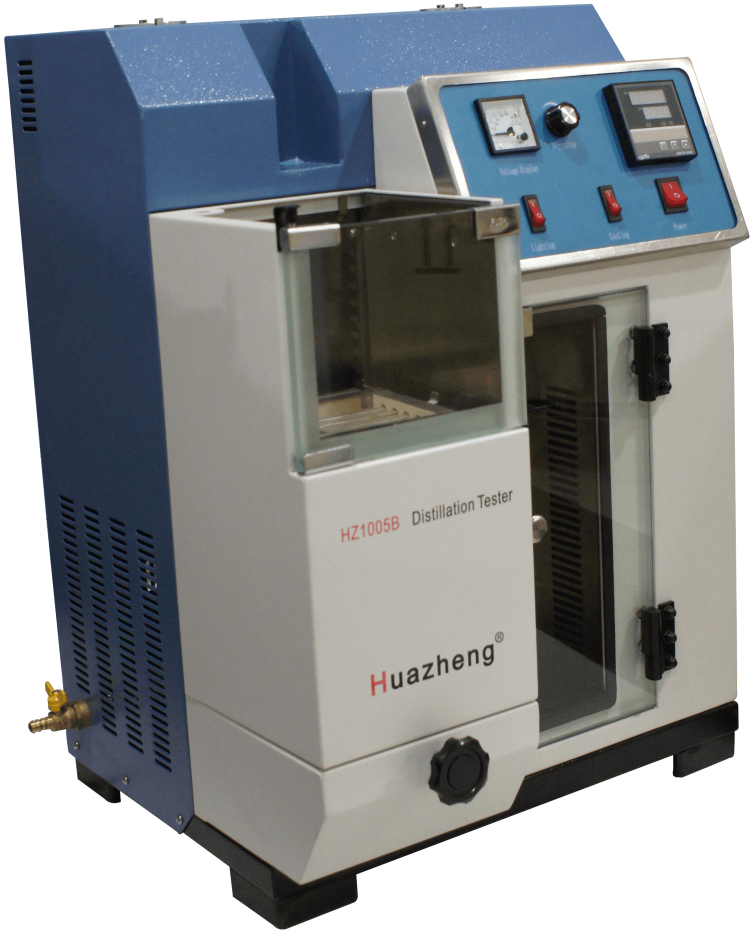
Huazheng®

HZ1005B
Distillation Tester



Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ1005B Distillation 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 !

Contents

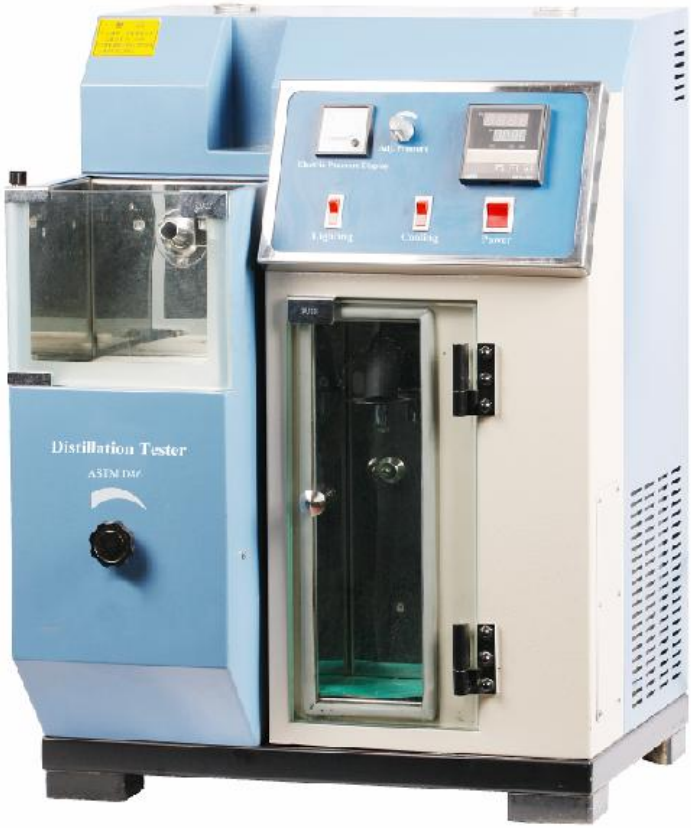
I.Introduction

The instrument is designed and manufactured according to the national standard GB/T6536 and ASTM D86, which is suitable for the distillation and determination of petroleum products such as gasoline, jet fuel, petroleum solvent, kerosene and diesel oil.

II.Structural Characteristics

The instrument is mainly composed of distillation unit, condensing unit and receiving system.

As shown in the figure below:



1. Distillation device is composed of heating rate control system and heating furnace lifting mechanism. The main components of the heating rate regulating circuit include the solid-state voltage regulator, which is simple to install, convenient to use and reliable in performance. The output voltage is directly displayed by the voltmeter, intuitive and easy to control.

2. The heating furnace adopts quartz tube electric furnace, which has the advantages of anti-oil splash, anti-electric shock, anti-oxidation and high thermal efficiency. The

observation window of the heating chamber adopts open type, which provides great convenience for flask installation, furnace height adjustment and furnace cooling.

3.The receiving system is composed of measuring cylinder, measuring cylinder chamber and lighting, etc. The measuring cylinder chamber is composed of stainless steel and glass door, easy to observe.

III.Technical Parameters

1. Distillation heating power :0 ~ 1200W continuous adjustable
2. Heating furnace lifting can be adjusted :35mm
3. Flask support plate diameter: 50mm and 37.5mm
4. Condensation bath temperature adjustment range :-5 ~ 80℃
5. Working power supply :AC220V 50Hz
6. Distillation range: room temperature-400°C
7. Condenser capacity: 8.3L
8. Condensation method: compressor refrigeration

IV.Instrument Installation and Use

After the instrument is unpacked, carefully remove the packaging, check the instrument packing list to see if the instrument accessories are complete and without damage.

Note: if the equipment accessories are incomplete or damaged, please contact us as soon as possible.

1. Put the support plate of the flask on the heating furnace, adjust the lifting knob of the furnace, so that the inclined pipe of the flask is exactly the same as the condensation pipe.

2. add appropriate medium to the cold bath, when using high temperature, can be used with the special temperature controller for distillation process.

3. The measuring cylinder is placed vertically in the measuring cylinder chamber, and the position of the measuring cylinder is adjusted so that the upper end of the measuring cylinder is closed with the sealing rubber, and the measuring cylinder wall is in contact with the condensation nozzle.

4. Switch on the power supply and make the instrument well grounded.

5. Turn on the power switch, both the power indicator and the light will be on.

6. By turning the temperature adjusting knob clockwise, the heating power can be determined according to the voltage value indicated by the voltmeter, and the heating rate in different sections can be determined according to the requirements of the test method.

7. Test according to the method.

8. At the end of the test, turn the heating rate adjusting knob counterclockwise to the terminal, turn off the power switch, open the observation window of the heating chamber, and carefully take out the flask.

9. When cleaning the condensing pipe, the brush should be inserted upward from the lower end of the condensing pipe. It is difficult to insert the brush from the upper end because of the curved tube condensing pipe.

10. The refrigerator should only be used when the temperature is below room temperature, and the interval between switching the refrigerator on and off should not be less than 20 minutes.

V.Function Introduction

5.1. Digital display temperature control meter

When the power is turned on, "PV" digital tube displays the current temperature of constant temperature bath, and "SP" digital tube displays the set temperature.

If the upper row displays "OVER", it means the sensor is open or the input signal exceeds the measurement range.

Change the set value

Press Key, the upper row shows SP. Press ▲ or ▼ to make the bottom row display the desired value. Press the button again to return to standard mode.

Change control parameters

Press " " for more than 4 seconds, and the upper row will display the prompt of control parameters. Press ▲ or ▼ to make the lower row display the desired value. Continue to press the key, the top row displays the prompt of each parameter, press ▲ or ▼ key, make each control parameter as the required value. Press the key for more than 4 seconds and return to standard mode. (It will automatically return to standard mode after 1-minute key-less press)

All of function parameters are as following:

Symbol	Name	Range	Description	Initial value
rE rE	Reset time scale	-99（99.9）~100（100.0）℃	Reset the time scale, only for adjusting the offset of the scale controller	0
rt rt	Process value offset	-99（99.9）~100（100.0）℃	For correction of measurement error caused by the sensor, thermocouple's compensating conductor	0
dF dF	Neutral zone (dead zone)	0.4~100（100.0）℃	Neutral zone for step-type and alarming. Same dF for meters with step-type control and alarm	0.4
AL AL	Set alarm value	-1999~1999℃	Set the alarm value. Upper limit alarm when AL>0, lower limit	50

			alarm when AL<0. Output state changes automatically.	
r	Control cycle (heating side)	1~100 sec	Relay output≮20s SSR and SCR switch ≮3s	20 2
Ct	Alarm delay	0~3600 sec	When the measurement reaches the alarm value, the alarm relay outputs only after Ct time.	0
p	Proportional band (heating side)	1~300℃	Adjust the proportional action, the higher P, the smaller proportional action, the lower system's gain, only for the heating side	30
I	Integral time (Reset time)	0~3600 sec	Time constant for integration. The higher I, the weaker integration.	240
d	Differential time (Preset time)	0~3600 sec	Time constant for differentiation. The higher D, the stronger differentiation. Adjustable.	60
Lc	Coded lock	0~2	0: All parameters could be revised.	0

			1: Could only be changed to given values (SP) 2. All parameters couldn't be changed.	

5.2 Self-tuning of the digital-display temperature controller

At indicator flashes when ▲ is held down for 8 sec and the meter starts self-tuning. AT indicator is off after self-tuning and a group of PID of warming up quickly is obtained. Then, the meter controls in accordance with new PID parameters.

AT indicator flashes when ▼ is held down for 8 sec, the meter starts self-tuning. AT indicator is off after self-tuning and a group of PID parameters that can overcome over-temperature is obtained. Then, the meter controls in accordance with new PID parameters.

New PID parameters could be checked on the meter.

During self-tuning, AT indicator is off after ▲or▼ is held down for 8 sec and self-tuning is ended. The meter controls in accordance with original PID parameters.

Remarks: The temperature controller is already adjusted before delivery and the operator doesn't need any setting.

VI.Failure Analysis and Elimination

Under normal circumstances, turn on the power switch, the power indicator and lighting light of the lighting switch are on, adjust the heating rate adjusting knob clockwise, the voltmeter indicator is continuously adjustable from 0-220V, and the furnace gradually gets hot. If the following abnormal conditions are found after starting the instrument, the following situations can be analyzed and handled.

Phenomenon	Reason	Elimination
No power	Fuse is bad	Change a good one
	On power in socket	Check it
	Switch is bad	Change a good one
Bath temperature does not change	Solid state relays is bad	Change a good one
	Heater is damaged	Change a good one
Can't set the temperature	The temperature controller is bad	Change a good one
	Not set condition	Set condition
Cooling device doesn't work	No power	Check it
	Condenser is damaged	Return to be repaired
Cooling speed slowly	Pipe is obstructed	Return to be repaired
	Too much dust on the condenser	Clean it
	No refrigerant	Add it
	Much water in alcohol	Changed mew alcohol
Shake & Can't cool	Power is not smooth	Check it
PV is disorder	Sensor connector is not well	Connect once again
	Sensor is damaged	Change a good one
Timer doesn't work	Button is bad	Repair or change it
	Timer is damaged	Repair or change it

VII.Attention

1. Keep the instrument clean.The electronic control part should not be flooded or contaminated with moisture.Prevent dirt such as oil sample from sputtering on the instrument.

2.It is well grounding before using.

3. When moving the instrument, do not pull the condensing pipe.

4.Bath heater must not dry burning, media from the bath along 20mm~30mm. (Please check the liquid

level display on the side)

5. The tilting of the whole instrument shall not be more than 45 degrees.

6. Do not start the refrigerator frequently. After each shutdown, the machine can be started again at an interval of 10 minutes.

7.Please contact us while the instrument is bad.

8.The warranty is one year.

VIII. Packing List

No.	Item	Qty
1	Rubber stopper	3
2	Fuse	2
3	thermometer	Each 1
4	thermometer	1
5	Flask	1
6	Furnace mat	1
7	Measuring cylinder	1
8	Cleaning mop	1
9	Deflector	1