



## Ultrasonic Portable Hardness Tester H-7000 Series

### Products Overview :

H-7000 Ultrasonic portable hardness testers utilize the very new UCI (ultrasonic contact impedance ) technology which are capable of measuring the surface hardness of a broad variety of metals on flat, round, thin or large surfaces. Unlike the standard Dynamic hardness testers, these "state-of-the-art" portable hardness testers are able to test very thin and small workpieces, which otherwise could not be tested accurately using a portable device. With Non-destructive function, these hardness testers allow for the testing of highly sensitive or finished parts that previously could not be tested in an operational setting. The non-destructive (ndt) feature of these hardness testers allow the operator to accurately test parts without causing physical or structural damage that would normally lead to disposal or refinish of operators part. That translates into less scrap parts/ lower mfg. costs due to necessary inspections.



## UCI Portable Hardness Testing Method:

Ultrasonic Contact Impedance is a hardness testing method based on the measurement of the frequency shift of a resonating rod caused by the essentially elastic nature of the finite area of contact between the indenter and the test piece during the penetration. Described as a hardness testing practice using a calibrated instrument by pressing a resonating rod with a Vickers style Diamond indenter with a fixed force against the surface of the part to be tested.

## Technical Specifications:

|                         |   |          |           |           |            |        |        |        |
|-------------------------|---|----------|-----------|-----------|------------|--------|--------|--------|
| Main model              | H-7000-0000   |          |           |           |            |        |        |        |
| Model                   | H-7001  | H-7002   | H-7005    | H-7010    | H-7103     | H-7105 | H-7108 | H-7110 |
| Probe type              | Hand-held   |          |           |           | Motorized  |        |        |        |
| Loading force           | 10N   | 20N      | 50N       | 98N       | 3N         | 5N     | 8N     | 10N    |
| Roughness surface       | Ra < 3.2um  | Ra < 5um | Ra < 10um | Ra < 15um | Ra < 3.2um |        |        |        |
| Conform Standard        | DIN 50159-1-2008;ASTM-A1038-2005 ; JB/T 9377-2010 and JIG-654-201                                     |          |           |           |            |        |        |        |
| Measurement Ranges      | HRC: 20.3~68;   |          |           |           |            |        |        |        |
|                         | HRB :41~100;  |          |           |           |            |        |        |        |
|                         | HRA: 61~85.6;   |          |           |           |            |        |        |        |
|                         | HV: 80~1599   |          |           |           |            |        |        |        |
|                         | HB: 76~618  |          |           |           |            |        |        |        |
|                         | Tensile strength: 255~2180N/mm2   |          |           |           |            |        |        |        |
| Accuracy                | HV: ±3% HV, HR:±1.5HR, HB: ±3%HB  |          |           |           |            |        |        |        |
| Measuring Directions    | 360°  |          |           |           |            |        |        |        |
| Weight of test piece    | >0.3kg  |          |           |           |            |        |        |        |
| Thickness of test piece | >2mm  |          |           |           |            |        |        |        |
| Mass Storage            | Save 2000 groups measurement data.<br>Simple Calibration: Save 20 groups calibration data for recall. |          |           |           |            |        |        |        |
| Hardness Scale          | HV、HB、HRC、HRB、HRA、HS、Mpa  |          |           |           |            |        |        |        |
| Display                 | average value ,convert to others hardness scales  |          |           |           |            |        |        |        |
| Power                   | INPUT:AC220V/50Hz、110V/60Hz; OUTPUT:DC5V/1A   |          |           |           |            |        |        |        |
| Size                    | 160x80x31mm   |          |           |           |            |        |        |        |
| Weight                  | 500g (no probe)   |          |           |           |            |        |        |        |



## Products Overview :

### H-7000 Optional Device

| Specification                      | Stock No   | Specification               | Stock No   |
|------------------------------------|------------|-----------------------------|------------|
| 1Kg Hand-held Probe                | H7000-0001 |                             |            |
| 5Kg hand-held Probe                | H7000-0005 |                             |            |
| 10Kg hand-held Probe               | H7000-0010 |                             |            |
| 0.1Kg motorized probe              | H7000-1001 |                             |            |
| 0.3Kg motorized probe              | H7000-1003 |                             |            |
| 0.5Kg motorized probe              | H7000-1005 | Protecting Tube for Probe   | H7000-2009 |
| 0.8Kg motorized probe              | H7000-1008 | Support Ring for Surface    | H7000-2001 |
| Support Ring for Small Column      | H7000-2002 | Support Ring for Big Column | H7000-2003 |
| Protecting Cap for deep Hole Probe | H7000-2005 | Mini-Printer                | H7000-2006 |
| Software                           | H7000-2007 | Test Stand                  | H7000-2008 |

### Parameters for Motorized probe

|                              | H7000-1001 | H7000-1003 | H7000-1005 | H7000-1008 |
|------------------------------|------------|------------|------------|------------|
|                              | Optional   | Optional   | Optional   | Optional   |
| Load                         | 1N         | 3N         | 5N         | 8N         |
| Dia                          | 35mm       | 35mm       | 35mm       | 35mm       |
| Length                       | 280mm      | 280mm      | 280mm      | 280mm      |
| Dia for Resonating Rod       | 2.4mm      | 2.4mm      | 3mm        | 3mm        |
| Min Weight for test piece    | 0.3kg      | 0.3kg      | 0.3kg      | 0.3kg      |
| Min Thickness For test piece | 2mm        | 2mm        | 2mm        | 2mm        |



## Hand-Held Probe Parameters:

|                              | H7000-0001 | H7000-0002 | H7000-0005 | H7000-0010 |
|------------------------------|------------|------------|------------|------------|
|                              | Optional   | Optional   | Optional   | Optional   |
| Test Load                    | 10N        | 20N        | 50N        | 98N        |
| Dia                          | 22mm       | 22mm       | 22mm       | 22mm       |
| Length                       | 154mm      | 154mm      | 154mm      | 154mm      |
| Dia for Resonating Rod       | 2.4mm      | 2.4mm      | 3mm        | 3mm        |
| Max Surface Roughness        | Ra<3.2um   | Ra<5um     | Ra<10um    | Ra<15um    |
| Min Weight for test piece    | 0.3kg      | 0.3kg      | 0.3kg      | 0.3kg      |
| Min thickness for test piece | 2mm        | 2mm        | 2mm        | 2mm        |

## Support ring and protecting Cap

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
| Support Ring for flat surface (H7000-2001)   | Support Ring for Small Column (H7000-2002)   | Support Ring for Big Column (H7000-2003)   | Standard Protecting Cap for standard probe (H7000-2004)                            | Protecting Cap for deep hole probe (H7000-2005)                                      |