Hydraulic Pressure	Hydraulic Pressure	Hydraulic Pressure
Cooling Mode	Automatic Water Cooling			
Mould,mm	●30 ○40 ○50 Other specifications can be customized			
Max Pressure (kgs)	500	1200	4000	4000
Highest Temperature(℃)	160	160	200	200
Machine Power	0.9KW	1.2KW	1.6KW	3.2KW
Installation Conditions				
Electrical Supply	220V5A/110V10A	220V6A/110V12A	220V8A/110V15A	220V15A/110V30A
Air Supply	Must			
Cooling Water/Water Tank	Must			

I

Flaw Detector

Features

- Four ways to present waveform: positive half-wave, negative half- wave, full wave and radio frequency.
- Automatic gain adjustment, defect equivalent calculation and peak memory function
- Two high resolution scanning mode: A and B
- Display of echo envelope
- Two individual gates setting and alarming function.
- 32 detecting channels are available with separate detecting parameters and DAC (Distance Amplitude Correction) curves in every channel.
- Automatic formation of DAC curves, and 30 points 'data can be recorded infinitely, adjustable offset curves and gain correction functions are available.
- Three detecting modes(single-probe, dual crystal probe and transmission) with automatic calibration function
- Connected to PC via USB interface with advanced software for data analysis and management.
- Data and documents are managed with file allocation table (FAT)system, making the management of inspection data more convenient, reliant and faster
- Super large memory up to 32M, 1000 echo data can be stored.
- EL Highlight matrix display (no drift with angle, temperature or sunlight)
- Brand new digital signal circuit is designed for TUD310
- Digital signal processor (DSP) is used for signals analyzing, making circuit noise reduced properly and waveform more stable.
- EPSON ink-jet printers can be connected with TUD
- Real-time waveform display and review

TUD310

ULTRASONIC FLAW DETECTOR

Standard Delivery

●Main unit	1	●Warranty card	1
●Power adaptor	1	●Instruction manual	1
●Neck strap	1		
●Cable for probe	2		
●Straight probe(2.5MHz,Ø20)	1		
●Angle probe(5MHz,8×9K2)	1		
●Couplant	1		
●Flash disk	1		
●Screw driver	1		
●TIME certificate	1		

Optional Accessory

- Connecting cable
- Software for TUD310
- Various probes
- EPSON ink-jet printer

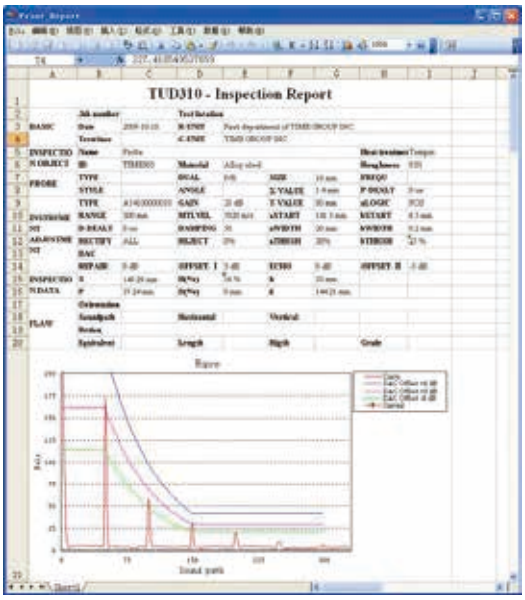
Technical Specification

Items	Description
Scanning range	2.5 mm ~9999 mm
Scanning resolution	0.1mm (2.5mm ~100mm) 1mm (100 mm ~5000mm)
Gain range	0dB ~110 dB
D-delay	-20μs~+3400μs
P-delay	0μs~99.99μs，resolution 0.01μs
Sound speed	1000 m/s~9999m/s
Bandwidth	0.2MHz~15MHz （Low0.2~1 Mid.0.5~4 High3~15)
Vertical linearity accuracy	≤3%
Horizontal linearity accuracy	≤0.2%
Dynamic range	≥32dB
Rectification	Positive half wave, negative wave, full wave, and RF
Sensitivity leavings	≥60dB
Test mode	Pulse-echo, dual and through transmission
Pulser	Spike excitation pulser
Damping	50ohms, 150ohms and 400ohms
Reject	Linear, 0-80% of full screen, variable in steps of 1%
Unit	Metric/inch
Interface	RS232 / USB
Printer	EPSON ink-jet printers
AC requirements	85-264V AC/1.0A,47-63Hz
Temperature	-10℃~40℃
Humidity	20%~90%RH
Power supply	Li battery4×3.6V 4000mAh
Charging time	4~5hours
Dimension (mm)	243×173×70
Weight (g)	1470

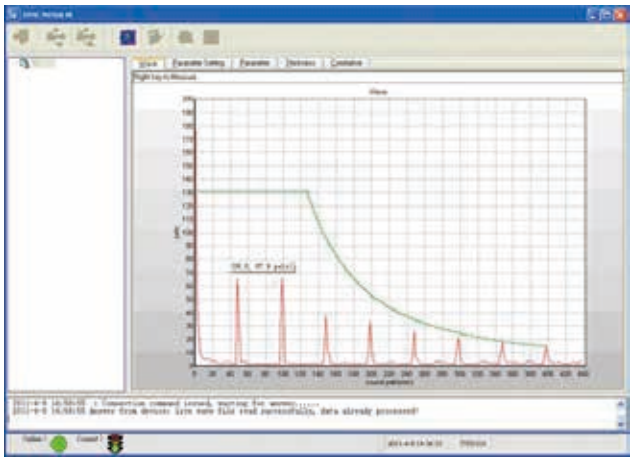
This program is used to display measurement data and graph in real time, edit and store data, prepare flaw detection report and print etc.

TUD310

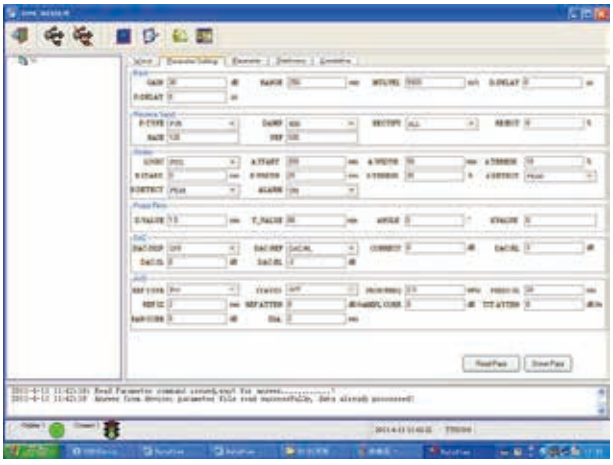
SOFTWARE AND PROBES



Inspection report



Wave data



Setting parameters

Features

- Large, 640x480 VGA color TET display with 60Hz update.
- Precise and stable horizontal and vertical linearity with horizontal linearity 0.1% and vertical linearity 2%
- High performance square wave pulser with tuning option.
- DAC,AVG,DGS curves and defect echo help to evaluate defect equivalent calculation
- Two high resolution scanning mode: A and B
- Four ways to present waveform: positive half-wave, negative half- wave, full wave and radio frequency.
- Automatic gain adjustment, defect equivalent calculation and peak memory function
- Display of echo envelope
- Two individual gates setting and alarming function.
- Gate measurement includes echo amplitude, beam path, depth, projection and so on.
- Waveform freeze available:in full ,peak, comparative and envelope ways
- 50 detecting channels are available with separate detecting parameters and DAC (Distance Amplitude Correction) curves in every channel.
- Three detecting modes(single-probe, dual crystal probe and transmission) with automatic calibration function
- Connected to PC via USB interface with advanced software for data analysis and management.
- Super large memory, 1000 waveform diagrams can be stored.
- EPSON ink-jet printers can be connected with TUD 500
- Real-time waveform display and review

TUD500

ULTRASONIC FLAW DETECTOR

Standard delivery:

●Main unit	1
●Li battery	2sets
●Power adapter (3A/9V)	1
●LEMO-Q9 probe connecting cable	1
●LEMO-Q6 Probe connecting cable	1
●Neck strap	1
●Wrist strap	1
●Hood	1
●Straight beam probe	1
●Angle beam probe	1
●Couplant	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●RS232 communication cable	1
●USB communication cable	1
●Flash disk	1
●Printer	1

Technical Specification

Items	Description
Scanning range	2.5 mm ~9999 mm
Scanning resolution	0.1mm (2.5mm ~100mm) 1mm (100 mm ~5000mm)
Gain range	0dB ~110 dB
D-delay	-20μs~+3400μs
P-delay	0.000~750.000
Sound speed	600 m/s~16000m/s
Bandwidth	0.1MHz~15MHz
Vertical linearity accuracy	≤2%
Horizontal linearity accuracy	≤0.1%
Dynamic range	100dB
Rectification	Positive half wave, negative wave, full wave, and RF
Sensitivity leavings	≥62dB
Test mode	Pulse-echo, dual and through transmission
Pulser	Square pulse
Damping	50ohms, 100ohms ,200ohms,500 ohms
Reject	Linear, 0-80% of full screen
Unit	Metric/inch
Interface	RS232 / USB
Printer	EPSON ink-jet printers
AC requirements	Input: 100-240~50/60Hz Output: 9V DC/3 A~4A
Temperature	-10℃~40℃
Humidity	20%~90%RH
Power	2×3.7V 5000mAh
Charging time	8h
Dimension (mm)	300×180×57
Weight (g)	2000

Features

- 5.7 inch, VGA color TET display and LEMO/BNC probe connector
- Wide measurement range from 1-10000 mm
- Precise and stable horizontal and vertical linearity with horizontal linearity 0.1% and vertical linearity 2%
- DAC、AVG、DGS curves and defect echo help to evaluate defect equivalent calculation
- Simultaneous display of high resolution A-scan and B-scan waveform
- Four ways to present waveform: positive half-wave, negative half- wave, full wave and radio frequency.
- Automatic gain adjustment, defect equivalent calculation and peak memory function
- Two individual gates setting and alarming function.
- Gate measurement includes echo amplitude, beam path, depth, projection and so on.
- Waveform freeze available:in full ,peak, comparative and envelope ways
- 50 detecting channels are available with separate detecting parameters and DAC (Distance Amplitude Correction) curves in every channel.
- Adjustable high performance square wave pluse generator
- Three detecting modes(single-probe, dual crystal probe and transmission) with automatic calibration function
- Connected to PC via USB interface with advanced software for data analysis and management.
- Super large memory, 1000 waveform and 4X2000 frame dynamic waveform diagrams can be stored, with the function of storage, checkout and review of channel, waveform, dynamic records.
- Flaw detection report printable

TIME® 1150

ULTRASONIC FLAW DETECTOR

Technical Specification

Operating temperature	-10℃~+50℃
Storage temperature	-20℃~+60℃
Language	English/Chinese/Spanish selectable
Probe socket	LEMO or BNC
Battery （mAh）	2×3.7V 5000mAh
Battery working time	＞8 h
Charging time （h）	＜8 h
Power adapter Input:	100-240~50/60Hz
Output:	9V DC/3A~4A
LCD	Color transmission TFT, 640×480
Measuring unit	mm、inch、μs
Scanning range （mm）	0~10000
Sound velocity （m/s）	600~16000
P-delay （μs）	-1.000~750.000
D-delay （μs）	-20~+3400
Test mode	Pulse-echo, dual and through transmission
Scanning mode	A scan and B scan, displaying A scan and B scan simultaneously
Pulse generator	
Pulser （V）	Square pulse
Transmitting voltage	100-400 （V） variable in steps of 10V
Transmitting pulse width （ns）	75 、100~500 variable in steps of 50 ns
Damping(Ω)	50、100、200、500
Pulse repetition frequency (Hz)	10~1000
Receiver	
Gain （dB）	0~110
Bandwidth （MHz）	0.1~15
Rectify	Positive half wave, negative half wave, full and RF
Vertical linearity accuracy	±2%
Amplifier resolution (dB)	±1
Dimension (mm)	177 x 255 x 51
Weight (g)	1200

Reject （%）	Linear, 0~80% of the full screen
Sampling frequency （MHz）	80
Crosstalk rejection （dB）	≥ 80
Dead zone （μs）	≤10 (related with transmitting)
Dynamic range（dB）	≥40
Instant resolution（dB）	≥32
Time base linearity	＜±0.2% full screen
Sensitivity leavings	＞62dB
Measurements and others	
Gate	2 independence gates
Testing position	Edge, Peak value
Gate measurements	Echo amplitude、Sound path、depth、projection etc.
Freeze	Freeze waveform, peak value, comparative and envelope
AVG equivalent calculate	Calculate the flaw equivalent according to the flaw echo and AVG curve
DAC flaw evaluating	Make flaw evaluation according to flaw echo and DAC curve
Gate logic	Off , measurement, gate positive wave alarm, gate negative wave alarm
Gate alarm	Off、anytime、hold for 0.2s、0.5s、1s and 2s、lock
Alarm	On/off
Data management, communication and print	
Data storage	50 channels
Data management	1000 wave images （including 980 A scan images and 20 B scan images）
	4x2000 dynamic wave image
	Store, review or replay the channels, waves
	All the data can be stored to PC or flash disk
Communication	Communicate with PC via USB interface
Printing	Print report
Output port	
USB OTG port	USB2.0 Device connected with PC USB2.0 Host connected with flash disk or printer

Standard Delivery	Quantity
Main unit	1 set
Lithium battery	2 packs
Power adapter （3A/9V）	1 piece
LEMO-Q9 Probe connecting cable （Q9-Q9 probe connecting cable）	1 piece
LEMO-Q6 Probe connecting cable(Q9-Q6 probe connecting cable)	1 piece
Straight beam probe(φ20 2.5MHz)	1 piece
Angle beam probe(8×9K2 5MHz)	1 piece
Coupling agent	1 bottle
Necklace belt	
Wrist belt	1 piece
TIME certificate	1 piece
Warranty card	1 piece
Instruction manual	1 piece

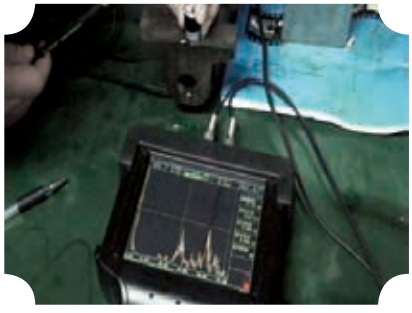
Pipe Inner Wall Flaw Detector

Mechanical Part Flaw Detector

Slim Bar Flaw Detector (Valve)

Pipe Hole Flaw Detector

Weld Flaw Detector



Casting Flaw Detector

TOFD Application

Phased Array Application

Brief Introduction

- DJ series are designed for quick inspecting a wide range of non-conductive coatings and linings for pinholes, porosity and other faults by means of pulsed voltage in the non-destructive testing field. It is widely used in the petro-chemical, pipe mills, plastic fabrication and aerospace industries.

Features

- Display of output high voltage directly
- Clear LCD with blue backlight
- Switch off automatically
- State of charge indicator
- DJ-6(A): mainly used for the antisepsis of pottery
- DJ-6(B): mainly used for petroleum pipeline (high voltage)
- DJ-9: displays leakage points of antisepsis coating on two digits

Standard Delivery

Main unit	1
High voltage detector	1
Brush probe	2
Brace rod	1
Earth lead	1
Earphone	1
Power charger	1
Fuse	2
Shoulder strap	1
TIME certificate	1
Warranty card	1
Instruction manual	1

Optional Accessory

- Arc-shaped brush
- Circle probe

Technical Specification

Model	DJ-6(A)	DJ-6(B)	DJ-9
Thickness detection	0.03-1mm	0.05-10mm	
Output voltage	0.6KV-8KV	0.6KV-35KV (adjustable)	
DC voltage	12V		
Consumed power	6W		
Alarm	Both earphone and buzzer		
Display	Three digit LCD, fully touch screen		
Dimension (mm)	220x130x88		

DJ SERIES

HOLIDAY DETECTOR

J

Industrial Borescope

TBS-1160/1161

●Easy connect to computer/Notebook/Laptop, photo shooting & recording ability.

●Easy editing to file.

Standard Delivery

●Lens (5.5mm dia.300,000pixel for 1160)	1
●Lens (5.5mm dia.8.0mmdia. optional for 1161)	1
●Cable (1m)	1
●USB cable (50cm)	1

TBS-1160/1161

USB VIDEO/PICTURE CAPTURE ENDOSCOPE

Technical Specification

Model	TBS-1160	TBS-1161
Image sensor	CMOS image sensor	
Resolution	640h×480v	
Tip diameter	5.5mm	5.5mm/8mm
Insert tube length	1m~30m	1m(option:3m)
Frame rate	20~30fps	
S/N ratio	42db	
Exposure	Automatic	
White balance	Fix	
Field of view(FOV)	67°	
Depth of field(DOF)	1.5cm~10cm/10cm~∞	2-5 cm
Light source	4 white LED-5.5mm 6 white LED-8mm	4 while LED-5.5mm 6 white LED-8mm
Power	DC 5V	
Display	Mini USB 2.0	
Video out format	NTSC & PAL	
Recording/ capture	640×480 JPEG or 640×480 AVI according to PC or notebook	

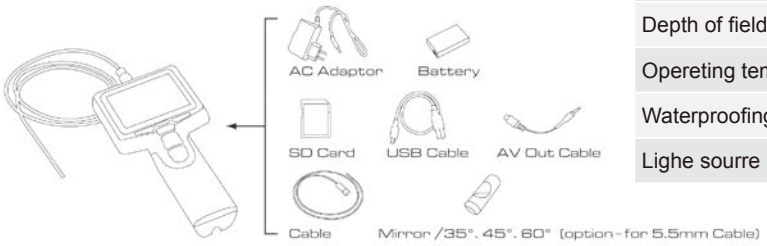
TBS-2486

VALUED VIDEO BORESCOPE

Standard Delivery

- Quick snap.
- Quick video recording.
- Quick review.
- Av out.
- Videp/picture viewer.
- 16 language seclected.

Modl No:TBS-2486



Technical Specification

Image sensor	CMOS
Effective pixels	537×505(NTSC)/628×582(PAL)
Resolution	640×480
Display	3.5”TFT-LCD
Interface	Mini USB 1.1/AV out
Power supply	Rechargeble lithium battery DC 5V/2A
Video format	NTSC&PAL
Recording media	4GB SD card
Operetunal interface	8Key
CABLE SPEC.	
Tip diameter	5.5mm(option:3.9,4.3,4.5,5.5,8,12mm)
Cable length	1M(ODption:1,3,5,10,20,30m)
Frame rate	-30 fps
S/N ratio	42 db
Exposure	Automatic
White balance	Fix
Field of view(Fov)	67"
Depth of field(Dof)	2cm~75cm~∞
Opereting temp.	-10~60°C
Waterproofing	IP67
Lighe sourre	4 white LED

K

Concrete Testing Gauge

TC100

TC110

Brief Introduction

●TC100/110 is used to detect the thickness of concrete covering layer and rebar diameter. Besides, it can detect the location of magnetic substance and electric and electric conductor in non-magnetic and non-conductive medium, e.g. cable inside wall body and water & heating pipe etc. it is a kind of intelligent nondestructive test equipment possessing the functions of automatic detection, data memory and output.

Features

●Acceptance inspection of cover after formwork is removed
●Locate rebars to avoid them when drilling holes
●Provide essential data (location, cover, diameter of rebars) for strength calculations of reinforced concrete structures
●Measuring concrete cover thickness
●Quality assurance in mass production of fabricated concrete elements
●Measuring the thickness of concrete over steel reinforcement and metal pipes
●Signal strength bar display and sound alarm for high accuracy
●Real time graphic output both to screen and printer
●Data processing software compatible with windows 95/98/2000/Me/WT/XP
●Auto calibration, correct the system error
●Three scan modes for TC110:grid pattern, profile scan and large area scan
●For TC110: direct display grid and profile image of rebars

TC100/110

REBAR LOCATOR

Standard Delivery (TC100)

●Main unit	1
●Transducer	1
●Software	1
●Signal cable	1
●Shoulder strap	1
●AA battery (LR6)	6
●Key	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Standard Delivery (TC110)

●Main unit	1
●Transducer	1
●Software	1
●Signal cable	1
●Shoulder strap	1
●Connecting cable	1
●Scanning trolley	1
●AA battery (LR6)	6
●Key	2
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Covering layer thickness measuring range	Range Ⅰ:6mm-90mm	
	Range Ⅱ:7mm-200mm	
Rebar diameter measuring range	Ø6mm- Ø50mm	
Tolerance of covering layer thickness	Range Ⅰ	Range Ⅱ
±1mm	6mm-59mm	7mm-79mm
±2mm	60mm-69mm	80mm-119mm
±4mm	70mm-90mm	120mm-180mm
Display	Large graphic display with backlight	
Operating temperature	-10℃~40℃	
Relative humidity	<90%	
Dimension (mm)	210 x 153 x 90	
Weight (g)	880	

Other special testing conditions

●Avoid strong magnetic field interruption
●Avoid high temperature
●Has no corrosive gas in the atmosphere

Brief Introduction

●TC200 is used to measure concrete crack depth by applying principle of acoustic diffraction. It also can be used to measure propagation velocity of ultrasonic wave in concrete. This instrument is a kind of intelligent nondestructive test equipment possessing the functions of automatic detection, data memory and output.

Features

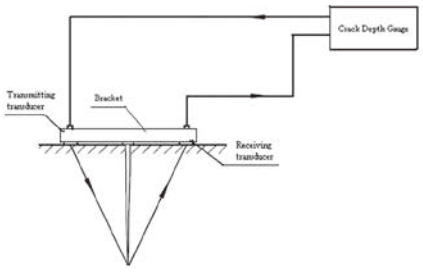
- Entire English display, clear and easy to use
- Direct digital read out of the crack depth
- Use special bracket to ensure the accuracy of two testing points
- A data base is set up to store and manage completed test data for analysis reporting
- RS232 interface to PC

Standard Delivery

●Main unit	1	●Electric torch	1
●Transducer	1	●Shoulder strap	1
●Software	1	●AA battery (LR6)	6
●Signal cable	1	●Key	2
●Bracket	1	●TIME certificate	1
●Tapeline	1	●Warranty card	1
●Oil pen	1	●Instruction manual	1

Technical Specification

Testing range	4mm~500mm
Tolerance	≤5mm (when crack depth is less than 50mm) ≤10%W (W means the crack depth) (when the depth is more than 50mm)
Memory	25000 test data
Power	AA batteries (LR6) x 6
Display	Large graphic display
Operating temperature	-10℃~40℃
Humidity	<90%
Dimension (mm)	210x153x90
Weight (g)	880



TC200

CRACK DEPTH GAUGE

Brief Introduction

- TC300 is used for measuring the thickness of nonmetallic plate indirectly, especially for concrete slab.This gauge is to measure the concrete slab thickness mainly by using distribution characteristics of electromagnetic field and possesses function of thickness measurement, data analysis, data storage & output etc. it is a kind of intelligent thickness measuring instrument that is portable, convenient and accurate.

Features

- Measuring the thickness of concrete, rock, glass and other nonmetallic plates
- Sound alarm, signal strength bar are used to improve measuring accuracy
- Direct digital read out of the thickness value avoid the inaccuracy of manual comparison
- Test data create and data logging
- RS232 and USB interface to PC
- Real time analysis of the tested data

TC300

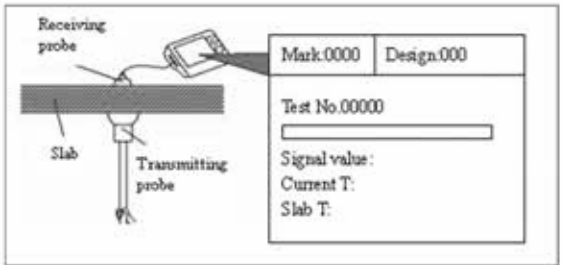
CONCRETE THICKNESS GAUGE

Standard Delivery

•Main unit	1	•Shoulder strap	1
•Transmitting transducer	1	•AA battery (LR6)	6
•Receiving transducer	1	•AAA battery (LR03)	6
•Supporting bar	5	•Key	2
•Interphone	2	•TIME certificate	1
•Signal cable	1	•Warranty card	1
•Charger	1	•Instruction manual	1

Technical Specification

Measuring range	40-820mm
Accuracy	±1mm[When thickness = (40-600mm)]
	±2mm[When thickness = (601-820mm)]
Memory	32000 test data and 4000 components
Power	AA batteries (LR6) x 6
Display	Large graphic display
Operating temperature	-10℃~40℃
	<90%
Dimension (mm)	210 x 153 x 90
Weight (g)	880



Brief Introduction

- TC410 is widely used for non-destructive testing of the crack width of bridges, tunnels, constructions and such concrete structures. During the detection, the system takes the image of crack automatically and displays real-time image and width data of cracks. The image data can be saved automatically.

Features

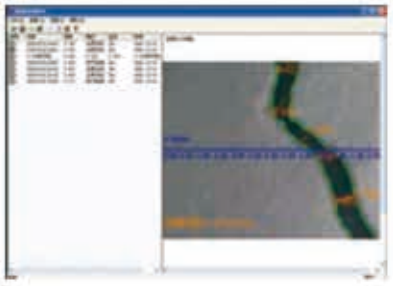
- The PDA design with data acquisition probe
- Automatic image recognition and intelligent width calculation technique
- Quick measurement without any adjustment
- Large screen of PDA for the more accurate and clear image
- Image file can be saved in JPEG format
- Powerful processing software can be able to save and analyses image and data

Standard Delivery

•PDA main unit	1
•Transducer	1
•Software	1
•Signal cable	1
•USB cable	1
•Universal coupling	1
•Extension rod	1
•SD card reader	1
•Charger	1
•TIME certificate	1
•Warranty card	1
•Instruction manual	1

Technical Specification

The main probe	Specialized CMOS camera
Controller	PDA
Display mode	Automatic calculation, save and display
Measuring range	0.01-6.50mm
Accuracy	0.02mm
Magnification	60 X
Image formats	JPEG (Around 10K per image)
Memory	Internal memory (SD card extension)
Interface	USB 2.0
Power	Lithium battery
Operating temperature	-10℃～+50℃
Dimensions (mm)	180x100x50
Weight (g)	1000



TC410

CRACK WIDTH GAUGE

Brief Introduction

●TC600 rebar corrosion detector is desiged for aassessing the corrosion of the reinforced concrete struture and components by half-cell potentiaal method, the electrode is go throughgo through the surfaace of the concrete and the potentiaal voltage difference is recorded, then the corrosion of rebar is assessed.

Features

●Non-destructive testing the corrosion in rebar
●Detection of the corrrosion condition of the rebaar accurately and conventently by field potential meaasurement
●Store, view, delete data and transfer all readings to PC with USB interface and serial port
●Faster and more accurate processing of data, Review of test area and reading as numbers or graphics
●Display of meaasurement values in 9 gery-scale or colorful graphicsl
●Permaanent copper/copper sulphate reference electrodes to measure electrical potentials

TC600

REBAR CORROSION DETECTOR

Standard Delivery

●Main unit	1	●Measuring tape	1
●Electrode	2	●AA battery (LR6)	6
●Signal cable	2	●Shoulder strap	1
●USB connecting cable	1	●TIME certificate	1
●RS232connecting cable	1	●Warranty card	1
●Connecting bar	1	●Instruction manual	1
●Extension cable	1		
●Clamp	1		
●Hygrothermograph	1		

Technical Specification

Measuring method		Potential measurement
Measuring range		±1000mv
Resolution		1mv
Memory		Mass storage
Space between testing points		1～100cm adjustable
Interface		RS232 and USB
Power		AA batteries (LR6)×6
Operating temperature		-10℃～+40℃
Humidity		＜90%RH
Dimensions (mm)	Main unit	210×153×90
	Probe	Ø30×120
Weight (g)	Main unit	880
	Probe	100

Brief Introduction

- TC500N is a portable instrument to test the compressive strength of concrete structures or rock in non-destructive testing field. The type N hammer is designed for measuring concrete thickness 100mm or more, or concrete with a maximum particle size no more than 32 mm.

Features

- Suitable for testing a wide variety of concrete, rock and bricks
- Light, flexible and simple operation
- Friction adjusted by the pointer
- Adopt stretching techniques to make the button work well
- Supplied with carborundum stone to prepare to test surface

TC500N

CONCRETE TEST HAMMER

Standard Delivery

•Hammer	1	•Radius gauge	1
•Carborundum stone	1	•Carrying case	1
•Flip tension spring	1	•TIME certificate	1
•Buffer spring	1	•Warranty card	1
•Screwdriver	1	•Instruction manual	1

Technical Specification

Model		TC500N
Measuring range		10-60 Mpa
Impact energy		2.207Nm
Spring extension		75±0.3mm
Friction of pointer system		0.65±0.15N
Length of pointer		20.0±0.2mm
Radius of spherical tip		25±1.0mm
Working length of the spring		61.5±0.3mm
Mean value of steel-anvil rating		80±2
Flip tension spring rigidity		785.0±40.0N/m
Operating temperature		0℃~+40℃
Storage temperature		-10℃~+50℃
Dimensions (mm)	Hammer	280×Ø60
	With case	320x170x86
Weight (g)	Hammer	1000
	With case	2200

Brief Introduction

●HT225-V is a portable instrument to test the compressive strength of concrete structures or rock in non-destructive testing field. The rebound value can be converted into a reading on the digital display, and the estimated mean value, standard deviation and concrete strength can be shown.

Features

- The main unit integrated with the sensor, portable design
- True color LCD screen, high resolution of 176*220mechanical hammers
- Powered by high-capacity rechargeable lithium battery
- Non-contact grating sensor with high precision
- Unique sound alarm of rebound value
- Easy to generate report by printer on the spot
- Automatic delete exceptional value and calculate component results
- Possibility to store, display and transfer data to PC with USB interfacel

HT225-V

DIGITAL CONCRETE TEST HAMMER

Standard Delivery

●Main unit	1
●Software	1
●USB connecting cable	1
●Power charger	1
●Carborundum stone	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Optional Accessory

●Printer
●Power charger for printer (9V/2V)

Technical Specification

Model	HT225-V
Measuring range	10-70MPa
Impact energy	2.207J
Spring extension	75mm
Display	16-bit true color, 176x220 resolution
Data storage	480000 testing results
Mean value of steel-anvil rating	80±2
Flip tension spring rigidity	785N/m
Power	Rechargeable lithium battery
Power consumption	Maximum backlight situation≈100mA (voice off)
Interface	USB2.0 full-speed
Weight (g)	1100

L

Colorimeter & Gloss Meter

Brief Introduction

●TCD100 is a light-sensitive instrument mainly used in colorimetry for measuring and psychophysical analyse the color of an object or color sample. This portable colorimeter is easy to use and can be carried anywhere, irrespective of environmental conditions.

Features

- Easy and direct operation with the simple function key
- Display directly color difference by △E*ab, △L*a*b,CIE_L*a*b, CIE_L*c*h
- Silicon photodiode as light sensors for analyzing the absorption sepctra.
- Standard deviation within △E*ab0.2 (test condition: choose average values by 12 pcs white tabula)
- Possibility of measuring any color of smooth surface
- LED illumination available
- Communication with PC the practical software

TCD100

COLOR DIFFERENCE METER

Standard Delivery

●Main unit	1
●Software	1
●USB connecting cable	1
●Batteries AA 1.5V	2
●Power	1
●TIME certificate	1
●Warranty card	1
●Instruction manual	1

Technical Specification

Test accuracy	Within 0.2△E*ab
Color space	△E*ab、CIE_Lab、△L、△a、△b、CIE_Lch
Measuring range	L：0~100 a：－128~127 b：－128~127
Measuring time	About 2 seconds
Measuring interval	About 2 seconds
Measuring aperture	Ø8mm
Automatic shutdown	Automatic shutdown after 5 minutes waiting
Memory	Keep a group of data automaticly (without connecting to PC)
Field of view	10°regulated by CIE
Light source	D65 light source
Sensor	Correct silicon photodiode (seed array)
Screen type	LCD with backlight
Power	1.5V AA batteries×2, DC/5V (1.5A)
Operating environment	0℃~+40℃; lower than 85% relative humidity
Dimension (mm)	170×50×48.8
Weight (g)	204 (without batteies)

TCR200

PRECISE COLOR READER

Features

- ●High performance-price ratio among similar products
- ●High accuracy and stable performance
- ●PC software for data and statistical management
- ●Suitable for a company's internal and extermal color evaluation and data control
- ●Energy saving design, USB and bluetooth(optional) data connection
- ●Yellowness and whiteness measurement
- ●Multi-point measurement for averaging
- ●Large data storage space
- ●Chinese metrology accreditation

Optional Accessory

- ●Obtained china metrology Accredition
- ●Both Chinese and English language options
- ●Ultra stable performance
- ●Display precision 0.01
- ●Repeatability precision AE's standard deviation 0.08
- ●Can measure whiteness or yellowness
- ●Measure at multiple spots for average
- ●Enhance the measure accuracy through white and
- ●Black calibration

Technical Specification

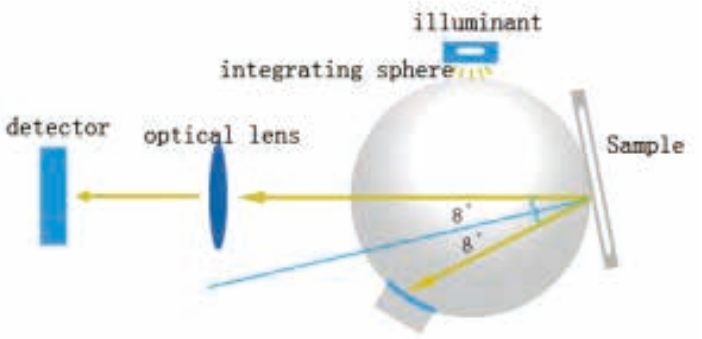
Illumination systen	8/d（8°/diffused illumination), specular component included（SCI）	Storage	100 sets of standard samples; up to 100 under each standard sample
Display modes	Colorimetric values: Lxaxb，LxCxh，△E*ab，XYZ，relative RGB values; Color difference values: △(Lxaxb)，△(LxCxh); Whiteness values: hunterwhiteness,ganz whiteness Yellowness value:YI	Measuring time	About 0.5 seconds
		Measuring light source	LED
		Interface languages	Chinese,English
Measuring caliber	About 8mm	Power source	Four AA1.5V alkaline battery or nickel-metal hydride batterys; ExclusiveDC5V adapter
Measuring conditions	CIE 10° standard observer; CIE D65 light source	port	USB 2.0, printer
Measuring range	L*：1-100	Dimension (mm)	77×86×210
Repeatability	Standard deviation within△E*ab*，0.08(condition: measure the white calibration board 30 times for average	weight (g)	550

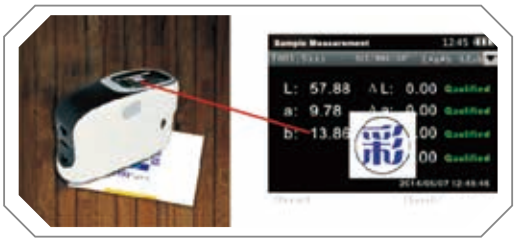
TCR300

SPECTROPHOTOMETER

Brief Introduction

- Our device adopts internationally agreed observe condition D/8 (Diffused lighting, 8 degrees observe angle) and SCI(specular reflection included)/SCE(specular reflection excluded). It could be used for color matching for many industries and widely used in painting industry, textile industry, plastic industry, food industry, building material industry and other industries for quality control.
- Camera view to catch the testing area (Patent Right Number: ZL20130519382X)
- In previous measurement instrument, we can only aim at the testing area approximately, and this may introduce errors. Our spectrophotometers include a camera in our optical system, and the user can clearly see the tested area to avoid measurement errors.





Technical Specification

Type	TCR300A/B
Illumination	d/8(Diffused lighting, 8 degrees observe angle)、SCI(specular reflection included)/SCE(specular reflection excluded)simultaneous measurement.(conform to CIE No.15、ISO 7724/1、ASTM E1164、DIN 5033 Teil7、JIS Z8722 Condition c standards)
Size of integrating sphere	Φ40mm, diffused reflection surface coating
Illumination Light source	CLEDs(entire wavelength balanced LED light source)
Sensor	dual light path sensor array
Wavelength Range	400-700nm
Wavelength Interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%
Reflectivity resolution	0.01%
Observation angle	2°/10°
Measurement light source	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,DLF,TL83,TL84,NBF,U30,CWF
Data being displayed	SPD distribution/data,sample's color values,color difference values/graph,pass/fail results,color error tendency,color simulation,display measurement area,history data color simulation,manual input standard sample,generate measurement report
Measurement time interval	2 seconds
Measurement time	1 second
Color space	CIE-L*a*b, L*C*h, L*u*v, XYZ, Yxy, Reflectance

Technical Specification

Type	TCR300A/B
Color difference formulas	ΔE*ab, ΔE*CH, ΔE*uv, ΔE*cmc(2:1), ΔE*cmc(1:1),ΔE*94,ΔE*00
Other colorimetric indices	WI(ASTM E313-10,ASTM E313-73,CIE/ISO, AATCC, Hunter, Taube Berger, Ganz, Stensby), YI(ASTM D1925,ASTM E313-00,ASTM E313-73),Tint(ASTM E313,CIE,Ganz) Metamerism index Milm, Stick color fastness, Color fastness
Repeatability	light splitting reflectivity:standard deviation within 0.08%
	color values:ΔE*ab<=0.03(After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum:0.05
Battery capacity	rechargeable, 10000 continuous tests, 7.4V/6000mAh
Interface	USB
Data storage	20000 test results
Light source longevity	5 years, 1.5 million tests
Inter-instrument agreement	ΔE*ab within 0.2(BCRA color charts II, average of the 12 charts)
Size	181*73*112mm(L*W*H)
Weight	about 550g(does not include battery's weight)
Display	True color screen that includes all colors
Work temperature range	0~45℃, relative humidity 80% or below(at 35°C),no condensation
Storage temperature range	-25℃ to 55℃, relative humidity 80% or below(at 35°C),no condensation
Standard accessories	DC adapter, Lithium battery, manual, color management software, drive software, electronic manual, color management guide, USB cable, black/white calibration tube, protective cover, spire lamella, portable bag, electronic color charts
Optional accessories	powder molding device, micro printer, measurement and test report
Color matching system	not match
UV light source	without UV light source

HP-300

SINGLE GLOSS METER

Brief Introduction

- HP-300 is a portable instrument mainly applied for the quality control in the field of paints, varnishes, printing,printing ink,building material,plastic cement, ceramic,artificial leather,hardware. It covers the range necessary to measure most surface from high gloss to matt.

Features

- The appearance design conforms to physical dynamics, high accuracy and stable performance easy to operate
- Professional analysis software for the gloss data analysis and output, easy to transfer data by removable memory card
- Automatic calibration, internal calculation of max, min, mean standard deviation and coefficient of variation
- 1000 groups of measurement data can be stored
- Alarms for low-power and space shortage

Standard Delivery

- Main unit
- Software
- USB connecting cable
- Standard panel
- AAA batteries
- Power supply
- TIME certificate
- Warranty card
- Instruction manual

Optional Accessory

- Mobile memory card

Technical Specification

Measuring angle	Degree	60°	
Inciedence angle	GU	Gs(60°):0.0~120	Gs(60°):120~1200
Measuring area	mm	Gs(60°):9x15	
Devision	GU	0.1	1
Rcproducibility	GU	0.2	0.2%
	GU	0.5	0.5%
Reading accuracy	GU	-1.5~+1.5	-1.5%~+1.5%
Deviation	GU	0.2	
Working temp	°C	10℃~40℃	
Storage temp	°C	-10℃~70℃	
Humidity		Less than 85%, non-condensing	
Power		4AAA alkaline battery (optional)	
Dimension	mm	163.8x58.1x88.3	
Weight	g	520	

Brief Introduction

● HP-380 is a portable instrument mainly applied for the quality control in the field of paints，varnishes，printing，printing ink，building material，plastic cement，ceramic，artificial leather，hardware. WWwWQWIt covers the range necessary to measure almost surface from high gloss to matt.

Features

●The appearance design conforms to physical dynamics, high accuracy and stable performance easy to operate

●Multi-angle one-key measurement: one-key operation can complete three angles' measurement to meet data demand under different gloss conditions, incident angle of light measurement conforms to ISO and ASTM standards

●Professional analysis software for the gloss data analysis and output, easy to transfer data by blue- tooth and mobile memory card

●Automatic calibration, internal calculation of max, min, mean standard deviation and coefficient of variation

●Optional angle mode: measurement angle or angle combination can be selected by user's need

●Big storage: under triangle mode, 10000 times or 1000 groups of measurement data can be stored

●Alarms for low-power and "space shortage"

HP-380

TRI-ANGLE GLOSSMETER

Standard Delivery

● Main unit	1
● Software	1
● USB connecting cable	1
● Standard panel	1
● AAA batteries	4
● Power supply	1
● TIME certificate	1
● Warranty card	1
● Instruction manual	1

Optional Accessory

● Mobile memory card

Technical Specification

Measurement angle	20° 60° 85°	
Standards	ISO2813，ISO7668，ASTM D523，ASTM D2457	
Incidence angle (GU)	Gs(20°)：0.0~120 Gs(60°)：0.0~120 Gs(85°)：0.0~120	Gs(20°)：120~2000 Gs(60°)：120~1200 Gs(85°)：120~160
Measuring optical spot (mm)	Gs(20°)：10x10 Gs(60°)：9x15 Gs(85°)：5x38	
Resolution (GU)	0.1	1
Repeatability (GU)	0.5	0.5%
Indication accuracy (GU)	-1.5~+1.5	-1.5%~+1.5%
Zero value accuracy (GU)	0.2	
Power	Both AAA batteries and power supply	
Operating temperature	10℃~40℃	
Storage temperature	-10℃~70℃	
Humidity	Less than 85%, Non-condensation	
Dimension (mm)	164x58x88	
Weight (g)	520	

TIME Micro-Printer

M1 TIME MICRO-PRINTER TA230 P127

Features

- ●Latest model using dot-matrix method, with battery reliability and printing quantity
- ●Fast printing and compact size
- ●Can be used with the following instruments:
  Ultrasonic thickness gaugeTIME®213 series
  Coating thickness gauge TT210
  Vibration tester TIME®7230/7231/7232

Technical specification

Printing method	Dot-matrix
Serial interface	RS232(19200,9600,4800,2400,1200, 600,300,150BPS selectable)
Parallel interface	CENTRONICS compatible
Ribbon	ERC-22/ERC-09
Ribbon life	1000.000 characters/250.000 characters
Dimension (mm)	170×110×50
Weight (g)	250

TA230

TIME MICRO-PRINTER