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# AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS CODE HDT-CRS200

BUILT-IN  
BLUETOOTH

AUTOMATIC  
OPERATION

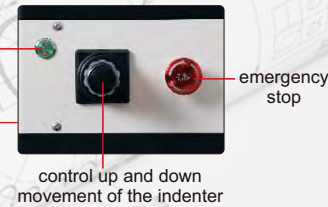
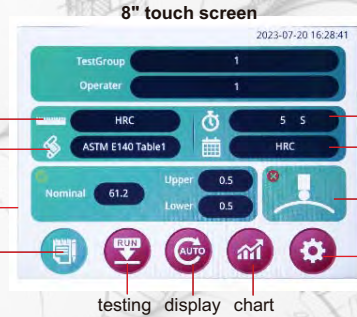
FORCE LOADING BY ELECTRIC  
MOTOR (WITHOUT WEIGHTS)

TOUCH  
SCREEN

HIGH  
ACCURACY

HIGH  
EFFICIENCY

INSPECTION  
CERTIFICATE



test interface

- One click operation can obtain measurement results, enabling large-scale hardness measurement of workpieces
- CNC system, close-loop electronic control system applies test force
- Touch screen operation and display
- Cantilevered structure, achieving full automation of hardness measurement
- The big flat stage is convenient for testing and can work in conjunction with robotic arms and automation equipment to step up online hardness testing and achieve completely unmanned testing
- Bluetooth, RS232 data transmission to computer, data management using hardness management software
- According to ISO 6508, ASTM E18, JIS Z2245

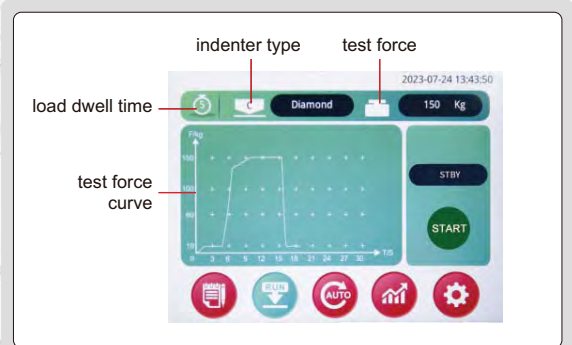
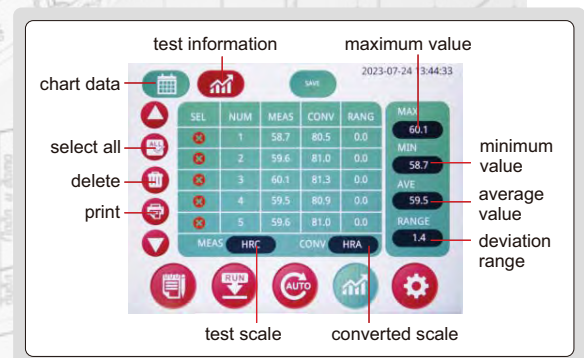
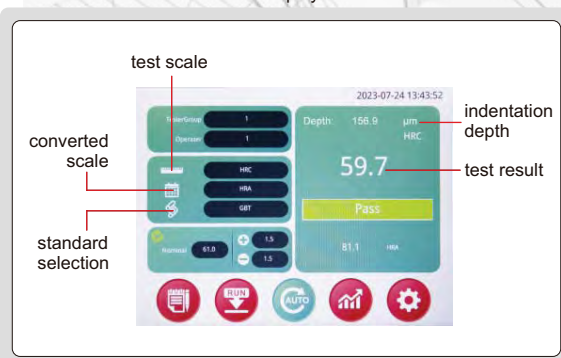


chart interface



To be continued

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Ø58mm flat anvil  
(included)



V-type anvil  
(included)



bluetooth printer  
(included)

### SPECIFICATION

<b>Measurement range</b>		Rockwell: 20~88HRA, 20~100HRB, 20~70HRC Superficial RockWell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T
<b>Hardness scale</b>	with indenter included	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
<b>Preliminary test force</b>		Superficial Rockwell: 29.4N (3kgf) Rockwell: 98N (10kgf)
<b>Test force</b>		Superficial Rockwell: 147N (15kg), 294N (30kg), 441N (45kg) Rockwell: 588N (60kg), 980N (100kg), 1471N (150kg)
<b>Test force accuracy</b>		±1%
<b>Operational mode</b>		automatic
<b>Load control</b>		automatic (load/dwell/unload)
<b>Resolution</b>		0.05HR
<b>Load dwell time</b>		0~99 second
<b>Max. workpiece height</b>		300mm
<b>Max. testing width</b>		200mm (from the center of indenter to the wall of main body)
<b>Output</b>		bluetooth printer, RS232
<b>Power supply</b>		220V, 50/60HZ
<b>Dimension</b>		555×400×1250mm
<b>Weight</b>		130kg

### STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.588mm carbide ball indenter	1 pc
Ø58mm flat anvil	1 pc
V-type anvil	1 pc
Hardness test block HRB20~30	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRBW80~100	1 pc
Hardness test block HR30N60~85	1 pc
Hardness test block HR30TW70~85	1 pc
Bluetooth printer	1 pc
Hardness analysis software	1 pc

### OPTIONAL ACCESSORY

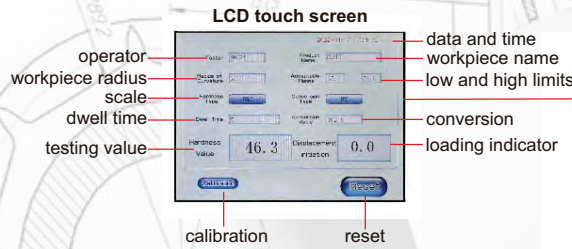
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRB80~100	HDT-B-HRB
Hardness test block HR15N78~88	HDT-B-HR15N2
Hardness test block HR30N55~73	HDT-B-HR30N2
Hardness test block HR30T73~82	HDT-B-HR30T
Desk	HDT-DESK1

DATA OUTPUT

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

# MOTORIZED DIGITAL ROCKWELL HARDNESS TESTERS (DOLPHIN-NOSE TYPE)

INSPECTION CERTIFICATE



ISHR-T100



Ø63mm flat anvil (included)



Ø150mm flat anvil (included)



level (included)



touch pen (included)



V-type anvil (included) for cylinders with diameter Ø4-60mm

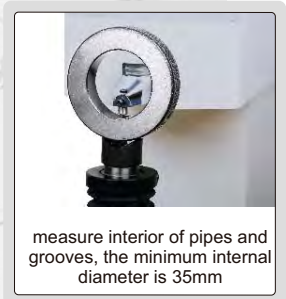


desk (optional)



small V-type anvil (optional) for cylinders with diameter Ø2-4mm

- Dolphin-nose indenter to reach interior of pipe and groove
- Automatic testing after preliminary test force is loaded by hand
- LCD touch screen, easy operation
- Convert to other Rockwell scales, HV or HB automatically
- Tolerance testing
- Insert USB disk, save the testing results as Excel
- Self-compensation of the hardness value for curved workpiece
- Force loading by electric motor (without weights)
- The test force is selected automatically according to hardness scale
- According to ISO 6508



measure interior of pipes and grooves, the minimum internal diameter is 35mm

To be continued

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### SPECIFICATION

Code		ISHR-T100	ISHR-T200	ISHR-T300
Type		Rockwell	Superficial Rockwell	Rockwell and Superficial Rockwell
Hardness scale	with standard indenter	HRA, HRB, HRC, HRD, HRF, HRG	HR15N, HR30N, HR45N, HR15T, HR30T, HR45T	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV	HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Preliminary test force		98N/10kgf for Rockwell	29.4N/3kgf for Superficial Rockwell	98N/10kgf for Rockwell 29.4N/3kgf for Superficial Rockwell
Test force		588N (60kg), 980N (100kg), 1471N (150kg)	147.1N (15kg), 294.2N (30kg), 441.3N (45kg)	147.1N (15kg), 294.2N (30kg), 441.3N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)
Stage elevation		manual		
Load control		automatic (load/dwell/unload)		
Load dwell time		0~99 second		
Resolution		0.1HR		
Output		USB		
Max. workpiece height		300mm		
Max. testing width		250mm (from the center of indenter to the wall of main body)		
Power supply		220V, 50/60Hz		
Dimension		720×260×840mm		
Weight		80kg		

### STANDARD DELIVERY

Code	ISHR-T100	ISHR-T200	ISHR-T300
Main unit	1 pc	1 pc	1 pc
Ø63mm flat anvil	1 pc	1 pc	1 pc
Ø150mm flat anvil	1 pc	1 pc	1 pc
V-type anvil	1 pc	1 pc	1 pc
Diamond indenter	1 pc	1 pc	1 pc
Ø1.5875mm carbide ball indenter	1 pc	1 pc	1 pc
Hardness test block HRB88~95	1 pc	—	1 pc
Hardness test block HRC60~65	1 pc	—	1 pc
Hardness test block HRC20~30	1 pc	—	1 pc
Hardness test block 78~88HR15N	—	1 pc	1 pc
Hardness test block 55~73HR30N	—	1 pc	1 pc
Hardness test block 57~69HR30T	—	1 pc	1 pc
USB disk	1 pc	1 pc	1 pc
Level	1 pc	1 pc	1 pc
Touch pen	1 pc	1 pc	1 pc
Anti-dust cover	1 pc	1 pc	1 pc

### OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 78~88HR15N	HDT-B-HR15N2
Hardness test block 55~73HR30N	HDT-B-HR30N2
Hardness test block 73~82HR30T	HDT-B-HR30T
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

# MOTORIZED DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS

**POPULAR MODEL**

**INSPECTION CERTIFICATE**

**FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)**

**TOUCH SCREEN**

**BUILT-IN BLUETOOTH**



Ø58mm flat anvil (included)



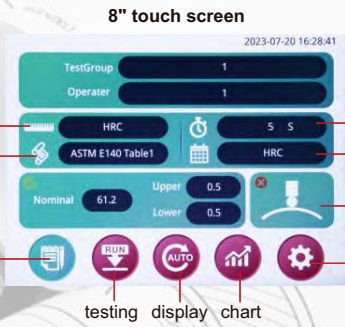
Ø150mm flat anvil (included)



V-type anvil (included)



bluetooth printer (included)

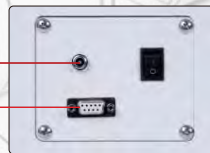


8" touch screen

test scales  
standard selection  
setting  
testing  
display  
chart  
load dwell time  
converted scales  
hardness value correction  
program setting

the back

power  
RS232 interface



HDT-RT151

test interface

- Electronic loading test force, high accuracy of force value, and stable measurement value
- Touch screen operation and display, simple operation interface
- 15 types of Rockwell hardness scales can be tested
- Convertible to various hardness standards such as HB and HV
- 500 sets of storage
- With correction function, the hardness value can be corrected based on the size of the cylinders
- According to ISO 6508

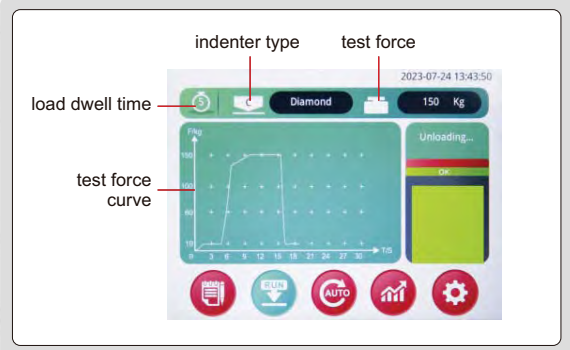
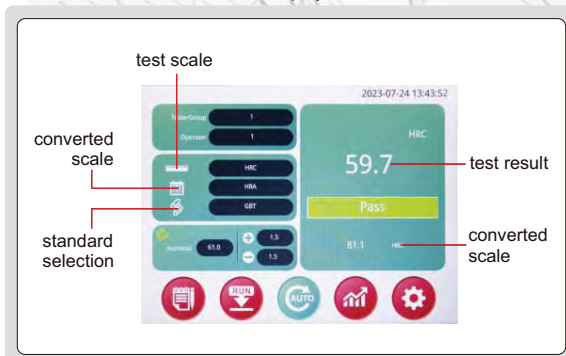
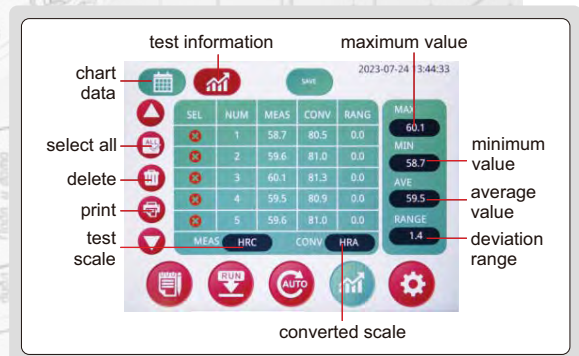


chart interface



test result display interface



To be continued

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### SPECIFICATION

Code		HDT-RT151	HDT-RT152	HDT-RT153
Type		Rockwell	Superficial Rockwell	Rockwell and Superficial Rockwell
Measurement range		20~88HRA, 20~100HRB, 20~70HRC	70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T	Rockwell: 20~88HRA, 20~100HRB, 20~70HRC; Superficial Rockwell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T
Hardness scale	with indenter included	HRA, HRB, HRC, HRD, HRF, HRG	HR15N, HR30N, HR45N, HR15T, HR30T, HR45T	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV	HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Preliminary test force		98N/10kgf for Rockwell	29.4N/3kgf for Superficial Rockwell	98N/10kgf for Rockwell 29.4N/3kgf for Superficial Rockwell
Test force		588N (60kg), 980N (100kg), 1471N (150kg)	147N (15kg), 294N (30kg), 441N (45kg)	147N (15kg), 294N (30kg), 441N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)
Stage elevation		manual		
Load control		automatic (load/dwell/unload)		
Load dwell time		2~60 second		
Resolution		0.1HR		
Max. workpiece height		230mm		
Max. testing width		170mm		
Power supply		100~240V, 50/60Hz		
Dimension		475×200×700mm		
Weight		70kg		

### STANDARD DELIVERY

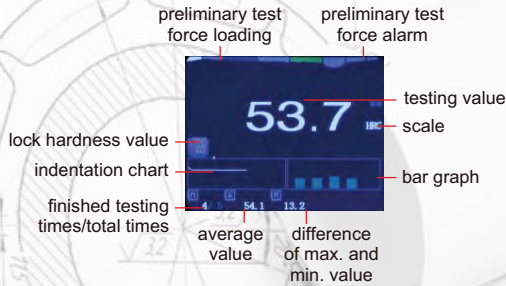
Code	HDT-RT151	HDT-RT152	HDT-RT153
Main unit	1 pc	1 pc	1 pc
Diamond indenter	1 pc	1 pc	1 pc
Ø1.5875mm carbide ball indenter	1 pc	1 pc	1 pc
Ø58mm flat anvil	1 pc	1 pc	1 pc
Ø150mm flat anvil	1 pc	1 pc	1 pc
V-type anvil	1 pc	1 pc	1 pc
Hardness test block HRC20~30	1 pc	—	1 pc
Hardness test block HRC40~50	1 pc	—	—
Hardness test block HRC60~70	1 pc	—	1 pc
Hardness test block HRBW80~100	1 pc	—	1 pc
Hardness test block HRA80~90	1 pc	—	—
Hardness test block HR15N80~90	—	1 pc	—
Hardness test block HR30N60~85	—	1 pc	1 pc
Hardness test block HR30TW70~85	—	1 pc	1 pc
Bluetooth printer	1 pc	1 pc	1 pc
Anti-dust cover	1 pc	1 pc	1 pc

### OPTIONAL ACCESSORY

Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRB80~100	HDT-B-HRB
Hardness test block HR15N78~88	HDT-B-HR15N2
Hardness test block HR30N55~73	HDT-B-HR30N2
Hardness test block HR30T73~82	HDT-B-HR30T



# MOTORIZED DIGITAL ROCKWELL HARDNESS TESTER CODE ISH-MRD200



software flash disk (included)

- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Display unit is automatic power off
- According to ISO 6508
- Keyboard signal, can be transmitted to Excel



Ø60mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included) for cylinders with diameter Ø4~60mm



small V-type anvil (optional) for cylinders with diameter Ø2~4mm



wireless printer (optional)



desk (optional)

## SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD HRF, HRG (with standard indenters) HRE, HRH, HRK (with optional indenter)
Preliminary test force	98N
Test force	588N, 980N, 1471N
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~99 second
Resolution	0.1HR
Output	wireless and USB
Memory	500
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply of the display unit	built-in rechargeable battery
Power supply	220V, 50/60Hz
Dimension	520×160×700mm
Weight	60kg

## STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

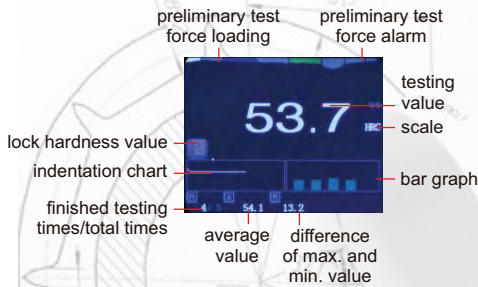
## OPTIONAL ACCESSORY

Wireless printer	ISH-DS-PRINTER
Ø3.175mm carbide ball indenter	ISH-EHK-INDENTER
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

# MANUAL DIGITAL ROCKWELL HARDNESS TESTER CODE ISH-RD200

DATA  
OUTPUT

INSPECTION  
CERTIFICATE



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- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Automatic power off
- According to ISO 6508
- Keyboard signal, can be transmitted to Excel



software flash disk (included)



Ø60mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included) for cylinders with diameter Ø4~60mm



small V-type anvil (optional) for cylinders with diameter Ø2~4mm



wireless printer (optional)



desk (optional)

## SPECIFICATION

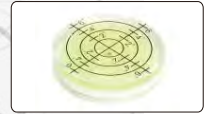
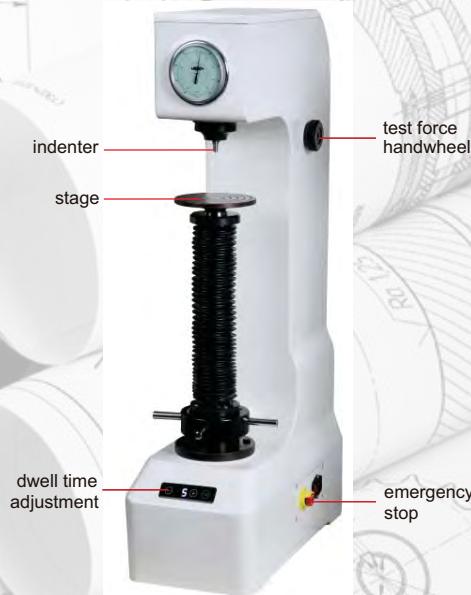
Hardness scale	HRA, HRB, HRC, HRD HRF, HRG (with standard indenters) HRE, HRH, HRK (with optional indenter)
Preliminary test force	98N
Test force	588N, 980N, 1471N
Stage elevation	manual
Load control	manual
Resolution	0.1HR
Output	wireless and USB
Memory	500
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply	built-in rechargeable battery
Dimension	520×160×700mm
Weight	60kg

## STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

## OPTIONAL ACCESSORY

Wireless printer	ISH-DS-PRINTER
Ø3.175mm carbide ball indenter	ISH-EHK-INDENTER
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

**MOTORIZED HIGH ROCKWELL HARDNESS TESTER  
CODE HDT-RM421**


level (included)


 V-type anvil (included)  
for cylinders with  
diameter Ø4~60mm

 Ø150mm flat anvil  
(included)

 Ø58mm flat anvil  
(included)

 small V-type anvil  
(optional) for  
cylinders with  
diameter Ø2~4mm

■ According to ISO 6508

**SPECIFICATION**

<b>Hardness scale</b>	HRA, HRB, HRC, HRD, HRF, HRG
<b>Preliminary test force</b>	98N (10kg)
<b>Test force</b>	588N (60kg), 980N (100kg), 1471N (150kg)
<b>Display</b>	analogue
<b>Stage elevation</b>	manual
<b>Load control</b>	automatic (load/dwell/unload)
<b>Load dwell time</b>	1~60 second
<b>Min. reading</b>	0.5HR
<b>Max. workpiece height</b>	400mm
<b>Max. testing width</b>	160mm (form the center of indenter to the wall of main body)
<b>Power supply</b>	220V, 50/60Hz
<b>Dimension</b>	540×300×1030mm
<b>Weight</b>	140kg

**STANDARD DELIVERY**

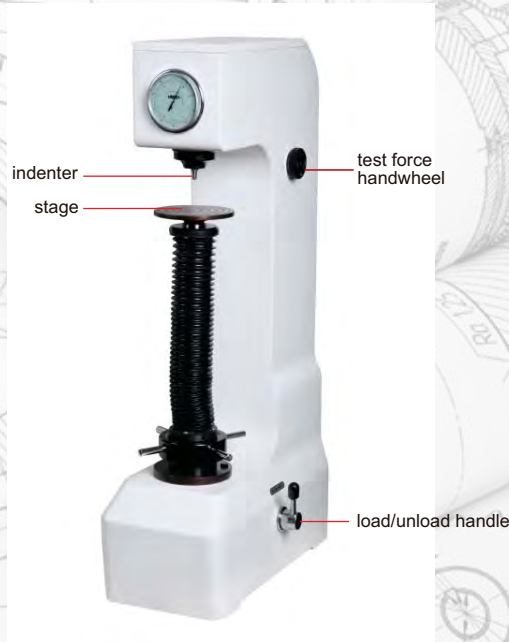
<b>Main unit</b>	1 pc
<b>Ø58mm flat anvil</b>	1 pc
<b>Ø150mm flat anvil</b>	1 pc
<b>V-type anvil</b>	1 pc
<b>Diamond indenter</b>	1 pc
<b>Ø1.5875mm steel ball indenter</b>	1 pc
<b>Ø1.5875mm steel ball</b>	5 pcs
<b>Level</b>	1 pc
<b>Hardness test block HRA80~84</b>	1 pc
<b>Hardness test block HRB88~100</b>	1 pc
<b>Hardness test block HRC20~30</b>	1 pc
<b>Hardness test block HRC35~55</b>	1 pc
<b>Hardness test block HRC60~70</b>	1 pc
<b>Anti-dust cover</b>	1 pc

**OPTIONAL ACCESSORY**

<b>Hardness test block HRA80~84</b>	<b>HDT-B-HRA</b>
<b>Hardness test block HRB88~100</b>	<b>HDT-B-HRB</b>
<b>Hardness test block HRC20~30</b>	<b>HDT-B-HRC1</b>
<b>Hardness test block HRC35~55</b>	<b>HDT-B-HRC2</b>
<b>Hardness test block HRC60~70</b>	<b>HDT-B-HRC3</b>
<b>Small V-type anvil</b>	<b>HDT-RW160-SV</b>

# MANUAL HIGH ROCKWELL HARDNESS TESTER CODE HDT-RH411

**INSPECTION  
CERTIFICATE**



level (included)



V-type anvil (included)  
for cylinders with  
diameter Ø4~60mm



Ø150mm flat anvil  
(included)



Ø58mm flat anvil  
(included)



small V-type anvil  
(optional) for  
cylinders with  
diameter Ø2~4mm

■ According to ISO 6508

## SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N (10kg)
Test force	588N (60kg), 980N (100kg), 1471N (150kg)
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	400mm
Max. testing width	160mm (form the center of indenter to the wall of main body)
Dimension	540×300×1030mm
Weight	140kg

## STANDARD DELIVERY

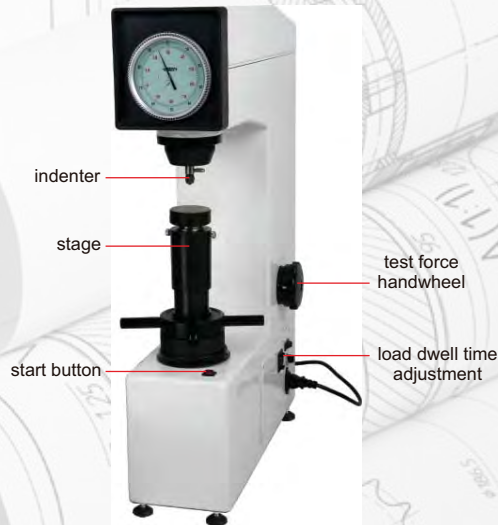
Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Ø1.5875mm steel ball	5 pcs
Level	1 pc
Hardness test block HRA80~84	1 pc
Hardness test block HRB88~100	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

## OPTIONAL ACCESSORY

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV

**INSPECTION  
CERTIFICATE**

## MOTORIZED ROCKWELL HARDNESS TESTER CODE ISH-MR150



■ According to ISO 6508



Ø60mm flat anvil  
(included)



Ø150mm flat anvil  
(included)



V-type anvil (included)  
for cylinders with  
diameter Ø4-60mm



small V-type anvil  
(optional)  
for cylinders with  
diameter Ø2-4mm



desk (optional)

### SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1-99 second
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	520×160×700mm
Weight	60kg

### STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88-95	1 pc
Hardness test block HRC60-65	1 pc
Hardness test block HRC20-30	1 pc
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

Hardness test block HRB88-100	HDT-B-HRB
Hardness test block HRC60-70	HDT-B-HRC3
Hardness test block HRC20-30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

**MOTORIZED ROCKWELL HARDNESS TESTER (BASIC TYPE)  
CODE HDT-RA151**



■ According to ISO 6508



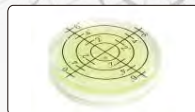
Ø58mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included) for cylinders with diameter Ø4~60mm



level (included)



small V-type anvil (optional) for cylinders with diameter Ø2~4mm



desk (optional)

**SPECIFICATION**

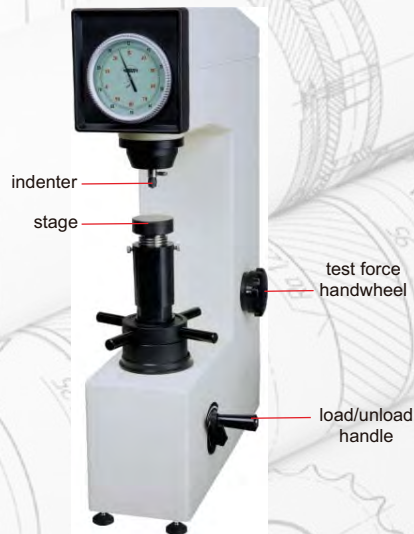
Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	128mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	500×225×640mm
Weight	65kg

**STANDARD DELIVERY**

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Level	1 pc
Hardness test block HRA80~88	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

**OPTIONAL ACCESSORY**

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV
Desk	HDT-DESK

**MANUAL ROCKWELL HARDNESS TESTER  
CODE ISH-R150**


■ According to ISO 6508



Ø60mm flat anvil  
(included)



Ø150mm flat anvil  
(included)



V-type anvil (included)  
for cylinders with  
diameter Ø4-60mm



small V-type anvil  
(optional)  
for cylinders with  
diameter Ø2-4mm



desk (optional)

**SPECIFICATION**

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Dimension	520×160×700mm
Weight	60kg

**STANDARD DELIVERY**

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc

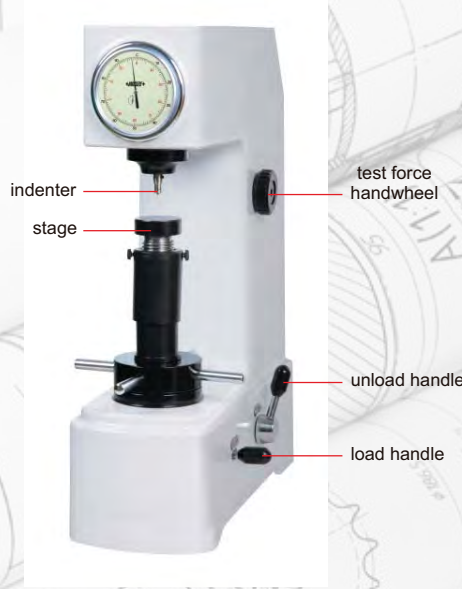
**OPTIONAL ACCESSORY**

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

**MANUAL ROCKWELL HARDNESS TESTER (BASIC TYPE)  
CODE HDT-RW160**



**POPULAR MODEL**



■ According to ISO 6508



Ø58mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included) for cylinders with diameter Ø4~60mm



level (included)



small V-type anvil (optional) for cylinders with diameter Ø2~4mm



desk (optional)

**SPECIFICATION**

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N (10kg)
Test force	588N (60kg), 980N (100kg), 1471N (150kg)
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	135mm (from the center of indenter to the wall of main body)
Dimension	466×238×630mm
Weight	70kg

**STANDARD DELIVERY**

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Ø1.5875mm steel ball	5 pcs
Level	1 pc
Hardness test block HRA80~88	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

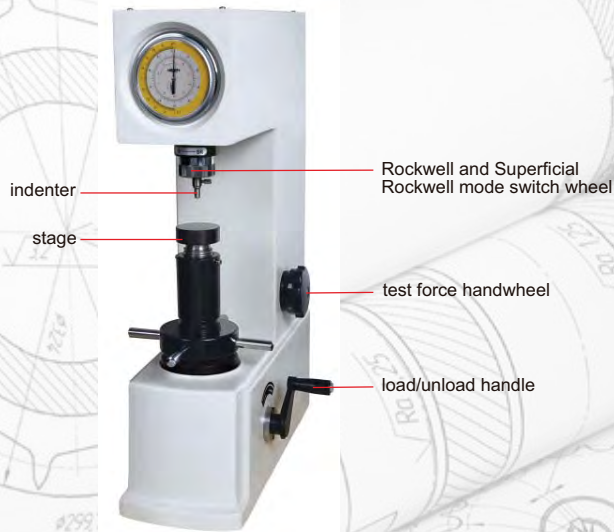
**OPTIONAL ACCESSORY**

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV
Desk	HDT-DESK





# MANUAL ROCKWELL AND SUPERFICIAL ROCKWELL HARDNESS TESTER CODE HDT-RSR100



Ø60mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included) for cylinders with diameter Ø4-60mm



small V-type anvil (optional) for cylinders with diameter Ø2-4mm



desk (optional)

■ According to ISO 6508

## SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Preliminary test force	29.4N/3kgf for Superficial Rockwell 98N/10kgf for Rockwell
Test force	147N/15kgf, 294N/30kgf, 441N/45kgf, 588N/60kgf, 980N/100kgf, 1471N/150kgf
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	160mm
Max. testing width	140mm (from the center of indenter to the wall of main body)
Dimension	460×240×660mm
Weight	75kg

## STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HR15N	1 pc
Hardness test block HR30N	1 pc
Hardness test block HR30T	1 pc
Anti-dust cover	1 pc

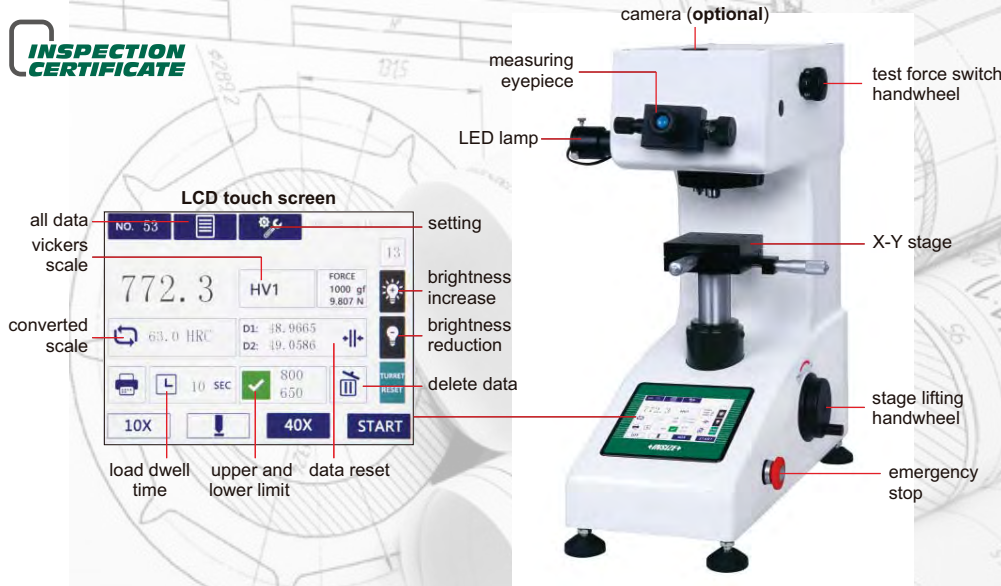
## OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 78~88HR15N	HDT-B-HR15N2
Hardness test block 55~73HR30N	HDT-B-HR30N2
Hardness test block 57~69HR30T	HDT-B-HR30T
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

# DIGITAL MICRO-VICKERS HARDNESS TESTER (BASIC TYPE) CODE HDT-MVE1300

MOTOR DRIVEN  
TURRET

TOUCH  
SCREEN



step: 1



measure indentation diagonal lengths by measuring microscope

step: 2



input the indentation diagonal lengths, the hardness value is shown on screen automatically

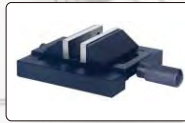
- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507



cylinder holder (included)



slice holder (included)



vice (included)



desk (optional)



camera (optional)

camera and measuring system (optional)



## SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.5µm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	100X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimension: 100×100mm, travel range: 25×25mm
Power supply	220V, 50/60Hz
Dimension	510×290×570mm
Weight	40kg



VIDEO

## STANDARD DELIVERY

Main unit	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Slice holder	1 pc
Vice	1 pc
Cylinder holder	1 pc
Anti-dust cover	1 pc

## OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Camera	HDT-MVH-CM
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW
Desk	HDT-DESK

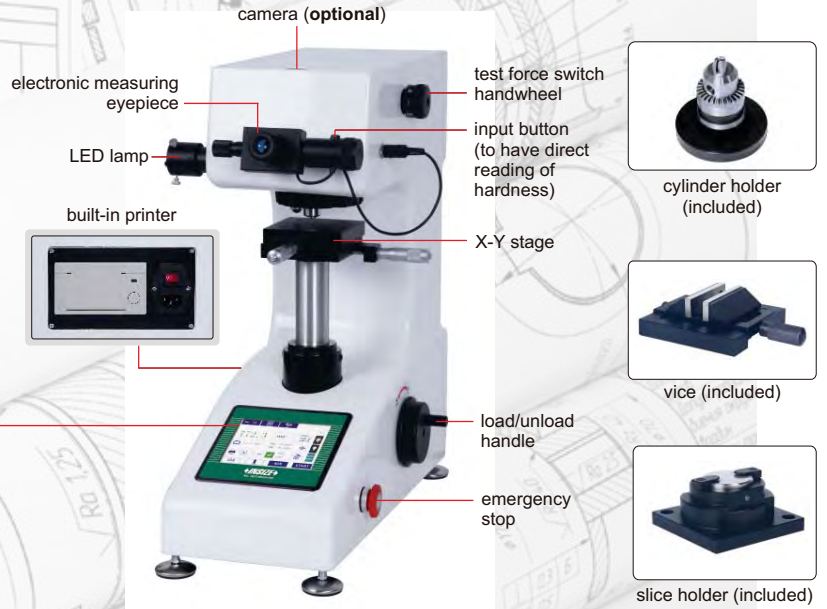
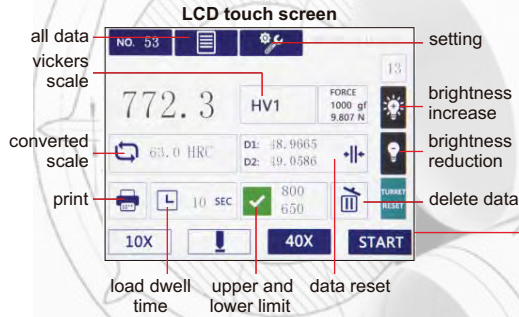
# DIGITAL MICRO-VICKERS HARDNESS TESTER (STANDARD TYPE) CODE HDT-MVH1100

**INSPECTION  
CERTIFICATE**

PRESS INPUT BUTTON TO HAVE  
DIRECT READING OF HARDNESS

TOUCH  
SCREEN

MOTOR DRIVEN  
TURRET



- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

## SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.025µm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	10X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimension: 100×100mm, travel range: 25×25mm
Data output	built-in printer
Power supply	220V, 50/60Hz
Dimension	510×290×570mm
Weight	40kg



camera and measuring system (optional)



## STANDARD DELIVERY

Main unit	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Slice holder	1 pc
Vice	1 pc
Cylinder holder	1 pc
Anti-dust cover	1 pc

## OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Camera	HDT-MVH-CM
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

# DUAL TOUCH SCREEN DIGITAL MICRO-VICKERS HARDNESS TESTER (ADVANCED TYPE) CODE HDT-DMV90

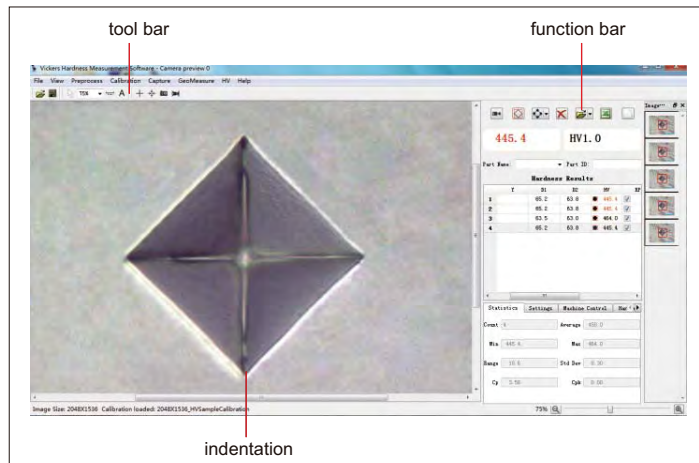
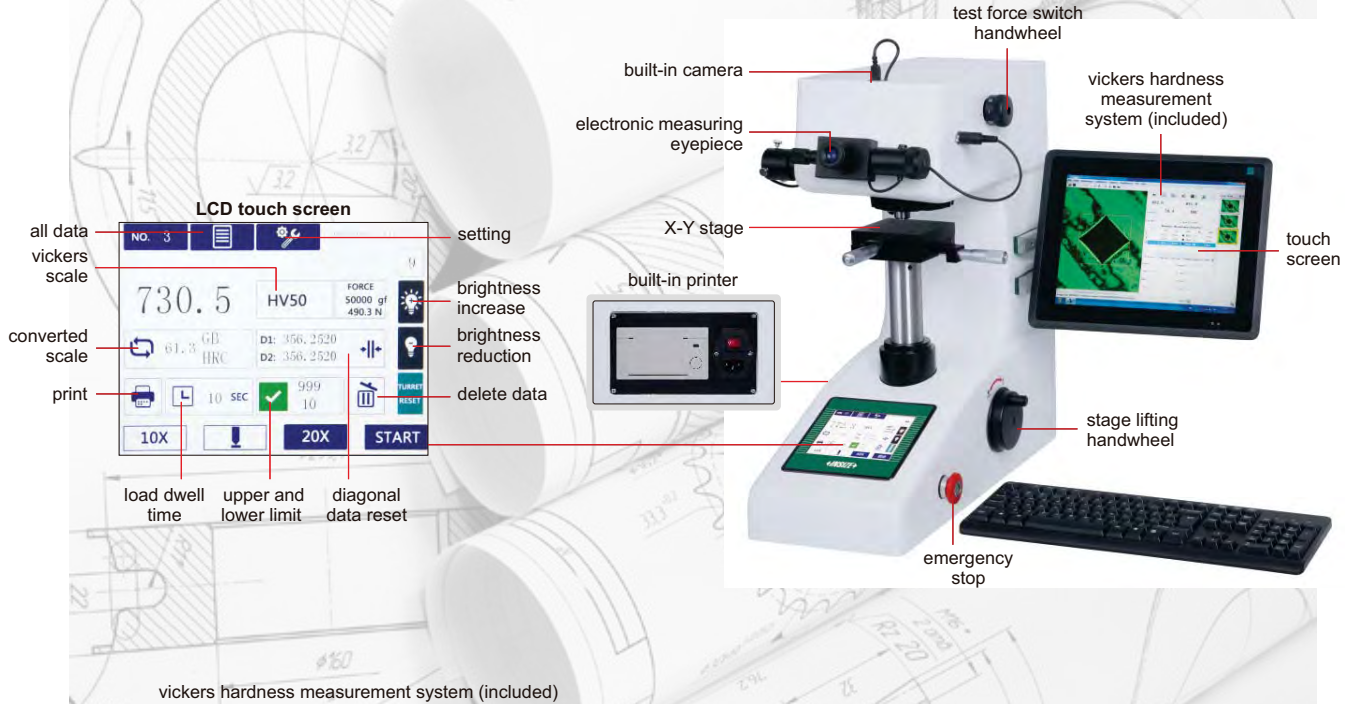


MOTOR DRIVEN TURRET

AUTOMATIC MEASUREMENT



32



cylinder holder (included)



vice (included)



slice holder (included)



desk (optional)

- Dual touch screen control, high-definition image measurement and analysis
- One click start, automatic pressing and automatic measurement
- The host and vickers hardness measurement system can be operated independently
- Automatic switch between the indenter and objective lens
- Data storage and average value calculation
- Can connect with wired and wireless networks to transmit data
- According to ISO 6507

To be continued

Continued from previous page

### SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.01μm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	100X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimensions: 100×100mm, travel range: 25×25mm
Data output	built-in printer, USB
Power supply	220V, 50/60HZ
Dimension	500×420×480mm
Weight	42kg

### STANDARD DELIVERY

Main unit	1 pc
Vickers hardness measurement system	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Wireless keyboard	1 pc
Wireless mouse	1 pc
Vice	1 pc
Slice holder	1 pc
Cylinder holder	1 pc
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Desk	HDT-DESK
OFFICE software	7313-OFFICE

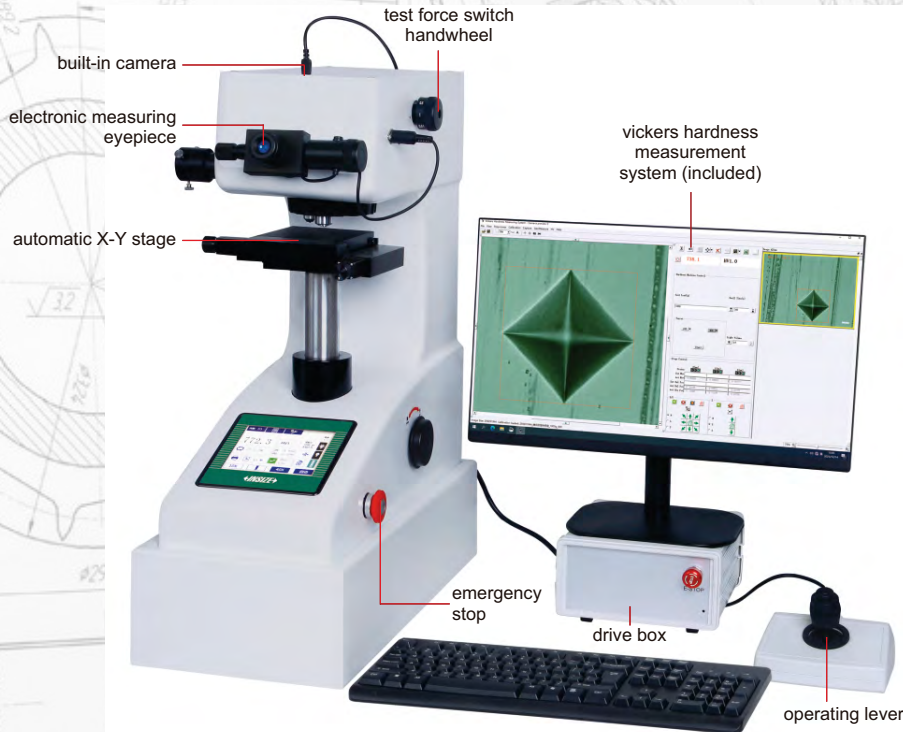
**AUTOMATIC MICRO-VICKERS HARDNESS TESTER  
CODE HDT-AMV338**

**MOTOR DRIVEN  
TURRET**

**AUTOMATIC  
MEASUREMENT**

**Z-AXIS  
AUTOFOCUS**

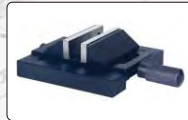
**INSPECTION  
CERTIFICATE**



automatic X-Y stage



cylinder holder (included)



vice (included)



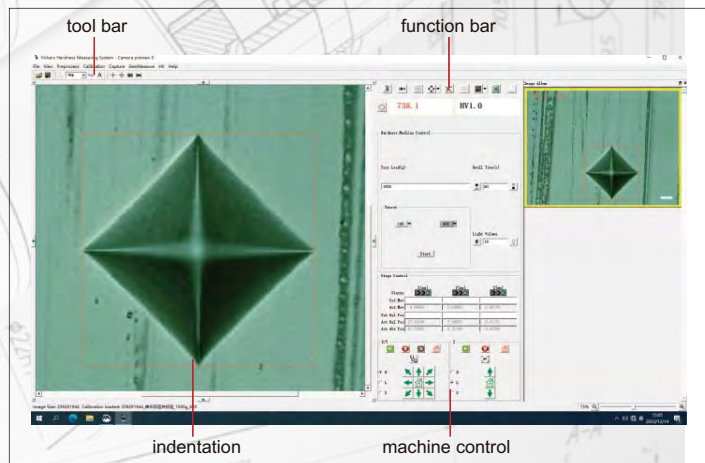
slice holder (included)



desk (optional)

- Suitable for micro-hardness determination of various metals and non-metal materials, effective depth and heat affected area measurement, especially suitable for measuring workpieces hardness gradient distribution curve and surface hardness after heat treatment, effective hardening layer depth
- Automatic switch between the indenter and objective lens
- Z-axis automatic focus, X, Y axis automatic movement, can be for multi-point continuous measurement
- Automatic moving table by built-in step motor, high positioning accuracy, good repeatability, fast moving speed, high efficiency
- Automatic moving table bidirectional movement, equipped with safety devices to avoid misoperation
- The software can control the hardness tester hardware operation, two-way communication with each other
- The image acquisition device has fast reaction speed, high automatic measurement accuracy and good repeatability
- The system can automatically generate Word or Excel test report, and the report template can be modified
- According to ISO 6507

vickers hardness measurement system (included)



To be continued

Continued from previous page

#### AUTOMATIC MEASUREMENT, CONTROL SYSTEM

<b>Hardness tester control</b>	1. automatic turret, automatic loading, automatic measurement 2. automatic display of test force, load dwell time, illumination brightness
<b>Control automatic X-Y stage</b>	software system controls automatic X-Y stage movement
<b>Measurement mode</b>	1. automatic mode: automatic loading, automatic measurement, automatic display of measurement results 2. manual measurement mode can be selected
<b>Automatic measurement</b>	about 0.3sec of one indentation
<b>Measurement repeatability</b>	±1% (700HV/500gf)
<b>The smallest indentation that can be measured</b>	about 5µm (automatic measurement)
<b>Data output format/edit functions</b>	1. inspection reports can be customized according to customer requirements 2. the depth of hardened layer is shown in table form 3. output various measurement data, hardness table, hardening layer depth, maximum value, average value, minimum value, image with hardness value

#### AUTOMATIC X-Y STAGE

<b>Drive motor</b>	step motor
<b>Drive control</b>	movement control by software, speed is adjustable
<b>Dimension</b>	110×110mm
<b>Maximum travel distance</b>	50×50mm
<b>Minimum travel distance</b>	1µm
<b>Movement speed</b>	1~10mm/sec, speed can be adjusted
<b>Displacement repetition accuracy</b>	within 1µm

#### SPECIFICATION

<b>Test force</b>	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
<b>Vickers scales</b>	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
<b>Converted scales</b>	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
<b>Range</b>	5~3000HV
<b>Length measurement resolution</b>	0.01µm
<b>Objective/indenter switch</b>	motor driven turret
<b>Stage lifting</b>	manual
<b>Focus mode</b>	Z-axis autofocus
<b>Load control</b>	automatic (load/dwell/unload)
<b>Load dwell time</b>	1~60 second
<b>Objective</b>	10X, 40X
<b>Eyepiece</b>	10X
<b>Total magnification</b>	100X (for measurement or observation), 400X (for measurement)
<b>Max. workpiece height</b>	80mm
<b>Max. testing width</b>	110mm (from the center of indenter to the wall of main body)
<b>Pixel</b>	5M
<b>Communication interface</b>	RS232
<b>Power supply</b>	220V, 50/60HZ
<b>Dimension</b>	520×290×680mm
<b>Weight</b>	42kg

#### STANDARD DELIVERY

<b>Main unit</b>	1 pc
<b>10X, 40X objective</b>	1 pc of each
<b>Micro vickers indenter</b>	1 pc
<b>Hardness test block 400~500HV0.2</b>	1 pc
<b>Hardness test block 700~750HV1</b>	1 pc
<b>Automatic X-Y stage drive box</b>	1 pc
<b>Vickers hardness measurement system</b>	1 pc
<b>Computer</b>	1 pc
<b>Vice</b>	1 pc
<b>Slice holder</b>	1 pc
<b>Cylinder holder</b>	1 pc
<b>Anti-dust cover</b>	1 pc

#### OPTIONAL ACCESSORY

<b>Hardness test block 400~500HV0.2</b>	HDT-B-HV02C
<b>Hardness test block 700~750HV1</b>	HDT-B-HV1F
<b>Desk</b>	HDT-DESK
<b>OFFICE software</b>	7313-OFFICE

DIGITAL VICKERS HARDNESS TESTERS (BASIC TYPE)



MOTOR DRIVEN TURRET



TOUCH SCREEN



HDT-VE56

32

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

<p>step: 1</p>  <p>measure indentation diagonal lengths by measuring microscope</p>	<p>step: 2</p>  <p>input the indentation diagonal lengths, the hardness value is shown on screen automatically</p>
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camera and measuring system (optional)



Ø58mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included)



desk (optional)



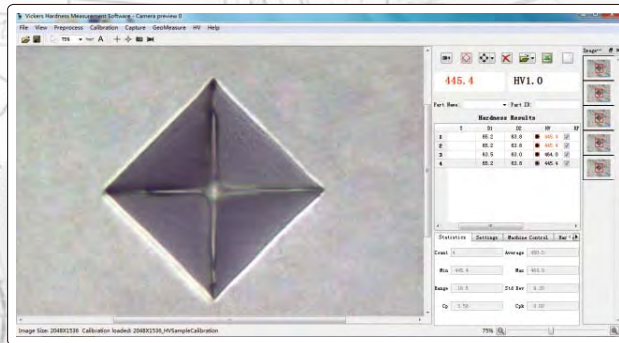
camera (optional)

To be continued



Continued from previous page

vickers hardness measurement system (optional)



### SPECIFICATION

Code	HDT-VE03	HDT-VE14	HDT-VE35	HDT-VE56
Test force	0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf	0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf	1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf	1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf
Vickers scales	HV0.3, HV0.5, HV1, HV2, HV3, HV5	HV0.3, HV0.5, HV1, HV3, HV5, HV10	HV1, HV3, HV5, HV10, HV20, HV30	HV1, HV5, HV10, HV20, HV30, HV50
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T			
Range	8~3000HV			
Length measurement resolution	0.5µm			
Objective/indenter switch	motor driven turret			
Stage lifting	manual			
Load control	automatic (load/dwell/unload)			
Load dwell time	1~60 second			
Objective	10X, 20X			
Eyepiece	10X			
Total magnification	100X (for measurement or observation), 200X (for measurement)			
Max. workpiece height	175mm			
Max. testing width	135mm (form the center of indenter to the wall of main body)			
Power supply	220V, 50/60HZ			
Dimension	580×320×660mm			
Weight	55kg			

### STANDARD DELIVERY

Main unit	1 pc
10X, 20X objective	1 pc of each
Vickers indenter	1 pc
Hardness test block 400~500HV10	1 pc
Hardness test block 700~750HV50	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

Hardness test block 400~500HV10	HDT-B-HV10D
Hardness test block 700~750HV50	HDT-B-HV50G
Desk	HDT-DESK
Vickers hardness tester camera	HDT-MVH-CM1
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

**DIGITAL VICKERS HARDNESS TESTERS (STANDARD TYPE)**

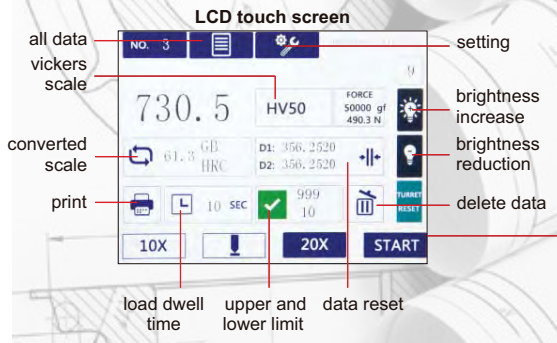
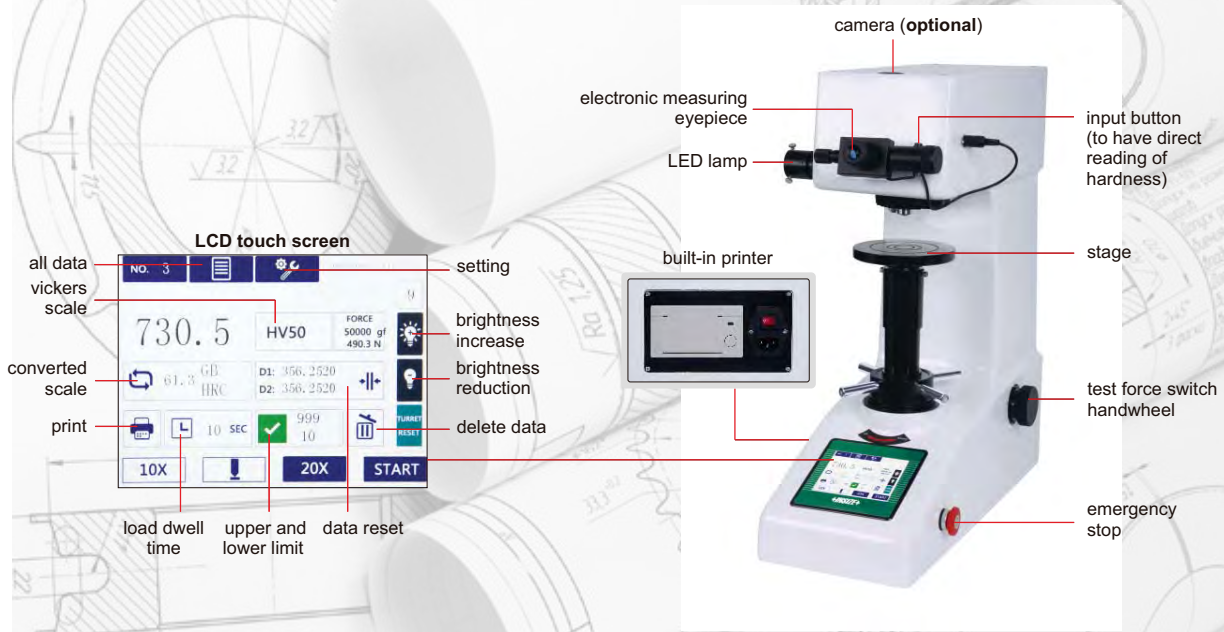
**MOTOR DRIVEN TURRET**

**PRESS INPUT BUTTON TO HAVE DIRECT READING OF HARDNESS**

**TOUCH SCREEN**



**INSPECTION CERTIFICATE**

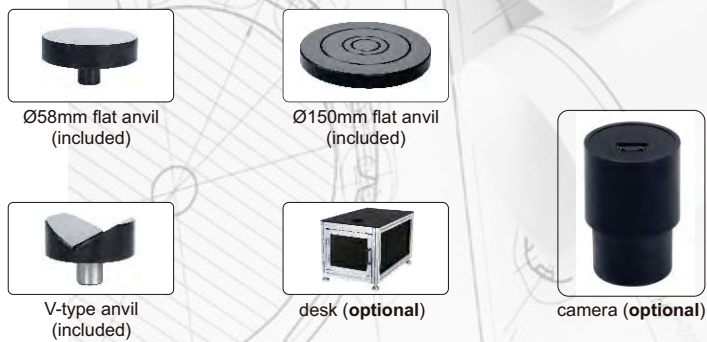


**HDT-VH51**

**camera and measuring system (optional)**



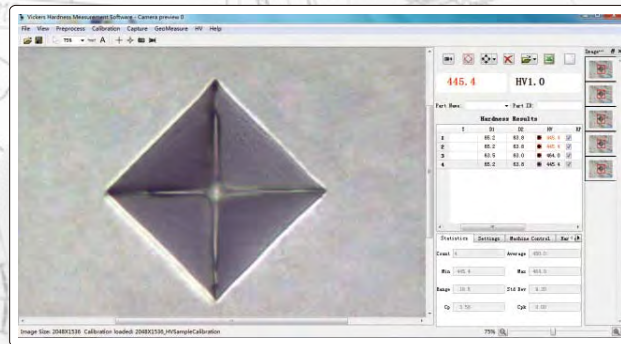
- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507



To be continued

Continued from previous page

vickers hardness measurement system (optional)



**SPECIFICATION**

Code	HDT-VH05	HDT-VH11	HDT-VH31	HDT-VH51
Test force	0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf	0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf	1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf	1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf
Vickers scales	HV0.3, HV0.5, HV1, HV2, HV3, HV5	HV0.3, HV0.5, HV1, HV3, HV5, HV10	Hv1, HV3, HV5, HV10, HV20, Hv30	Hv1, HV5, HV10, HV20, HV30, Hv50
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T			
Range	8~3000HV			
Length measurement resolution	0.125µm			
Objective/indenter switch	motor driven turret			
Stage lifting	manual			
Load control	automatic (load/dwell/unload)			
Load dwell time	1~60 second			
Objective	10X, 20X			
Eyepiece	10X			
Total magnification	100X (for measurement or observation), 200X (for measurement)			
Max. workpiece height	175mm			
Max. testing width	135mm (form the center of indenter to the wall of main body)			
Output	built-in printer			
Power supply	220V, 50/60HZ			
Dimension	580×320×660mm			
Weight	55kg			

**STANDARD DELIVERY**

Main unit	1 pc
10X, 20X objective	1 pc of each
Vickers indenter	1 pc
Hardness test block	2 pcs
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Anti-dust cover	1 pc

**OPTIONAL ACCESSORY**

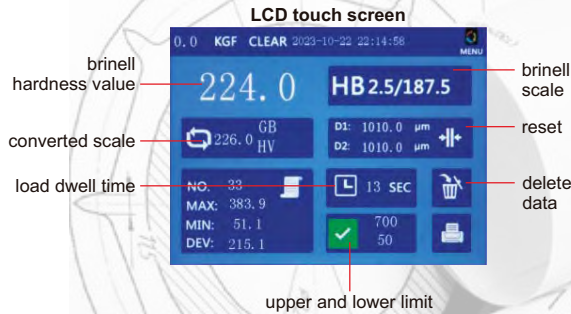
Hardness test block	page 840~841
Desk	HDT-DESK
Vickers hardness tester camera	HDT-MVH-CM1
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

# MOTORIZED DIGITAL BRINELL HARDNESS TESTER (BASIC TYPE) CODE HDT-MBE320



TOUCH SCREEN

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHT)



step: 1

measure indentation diameter by measuring microscope



step: 2

input the diameters, the hardness value is shown on screen automatically

- Touch screen color LCD display
- Measure indentation diameter by measuring microscope, then input the diameters, the hardness value is shown on screen automatically
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506



## SPECIFICATION

Test force	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf	
Brinell scale	HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW5/125, HBW5/250, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000	
Range	8~650HBW	
Hardness resolution	0.1HBW	
Stage elevation	manual	
Load control	automatic (load/dwell/unload)	
Load dwell time	0~60 second	
Measuring microscope	magnification	20X
	resolution	0.01mm
Max. workpiece height	230mm	
Max. testing width	140mm (form the center of indenter to the wall of main body)	
Power supply	220V, 50/60Hz	
Dimension	510×210×750mm	
Weight	130kg	



Ø78mm flat anvil (included)



Ø200mm flat anvil (included)



V-type anvil (included)



desk (optional)



measuring microscope (included)

## STANDARD DELIVERY

Main unit	1 pc
Ø78mm flat anvil	1 pc
Ø200mm flat anvil	1 pc
V-type anvil	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Ø10mm carbide ball indenter	1 pc
Hardness test block 100~200HBW2.5/187.5	1 pc
Hardness test block 90~200HBW10/1000	1 pc
Hardness test block 100~200HBW10/3000	1 pc
Measuring microscope	1 pc

## OPTIONAL ACCESSORY

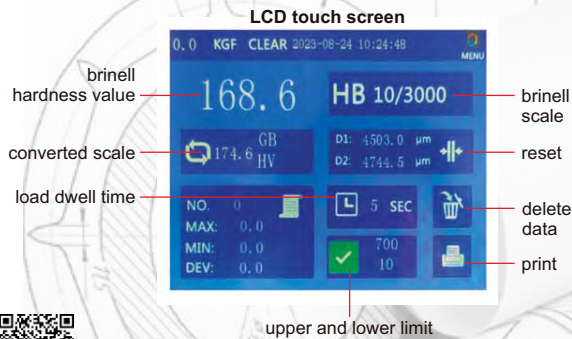
Hardness test block 100~200HBW2.5/187.5	HDT-B-HB25A1
Hardness test block 90~200HBW10/1000	HDT-B-HB10C1
Hardness test block 100~200HBW10/3000	HDT-B-HB10A1
Desk	HDT-DESK

TOUCH SCREEN

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHT)

## MOTORIZED DIGITAL BRINELL HARDNESS TESTERS (STANDARD TYPE)

**INSPECTION CERTIFICATE**



- Touch screen color LCD display
- Measure the indentation with microscope, automatically calculate the hardness value and display it on the screen
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506



Ø78mm flat anvil (included)



Ø200mm flat anvil (included)



V-type anvil (included)



desk (optional)

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### SPECIFICATION

Code	HDT-MB610	HDT-MB710
Turret rotation	manual	automatic
Test force	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf	
Brinell scale	HBW2.5/62.5, HBW2.5/187.5, HBW5/125, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000	
Range	8~650HBW	
Hardness resolution	0.1HBW	
Stage elevation	manual	
Load control	automatic (load/dwell/unload)	
Load dwell time	0~60 second	
Measuring microscope	magnification	20X
	resolution	0.1µm
Max. workpiece height	200mm	
Max. testing width	135mm (form the center of indenter to the wall of main body)	
Data output	built-in printer, RS232	
Power supply	220V, 50/60Hz	
Dimension	510×210×750mm	
Weight	130kg	

### STANDARD DELIVERY

Main unit	1 pc
Ø78mm flat anvil	1 pc
Ø200mm flat anvil	1 pc
V-type anvil	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Ø10mm carbide ball indenter	1 pc
Hardness test block 100~200HBW2.5/187.5	1 pc
Hardness test block 90~200HBW10/1000	1 pc
Hardness test block 100~200HBW10/3000	1 pc

### OPTIONAL ACCESSORY

Hardness test block 100~200HBW2.5/187.5	HDT-B-HB25A1
Hardness test block 90~200HBW10/1000	HDT-B-HB10C1
Hardness test block 100~200HBW10/3000	HDT-B-HB10A1
Desk	HDT-DESK

# BRINELL INDENTATION MEASURING SYSTEM CODE ISHB-MSA

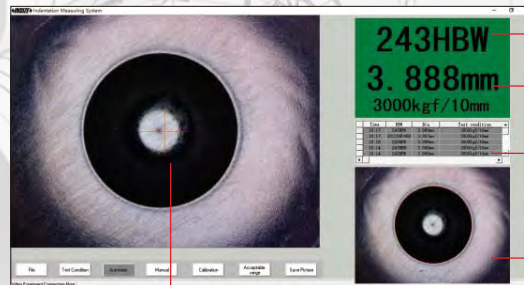


application



software flash disk  
(included)

software (included)



result and scale  
diameter of indentation  
result list  
picture

- Connected to computer USB port
- Automatically measure the indentation
- Result saved to Excel automatically
- Tolerance testing
- Calibration with standard hardness blocks or standard indentation blocks

indentation

## SPECIFICATION

<b>Applicable Brinell indenter</b>		Ø10mm, Ø7.26mm, Ø5mm, Ø4mm, Ø2.5mm
<b>Hardness range</b>		16~650HB
<b>Range of indentation diameter</b>		Ø0.6~6mm
<b>Test force</b>		62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf
<b>Hardness resolution</b>		1HB
<b>Diameter measuring resolution</b>		0.001mm
<b>Diameter measuring accuracy</b>	Ø10mm ball indneter	±0.4% (indentation diameter)
	Ø5mm ball indneter	±0.8% (indentation diameter)
	Ø2.5mm ball indneter	±1.2% (indentation diameter)
<b>Camera</b>	sensor	1/3.2" CMOS
	pixel	2M (resolution 1600×1200)
	view filed	8×6mm
<b>Dimension</b>		170×54×54mm
<b>Weight</b>		385g



standard blocks for Ø5mm and Ø10mm indenters (included)

## STANDARD DELIVERY

<b>Main unit</b>	1 pc
<b>Software</b>	1 pc
<b>Ø5mm standard indentation block</b>	1 pc
<b>Ø10mm standard indentation block</b>	1 pc

## OPTIONAL ACCESSORY

<b>Ø2.5mm standard indentation block</b>	<b>ISHB-MSA-BLOCK25</b>
--	-------------------------



## BRINELL/ROCKWELL/VICKERS HARDNESS TESTER CODE ISH-BRV



Ø60mm flat anvil for Rockwell (included)



Ø150mm flat anvil for Rockwell (included)



Ø60mm flat anvil for Vickers and Brinell (included)



V-type anvil for Rockwell (included), for cylinders with diameter Ø4-60mm



V-type anvil for Vickers and Brinell (included)



small V-type anvil for Rockwell (optional), for cylinders with diameter Ø2-4mm



desk (optional)



VIDEO

projection screen with scale for reading Rockwell hardness

graduation 0.01mm

microscope for Vickers and Brinell 15X eyepiece

objective 2.5X/5X

slider

load/unload handle

stage

test force handwheel

select hardness scale



- According to ISO 6506, ISO 6507, ISO 6508

### SPECIFICATION

Rockwell test load	98N preload, 588, 980, 1471N total load
Min. Rockwell reading	0.5HR
Brinell test load	306, 613, 1839N
Vickers test load	294N
Stage elevation	manual
Load control	manual
Magnification of microscope	37.5X/75X
Max. workpiece height	180mm
Max. testing width	200mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	546×300×767mm
Weight	90kg

### STANDARD DELIVERY

Main unit	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Diamond Rockwell indenter	1 pc
Ø5mm Brinell indenter	1 pc
Ø2.5mm Brinell indenter	1 pc
Vickers indenter	1 pc
Ø60mm flat anvil for Rockwell	1 pc
Ø150mm flat anvil for Rockwell	1 pc
V-type anvil for Rockwell	1 pc
Ø60mm flat anvil for Vickers and Brinell	1 pc
V-type anvil for Vickers and Brinell	1 pc
Hardness test block HRB88-95	1 pc
Hardness test block HRC60-65	1 pc
Hardness test block HRC20-30	1 pc
Hardness test block 400-500HV30	1 pc
Hardness test block 180-300HBW2.5/187.5	1 pc
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 400-500HV30	HDT-B-HV30D
Hardness test block 200-300HBW2.5/187.5	HDT-B-HB25A2
Small V-type anvil for Rockwell	ISH-SMALLANVIL
Desk	HDT-DESK

## BALANCING BRACKET CODE ISH-BL01



- Suitable for hardness measurement of long strip specimens
- By adjusting the counterweight, to ensure that the indenter is perpendicular to the specimen

### SPECIFICATION

Sample diameter	<50mm
Test bench type	V-type anvil
Dimension	600×100×100mm
Weight	5kg

application example



## JACK LIFTING BRACKET CODE ISH-ST02



- No need to hold the sample, fixing the sample can reduce measurement error

### SPECIFICATION

Sample diameter	<50mm
Test bench type	V-type anvil
Adjusting the height	200mm (customizable)
Dimension	250×250×400mm
Weight	11kg

application example





## PORTABLE LEEB HARDNESS TESTER APPLICABLE MATERIAL AND HARDNESS RANGE OF IMPACT DEVICE D

Material	HLD	HV	HB	HRC	HRB	HS	Tensile strength (MPa)
Steel & cast steel	300-900	81-955	81-654	20-68	38-100	32-100	375-2639
Tool steel	300-840	80-898		20-67			
Stainless steel	300-800	85-802	85-655		46-101		
Cast iron	360-650		93-334				
Cast aluminum alloy	170-570		19-164		23-84		
Brass	200-550		40-173		13-95		
Bronze	300-700		60-290				
Copper	200-690		45-315				

BLUETOOTH

DATA  
OUTPUT

## PORTABLE LEEB HARDNESS TESTERS

32

INSPECTION  
CERTIFICATE



**HDT-CB320**  
(wired probe is included)



**HDT-WL320**  
(wireless probe is included)

- Can use wired probes or wireless probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (σ<sub>b</sub>)
- Dual value display, shows both Leeb and converted hardness
- Large 2.4" LCD display with backlight
- With a magnet on the back, the main unit can be attached on steel surfaces
- According to ASTM A956 and DIN 50156



hardness test  
block D (included)



small support ring  
(included)

connect to PC, upload the data to PC, print and send to Excel (software is included)



connect to  
bluetooth printer (optional)



To be continued

Continued from previous page

**SPECIFICATION**

<b>Code</b>	<b>HDT-CB320</b>		<b>HDT-WL320</b>	
<b>Probe included</b>	wired probe D		wireless probe D	
<b>Optional probes</b>	wired (DC/C/D/D+15/DL/E/G), wireless (DC/C/D/DL/G)			
<b>Resolution</b>	1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HRA/0.1HS/1MPa			
<b>Accuracy</b>	±6HLD (when HLD=800)			
<b>Output</b>	USB			
<b>Measuring range</b>	HL 170-960/HRC 1.3-74.7/HRB 1.2-139.7/HB 28-1027/HV 45-1221 HS 4.0-112.1/HRA 1.3-88.5/MPa 118-3315N/mm <sup>2</sup>			
<b>Applicable materials</b>	1. steel/cast steel 5. nodular cast iron 9. copper	2. alloy steel 6. cast aluminum 10. forging steel	3. stainless steel 7. brass 11. rolling steel	4. gray pig iron 8. bronze
<b>Statistics</b>	average/max./min./s.value			
<b>Memory</b>	999 data			
<b>Working environment</b>	-10°C~45°C			
<b>Power supply</b>	2xAA battery			
<b>Dimension</b>	145×68×28mm			
<b>Weight</b>	158g			

**STANDARD DELIVERY**

<b>Code</b>	<b>HDT-CB320</b>	<b>HDT-WL320</b>
<b>Main unit</b>	1 pc	1 pc
<b>Wired probe D</b>	1 pc	—
<b>Wireless probe D</b>	—	1 pc
<b>Hardness test block D</b>	1 pc	1 pc
<b>Small support ring</b>	1 pc	1 pc
<b>Cleaning brush</b>	1 pc	1 pc

**OPTIONAL ACCESSORY**

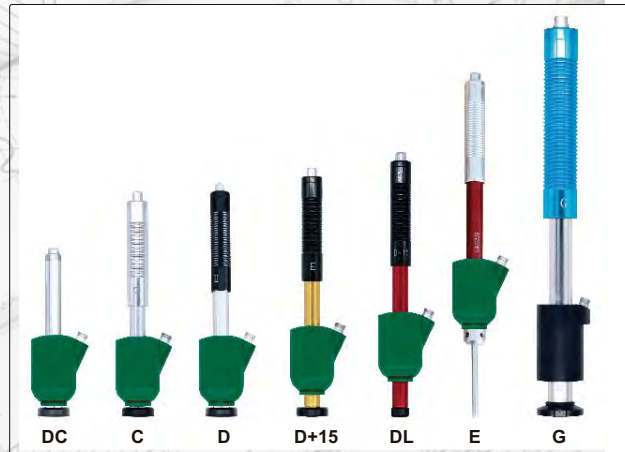
<b>Wired probe</b>	<b>DC</b>	<b>HDT-CB320-DC</b>
	<b>C</b>	<b>HDT-CB320-C</b>
	<b>D</b>	<b>HDT-CB320-D</b>
	<b>D+15</b>	<b>HDT-CB320-D15</b>
	<b>DL</b>	<b>HDT-CB320-DL</b>
	<b>E</b>	<b>HDT-CB320-E</b>
	<b>G</b>	<b>HDT-CB320-G</b>
<b>Wireless probe</b>	<b>DC</b>	<b>HDT-WL320-DCW</b>
	<b>C</b>	<b>HDT-WL320-CW</b>
	<b>D</b>	<b>HDT-WL320-DW</b>
	<b>DL</b>	<b>HDT-WL320-DLW</b>
	<b>G</b>	<b>HDT-WL320-GW</b>
<b>Hardness test block D**</b>	<b>HDT-B-HLD3</b>	
<b>Hardness test block G*</b>	<b>HDT-B-HLG2</b>	
<b>Printer</b>	<b>ISH-LP200-PRINTER</b>	
<b>Support rings</b>	page 829	

\* Hardness test block G (HDT-B-HLG2) is for probe G (HDT-CB320-G or HDT-WL320-GW)  
 \*\* Hardness test block D (HDT-B-HLD3) is for all other probes

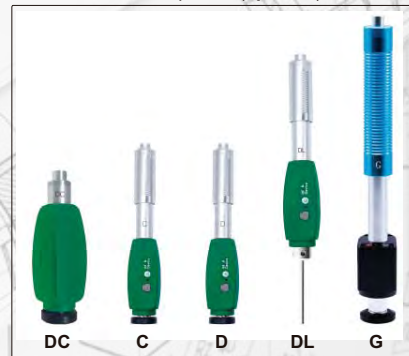
**APPLICABLE WORKPIECE**

<b>Probes</b>	<b>DC</b>	<b>C</b>	<b>D</b>	<b>D+15</b>	<b>DL</b>	<b>E</b>	<b>G</b>
<b>Application</b>	inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	very hard material	casting or forging workpiece
<b>Maximum roughness of workpiece (Ra)</b>	2µm	0.4µm	2µm	2µm	2µm	2µm	7µm
<b>Minimum weight of workpiece</b>	<b>direct measurement</b>	5kg	1.5kg	5kg	5kg	5kg	15kg
	<b>on solid support</b>	2.5kg	0.5kg	2kg	2kg	2.5kg	5kg
	<b>coupled on plate</b>	0.05-2kg	0.02kg	0.05-2kg	0.1kg	0.1kg	0.1-2kg
<b>Minimum thickness of workpiece</b>	3mm	1mm	3mm	3mm	3mm	3mm	10mm

wired probes (optional)



wireless probes (optional)





- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via bluetooth
- Automatic power off, according to ASTM A 956



hardness test block D (included)



small support ring (included)



wireless printer (optional)

**SPECIFICATION**

<b>Min. reading</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
<b>Accuracy</b>	±6HLD (when HLD=800)	
<b>Display</b>	Leeb (HLD), converted hardness, material, impact direction, test times, average value, date	
<b>Output</b>	bluetooth	
<b>Applicable workpiece</b>	minimum weight	5kg
		2kg (on solid support)
		0.1kg (coupled on plate)
	minimum thickness: 5mm	
minimum radius of curved surface: 30mm		
maximum roughness (Ra): 1.6µm		
<b>Power supply</b>	3×AAA batteries	
<b>Dimension</b>	150×84×28mm	
<b>Weight</b>	200g	

**STANDARD DELIVERY**

<b>Main unit</b>	1 pc
<b>Impact device D</b>	1 pc
<b>Hardness test block D</b>	1 pc
<b>Small support ring</b>	1 pc
<b>Cleaning brush</b>	1 pc

**OPTIONAL ACCESSORY**

<b>Wireless printer</b>	<b>ISH-DS-PRINTER</b>
<b>Couplant</b>	<b>ISH-COULANT</b>
<b>Support rings</b>	page 829
<b>Hardness test block D</b>	<b>HDT-B-HLD3</b>

# PORTABLE LEEB HARDNESS TESTER (BUILT-IN BLUETOOTH) CODE ISH-PHB-B

BUILT-IN BLUETOOTH

DATA OUTPUT

INSPECTION  
CERTIFICATE

- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via wireless module
- Automatic power off
- According to ASTM A 956
- Wired data transmission (keyboard signal):  
USB cable connect to computer, press transmission button to send data
- Wireless data transmission (keyboard signal):  
built-in Bluetooth module connect to computer or mobile phone, press transmission button to send data



transmission button



hardness test block D (included)



small support ring (included)



wireless printer (optional)



VIDEO

32

## SPECIFICATION

<b>Min. reading</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
<b>Accuracy</b>	±6HLD (when HLD=800)	
<b>Display</b>	Leeb (HLD), converted hardness, material, impact direction, test times, average value, date	
<b>Output</b>	bluetooth, USB	
<b>Applicable workpiece</b>	minimum weight	5kg
		2kg (on solid support)
		0.1kg (coupled on plate)
	minimum thickness: 5mm	
	minimum radius of curved surface: 30mm	
	maximum roughness (Ra): 1.6µm	
<b>Power supply</b>	3×AAA batteries	
<b>Dimension</b>	150×84×28mm	
<b>Weight</b>	200g	

## STANDARD DELIVERY

<b>Main unit</b>	1 pc
<b>Impact device D</b>	1 pc
<b>Hardness test block D</b>	1 pc
<b>USB cable</b>	1 pc
<b>Small support ring</b>	1 pc
<b>Cleaning brush</b>	1 pc

## OPTIONAL ACCESSORY

<b>Wireless printer</b>	ISH-DS-PRINTER
<b>Couplant</b>	ISH-COUPPLANT
<b>Support rings</b>	page 829
<b>Hardness test block D</b>	HDT-B-HLD3

connected to computer by USB cable,  
upload the data in real time



connected to computer by bluetooth module,  
upload the data in real time





DATA  
OUTPUT

INSPECTION  
CERTIFICATE

## PORTABLE LEEB HARDNESS TESTER CODE ISH-SPHA

- Based on Leeb (HL), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Connected with printer via bluetooth
- Connected with computer via USB port
- Up to 800 test results can be saved
- Tolerance testing
- Touch screen operation, large display with backlight
- Language: English, Chinese, Italian, German, French and Portuguese
- Automatic power off
- According to ASTM A 956



software flash disk  
(included)



hardness test  
block D (included)



small support ring  
(included)



printer (included)

### SPECIFICATION

Min. reading	1HL, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HL (when HL=800)
Display	Leeb (HL), converted hardness, material, impact direction, test times, average value, deviation, time
Output	bluetooth and USB
Power supply	built-in rechargeable battery
Dimension	135×83×24mm
Weight	350g

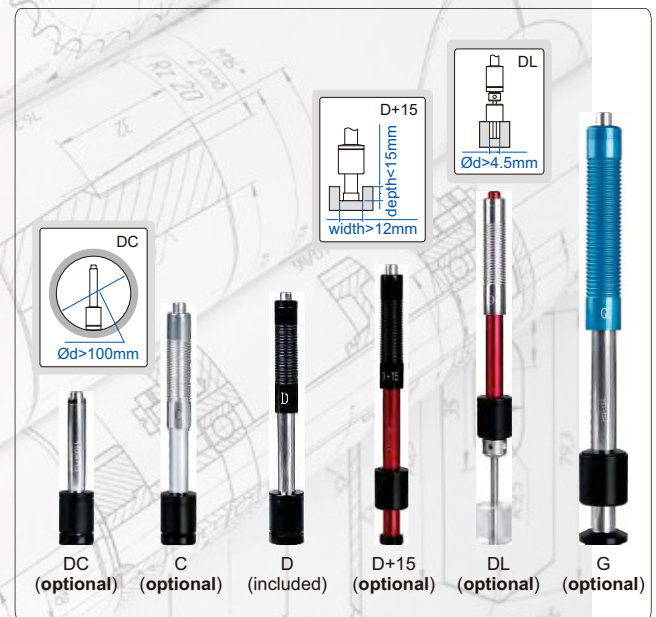
### STANDARD DELIVERY

Main unit	1 pc
Impact device D	1 pc
Printer	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc
Pen for touch screen	1 pc

### OPTIONAL ACCESSORY

Impact device DC	ISH-SPHA-DC
Impact device C	ISH-SPHA-C
Impact device D+15	ISH-SPHA-D15
Impact device DL	ISH-SPHA-DL
Impact device G	ISH-SPHA-G
Hardness test block D *	HDT-B-HLD3
Hardness test block G *	HDT-B-HLG2
Couplant	ISH-COULPLANT
Support rings	page 829

\* Hardness test block G (HDT-B-HLG2) is for impact device G (ISH-SPHA-G).  
Hardness test block D (HDT-B-HLD3) is for all other impact devices.



### APPLICABLE WORKPIECE

Impact device	DC	C	D	D+15	DL	G
Application	inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)	1.6µm	0.4µm	1.6µm	1.6µm	1.6µm	7µm
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	15kg
	coupled on plate	2kg	0.5kg	2kg	2kg	5kg
Minimum thickness of workpiece	0.1kg	0.02kg	0.1kg	0.1kg	0.1kg	0.5kg
	5mm	1mm	5mm	5mm	5mm	10mm

**PORTABLE LEEB HARDNESS TESTERS (BASIC TYPE)**

**INSPECTION  
CERTIFICATE**

**POPULAR  
MODEL**

- Can change probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength ( $\sigma_b$ )
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature: -10°C~45°C
- According to ASTM A956, GB/T 17394



**HDT-LP200**



hardness test block D (included)



small support ring (included)



bluetooth printer (included in HDT-LP200B)

**SPECIFICATION**

Code	HDT-LP200	HDT-LP200B
Printer	not included	included
Resolution	1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HSD/1 $\sigma_b$	
Accuracy	±6HLD (when HLD=800)	
Measuring range	HL 170-960/HRC 17-70/HRB 13-109/HB 20-655/HV 80-940/HSD 32-99.5/ $\sigma_b$ (m) 255-2639N/mm <sup>2</sup>	
Power supply	2xAA battery	
Dimension	135×77×32mm	
Weight	240g	

**STANDARD DELIVERY**

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
Impact device D	1 pc
Bluetooth printer (included in HDT-LP200B)	1 pc

**OPTIONAL ACCESSORY**

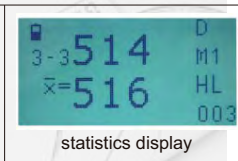
Impact device DC	HDT-LP200-DC
Impact device C	HDT-LP200-C
Impact device D+15	HDT-LP200-D15
Impact device DL	HDT-LP200-DL
Impact device G	HDT-LP200-G
Hardness test block D **	HDT-B-HLD3
Hardness test block G *	HDT-B-HLG2
Support rings	page 829

\* Hardness test block G (HDT-B-HLG2) is for impact device G (HDT-LP200-G)

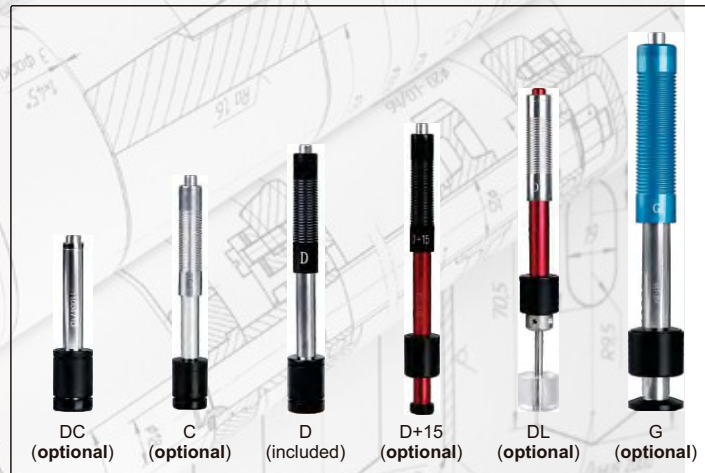
\*\* Hardness test block D (HDT-B-HLD3) is for all other impact devices



large font display



statistics display



**APPLICABLE WORKPIECE**

Impact device	DC	C	D	D+15	DL	G
Application	inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)	2 $\mu$ m	0.4 $\mu$ m	2 $\mu$ m	2 $\mu$ m	2 $\mu$ m	7 $\mu$ m
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	2kg	5kg
	coupled on plate	0.05kg	0.02kg	0.05kg	0.1kg	0.05kg
Minimum thickness of workpiece	3mm	1mm	3mm	3mm	3mm	10mm



## PORTABLE LEEB HARDNESS TESTER (WITH WIRELESS PROBE) CODE HDT-WP201

- Bluetooth digital probe
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength ( $\sigma_b$ )
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature:  $-10^{\circ}\text{C}$ ~ $45^{\circ}\text{C}$
- According to ASTM A956, DIN 50156 GB/T 17394



### SPECIFICATION

Resolution	1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HSD/1 $\sigma_b$
Accuracy	$\pm 6\text{HLD}$ (when $\text{HLD}=800$ )
Measuring range	HL 170-960/HRC 17-69/HRB 13-101.7/HB 20-655/HV 80-940/HSD 32-99.5/ $\sigma_b$ (rm) 255-2180N/mm <sup>2</sup>
Power supply	2xAA battery
Dimension	135x77x32mm
Weight	240g



### STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
Impact device D	1 pc

### OPTIONAL ACCESSORY

Impact device DC	HDT-WL320-DCW
Impact device C	HDT-WL320-CW
Impact device DL	HDT-WL320-DLW
Impact device G	HDT-WL320-GW
Hardness test block D	HDT-B-HLD3
Bluetooth printer	ISH-LP200-PRINTER
Support rings	page 829



### APPLICABLE WORKPIECE

Impact device	DC	C	D	DL	G
Application	inner wall of small space	small or thin workpiece, coating layer	general use	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)	2 $\mu\text{m}$	0.4 $\mu\text{m}$	2 $\mu\text{m}$	2 $\mu\text{m}$	7 $\mu\text{m}$
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	5kg
	coupled on plate	0.05kg	0.02kg	0.05kg	0.5kg
Minimum thickness of workpiece	3mm	1mm	3mm	3mm	10mm

## PEN-TYPE LEEB HARDNESS TESTER (ADVANCED TYPE) CODE HDT-L410

DATA  
OUTPUT

HIGH  
ACCURACY

DL PROBE IS  
OPTIONAL

**INSPECTION  
CERTIFICATE**



VIDEO



software flash disk (included)



hardness test block D (included)



wireless printer (optional)



small support ring (included)

- Metal housing
- HD TFT 320×320 display
- Impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Four display modes
- Automatic direction correction
- Tolerance testing
- Automatic power off, automatic calculation of statistics
- Dual value display, shows both Leeb and other conversion values
- 31 files can be saved, each containing 100 measurement data
- Connected to PC software via USB or Bluetooth 2.0
- Connected with printer via Bluetooth
- Operation temperature: -20°C~70°C
- According to ASTM A956, DIN 50156, GB/T 17394



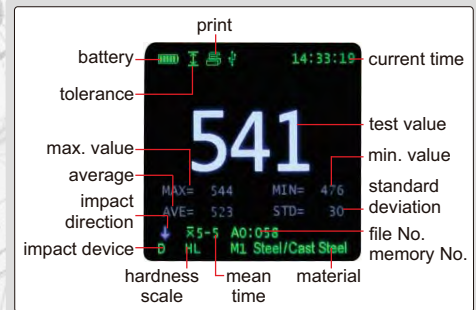
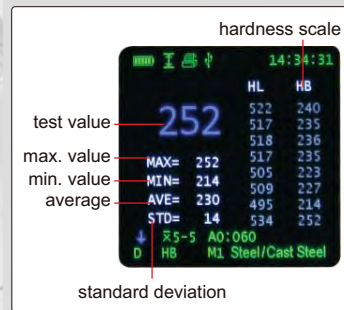
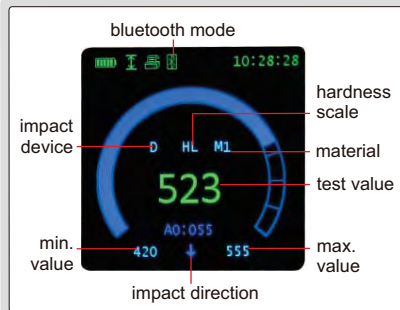
DL probe can be installed (optional)



dynamic ring display

statistic display

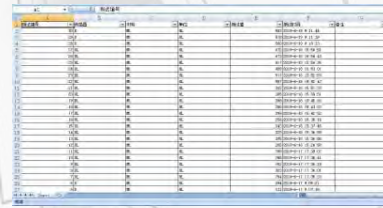
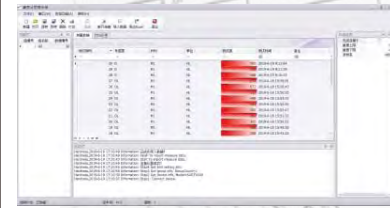
can choose large font display



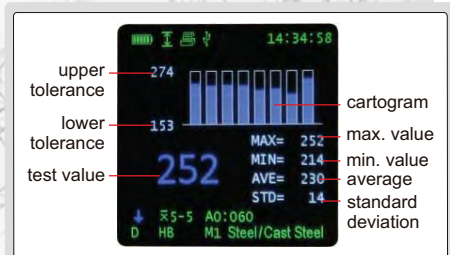
software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable or Bluetooth

send the stored data to EXCEL



histogram display



### SPECIFICATION

<b>Resolution</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM	
<b>Accuracy</b>	±4HLD (when HLD=800)	
<b>Output</b>	USB and bluetooth	
<b>Applicable workpiece</b>	minimum weight	5kg (direct measurement)
		2kg (on solid support)
	0.05kg (coupled on plate)	
minimum thickness: 5mm	minimum radius of curved surface: 30mm	
	maximum roughness (Ra): 2µm	
	built-in 3.7V rechargeable battery	
<b>Power supply</b>	built-in 3.7V rechargeable battery	
<b>Dimension</b>	148×44×22mm	
<b>Weight</b>	115g	

### STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc

### OPTIONAL ACCESSORY

Printer	HDT-L410-PRINTER
Support rings	page 829
Hardness test block D	HDT-B-HLD3
DL probe	HDT-L410-DL



DATA OUTPUT

DL PROBE IS OPTIONAL

INSPECTION CERTIFICATE

## PEN-TYPE LEEB HARDNESS TESTER (STANDARD TYPE) CODE HDT-B430



software flash disk (included)



hardness test block D (included)



small support ring (included)



wireless printer (optional)



VIDEO



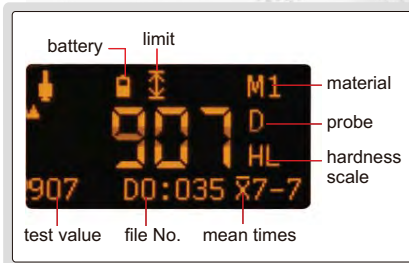
DL probe can be installed (optional)



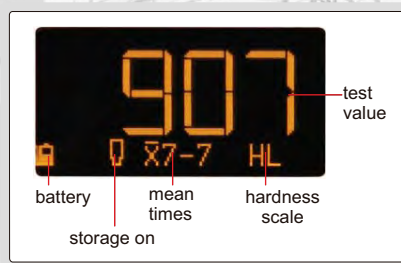
- Impact device D is included
- High contrast OLED display
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength ( $\sigma_b$ )
- Dual value display, shows both Leeb and other conversion values
- No need to set the testing direction
- 31 files can be saved, each containing 100 measurement data
- Automatically calculate maximum, minimum, average value
- Connected to PC software via USB or Bluetooth
- Connected with printer via Bluetooth
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156 GB/T, 17394

32

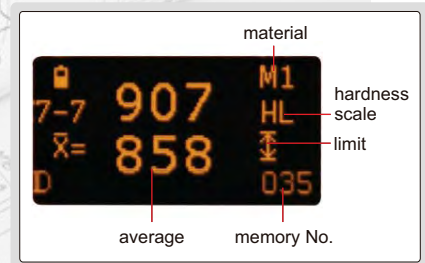
standard display



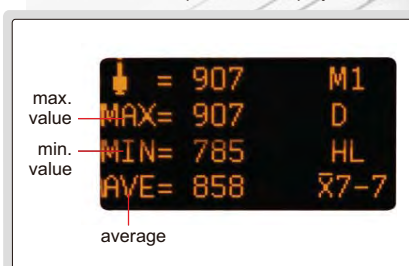
big character display



average display

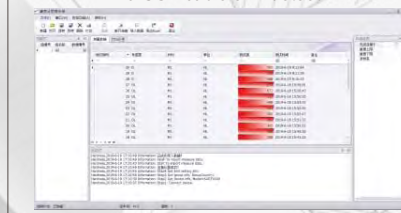


statistical parameter display

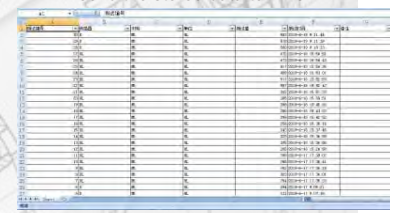


software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable or Bluetooth



send the stored data to EXCEL



### SPECIFICATION

<b>Resolution</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HSD, 16b	
<b>Accuracy</b>	±6HLD (when HLD=800)	
<b>Measuring range</b>	HLD170-960, HRC17-70, HRB13-109, HB20-655, HV80-940 HSD32-99.5, HRA30-88, $\sigma_b$ (rm) 255-2180N/mm <sup>2</sup>	
<b>Applicable workpiece</b>	minimum weight	5kg (direct measurement)
		2kg (on solid support)
		0.05kg (coupled on plate)
	minimum thickness: 5mm	
minimum radius of curved surface: 30mm		
maximum roughness (Ra): 2 $\mu$ m		
<b>Output</b>	USB and bluetooth	
<b>Power supply</b>	built-in 3.7V rechargeable battery	
<b>Dimension</b>	148×44×28mm	
<b>Weight</b>	110g	

### STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc

### OPTIONAL ACCESSORY

Printer	ISH-LP200-PRINTER
Support rings	page 829
Hardness test block D	HDT-B-HLD3
DL probe	HDT-L410-DL

**PEN-TYPE LEEB HARDNESS TESTER (BASIC TYPE)  
CODE HDT-L411**

**DATA  
OUTPUT**

**INSPECTION  
CERTIFICATE**



software flash disk (included)



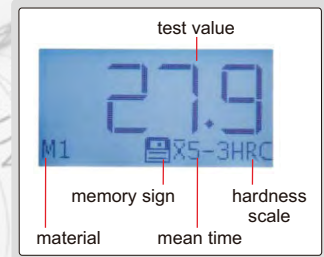
hardness test block D (included)



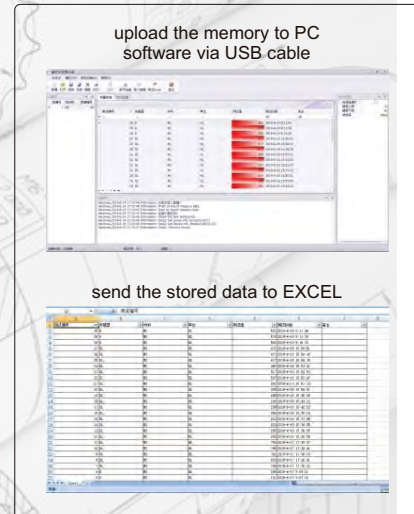
small support ring (included)



can choose large font display



software (included), upload the memory to PC, print and send to EXCEL



- Impact device D
- Universal testing angle, no need to set impact direction
- Dual-coil probe, high accuracy
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Dual value display, shows both Leeb and converted hardness
- High contrast digital LCD display
- Can choose large font display
- Automatically calculate maximum, minimum, average value
- Connected to PC via USB
- Save 999 data
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156, GB/T 17394

**SPECIFICATION**

<b>Resolution</b>	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM	
<b>Accuracy</b>	±6HLD (when HLD=800)	
<b>Output</b>	USB	
<b>Measuring range</b>	HL100-960, HRC1-74.7, HRB1.2-140, HB28-1027, HV45-1230, HS4-112, HRA7-88.5, SGM (rm) 118-3315N/mm <sup>2</sup>	
<b>Applicable workpiece</b>	minimum weight	5kg (direct measurement)
		2kg (on solid support)
		0.05kg (coupled on plate)
	minimum thickness: 5mm	
minimum radius of curved surface: 30mm		
maximum roughness (Ra): 2µm		
<b>Power supply</b>	1xAAA battery	
<b>Dimension</b>	148×45×21mm	
<b>Weight</b>	105g	

**STANDARD DELIVERY**

<b>Main unit</b>	1 pc
<b>Hardness test block D</b>	1 pc
<b>Cleaning brush</b>	1 pc
<b>AAA battery</b>	1 pc
<b>Small support ring</b>	1 pc
<b>Software flash disk and USB cable</b>	1 pc

**OPTIONAL ACCESSORY**

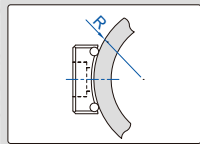
<b>Support rings</b>	page 829
<b>Hardness test block D</b>	<b>HDT-B-HLD3</b>

## SUPPORT RING SET FOR PORTABLE LEEB HARDNESS TESTER CODE ISH-PH-SP9

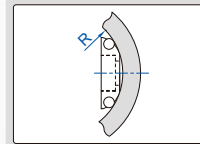


VIDEO

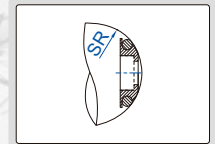
type A



type B



type C



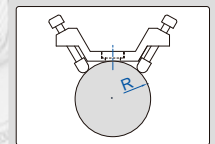
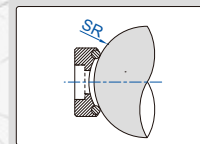
### SPECIFICATION

Type	Applicable workpieces	Range (mm)	Quantity
A	cylindrical outside surface	R10-15	3 pcs
		R14.5-30	
		R25-50	
B	cylindrical inside surface	R11-13	3 pcs
		R12.5-17	
		R16.5-30	
C	spherical inside surface	SR11-13	3 pcs
		SR12.5-17	
		SR16.5-30	
D	spherical outside surface	SR10-15	2 pcs
		SR14.5-30	
E	cylindrical outside surface	R>10	1 pc

type D



type E



## DIGITAL MAGNETIC ROCKWELL HARDNESS TESTER CODE ISHR-D121



flat anvil for test block  
(included)



VIDEO

- Apply to large and heavy steel or iron workpieces
- With statistic function, display average, maximum and minimum values
- Convert to HV, HB and tensile strength
- According to ISO 6508, ASTM E18



### SPECIFICATION

Hardness scale	HRA, HRB, HRC
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	0.1HR
Flat workpiece requirement	length>190mm, width>60mm, thickness>5mm
Cylinder or tube workpiece requirement	length>200mm, diameter>Ø50mm, wall thickness>8mm
Power supply	3×AA batteries
Dimension	245×105×230mm
Weight	5.3kg

### STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc

## MAGNETIC ROCKWELL HARDNESS TESTER CODE ISHR-M111

- Apply to large and heavy steel or iron workpieces
- According to ISO 6508, ASTM E18



flat anvil for test block  
(included)



supports for cylinder or  
tube workpieces (included)



magnifier with LED  
(included)



32

### SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	1HR
Flat workpiece requirement	length>180mm, width>60mm, thickness>5mm
Cylinder or tube workpiece requirement	length>180mm, diameter>Ø50mm, wall thickness>8mm
Dimension	220×70×220mm
Weight	4.7kg

### STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	2 pcs
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc
Flat anvil	1 pc
Support	4 pcs
Magnifier with LED	1 pc

## MAGNETIC BRINELL/ROCKWELL HARDNESS TESTER CODE ISHR-B141



flat anvil for test block  
(included)



supports for cylinder or  
tube workpieces (included)



magnifier with LED  
(included)



measuring microscope  
(included)

- Apply to large steel or iron workpieces
- According to ISO 6508, ASTM E18

### SPECIFICATION

Rockwell scale	HRA, HRB, HRC, HRD, HRF, HRG
Brinell measuring range	20~650HBW
Rockwell test force	10kg preload, 60kg, 100kg, 150kg total load
Brinell test force	62.5kg, 125kg, 187.5kg
Load control	manual
Min. Rockwell reading	1HR
Measuring microscope	40X, graduation 0.01mm
Flat workpiece requirement	length>180mm, width>60mm, thickness>5mm
Cylinder and tube workpiece requirement	length>180mm, diameter>Ø50mm, thickness>8mm
Dimension	220×70×220mm
Weight	4.7kg

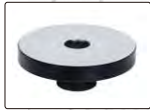
### STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
Support	4 pcs
Diamond Rockwell indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Ø2.5mm Brinell indenter	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc
Brinell test block	1 pc
Measuring microscope	1 pc
Magnifier with LED	1 pc

## PORTABLE BRINELL AND ROCKWELL HARDNESS TESTER CODE ISBR-H181



- Apply to huge or medium-size workpieces
- According to ISO 6506, ISO 6508, ASTM E10, ASTM E18



flat anvil  
(included)



V-type anvil  
(included)



measuring  
microscope  
(included)



### SPECIFICATION

Rockwell hardness scale	HRA, HRB, HRC
Brinell test range	16~650HBW
Rockwell preliminary test force	10kgf
Rockwell total test force	60kgf, 100kgf, 150kgf
Brinell test force	62.5kgf, 125kgf, 187.5kgf
Load control	manual
Min. reading	rockwell 0.5HR brinell 0.005mm (indentation diameter)
Max. workpiece thickness	75mm
Max. testing width	100mm (from the center of indenter to the main body)
Dimension	510×380×180mm
Weight	2.3kg

### STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block 200~300HBW2.5/187.5	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Measuring microscope	1 pc

## PORTABLE ROCKWELL HARDNESS TESTER CODE ISHR-P151



anvil extension for thin  
workpieces (included)



flat anvil (included)

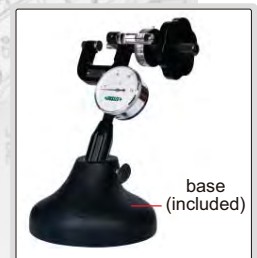
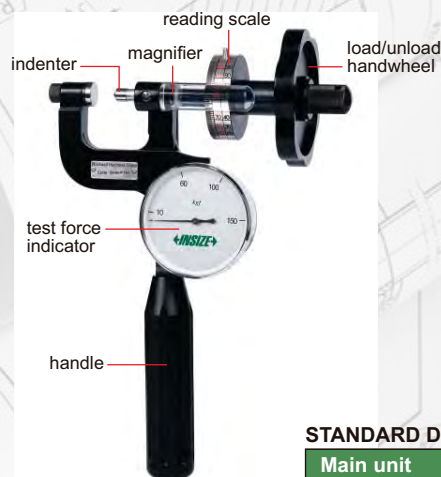


V-type anvil (included)

- According to ISO 6508, ASTM E18

### SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	1HR
Max. workpiece thickness	25mm
Max. testing width	25mm (from the center of indenter to the main body)
Dimension	240×70×160mm
Weight (with base)	2.5kg



base  
(included)

### STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	2 pcs
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Base	1 pc
Anvil extension	1 pc
Magnifier	2 pcs

## PIN BRINELL HARDNESS TESTER CODE ISHB-P101



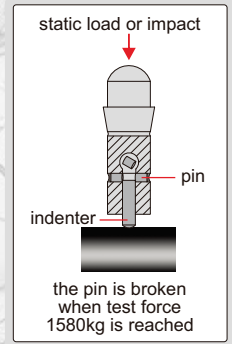
- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter
- Static and impact test modes
- According to ISO and ASTM standard



static test clamp



impact test handle



measuring microscope (included)



pins (included)



V-type anvil (included)

### SPECIFICATION

Measuring range	100~350HBW (with Ø7.26mm indenter, included) 350~650HBW (with Ø4mm indenter, optional)
Test force	1580kg
Accuracy	static test: ±3% impact test: ±5%
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height of static test	150mm
Max. testing width of static test	80mm (from the center of indenter to the clamp)
Dimension	195×60×350mm
Weight	4.2kg

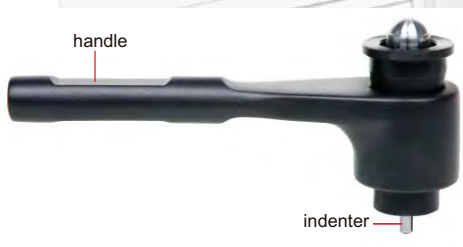
### STANDARD DELIVERY

Static test clamp	1 pc
Impact test handle	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Ø7.26mm indenter	1 pc
Hardness test block	1 pc
Pin	250 pcs
Measuring microscope	1 pc

### OPTIONAL ACCESSORY

Ø4mm indenter	ISHB-P101-INDENTER
Pin (250 pcs)	ISHB-P101-PIN

## HAMMER IMPACT BRINELL HARDNESS TESTER CODE HDT-PB350



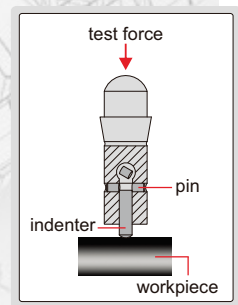
hammer impact to apply test force



pins (included)



measuring microscope (included)



- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter



### SPECIFICATION

Measuring range	100~350HBW (with Ø7.26mm indenter, included) 350~650HBW (with Ø4mm indenter, optional)
Test force	1580kg
Accuracy	±5%HBW
Repeatability	±5%HBW
Measuring microscope	20X, graduation 0.01mm
Dimension	200×50×100mm
Weight	0.8kg

### STANDARD DELIVERY

Main unit	1 pc
Ø7.26mm indenter	1 pc
Hardness test block	1 pc
Pin	250 pcs
Pin removal tool	1 pc
Measuring microscope	1 pc

### OPTIONAL ACCESSORY

Ø4mm indenter	ISHB-P101-INDENTER
Pin (250 pcs)	ISHB-P101-PIN

## HYDRAULIC BRINELL HARDNESS TESTER CODE ISHB-H131



V-type anvil  
(included)



spherical anvil  
(included)



measuring microscope  
(included)



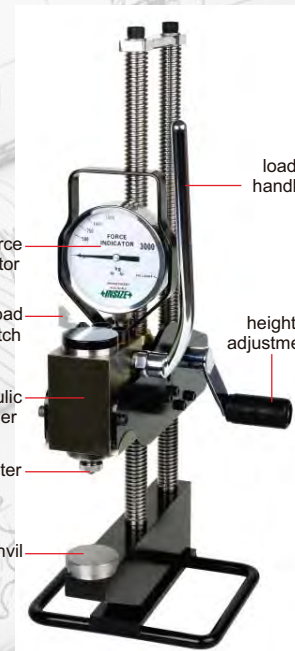
- According to ISO 6506, ASTM E10

### SPECIFICATION

Measuring range	16~650HBW
Test force	3000kg
Indenter	Ø10mm carbide ball
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height	350mm
Max. testing width	90mm (from the center of indenter to the column)
Dimension	270×225×570mm
Weight	13.8kg

### STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Spherical anvil	1 pc
Ø10mm carbide ball	2 pcs
Brinell test block	2 pcs
Measuring microscope	1 pc



## CHAIN TYPE HYDRAULIC BRINELL HARDNESS TESTER CODE ISHB-C161

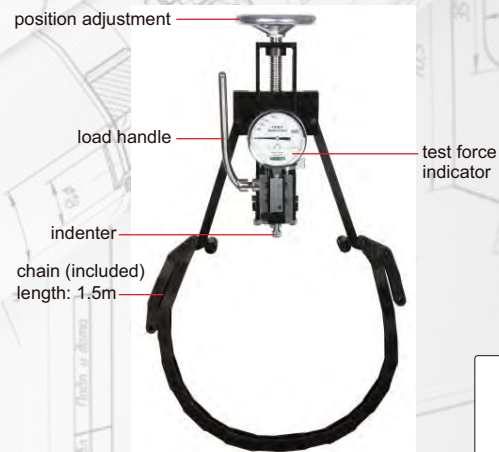
- To measure the hardness of cylinders or tubes
- According to ISO 6506, ASTM E10

### SPECIFICATION

Measuring range	32~650HBW
Workpiece diameter range	Ø150~Ø500mm
Test force	3000kg
Indenter	Ø10mm carbide ball
Measuring microscope	20X, graduation 0.01mm
Dimension	270×225×570mm
Weight	14.5kg

### STANDARD DELIVERY

Main unit	1 pc
1.5m chain	1 pc
Ø10mm carbide ball	2 pcs
Brinell test block	2 pcs
Measuring microscope	1 pc



measuring microscope  
(included)

## ALUMINUM HARDNESS TESTERS



ISHW-L20B

- To measure the hardness of soft metal such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-84 (2000)

### SPECIFICATION

Code	ISHW-L20	ISHW-L20A	ISHW-L20B	ISHW-B70	ISHW-B75	ISHW-B92
Application	for aluminum alloy general use	for aluminum alloy thick workpiece	for aluminum alloy small tube	for hard aluminum alloy and hard brass	for soft brass and copper	for soft steel and cold-rolled steel
Thickness requirement of flat workpiece	0.6~6mm	0.6~13mm	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Internal diameter requirement of tube workpiece	>Ø10mm	>Ø10mm	>Ø6mm	>Ø10mm	>Ø10mm	>Ø10mm
Wall thickness requirement of tube workpiece	0.6~6mm	6~13mm (internal diameter Ø10~23.3mm) 0.6~6mm (internal diameter >Ø23.3mm)	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Hardness range	0~20HW					
Min. reading	1HW					
Accuracy	±0.5HW (at 5~17HW)					
Dimension	205×30×85mm					
Weight	500g					

### STANDARD DELIVERY

Main unit	1 pc
Spare indenter	1 pc
Hardness test block	1 pc
Wrench	1 pc



## ALUMINUM HARDNESS TESTERS (BASIC TYPE)

- To measure the hardness of soft metal such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-10 (2016)



### STANDARD DELIVERY

Main unit	1 pc
Spare indenter	1 pc
Hardness test block	1 pc
Wrench	1 pc



ISHW-H10

### SPECIFICATION

Code	ISHW-H10	ISHW-H11	ISHW-H12	ISHW-H13	ISHW-H14	ISHW-H15
Application	for aluminum alloy general use	for aluminum alloy thick workpiece	for aluminum alloy small tube	for hard aluminum alloy and hard brass	for soft brass and copper	for soft steel and cold-rolled steel
Thickness requirement of flat workpiece	0.6~6mm	0.6~13mm	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Internal diameter requirement of tube workpiece	>Ø10mm	>Ø10mm	>Ø6mm	>Ø10mm	>Ø10mm	>Ø10mm
Wall thickness requirement of tube workpiece	0.6~6mm	6~13mm (internal diameter Ø10~23.3mm 0.6~6mm (internal diameter >Ø23.3mm))	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Hardness range	0~20HW					
Min. reading	1HW					
Accuracy	±0.5HW (at 5~17HW)					
Dimension	205×30×95mm					
Weight	500g					

## ALUMINUM HARDNESS TESTER CODE ISHB-B300

- To measure the hardness of workpieces made of pure aluminum, aluminum alloy, fiber reinforced plastic, hard plastic, etc.
- According to ASTM B648-00, ASTM D2853-07

### SPECIFICATION

Hardness range	0~100HBa (equal to 25~150HBW)
Min. reading	1HBa
Accuracy	±2HBa (at 42~52HBa) ±1HBa (at 84~88HBa)
Min. workpiece thickness	0.8mm
Dimension	142×65×90mm
Weight	500g

### STANDARD DELIVERY

Main unit	1 pc
Spare indenter	2 pcs
Hardness test block	2 pcs
Wrench	1 pc



## DIGITAL SHORE DUROMETERS



32



blunt taper indenter

ISH-DSA

sharp point indenter

ISH-DSD

ball indenter

ISH-DSOO

- According to ISO868, ISO7619, ASTM D 2240
- Average and peak (max.) mode
- Dwell time is adjustable
- Tolerance testing
- 500 memories
- Wireless connection to printer
- Handhold use or work with test stand (code **ISH-DS-STANDA**)
- Automatic power off



software flash disk (included)



calibration block (included)



printer (optional)

### SPECIFICATION

Code	ISH-DSA	ISH-DSD	ISH-DSOO
Unit	Shore A	Shore D	Shore OO
Test material	soft plastic, soft rubber, etc.	hard plastic, hard rubber, etc.	very soft plastic, rubber, sponge, textile, etc.
Measuring range	0~100HA *	0~100HD *	0~100HOO
Resolution	0.1HA	0.1HD	0.1HOO
Accuracy	±1HA	±1HD	±1HOO
Indenter protrusion	2.5mm		
Output	wireless and USB		
Power supply	built-in rechargeable battery		
Dimension	153×50×29mm		
Weight	170g		

\* Use **ISH-DSD** when measuring result is higher than 90HA  
Use **ISH-DSA** when measuring result is lower than 20HD

### STANDARD DELIVERY

Main unit	1 pc
Calibration block	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

### OPTIONAL ACCESSORY

Printer	ISH-DS-PRINTER
Test stand	ISH-DS-STANDA

## TEST STAND FOR DIGITAL SHORE DUROMETERS CODE ISH-DS-STANDA

- For digital shore durometers (code **ISH-DSA**, **ISH-DSD** and **ISH-DSOO**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- Weight block A (included) is for **ISH-DSA**, weight block D (optional) is for **ISH-DSD**, remove weight block for **ISH-DSOO**



weight block D (optional) for ISH-DSD



### SPECIFICATION

Stage diameter	Ø115mm
Max. workpiece height	45mm
Max. testing width	63mm (from test point to the column)
Dimension	Ø195×370mm
Weight	5.61kg

### STANDARD DELIVERY

Test stand	1 pc
Weight block A (for ISH-DSA)	1 pc

### OPTIONAL ACCESSORY

Weight block D (for ISH-DSD)	ISH-DS-W4
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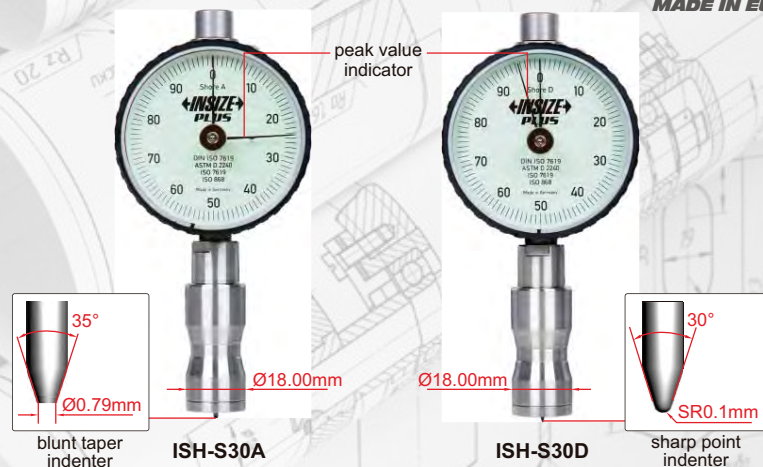


VIDEO

## SHORE DUROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Handhold use or work with test stand (code **ISH-OS2**)



### SPECIFICATION

Code	ISH-S30A	ISH-S30D
Scale	Shore A	Shore D
Test material	soft plastic, soft rubber, etc.	hard plastic, hard rubber, etc.
Measuring range *	0~100HA	0~100HD
Graduation	1HA	1HD
Accuracy	±0.5HA	±0.5HD
Indenter protrusion	2.5mm	
Weight	184g	

\* Use **ISH-S30D** when measuring result is higher than 90HA  
Use **ISH-S30A** when measuring result is lower than 20HD

## TEST STAND FOR SHORE DUROMETERS CODE ISH-OS2

**INSIZE PLUS**  
MADE IN EUROPE



- For shore durometers (code **ISH-S30A** and **ISH-S30D**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- 1kg weight block (included) is for **ISH-S30A**, 4kg weight block (optional) is for **ISH-S30D**

### SPECIFICATION

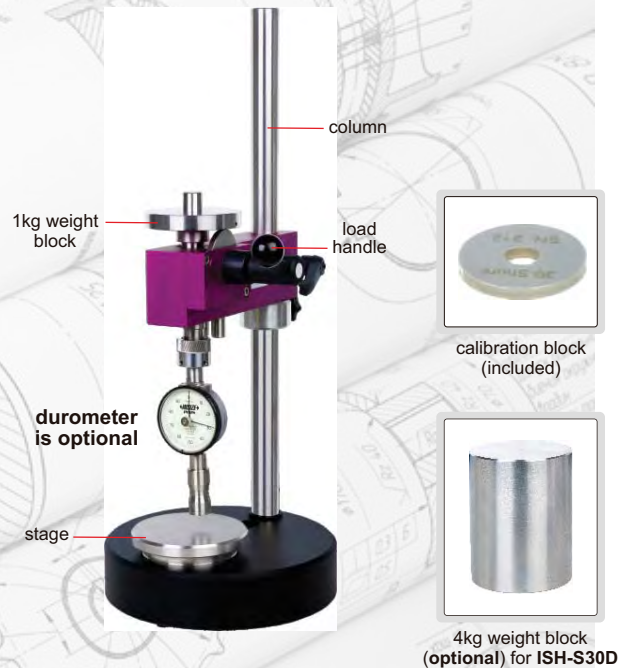
Stage diameter	Ø98mm
Max. workpiece height	180mm
Max. testing width	115mm (from test point to the column)
Dimension	Ø200×500mm
Weight	18kg

### STANDARD DELIVERY

Test stand	1 pc
1kg weight block (for ISH-S30A)	1 pc
Calibration block	1 pc

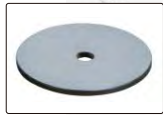
### OPTIONAL ACCESSORY

4kg weight block (for ISH-S30D)	ISH-OS2-W4
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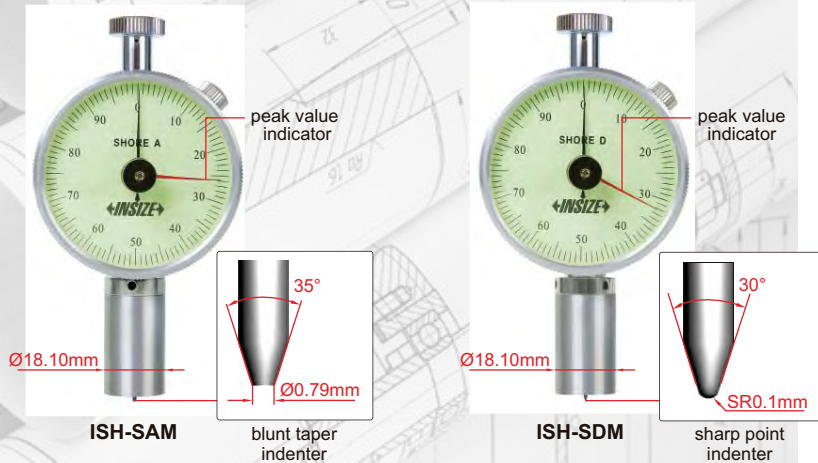
32

## SHORE DUROMETERS



calibration block (optional)

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Optional accessory: test stand **ISH-STAC** and **ISH-STD**



### SPECIFICATION

Code	ISH-SAM	ISH-SDM
Scale	Shore A	Shore D
Application	nature rubber, soft elastomer, etc.	hard rubber, plastic, hard elastomer, etc.
Measuring range*	10~90HA	20~90HD
Graduation	1HA	1HD
Indenter protrusion	2.5mm	
Dimension	115×60×25mm	
Weight	160g	

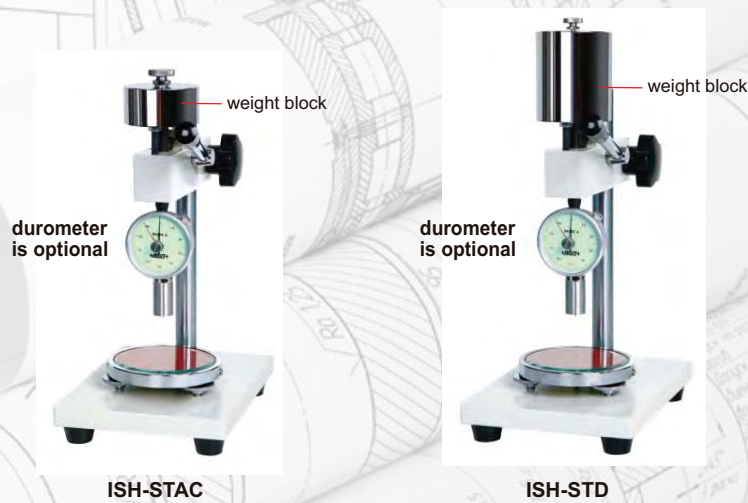
\* Use **ISH-SDM** when measuring result is higher than 90HA  
Use **ISH-SAM** when measuring result is lower than 20HD

### OPTIONAL ACCESSORY

Calibration block	ISH-DS-BLOCK
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## TEST STANDS FOR SHORE DUROMETERS



- For shore durometers (code **ISH-SAM** and **ISH-SDM**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations

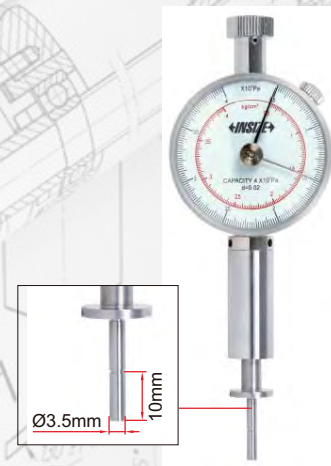
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### SPECIFICATION

Code	ISH-STAC	ISH-STD
Applicable durometer	ISH-SAM	ISH-SDM
Stage diameter	Ø100mm	Ø100mm
Max. workpiece height	75mm	75mm
Max. testing width	65mm (from test point to the column)	65mm (from test point to the column)
Weight block	1kg	5kg

## FRUIT HARDNESS TESTER

- Measure the hardness of apples, pears, strawberries and grapes, etc.
- The degree of ripeness can be judged by measuring the hardness of the fruit

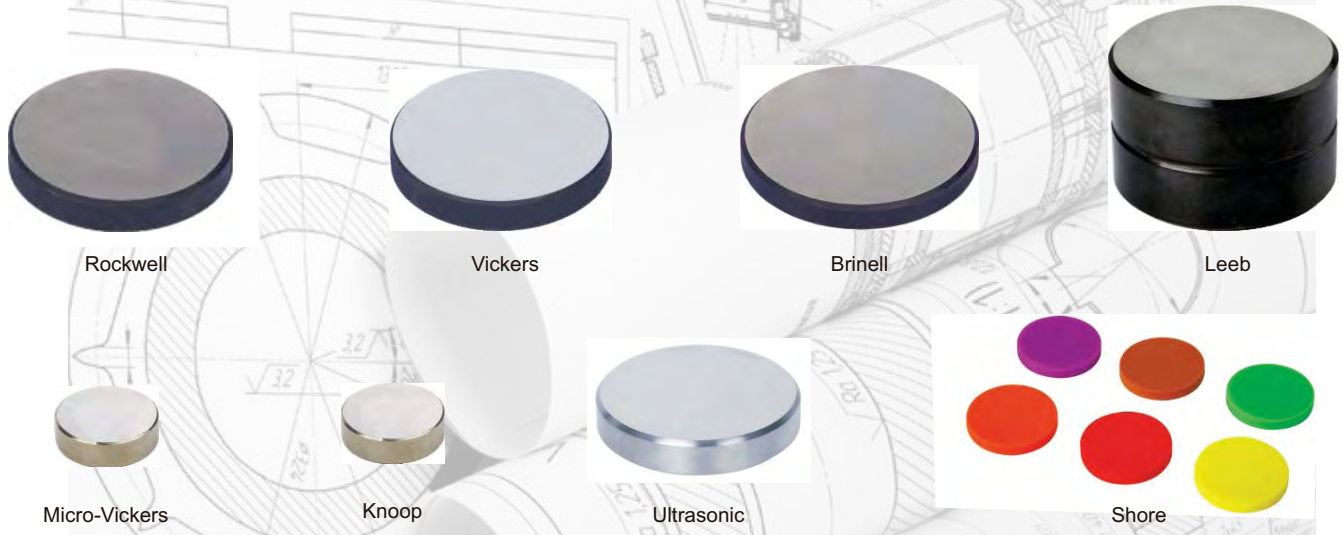


9643-4

### SPECIFICATION

Code	Range	Graduation	Accuracy	Probe diameter	Probe depth	Dimension	Weight
9643-4	0.5-4kg/cm <sup>2</sup> (0.5-4×10 <sup>5</sup> Pa)	0.02kg/cm <sup>2</sup> (0.02×10 <sup>5</sup> Pa)	±2%	Ø3.5mm	10mm	151×55×30mm	0.2kg

**HARDNESS TEST BLOCKS**



Rockwell

Vickers

Brinell

Leeb



Micro-Vickers



Knoop



Ultrasonic



Shore

▪ Supplied with manufacturer inspection certificate

**Rockwell hardness test blocks**

Code	Type	Hardness
HDT-B-HRA	HRA	80-84
HDT-B-HRB	HRB	88-100
HDT-B-HRC1	HRC	20-30
HDT-B-HRC2	HRC	35-55
HDT-B-HRC3	HRC	60-70
HDT-B-HRD1	HRD	40-47
HDT-B-HRD2	HRD	55-63
HDT-B-HRD3	HRD	70-75
HDT-B-HRE	HRE	107-114
HDT-B-HRF	HRF	105-114
HDT-B-HRG1	HRG	57-82
HDT-B-HRG2	HRG	80-94

**Vickers hardness test blocks**

Code	Type	Hardness
HDT-B-HV5A	HV5	175-200
HDT-B-HV5B	HV5	200-300
HDT-B-HV5C	HV5	300-400
HDT-B-HV5D	HV5	400-500
HDT-B-HV5E	HV5	500-600
HDT-B-HV5F	HV5	600-700
HDT-B-HV5G	HV5	700-750
HDT-B-HV10A	HV10	175-200
HDT-B-HV10B	HV10	200-300
HDT-B-HV10C	HV10	300-400
HDT-B-HV10D	HV10	400-500
HDT-B-HV10E	HV10	500-600
HDT-B-HV10F	HV10	600-700
HDT-B-HV10G	HV10	700-750
HDT-B-HV30A	HV30	175-200
HDT-B-HV30B	HV30	200-300
HDT-B-HV30C	HV30	300-400
HDT-B-HV30D	HV30	400-500
HDT-B-HV30E	HV30	500-600
HDT-B-HV30F	HV30	600-700
HDT-B-HV30G	HV30	700-750
HDT-B-HV50A	HV50	175-200
HDT-B-HV50B	HV50	200-300
HDT-B-HV50C	HV50	300-400
HDT-B-HV50D	HV50	400-500
HDT-B-HV50E	HV50	500-600
HDT-B-HV50F	HV50	600-700
HDT-B-HV50G	HV50	700-750
HDT-B-HV100A	HV100	175-200
HDT-B-HV100B	HV100	200-300
HDT-B-HV100C	HV100	300-400
HDT-B-HV100D	HV100	400-500
HDT-B-HV100E	HV100	500-600
HDT-B-HV100F	HV100	600-700
HDT-B-HV100G	HV100	700-750

**Rockwell superficial hardness test blocks**

Code	Type	Hardness
HDT-B-HR15N1	HR15N	70-77
HDT-B-HR15N2	HR15N	78-88
HDT-B-HR15N3	HR15N	89-91
HDT-B-HR30N1	HR30N	42-54
HDT-B-HR30N2	HR30N	55-73
HDT-B-HR30N3	HR30N	74-80
HDT-B-HR45N1	HR45N	20-31
HDT-B-HR45N2	HR45N	32-61
HDT-B-HR45N3	HR45N	63-70
HDT-B-HR15T	HR15T	88-93
HDT-B-HR30T	HR30T	73-82
HDT-B-HR45T	HR45T	58-72

**Leeb hardness test blocks**

Code	Type	Hardness
HDT-B-HLD1	HLD	490-570
HDT-B-HLD2	HLD	590-670
HDT-B-HLD3	HLD	750-830
HDT-B-HLG1	HLG	460-540
HDT-B-HLG2	HLG	550-630

To be continued

Continued from previous page

#### Micro-Vickers hardness test blocks

Code	Type	Hardness
HDT-B-HV005A	HV0.05	200-300
HDT-B-HV005B	HV0.05	300-400
HDT-B-HV005C	HV0.05	400-500
HDT-B-HV005D	HV0.05	500-600
HDT-B-HV005E	HV0.05	600-700
HDT-B-HV005F	HV0.05	700-750
HDT-B-HV01A	HV0.1	200-300
HDT-B-HV01B	HV0.1	300-400
HDT-B-HV01C	HV0.1	400-500
HDT-B-HV01D	HV0.1	500-600
HDT-B-HV01E	HV0.1	600-700
HDT-B-HV01F	HV0.1	700-750
HDT-B-HV02A	HV0.2	200-300
HDT-B-HV02B	HV0.2	300-400
HDT-B-HV02C	HV0.2	400-500
HDT-B-HV02D	HV0.2	500-600
HDT-B-HV02E	HV0.2	600-700
HDT-B-HV02F	HV0.2	700-750
HDT-B-HV03A	HV0.3	200-300
HDT-B-HV03B	HV0.3	300-400
HDT-B-HV03C	HV0.3	400-500
HDT-B-HV03D	HV0.3	500-600
HDT-B-HV03E	HV0.3	600-700
HDT-B-HV03F	HV0.3	700-750
HDT-B-HV05A	HV0.5	200-300
HDT-B-HV05B	HV0.5	300-400
HDT-B-HV05C	HV0.5	400-500
HDT-B-HV05D	HV0.5	500-600
HDT-B-HV05E	HV0.5	600-700
HDT-B-HV05F	HV0.5	700-750
HDT-B-HV1A	HV1	200-300
HDT-B-HV1B	HV1	300-400
HDT-B-HV1C	HV1	400-500
HDT-B-HV1D	HV1	500-600
HDT-B-HV1E	HV1	600-700
HDT-B-HV1F	HV1	700-750

#### Knoop hardness test blocks

Code	Type	Hardness
HDT-B-HK005A	HK0.05	200-300
HDT-B-HK005B	HK0.05	400-500
HDT-B-HK005C	HK0.05	700-800
HDT-B-HK01A	HK0.1	200-300
HDT-B-HK01B	HK0.1	400-500
HDT-B-HK01C	HK0.1	700-800
HDT-B-HK02A	HK0.2	200-300
HDT-B-HK02B	HK0.2	400-500
HDT-B-HK02C	HK0.2	700-800
HDT-B-HK03A	HK0.3	200-300
HDT-B-HK03B	HK0.3	400-500
HDT-B-HK03C	HK0.3	700-800
HDT-B-HK05A	HK0.5	200-300
HDT-B-HK05B	HK0.5	400-500
HDT-B-HK05C	HK0.5	700-800
HDT-B-HK1A	HK1	200-300
HDT-B-HK1B	HK1	400-500
HDT-B-HK1C	HK1	700-800

#### Brinell hardness test blocks

Code	Type	Hardness
HDT-B-HB10A1	HBW10/3000	100-200
HDT-B-HB10A2	HBW10/3000	200-300
HDT-B-HB10A3	HBW10/3000	300-400
HDT-B-HB10A4	HBW10/3000	400-500
HDT-B-HB10A5	HBW10/3000	500-600
HDT-B-HB10A6	HBW10/3000	600-650
HDT-B-HB10B1	HBW10/1500	100-200
HDT-B-HB10B2	HBW10/1500	200-300
HDT-B-HB10B3	HBW10/1500	300-400
HDT-B-HB10B4	HBW10/1500	400-500
HDT-B-HB10B5	HBW10/1500	500-600
HDT-B-HB10B6	HBW10/1500	600-650
HDT-B-HB10C1	HBW10/1000	90-200
HDT-B-HB10C2	HBW10/1000	200-300
HDT-B-HB10C3	HBW10/1000	300-400
HDT-B-HB10C4	HBW10/1000	400-450
HDT-B-HB10D1	HBW10/500	90-200
HDT-B-HB10D2	HBW10/500	200-300
HDT-B-HB10D3	HBW10/500	300-400
HDT-B-HB10D4	HBW10/500	400-450
HDT-B-HB25A1	HBW2.5/187.5	100-200
HDT-B-HB25A2	HBW2.5/187.5	200-300
HDT-B-HB25A3	HBW2.5/187.5	300-400
HDT-B-HB25A4	HBW2.5/187.5	400-500
HDT-B-HB25A5	HBW2.5/187.5	500-600
HDT-B-HB25A6	HBW2.5/187.5	600-650
HDT-B-HB25B1	HBW2.5/62.5	90-200
HDT-B-HB25B2	HBW2.5/62.5	200-300
HDT-B-HB25B3	HBW2.5/62.5	300-400
HDT-B-HB25B4	HBW2.5/62.5	400-450
HDT-B-HB5A1	HBW5/750	100-200
HDT-B-HB5A2	HBW5/750	200-300
HDT-B-HB5A3	HBW5/750	300-400
HDT-B-HB5A4	HBW5/750	400-500
HDT-B-HB5A5	HBW5/750	500-600
HDT-B-HB5A6	HBW5/750	600-650
HDT-B-HB5B1	HBW5/250	90-200
HDT-B-HB5B2	HBW5/250	200-300
HDT-B-HB5B3	HBW5/250	300-400
HDT-B-HB5B4	HBW5/250	400-450

#### Shore hardness test blocks

Code	Type	Hardness *
HDT-B-SA	SA	6 pcs/set (30, 40, 50, 60, 70, 80)
HDT-B-SD	SD	3 pcs/set (15, 30, 90)

\*The actual value may be slightly different when delivered

#### Ultrasonic hardness test blocks

Code	Type	Hardness
HDT-B-HRCU1	HRC	20-30
HDT-B-HRCU2	HRC	35-55
HDT-B-HRCU3	HRC	60-70
HDT-B-HV5U1	HV5	200-300
HDT-B-HV5U2	HV5	400-500
HDT-B-HV5U3	HV5	700-750
HDT-B-HB10U1	HBW10/1000	90-200
HDT-B-HB10U2	HBW10/3000	200-300
HDT-B-HB10U3	HBW10/3000	400-500

# CONCRETE STRENGTH TESTERS



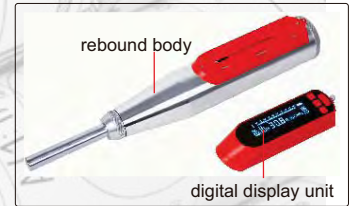
DATA OUTPUT



CST-D101



CST-D102



CST-D102 separable

- Measure the strength of general building components, bridges and various concrete components (slabs, beams, columns, bridges, etc.)
- Angle, test surface, pumping, carbonization depth and other parameters can be customized according to the requirements
- The rebound body can be used for 2000 times
- USB data transmission
- The software can automatically generate the test report, and the strength curve can be customized and stored in the tester
- Storage and reading of 1000 test data
- According to JGJ/T23-2011, the curve of rebound meter can be customized to calculate the compressive strength of concrete



analog scale, battery display, test parameters, measurement grouping, rebound data, tolerance alarm, strength

## SPECIFICATION

Code	CST-D101	CST-D102
Display	OLED display	
Range	10-70N/mm <sup>2</sup>	
Accuracy	±1R	
Parameter	MPa, N/mm <sup>2</sup> , Kgf/mm <sup>2</sup>	
Impact energy	2.207J, for testing common buildings or bridge structures	
Output	USB	
Structure	one body, non-seperable	seperable, the digital display unit can be reused
Memory	1000 data	
Operation temperature	-40°C~60°C	
Power supply	built-in rechargeable battery	
Dimension	280×75×60mm	
Weight	1.1kg	



software flash disk (included)



sander (included)



calibration block (optional)

## STANDARD DELIVERY

Main unit	1 pc
Sander	1 pc
Power adapter	1 pc
Software and USB cable	1 pc

## OPTIONAL ACCESSORY

Rebound body (for CST-D102)	CST-D102-REBOUND
Digital display unit (for CST-D102)	CST-D102-DISPLAY
Calibration block	CST-D-BLOCK

software (included) for uploading and storing data, printing and importing/exporting strength curves

NO	Part	Zone	Name	NO	Part	Zone	Name
1	1	3		1	1	3	
2	2	15.2		2	2	15.2	
3	3	15.4		3	3	15.4	
4	4	15.6		4	4	15.6	
5	5	15.8		5	5	15.8	
6	6	16		6	6	16	
7	7	16.2		7	7	16.2	
8	8	16.4		8	8	16.4	
9	9	16.6		9	9	16.6	
10	10	16.8		10	10	16.8	
11	11	17		11	11	17	
12	12	17.2		12	12	17.2	
13	13	17.4		13	13	17.4	
14	14	17.6		14	14	17.6	
15	15	17.8		15	15	17.8	
16	16	18		16	16	18	
17	17	18.2		17	17	18.2	
18	18	18.4		18	18	18.4	
19	19	18.6		19	19	18.6	
20	20	18.8		20	20	18.8	
21	21	19		21	21	19	
22	22	19.2		22	22	19.2	
23	23	19.4		23	23	19.4	
24	24	19.6		24	24	19.6	
25	25	19.8		25	25	19.8	
26	26	5.7	5.9	13.4	6.3		
27	27	5.8	5.9	13.6	6.4		
28	28	5.9	5.9	13.7	6.5		

Concrete compressive strength report detected by rebound method									
Project Name					Region				
NO	Part	Zone	Total Area	Average	SYMBOL	Rebound Value	Strength	Strength Date	Strength Unit
1	1	3							
2	2	15.2							
3	3	15.4							
4	4	15.6							
5	5	15.8							
6	6	16							
7	7	16.2							
8	8	16.4							
9	9	16.6							
10	10	16.8							
11	11	17							
12	12	17.2							
13	13	17.4							
14	14	17.6							
15	15	17.8							
16	16	18							
17	17	18.2							
18	18	18.4							
19	19	18.6							
20	20	18.8							
21	21	19							
22	22	19.2							
23	23	19.4							
24	24	19.6							
25	25	19.8							
26	26	5.7	5.9	13.4	6.3				
27	27	5.8	5.9	13.6	6.4				
28	28	5.9	5.9	13.7	6.5				





**Cutting Machines**  
Page 844-846



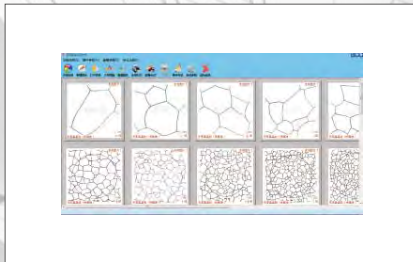
**Grinders And Polishers**  
Page 847-850



**Mounting Presses**  
Page 851-853



**Metallurgical Microscopes**  
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**Metallurgical Analysis Softwares**  
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**Cutting Machine Accessories**  
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**Mounting Press Accessories**  
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**Grinder And Polisher Accessories**  
Page 857

# AUTOMATIC CUTTING MACHINE (ADVANCED TYPE) CODE MLP-HCM102



electromagnetic lock

water cleaning gun

sliding door

coolant switch

- Suitable for cylinder workpieces (diameters ≤ 100mm) and rectangular samples (height ≤ 70mm, width ≤ 100mm)
- Cooling system avoids overheating and destroying sample structure
- Three cutting modes (manual, pulse, continuous cutting), the cutting feed speed and cutting stroke can be programmed

## SPECIFICATION

Maximum cutting diameter	Ø100mm
Cutting blade	Ø350×2.5×Ø32mm
Rotation speed	2200r/min
Spindle travel	145mm
Table travel	300mm
Illumination	LED ceiling light
Noise	≤85dB
Cooling tank	60L
Removable baffle	contain
Table dimension	330×280mm
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	900×860×620mm
Weight	285kg

## STANDARD DELIVERY

Main unit	1 pc
Cutting blade	5 pcs
Cutting blade chuck	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

## OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø350×2.5×Ø32mm, 40 pcs/box)	MLP-50Z4
Cutting blade chuck (for Ø32mm cutting blade)	MLP-60Y4*
	MLP-HCM102-CHUCK

\* Special cutting blade for high hardness



coolant (included)



cutting blade MLP-50Z4 (included)



cutting blade MLP-60Y4 (optional)

## CUTTING MACHINE (STANDARD TYPE) CODE MLP-CM60



- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure
- With safety switch, the machine will automatically stop when the cover is opened



### SPECIFICATION

Maximum cutting diameter	Ø60mm
Cutting blade	Ø250×1.5×Ø25.4mm
Rotation speed	2800r/min
Motor power	2.2kW
Power supply	AC 380V, 50Hz
Dimension	830×620×450mm
Weight	82kg



cutting blade MLP-CM60-CUT2  
(included)

### STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc



coolant (optional)

### OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø250×1.5×Ø25.4mm, 60 pcs/box)	MLP-CM60-CUT2
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	MLP-50Z2 *
Cutting blade chuck (for Ø32mm cutting blade)	MLP-CM60-CHUCK

\* When use MLP-50Z2, please purchase MLP-CM60-CHUCK

# CUTTING MACHINE (BASIC TYPE) CODE MLP-CM86



- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure

Cutting blade

### SPECIFICATION

Maximum cutting diameter	Ø80mm
Cutting blade	Ø250×2×Ø32mm
Rotation speed	2800r/min
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	690×790×670mm



coolant (included)

### STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc



cutting blade MLP-50Z2 (included)

### OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	MLP-60Y2*
	MLP-50Z2
Cutting blade chuck (for Ø32mm cutting blade)	MLP-CM86-CHUCK



cutting blade MLP-60Y2 (optional)

\*Special cutting blade for high hardness



## GRINDER AND POLISHER (ADVANCED TYPE) CODE MLP-GP305



manual grinding wheel

- Replaceable double wheels, rotation direction can be selected
- Multi sample holder, pneumatic single point loading, automatic abrasive distribution
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished

### SPECIFICATION

Wheel diameter	Ø250mm (customizable Ø300mm)
Wheel rotation speed	50~1000r/min (stepless adjustable), 150r/min, 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation number	6
Operation time	0~995s
Sample diameter	Ø30mm (customizable Ø22mm, Ø25mm, Ø30mm, Ø40mm, Ø45mm, Ø50mm)
Air pressure	0.6~0.9MPa
Power supply	AC220V, 50Hz
Input power	1.1kW
Dimension	758×785×680mm
Weight	125kg

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 250, 400, 800, 1200), 100 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 350ml)
Magnetic pad	2 pcs (Ø250mm)
Anti-stick disc	3 pcs (Ø250mm)

### OPTIONAL ACCESSORY

Silicon carbide paper	<b>MLP-SZG</b> □□ *	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	<b>MLP-CT7</b>	15 pcs/box, long velvet silk material
	<b>MLP-CT27</b>	15 pcs/box, woolen fabric
Diamond polishing liquid	<b>MLP-DLA</b> □□ *	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Spray polish agent	<b>MLP-DSA</b> □□ *	350ml, select granularity (µm): W40, W28, W20, W14, W10, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	<b>MLP-AD2</b>	Ø250mm
Anti-stick disc	<b>MLP-DC2</b>	Ø250mm

\* □□ is granularity specification, for example, code **MLP-DLA40** stands for 40µm



silicon carbide paper (included)



polishing cloth (included)

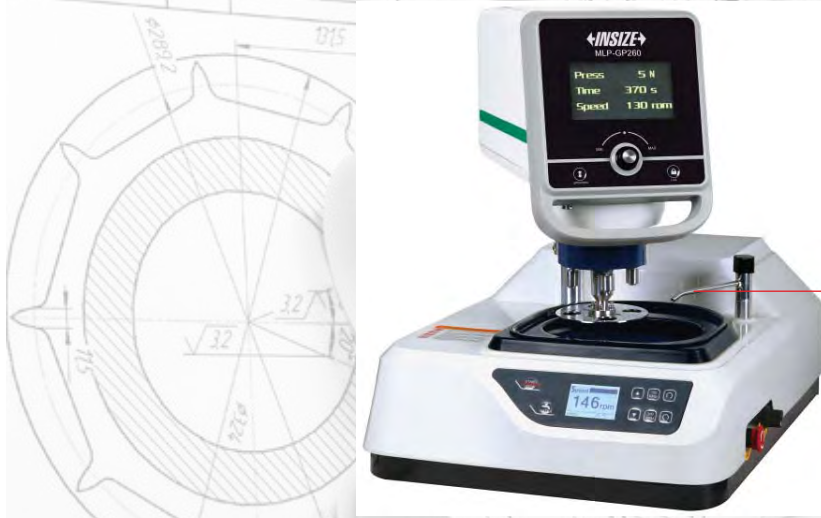


anti-stick disc (included)



magnetic pad (included)

## GRINDER AND POLISHER (ADVANCED TYPE) CODE MLP-GP260



cooling water pipe

- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 4 samples (6 holes are optional and can hold up to 6 samples)
- Smooth rotation, low noise
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Wheel rotation direction can be selected
- Replaceable wheel

### SPECIFICATION

Wheel diameter	Ø250mm
Wheel rotation speed	50~999r/min (stepless adjustable), 150 or 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation time	5~995s
Sample diameter	Ø30mm (can be customized)
Air pressure	0.6~0.9MPa
Power supply	AC 220V, 50Hz
Input power	1.1kW
Dimension	594×795×687mm
Weight	98kg



silicon carbide paper  
(optional)



polishing cloth (optional)

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	6 pcs (200, 600, 1000)
Polishing cloth	4 pcs

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZG□□*	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	MLP-CT7	15 pcs/box, long velvet silk material
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25

\* □□ is granularity specification, for example, code MLP-DLA40 stands for 40µm

## GRINDERS AND POLISHERS (STANDARD TYPE)



- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Replaceable double wheel, wheel can be controlled independently, rotation direction can be selected
- Smooth rotation, low noise
- Four fixed speeds/stepless adjustable speed
- Water cooling device, prevent samples from overheating and destroying structure
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished



MLP-GP280



silicon carbide paper (optional)



polishing cloth (optional)



magnetic pad (optional)



anti-stick disc (optional)

### SPECIFICATION

Code	MLP-GP270	MLP-GP280
Wheel diameter	Ø203mm	Ø250mm
Wheel rotation speed	0-1400r/min (stepless adjustable)	0-1000r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise	
Fixed speed	150r/min, 300r/min, 600r/min, 1000r/min	
Power supply	AC 220V, 50Hz	
Input power	1.5kW	
Dimension	758×785×310mm	
Weight	50kg	

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	3 pcs
Polishing agent	1 pc

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZD□□* (for MLP-GP270)	50 pcs/box, select granularity, Ø200mm with adhesive: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
	MLP-SZG□□* (for MLP-GP280)	50 pcs/box, select granularity, Ø250mm with adhesive: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	MLP-CT6 (for MLP-GP270)	15 pcs/box, Ø200mm with adhesive, long velvet silk material
	MLP-CT7 (for MLP-GP280)	15 pcs/box, Ø250mm with adhesive, long velvet silk material
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD1 (for MLP-GP270)	Ø200mm
	MLP-AD2 (for MLP-GP280)	Ø250mm
Anti-stick disc	MLP-DC1 (for MLP-GP280)	Ø200mm
	MLP-DC2 (for MLP-GP280)	Ø250mm

\* □□ is granularity specification, for example, code MLP-DLA40 stands for 40µm

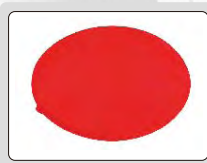
## GRINDER AND POLISHER (BASIC TYPE) CODE MLP-GP314



- Double wheels, rotation direction can be selected
- Smooth rotation, low noise
- Water cooling device, prevent samples from overheating and destroying structure
- Replaceable silicon carbide paper and polishing cloth for grinding and polishing process



silicon carbide paper  
(included)



polishing cloth (included)



anti-stick disc (optional)



magnetic pad (optional)

### SPECIFICATION

Wheel diameter	Ø203mm
Wheel rotation speed	0~1400r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise
Power supply	AC 220V, 50Hz
Input power	0.75kW
Dimension	755×700×310mm
Weight	50kg

### STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	4 pcs
Polishing agent	1 pc (W2.5, 500ml)

### OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZD□□ *	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	MLP-CT6	15 pcs/box, long velvet silk material
Diamond polishing liquid	MLP-DLA□□ *	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD1	Ø203mm
Anti-stick disc	MLP-DC1	Ø203mm

\* □□ is granularity specification, for example, code MLP-DLA40 stands for 40µm



## MOUNTING PRESSES (ADVANCED TYPE)



MLP-MP43



MLP-MP53

- Built-in heating and cooling structure reduces the mounting time to 6 minutes
- The programmed control system reserves 10 customized preparation schemes to meet different mounting requirements
- The thickness of the middle mold is up to 15mm, and 2 samples can be mounted at the same time at one station
- Can accurately control the pressure size, adjustment range: 1~20MPa



hot mounting resin (included)

### SPECIFICATION

Code	MLP-MP43	MLP-MP53
Station number	1	2
Power	1100W+heating power *	1200W+heating power×2
Mounting diameter	Ø30mm (customizable Ø25, Ø40, Ø50mm)	
System pressure	1~20MPa, optional increase or decrease 1MPa	
Pressure mode	automatic electro-hydraulic	
Cooling mode	automatic water cooling **	
Heating range	90~200°C	
Holding time	0~10min	
Cooling temperature/time	40~90°C/0~10min	
Power supply	AC 220V, 50Hz	
Dimension	530×485×463mm	671×485×463mm
Weight	44kg	77kg

\* Heating power of mounting sleeve: 1800W (mounting diameter≤31.8mm), 2400W (mounting diameter≥38.1mm)

\*\* Cooling water pressure should not be higher than 1MPa, must be filtered through 40µm filter

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc
Filter	1 pc
Vacuum cleaner tip	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
---------------------------------	---------

## MOUNTING PRESS (STANDARD TYPE) CODE MLP-MP30



- Automatic heating, pressuring, cooling and pressure relief
- Water cooling system



hot mounting resin (optional)



### SPECIFICATION

Diameter of workpiece	Ø30mm
Heating temperature range	100~200°C
Delay range	0~999s
Hold time	0~999s
Cooling temperature	20~90°C
Heating power	600W
Power supply	AC 220V, 50Hz
Dimension	350×450×470mm
Weight	45kg

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
---------------------------------	---------

## MOUNTING PRESS (BASIC TYPE) CODE MLP-MP62



- Suitable for tiny, difficult to handle or irregular metallographic and petrographic samples
- The sample preparation program has three modes: bakelite powder, electric jade powder and user-defined
- The sample preparation program controls the sample preparation time and realizes unattended sample preparation



hot mounting resin (included)



### SPECIFICATION

Mounting diameter	Ø30mm (customizable Ø22mm, Ø45mm)
Heating range	room temperature~200°C
Timing range	0~30min
Power	≤800W
Power supply	AC220V, 50Hz
Dimension	440×253×310mm
Weight	32kg

### STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (60g)
Funnel	1 pc

### OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3
---------------------------------	---------



VACUUM MOUNTING PRESS  
CODE MLP-MP25

- Suitable for epoxy resins and cold mosaic compound of polyester castable
- High efficiency, simple and reliable



cold mounting compound  
(optional)

SPECIFICATION

Maximum vacuum	-58kPa
Vacuum chamber size	Ø260×125mm
Transposition speed	5r/min
Input power	6W
Power supply	220/110V
Dimension	460×400×403mm
Weight	30kg

STANDARD DELIVERY

Main unit	1 pc
Vacuum pump	1 pc
Ø25mm mold	1 pc
Ø30mm mold	1 pc
Ø40mm mold	1 pc
Ø50mm mold	1 pc
Epoxy resin (400g)	1 pc
Curing agent (200g)	1 pc
Waxed paper tray	10 pcs



OPTIONAL ACCESSORY

Cold mounting compound	MLP-CM1, MLP-CM6
Epoxy resin	MLP-CM3, MLP-CM4

REFER TO PAGE  
638-640 FOR DETAILS

METALLURGICAL MICROSCOPES



5102-M600

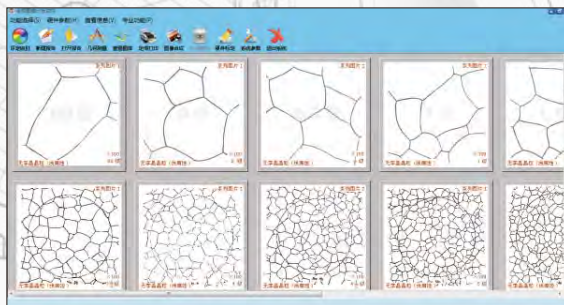


5108-M3000



5103-M1000

METALLURGICAL ANALYSIS SOFTWARE AND CAMERA



ISM-MAS100

REFER TO PAGE  
657-658 FOR DETAILS

## DIAMOND BLADES

- Specially for precision cutting of carbide, ceramic materials, optical glass and other brittle metal materials

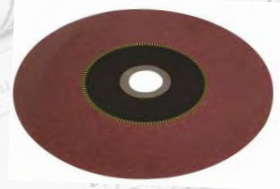


Code	Description	Specification (mm)
MLP-DQ1	1. saw blade is made of edge electroplating 2. used for small workpieces made of crystal, ceramic, glass and alloy materials	Ø100×0.4×12.7
MLP-DQ2		Ø150×0.5×12.7
MLP-DQ3	1. saw blade is made of edge sintering technology 2. used for hard alloy, ceramic, optical glass and other brittle metal materials	Ø100×0.5×20
MLP-DQ4		Ø200×1×32

## CUTTING BLADES



MLP-50Z1



MLP-60Y1

Code	Application	Cutting blade size	Package (pcs/box)
MLP-10R1	1. light non-ferrous metal 2. high toughness metal (Ti) 3. HV hardness value: 0~250	Ø250×1.5×32mm	60
MLP-10R2		Ø250×2×32mm	50
MLP-10R3		Ø300×2×32mm	50
MLP-10R4		Ø350×2.5×32mm	40
MLP-20R1	1. soft ferrous metal 2. HV hardness value: 50~300	Ø250×1.5×32mm	60
MLP-20R2		Ø250×2×32mm	50
MLP-20R3		Ø300×2×32mm	50
MLP-20R4		Ø350×2.5×32mm	40
MLP-30R1	1. medium soft ferrous metal 2. HV hardness value: 120~500	Ø250×1.5×32mm	60
MLP-30R2		Ø250×2×32mm	50
MLP-30R3		Ø300×2×32mm	50
MLP-30R4		Ø350×2.5×32mm	40
MLP-40Z1	1. medium hardness ferrous metal 2. HV hardness value: 180~600	Ø250×1.5×32mm	60
MLP-40Z2		Ø250×2×32mm	50
MLP-40Z3		Ø300×2×32mm	50
MLP-40Z4		Ø350×2.5×32mm	40
MLP-50Z1	1. hard ferrous metal 2. HV hardness value: 180~700	Ø250×1.5×32mm	60
MLP-50Z2		Ø250×2×32mm	50
MLP-50Z3		Ø300×2×32mm	50
MLP-50Z4		Ø350×2.5×32mm	40
MLP-50Z5		Ø400×3×32mm	25
MLP-50Z6		Ø450×3.2×32mm	25
MLP-50Z7		Ø509×4×38.1mm	10
MLP-50Z8		Ø610×4×38.1mm	10
MLP-60Y1	1. high hardness ferrous metal 2. HV hardness value: 250~900	Ø250×1.5×32mm	60
MLP-60Y2		Ø250×2×32mm	50
MLP-60Y3		Ø300×2×32mm	50
MLP-60Y4		Ø350×2.5×32mm	40

- Cutting surfaces are bright and smooth without burning

## CUTTING COOLANT

- Free of mineral oil and sodium nitrite, suitable for all kinds of metallographic cutting machines
- Harmless to human health and environment



Code	Description	Specification
MLP-OL1	1. fully synthetic concentrate, used for various types of cutting machines, specially for built-in cooling circulatory system models 2. concentrate, dilute 1:20 with water 3. replace regularly, recommended once a month	1L
MLP-OL2		2L
MLP-OL3		4L
MLP-OL4		6L
MLP-OL5		10L
MLP-OL6	1. oily mixture, use directly 2. cut water sensitive materials at low speed (high speed cutting machine is prohibited) 3. replace regularly, recommended once a month	1L
MLP-OL7		4L

## HOT MOUNTING RESIN

- Suitable for small sample preparation



Code	Color	Description	Package (barrel)
MLP-DR1	black	for common sample preparation, fast grinding speed	0.5kg
MLP-DR2			1kg
MLP-DR3			4kg
MLP-DR4	black	edge protection type, low shrinkage, sample binding, high hardness, good wear resistance, slow grinding speed	0.5kg
MLP-DR5			1kg
MLP-DR6			4kg
MLP-DR7	black	carbon phenolic polymer, used in highly conductive fields, medium grinding speed	0.5kg
MLP-DR8			1kg
MLP-DR9	red	for common sample preparation, fast grinding speed	0.5kg
MLP-DR10			1kg
MLP-DR11			4kg
MLP-DR12	white	for common sample preparation, fast grinding speed	0.5kg
MLP-DR13			1kg
MLP-DR14			4kg
MLP-DR15	green	for common sample preparation, fast grinding speed	0.5kg
MLP-DR16			1kg
MLP-DR17			4kg
MLP-DR18	transparent	transparent, soluble, for sample with size, position, depth and other requirements	0.5kg
MLP-DR19			1kg
			4kg

## COLD MOUNTING CONSUMABLES



cold mounting resin



curing agent

Code	Description	Package
MLP-CM1	<ol style="list-style-type: none"> <li>1. cold mounting compound, fast speed/good transparency/low viscosity/high strength</li> <li>2. for metal processing without heating, pressure and mounting press</li> <li>3. curing time: 25°C, 25min</li> <li>4. usage: cold mounting resin 3:curing agent 2</li> </ol>	<ol style="list-style-type: none"> <li>1. cold mounting resin 1000g</li> <li>2. curing agent 800ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs</li> <li>5. stirring rod 40 pcs, spoon 1 pc</li> </ol>
MLP-CM2	<ol style="list-style-type: none"> <li>1. epoxy resin, low viscosity, good permeability, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 5~6h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs</li> <li>5. stirring rod 40 pcs</li> </ol>
MLP-CM3	<ol style="list-style-type: none"> <li>1. fast epoxy, fast curing products, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 1h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs</li> <li>5. stirring rod 40 pcs</li> </ol>
MLP-CM4	<ol style="list-style-type: none"> <li>1. low viscosity epoxy, good permeability, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 3~4h</li> <li>4. usage: resin liquid 2:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml</li> <li>2. curing agent 500ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs</li> <li>5. stirring rod 40 pcs</li> </ol>
MLP-CM5	<ol style="list-style-type: none"> <li>1. low heat release epoxy, small, shrink, completely transparent</li> <li>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples</li> <li>3. curing time: 25°C, 20~24h</li> <li>4. usage: resin liquid 3:curing agent 1</li> </ol>	<ol style="list-style-type: none"> <li>1. resin liquid 1000ml,</li> <li>2. curing agent 300ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs,</li> <li>5. stirring rod 40 pcs</li> </ol>
MLP-CM6	<ol style="list-style-type: none"> <li>1. cold mounting compound, fast speed/ceramics white/low viscosity/high strength</li> <li>2. for metal processing without heating, pressure and mounting press</li> <li>3. curing time: 25°C, 25min</li> <li>4. usage: cold mounting resin 3:curing agent 2</li> </ol>	<ol style="list-style-type: none"> <li>1. cold mounting resin 1000g</li> <li>2. curing agent 800ml</li> <li>3. Ø30mm cold mounting mold 1 pc</li> <li>4. plastic cup 20 pcs</li> <li>5. stirring rod 40 pcs, spoon 1 pc</li> </ol>

## COLD MOUNTING MOLDS

Code	Description	Specification (mm)
MLP-QM1	round soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø20×18
MLP-QM2		Ø25×18
MLP-QM3		Ø30×18
MLP-QM4		Ø40×23
MLP-QM5		Ø50×23
MLP-QM6	square soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	55×20×22
MLP-QM7		70×40×22
MLP-QM8	round hard mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø25×23
MLP-QM9		Ø30×27
MLP-QM10		Ø32×27
MLP-QM11		Ø40×29



## MOUNTING DISCHARGING AGENT



Code	Description	Specifications
MLP-RA	for hot mounting press and cold mounting mold discharging	200ml/bottle

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## SLICE CLIPS



MLP-QP1



MLP-QP2

Code	Description	Specifications
MLP-QP1	stainless steel roll slice clip, for hot and cold mounting fixing	100 pieces/pack
MLP-QP2	PET roll slice clip, for hot and cold mounting fixing	100 pieces/pack

## DIAMOND POLISHING LIQUID

- For surface grinding and polishing of metallographic, lithographic, ferrous and non-ferrous metals, ceramics, composite materials, gems, instruments, optical glass of high finish
- Compared with ordinary polishing agent, under the same grinding and polishing quality, consumption is saved 30%, time is saved 60%



Code	Description	Granularity (µm)	Package/Bottle
MLP-DLA <sup>□□*</sup>	1. single crystal, water-based, ethylene glycol-based polishing lubricant formulation 2. for general metallographic preparation	40, 30, 28, 20, 14, 10, 9, 7, 6, 5, 3.5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLB <sup>□□*</sup>	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for grinding and polishing of soft and ductile materials	30, 20, 15, 14, 9, 7, 6, 5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLC <sup>□□*</sup>	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for ultra-precision polishing	0.05	500ml
MLP-DLD <sup>□□*</sup>	1. single crystal, oil-based, solvent-based polishing lubricant formulation 2. for grinding and polishing of soft materials and materials which cannot touch water	20, 14, 9, 7, 5, 3.5, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLE <sup>□□*</sup>	1. polycrystalline, water-based, propylene glycol based polishing lubricant formula 2. for grinding and polishing of different materials and hardness components	9, 6, 3, 1.0, 0.5, 0.25	500ml
MLP-DLF <sup>□□*</sup>	1. polycrystalline, water-based, denatured ethanol based polishing lubricant formula 2. for grinding and polishing of materials which cannot touch water	9, 6, 3, 1.0, 0.5, 0.25	500ml

\*□□ is granularity specification, for example, code MLP-DLA40 stands for diamond polishing liquid 40µm granularity