

TOPECH Instrument Company is more than a technical instrument manufacturer. We are committed to providing you with full support for your laboratory testing needs. Our extensive range of support services is brought to you by our staff of technically knowledgeable, trained specialists who are experienced in testing petroleum products and servicing instrumentation. We take care of you through the whole process... before and after your purchase from TOPECH



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# **Full Automatic Open Cup Flash Point Tester LY-001A**



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## **I. Brief Introduction**

Thank you for using the product researched and manufactured by TOPECH INSTRUMENT CO.,LTD . In order that you can use our product more comfortably and know functions and features, you are suggested to read the Instruction carefully. Please place the instruction on file and at the convenient location after reading for future reference.

The instrument heating up according to standard method automatically displays, locks flash-point value, prints,cools down after completing the test. It realizes full-auto working process.

It features high measurement accuracy, good repeatability and convenient operation. It has been widely used in electricity,petroleum,chemical engineering ,commercial inspection, R & D and academy. The instrument, a kind of dedicated test instrument, is designed according to ASTM D93.

## **II. Instrument Features**

- 1.Color LCD display screen resolution:480\*272。
- 2.The language of operation interface: Chinese
- 3.It is convenient and fast to operate by light touching key of the touch screen.
- 4.Automatically correct the effect atmospheric pressure causes and calculate corrected

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value.

- 5.The system deviation can self-correct by differential test.
- 6.The detection arm can lift automatically and the heated air inside cools down.
- 7.Open cover,detection and printing the data are all completed automatically.
- 8.Method of ignition: gas flame
- 9.Self-testing of equipment

### **III. Main Technical parameters**

- 1.Measurement range: room temperature  $\sim 400^{\circ}\text{C}$
- 2.Repeatability: flash point $\leq 110^{\circ}\text{C}$   $\leq 2^{\circ}\text{C}$   
flash point $> 110^{\circ}\text{C}$   $\leq 4^{\circ}\text{C}$
- 3.Resolution ratio:  $0.1^{\circ}\text{C}$
- 4.Accuracy: 0.5%
- 5.Service environment:  $10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
- 6.Environment humidity:  $< 85\%$
- 7.Power:  $< 1\text{KW}$
- 8.Power supply: alternating  $220\text{V} \pm 20\%$

### **IV. Operation Instruction**

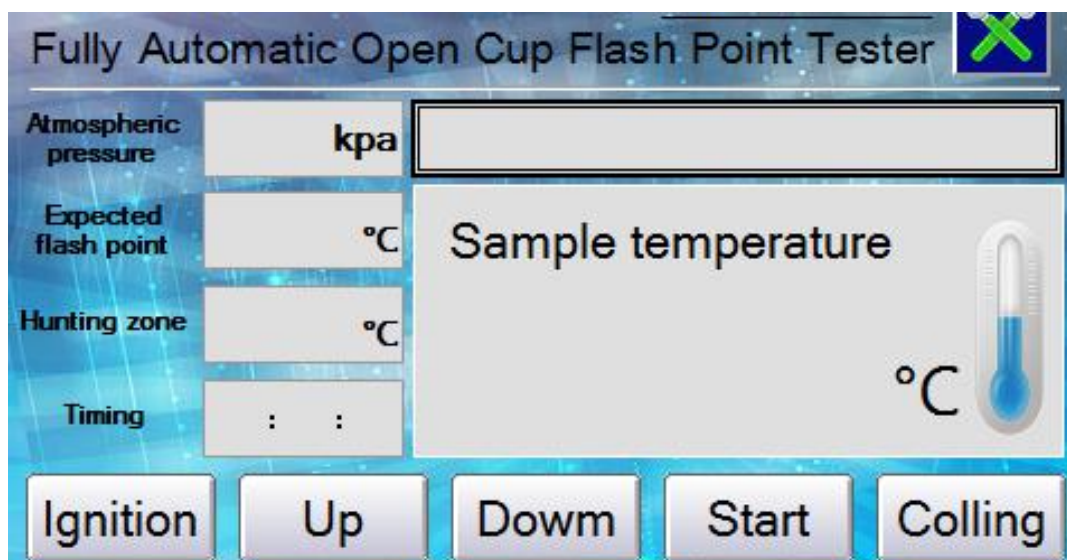
- 1.Interface is as follows after starting up.



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Press the key“TEST”.Switch to the main interface and you can see the master-control interface.

## 2. The master-control interface of tester



In this interface, there are organization, instrument name and type on the top of the screen. And at the bottom of the screen, there is the main button control area. The current atmospheric pressure value is showed on the left; On the right, it is the

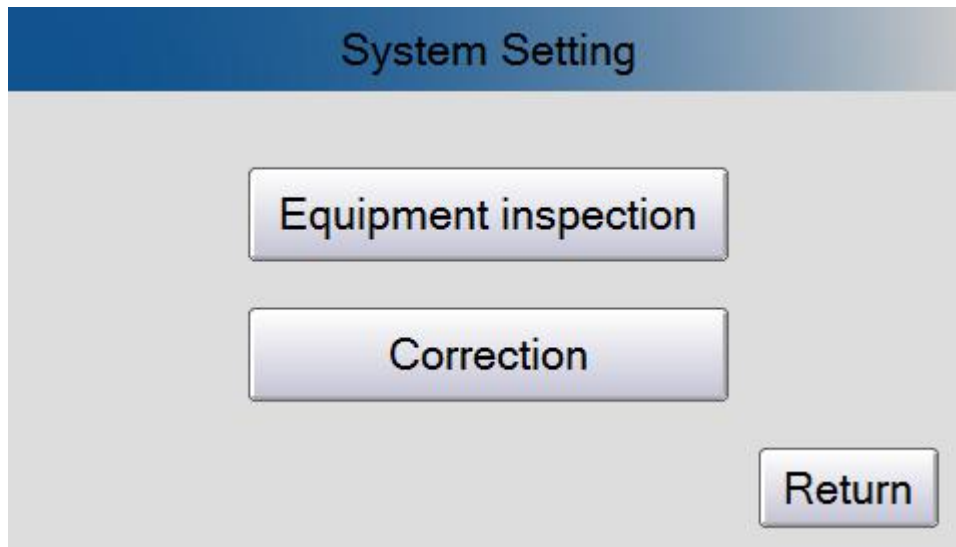
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display of sample's temperature.

### 3.Settings

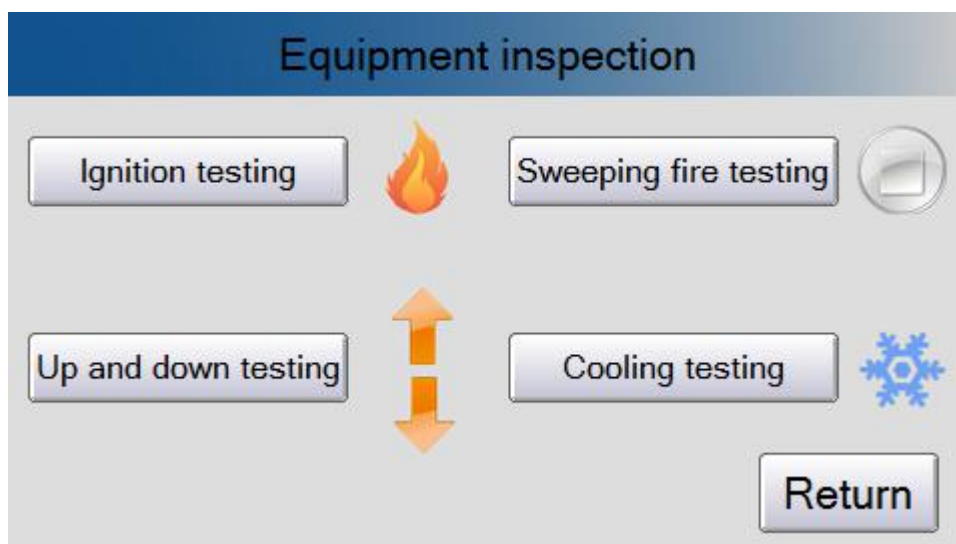
In the determinator-main control interface, click the button [Set] at the upper right, and the screen will switch to the parameter settings screen.

In the parameter settings screen, equipment inspection and calibration of atmospheric pressure can be undertaken. Specific screen display is as follows:



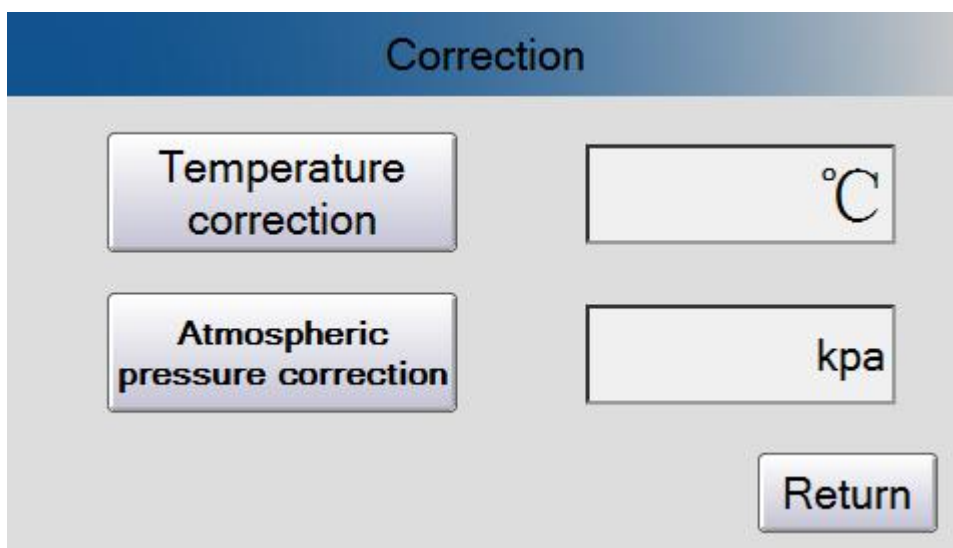
In the operation interface, click on the equipment check buttons, ignition test, mixing, cooling and lift testing can be undertaken. Click the button correspondingly to check according equipment parts.

Click stirring test and ignition test, and the corresponding equipment motor running. Whether equipment runs well or not can be clearly checked. In ignition test, when click on ignition test button, ignition door will be opened and the component of ignition door will be closed at a time. The right side of the corresponding display motor's running state: stop or run. As shown in the figure below:



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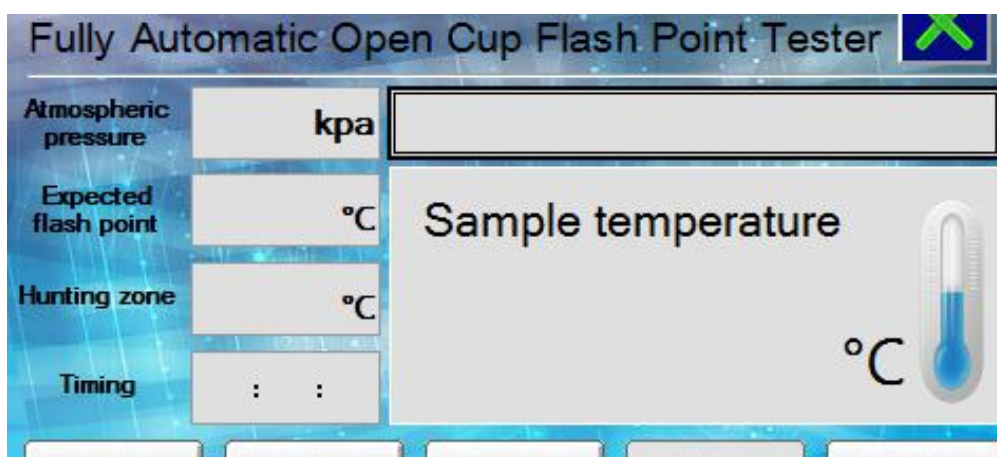
In the parameter settings screen, click on the [temperature&atmospheric pressure correction] button, the correction of sample temperature and atmospheric pressure can be carried out. As shown in the figure below:



**Temperature correction:** using the glass thermometer which has been calibrated, to test the temperature of the same sample, and then compare the actual temperature value and measurement temperature value to obtain the difference. Then input it to modify the corresponding temperature correction value.

**Pressure correction:** using the barometer to measure the pressure value at that time, and then compare the actual pressure value, and pressure value measured with equipment to get the difference. And then modify the corresponding pressure correction value.

#### 4. Running test:



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Before starting to run the test, be sure to set the parameter values: expected flash point and hunting zone. Through special gas pipe to connect with gas device used in experiment, please pay attention to the seal of connection pipe, which is forbidden to leak.

**At the time of test running, it is not allowed to change these parameters, unless you stop this test, back into the parameter settings screen, and set these parameters.**

According to the standard requirements, after washing test cup, add right amount of test oil sample to copper test cup, and carefully place it into the heating room below the detection arm of equipment. Pay attention to the positioning hole above test cup aiming the positioning bolt on the cover plate. If the detection arm of equipment doesn't lift, please press [Up] button on the front panel to make detection arm lift.

After confirming to set the parameters of the experimental, press the [start] button on the operation panel and began to run the test.

According to the above requirements operation, after starting to run the test, the detection arm of equipment automatically drops, at the same time blender stirs in setting speed of experiment method. After detection arm fell to the lowest position, automaticly stops, and doesn't need any manual intervention.

Please notice whether the location of the detection loop is correct. Special attention is that don't let the detection loop in contact with the lining of test cup. Otherwise, it will affect the test!

To adjust the equipment's gas regulating valve need to be slight. At the same time press the ignition button on the equipment operation screen , and obviously ignition head slowly become red. Ignition head has a high temperature! Remember that don't touch it by hand.

After the flame lighting, adjust slightly the gas regulating valve to make the flame size meet the requirement of experimental standard.

Then, the equipment automatically adjusts the heating rate to heat. Reaching the setting temperature, the equipment scans automatically to detect the temperature of flash point according to the experimental standard requirement. The whole process is fully automated



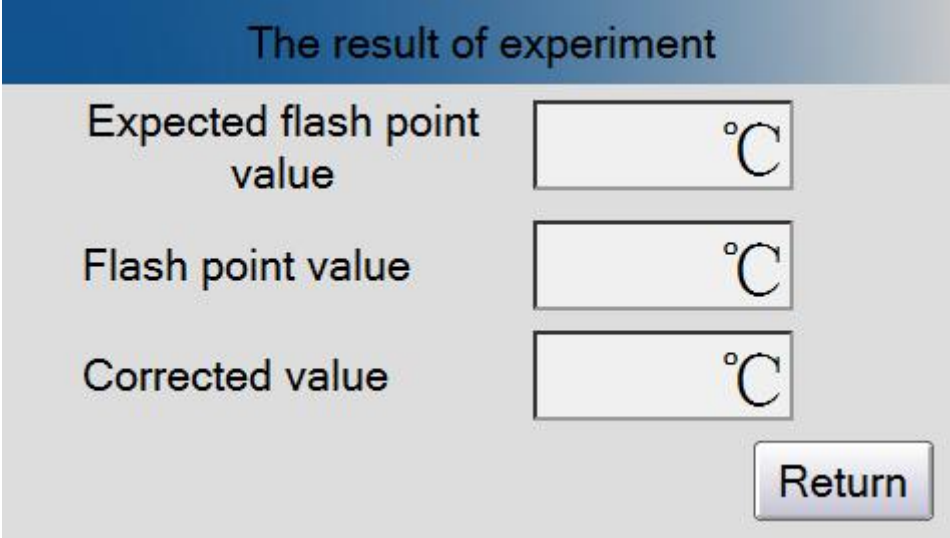
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without any human intervention.

Attention: in order to save energy and prolong the service life of ignition head, ignition head will ignite automatically until detecting flash point before 56 ° C you set. When flash point is detected or not (more than the expected flash point + search range), ignition head cut off electricity automatically.

After the flash point is detected, the equipment automatically stops heating, and detection arm automatically rises; buzzer rings, and screen automatically displays the testing results and automatically corrects atmospheric pressure.

#### **5.The result of experiment:**



The screenshot shows a screen titled "The result of experiment" with a blue header. Below the header, there are three rows of text, each followed by an input field and a degree Celsius symbol (°C). The first row is "Expected flash point value", the second is "Flash point value", and the third is "Corrected value". At the bottom right of the screen, there is a button labeled "Return".

When you detected the flash point value, the result of the measurement will showed on the screen automatically: When the result of the flash point and the flash point which was corrected by the barometric pressure showed, the buzzer rings at the same time.

Press anywhere of the screen, the buzzer will stop ringing. Press [Return], and the screen will switch to another home screen.

#### **6.The cooling device:**

After the detection, the instrument can be used to refrigerate. Press "Setting", then press "Equipment Inspection", finally press "Cooling Test" to refrigerate. When the equipment cool to room temperature, you can continue to doing the other experiment.

## **V. Precautions**

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Although the process of detection is fully automatically, there are air supply and inflammable in the examination procedure. So, in case of emergency, the whole process of detection needs people to supervise.

1. During the whole process of detection, do not touch the high temperature behind the instrument. And do not get burned.

2. Before the detection, please check whether there is crack and shed of the latex tubing or not, if the latex tubing is damaged or become retrograde, please change it in time.

4. After the detection, turn off the power supply, especially the control valve and the main air supply valve. Prevent air leak and dangerous when staffs are not here.

5. The instrument should have safe earth wire.

## **VI. Equipment maintenance**

1. Before you use the instrument, you should make sure that it must near to the ground firmly. So the personal security can be guaranteed.

2. You are not allowed to store or use it in a wet environment or somewhere full of corrosive gas.

3. If there are malfunctions in the instrument during your usage, please do not take it apart by yourself. You are suggested to ask help to the professional one. If he or she can't solve it, you can phone us. And we will repair it as soon as possible.

4. The instrument of our company can be repaired freely if it there are truly some quality problems of the instrument itself (Since the delivery date, until one year later.)

Thanks again for using the product research and development by our company.

