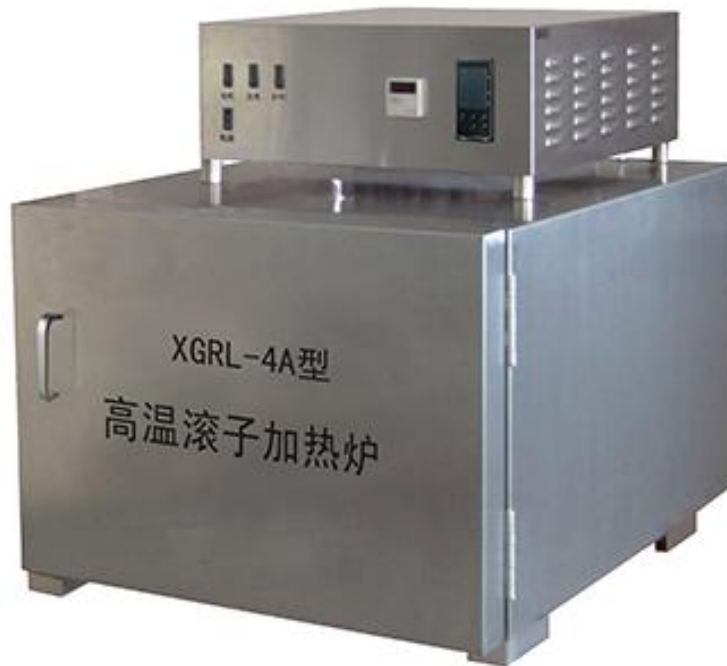




青岛创梦仪器有限公司

Qingdao Chuangmeng Instrument Co., Ltd



高温滚子加热炉
High Temperature Roller Ovens

Model:1510

使用手册

Instruction Manual

版本 1.0

Revision 1.0

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请你仔细阅读《使用手册》，正确掌握本产品的安装和使用方法。阅读后请将本《使用手册》妥善保管，以备今后进行检修和维护时使用。

Carefully read this User Manual to learn how to install and use the product correctly. After reading, properly keep the User Manual as a reference for future maintenance and repair.

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一、概述

该加热炉控温部分采用最新的微机智能控制技术，直接设定温度，数字显示，并可进行偏差指示，精度较高。工作安全可靠。另外在炉体的上部设有动力和电器控制系统，便于使用、保养和维修。

用途

- 1、在重新制备的钻井液内，研究出现在钻井液内的阳离子交换反应（例如钙处理钻井液）。
- 2、测定钻井液添加剂的稳定性（例如各种稀释剂和有机胶）。
- 3、作干燥箱。
- 4、作陈化烘箱。
- 5、作球磨机用。
- 6、搅拌化学用品溶液。
- 7、均匀混合液体或固体物质。
- 8、对液体进行除气。

二、型号及规格

1510 型

三、仪器的主要技术参数：

序号	名称	技术指标
1	电源	220V±5% 50Hz
2	电机功率	370W
3	加热功率	500W×3
4	使用温度范围	0~300℃
5	控温精度	±2℃
5	滚子转速	50r/min
6	釜内样品流速	0.16 m/s
7	工作面积	555×355×630mm
8	外形尺寸	700×820×685mm

四、仪器的结构与工作原理

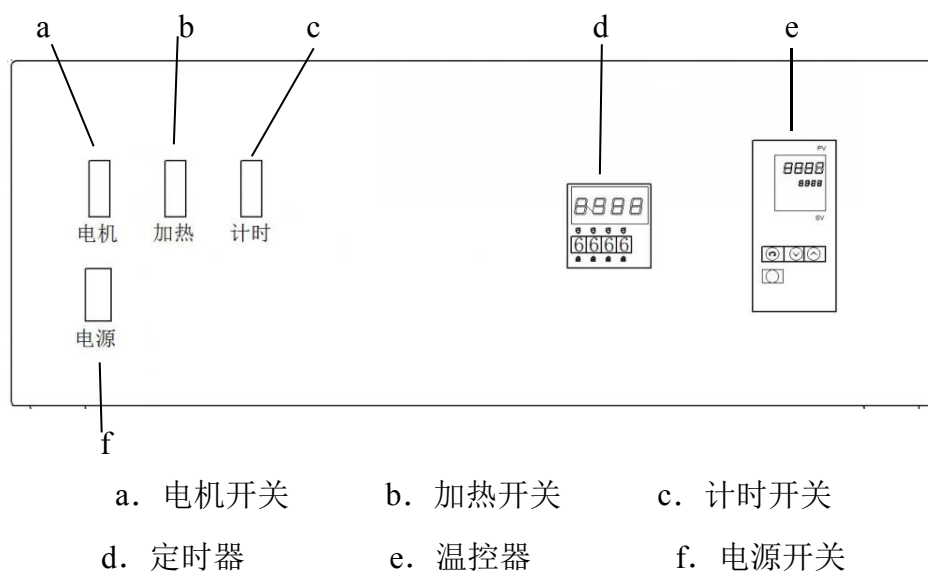
(一) 箱体：采用角钢构架、硅酸铝保温、不锈钢外壳坚固耐用。

(二) 滚筒：采用不锈钢轴、优质合金铝滚筒和框架、四氟石墨轴承重量轻转动平稳。

(三) 加热系统：由 3 根 500W 加热板加热。

(三) 动力系统：由电机 370W, 变频器控制转速，由链轮带动五根滚子转动。传动噪音低、平稳可靠。

(五) 电器控制：温控部分采用智能显示、直接进行温度设定和读出，恒温自控准确，超温自动断电，定时部分定时关机。



说明：

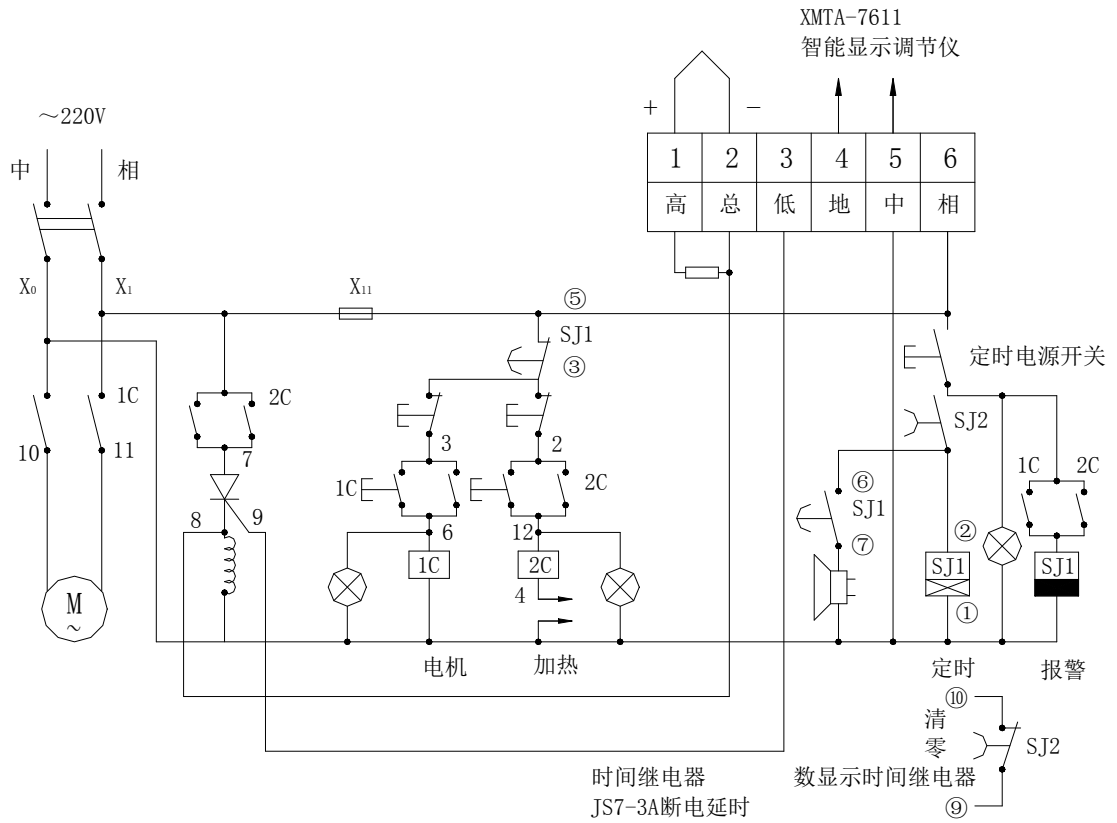
- 1) 电机开关按钮：按动此按钮关闭或启动电机。
- 2) 加热开关按钮：按动此按钮加热或不加热。
- 3) 计时开关：需定时时，打开开关，不定时时关闭开关。
- 4) 定时器：按需要控制加热炉的工作时间。
- 5) 温控器：控制和显示炉内温度。
- 6) 电源开关：接通和关闭电源。

(六) 结构明细：

- 1) 炉门锁紧装置

- 2) 炉体
- 3) 电器控制箱
- 4) 炉门
- 5) 炉温校对孔（温度计插孔）

(七) 电器原理图:



(图四) 滚子加热炉电器原理图

(八)、工作原理:

其工作原理和性能完全根据美国 API 标准设计。模拟钻井液在井下环形空间内缓慢循环的速度，研究其加热滚动中的特性。

五、仪器的操作：

（一）使用前的准备

- 1、未开箱的加热炉，应先打开顶部和四周的箱盖，露出箱体底部固定加热炉的螺栓，将与炉体连接的螺栓松开卸掉，将加热炉从包装箱中移出安放于适当位置。
- 2、使用前应检查电压是否与要求电压相符。为保证使用安全，加热炉的电源应接地可靠。
- 3、仔细阅读说明书，按操作步骤操作。
- 4、接通电源，合上总电源开关。温度显示窗显示当前炉内温度。
- 5、按动电机的“滚动”按钮，炉内滚筒转动，可进行样品的搅拌。
- 6、使电机空转数分钟，声音、转速正常，按动“滚动”键停止电机转动。准备工作结束，即可进行正常工作。

（二）温度设定：

接通电源后，温控仪 SV 与 PV 视窗显示数字，设定温度时按上下键，SV 视窗数字闪烁，使 SV 视窗数字增加或减少至所需温度，5 秒后 SV 停止闪烁设置完成。温控仪开始控温工作。温控仪具有超温断电功能，请放心使用。

（三）定时设定：

时间设定时先关闭时间控制开关，取下透明罩，它是在数字和字母的上下都有“+或-”，字母表示的是 h 为小时，m 为分钟，s 为秒，字母左边表示的是整数，右边是小数，每按一次数字的或者字母的上或下的+和-号会变换一次，如：设定的时间是 16 小时 20 分钟，就是 16h20，依此可设定所需要的时间。

（四）滚子炉操作方法：

根据实验需要，在完成以上各项工作后，关紧炉门用锁紧装置锁住。

- 1、按动电机的“滚动”按钮，炉内滚筒转动，可进行样品的搅拌。
- 2、按动加热的“加热”按钮，炉内按设定温度开始加热。
- 3、实验完毕后，将陈化釜从炉中取出，冷却至室温。
- 4、将陈化釜直立后，慢慢旋松排气阀，放掉釜体内的余气。
- 5、旋松釜盖上的三个六角螺栓，拧开釜盖，倒出测试样品。
- 6、清洗陈化釜所有部件，并擦干，螺纹部涂上润滑油保存。



使用时所用电源一定要保证接地可靠。

工作时手、衣服和其他物品一定要远离滚筒和其他旋转部件。

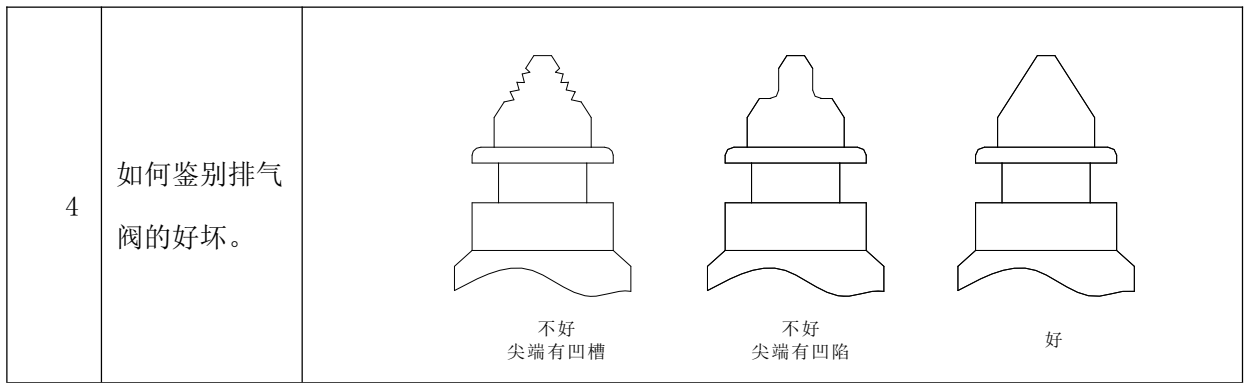
第一次使用或长期未使用的滚子炉，应在使用前将炉温升至 120℃加热 2 小时，以避免因潮湿影响炉体绝缘性能。

六、仪器的维护与保养

- 1、当移动、维修或清洁仪器时。要轻拿、轻放，以免造成部件变形影响精度和使用。
- 2、滚筒轴不得碰撞，以免弯曲变形，影响使用。
- 3、电动机、电器部件应保持清洁干燥不能受潮，要定期检查，维修时不得用金属铁器敲打。严禁将腐蚀性化学药品与本机同存放。
- 4、电器箱四周的排气孔不得阻塞。保持电器部件的通风散热。
- 5、每次使用完毕后，应及时将加热炉擦拭干净，放置干燥环境内。
- 6、长期搁置不用，使用前需用 500V 兆欧表测定绝缘电阻。如绝缘电阻小于 1 兆欧时，则需对加热炉进行干燥处理，直至绝缘电阻超过 1 兆欧后，再投入使用。
- 7、加热炉损坏时，应请维修工检修，请勿随便拆开。
- 8、应定期打开后盖给链轮、链条加润滑油。

七、故障的判定与排除

序号	故障	原因	维修方法
1	接通电源，电动机转动，滚筒不转动。	①链轮与轴连接的紧定螺钉松动。 ②链条与链轮脱开。	①打开电器控制箱的上盖和箱体的后盖，将所有链轮与轴连接的紧定螺钉拧紧。 ②打开电器控制箱的上盖和箱体的后盖，将脱开的链条重新按装于链轮上。
2	实验时，陈化釜有气体冒出。	①见（图一）密封盖（8）安装不妥。 ②见（图一）密封环（9）损坏。	①重新安装密封盖拧紧釜盖，均匀拧紧三个六角螺栓。 ②打开陈化釜，更换密封环（9）。
3	接通电源，电源指示灯不亮。系统无电。	①电源插头接触不良。 ②熔断丝烧断。	①检查电源插头是否牢固。重新安装电源插头。 ②打开电器控制箱的上盖，拧开熔断器盒更换熔断丝。



I . Summary

The temperature control part of roller oven adopts the latest computer intelligent control technology, which can directly set the temperature, display the data, and carry out deviation indication with high precision. The work is safe and reliable. In addition, the upper part of the roller is equipped with power and electrical control system for easy use, maintenance and maintenance.

Purpose

1. Cation exchange reactions (e.g. calcium-treated drilling fluids) that occur in drilling fluids are studied in re-prepared drilling fluids.
2. Determine the stability of drilling fluid additives (e.g. various diluents and organic gums).
3. It can be used as a drying box.
4. It can be used as an aging oven.
5. It can be used as a ball mill.
6. It can mix chemical solution.
7. It can mix liquid or solid substances evenly.
8. It can degasse liquid.

II . Model and Specification

Model:1510

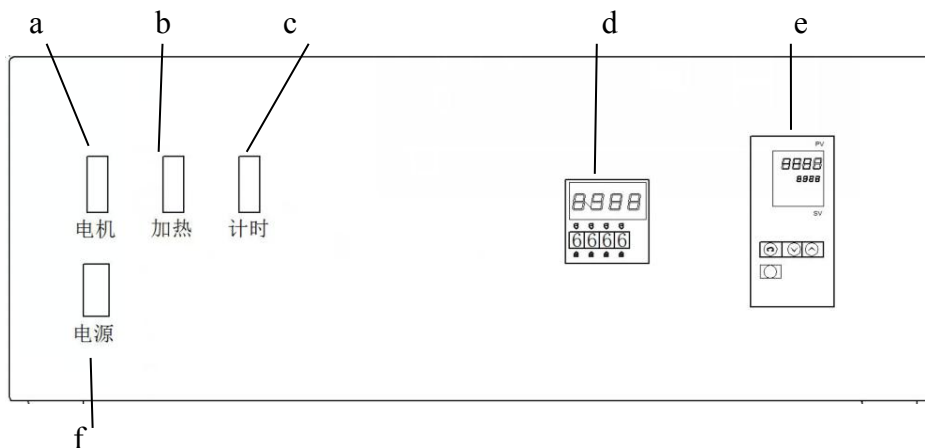
III. Main technical parameters

No	Name	Technical index
1	Power supply	220V±5% 50Hz
2	Motor power	370W
3	Heating power	500W×3

4	Using temperature range	0~300℃
5	Accuracy of temperature control	±2℃
5	Roller speed	50r/min
6	Sample flow rate	0.16 m/s
7	Working area	555×355×630mm
8	Overall dimension	700×820×685mm

IV. The Structure and Working Principle of the Instrument

- 1.Box body: Angle steel frame, aluminium silicate insulation, stainless steel shell strong and durable.
- 2.Rollers: Stainless steel shafts, high-quality alloy aluminium drums and frames, tetrafluorographite bearings light weight and smooth rotation.
- 3.Heating system: heated by three 500W heating plates.
- 4.Power system: the motor 370W, the frequency converter control the speed, and the sprocket drive five rollers to rotate. The transmission noise is low, stable and reliable.
- 5.Electrical control: The temperature control part adopts intelligent display, direct temperature setting and reading, constant temperature automatic control is accurate, over-temperature automatic power off, timing part of the shutdown.



- a. Motor switch b. Heating switch c. Timing switch
d. Timer e. Temperature Controller f. Power Switch

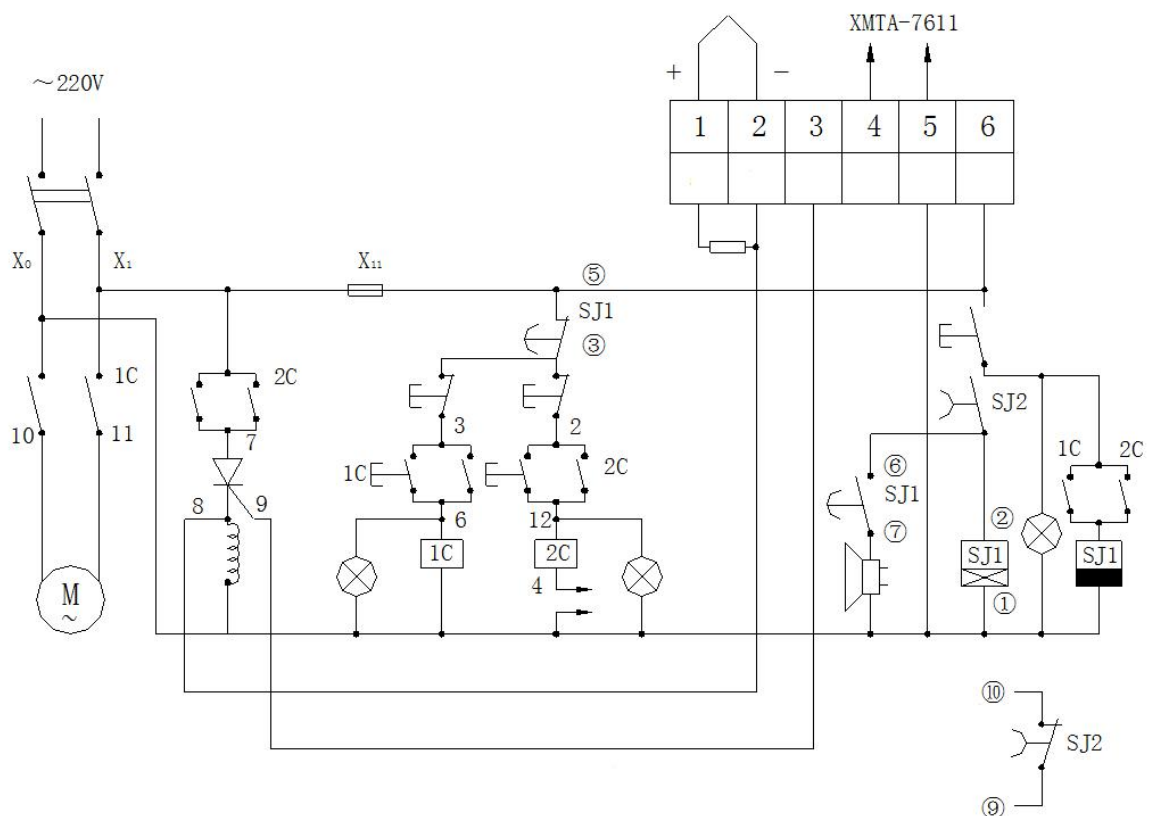
Explain:

- a. Motor switch button: press this button to close or start the motor.
- b. Heating switch button: press this button to heat or not.
- c. Timing switch: when needed, turn on the switch and turn off the switch from time to time.
- d. Timer: Control the working time of heating roller according to need.
- e. Temperature Controller: Control and display the temperature in the roller.
- f. Power switch: turn on and off the power supply.

6. Detailed structure:

- a. Roller door locking device
- b. Roller body
- c. Electrical control box
- d. Roller door
- e. Roller temperature proofreading hole (thermometer jack)

7. Electrical schematic diagram:



8. Working principle:

Its working principle and performance are completely designed according to American API standards. The characteristics of heating and rolling of drilling fluid are studied by simulating the slow circulation speed of drilling fluid in downhole circulating space.

V. Instrument operation:

1. Pre-use preparation

a.) Unopened heating roller should first open the top and surrounding lid of the box, expose the bolts of the fixed heating roller at the bottom of the box body, release the bolts connecting the roller body, and remove the heating roller from the packing box and place it in a proper position.

b.) Check whether the voltage is in conformity with the required voltage before use. In order to ensure safe operation, the power supply of heating roller should be grounded reliably.

c.) Read the instructions carefully and follow the operation steps.

d.) Turn on the power supply and turn on the main power switch. The temperature display window shows the current temperature in the roller.

e.) The sample can be stirred by pressing the "rolling" button of the motor and rotating the drum in the roller.

f.) Make the motor idle for several minutes, sound and speed are normal, press the "rolling" key to stop the motor rotation. When the preparatory work is finished, the normal work can be carried out.

2. Temperature setting:

When the power is switched on, the temperature controller SV and PV window display the number, press the up and down buttons when setting the temperature, and the SV window digital flicker, so that the number of SV window increases or decreases to the required temperature. After 5 seconds, the setting of SV flicker stops. The temperature controller began to control the temperature. The temperature controller has the function of overheating and power off. Please feel free to use it.

3. Timing setting:

When setting the time, turn off the time control switch and remove the transparent cover. It has "+or-" on the top and bottom of the numbers and letters. The letters represent h as hour, m as minute, s as second, the left side of the letters represents integer, and the right side is decimal. Every time you

press the number on the top or bottom of the letters, the + and - numbers will be changed. For example, the setting time is 16 hours and 20 minutes, that is 16 hours and 20 minutes. The time required can be set accordingly.

4. Roller operation method:

According to the needs of the experiment, after completing the above work, the roller door is closed and locked with a locking device.

a.) The sample can be stirred by pressing the "rolling" button of the motor and rotating the drum in the roller.

b.) Press the "heating" button for dynamic heating and start heating at the set temperature in the roller.

c.) After the experiment, the aging cell is removed from the roller and cooled to room temperature.

d.) After the aging cell is upright, slowly loosen the exhaust valve and release the residual gas in the kettle.

e.) Rotate the three hexagonal bolts on the cover of the kettle, unscrew the cover and pour out the test sample.

f.) Clean and dry all parts of the aging cell, and coat the threads with lubricant for preservation

Note: The power supply used in use must ensure reliable grounding.

Hands, clothes and other items must be kept away from drums and other rotating parts when working.

Rollers that are used for the first time or have not been used for a long time should be heated up to 120°C for 2 hours before use in order to avoid dampness affecting the insulation performance of the roller body.

VI. Maintenance and Maintenance

1. When moving, repairing or cleaning instruments. It should be handled and handled lightly so as not to cause parts to deform and affect accuracy and use.

2. Roller shafts should not be collided to avoid bending and deformation, affecting the use.

3. Motor and electrical components should be kept clean, dry and not damp. Regular checks should be made and no metal or iron knocks should be used in maintenance. It is strictly forbidden to store

corrosive chemicals with this machine.

4. The exhaust holes around the electrical box shall not be blocked. Maintain ventilation and heat dissipation of electrical components.

5. After each use, the heating roller should be wiped clean in time and placed in a dry environment.

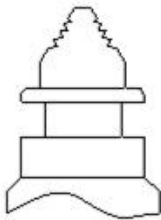
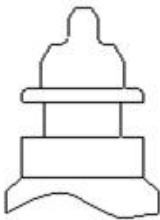
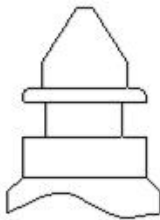
6. Long-term shelf is not needed. It is necessary to use 500V Megohmmeter to measure insulation resistance before use. If the insulation resistance is less than 1 mega-ohm, the heating roller should be dried until the insulation resistance exceeds 1 mega-ohm, and then put into use.

7. When the heating roller is damaged, the repairman should be asked to repair it. Do not disassemble it casually.

8. The back cover should be opened regularly to lubricate sprockets and chains.

VII. Diagnosis and Elimination of Faults

No	Fault	Cause	Removing method
1	Switch on the power, motor rotation, drum don't turn	a. The sprocket and shaft connection set screw loose b. The chain and sprocket release	a. Put all the sprocket and shaft connection set screw tightening b. Will release the chain to be installed by in sprocket.
2	In the experiment, there is gas in the aging cell.	a. See (Fig. 1) Improper installation of sealing cover (8). b. See (Fig. 1) Sealing Ring (9) Damage.	a. Re-install the sealing cover and tighten the cell cover. Tighten three hexagonal bolts evenly. b. Open the aging cell and replace the sealing ring (9).
3	Switch on the power supply, the power indicator does not turn on. The system has no electricity.	b. Poor contact of power plug. b. Fuse Wire Burning.	a. Check whether the power plug is firm. Re-install the power plug. b. Open the top cover of the electrical control box, unscrew the fuse box and replace the fuse wire.

4	How to Identify Exhaust Valve.	 Bad	 Bad	 Good
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青岛创梦仪器有限公司 装箱单

Qingdao Chuangmeng Instrument Co., Ltd. Packing list

生产企业：青岛创梦仪器有限公司

Manufacturing enterprise: Qingdao Chuangmeng Instrument Co., Ltd.

生产地址：青岛市城阳区流亭街道兴海路 3 号

Production address: No. 3 Xinghai Road, Liuting Street, Chengyang District, Qingdao

主机型号：

Model of the main motor:

出厂编号：

Manufacturing No:

序号	编号	名称及规格	单位	数量	备注
1		主机	台	1	
2		电源线	根	1	
3		使用手册	份	1	
4		合格证	份	1	