

EZ-Retriever[®] **System**

Pre-treatment and Antigen Retrieval System

A Complete Solution for pre-treatment
of tissue in Molecular Pathology



Instruction Manual

Instruction Manual

EZ to Understand
EZ to USE
EZ to Rely on

BioGenex
Accelerating the pace of precision medicine

INSTRUCTION MANUAL



EZ-Retriever® System

Pre-treatment and Antigen Retrieval System

BioGenex

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REF

MW014-MO For Laboratory Use only

Explanation of Symbols



Catalogue number



Please consult instructions for use



Manufactured by:



Ground: This symbol indicates or identifies the location of earth grounding position on the instrument.



ATTENTION: Indicates special problems or important information. Read the accompanying text carefully.



Caution (refer to accompanying documents). Please refer to safety-related notes in the manual accompanying this instrument.



HIGH VOLTAGE: This symbol indicates or warns the operator that the line voltage is present in the area of the symbol and there is the potential for electric shock.

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Introduction

Antigen Retrieval is used in pre-treatment of samples in Molecular Pathology and helps in unmasking the target antigenic sites. The masking of antigenic epitopes happens during tissue fixation.

Two different methods used for the purpose are:

- (a) Heat Induced Epitope Retrieval (HIER)
- (b) Proteolytic Induced Epitope Retrieval (PIER)

Studies have revealed that the Antigen Retrieval heating method can distinctly enhance the results in Immunohistochemistry (IHC), in-situ hybridization (ISH) and FISH (fluorescence in situ hybridization) techniques, for tissues embedded in plastic embedding media, celloidin-embedded tissues, or non-embedded tissue slices, as well as in cell smear preparations fixed in non-cross linking fixatives.

The BioGenex EZ-Retriever® System v.3 is intended for Dewaxing, Rehydration for all tissue preparations and Antigen retrieval and nucleic acid retrieval for formalin-fixed, paraffin-embedded tissue sections. For optimal results, the use of BioGenex Antigen Retrieval solutions is recommended.

Principle

Majority of the formalin fixed tissues requires an antigen retrieval step before immunohistochemical staining. This is due to the formation of methylene bridges during fixation, which cross link proteins and therefore mask antigenic sites. Antigen retrieval methods serve to break these methylene bridges to expose the antigenic sites in order to allow the antibodies to bind. The demonstration of many antigens can be significantly improved by the pretreatment of sample with the antigen retrieval reagents which assist in unmasking the hidden antigenic sites.

Microwave irradiation of formalin-fixed, paraffin-embedded specimens has been found to markedly enhance the retrieval of antigens that help to overcome false negative staining and thus provide a crystal clear image. In this technology, a magnetron converts electrical energy into microwaves that has shorter wavelength and greater frequency. The amount of microwave energy absorbed by a given specimen (or “load”) depends on the size of the load, its orientation with respect to the waves, and the dielectric and thermal properties of the material.

BioGenex **EZ-Retriever® System v.3** is specifically designed to unmask the antigens on the tissue section based on Microwave technology. The thrust of the technology is based on the application of heat for varying lengths of time to formalin-fixed, paraffin-embedded (FFPE) tissue sections immersed in “Antigen Retrieval Solution” with a unique feature of temperature monitoring system.

Unique Features

- Programmable Time and Temperature Control
- DeWax, Rehydration & Antigen Retrieval in 35 minutes^ψ
- User-Friendly Interface
- User-Defined Protocols for Versatility
- Default Factory Protocols for Convenience and Consistency in results
- High Throughput
- Preserves the tissue morphology, resulting in effective staining.
- Valuable tool for Investigative Pathology wherein high quality of staining is required.

^ψTimings are subjected to ideal laboratory conditions

Specifications

General Specifications*	
Model	EZ-RT-110, V.3
Rated Voltage	110 V / 60 Hz
Rated Input power	1500 W
Rated Output power	1000 W
Oven Capacity	1.0 cu-ft
External Dimensions (WxHxD)	20.4" X 12" X 17.3"
Turntable Diameter	12.3"
Instrument weight	37.5 lb
Factory supplied parts	P/N 6520-26628, Microwave Probe Tank (1)
	P/N 6520-26629, Microwave Tank (3)
	P/N 4730-20006, Slide Rack (4)
	P/N 6520-37922, Mod Tank Holder (1)
	P/N 4271-00013, Turntable (1)
	P/N 4271-000014, Rotating Ring (1)
Environmental conditions	10 °C to 40°C
Technical Specifications	
Operations	Default Protocols and User Protocols
Heat Control	Through Microwaves
Temperature Monitor	By Temperature Probe

* Specifications are subjected to change without prior information

† If the optional kit for compliance to clinical and Laboratory standards Institute (CLSI) guidelines is purchased

Equipment Checklist

- Carefully unpack the instrument.
- Preserve the box and packing materials for future use.
- Ensure that you have all the following items along with BioGenex EZ-Retriever® System V.3 instrument user's manual.

<u>Catalogue Number</u>	<u>Description</u>	<u>Quantity</u>
P/N 6520-26628	Microwave Probe Tank	(1)
P/N 6520-26629	Microwave Tank	(3)
P/N 4730-20006	Slide Rack	(4)
P/N 6520-37922	Mod Tank Holder	(1)
P/N 4271-000013	Turntable	(1)
P/N 4271-000014	Rotating Ring	(1)



The system may not function properly if you use items that are not preinstalled or distributed by BioGenex. If any of the items are missing or damaged, please contact us immediately.

Instrument Overview

Figure1: EZ-Retriever® System V.3 with all the components.



Microwavable Tank holder



Four Microwavable Holders



Four Slide Racks

Instrument Overview

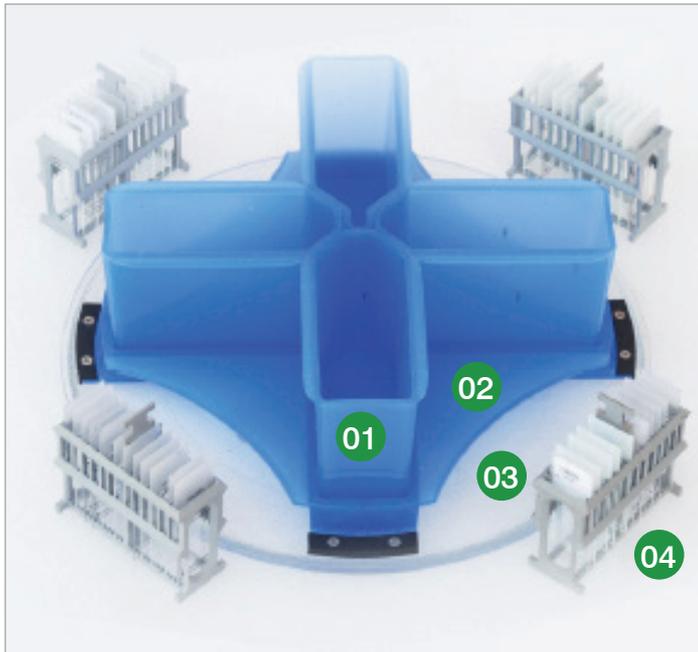
Figure 2: EZ-Retriever® System V.3



1. Observation Window
2. Microwavable Tank
3. Safety Interlock System
4. Temperature Probe Guide
5. Turntable
6. Rotating Ring
7. LCD Display

Instrument Overview

Figure 3: Top view of the microwavable tanks for retrieval solution, slide racks, microwavable tank holder and turntable which are placed inside the microwave.



1. Four Microwavable tanks for antigen retrieval solution. These tanks should always be filled with at least 275 ml. of retrieval solution.

2. Microwavable Tank Holder. Make sure that the tanks are kept centrally on tank holder.

3. Glass Turntable. Always keep both the glass turn table and rotating ring at the center of oven.

4. Slide Racks. Each slide rack can hold 24 slides. If only one is used make sure to put dummy rack on the opposite side filled with distilled water.

Quick Tour

- The **EZ-Retriever® System v.3** has been designed for general laboratory use only.
- It is an effective Antigen Retrieval system for formalin-fixed, paraffin-embedded tissue sections.
- The instrument is provided with all the components such as Microwavable Tanks, Microwavable tank holder, slide racks, turntable and rotating ring.
- Each Microwavable tank can hold one slide rack and each slide rack can accommodate 24 slides.
- It is an effective Antigen Retrieval system for formalin-fixed, paraffin-embedded tissue sections.
- It is time and temperature controlled to ensure proper processing of the tissue sections during a single run.
- A temperature probe is used to measure the temperature of the solution.



Do not use a metal slide rack as it could produce arcing affect and damage the instrument. Use protective gloves or pads while removing the inner base from the instrument. To avoid fire, do not use this unit for any other purpose.

Temperature Control

The recommended temperature for Antigen Retrieval at higher temperatures is 95° –107°C. The temperature can be changed in increments of 1°C.



Make sure that there is sufficient reagent volume inside the Microwavable tanks while using higher temperatures for Antigen Retrieval as insufficient reagent volume could cause overheating of the components and possible damage to the instrument. Ensure that the Probe Tank which contains a slot for the temperature control probe is always filled with the solution.

Time Control

The recommended time for each heating cycle is 4 to 5 minutes when used in combination with High Temperature Antigen Retrieval solution.



Make sure that there is sufficient reagent volume inside the tanks while using long heating times. The maximum heating cycle allowed by the program is 20 minutes from the time the set point is reached. Make sure that the instrument is connected to a Voltage Stabilizer in case voltage fluctuations are observed on the 110V main power supply

Microwave Tank and Tank Holder

The Microwave tanks are made of microwavable material and can withstand high temperatures. Each tank can hold up to 24 slides and 275 ml of solution. The temperature probe is immersed in the solution when the Run is started and the probe will automatically retract from the tank when the Run is Completed or Paused.



DO NOT attempt to install or remove the tank when there is power failure during the Run. The probe might be in the downward position and can be damaged.

Safety Notices



It is recommended that EZ-Retriever® System V.3 should be used by a qualified person only.

EZ-Retriever® can be safely used in a laboratory, provided that certain precautions are observed. The EZ-Retriever® presents no hazards to the user if operated according to the Instructions in this manual. Read the following safety precautions before operating this instrument. Read and follow the precautions described in the section titled “Precautions to Avoid Possible Exposure to Excessive Microwave Energy”. Clinical interpretation of any results from the EZ-Retriever® is solely the responsibility of the user. Use this instrument only for its intended use as described in this manual.

Following is the list of the safety measures:

1. This instrument MUST BE GROUNDED. Connect the instrument to properly grounded outlets of the specified voltage 

- Never place a conductive material (such as a metal container) inside the EZ-Retriever®
- Periodically inspect and clean the door seals and hinges
- Use a microwave leakage detector to check for the leakage from the door seals
- Never heat food in EZ-Retriever®
- Never use toxic chemicals in EZ-Retriever® System V.3.
- Do not use flammable solvents in EZ-Retriever® System V.3.

2. In case of fire inside the instrument, DO NOT OPEN THE DOOR. Turn off the power and disconnect the power cord or shut off power at the fuse or circuit breaker panel.

3. The AC line cord provided with the unit is intended to ground the chassis to help prevent shock and injury to the personnel. The national and local electrical code requires a three-conductor AC outlet that connects the ground wire of the cord to the power ground.

4. DO NOT try to open the instrument covers as high voltage components can cause shock even if the instrument is disconnected from the power source.

Precautions to Avoid Possible Exposure to Excessive Microwave Energy



- DO NOT attempt to operate the instrument with the door open since this can result in harmful exposure to microwave energy. It is essential to use safety interlocks.
- DO NOT place any object in between the front end of the instrument and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
- DO NOT operate this instrument if it is damaged. It is essential to check that the instrument door is closed properly and there is no damage to the
 - DOOR (Dent)
 - HINGES AND LATCHES (broken or loosened)
 - DOOR SEALS AND SEALING SURFACES
- DO NOT bypass, defeat or tamper with any of the safety interlocks.
- DO NOT operate the instrument with insufficient reagent as it could cause overheating of the components. This can result in microwave leakage from the instrument and possible damage to the EZ-Retriever[®]
- The instrument must be serviced ONLY by qualified service personnel.
- There are no user serviceable parts inside the instrument therefore DO NOT try to open the instrument.
- High voltage can cause shock even if the instrument is disconnected from the power source. 

General Precautions



To reduce the risk of fire, electric shock, injury, or exposure to excessive microwave energy follow the general precautions described below. Install or locate this instrument **ONLY** in accordance with the instructions of this manual.

1. Place the instrument on a flat surface, in a location that provides adequate ventilation.
2. DO NOT cover or block any openings of the instrument.
3. Use ONLY the accessories supplied by BioGenex.
4. To avoid damage to the temperature probe, use only the tank holder and tanks provided with the instrument. Ensure that the tanks are always filled with at least 275 ml. of solution.
5. DO NOT use EZ-Retriever® in an atmosphere where flammable or corrosive vapors may be present. Operating AC-line-powered equipment in such an environment may cause an explosion.
6. Keep the cord away from heated surfaces and DO NOT let the cord hang over table or counter.
7. DO NOT operate with a damaged power cord or immerse the cord or plug in water.
8. DO NOT operate EZ-Retriever® empty.
9. The turntable and the rotating ring must be in the oven during the RUN time.
10. DO NOT set the instrument to run at temperatures higher than 95° C, if the tanks are filled with distilled water or other aqueous solution.
11. DO NOT try to remove or install the tank holder when there is power failure as the probe may be in the down position and this could cause the probe to bend causing future malfunctions.
12. Always wait for the tanks and the tank holder inside the microwave to cool before removing them from the microwave.

13. Please ensure that there is no boiling due to excessive heating while performing the desired protocol.
14. The instrument has several built-in safety switches to ensure that the power remains off when the door is open. Do not tamper with these switches.
15. Failure to maintain the instrument in a clean condition leads to deterioration of the surface that could adversely affect the life of the instrument and possibly result in a hazardous situation.
16. DO NOT use the instrument cavity for storage purposes when not in use.

Do not store this instrument outside. For long term storage, instrument may be stored in its original shipping container in a dry location.

EZ-Retriever® does not facilitate active cooling from higher to lower temperature. Therefore, in case of 2-cycle run, the temperature of the first cycle should be set lower than or equal to the temperature of 2nd cycle. If antibody protocol specifies lower temperature for the 2nd cycle, all solutions in tanks should be replaced.

Installation Instructions



Warning: To ensure proper operation of the instrument, read BioGenex EZ-Retriever® instrument Instruction Manual carefully before installation.



Warning Attention: If your instrument has been exposed to marked changes in temperature or humidity, wait for it to acclimatize sufficiently before operating.



Warning Attention: Upon receipt, check the contents of the BioGenex EZ-Retriever® System V.3 box for completeness. If the contents have suffered from any damage in transport, contact BioGenex Service representative immediately.

Grounding Installation

Remove all packing material and accessories. Examine the instrument for any damage such as dents or broken door. Do not install if instrument is damaged.

This instrument must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current. This instrument is equipped with a cord having a grounding wire with a grounding plug. The instrument must be plugged into an outlet that is properly installed and grounded.

Consult a qualified electrician or serviceman if the grounding instructions are not completely understood or if doubt arises as to whether the instrument is properly grounded. If it is necessary to use an extension cord, use only a 3- wire extension cord.



Warning: Improper use of the grounding can result in electric shock. Do not plug into an outlet until instrument is properly installed and grounded.



Danger: Electric shocks Hazard touching some of the internal components can cause serious personal injury or death. Do not disassemble this instrument.

Instrument installation

Select a level surface that provides enough open space for the intake or outlet vents and suitable location for the instrument.

A minimum clearance of 3.0 inch (7.5 cm) is required between the instrument and any adjacent wall. One side must be open.

Leave a minimum clearance of 12 inch (30.0 cm) above the instrument.

Blocking the intake and/or outlet openings can damage the instrument.

Ensure that the socket outlet must be easily accessible and nearer to the instrument to disconnect the plug.

The back, top and sides of the instrument require a minimum of 2-inch clearance from walls to allow adequate ventilation. Allow at least 3 inches from door front to edge of bench top to avoid accidental tipping of the instrument.

EZ-Retriever[®] instrument is designed to be placed on a standard lab bench or on a suitable desktop.

The lab bench must be able to safely support the weight of the machine and support equipment.

The EZ-Retriever[®] may be handled by 1 person but 2 persons are recommended. The instrument may be safely lifted anywhere around the bottom perimeter by the base plate.

The rotating ring and turntable must be properly centered and engaged with the drive cog. This is very important, so check this before each run.

Make sure that both the turntable and the tank holder with all microwave tanks are centered and there should not be any contact between these tanks with the temperature probe.

Important Note:

For installation in USA:

The Instrument should be plugged into a separate circuit with the electrical rating of 15 Amp for the EZ-Retriever 110V, V3.0 model

For installation in India:

Use the Step-down transformer for powering up the EZ-Retriever 110V, V3.0 model. Here step-down transformer input should be plugged in to separate circuit with the electrical rating of 15 Amp.

Operating Instructions



Operations

Switch ON the EZ-Retriever® by plugging in the instrument into a standard laboratory outlet. Be sure that the voltage and frequency are same as mentioned on the rating label.

As soon as EZ-Retriever® is ON you can see LCD showing the logo “Welcome to EZ-Retriever® Version 3.0 BioGenex “.

Make sure that the turntable ring and turntable are placed centrally inside the EZ-Retriever®.

To make the antigen retrieval process more consistent, have all the microwave tanks filled with antigen retrieval solutions or buffers and the slides ready before starting the run

Fill each tank with at least 275 ml of antigen retrieval solution. At least 2 tanks are required for each run. The two tanks must be in opposing positions in the Tank Holder in order to balance each other during the antigen retrieval process. In case of insufficient sample load you can fill the other tank with distilled water for proper balancing.

Keep the Tank Holder with microwave tanks having antigen retrieval solution with slides to be processed at the center of the turntable.

EZ-Retriever® instrument has got two modes of selecting the protocol for antigen retrieval process i.e.

Default Protocols

User-Protocols

To select any of these protocols close the EZ-Retriever® instrument door and press the soft key corresponding to the Start button. Follow instructions appearing on the LCD to enter applications or to create protocols.

Operation of Default Protocols

The EZ-Retriever[®] has been installed with three different default protocols. These default protocols are designed based on the most ideal conditions required for antigen retrieval process.

<u>Catalogue Number</u>	<u>Temperature</u>	<u>Time</u>	<u>Number of Cycles</u>
Protocol - 1	95° C	5 Min	1
	95° C	5 Min	1
Protocol - 2	95° C	5 Min	1
	107° C	5 Min	1
Protocol - 3	60° C	5 Min	1
	90° C	5 Min	1



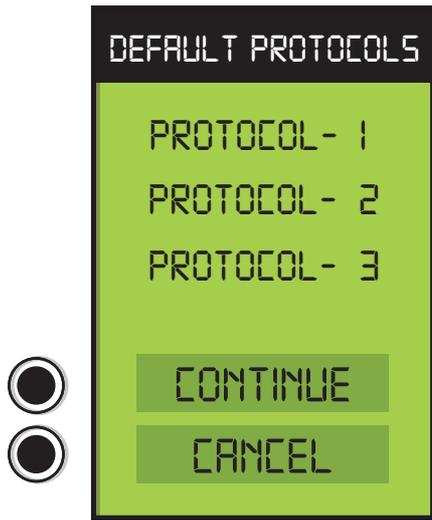
Default
Protocol

Up
Arrow

Down
Arrow

As soon as the instrument is switched ON, this screen is displayed on the LCD.

To select any of the default protocols press 'Default Protocol' key on the control panel. All three protocols with temperature, time and number of cycles present in each protocol will be displayed on the LCD panel.



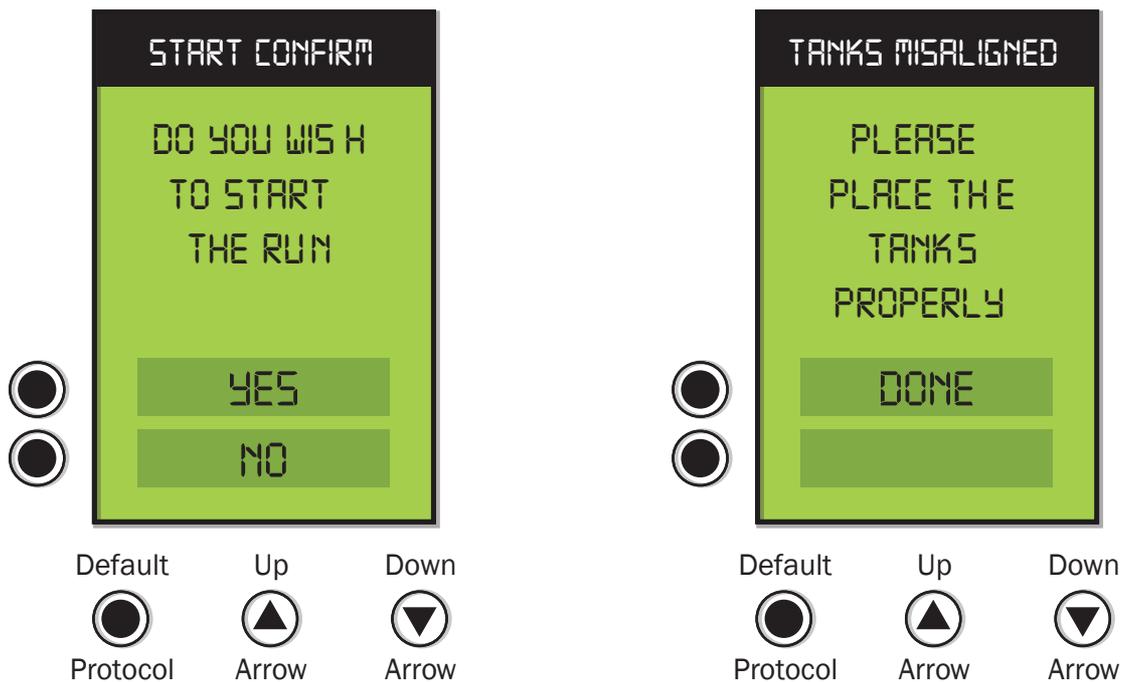
Default
Protocol

Up
Arrow

Down
Arrow

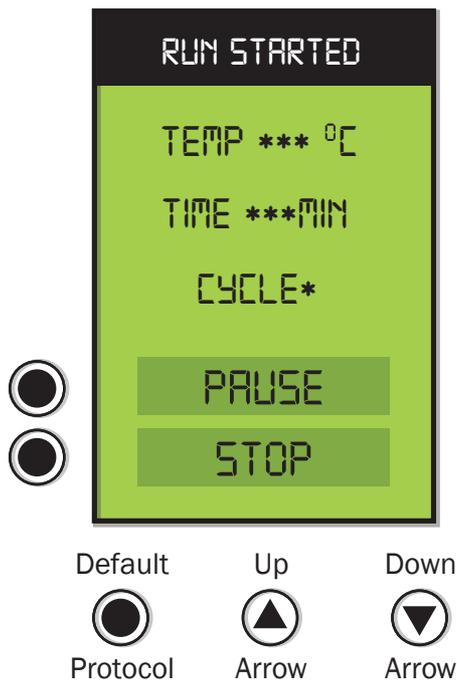
The 'Default Protocols' screen shows the list of factory protocols. Select the desired protocol by pressing on the Up and Down keys. Confirm the selected protocol by pressing the soft key corresponding to 'Continue' button, which will take to 'Start Confirm' screen.

Note - To return back to the main screen press the key corresponding to 'Cancel' button.



Start the run from 'Start Confirm' screen by pressing the soft key corresponding to "Yes" button. The user can go back to the previous screen by pressing the soft key corresponding to the 'No' button.

Once confirmed the 'Start Run', the instrument will go to 'Run Started' screen. If the microwave tanks are not placed centrally, instrument shows an error screen "Tanks misaligned". Place the tanks properly and press the soft key corresponding to 'Done' button, which will bring you to 'Start Confirm' screen. Start the run by pressing the key corresponding to "Yes" button.



'Run Started' screen will be displayed on LCD as shown.

Once run is started turntable starts spinning, temperature probe goes down into the solution present in the microwave tank, and the microwave starts heating up the antigen retrieval solutions.

Once the temperature reaches to the set point the actual count down of the timer starts.

The temperature is constantly monitored and displayed on the 'Run Started' screen along with current run cycle number and time remaining for completion of that particular run.

Note - The Run can be paused or stopped any time during the process by pressing the corresponding keys.



After finishing the 'cycle 1' the 'Run 1 completed' screen will be displayed along with a beep. Open the door to stop the beep sound and change the solutions if required and close the door. Press the soft key corresponding to 'Resume' which continues with the cycle 2. To abort the run, press soft key corresponding to 'stop' button.



Default



Protocol

Up



Arrow

Down



Arrow

When time has elapsed for the programmed cycles, the LCD displays 'Finalizing' screen with a message indicating that the run is completed and is being finalized.

Upon the completion of 'finalizing run' step, the instrument will give beep sound and "Run Stopped" screen will appear.



Default



Protocol

Up



Arrow

Down



Arrow

After the “Run Stopped” screen appears, press key corresponding to ‘Done’ to stop the beep.

This will lead back to the home screen.

Temperature probe will reach its home position now.

When the run is completed, the instrument will automatically store the temperature and time settings of last used run in its memory

Warning: To avoid burn injury from hot solutions, allow the microwave tanks to cool before removing the tank holder from the instrument.



Default



Protocol

Up



Arrow

Down



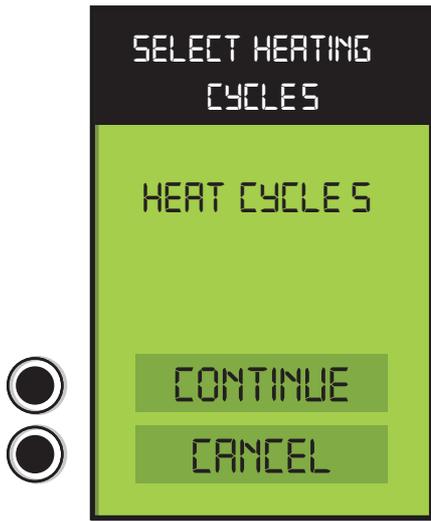
Arrow

Operation of User Protocols

As soon as the instrument is switched on, this screen is displayed on the LCD.

To enter into the applications and to create USER protocols press the Start key on the control panel.

Note: You can return to the previous window from any other screen by pressing the key corresponding to "Cancel" button.



Default
Protocol

Up
Arrow

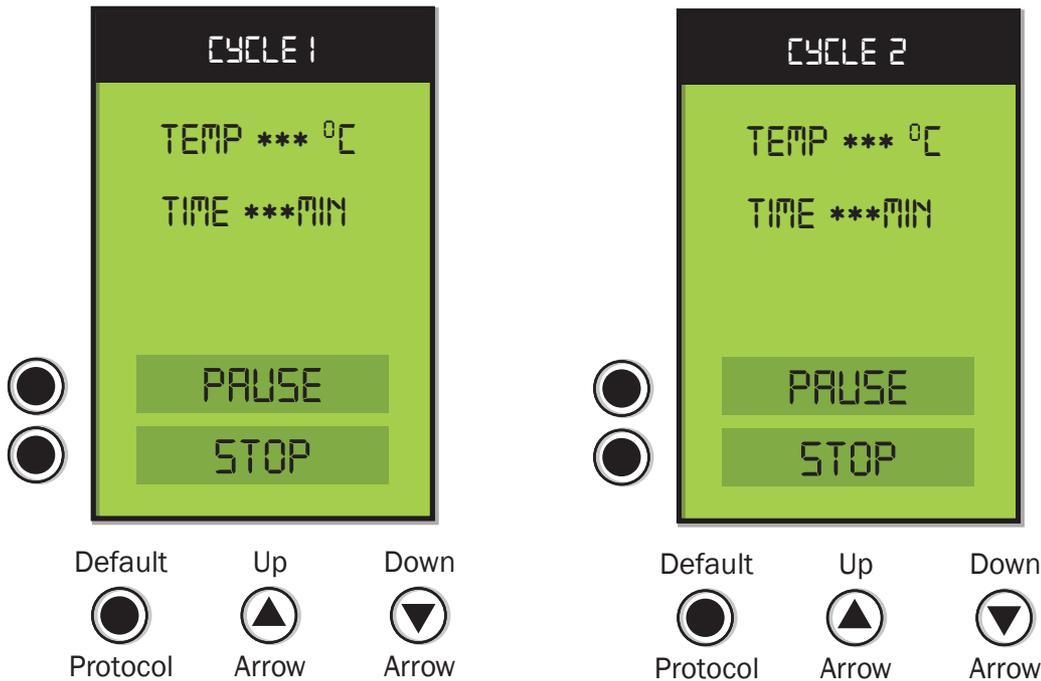
Down
Arrow

Upon pressing the START button, the “Select Heating Cycles” screen will be displayed on the LCD.

Select number of cycles required for the run by pressing the soft keys corresponding to ‘up’ and ‘down’ arrows.

Confirm the selection by pressing on the soft key corresponding to ‘Continue’ button which will lead to the next screen.

Note: This screen will accept maximum of 2 cycles and will ignore any number above 2.



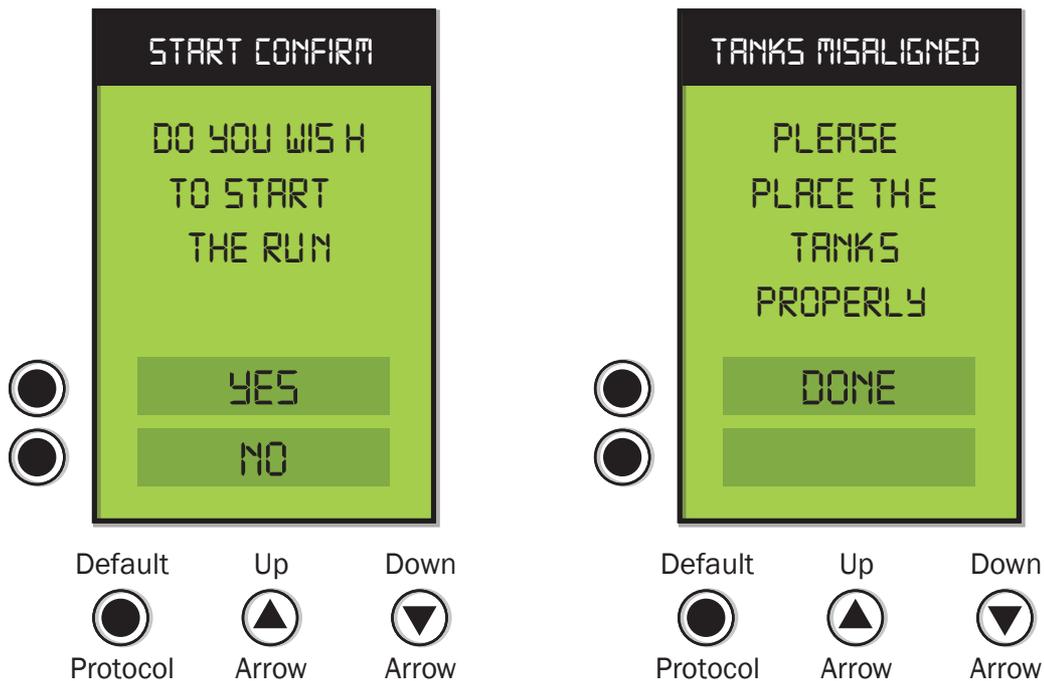
If one heating cycle is being selected in the previous screen, 'Cycle 1' screen will be displayed

The 'Temp' button will be blinking. Set the temperature in degrees C (between 40 to 107) by pressing the soft keys corresponding to 'up' and 'down' arrows.

Confirm the selection by pressing on the soft key corresponding to 'Continue' button. The selected temperature set point will be displayed.

Next the 'Time' button will be blinking. Set the time in minutes (between 1 to 15) by pressing the soft keys corresponding to 'up' and 'down' arrows.

Confirm the selection by pressing on the soft key corresponding to 'Continue' button. The selected time set point will be displayed. Press the key corresponding to 'Continue' button to Start the Run



Start the run by pressing the key corresponding to “Yes” button. The user can go back to the previous screen by pressing the key corresponding to the ‘No’ button.

Once the ‘Start Run’ is confirmed, the instrument will go to ‘Run Started’ screen. If the microwave tanks are not placed centrally, instrument shows an error screen “Tanks misaligned”. Place the tanks properly and press the soft key corresponding to ‘Done’ button. This which will bring you to ‘Start Confirm’ screen. Start the run by pressing the key corresponding to “Yes” button.



Default

Up

Down



Protocol

Arrow

Arrow

'Run started' screen will be displayed on LCD.

Once run is started Turn table starts, temperature probe goes down into the solution present in the microwave tank and the microwave starts heating up the antigen retrieval solutions.

Once the temperature reaches the set point, actual count down of the timer starts

The temperature is constantly monitored and displayed on the screen along with current run cycle number and time remaining for completion of that particular run.

Note: You can pause or stop the Run any time during the process by pressing the keys corresponding to the respective buttons.



Default

Up

Down



Protocol

Arrow

Arrow

After finishing the 'cycle 1' the 'Run 1 completed' screen appears along with the beep, Open the door to stop the beep sound and change the solutions if required and close the door.

Press the soft key corresponding to 'Resume' which allows continuing with the cycle 2.

Press soft key corresponding to 'stop' button to abort the run.



When time has elapsed for the programmed cycles, the LCD displays 'Finalizing' screen with a message indicating that the run is completed and is being finalized.

Default

Up

Down



Protocol

Arrow

Arrow



Default
Protocol

Up
Arrow

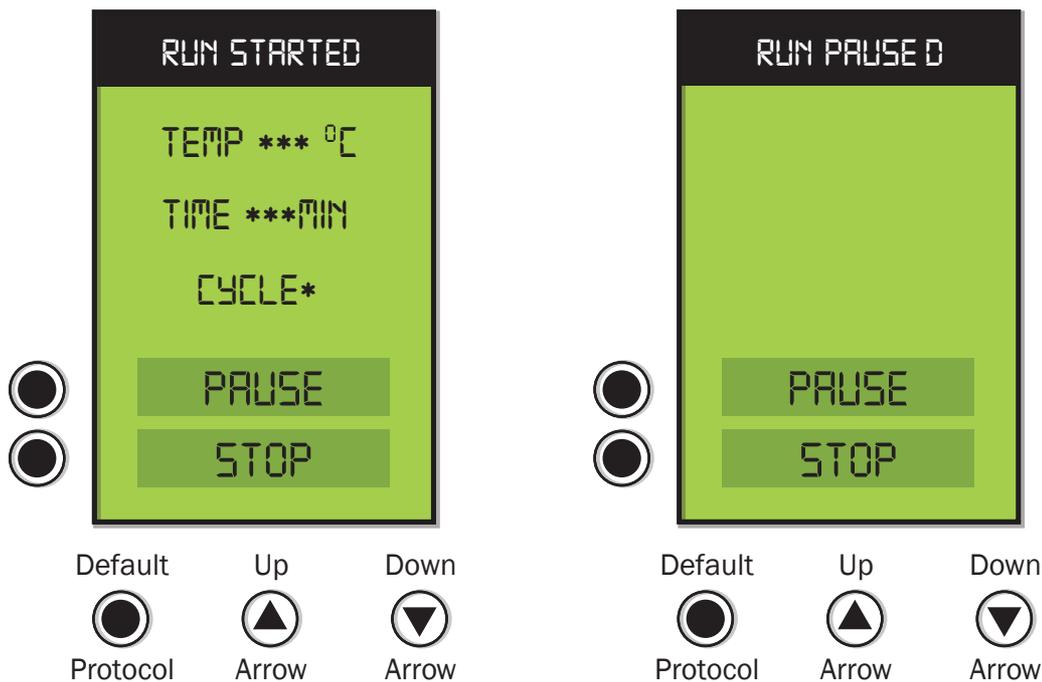
Down
Arrow

With the completion of 'finalizing run' step, the instrument will give beep sound and "Run stopped" screen will be displayed.

After the "Run Stopped" screen appears, press key corresponding to 'Done' to stop the beep and this will lead back to the home screen.

Temperature probe will reach its home position now. When the run is completed, the instrument will automatically store the temperature and time settings of last used Run in its memory. To avoid burn injury from hot solutions, allow the microwave tanks to cool before removing the tank holder from the instrument.

Press the key corresponding to the 'Done' button to return to the main screen.



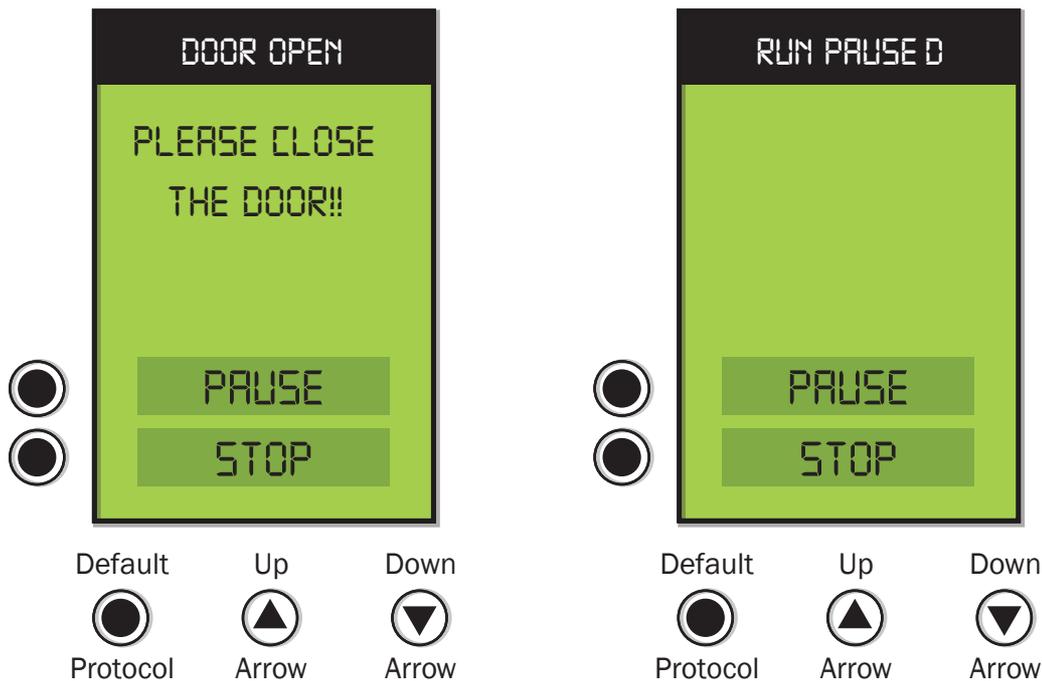
To Pause the RUN

While the instrument is in 'Run Started' mode if you want to Pause the run press the key corresponding to "Pause" button.

The 'Run Paused' screen will appear. The user can "Stop" the run or "Resume" the run by pressing the appropriate keys corresponding to the buttons.

When ready to resume the run, press the key corresponding to resume button and the program will continue. Once the temperature reaches to the set point the actual count down of the timer starts from time left when the instrument was paused.

When user opts for stop the run LCD shows 'Stop Confirm' screen.



Opening the door during the run, displays a 'Door open' screen and the temperature probe goes to its home position.

Closing the door will lead to the 'Run Paused' screen. Start the run by pressing the key corresponding to "Resume" button.

Now the temperature probe goes inside the solution in the microwave probe tank.



Default

Up

Down



Protocol

Arrow

Arrow

To Stop the RUN

While the instrument is in 'Run Started' mode if you want to Stop the run, press the key corresponding to "STOP" button.

The 'Stop Confirm' screen will be displayed. The user can then "Stop" the run by pressing the key corresponding to the 'Yes' button or "Resume" the run by pressing the key corresponding to the 'No' button.

Once you confirm the 'Stop Run', the instrument will go to the Finalizing mode and 'Run Stopped' screen will be displayed on the LCD display.



Error: Once the instrument is unable to reach the set temperature within 25 minutes an 'Error' screen will be displayed on the LCD display.

Default



Protocol

Up



Arrow

Down



Arrow



To avoid burns, use protective gloves or pads when removing the inner base from the instrument and to avoid fire do not dry news papers or clothes in the instrument

Cleaning and Maintenance

Daily Cleaning and Maintenance

The EZ-Retriever® requires nominal cleaning to ensure consistent results, to eliminate potential contamination, and enhance the longevity of the instrument. The following procedure should be performed each day at the end of the final run.

Remove the microwave tanks, tank holder and turntable from the instrument.

Rinse them with tap water.

Allow the turntable to cool before cleaning.

Wipe the interior, exterior and door seals of the instrument with a soft damp cloth and mild soap if needed. DO NOT use abrasive cleaners, strong detergents, alcohol, ammonia or organic solvents to clean either the inside or outside of the instrument.

Dry the instrument with a clean soft cloth.

Inspect the door, door sealing surfaces and power cord for damage. Do not use a damaged instrument.

Monthly Cleaning and maintenance

Check for obstructions along the intake and discharge louvers located at the bottom and at the back of the instrument. Clean with a damp cloth to ensure proper airflow. Dry thoroughly.

Troubleshooting

<u>TROUBLE</u>	<u>CAUSE</u>	<u>SOLUTION</u>
Instrument cannot be started	Power cord may not be plugged in. No power to the Power Socket.	Plug the power cord into the appropriate grounded power source. Check the main fuse or circuit breaker.
Instrument cannot be started even though the power is available at Power Socket	Safety fuse may be blown out.	Authorized service personnel must replace the fuse.
The Display is blank or incorrect but power is on.	The controller may need to be reset.	Unplug instrument, wait 10 sec. and plug back in.
Program is running but temperature on display is incorrect	Temperature probe is not immersed properly in the probe tank. No liquid in the tank	Make sure temperature probe is in the down position, immersed into probe tank, when the instrument is operational. Make sure a minimum of 275 ml. liquid is in the probe tank when operating.
Instrument operates intermittently	Air vents may be blocked	Check air vents for blockage.
Temperature probe touches the wall of the tank	Tanks misaligned	Check that the probe is immersed properly into the tank solution.

Checking the Safety Fuses

The EZ-Retriever® System V.3 has 1-safety fuse that cannot be changed by the operator.

20 Amp fuse (110 V model) protects the microwave heating system. Contact BioGenex Technical Support for repairs.

Limitations of Liability

Services:

BioGenex would provide Limited warranty for the products subject to the Customer's compliance with the terms.

The liability of BioGenex under this Warranty is limited, at BioGenex's option, solely to repair the Product (parts, labor, and shipping charges included), or to send a refurbished replacement Product for the product returned to BioGenex, once the Customer has

- (1) Notified BioGenex that the Product, to the best of their belief, contains defects in materials or workmanship, and
- (2) Obtained a Return Material Authorization ("RMA") number from BioGenex.

BioGenex has the option to ship a replacement product that is refurbished with the specifications that are equivalent to that of the Product received from the Customer. Upon receipt of the Product at the authorized repair depot as specified by BioGenex in the RMA, BioGenex, or its Service Provider, will use commercially reasonable efforts to repair or replace the defective Product within a reasonable period of time.

Replacement of parts will be provided on an exchange (refurbished) or new part basis, at BioGenex's option. Replaced parts become BioGenex's property.

Customer's Obligations

Customer must notify BioGenex of any product defects promptly, and request a RMA number from BioGenex before returning the Product. All returned Products must be sent to BioGenex. When requesting Services, Customer must provide the Product Serial Number.

EXCLUSIONS

BioGenex shall have no obligations to provide Services for the Product that

- (a) Has been altered, damaged or modified;
- (b) Has been used in a manner not specified in the applicable Operator's manual;
- (c) Has been damaged by accessories, attachments or other similar devices;
- (d) Has been damaged as a result of accident, natural disaster or other force majeure;
- (e) Has been damaged by negligence, misuse, misapplication, or other causes beyond the reasonable control of BioGenex; or
- (f) Has been serviced, or attempted to be serviced, by anyone other than BioGenex or its authorized agents.

SERVICE CHARGES

BioGenex may charge to the customer its standard service rates for services, or may decline to provide the services required to correct a malfunction caused by customer's failure to fulfill its responsibilities hereunder, the failure of anyone other than BioGenex or its service contractor to comply with its written instructions or recommendations, the combination of the System(s) with an incompatible third party product, the alteration or improper storage, handling, use or maintenance of any part of the System(s) by anyone other than BioGenex or its service contractor, any factor external to the System(s) or beyond BioGenex reasonable control.

NO ADDITIONAL WARRANTY

The Services provided here under are provided “AS IS” and are without warranty of any kind. Without limiting the foregoing, BioGenex disclaims all express and implied warranties, including the implied warranties of title, merchantability, non-infringement and fitness for a particular purpose. The foregoing disclaimer does not modify any warranties provided in the End User Agreement.

TECHNICAL SERVICE

If you have any questions after reading this manual or for any technical assistance, please contact our Technical Support team.

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