



Viale G.di Vittorio, 30
20090 Pantigliate (MI)

Tel. 02.55230061

<http://www.histoline.com>

email: histoline@histoline.com

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Automatic Linear Tissue Processor ATP1000 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 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 that are 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

ATP 1000 Tissue Processor is a compact, bench top, linear tissue processor designed to process biological tissues from fixation to paraffin infiltration.

The unique linear design offers reliable technique in a small space in the laboratory. ATP 1000 includes 14 containers, 10 reagents and 4 paraffin, can process 150 samples simultaneously. (2 racks x 75 cassettes)

All the reagent and paraffin containers are completely closed to prevent evaporation, activated carbon filter prevent solvent odors and pollution.

ATP 1000 can be programmed for immediate or delayed start, the immersion time can be set from 1 minute to 99 hours and 59 minutes.

1.3 User group

- The Histo-Line ATP1000 may only be operated by trained laboratory 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



**Be sure to comply with the safety 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 it's 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.

2.4 Regulations on the instrument itself



Safety regulations marked with a warning triangle on the instrument itself mean that when operating or exchanging respective parts of the instrument, the correct operating steps as described in the instruction manual supplied, must be adhered to.

Non-observance can cause accidents, injuries and/or damage to the instrument/accessories



Certain surfaces of the instrument are hot during operation under normal conditions.

Touching these surfaces can cause burns.

2.5 Transport, installation and site requirements



After unpacking the instrument it may only be transported in an upright position. Place the instrument on a laboratory table and adjust it to a horizontal position. The instrument must not be exposed to direct sunlight (window)! Plug the instrument only into a grounded mains socket. The protective effect may not be eliminated by an extension cable without a protective grounding conductor. The installation location must be well-ventilated; there should be no ignition sources there of any kind. The instrument may not be operated in hazardous locations.

- **More than 20cm of space around the equipment for heat dissipation**
- **Free of water-drop, steam, dust(including oily dust and flying dust)**
- **Room temperature constantly between +15 °C and +35 °C.**
- **Relative humidity maximum 90%, non-condensing.**
- **Avoid vibrations, direct sunlight and heavy variation in temperature.**

2.6 Matters



- **Use proper nominal supply voltage;**
- **The input power supply must have a good ground;**
- **Install away from flammable and explosive objects;**
- **Never open instrument without authorization to prevent high voltage shock**
- **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 liquid**

2.7 Built-in safety devices

The instrument is equipped with the following safety features and devices:

Fuses (thermal breakers) in the heating elements

All resistance mats of the instrument are equipped with overheating fuses, which switch the heating element off if overheated.



Note: the only way for the user for a complete unit disconnection from the mains supply, is disconnection of the mains power plug.

3. Warnings and hazards



**Be sure to comply with the warnings and hazards 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.**

The safety devices installed in this instrument by the manufacturer only constitute the basis for accident prevention. Primarily responsible for accident-free operation is above all the owner of the instrument and, in addition, the designated personnel who operates, services or cleans the instrument. To ensure trouble-free operation of the instrument, make sure to comply with the following instructions and warnings and hazards.

3.1 Handling reagent



- **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 as well.**
- **Do not clean reagent bottles in an automatic dishwasher.**

3.2 Maintenance

Open back panels and access inside the instrument is not allowed except the authorized technicians of Histo-Line or trained personnel if necessary during maintenance.

3.3 Servicing and cleaning



- **Switch off the instrument each time before servicing and pull out the mains plug.**
- **When using cleaners, please comply with the safety instructions of the manufacturer and the laboratory safety regulations and follow a specific chapter in this manual for the cleaning methods.**
- **Before changing defective fuses, the instrument has to be disconnected from the mains.**
- **Only fuses that are easily accessible may be replaced by the user.**
- **During operation and cleaning, do not allow any liquid to penetrate inside the instrument and the transporting arm.**
- **Service must be done by authorized personnel only**
- **DO NOT USE XYLENE OR OTHER SOLVENTS**

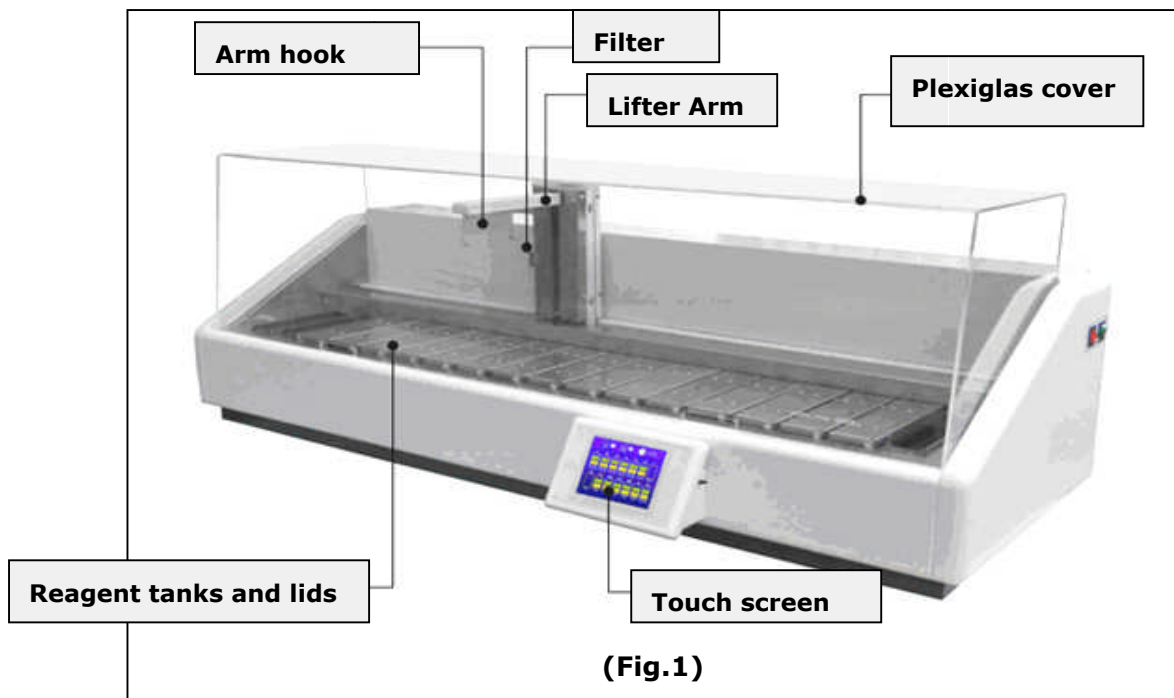
4. Technical parameters

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.

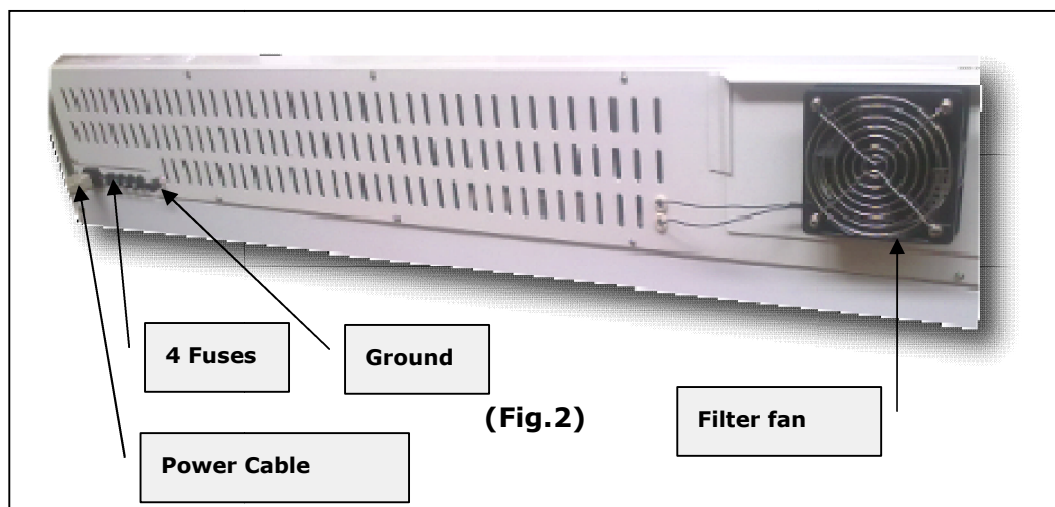
5. Brief descriptions

5.1 Outline of instrument

Front view **(Fig.1)**



Rear view **(Fig.2)**



5.2 Introduction and characteristics

The main functions of the product include:

1. Run of two baskets simultaneously to meet the different specimen capacity;
2. Run of two baskets with same or different programs. So big and small tissue, or hard and soft tissue can be dehydrate separately to improve the dehydration quality;
3. UPS power backup protection: when power failure, UPS will supply electricity automatically; (Optional)
4. It can store six different programs in the memory, to meets the different tissue dehydration requirement;
5. Enclosed design and Fume purification, activated carbon filter make user operation safer;
6. Color touch screen, display all running parameters, easy to watch and convenient to operation;
7. While in automatic running, if need add the running time in any station, use delay process time function easy to modify the program;
8. The system has automatic position search function. While start automatic run, the hanging basket in any position can find its set first position to run;
9. Acoustic alarm function for any wrong operation and end of program;
10. Microprocessor control;
11. Battery power backup protection: if case of power failure, unit will start automatically from the step of interruption.

5.3 Accessories

Standard

The equipment is provided with:

- N° 2 racks for cassettes;
- N° 1 handle for containers;
- N° 14 reagents containers;
- Power cable
- Certificate of conformity
- User manual

Optional

The optional equipment are:

- UPS Power Supply;

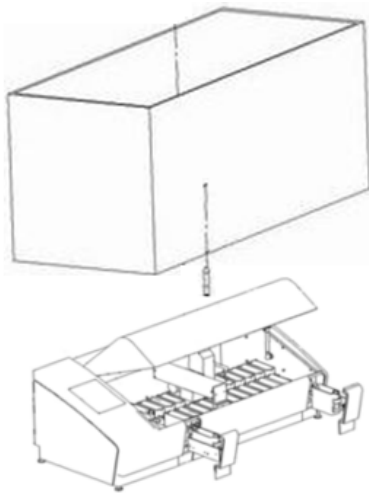
All the above mentioned items and other parts ordered will be properly packed.

Please check when unpacking. Contact immediately Histo-Line or local distributor if any damaged or missing parts.

6. Unpacking and installing the instrument

6.1 Unpacking

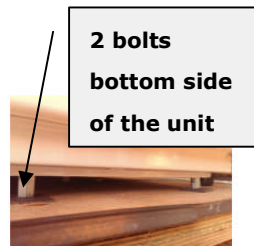
- Remove the safety bolt from top and bottom side of the box
- Unpack the wooded box to take out all components and the Instructions;



WARNING:
Hold the base of instrument and take it out.
DO NOT try lifting the unit by any part of the enclosure at any time

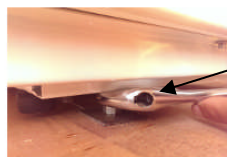


Unscrew 2 bolts bottom side of the box



2 bolts bottom side of the unit

WARNING:
For safety purpose, unit is hold by 4 protection bolts. Remove bolts only after unit transport



Unscrew 2 bolts bottom side of the unit

Instrument setting

- The instrument should be set on the stable platform in the lab;
- Hold the base of instrument and take it out;

6.2 Installation site requirements for the place to set

- Transport the instrument by holding from the four corners. Keep it safely from the unit basement
- Stable, vibration-free laboratory bench with horizontal and even stage plate; practically vibration-free floor.
- No other instruments nearby which might cause vibrations.
- Room temperature permanently between +15 ° C and +35 ° C.
- Never operate the instrument in rooms with explosion hazard.
- By holding the instrument at the front by the base plate, and at the rear by the recessed grip, lift it out of the molded cushion of the packaging and place it on a stable laboratory table.
- Leave enough room for the convenient operation of the unit;

6.3 Connect power

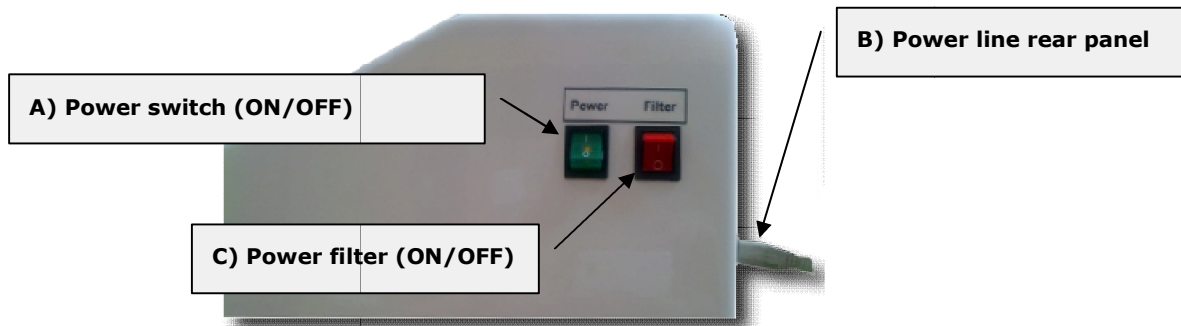
Connect the Power cord to the Mains power inlet socket showed in **(Fig.2)**.



The instrument must be connected to an earthed mains power outlet socket only
The instrument MUST be connected to a grounded power socket!
Use standard power line, do not use other power line without grounded power socket.

6.4 Switching on the instrument

- New instruments are factory-set to customer' s need voltage. This is documented by a sliver label on the rear of the instrument, which covers the power switch and power socket.
- Before connecting the instrument to the power supply, be absolutely certain to check that the voltage is correct voltage according to your area! Severe damage can be caused to the instrument if the voltage is not correct.
- Exposure to extreme temperature changes and high air humidity may cause condensation to form inside the instrument.
- After transporting, please wait at least 2 hours to allow the instrument to adopt the ambient temperature before turning it ON!
- Failure to comply with this may cause damage to the instrument
- Connect the instrument with delivery power line. **(Fig.3B)**



(Fig.3)

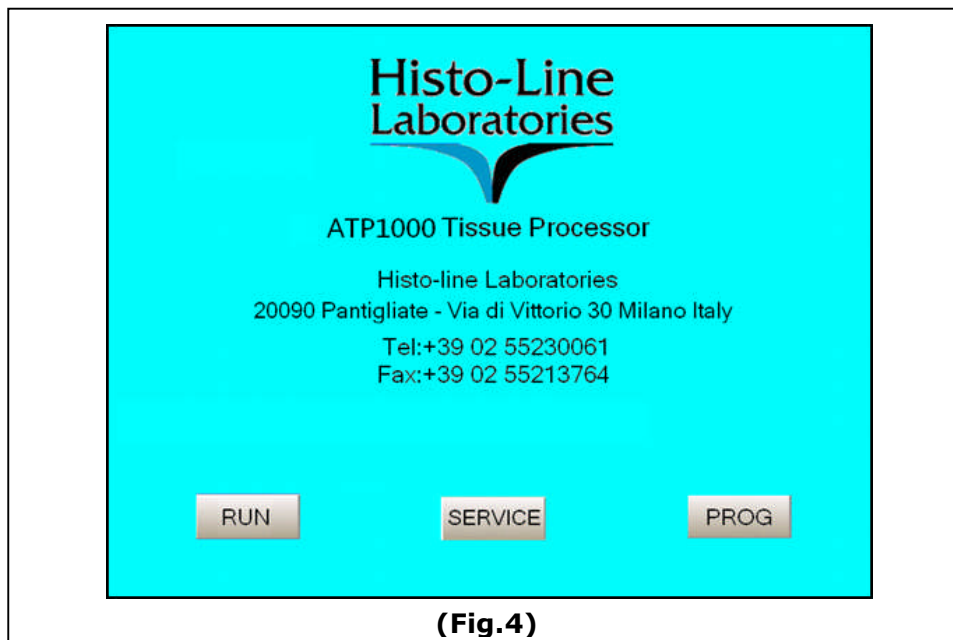
- Before connecting the power cable, make sure that the power switch on the right side of the instrument is in 0 = OFF **(Fig.3A)** (Off position)
- Various country-specific power cables are provided with the instrument. Make sure that the power cable provided has the correct plug for the power socket.
- When switching on the instrument using the power switch, never press any of the buttons on the control panel at the same time
- Turn the instrument on with the mains switch at the right side. This is followed by a beep. The instrument is ready 0 = OFF 1 = ON **(Fig.3A)**
- Turn the filter ON with the mains switch at the right side. The filter is ready 0 = OFF 1 = ON **(Fig.3C)**

7.Operations

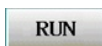
7.1 Initialize interface

The LCD display in Stand By mode with Histo-Line information.

7.2 The main menu



Run key



Press this key, to enter the running operation interface.

Manual key



Press this key, to run the basket manually or enter filter parameters

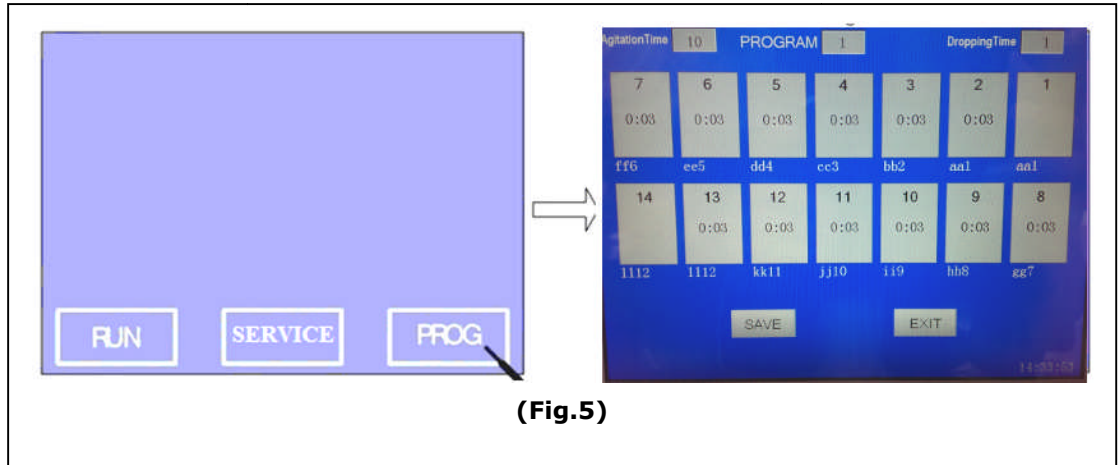
Set key



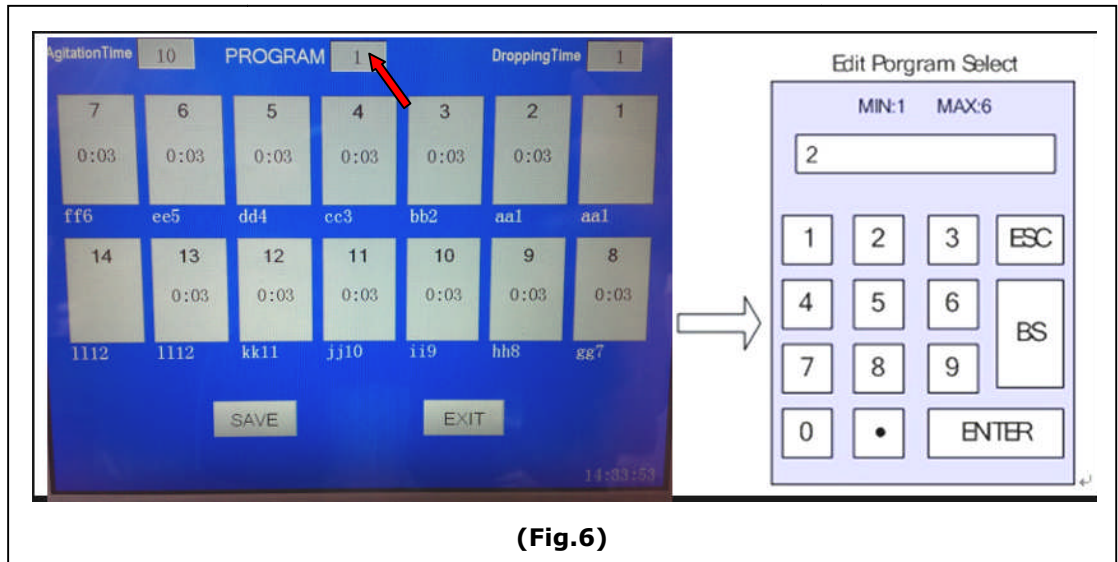
Press this key, to enter the program interface.

7.3 Programme Interface

Press **PROG** on the main menu, the system enters to the **PROGRAM** interface, the LCD displays as follows: **(Fig.5)**



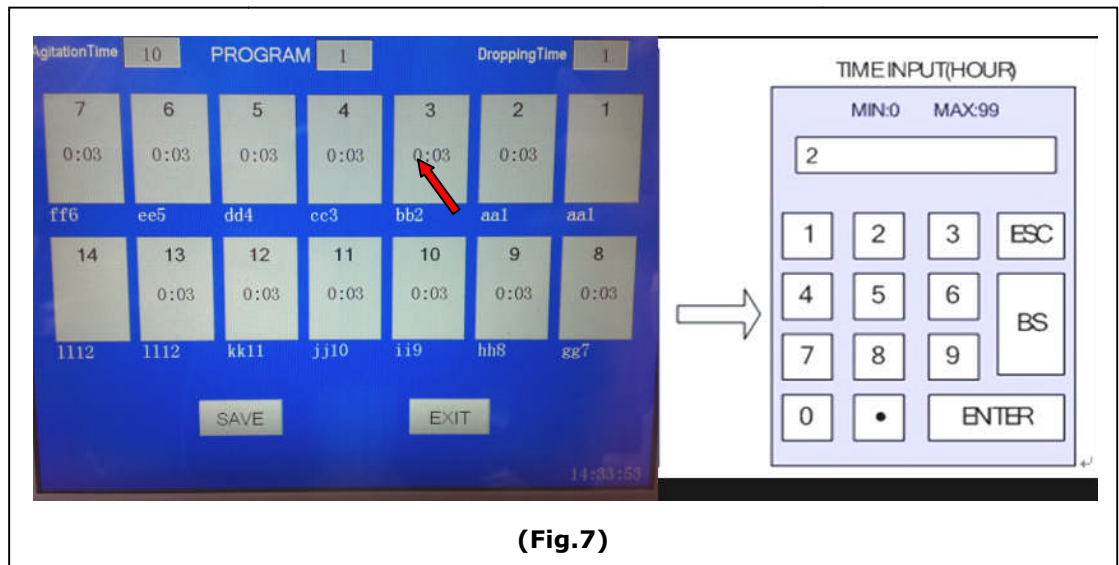
Choose program number



Exit
 Delete
 Save & Exit

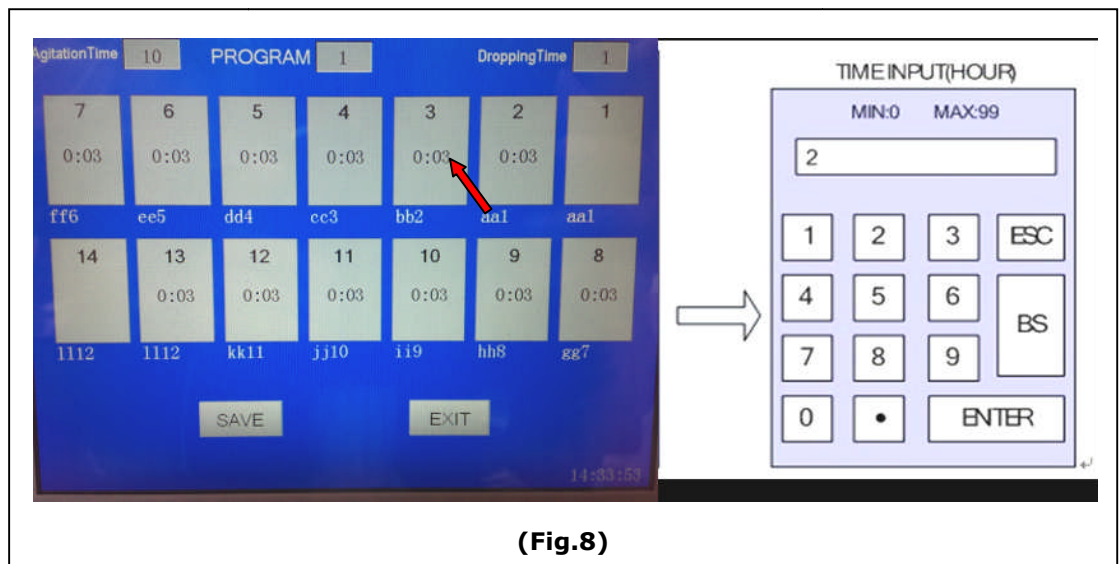
Set Time for each tank

Press the hour number on the tank to set the hour.



Exit
 Delete
 Save & Exit

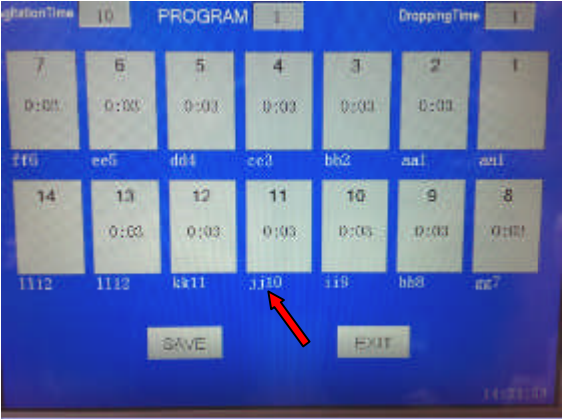
Press the minute number on the tank to set the min.



Exit
 Delete
 Save & Exit

Amend tank name

Press the tank name to amend the name as your required.

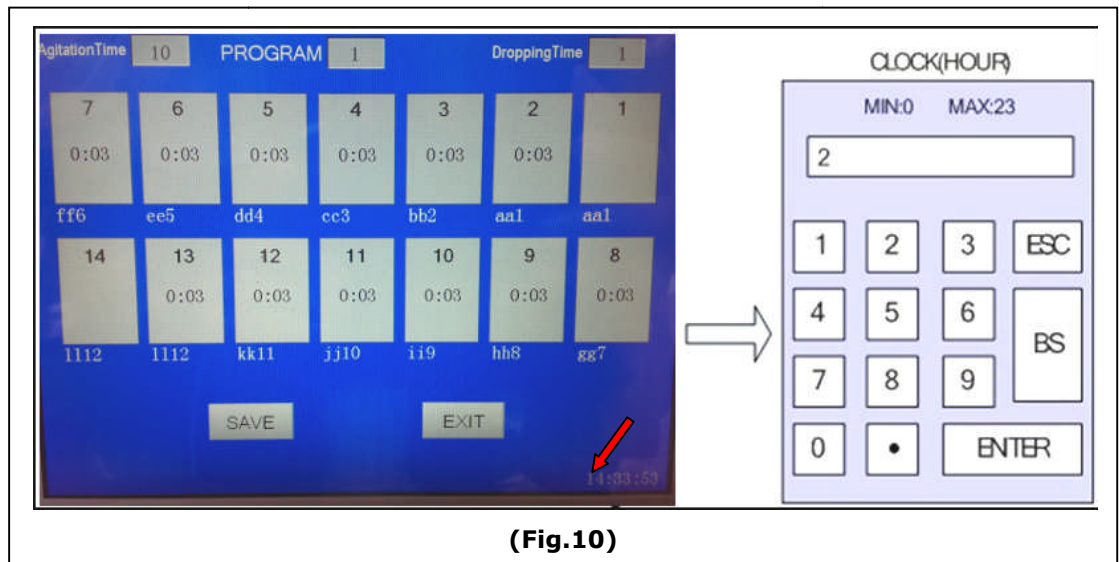


The screenshot shows a control panel with a grid of 14 tanks. Each tank has a number (1-14), a name, and a time. A red arrow points to tank 11, which has the name 'jjj0'. Below the screenshot is a diagram of a virtual keyboard with a text field containing 'Paraffin' and function keys DEL, ENT, ESC, and ALT.

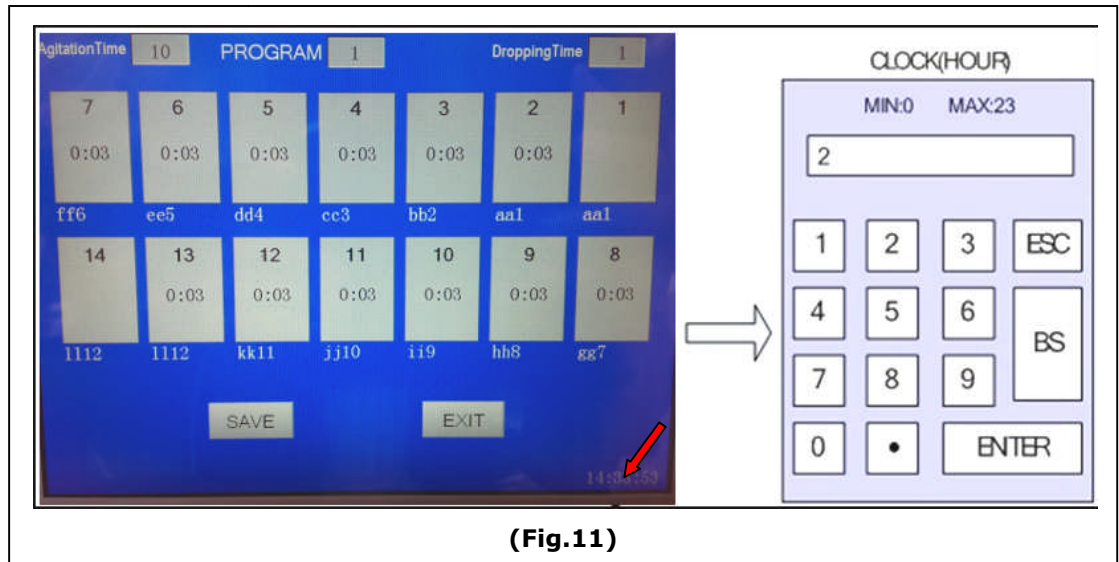
ESC:Exit **DEL**:Delete **ENT**:Save & Exit **ALT**:Switch of the Symbol / Number / letter

Set clock

Press the hour number of clock to set.



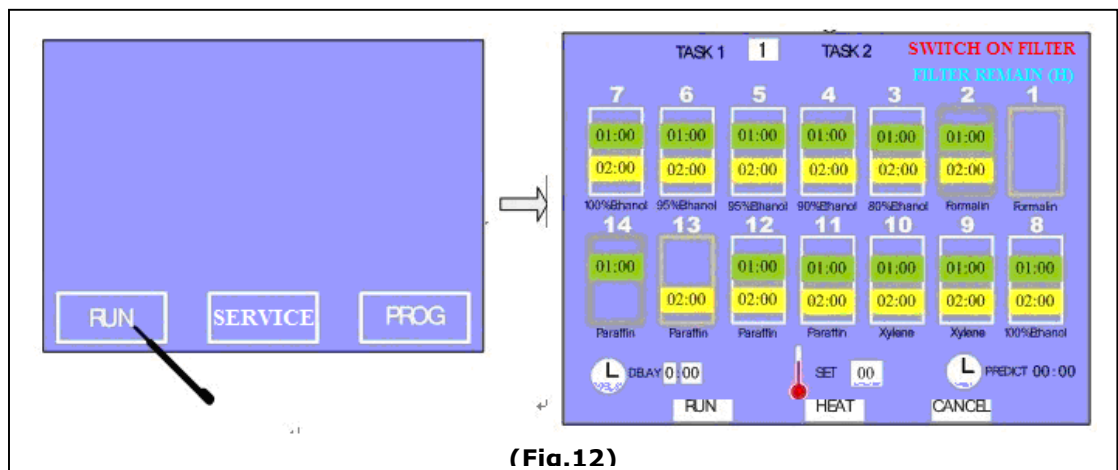
Press the minute number of clock to set.



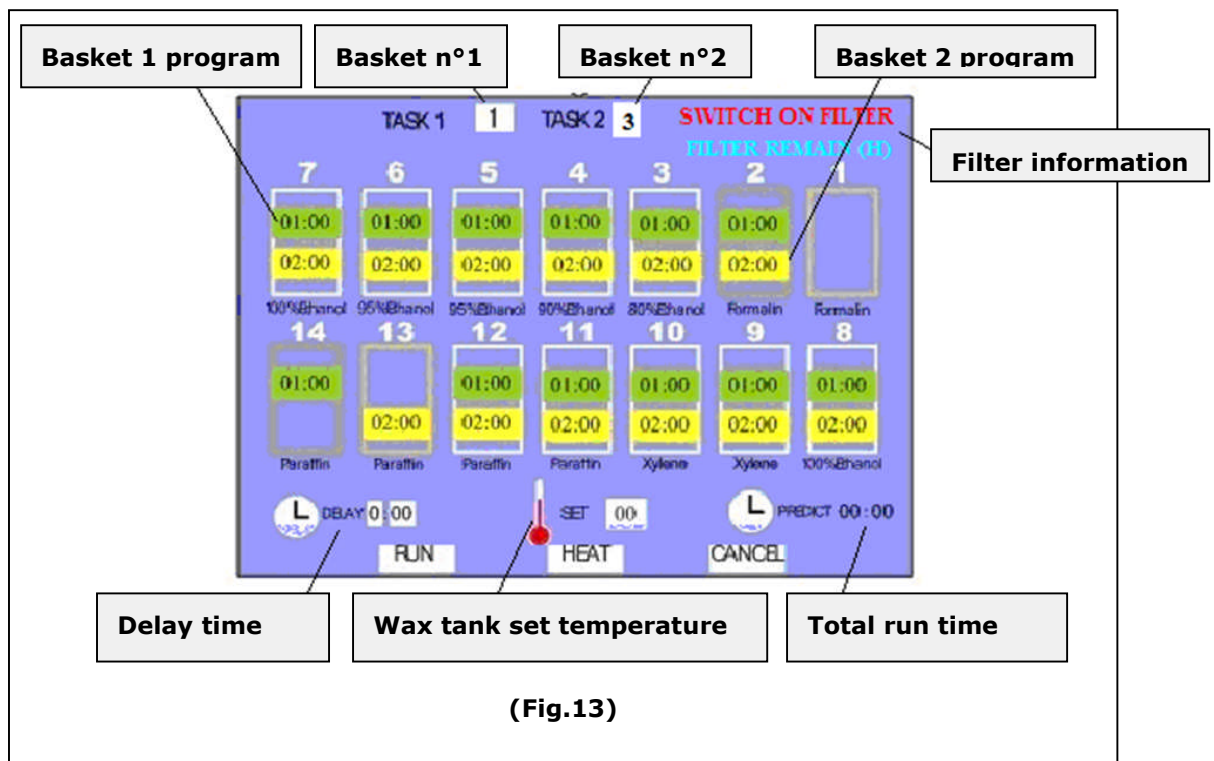
After programmed finished, press **SAVE** to save the program. Otherwise press **EXIT** to exit the set interface.

7.4 Run program

Press **RUN** on the main menu, the system enters to the **RUN** interface, the LCD displays as follows: **(Fig.12)**



LCD Display Explanation



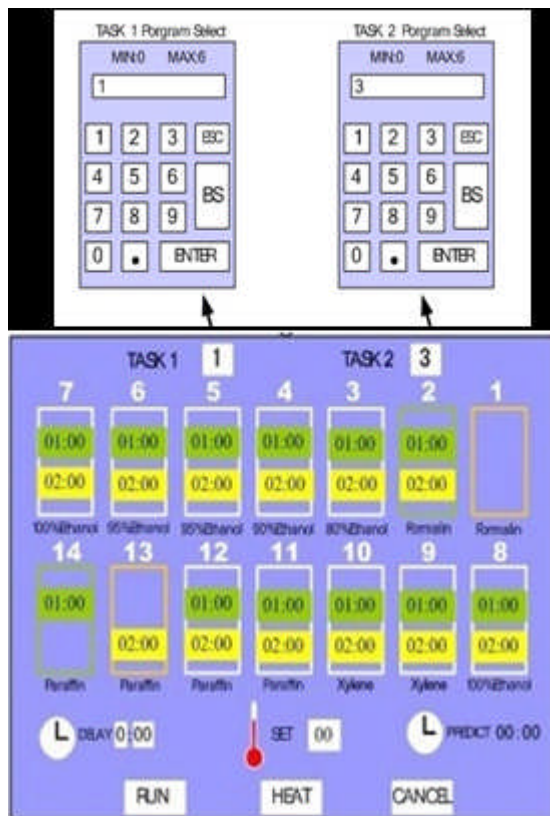
Run operation

1. Before run program, please switch on filter first, as screen shows
[SWITCH ON FILTER]



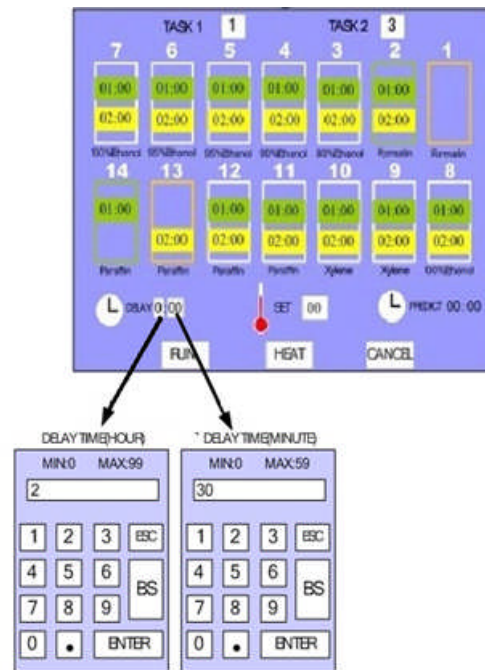
The filter remaining time shows on the screen, as screen shows [FILTER REMAIN HOUR].

2. Choose the executed program for the basket 1 and basket 2.
(If input 0, means this basket will not run)



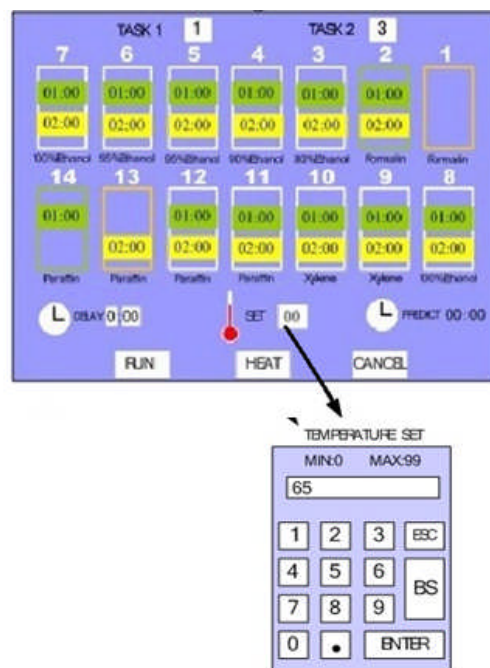
(Fig.14)

- Set delay start run time (if set 00:00, means no delay start).
The DELAY [0:00] on the touch screen, for setting the delay start run time. Press the preceding [0] for set the delay time hours, the after [00] for set the delay time minutes (as the following picture shows)



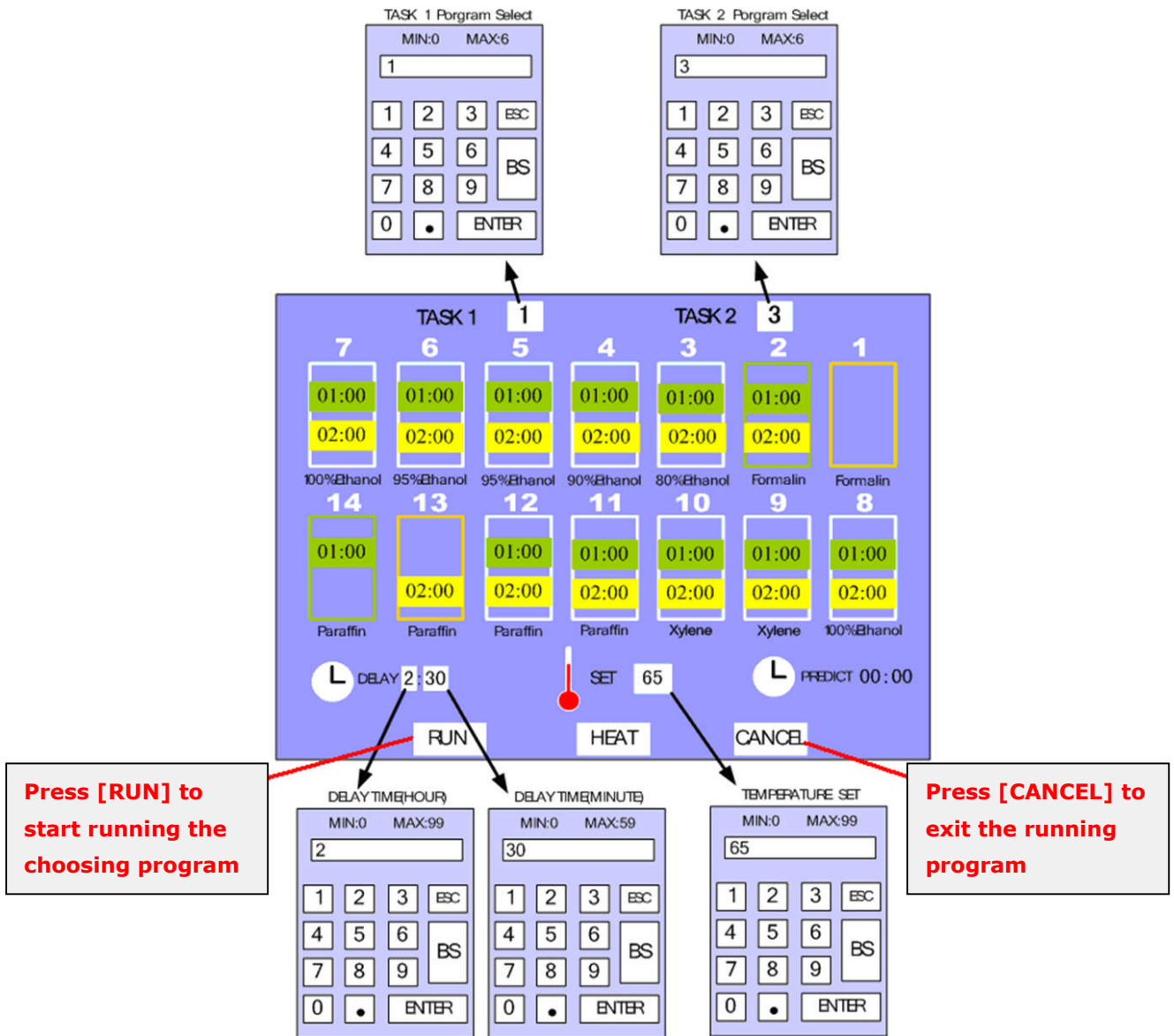
(Fig.15)

- Set a required temperature for the paraffin tanks



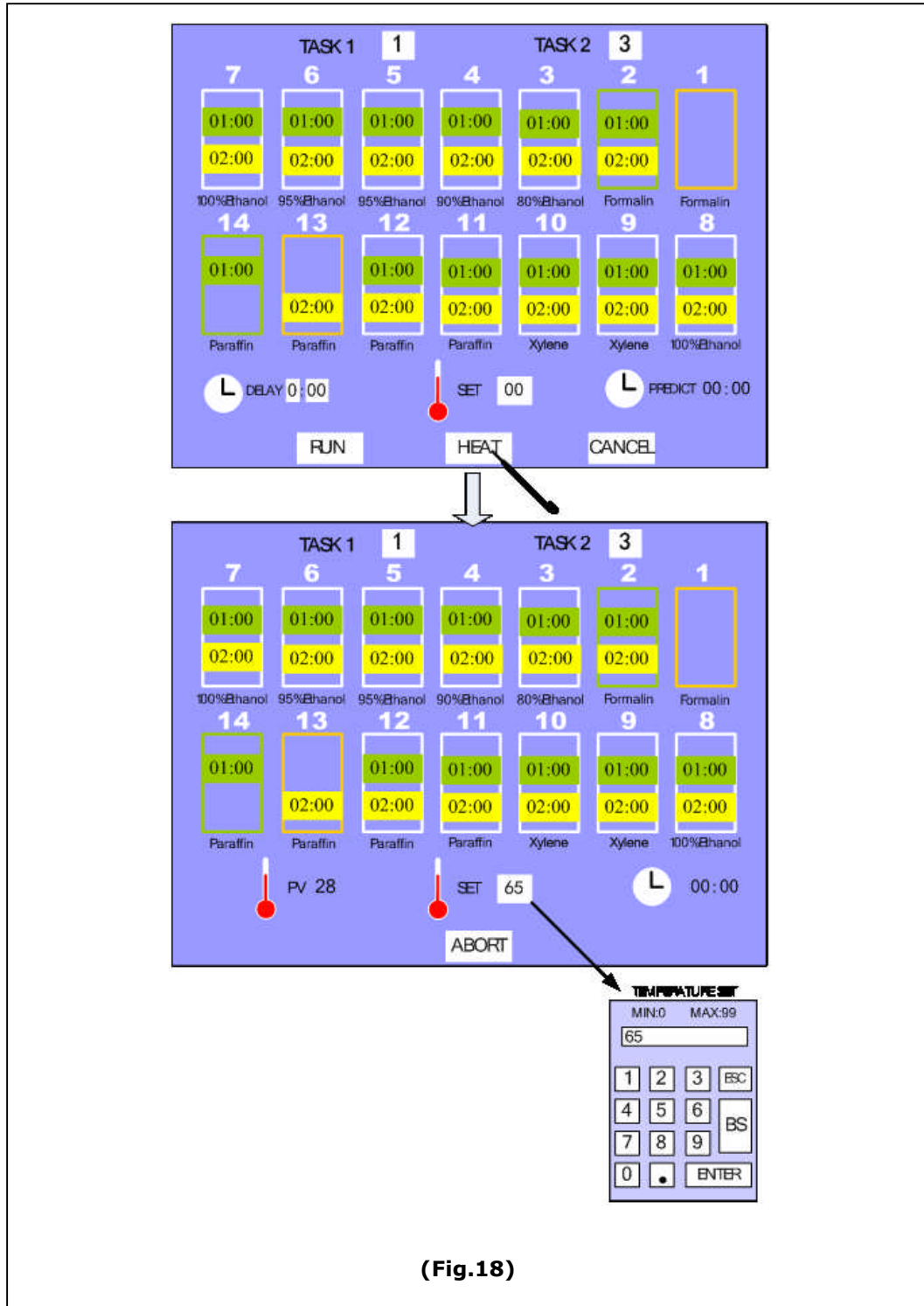
(Fig.16)

5. Press **RUN** key to run the choosing program.
OR press the **CANCEL** key to exit the run operation.
6. The Run operation is indicating as the following picture shows

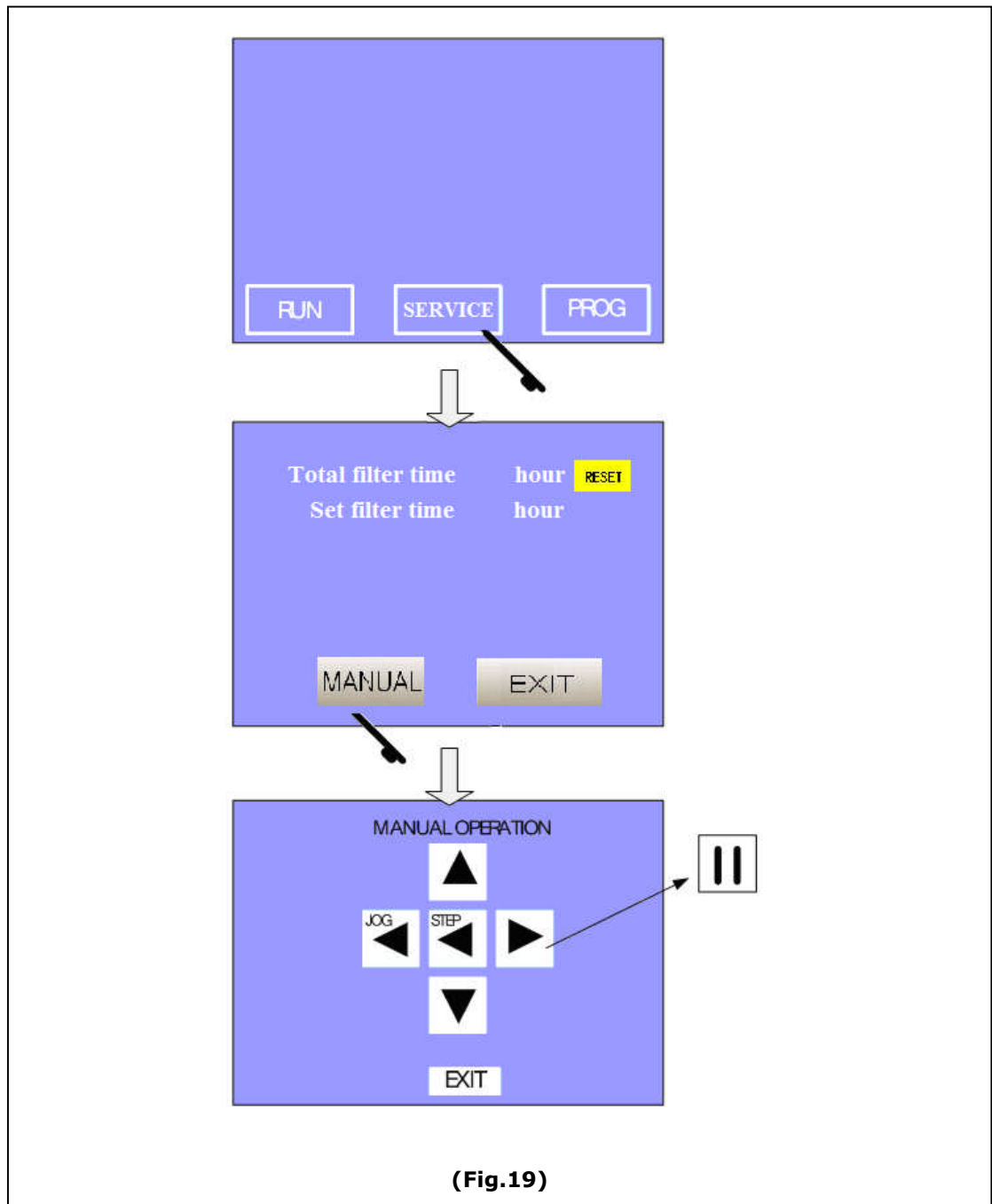


(Fig.17)

Manual heating



8.Service



8.1 Filter

Filter time

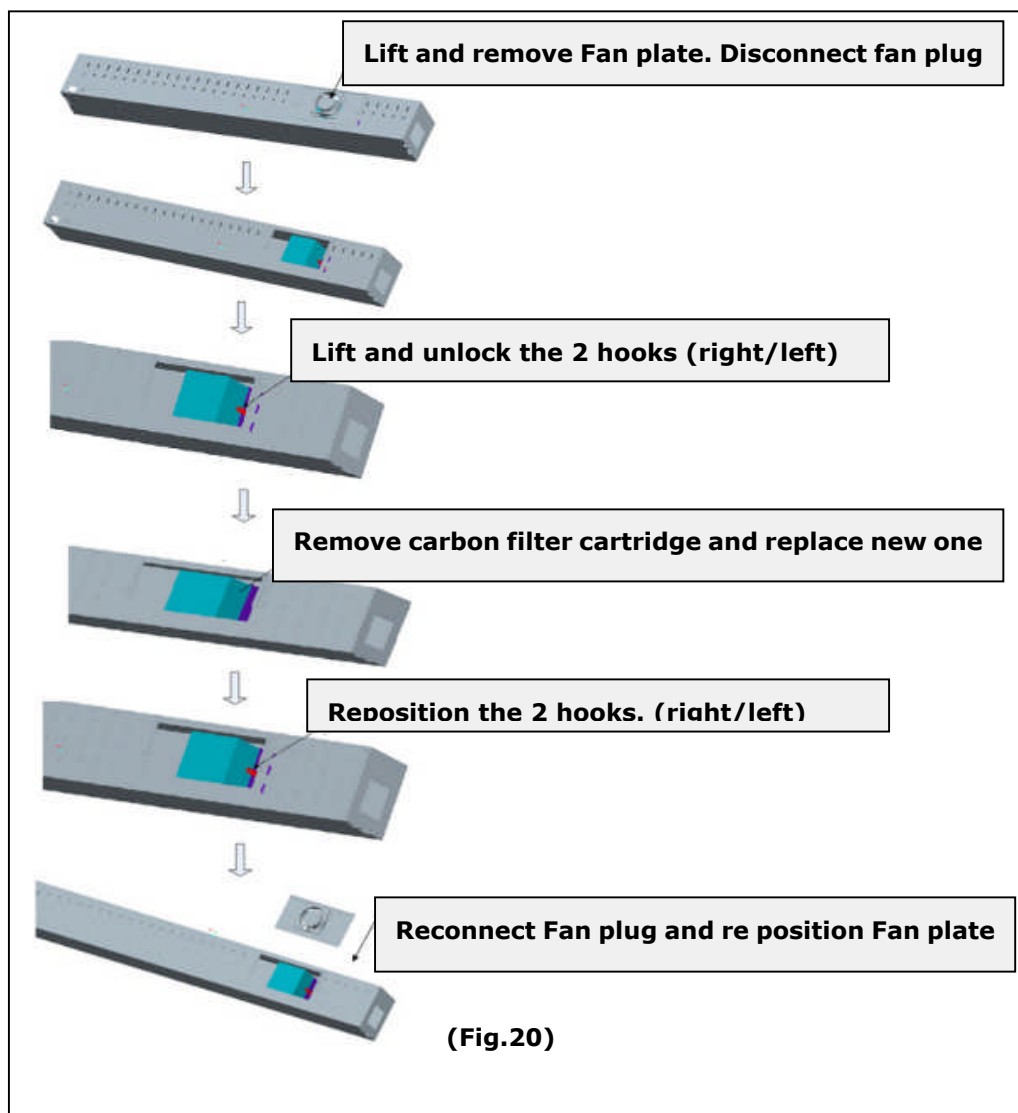
Total filter time: The filter already used time. After the filter is replaced, press **[RESET]** to the number to 0.

Set filter time: Set the filter using time. The recommend time is 200 hours.

Replace filter

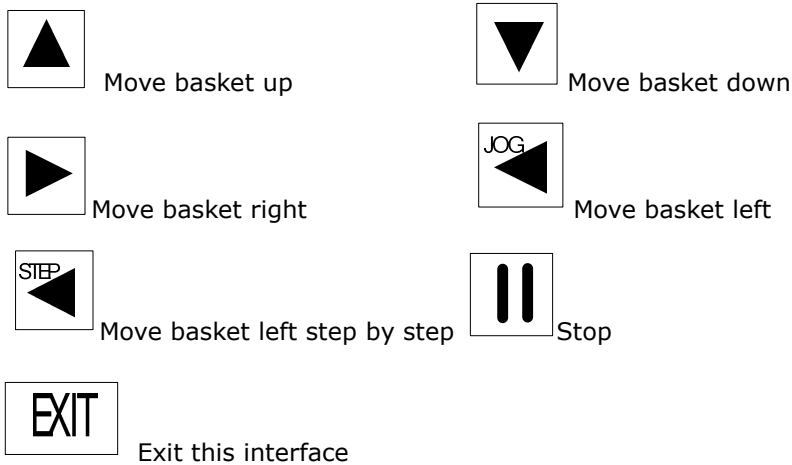
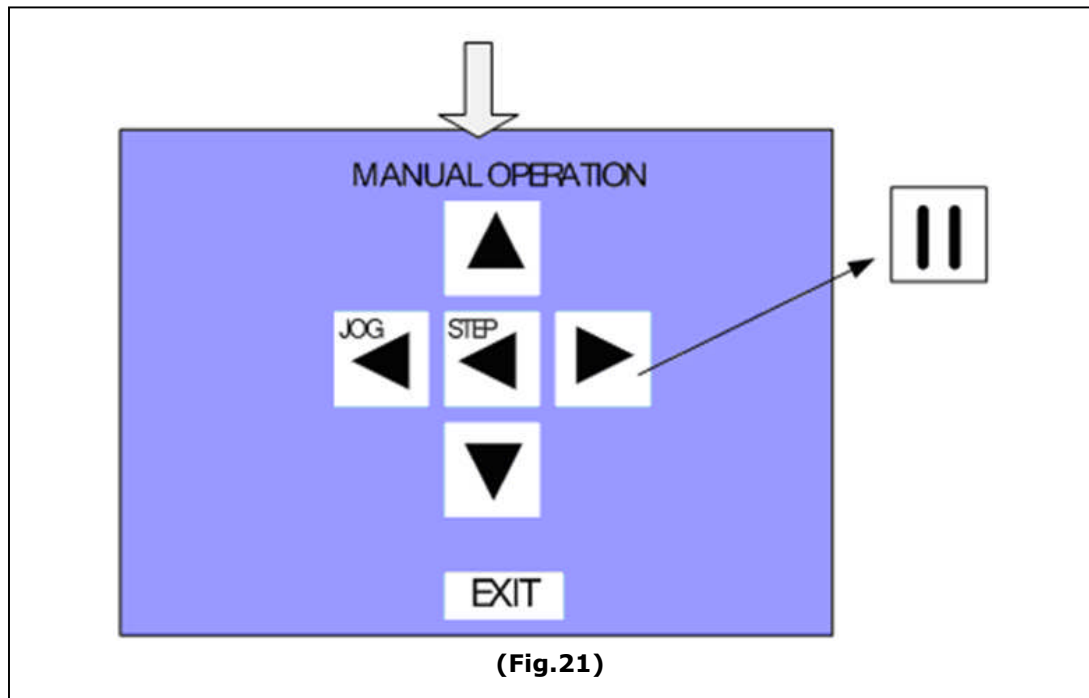
As soon as the set filter time is reached, the screen shows Filter Remain 0, so user need replace the filter.

Please contact provider for new filter, and replace as following. **(Fig.20)**



8.2 Run manually

1. From SERVICE menu (**Fig.19**), press the **[MANUAL]** key on the screen. it will enter the manual run interface as the following shows (**Fig.21**);
2. By pressing appropriate arrows-key , the arm will start to move right, left, up or down or station by station.



9.Cleaning

Each part of the equipment may be wiped using a tissue or soft cloth moistened with a little water to which a small quantity of mild detergent may be added. Take care to avoid water entering the equipment.



- **Clean interior stainless steel surface with detergent and rinse with water.**
- **Clean with head covers by wiping with a cloth;**
- **Wipe the control panel carefully with a cloth.**
- **Don't use liquids directly on the sensitive electronic components. Wipe clean only.**

Do not use solvents on exterior surface and especially on the control panel.

9.1 Wash reagent containers

Wash the reagent containers in warm water with detergent.

9.2 Wash Slide racks

Wash slide racks clean with detergent or laboratory cleaning agents as required.

10.Troubleshooting

TROUBLE		REASON & SOLVE
LCD Display off	internal fan works	The fuse is damaged
		The power supply socket it's not well connected
	Internal fan doesn't work	The switch power is damaged
		LCD display is damaged
The rack transfer arm has stalled during operation.		Reagent container not properly seated.
		Handle not properly positioned.
		Lid not properly seated on the reagent container.
		Slide rack belt.
Program can't be used for processing.		Program parameters are empty.
The basket arm can't move left-right.		The Servo motor driver and the PC board connection wire is loosen or disconnected.
		The Servo motor overload, check whether has any obstruction on the basket arm or close to it.
		The PLC control board is damaged.
		The Servo motor is damaged.

TROUBLE	REASON & SOLVE
The basket can't upward-downward and forward-backward move.	The fuse is blown.
	The transformer is failed.
	The PLC control board is damaged.
The basket can't upward-downward or forward-backward move.	The Step motor driver of upward-downward or forward-backward is damaged.
	The Step motor of upward-downward or forward-backward is damaged.
	The PLC control board is damaged.
While cover is opened, staining going on running.	The position sensor is broken beside of the cover.