

MTM-B SERIES

INTELLIGENT TABLET HARDNESS TESTER OPERATION MANUAL



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MN-MTM-B SERIES-E

V0

<https://m.insize.com/page-37-1232.html>



EN -- Please scan the QR code or visit the website for operation manual.

IT --- Scansiona il codice QR oppure visita il sito web per il manuale d'uso.

CZ -- Pro návod prosím naskenujte QR kód nebo navštivte webovou stránku.

ES -- Por favor, escanee el código QR o visite la página web para ver el manual de instrucciones.

FR -- Veuillez scanner le QR Code ou visiter notre site web pour accéder aux manuels d'utilisation.

DE -- Bitte scannen Sie den QR-Code oder besuchen Sie die Website für die Bedienungsanleitung.

PT -- Para aceder ao manual de instruções, por favor, faça a leitura do código QR ou visite o nosso site.



OVERVIEW

Tablet hardness testing plays a vital role in its research and development, production process and final product, and is widely used in pharmaceutical factories, drug testing institutes and related scientific research units. MTM-B series tablet hardness tester can measure the diameter and hardness value of tablets, and in the process of testing, it can automatically record and statistic the maximum value, minimum value and average value of the tested tablets.

1. Main features

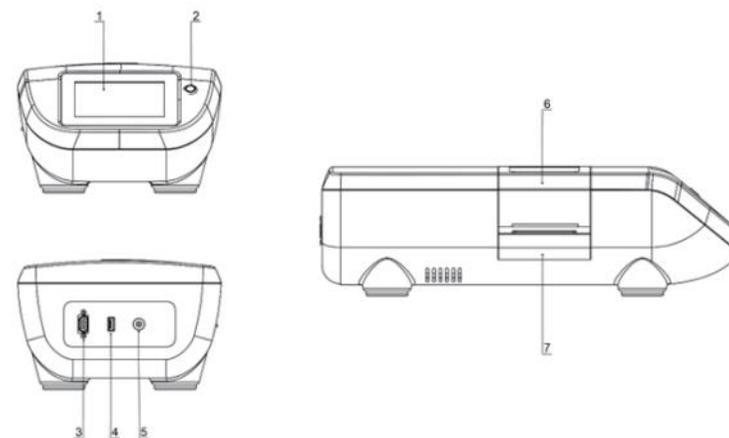
- Built-in three-level user rights management, audit trail, test record management, through the device interface can print or USB output test report.
- Commonly used sample information management, easy to retrieve and use, touch human-computer interaction interface, convenient operation.
- Higher accuracy load cell to ensure measurement accuracy.
- Tests are required to be completed in a short period of time, as fast as 15 seconds per sample.
- Visual window above the test chamber for clear observation of each test.
- Can be tested continuously for 1000 times, and the interval between successive tests is user-adjustable.
- DC 12V working voltage, using the global universal voltage adapter, convenient and reliable.
- Built-in high-precision sensor ensures measurement accuracy.

2. Specification

Code	MTM-B350	MTM-B500	MTM-B700
Range of hardness	10~350N	10~500N	10~700N
Resolution of hardness	0.01N		
Accuracy of hardness	± (1.5%+1 digit)		
Unit of hardness	N, kg, kgf		
Range of diameter	2~25mm		
Resolution of diameter	0.1mm		
Loading rate	20mm/min		
Power supply	AC (100~240)V, 50/60Hz		
Dimension (LxWxH)	460x215x135mm		
Weight	7.2kg	11.5kg	11.5kg

3. Product schematic

This machine adopts horizontal structure, precision screw drive system to drag the load chuck, effectively improve the displacement accuracy. The whole machine consists of force sensor, special fixture, embedded controller, micro printer and LCD touch screen.



1.Touch Screen	5.Power Outlet
2.Power switch	6.Hardness Testing Chamber
3.RS232	7.Collection container for fragments
4.USB	

4. Installation and commissioning

Carefully open each part, make sure that the packaging is intact for later transport and storage, check each part for any damage during transport, if possible damages are found inside or outside after checking, immediately notify us of these damages and place the instrument in a reliable place.

5. Pre-installation precautions

- **Temperature:** The ambient temperature should be kept between 15 °C -30°C, avoid large temperature difference and keep away from heat generating objects.
- **Humidity:** Relative humidity should be within 10-75 per cent.
- **Environment:** The environment should be free of dust, fumes and corrosive gases, and the instrument should not be operated in an environment where there is a risk of explosion.
- **Exposure to sunlight:** avoid direct sunlight.
- **Vibration:** The instrument should be placed in a less vibrating, stable place.
- **Voltage and frequency:** Check that the mains voltage and frequency are within the calibrated range of the instrument.
- **Keep the instrument level.**

6. Installation and printer connection

1. Plug in the power supply



2. Connection with printer

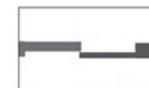
- **Compatible micro printer.**
- **External connection:** serial port (RS232).
- **Feed width:** 57mm.
- **Effective print width:** 48mm.

- 24 characters/line or 40 characters/line.



7. Operating Instructions

1. Switch on the computer
 - After connecting the power supply, the indicator light of the power switch is on, which represents that the instrument is in standby mode, after pressing the power switch, the indicator light is off, the screen is on, the active platen moves forward, and the instrument enters into self-checking state.
 - Do not perform any operation at this time until the active platen is reset to its initial position (below).
 - If you log into the system after a timeout, the self-test will be performed again after logging into the instrument.

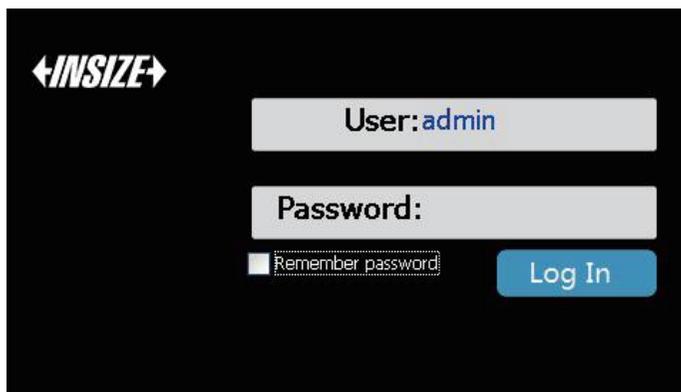


Attention:

Before each start-up, please make sure that the active and passive platens in the test chamber are clean and free of foreign objects, and it is strictly prohibited to place tablets or other foreign objects at this time, otherwise the test results will be affected.

2. Login system

- After booting into the login interface (as shown below), the first time you log in using the maintainer account ID: admin, the default password: 123456 login, after logging in, please change the login password, the other accounts are obtained by the maintainer to enter the system after the addition of the user rights set in the acquisition.



3. System interface

■ Main interface (below).



Description:

Operation mode: Single and continuous operation modes.

Default preset 10 times (setting range 1-1000 times).

The default continuous working interval is 15 seconds (set range 5-25 seconds).

Start: Start the experiment.

Stop: Yes: The experiment is paused, press start to continue the experiment.

No: Continue the experiment.

Reset:

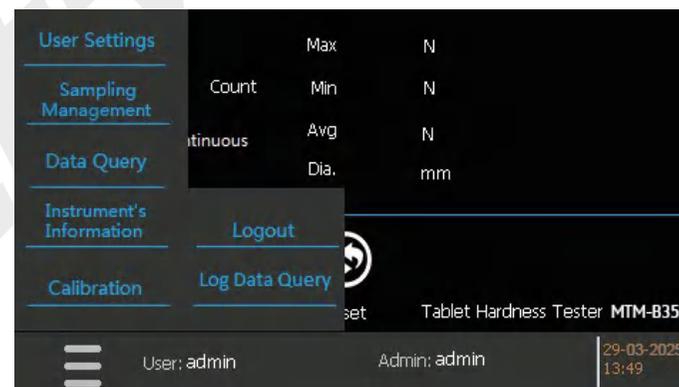
Click to reset the experimental value to zero and set the parameters unchanged.

Long press for 5 seconds:

The test value is reset to zero, and the set parameters are restored to their default settings.

Submenus:

Open by pressing the bottom left corner.



■ Sample information management (below).

Sample information management			
ID	Sample No.	Sample name	Operat
1			Add
2			
3			
4			
5			
6			

OK

Description:
Common sample information is entered for easy retrieval and use.

■ User permission management (below).

User Management			
User name	Permission	Build date	
admin	Admin	2025-03-28 17:13:35	
001	Power Users	2025-03-28 17:13:53	
002	Users	2025-03-28 17:14:07	

Add Edit Delete Exit

Description:
levels of permission management: Admin-Power Users- Users
Admin permission:

- ① Set up accounts of a lower level.
- ② log data query.
- ③ Inspect, test, check, view, print, export, delete the test data.
- ④ Editing of sampling information management.
- ⑤ Measurement Verification.
- ⑥ System time synchronization.

Power Users permission:

- ① Og data query.
- ② Inspect, test, check, view, print, export the test data.
- ③ Editing of sampling information management

Users permission:

- ① Inspect, test, check, view, print the test data.
- ② Editing of sampling information management.

■ Data uery management (below).

Data Query Management

Test No.	Test Date	Sample No.
YD1903040001	2025-3-4 19:39:12	

04/03/2025
Query
Page: 1

04/03/2025
Total: 1

USB Export
Details
EXIT
V 1.2.7

Tablet hardness test result

Sample No.	Test No.
Sample Name	Sample Quantity
Specs	Remark

Result

Number of inspection : 10	Max: 146.02 N	Min: 143.47 N
Average: 145.01 N	1: 145.33 N 2: 145.73 N 3: 145.33 N 4: 145.24 N 5: 144.26 N 6: 146.02 N 7: 143.47 N 8: 145.63 N	
Diameter: 14.90 mm		

USB Export
Print
Delete
EXIT

Description:

Query: The query spans 10 days.

Detailed information: View the test record details.

List USB export: All test records in the list.

Detailed information USB export: Currently viewing test records.

Print: Currently viewing test records.

■ System log query (below).

System log					
ID	Operator	Datetime	Type	Remark	
74	admin	2025-3-4 21:20:44	Query	User:admin	
73	admin	2025-3-4 21:11:43	Query	User:admin	
72	admin	2025-3-4 21:07:48	Query	User:admin	
71	admin	2025-3-4 21:01:30	Query	User:admin	

Page 1 Total 1

04/03/2025 ~ 04/03/2025

Refresh USB Export Exit

Description:

Query: After selecting the start and end time of the query, press the [Refresh Data] key.

USB export: query all log information within the time period.

Export folder directory: Export folder directory: Data Management, SN ***** (product number), system logs.

■ System time modification.

Description:

Maintainer rights only.

4. Usage

■ Single run mode.

To start the test:

① Select the unit of measure (kg/N).

Open the test chamber.

③Put in the tablets.

④ Press the [Start] key to start the test.

⑤ Clean the debris on the active and passive platens with a cleaning brush after the current test is completed (otherwise the accuracy of the next test will be affected).

⑥ Insert the tablet again.

⑦ Repeat ④, ⑤ and ⑥ until the test is completed.

Test record keeping and printing:

① After the test is finished, press the reset button to enter the test record saving page.

②Enter the sample related information.

③Select: print and save, save only, no save, the instrument enters the reset state after selection.

■ Continuous operation mode.

Starting the test:

① Set the preset number of times (range: 1-1000 times).

②Set the continuous operation interval time (range: 5-25s).

③Select the unit of measurement (kg/N).

④ Open the test chamber.

⑤ Put in the tablets.

⑥ Press the start button to start the test.

⑦ After the current test is completed use a cleaning brush to clean the debris on the active and passive platens (otherwise it will affect the accuracy of the next test. st

⑧ Put in the tablets again.

⑨Repeat ⑦ and ⑧ until the end of the test.

Note:

The parameters of preset times, continuous working interval time and unit of measure that have been set cannot be changed in the test and can only be reset after reset;

Pause in the test: press the stop key, the selection is pause, and then you can carry out the reset operation or press the start key to continue to carry out the test;

Reset in the test: it must be paused before it can be reset.

■ Test record saving and printing.

①After the test is finished, press the View Hardness Test result prompt window to enter the test record saving page.

② Enter the relevant information of the sample.

③Select: print and save, save only, do not save, after selecting the instrument into the reset state.

8. Calibration

■ Tool (below).

1. Weights (M1 class and above weights).



10kg

2. Weight Tray.



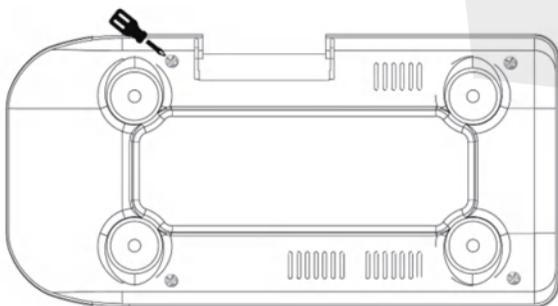
3. Sensor mount.



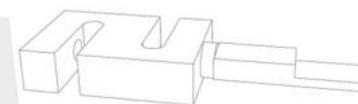
■ Measurement calibration method.

Procedure

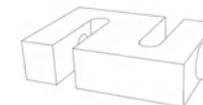
1. Open the upper case of the instrument.



2. Connect the power supply to enter the main system interface and wait for the instrument to reset.
3. Dismantle the sensor.



4. Remove the passive platen from the sensor.



5. Place the sensor vertically on the fixed seat.
6. Open the measurement calibration window and press read.
7. Place the weight tray on the sensor.
8. Press zero (the screen displays a value of 0.00kg).
9. Place the weight on the weight tray.
10. Observe the value displayed on the screen.



11. After the calibration, install the passive platen parallel to the active platen and keep a clearance of about 0.5 mm.

9. Maintenance

When using this instrument, it should be placed flat on the horizontal working table, and check whether the working environment and

power supply voltage meet the requirements of technical parameters.

Before using this instrument, please read this instruction manual carefully to fully understand the operation and precautions of this instrument.

Non-professional maintenance personnel, please do not disassemble this instrument by yourself.

Before each start-up, make sure that the active and passive platens in the test chamber are clean and free of foreign objects.

When the instrument is in operation, no foreign objects other than tablets should be placed between the active and passive platens.

Clean the debris out of the test compartment after use.

The machine test is not recommended for non-brittle tablets.

When the instrument is not used for a long period of time, it must be completely disconnected from the power supply.

Contact the manufacturer in case of malfunction.

10.Safety tips

The following symbols and conventions are used in this manual:

The pinch prevention icon, which refers to the presence of a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.



The tip icon indicates the procedure and method of operation:

- ① Lift up the window..
- ② Pull out the debris collection box.



Cue icons refer to matters to be noted and emphasised:

