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Vacuum Tissue Processor HISTO-PRO 300 User Manual



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1.Important Notes

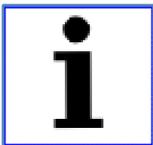
This instruction manual contains important instructions information and notes regarding the operational safety and maintenance of the instrument.

The instruction manual is an important part of the product, which must be read carefully prior to start-up and use and must always be kept near the instrument.

1.1 Symbols used in the text and their meanings



Warning and cautions appear in a light blue box and are marked by a warning triangle .



Notes, i.e. important information for the user, appear in a light blue box and are marked with the symbol .



Solvents and reagents that are inflammable are marked with this symbol.



This warning symbol indicates the surface on the instrument could be hot during operation. Avoid direct contact to prevent risk of burning.

(5)

Figures in brackets refer to item numbers in figures.

[ENTER]

Function keys that have to be pressed on the input screen, are displayed in square brackets bold type and capital letters.

1.2 Information and specified use

The HISTO-PRO300 Vacuum Tissue Processor is the necessary equipment for pathology processing specimens. It is a modular automated tissue processor designed for the laboratory applications as fixation, dehydration, paraffin infiltration of biological tissue specimens.

The instrument must be operated only according to the instructions contained in this manual.

1.3 User group

- The Histo-Line HISTO PRO may only be operated by qualified personnel.
- The user must read the operating instructions supplied and be familiar with all the instrument's technical details before any work on the instrument.

1.4 Instrument type

All information in this instruction manual applies only to the instrument type indicated on the title page.

A name plate with the serial number is attached to the back of the instrument.

2.SAFETY AND WARNINGS



Be sure to comply with the safety warning instructions provided in this chapter. Be sure to read these instructions, even if you are already familiar with the operation and use of other Histo-Line Laboratories products.

2.1 Notes

This instrument has been built and tested in accordance with the safety regulations for electrical measuring, control, regulating and laboratory devices. To maintain this condition and ensure safe operation, the user must observe all notes, warnings and hazards contained in this Operating Manual.



If additional requirements on accident prevention and environmental protection exist in the country of operation, this instruction manual must be supplemented by appropriate instructions to ensure compliance with such requirements.



The protective devices on both instrument and accessories may neither be removed nor modified. Only service personnel qualified by Histo-Line Laboratories may repair the instrument and access the instrument's internal components.

2.2 SAFETY - Sites requirements



- 1. The instrument must be set up in a clear space of about 650 x 700 mm back and side.**
- 2. Room temperature constantly between +10 °C and +35 °C.**
- 3. Relative humidity maximum 80%, non-condensing.**
- 4. Avoid vibrations, direct sunlight and heavy variation in temperature.**

2.3 SAFETY - Matters



- Use proper nominal supply voltage;**
- The input power supply must have a good ground;**
- Install far from flammable and explosive objects;**
- Never open instrument without authorization to prevent high voltage shock;**
- Service should be done only by authorized personnel;**
- Check regularly the parameters showed during operation;**
- Disconnect instrument from power supply after use;**
- Use proper fuses;**
- Use only proper power cord**
- Install the instrument away from any interference source;**
- Equipment which needs heating must not be heated without proper liquid or reagents.**

2.4 WARNINGS - Working with the instrument



- **The instrument may only be operated by trained laboratory personnel, according to its designed use and per the present instruction manual;**
- **Do not move the wax drain hose until the fill or drain has be completed, as pressurized air is used to clear the hose after each fill/drain;**
- **After refilling/replacing the reagent bottles ensure that the lids are tighten;**
- **The bottles must be properly pushed into the bottle suitable position;**
- **Fixatives containing mercuric salts, acetic or picric acid will corrode metallic components in the instrument. Do not use!**
- **After each paraffin step a retort clean cycle must be run.**

2.5 WARNINGS – Handling reagents



- **Be careful when handling solvents;**
- **Always wear rubber gloves and safety goggles when handling the chemicals used in this instrument;**
- **Reagent used for tissue infiltration can be both toxic or flammable;**
- **Use caution when handling paraffin wax or removing baskets. Melted paraffin is hot and may cause burns;**
- **Avoid personal contact with paraffin stations and retort walls. Can be very hot!**

2.6 WARNINGS –Cleaning and maintenance



- **Prior to each maintenance and/or cleaning, switch the instrument off and disconnect mains power;**
- **Do not clean the instrument with solvents containing acetone or xylene. No liquid may be spilled into the internal components of the instrument neither during operation nor during cleaning;**
- **The condensate bottle should be inspected at least one week and, if necessary, emptied.**
- **Do not clean reagent bottles in an automatic dishwasher.**

3. Technical parameters

Refer to attached pages, download the electronic version of data sheet from www.histoline.com web site, or request to customercare@histoline.com for detailed information about technical data.

4. Installation

4.1 Installation requirement



- 1. Stable tabletop, enough space far from wall to ensure Histo-Pro300 normal working;**
- 2. do not place close to other instruments that can cause vibrations**
- 3. Room temperature about between +15°C- 40°C.**
- 4. Relative humidity maximum 80%, non-condensing;**
- 5. Avoid vibrations, direct sunshine and heavy variation in temperature;**



NOTES:

The chemical to be used in the Histo-Pro 300 are both flammable and toxic/noxious. The Histo-Pro 300 must be positioned in a well ventilated area free from any ignition sources. Do not operate instrument in rooms with explosion hazard..

4.2 Connect power

Connect the Power cord to the Mains power inlet socket.

Turn **ON** the power switch at the rear panel. The Electronic Touch Screen will be displayed.



NOTES

- **The instrument must be connected to an earthed mains power outlet socket only.**
- **It is recommended that Histo-Pro 300 be plugged into a wall socket that has Ground Fault Circuit Interruption protection-as an additional electrical safeguard.**
- **Make sure to use the appropriate mains cable for the local voltage supply(wall outlet)**

4.3 Connect external fill/drain hose



For Histo-Pro equipped with Reagent Management System only!!

Connect the supplied fill/drain hose to the drain connection on the front of instrument as following.



NOTE

- **Make sure the hose is well locked and ensure a clear passage for fluid flow.**

5. Operation

5.1 Start Up screen



(Fig.1)

5.2 Stand by screen

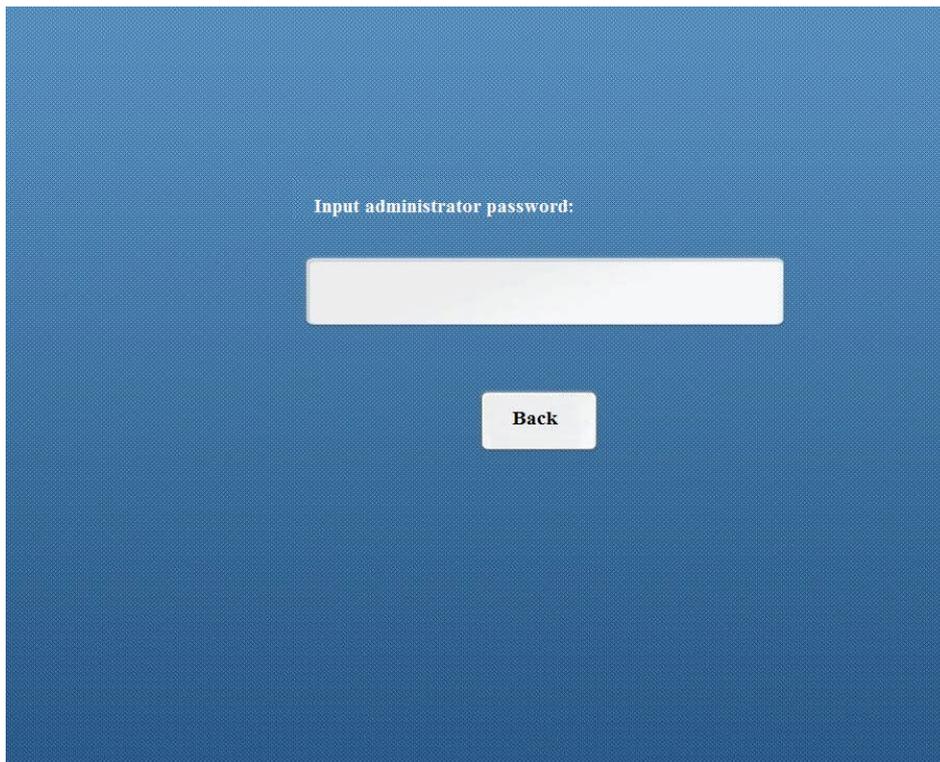
After few seconds, screen will go to standby interface.



(Fig.2)

5.3 Password protect

Press **SYSTEM SET** button in Standby screen (**Fig.2**), it will display as below:



(Fig.3)

Type the password to continue.



NOTE

- **Password protected. Can set by user;**
- **Default password is 0000**
- **If want change password, please go to Set System Parameter interface at this Chapter. (see 5.4)**

5.4 SYSTEM SET INTERFACE

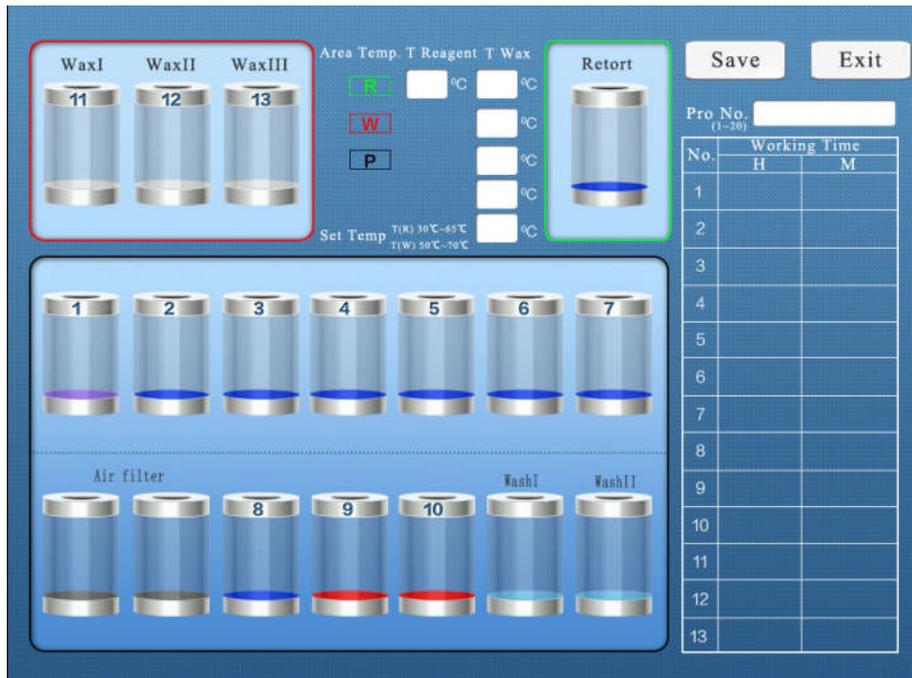
After input Password administrator (**Fig.3**), it will display as below:



(Fig.4)

5.5 SYSTEM SET INTERFACE – Set program

Press **SET PROGRAM** button in *SYSTEM SET INTERFACE* screen (**Fig.4**), it will display as below:



(Fig.5)

Set temperature

1. **R**: Retort area temperature set;
T Reagent: Set the reagent temperature in retort from ambient to 65 degree;
T Wax:. Set Wax temperature in retort from 55°C to 70°C.
2. **W**: Wax area temperature set;
T Wax:. Set Wax temperature in 3 wax stations from 55°C to 70°C.
P:. Pipes area temperature set from 55°C to 70°C. Default value 65°C

Set program

Press **Pro. No.** area (1 to 20)and set working time (**H**ours and **M**inutes)for steps (1 to 13).

Save or Exit

Press **SAVE** button to store program in memory.

Press **EXIT** button for exit without saving.

5.6 SYSTEM SET INTERFACE – Set system parameter

Press **SET SYSTEM PARAMETER** button in *SYSTEM SET INTERFACE* screen (**Fig.4**), it will display as follow:

The screenshot shows the 'SYSTEM SET INTERFACE' screen with the following elements:

- Vacuum condition:** ON OFF
- Liquid level alarm:** ON OFF
- Fill reagent time:** (4-7) [input field] Min
- Drain reagent time:** (4-7) [input field] Min
- WashI time:** (3-10) [input field] Min
- WashII time:** (3-10) [input field] Min
- Agitation time:** (0-5) [input field] Min
- Buttons:** Save, Back, Change password
- Table:**

No	Reagent	Usage	No	Reagent	Usage
1			9		
2			10		
3			11	WaxI	
4			12	WaxII	
5			13	WaxIII	
6				WashI	
7				WashII	
8				Filter	
- Usage Legend:** Usage: Filter(1-500) Other(1-200)

(Fig.6)

- Vacuum condition:**
Flag **ON** for vacuum in retort during processing.
- Liquid level alarm:**
Set **ON** for retort liquid level sensor. **Please note:** with level alarm **ON**, be sure every container has enough liquid to cover samples and reach sensor. Suggest to use it with maximum samples load only.
- Fill reagent time:**
Set fill reagent time from 4 to 7 minutes;
- Drain reagent time:**
Set drain reagent time from 4 to 7 minutes;
- Wash I time:**
Set the wash time for Wash I station, from 3 to 10 minutes;
- Wash II time:**
Set the wash time for Wash II station, from 3 to 10 minutes;
- Agitation time:**
Set agitation time for reagent in retort from 0 to 5 minutes;
- Reagent:**
Set station reagent name.;
- Reagent usage:**
Set reagent Usage Times.



NOTES:

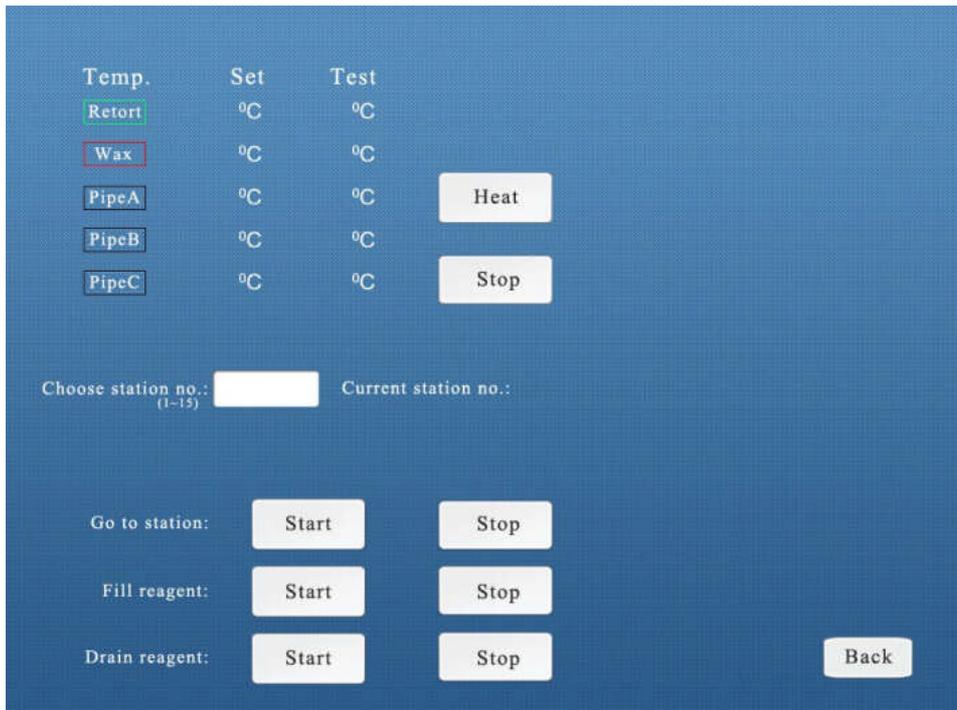
When usage time is reached, it will show **OVER** in red color is *Stand-By* screen to remind user.

To clear the **OVER** on the bottle, there are 2 methods:

1. Press **SYSTEM INFO**;
Press **ELIMINATE FAULT** and **RESET**;
Then Switch OFF unit;
Switch ON again;
Now the all Fault in factory is all cleared.
2. If during usage, there is 1 container with **OVER** message:
Press **SET PROGRAM** ;
press the number under corresponding container, and set the usage number again; will clear **OVER**

5.7 SYSTEM SET INTERFACE – Manual

Press **MANUAL** button in *SYSTEM SET INTERFACE* screen (**Fig.4**), will display as follow:



(Fig.7)

1. **Temperature:**
Retort, wax containers, Pipe A, Pipe B, Pipe C temperature set / Test.
2. **Choose station N°:**
Set the required station number to run.

5.8 SYSTEM SET INTERFACE – System Info

Press **SYSTEM INFO** button in *SYSTEM SET INTERFACE* screen (**Fig.4**), will display as follow:



The screenshot shows a blue interface with the following fields and buttons:

- Product Model: HISTO-PRO 200
- No: ZH200 14.06.18
- Version: V0.1E
- Production Date: January 2015
- Company: Histo-Line Laboratories
- TEL: +39 02 5523 0061
- ADD: 20090 Pantigliate-Via Di Vittorio 30 Milano Italy
- FAX: +39 02 5521 3764
- Website: www.histoline.com
- Email: (empty field)

Below the contact information, there is a "Troubleshooting" section with a "Eliminate fault" button. The troubleshooting section is organized into three rows, each with a "Fault" label and five numbered columns (1# to 5#). Each row also includes labels for "Pipe:", "Distribution valve:", and "Overflow:".

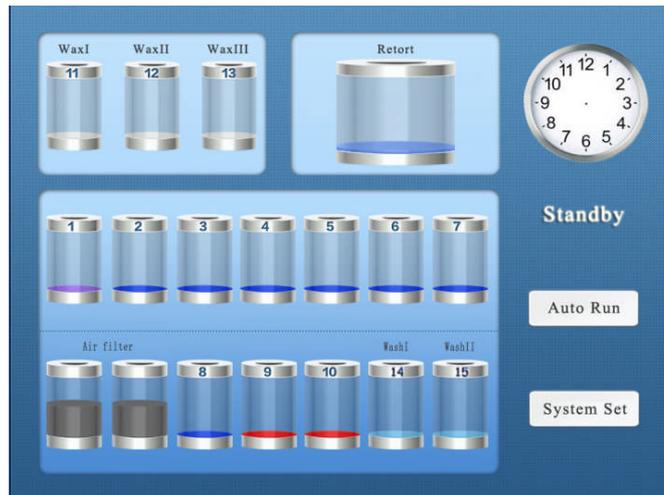
At the bottom of the screen, there are three buttons: "Restore factory defaults", "RESET", and "Exit".

(Fig.8)

1. **Unit information:**
All unit information will be available from this screen;
2. **Troubleshooting:**
Shows the all historical.
So user can check this unit running situation;
3. **Restore factory default:**
Press Reset to clear the all troubleshooting information.

SYSTEM SET INTERFACE – Back to Stand By

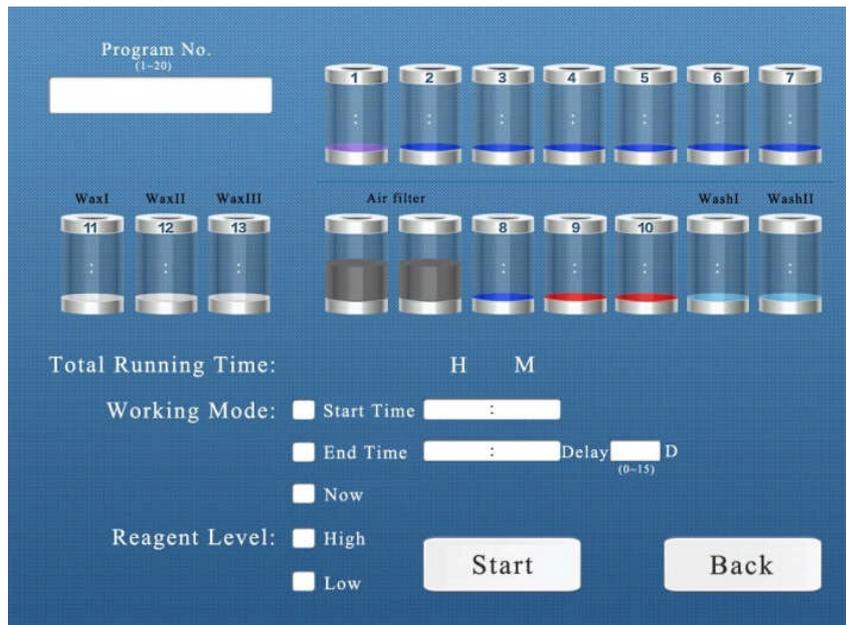
Press **BACK TO STAND BY** button in *SYSTEM SET INTERFACE* to go back to stand by screen, it will display as below:



(Fig.9)

5.9 AUTO RUN- Running a program

Press **AUTORUN** button in *STAND BY* screen (**Fig.9**), it will display as follow:

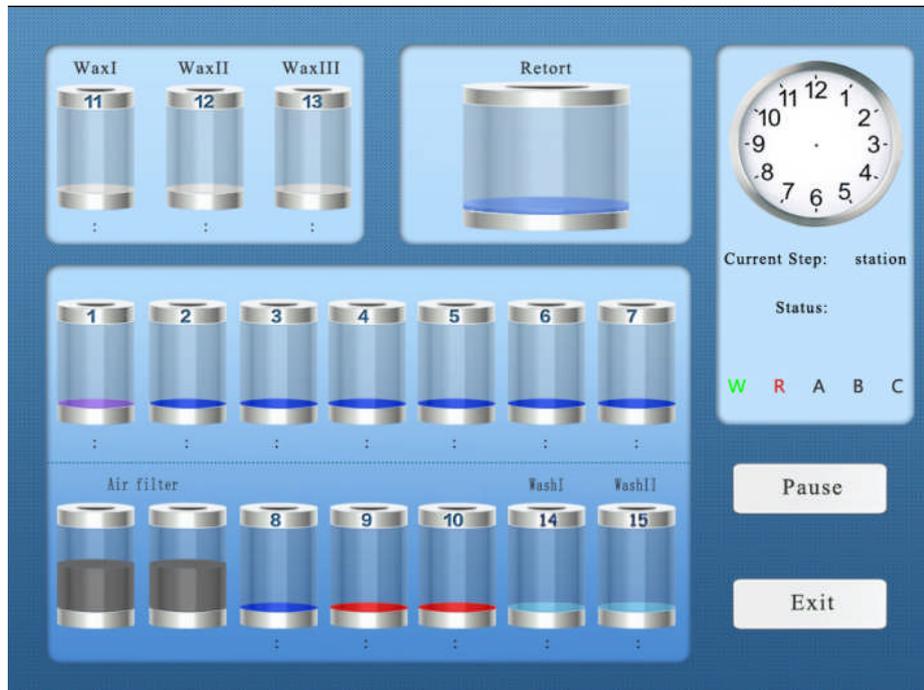


(Fig.10)

1. **Program No.:**
Choose required program number to run.
2. **Total Running Time:**
According to program No., it will show the total running time.
3. **Working Mode:**
Flag **Start Time** and enter the time you need the program to run.
Flag **End Time** and enter the time you want the program to finish (example: 8:00 for the morning after).
Delay will add days (24 hours) to program (example: it's Friday and you need the samples ready for Monday at 8:00, then set **3**. Set 1 for the day after, 2 for the day after tomorrow, 3 for the third day)
Now will start the program immediately and finish after timing.
4. **Reagent Level:**
Set **High** or **Low** reagent level in retort, according to cassettes quantity.

AUTORUN – Start button

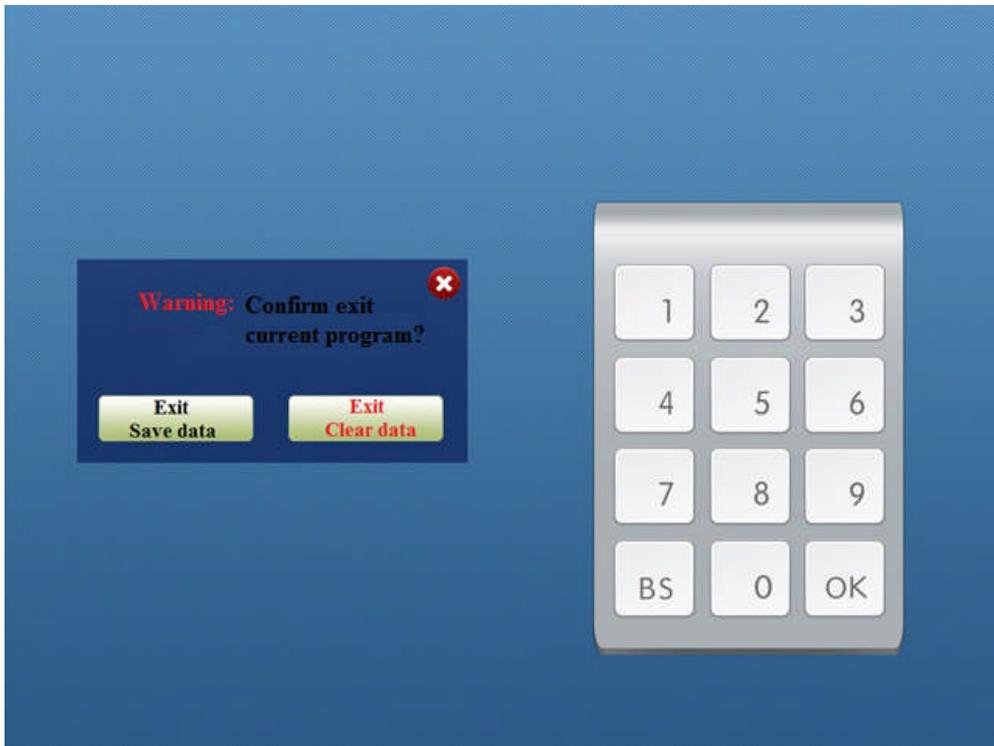
Press **START** button in *AUTORUN* screen (**Fig.10**), it will display as below:



(Fig.11)

1. **Current Step.:**
It shows the current running step;
2. **Status:**
It show the all current running information, as fill reagent, or drain reagent.

During Auto Run, if press **EXIT** button (**Fig.11**), it will display as below:



(Fig.12)

1. **Exit Save data:**
The program will exit, but will save this running information. Example: If station 5 is running, it will save this information in program. Next Run, unit will start from this exit bottle;
2. **Exit Clear data:**
The program will exit and clear the current running date.

5.10 Samples protection

Power supply failure

During running automatically, if main power supply failure, as soon as power supply recover, it will go on running from the pause step.

Retort Safe Switch is turn on



(Fig.13)

On the right handle of retort, there is a Safe Switch fixed. While retort in vacuum running, if the Safe switch is turned on, the running will stop immediately and show message on screen to remind customer.

Retort reagent level is over than the Full Level Sensor



(Fig.14)

There are 3 Level Sensors totally in retort:

- L** Lower sensor, for Low Level processing.
- H** Higher sensor, for High Level processing.
- F** Overflow sensor, this is the highest level for reagent in retort.

If retort reagent level is over than the Full level sensor, it will stop running immediately.

5.11 Changing reagent

How to change reagent bottle

1. Remove bottle with exhaust reagent, empty and dispose reagents according to regional regulations;
2. Refill bottle with new reagent. Do not overfill bottle;
3. Reposition bottle. Take care nozzle is insert properly and well stable (**Fig.14a**).



(Fig.14a°)

How to change paraffin

1. Open Wax Drain Port and insert draining white hose in one of 3 taps;
2. Place a container under the hose to collect exhaust paraffin;
3. Open tap by moving red lever;
4. Close tap after drain finished and remove hose. (**Fig.14b**).



(Fig.14b)



During operate the Vacuum Tissue Processor, please take care of below points:

- 1. Use Xylene as cleaning (Wash retort) reagent.**
- 2. CHANGE XYLENE REGULARLY.**
With dirty reagents it's easy to block the pipes;
- 3. Never exceed the level of wax tanks with melted paraffin !**
See following picture.



- 4. Never exceed the bottle level reagents. Reagents will overflow from the bottle. See following picture.**



- 5. During run program, please be sure to seal retort lid.**

6. Cleaning and maintenance

6.1 Paraffin wax baths

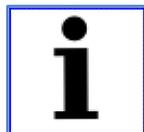
1. Keep the wax baths and lids clean.
The lid can be removed for cleaning purposes;
2. If they are dirty, remove the wax strainers from the wax baths. Clean, dry and reinsert them;
3. Ensure that the air vent hole at the top rear right hand corner is unobstructed



Be careful as the walls of the wax baths are very hot and may cause burns.

6.2 Instrument exterior

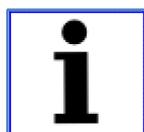
Clean the instrument exterior as necessary. Wipe with a damp cloth moistened with mild detergent and dry it.



NOTES:
Do not use solvents on painted surface and the LCD screen.

6.3 Clean the retort lid

1. Remove the wax from the inside from of the retort lid and from around the retort lid seal with a plastic scraper.
Thoroughly remove all wax deposits from the around the lid seal;
2. For convenience, the lid may be removed during cleaning. Lift the lid to a vertical position, release the hinge lock and pull the lid toward you;



Only use a plastic scraper when cleaning the retort lid and seal to avoid damage to the retort lid seal and to the PTFE coating on the retort lid.
Do no damage the edges of the seal with the scraper.
Never use a metal scraper.

6.4 Clean the retort

The retort may be wiped clean using a cloth moistened with solvent (Xylene or alcohol) or mild detergent.

Ensure that the air holes at the top front of retort are clear.

6.5 Clean the retort strainer.

Use alcohol or Xylene to clean the metal strainer located at the bottom of the retort. For convenience, the strainer can be taken out to remove all solid dirt.

6.6 Clean the processor module top surface

To ensure proper sealing of the lids at all times, it's important that you:

1. Remove both lids for cleaning;
2. First scrape the stainless steel surface with the plastic scraper and then wipe down to remove all solid matter around the retort and paraffin wax stations.

6.7 Clean the reagent bottles

1. Empty and clean the reagent bottles using a bottle brush and a laboratory detergent in warm water;

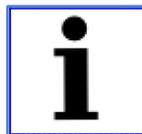


NOTES:

Never clean reagent bottles in an automatic dishwasher.

The reagent bottles are not dishwasher-proof.

2. Refill and reconnect the bottles once cleaned.
Make sure the bottle lids are tight and the bottles are properly seated in their home position at the rear of reagent cabinet; (refer chapter 5.11)



NOTES:

The reagent bottles must be properly engaged in the home position in the connection manifolds at the rear inner wall of the reagent module.

Failure to correctly plug reagent bottles into the manifold will cause an interruption to the processing run and may result in spilling of reagents.

3. While the reagent bottles are outside of the reagent cabinet, wipe the stainless steel inner wall of the reagent cabinet with a damp cloth moistened with a mild detergent.

6.8 Checking the retort lid seal

Regularly check the retort lid seal for damage. If the seal is damaged, must be replaced.