

HZ-1038 Cone Penetration Tester



Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ-1038 Cone Penetration Tester .

We hope that this instrument can make your work easier and more enjoyable, so that you can get the feeling of office automation in the test and analysis work.

Before using the instrument, please read this manual, and operate and maintain the instrument according to the manual to prolong its service life. "Just a light press, the test will be completed automatically" is the operating characteristics of this instrument.

If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

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I. Summary

HZ-1038 cone penetration tester for lubricating grease is designed and manufactured according to GB/T 269 and ASTM D217. It is suitable to determine the cone penetration of all kinds of lubricating grease.

II. Structure Characteristics

HZ-1038 includes two parts of the main part and the grease worker. As the picture, the main part is on the right hand and the grease worker is on the left hand.



The penetrometer consists of three parts of the base with adjustment, the centering device and the measure device.

The base with adjustment: there are fine-tuning feet screws and the circular bubble for indicating horizon on the base. It is easy to adjust the horizon of the base by adjusting the feet screws.

The centering device: it consists of the strut, brace arm and the knobs of rough and fine adjustment. The height of the gauge used in the measuring device can be adjusted while testing; it has the features of the accurate adjustment and auto locking.

The measuring device: it consists of the digital gauge, the electric lock of the cone, the manual button and the timer. It has the features of the accurate measurement, the easy operation and no resistance while the cone falls.

The grease worker consists of the base, the strut, the reciprocating stick and the

grease pole. It is simple on the structure and easy on the operation.

III. Technical Parameters

- a. The max measuring range: 75 mm.
- b. The cone penetration accuracy: ± 0.1 mm.
- c. The time accuracy: 0.1 s.
- 1、 d. The standard cone: as per GB/T 269 and ASTM D217

IV. Installation And Use

Please remove the package carefully after unpacking. Find whether the parts are well or not referring the list.

Note: please contact us if the parts are damaged or los

(1) Assembly of the cone penetrometer

A. place the penetrometer on the plate of the base and adjust the feet screws to make the circular bubble be in the centre. Don't move the apparatus at will after adjustment.

B. the base of the brace arm should be easy to move up and down by adjusting the rough button and the fine button on the strut, the position of it couldn't be moved after fixed. Turn on the digital gauge, and then push the button, 0.00 will be displayed in the screen. The digits in the screen will be changed when the gauge is moved up and down(if the battery used in the gauge is power off after using a period of time, please remove the cover under the button by turning it right and replace the same type battery).

C. the cone pole should fall down naturally while the manual button is pushed.

D. turn on and push the manual button, the electric device should lock the cone pole automatically after the timer finished.

★ the cone pole moves up: press the manual button and push the cone pole up to the suitable position at the same time. Unlock the manual button, the cone pole is locked. Don't move it up until the manual button is pressed.

Note: the operation of the timer: push the "time" button at the right side of the timer panel, the digits are displayed in the screen. Set the duration switch (the English characters with underline is countdown duration switch, such as S, H etc.) according to the demand time of the test. Press the "time" button at the right side of the panel, the

timer is clear; push again, it starts to count. When it finished, the buzzer is alarm.

2) Assembly of the grease worker

A. the cover of the grease cup should be spun out at anti-clockwise before the grease is poured.

B. unlocks the three fixed screws around the grease cup and spins it out.

C. put it back by reverse order after the grease is poured.

D. the seal of the grease cup cover maybe leaks the grease after long time use. Please spin the grease cup out and unload its orifice, remove the cover along the pole and open its seal cover, replace old O circle with new one, then put the grease cup back at reserve order.

V. Test Steps

1) Clean the cone carefully. If the cone is hanged at the pole, don't turn it to prevent the damage of the release system.

2) Encase enough sample into the clear grease cup (it is about 13mm height for the standard cone, 6mm for 1/4 cone). It is often needed to shake the grease cup in the encasing process to exclude any mixed air at any time.

3) Put the thermometer into the grease cup through the exhaust valve after it is installed. The bottom of the thermometer should be put into the center of the sample. Put the grease worker into the constant water bath which the temperature is $25\pm 0.5^{\circ}\text{C}$ and take it out when the thermometer indicates 25°C .

4) The sample is pressed through the orifice 60 times in one minute, then the orifice is sent back to the top. Take out the grease cup and scrape the grease stuck in the orifice as far as possibly into the grease cup.

5) Shake the grease cup and fill the caves which formed by the orifice and air in the sample with the scraper.

★ please decrease to churn the grease as far as possibly in the operation.

6) Move the scraper which is kept to tilt 45° along the cup edge to scrape and retain the extra sample at the cup edge.

7) Measuring the cone penetration

A. fix the cone on the cone pole, press the manual button and lift the cone up and make the gauge just touch the cone pole. Adjust its button to display 0.00 in the screen.

B) put the grease cup on the leveled base and adjust the rough button and the fine button to make the cone tip just reach the sample's surface (the cone penetration is 400, the cone tip is at the center of the grease cup). Press the start button, the cone will be locked by locking system 5 seconds later.

C) fall the gauge slowly and get the value from it while it just touch the cone pole. The value which accuracy is 0.1mm is the cone penetration of the sample.

6、Notes:

- 1) The manual button must be pressed when the cone pole is moved, avoid pulling it under the locking.
- 2) The cone should be clear after each test finished and painted the protect grease to prevent to damage the cone tip.
- 3) The apparatus should be placed at dry and no dust, and maintained by regular electricity.
- 4) The digital gauge should be detected and corrected regularly.

VI. Packing List

No.	Item	Qty
1	User manual	1
2	Certificate of quality	1
3	Main machine	1
4	Grease operator	1
5	Cone	1
6	Fuse	4
7	Button cell	1