



Automatic Slide Stainer

Model YR435

## Instruction Manual

Thank you very much for purchasing our Kalstein's Automatic Slide Stainer Model YR435

Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the "Warranty" at a hand place for future reference.



Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.



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## 1. Important Illustration

The information, data, points for attention and adjustments in the manual have reflected the latest technological level of us grasped in the field after investigations.

We don't have obligations of updating the manual for you in time, with the development of technology, and we don't offer new version copies and latest versions of the manual to the users. We don't have the responsibilities if the illustrations, drawings and technological requirements in the manual are in contradiction to the laws of the country the user is domiciled. Particularly, our company don't have the responsibilities for the damages or destructions of the machine for applying with the illustrations in the manual (on other aspects).

The illustrations, drawings and technological requirements in the manual don't represent the guaranty from the company on the characteristics of the product. Only the items specified in the contract are legally effective.

Kalstein is entitled with the rights of altering the technological characteristics and processing tectonics, without the obligations of notification in advance. Thus in this way we can improve ourselves and make the progress on our technology.

This manual is protected by property rights. The property rights of the manual are reserved by Kalstein. Printing, duplication, micrography or copy of other electronic documents or other media concerning partial or entire texts and photos of the manual have to be approved by Kalstein in written form in advance.

Please refer to the nameplate on the back of the instrument for the serial number and manufacturing date of the instrument.





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### 3. Safety Regulations of Instrument

- Pay attention to the safety if the machine need contact with the inflammablesubstance during the working .

- Pull out the plug and cover the protection cover if the machine will be not usefor a long period

- △ Forbid to add the reagent when instrument under working. No reagent should fall into the instrument.

- △ The instrument should place plat and the inclination should not exceed 5.

- Forbid to touch the screen with hard substance.

- The outfall pipe should lower then pipe joint to avoid the water drain into thebody of instrument

- △The instrument can only connect to power with offered power line and there should be good grounding

- △ The power supply socket should be used only for the instrument to avoid disturbing

- △ When changing the fuse ,same fuse type should be use and the instrument should be power off and pull off the power line .

- △ The dying shelf should be from our company and is prohibited to use other incompatible model to avoid working abnormally.

- △ The power should shut off and power line should be pull out when cleaning.

- △ The instrument is prohibited to use or store on the inflammable place

- The organic solvent like acetone and dimethylbenzene shouldn't be used asdetergent for cleaning

- △ When operating, the reagent should not overfill the tank.

- △The instrument could only be dismantled if the maintenance technician authorized by our company deem it is necessary!



## 4. Brief introduction

YR435 is a Routine Pathological Staining Machine for the plant and human body tissue. It has Color Display Screen interface, computerized control system, multi-function, stable performance, easy operation, intelligent and widely used on doing the pathological research.

### Features:

- The machine surface is painted with APS engineering plastic, which is highly strong, corrosion-resistant, with lucid lines and graceful appearances.
- Monolithic computer control technology is adopted by the machine, which is equipped with LCD display, the man-machine conversation is easier to use, the machine is equipped with organic glass shield, gas exhaust device is adopted, which is properly sealed, environmental-friendly and safe.
- Capacity of Staining Rack: 72pcs Microscopic slides one time.

## 5. Technical Specifications

- Programs: 20 sets
- Reagent containers: 14.
- One cleaning bath (the 8<sup>th</sup> one).
- One roasting bath (the 1<sup>st</sup> one).
- Processing time of each container: 0s – 59 min and 59 s.
- Capacity of each container: 750ml
- Residual liquid dropping time while replacing the container: 0~30s adjustable(shaking on the upward), 0~9s adjustable(for cleaning purpose)
- Working Voltage: AC220V / 50~60Hz
- Power Draw: 500 W
- Overall Dimension: 1175×470×460(L x W x D),
- Weight: 85 kg.

## 6. Box Opening

- Check whether there is damage on the package, contact the shipping agent if found evident damage.
- Take out all accessories and operational instruction manual.



- Take out the machine with protection cover. If need safety shipment , suggest to pack with original packing material back

- Take off the protection cover and put the instrument on the stable table.

- The instrument is forbid to put on the inflammable place

- The instrument should be installed on the place near to socket which is convenient for power supply

- The instrument should be placed near the wall which is convenient to install the exhaust pipe.

- The instrument should have good joint pipe and exhaust pipe.

## 7. Preparation

The instrument should only use the power line offered and with good grounding.

- The instrument can only use the offered in-fall and out-fall pipe.

- Before connecting the power, to check the switch whether on the position “0”

⚠ When connecting the power , to insert the plug to the instrument first and then connect it to the socket .

- To check the in-fall and outfall pipe in good condition before opening.

- Connect the power switch, the indicator is bright, and the display shows Model YR435 Automatic Slide Stainer.

## 8. Operation

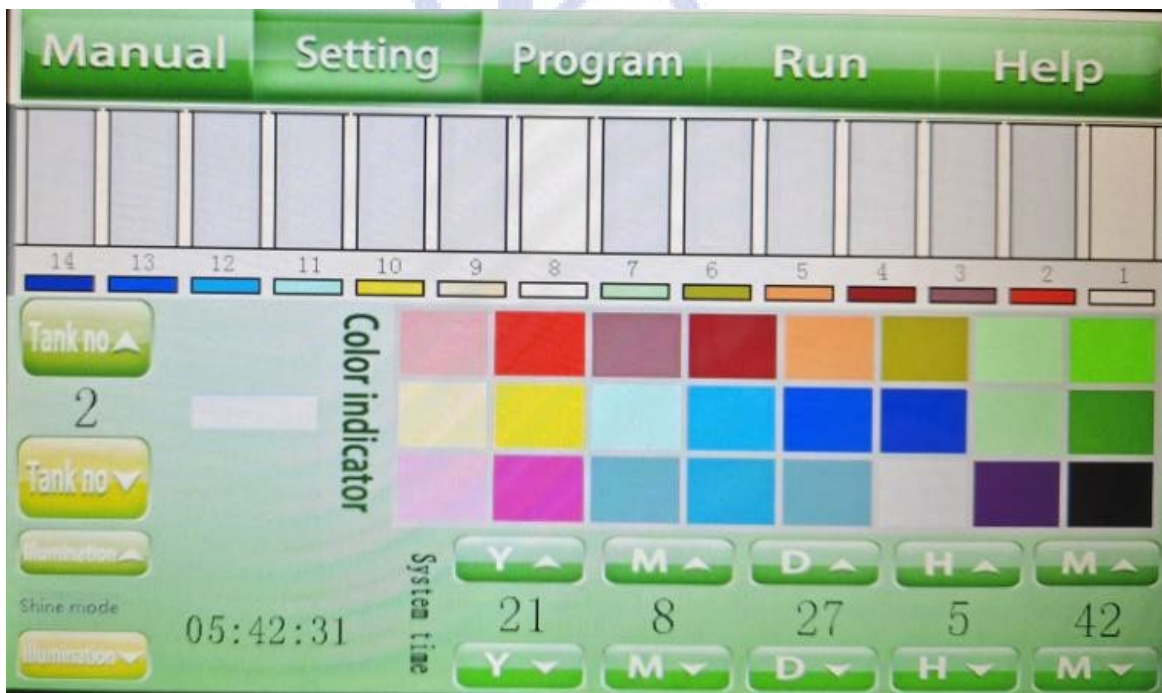
(1) Connecting the in-fall & out-fall tube, switch on electricity power, the system program run to restoration status. The mechanical arm run to the first tank automatically. The Display Screen shows the Machine Name after 5 seconds, it turns into main menu interface.

(2) Select the related function key on the menu (Pic.1)



(Pic.1)

Touch "Setting" key to set "Year"(Y), "Month"(M), "Day"(D), "Hour"(H),"Minute"(M), Mode of Illumination, Name of the Station (Pic.2):

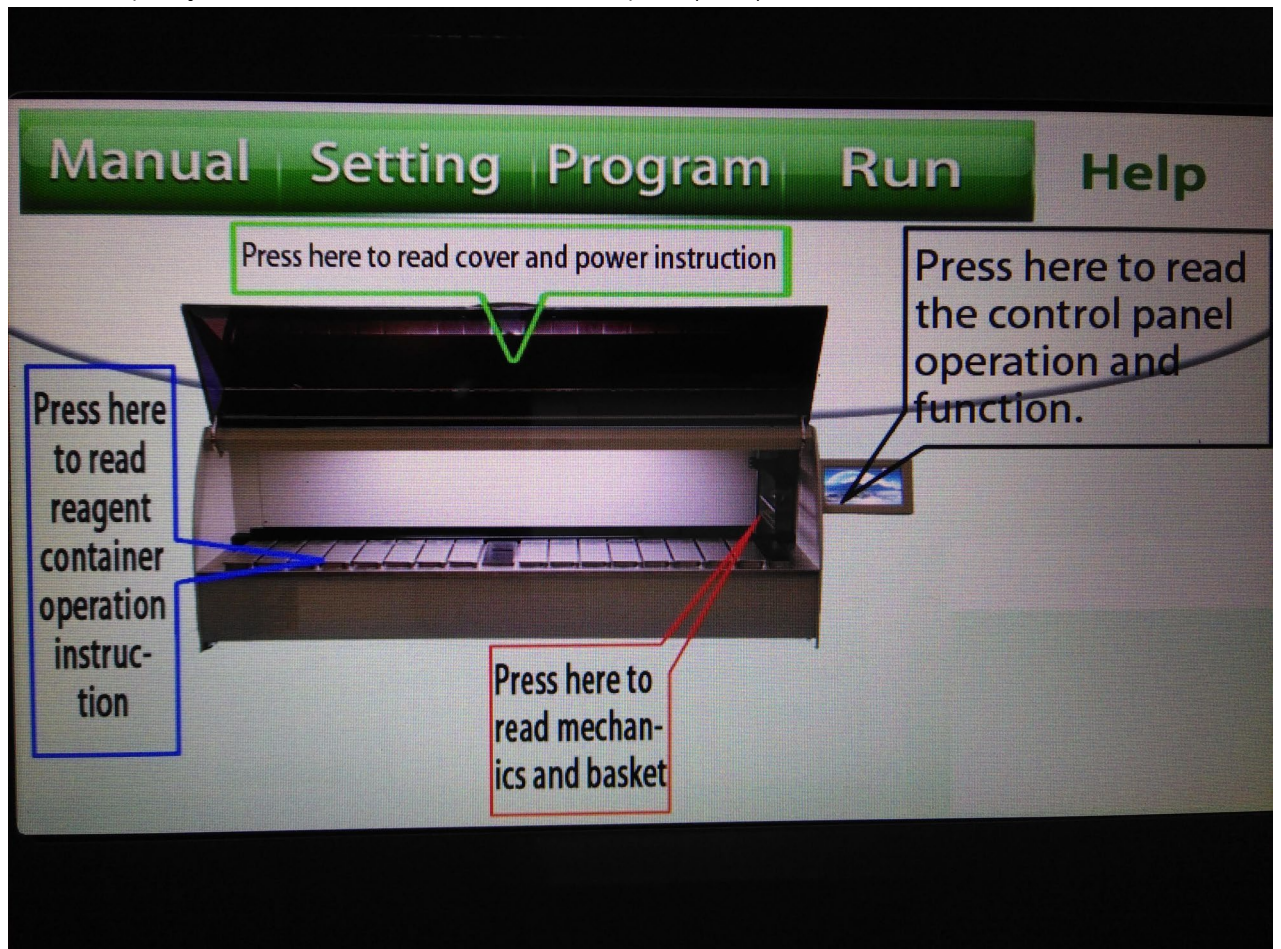


(Pic.2)



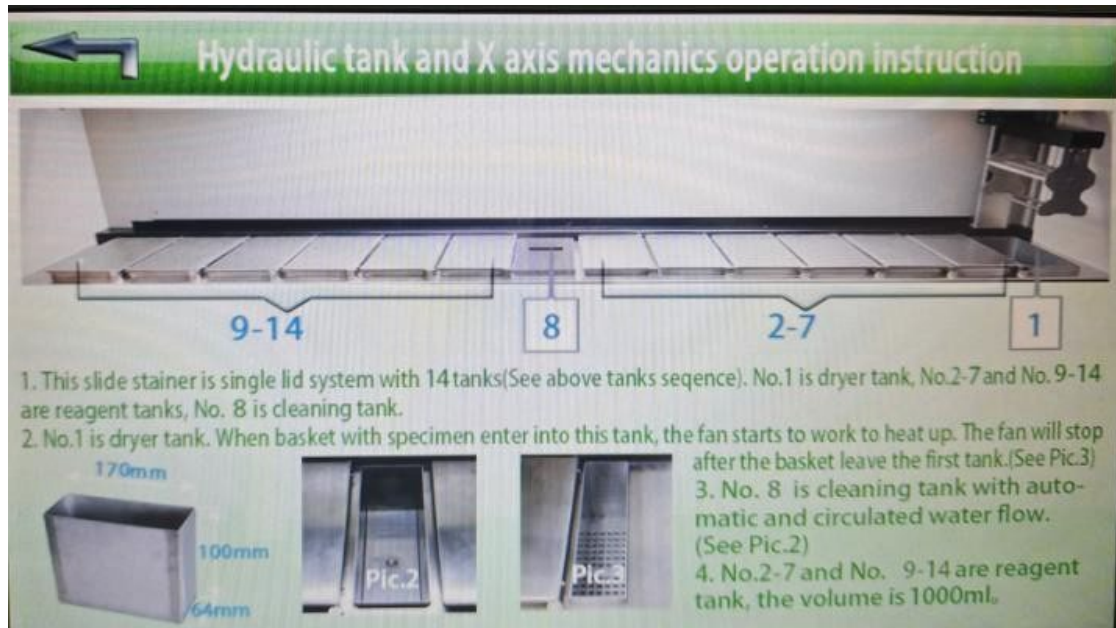


Touch "Help" key to find useful instructions of different parts (Pic.3):



(Pic.3)

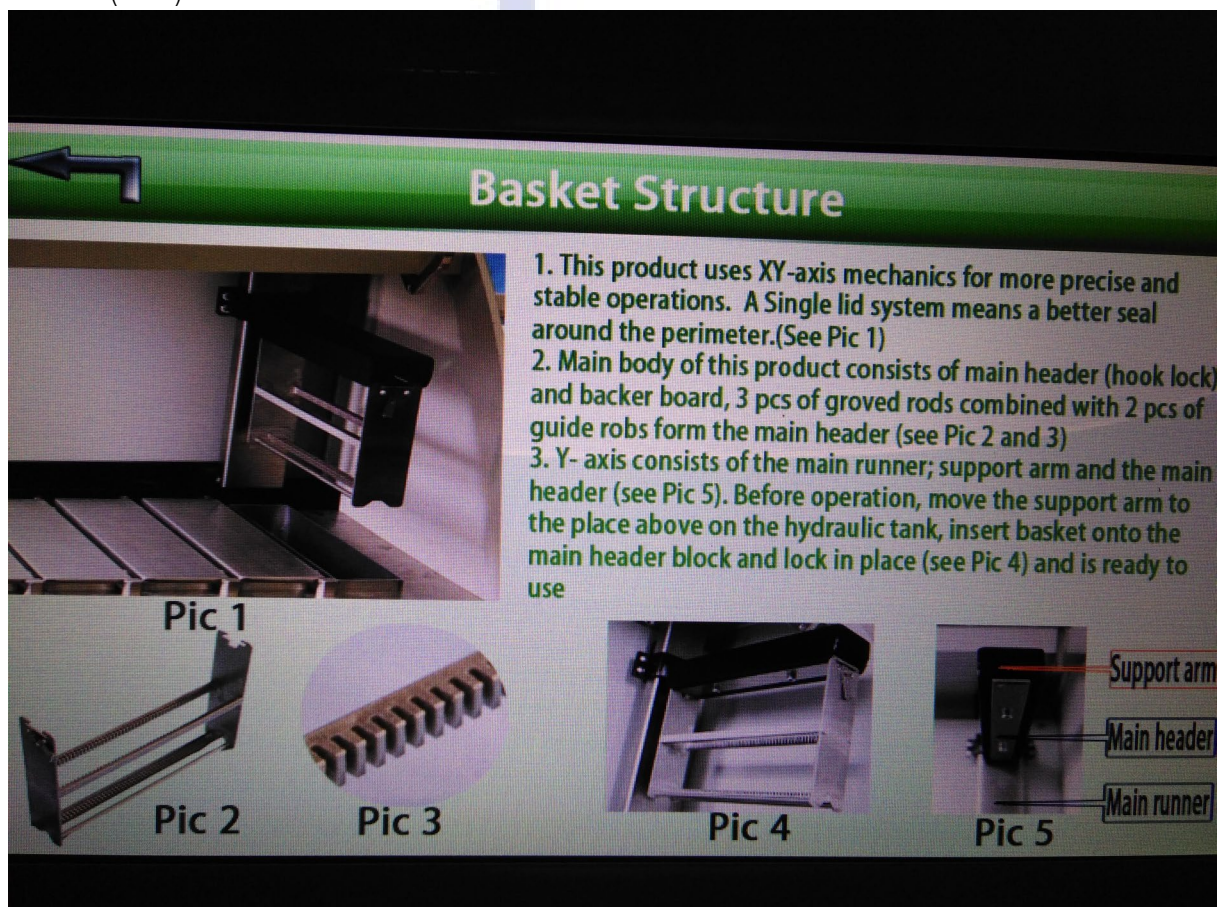
Touch the left blue frame on "Help" interface to get instructions of Reagent Station, Cleaning Bath, Drying Bath and Operational Display Screen(Pic.



(Pic.4)

Touch the arrow tip at left top position to return to last interface.

On "Help" Interface, Touch the below red frame to get instructions of mechanicaldrive, Slide Rack etc.(Pic.5):



(Pic.5)

On “Help’ Interface, Touch the above green frame to get instructions of Body Machinecloser, Water In-let, Water Out-let, Power Switch and Exhaust Fan etc.(Pic.6):

(Pic.6)

On main Menu, Press “Program” key to set Nos of Program, Nos of Steps, Tank (Processing Station) Nos, Hours or Minutes of Immersion, and times of Leachate, Cleaning etc.(Pic.7):

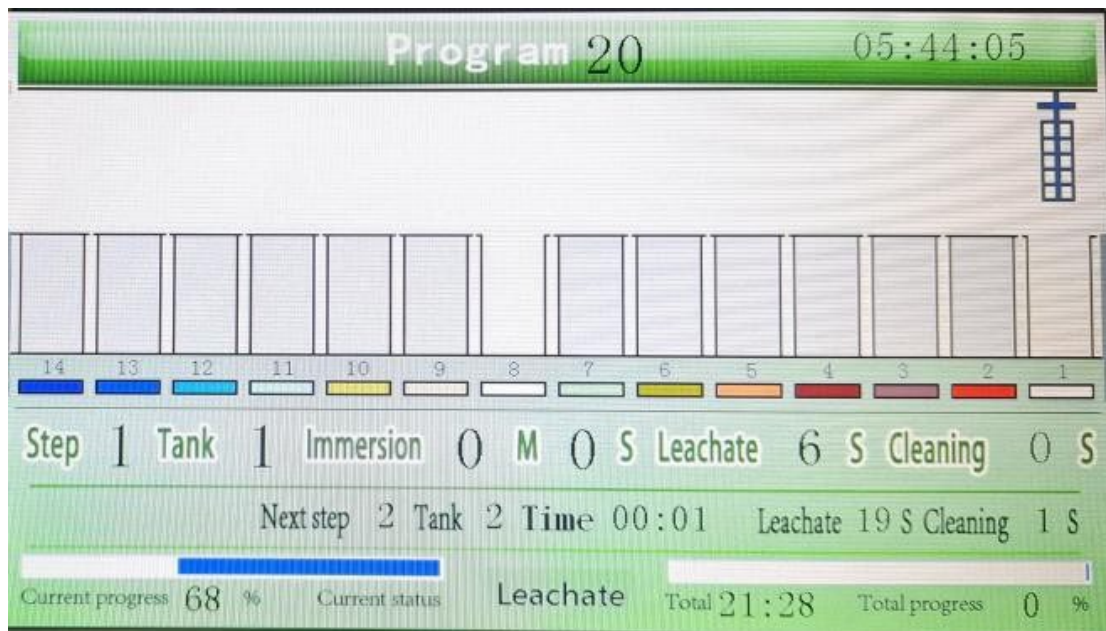


(Pic.7)

After making program, Touch “Run”key to enter the selected program interface. After confirmation of the program, Touch “OK” key to run the system(Pic.8 and Pic.9)

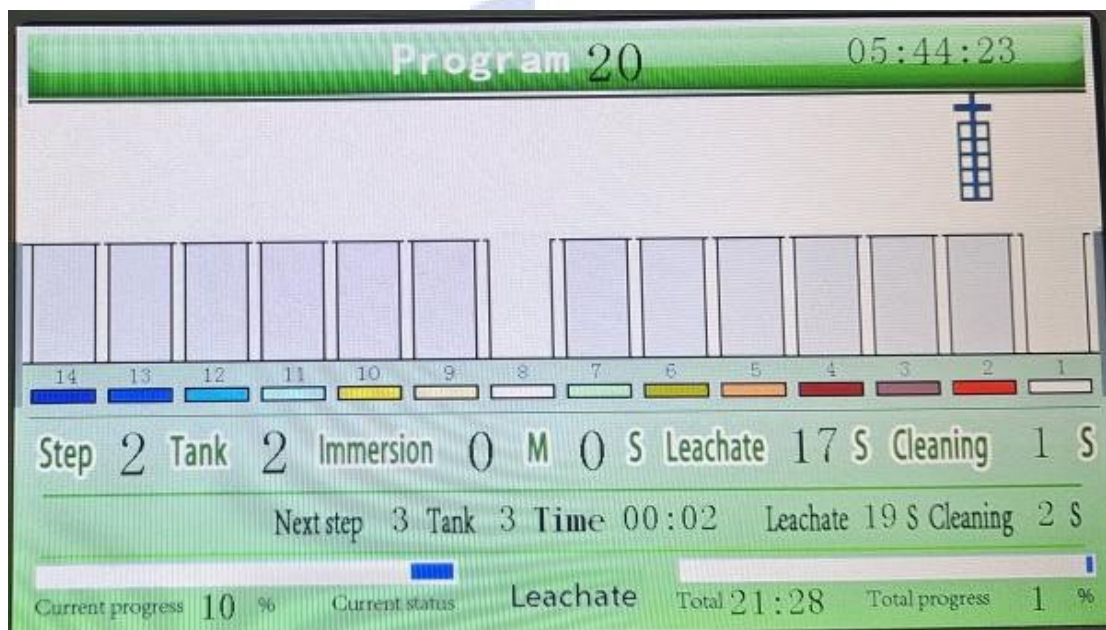


(Pic.8)



(Pic.9)

After the program finished, Slide Staining Rack stop at top of the last station(Pic.10):  
(In this state, if Buzzer function set already, there is buzzer when finishing program)



(Pic.10)

After finishing, Take off the slides on slide rack and turn off the power switch if no further work.  
If further work needed, Touch the any organization frame on the display screen, then the staining rack will return to Number One station, the system start to reset.



## 9. Attention

- Pay attention to the safety if the machine need contact with the inflammable substance during working .

Pull out the plug and cover the protection cover if the machine doesn't use for a long period

- Forbid to add the reagent when instrument under working . No reagent should fall into the instrument

- The instrument should place flat and the inclination should not exceed 5°. Forbid to touch the screen with hard substance.

For the outfall pipe should lower than pipe joint to avoid the water drain into the body of instrument

- There should be good grounding to avoid faradism.

- The instrument should be clean after working every time. Turn off the power switch and pull of the plug when cleaning.

The instrument is prohibited to use or store on the inflammable place.

When operating, the reagent should not overfill the tank and the tissue can immerse on reagent is ok

- When changing the fuse, same fuse type should be use and the instrument should be power off and pull off the power line .

The dying shelf should be from our company and is prohibited to use other

incompatible model to avoid working abnormal.

- The organic solvent like acetone and dimethylbenzene shouldn't be used as detergent for cleaning

## 9. Recognition and Elimination of Problems

Problems	Causes	Elimination
No power indication	Fuse burnt or power socket not fixed well	Change fuse or power line



Hands numb when touching the plastic cover	Grounding line not connected or not connected well	Fix firm grounding line
Time cannot edited	keyboard damage	change keyboard
Low water inflow	Inflow pipe blocked	Clean filter of the inflow pipe
When start-up, mechanical drive move to right (normally, it goes up to end position and move to No.1 jar)	Sensor for vertical movement is damaged	Test the sensor, if $> 0.1V$ , change the sensor. If $\leq 0.1V$ , it's normal state
When start-up, mechanical drive move to top position, but not moving to right	No.1 jar's sensor is damaged	Change the sensor
Vertical lead rail not stop, when machine's working or pressing the right/left key	Single jar's position sensor is damaged	Change the sensor
No strength of the movement and big noise	Lack of phase of the motor or circuit has problem	Check the motor, test the 3717 of step motor
Mechanical drive shaking when it goes up or drop down	The belt for vertical rail is losing the teeth or the plastic wheel for vertical rail is damaged	Change the belt or change the wheel
No left/right movement for vertical rail, but there is sound	The steel line is broken for horizontal movement	Change the steel line
No heating for heat bath	Heating tube is damaged or the silicone heater is damaged	Check the heating tube or silicone heater
Not cover well for the lid of reagent jar	Problem of the opening system of the lid	Check the spring of lid, if possible, change the spring
Not display well for the screen	Screen's circuit is damaged	Change the resistance of 103 parts on circuit board



No response on the display screen	Circuit or screen has problem	34063 Check the 34063 part on the circuit board (normally it's 24 for input, and 5V for output), if it's abnormal, change the part.
Keyboard insensitively	Keyboard is damaged	Check the board and connecting wires

## 11. Maintenance

- Maintenance the instrument regularly (lubricate the jar cover every week) and keep it clean.
- Turn off the power switch before cleaning. Clean the instrument with normal detergent and soft cloth. And no detergent should be drain into the instrument body.
- When changing the fuse, same fuse type should be use and the instrument should be power off and pull off the power line.

## 12. Transportation and storage

- Transportation: Handle in care, avoid wetting, and place upward.
- Storage: This machine should be stored in the clean and airy indoor places with the relative humidity under 80% and be kept far from the caustic gas.

## 13 Appendix

- Product Alteration

Kalstein Instrumental Equipment Co., Ltd reserves the right of altering the technological parameters of the product without notifying in advance, because the instruments required to face to the alteration and improvement for technological progress.

- Warranty Period





Kalstein guarantees that all instruments manufactured by the company have been strictly and comprehensively checked on quality to guarantee the compliance with the technological standard.

The warranty conditions will be up to the KALSTEIN sales agent responsible to you.

The warranty period is only valid for normal usage according to the specified conditions for the instrument and the circumstances of following the various regulations specified in the operational instruction manual.

Warranty terms are not applicable for the damages caused by misuse or improper operations of instrument and our company is not responsible for the above-mentioned damages either.

- Discard and Disposal

The discarded instrument or parts of instrument shall be disposed according to the existing relevant and effective laws and regulations.

We are pleased to offer you an environment-friendly disposal plan when you need to dispose the discarded the slide staining machine.

- User's Service Information

Please contact the sales representative of KALSTEIN or the sales agent once sold the instrument to you if you require any service or parts during the warranty period. Please inform the instrument model, serial number and supply time. Kalstein doesn't accept any rejection of goods without any formal permission for rejection of goods.

Please pay attention to the following items if you will deliver the instrument back to KALSTEIN:

**a.** The instrument or parts shall be disinfected or radioactive elimination treatment before sending back if viruses or radioactive substances have been connected with the instrument or the parts. Our user's service technician will be assigned to check this out clearly.

**b.** If you are sure that the instrument or parts are free from any radioactive or dangerous viruses, please get the suggestions on the possible methods for disinfection and radioactive elimination from your KALSTEIN representative. The instrument or parts will be directly sent back to the customer under the customer's expenses if possible infection dangers are still existed on the instrument or parts upon the arrival of the KALSTEIN representative.

Please tell us the following information if you require technical services: Model and serial number.

The place where the instrument is located and the contact person. Reasons for service request.