OPERATING MANUAL

LABSTAC

TISSUE EMBEDDING SYSTEM

HTP61-600

labstac.com

INDEX

1. Important note

Please ensure that you have read and understood the following safety statement before using this product.
• Please read the instruction manual carefully before installation and use.
• Check that the power cables are properly connected.
• Melted paraffin wax is very hot and may cause serious burns.
• When handling more than one sample at a time, ensure that appropriate measures are taken to avoid mixing.
• Ensure that appropriate measures are taken when handling hazardous materials.
• Do not use paraffin with a melting point above 70 ° C (167°F) as it may not melt.
• The area of the embedded work table is very hot, please take care to prevent burns.
• Do not use this product in the presence of flammable chemicals as this may cause a fire or explosion hazard.
• Do not place the machine in an environment of too high or too low temperature and too wet. The extreme environment can easily cause damage to the machine.
• Please keep the machine away from fire.
• In case of trouble, please contact the company, do not handle without authorization
The model number，factory serial number and year of manufacture are indicated on the nameplate on the back of the instrument.
The service life of this instrument is 6 years.

2. Symbol and meaning

	DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING: If this hazard is not avoided, death or serious injury may result.
	CAUTION: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	NOTE: Indicates information that is not related to risk but is important.
	Instructions require the user to consult the instruction manual for important cautionary information such as warnings and precautions.
	Indicates the correct vertical position of the box.
	Items are fragile and must be handled with care.

	Packaging must be stored in a dry environment.
	Recycle in accordance with local laws and regulations.
	Power on
	Power disconnected
	Environmental protection mark of RoHS directive. The number in the symbol refers to the "environmentally friendly use" years of the product. This symbol should be used if the use of a restricted substance exceeds the maximum permitted limit.
	This product complies with the requirements of EU Directive 98/79/EC for in vitro diagnostic (IVD) medical devices.
	The WEEE (Waste Electrical and Electronic Equipment) symbol is a crossed-out roller bin, indicating the separate collection of electrical and electronic equipment (§ 7 ElektroG Environmental Protection Act).

Table 1

3. Security

1. Specified purpose
This product is an IVD (In Vitro Diagnostic) instrument and a laboratory paraffin embedding machine, used for sample embedding processing before pathological analysis. It freezes and fixes tissue samples in wax blocks so that they can be separated from the mold.

 WARNING:
This instrument may only be used for its intended purpose and only when all safety features are in correct working order. Malfunctions that impair safety must be corrected immediately.

2. User group
• Only trained laboratory personnel should operate this equipment.
• All laboratory personnel assigned to operate this equipment must read this instruction manual carefully and must be familiar with all technical features of the instrument before operating it. This instrument is

for professional use only.

 NOTE:

To avoid damage to the instrument and samples, only accessories and spare parts authorized by Hisure can be installed or used on the instrument.

3. General safety precautions

 WARNING:

• The safety and precautions described in this chapter must be followed at all times. Even if you are already familiar with the operation and use of other Hisure products, please be sure to read these instructions.
• It is strictly prohibited to disassemble or modify the protective devices on the instrument and accessories.
• Only qualified service personnel certified by Hisure can repair the instrument and dispose of the internal components of the instrument.
• Other risks:
• This instrument is manufactured and tested in accordance with the safety requirements for electrical equipment for measurement, control and laboratory use. Improper operation or handling of the instrument can result in injury or death to the user or other personnel, or damage to the instrument or property.
• This instrument may only be used for its intended purpose and only when all safety features are in correct working order.
• To maintain this condition and ensure safe operation, the user must comply with all safety precautions and warnings in this instruction manual.
• If a safety-threatening failure occurs, the instrument must be stopped immediately and the Hisure technician responsible for instrument service must be notified.
• Only original spare parts and permitted Hisure original accessories can be used.

4. Safety Instructions—Transportation and Installation

 WARNING:

• After unpacking the instrument, the instrument can only be transported in an upright position.
• Before connecting the device to the power supply, make sure that the voltage marked on the nameplate matches the voltage available at the installation location.
• The equipment may only be connected via the power cord provided and only to a grounded electrical outlet. Do not use extension cords.
• The power socket to which the instrument is connected should be placed near the instrument and easily accessible.

 WARNING:

• A stable power supply that meets the instrument specifications is necessary for proper operation. Before installing the device, make sure that the electrical installation complies with the above prerequisites. Failure to meet the above conditions may result in damage to the instrument.
• Before each maintenance, repair or cleaning, please turn off the instrument and unplug the power plug.

• If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired.

4. Summarize

The HTP61-600 tissue embedding system is a commonly used instrument for embedding pathological tissue. It has a temperature-controlled wax cylinder, tweezers storage block, wax nozzle pipe heating system, thermal insulation cylinder, workbench, and freezing table (optional) as separate and independent structures. It creates comfortable operating conditions for users. The constant-temperature forceps storage block keeps the medical forceps at a certain temperature during the embedding process, improving the quality of tissue embedding. Suitable for use in hospital pathology rooms.
The model number, factory serial number and year of manufacture are indicated on the nameplate on the back of the instrument.
The service life of this instrument is 6 years
1、Main features:
• Rational layout and easy operation.
• Fully automatic program control, can preset the start time of each day of work within a week.
• You can choose manual or foot control.
• The wax cylinder has double overheating protection, safe and reliable.
• Equipped with lighting, suitable for tissue operations on extremely small specimens.

2、Operating environment conditions:
• Working power supply: 220V±10%, 50Hz
• Ambient temperature: 0-40℃
• Relative temperature: ≤85%
• Atmospheric pressure: 86-106kpa

3. Security type:
Common type type I, type B.

5. Structural feature

The external structure of the HTP61-600 embedding machine host consists of a control system, a wax melting system, and a cooling system (Figure1)

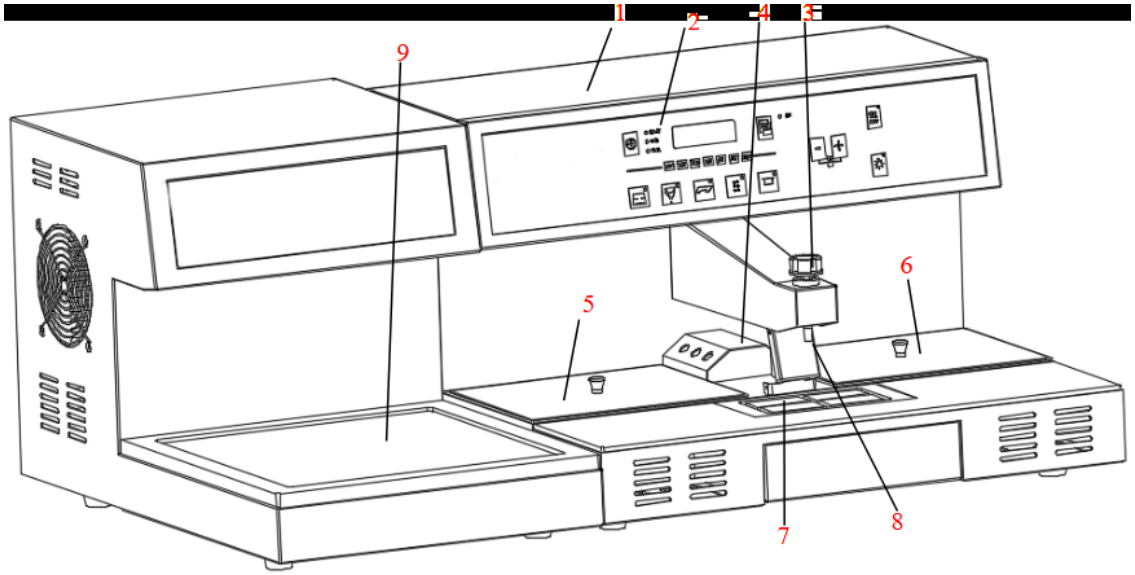


Figure 1
Outline structure diagram

1	Wax Tank	6	Right Storage Box
2	Control Panel	7	Workbench
3	Flow Knob	8	Wax Lip
4	Tweezers Storage Block	9	Small Cooling Plate
5	Left Storage Box		

1. Rear panel description:

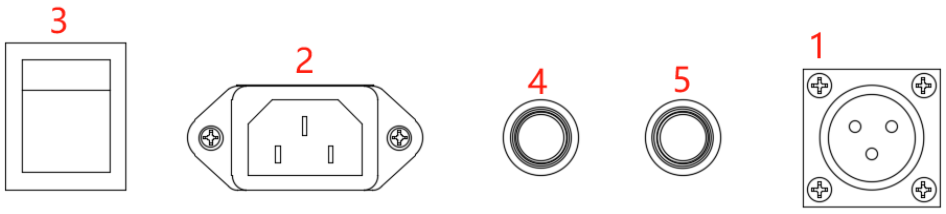


Figure 2
Rear panel view
1 Aviation socket: Connect the foot switch to activate the solenoid valve.
2 Three-wire power socket: AC200V power inlet socket.
3. Power switch: Press "—", the green light is on, indicating that the power is on. Press the "○" end, the green light is off, and the power is off.
4. 5 Power fuses. This machine is equipped with 2 BGDP-10A (Φ5×20) fuses.

2. Front panel button and indicator light description: (see Figure 3)

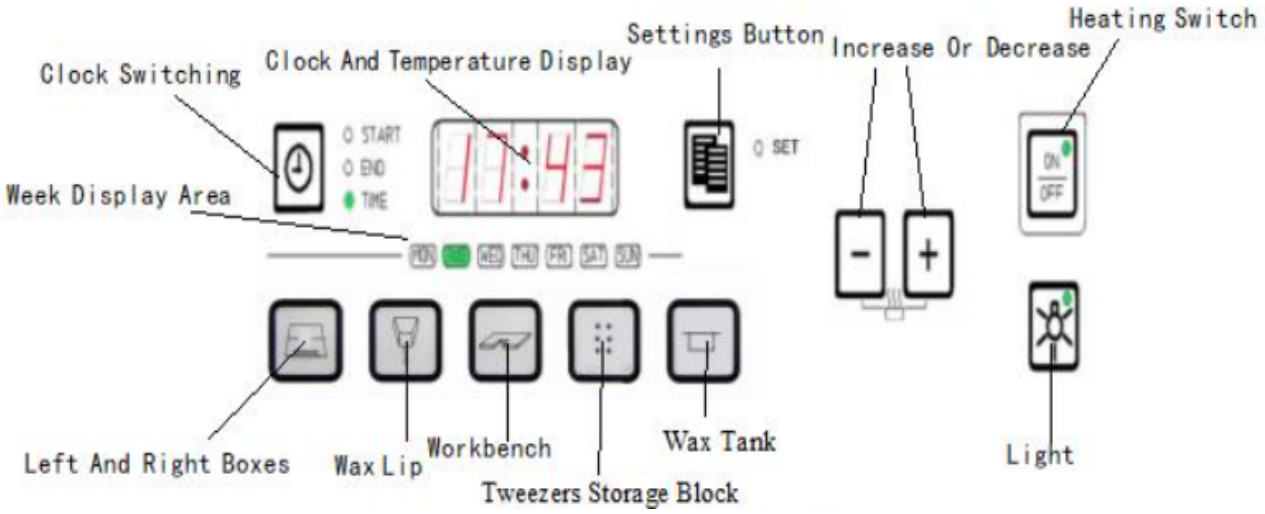


Figure 3
Panel Diagram

Button	Function
	Heating zone selection button: 1 left and right box temperature and heating instructions
	Heating zone selection button: 2 wax nozzle temperature and heating indication
	Heating zone selection button: 3 workbench temperature and heating indication
	Heating zone selection button: 4-storage tweezers table temperature and heating indication
	Heating zone selection button: 5 wax cylinder temperature and heating instructions
	On/off button, press this button, the machine starts heating or turns off heating.

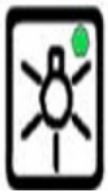
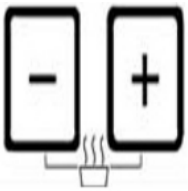
	The clock button is used to switch the current time (TIME), the automatic power-on time (START), and the automatic power-off time (END).
	Setting button
	Illuminated light button
	Decrease and Increase button

Table 2

6. Main technical specification

Dimensions (width * depth * height)	Main Console（560*530*350mm） Cryo Console（345*600*375mm）
Weight	Main Console（30kg） Cryo Console（24kg）
Voltage	220V±10%
Frequency	50Hz±10%
Power	950W
Fuse	10A 220V
A-weighted noise level (measured at 1 m distance)	<75dB (A)
Performance parameters	
Main Console：	
Temperature setting range	0-99℃
Temperature tolerance	±3℃
Main wax tank volume	275*118*95mm
Storage box capacity	215*170*40mm，2 in total

working desk size	175*95mm
Heating time to reach set temperature	≤60 minutes
Automatic operation timing setting range	Any day, any hour, any minute of the week
Cryo Console：	
Refrigeration temperature range	Room temperature— -10℃
Work area size	320*315mm
Environmental conditions	
Operating temperature	+15～+35℃
Working relative humidity	20%～80%，No condensation
Working altitude	高达海平面以上2000m
Storage temperature	0～+50℃
Storage relative humidity	10%～85%，No condensation
Transport temperature	-29～+50℃
Transport relative humidity	20%～80%，No condensation

Table 3

7. Instrument installation

7.1 Installation site requirements

• Stable and vibration-free experimental bench, the table top is flat and smooth, and the ground is as vibration-free as possible.
• Avoid sunlight or drastic temperature changes. The room temperature is kept constant between +20°C and +30°C.
• Relative air humidity max. 80 %, non-condensing.
• The instrument should be installed in such a way that air circulation is not affected.
• When installing, please install the instrument in a location where the power can be disconnected at any time. The power cord serving as the mains disconnect device must always be accessible.

 WARNING:
• When the room temperature exceeds +30℃, it may not be guaranteed that all locations reach the operating temperature of the instrument.
• To ensure correct operation and facilitate disconnection from the instrument, a clearance of at least 15 cm is required at the back of the instrument. Failure to allow this distance may result in severe damage to the instrument's freezing stage. Do not operate the instrument in hazardous locations.
• There is a cooling vent on the left side of the freezing table. Please ensure that the safe and effective distance between the left side of the equipment and other equipment is more than 20 cm and maintain

ventilation. Otherwise, the hot air blown from the cooling vent will bounce through obstacles and bounce to the surface of the cooling table, which will cause serious damage. Affect the cooling effect.
• The cooling and heating areas of the embedding machine may be affected by the wind speed of the external environment, resulting in abnormal heating or cooling;

7.2 Install the instrument

 WARNING:
Improper handling and transportation of the instrument.
PERSONAL INJURY AND/OR PROPERTY DAMAGE
• The number of persons carrying the instrument shall not be less than 2.
• Grasp the corners of the frame and lift the instrument steadily.

1. Have at least 2 people hold the corners of the instrument and lift the instrument steadily.
2. Place the instrument on the workbench.
3. Check against the order to see if all attachments have been delivered.

7.3 Instrument connections

 WARNING:
• Before connecting the device to power, be sure to compare the connection parameters on the nameplate with the local power supply.
• The instrument must be connected to a grounded electrical outlet. Only use the power cord supplied with the local power supply.

How to turn on:
1. Plug the power plug into the electrical outlet.
2. Press the instrument switch to the “—” state (on).
3. When the instrument is not in use, please set the switch to the "○" state (stop).

8. Operation method

1 Turn on the machine: Connect the power supply, turn on the rear panel switch, and turn on the machine.

2 Temperature setting: First use the heating zone selection button to switch to the area that needs to be set, and press the [Set] key to enter the temperature setting state. At this time, the temperature data starts to flash. Press the [+] and [-] keys to increase or decrease the current setting. value, the setting is completed, press [Set] to save and exit;

3 Clock settings：
3.1 Press the [Clock] key to switch the time to "TIME", press the [Set] key, the clock window starts to flash, and the day of the week indicators all turn off. Press the [+] and [-] keys to set the current time. After setting, press [Set] to enter. The next step is "week modification";
3.2 In this step, the clock window is completely black, and the day of the week indicator light below the clock window starts to flash. Use [+] and [-] to modify the day of the week. After modification, press [Settings] to enter the next step of "Monday scheduled power on and off settings";
3.3 In this step, the clock window flashes, the clock indicator light indicates "START", and the day of the week indicator light indicates "MON", indicating that the current setting is the scheduled power-on time for Monday. Press the [Clock] key to switch the scheduled power-on time to "START" and the scheduled power-off time "END", the corresponding indicator light will also switch. Switch to the time that needs to be modified and use [+] [-] to modify it. After the modification is completed, press [Settings] to enter the next step of "Tuesday scheduled power-off setting";
3.4 The setting of this step and the setting of scheduled power on and off on Sunday are the same as the previous step "Setting on timed power on and off on Monday". After the setting is completed, press [Setting] to enter the next step. After setting Sunday, press [Setting] to exit the clock setting. program.

4 Embedding

 NOTE:
Please ensure that the paraffin wax in the wax tank has been melted before embedding.
4.1 Place the treated tissue cassette in the storage box, ensuring that the melted paraffin covers the entire tissue cassette;
4.2 Take out the clean embedding mold, put it on the workbench, and use the foot or manual switch to inject appropriate amount of paraffin;

Figure 3

NOTE:

Do not let a shell form on the surface of the embedded mold, otherwise it may cause paraffin splitting during the preparation of the microscopic section.

4.3 The sample is removed from the tissue cassette using tweezers and then fixed in the embedded mold as required;

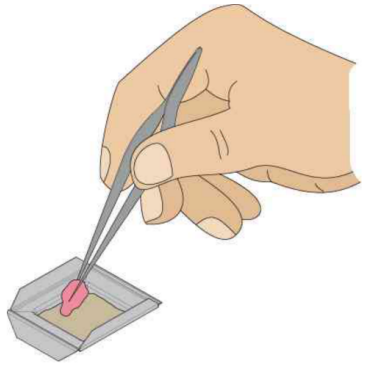


Figure 4

NOTE:

• Extra care needs to be taken when handling samples to prevent them from dripping onto the work area.

• Dripping samples may result in cross-contamination of tissues. If transferring tissue diskette to a work surface, make sure to clean it before proceeding.

• If you want to retrieve a new dripped sample from the workspace, take care to ensure that the sample is not damaged.

• Ensure that the tip of the tweezers is kept clean to avoid cross-contamination of the sample.

4.4 Move the embedding mold to the cold table, and wait until the paraffin becomes transparent;

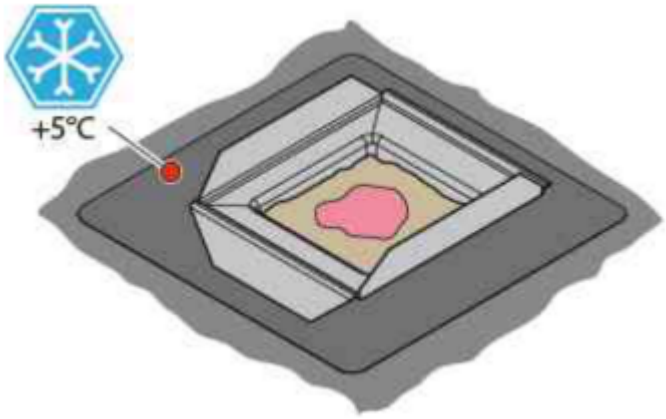


Figure 5

4.5 Move the embedding mold back to the workbench and place the tissue cassette on the embedding mold.

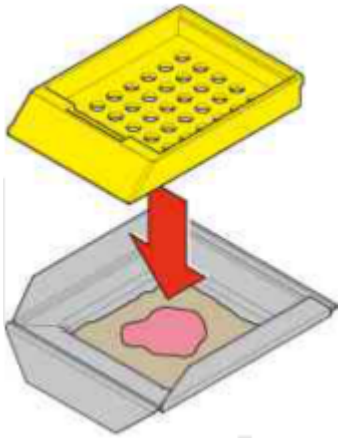


Figure 6

4.6 Fill the tissue cassette with paraffin wax.

Figure 7

NOTE:

Use the paraffin flow adjustment knob to adjust the paraffin flow rate to the appropriate setting. Incorrect flow settings may result in ineffective paraffin formation and/or problems in orienting the sample.

4.7 Transfer the embedding mold and tissue cassette to the cold stage for rapid cooling；

Figure 8

NOTE:

It should be placed on the cold table for more than 1 hour to ensure that the paraffin is completely fixed. Excessive cooling time may cause small cracks in the paraffin shape at the bottom of the investment mold.

4.8 After being completely cooled and fixed, the tissue cassette can be removed from the embedding mold to prepare for slicing；

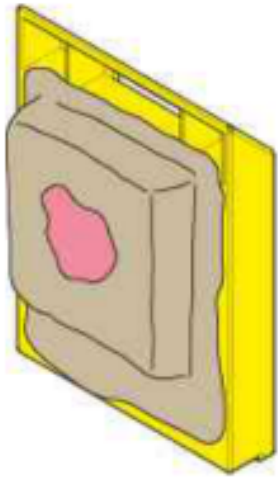


Figure 9

4.9 Embedding complete

9. Common faults and troubleshooting methods (for reference only)

Fault phenomenon	Fault cause	Elimination method
Unable to boot	Power supply no input	Check the external power supply or replace the power cable
	The fuse is blown out	Change the fuse
unheated	The temperature setting is too low	Set the temperature to the desired temperature;
	The work switch is not turned on	Turn ON [ON/OFF] heating switch
No wax	The wax tip temperature does not reach the set value	Wait for the wax tip temperature to reach the set temperature
	The traffic switch is not turned on	Turn the flow switch counterclockwise
Temperature display ER	Temperature sensor off	Check whether the temperature sensor falls off
	Temperature sensor failure	Replace the temperature sensor

Table 4

10. Maintenance and cleaning

 WARNING:

• Turn off the instrument and unplug it before each cleaning.
• When handling cleaning materials, comply with the manufacturer's safety regulations and current laboratory regulations in your country.
• During cleaning, no liquid should penetrate into the instrument!
• In order to prevent scratching the surface of the instrument, metal tools with sharp edges should not be used under any circumstances.

Working surface
• Common laboratory cleaning products suitable for paraffin removal (e.g., PolyGuard or xylene substitutes) are available for cleaning work areas.
• Use dry dust-free paper to clean condensation on the instrument.
Instruments and external surfaces
• If necessary, clean the outer surface of the spray paint with a mild household cleaner or soapy water and wipe it with a damp cloth.
• Avoid organic solvents from touching the surface of the instrument for a long time. Do not use xylene, acetone or alcohol on painted surfaces!
In order to ensure long-term reliable operation of the instrument, please comply with the following points:
• The instrument should be cleaned carefully after each use.

• Use a brush or vacuum cleaner to regularly remove dust from the ventilation slot behind the instrument.

11. Taboos and precautions

 WARNING:
• Must have a good grounding socket before switching on the power.
• This instrument is used for histological and pathological sections only, not for other purposes.
• The back of the instrument should be about 15cm away from the wall to maintain good heat dissipation, otherwise it will affect the life of the instrument.

1、After the instrument arrives, unpack the box to check the appearance and accept the accessories. Please read the instruction manual carefully before starting operation. The operator must hold the operating certificate.
2, In order to ensure personal and equipment safety, the machine must use three-wire power supply, and ensure that the instrument is reliably grounded. Do not use a power supply without ground cables or grounding cables.
3, In order to prevent the heater temperature is too high, the internal installation of overheating protection temperature relay. If the heater temperature is too high, when the dangerous temperature exceeds 95℃, the temperature relay will automatically cut off the heating power supply. When the temperature is lower than this, the heating will automatically resume. Once you find that the temperature protection is out of control, please cut off the power immediately!
4, When the paraffin is not melted, you can not use manual or foot switches to prevent wax leakage.
5, After the work, please unplug the power plug, do a good job of cleaning and maintenance.

12. Packing list

No.	Name	Quantity
1	Main console, Cryo console	1 set
2	Storage tank	2
3	Lid of storage tank	2
4	Power cord	1
5	Fuse wire	1
6	Foot switch	1
7	User manual	1

13. Warranty and maintenance

Under the condition that the user complies with the rules of use, the factory or a legitimate dealer is responsible for the warranty within one year from the sale. The maintenance of this product requires a certain professional knowledge, please do not repair yourself. Please inform the factory as soon as possible for products that have exceeded the warranty period. Our factory will carry out maintenance in time according to the regulations.

14. Transportation and storage

1.Transportation: The packaged products can be used in various modes of transportation under the condition of avoiding direct rain and snow.
2, Storage: After the product packaging, it can be stored for half a year under the condition of 0-40 ℃, no acid, no alkali and no corrosive gas.

15. Scrapping and disposal

 CAUTION:
Instruments or instrument components must be disposed of in accordance with applicable local regulations in force. All contaminated objects must be immediately disinfected with an appropriate disinfectant to prevent spread to other areas of the laboratory or to laboratory staff.

Instruments can become contaminated when using biohazardous samples. Thorough disinfection (e.g. multiple cleaning steps, disinfection or sterilization) is required before reuse or disposal. Dispose of instruments according to applicable laboratory specifications.

 Instrument components, such as computers, monitors, etc. that are marked with the symbol of a dustbin with a fork are governed by EU Directive 2002/96/EC of the European Parliament and of the Council (27 January 2003) on Waste Electrical and Electronic Products (WEEE).
These objects must be disposed of at the collection point in accordance with local regulations.

LABSTAC

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