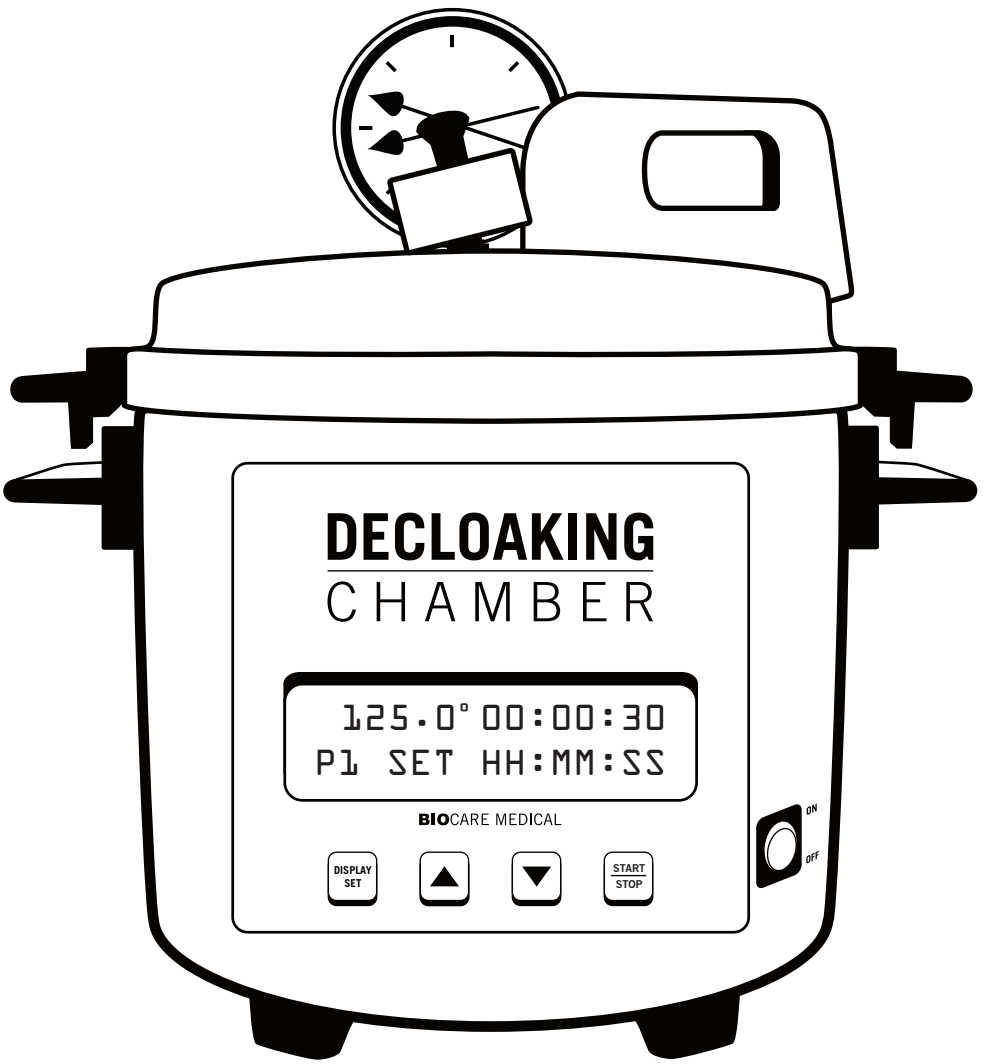
BIOCARE
MEDICAL

Decloaking Chamber™ Plus Manual

Digital programmable pressure system for heat-induced epitope retrieval



U.S. patent number 6,580,056

Biocare Medical

Technical Support:
800-799-9499 Option 3

Customer Service:
800-799-9499

Fax:
925-603-8080

Corporate Office:
60 Berry Drive
Pacheco CA 94553

www.biocare.net

Table of Contents

Overview 1
Specifications 1
    Decloaking Chamber - Intended Use 1
Transportation, Storage and Handling 2
Unpacking 2
Parts List 2
Description of Parts 3
Related Consumables 4
Important Notes 5
Important Safety Guidelines 6
Operating Instructions 6
    Safety First 6
    Assembly and Setup 6
    Recommended Protocols 7
    Beginning Operation 7
    Programming 8
    To Initiate a Run 8
    After Run Completion 8
    Positioning the Decloaking Chamber for Emergency Disconnection 11
    Actions In Case of a Malfunction 11
Programming Display 12
    Programmable Features 12
    Default Settings 13
    Changing the Default Settings 13
USB Flash Drive Feature 14
    How to use the USB flash drive 14
    Start Program 15
    End Program 15
    Run Report 16
Maintenance 17
Safety and Electrical Precautions 17
Quick Instructions 18
    Assembly and Setup 18
    Programming 18
    To Initiate a Run 18
    After Run Completion 19
Symbol Glossary 20
Troubleshooting and Service 20

⚠ Not for use with flammable solvents or gases

Warranty

The Decloaking Chamber warranty is for one year from receipt of purchase and covers all parts and labor when performed solely by Biocare Medical. Warranty is invalidated if equipment is abused, damaged, or improperly maintained by customer. Warranty is not transferable to any other party should the equipment be resold or transferred by the customer to another party. To the extent permitted by law, Biocare Medical disclaims any liability for any incidental or consequential damages related to this equipment or for any warranty related services it performs.

Overview

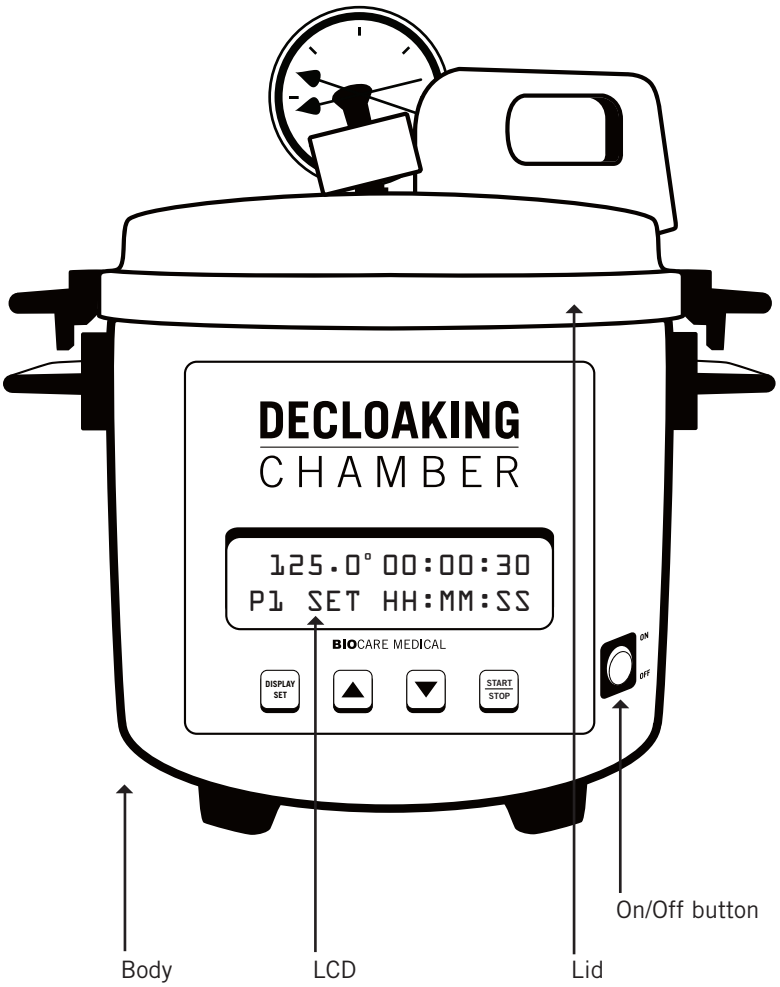
The new and improved Decloaking Chamber Plus has been redesigned with a programmable walk-away capability, a cooling fan for more rapid antigen retrieval and an optional stainless steel rack holder for plastic slide containers. Furthermore, a USB port enables the laboratory to utilize a flash drive to track and save run data for quality control purposes. The pressure gauge has a new feature in which the needle remains at the highest pressure reading during the run, validating that antigen retrieval has occurred properly. This feature allows for a complete walk-away procedure. When the procedure is completely finished, an audible beep alerts the user.

The Decloaking Chamber is an excellent tool for heat-induced epitope-retrieval (HIER) methods. The proper use of heat and pressure in conjunction with the appropriate buffer solutions is of the utmost importance for consistent immunohistochemistry (IHC) staining. The Decloaking Chamber is designed to optimize and standardize antibody staining procedures and has been engineered to pass strict laboratory safety requirements. Temperature, pressure and pH can be monitored and recorded with the Decloaking Chamber to produce consistent staining, which will reduce repeat testing and false negatives.

Specifications

Decloaking Chamber - Intended Use

The Decloaking Chamber is a programmable bench top pressure cooker intended for laboratory use only. It is programmed to allow the precise pressurized heating necessary for antigen retrieval and also has the capability to perform at a variety of temperatures ranging from 37 °C to 125 °C ± 5 °C.



Model: DC2008US
Model: DC2008US-RH
Voltage: 110-120 volts, 800 watts, 60 HZ

Model: DC2008INTL
Model: DC2008INTL-RH
Voltage: 220-240 volts, 900 watts, 50 HZ

Dimensions:
31cm (W) X 29cm (D) X 28cm (H)

Pan Capacity:
3.2 liters

Weight:
3.7 kg (8.18 lbs)

CE Listed
ETL Approved

CE

Transportation, Storage and Handling

Storage: environment is 10-40 °C (50-104 °F). Do not stack. Protect from rain. Duration not to exceed 1 year; may be extended with inspection

Transportation: Shipping environment is 0-50 °C (32-122 °F). Do not stack. Protect from rain. In addition to the ASTM regulation required markings, label shipping container with shipping and storage temperatures, a warning indicating do not stack and protect from rain.

Handling: The Decloaking Chamber may be safely handled by one person capable of lifting 20 pounds (18 kg). Lift by the handles only. Do not move until completely cooled.

Action Upon Delivery
Unpacking should be performed or supervised by trained laboratory personnel or facility engineer who will record any issues with regard to missing or damaged contents. In the event the instrument is damaged in transit, do not operate and contact Biocare Medical for instructions.

Operating Environment
Laboratory conditions: 15-30 °C; 15-80% relative humidity; maximum elevation 2000 M

Unpacking

Review and follow the instructions on the "Important Shipping Notice" insert.

Review the Contents of Your Package
Upon receipt of the Decloaking Chamber, inspect the packaging and become familiar with the parts. Save the packaging in case returning the instrument becomes necessary.

Note
Be sure to remove any packing material from inside of the Decloaking Chamber before operating!
Failure to do so will result in FIRE.

Parts List

- Lid with pressure gauge and hot sticker
- Gasket (removable)
- Weight (petcock)
- Pan (removable)
- Rack holder (removable) - only with Cat. No. DC2008US-RH and DC2008INTL-RH
- Body with programmable digital timer
- Electric power cord
- Heat shield

Description of Parts

Pan
The main removable metal chamber that is placed within the outer shell. The pan comes in contact with the heat sensor and heat plate.

Vent Nozzle
The top center of the chamber lid where the weight (petcock) is placed.

Heat Sensor
A circular spring-loaded device within the main body that senses the actual temperature during operation.

Heat Plate
A large metal disc area within the main body of the chamber that surrounds the heat sensor.

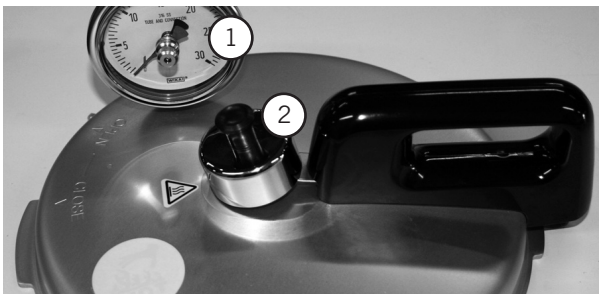
Heat Shield
A circular, concave metal disc with perforations on it that is placed in the center of the pan.

Rack Holder
A circular stainless steel basket, capable of holding plastic slide containers.
Cat. No. RMDC085

Weight Valve
Regulates the amount of steam released.
Cat. No. RMDC038

Fuse
Type 217 Fast acting 4 amp 250V. Prevents electrical shorting. (For 220 V markets only)

Gasket
The rubber seal between the pan and the lid that ensures an airtight chamber.
Cat. No. DC037

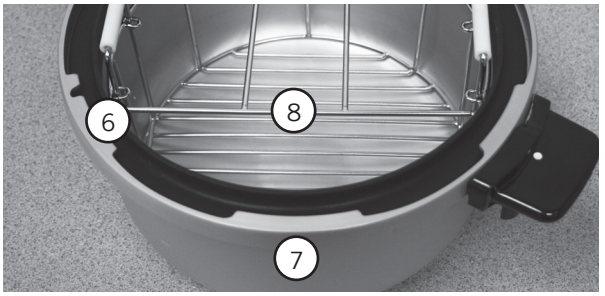


1) Pressure gauge
2) Weight (Petcock)

3) Vent nozzle

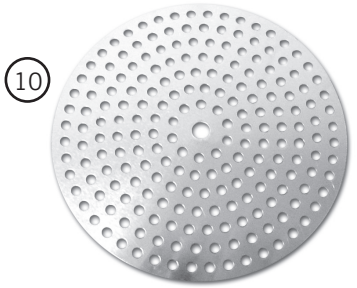
4) Heat plate
5) Heat sensor

Description of Parts (continued)



6) Gasket
7) Removable pan
8) Rack holder

9) Hot sticker will display this warning when hot.



10) Heat shield

Related Consumables (Not provided)

Retrieval Solutions
Biocare Medical retrieval solutions are specially formulated for pH stability at high temperature. Our retrieval solutions incorporate ASSURE™ technology that contains a color-coded pH indicator for quality control and visual inspection.

Steam Monitor Strips
The heat and pressure sensitive steam strip allows the end-user to monitor both pressure and heat inside the Decloaking Chamber. The best temperature for a Steam Monitor Strip to show quality control is 125 °C ± 5 °C. It is at this temperature and relative pressure that a dark brown to black color is achieved. Lower temperature and pressure will produce a lighter strip. The steam strip can be dated and recorded for laboratory and CAP inspections.
Cat. No. 613 (C,D,H)

QC Heat-Tested pH Strips
The pH of retrieval solutions at high temperatures can be critical for proper IHC staining. However, the pH of retrieval solutions can change at high temperatures. To assure quality control and consistent staining, Biocare Medical has developed heat-tested strips that give accurate and true pH at high temperatures. The pH of a solution at a certain temperature can be recorded on a daily basis to comply with JCOHA and CAP recommendations.
Cat. No. PH615 (pH 7.5-10.5), PH616 (pH 4-7)

USB flash drive
The Decloaking Chamber Plus is equipped with a USB flash drive feature that will create and save a data file for every run. The USB flash drive feature requires the use of a USB 2.0 flash drive with a minimum capacity of 512 MB.

Important Notes

The Decloaking Chamber has been designed with many unique safety features. However, when using heating and electrical equipment, basic precautions should be used. This is a heating device under pressure. Please read these notes before operating the instrument.

- **Lift the lid gently**
  When operating, make sure the lid is in the closed position. When there is resistance, don't open the lid by force. Tip the weight (petcock) carefully to release any residual pressure and make sure that the pressure in the pan is at zero on the pressure gauge. Gently push down on the brown handle, turn the lid counter clockwise and slowly lift off the lid.

- **Always be sure there is water in the chamber before use**
  VERY IMPORTANT! Make sure there is deionized or distilled water in the pan. Do not turn on the heat when the pan is empty as it may cause a malfunction or damage the instrument.

- **Check the weight each time before use**
  Make sure the weight (petcock) is secure. Do not operate without the weight properly installed.

- **Handle with care**
  Dropping or roughly jolting the instrument will cause damage and deformation leading to malfunctions.

- **Avoid touching the pan or lid when in use - HOT!**
  When in use, the pan, lid and weight get very hot—avoid touching them. There is a hot sticker to warn that the lid is hot. The circular sticker reads "HOT" at elevated temperatures.

- **Do not operate the Decloaking Chamber near a heat, flame or gas source**
  Never place the instrument directly on a stove or other heat source.

- **Keep the exterior dry**
  Remove foreign matter and water drops. The heating plate, sensor and the area outside of the pan must be dry and clean to work properly.

- **Cool down after each use**
  Make sure the Decloaking Chamber is cooled down after each use. Replace hot water with cool water and make sure the temperature is 37 °C or less before starting again. If starting temperature is above 37 °C, an error signal might be activated or optimum temperature and pressure may not be obtained.

- **Check the gasket periodically**
  The gasket must be consistently checked for tears or damage. A replacement gasket can be ordered (Cat. No. DC037). A weak Steam Monitor Strip color may indicate that the gasket needs replacement.

- **Fill the pan with only 500 ml deionized water**
  500 ml is all that is needed for heat-induced epitope-retrieval methods. Special stains and other histology procedures may require 1,000-2,500 ml.

- **Do not use glass containers**

Important Safety Guidelines

The Decloaking Chamber has been designed with many unique safety features. However, when using heating and electrical equipment, basic precautions should be used. This is a heating device under pressure. Please read these safety guidelines before operating the instrument.

- The Decloaking Chamber is to be operated only by trained personnel.
- Do not splash liquid on the temperature controller box.
- Do not touch the surface of the Decloaking Chamber when in use.
- Do not operate the Decloaking Chamber when it is malfunctioning, the gasket is damaged or parts are missing.
- Do not replace the weight with any other device or attempt to block the vent nozzle.
- Do not leave paper or flammable elements around or on top of the Decloaking Chamber at any time.
- Keep power cord away from heated surfaces.
- Leave a minimum of five inches clearance from any obstruction.
- Intended use warning - Do not use the Decloaking Chamber for any other purpose than stated in this manual. Failure to adhere to these guidelines may result in damage to the instrument or injury.
- Operators must not place face over the Decloaking Chamber when opening and removing the lid.
- Operators should wear gloves and eye protection when using the Decloaking Chamber.
- Do not use alcohol or other flammable materials in the Decloaking Chamber.

Operating Instructions

Safety First

The Decloaking Chamber must be used only for its intended purpose following the operating instructions in this manual. If the Decloaking Chamber is used in a manner not specified herein, the safety protection provided by the instrument may be impaired. This could result in personal injury and damage to the equipment.

Assembly and Setup

The Decloaking Chamber must be on a level surface, away from direct sunlight and any source of heat or cold, near an electrical outlet. It is recommended that a surge protector be used, and if possible a dedicated outlet. Make sure that other types of high voltage equipment such as incubators, microwave ovens or refrigerators are not plugged into the same circuit, as this may affect the performance of the instrument.

1. Place the body of the Decloaking Chamber on a flat surface.
2. Check that the gasket has already been placed into the groove on the top of the pan (Figure 1).
3. Add 500 ml of deionized water to the pan (Figure 2).
4. Place the pan and rack holder into the body. Make sure the outside of the pan is completely dry & clean (Figure 3). Note: If using a Decloaking Chamber without a rack holder, place the heat shield in the center of the pan.

5. Place the weight (petcock) onto the vent nozzle, making sure it is fully seated and rotates freely (Figure 6).

6. Rest the lid on the pan until ready to use.

7. Plug the instrument into a grounded electrical outlet. If you are facing the Decloaking Chamber, the on/off switch is located to the right of the display panel on the front. It will illuminate red if the instrument is turned on.

Note: For elevation greater than 2000 M, time duration may need to be adjusted.

Recommended Protocols

The protocols for a specific application can vary. These include, but are not limited to: fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. These products are tools that can be used for interpretation of morphological findings in conjunction with other diagnostic tests and pertinent clinical data by a qualified pathologist.

Recommended protocols for HIER with Decloaking Chamber Plus:

125°C for 30 seconds
95°C for 40 minutes
90°C for 15 minutes
80°C for 60 minutes
60°C for 15 hours

Beginning Operation

Adjust the pan by matching the pan handles with the body handles. Be certain that the outside of the pan is dry, as any wetness will cause the Decloaking Chamber to make a crackling noise and may cause a malfunction.

1. Make sure the pan is filled with 500 ml DI water (Figure 2).

2. Turn the red main power switch to the ON position (the red light will go on).

3. Place Tissue Tek containers filled with 250 ml of heat-induced epitope-retrieval (HIER) solution in the pan. Alternatively, plastic Coplin jars can be used with 50 ml HIER solution in each one (Figure 4a).
   Note: If heat shield is used, place the slide containers on top of the heat shield off center to avoid heat concentration (Figure 4b).

4. Place a dry Steam Monitor Strip on top of the staining container or plastic Coplin jar (Figure 5).

5. Place the lid on the pan and secure in place by aligning the OPEN arrow on the surface of the lid with the white dot on the handle (Figure 7).

6. Grip the handle and rotate clockwise to the CLOSE position. Make sure the weight (petcock) is on the vent nozzle located on the lid. It will drop to a flat horizontal seating when the lid is closed (Figure 8).

Operating Instructions (continued)

Standard Programming

1. Turn the instrument on by flipping the red toggle to the right of the control panel.

2. Press and hold the "Display Set" button for 3 or more seconds to access the program-mode.

3. To verify or change your program, follow instructions in “Default Settings” or “Changing the Default Settings” (page 13).

4. To exit the program-mode, press and hold the "Display Set" button for three or more seconds.

5. Optional: Insert a USB flash drive (USB 2.0 with minimum 512 MB capacity) and allow 30 seconds to initialize before starting the program. For more information about USB flash drive feature, begin following instructions on page 14.

6. Push “Start/Stop” button to initiate programmed run.

7. If USB flash drive is not used, when P1 temperature is reached (approximately 10-15 minutes), record temperature and pressure. Note that the USB flash drive, if used, will automatically record run (except pressure) data.

8. When the alarm sounds a second time (approximately 20 minutes) the temperature has cooled to your programmed P2 fan off temperature.

After Run Completion

1. Confirm that the “Cycle Done!” message is displayed.

2. Visually confirm that the pressure has dropped to 0 (zero) psi.

3. Turn the unit off. Toggle the weight (petcock) to release any residual pressure.

4. Open the lid with the steam directed away from yourself.

5. Confirm that run has completed successfully by the following:

   a. Steam Monitor Strip has changed to a dark brown or black color (Figure 5b)

   b. Pressure gauge has reached between 17-24 psi.

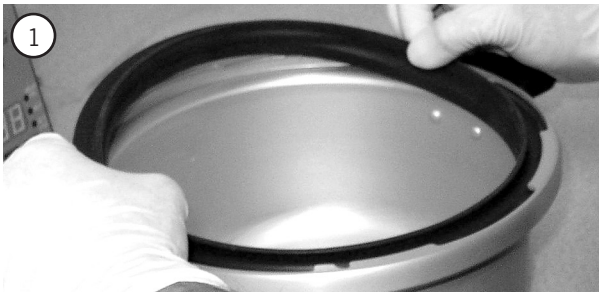
6. Carefully remove the plastic slide containers from the instrument.

7. Place the plastic slide containers on the counter top to cool down for a at least 10 minutes.

8. Decant half of hot retrieval solution and add DI water. Do five complete changes of DI water.

9. Proceed with immunohistochemistry (IHC) staining.

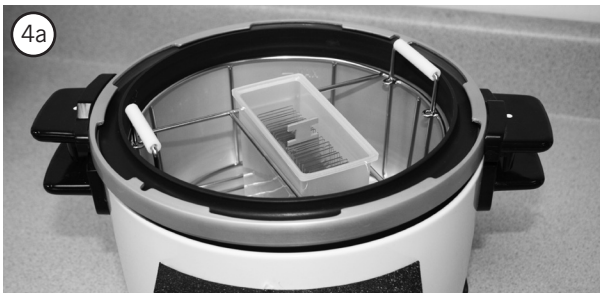
Operating Instructions (continued)



1) Check that the gasket has already been placed into the groove on the top of the pan.

2) Add 500 ml of DI water to the pan.

3) Place pan and rack holder into the body of the instrument.
Note: If rack holder is not available, place the
heat shield in the bottom center of the pan.



4a) Place the container with the retrieval solution in the rack holder. Do not use glass containers.

4b) If heat shield is used, place the container with the retrieval solution on top of the heat shield. Do not place the container on the center of the heat shield where the heat is concentrated, but towards the edge of the heat shield. Do not use glass containers.

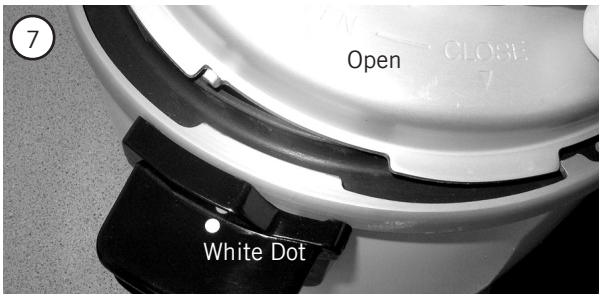
Operating Instructions (continued)

5) Place steam monitor strip across the retrieval solution container.

5a) Unused Steam Monitor Strip.

5b) Steam Monitor Strip after being exposed to the temperature of 110 °C or above for 30 seconds.

6) Place the weight (petcock) onto the vent nozzle. Making sure it is fully seated and rotates freely.



7) Match the word "OPEN" on the lid to the white dot on the handle.

8) Secure lid by turning clockwise until the word "CLOSED" is matched with the white dot on the handle.

Operating Instructions (continued)

9) Correctly secured lid.

10) Gap indicates that the lid is not correctly secured.

Positioning the Decloaking Chamber for Emergency Disconnection

If you are facing the Decloaking Chamber, the on/off switch is located to the right of the display panel on the front. It will illuminate red if the instrument is turned on. The power cord is located to the right of the power switch. Do not position the Decloaking chamber in such a way as to block access to the power switch, the power cord or the receptacle into which the power cord is plugged. Do not place other objects around the Decloaking Chamber that may impede access to the switch or power cord.

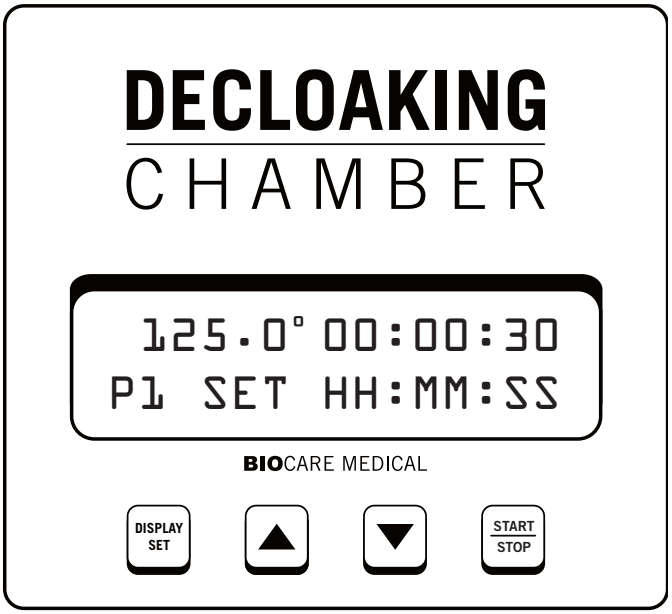
Actions In Case of a Malfunction

In case of a malfunction, disconnect the Decloaking Chamber from its power source. The Decloaking Chamber may be disconnected from the power source by either using the power switch or unplugging the power cord or switching off the circuit breaker.

Programming Display

Control Panel

- **LED Screen:**
  Displays the current setting or error message.
- **Display Set Button:**
  Used for accessing and changing the temperature mode and time.
- **Up Button:**
  Used for increasing the temperature or time setting.
- **Down Button:**
  Used for decreasing the temperature or time setting.
- **Start/Stop Button:**
  Used to start or stop a process.



Programmable Features

- **Autocontinue:** The Autocontinue feature, when "ON", allows the program to progress from Preheat to P1 run automatically.
- **Delayed Start:** This feature allows the instrument to be loaded in advance of the desired run start time. This is particularly useful in having retrieved slides available at the beginning of the work shift. This feature can be disabled by setting the time to zero (0).
- **Preheat:** This feature is available for protocols that benefit from a preheat cycle or to reduce the cycle time for antigen retrieval. This feature can be disabled by setting the time to zero (0).

To access the following displays, press and hold the DISPLAY/SET button for 3 seconds. To cycle through the screens press the DISPLAY/SET button.

- **Delayed Start Screen:** Displays the time the programmed run will be delayed before stating automatically.
- **Preheat Screen:** Displays the Preheat temperature setting and the duration of the Preheat cycle.
- **Autocontinue Screen:** Display indicates if the Autocontinue feature is enabled.
- **P1 Set Screen:** Displays the temperature set-point for the programmed run and the duration the temperature will be maintained after reaching the set-point.
- **P2 Set screens (2):** The first screen displays the programmed temperature at which the cooling fan will turn on. The second screen displays the temperature at which the cooling fan will turn off.
- **Error Message:** The LCD screen will display the letters “ERR” if the temperature of the system rises beyond normal limits or if there is a failure of the temperature sensor.

Programming Display (continued)

Audible Alerts

- **Preheat:** 3 beeps will sound when the set-point temperature is reached.
- **End of Run:** The instrument will beep for 1 minute, indicating that the run is complete. To turn off the beeping tone at the end of the run, press and hold the Start/Stop button for 3 seconds.
- **Display Buttons:** The display buttons beep each time they are pressed (this feature may be turned off for silent programming)

Default Settings

The User may program the run settings by entering the programming mode. With the power on, press and hold the DISPLAY/SET button for 3 seconds. The User can now cycle through the screens and programmable parameters by pressing the DISPLAY/SET button once for each parameter. Each parameter, when selected can be adjusted by pressing the UP or DOWN buttons until the desired setting is displayed. When all the parameters have been set, press and hold the DISPLAY/SET button for 3 seconds to save the settings and return to the main screen.

Below are the default settings recommended for optimal immunostaining. Preheat and Autocontinue are optional functions and not necessarily required. Always, however, refer to the assay or analyte specification sheet for the specific antigen retrieval protocol as times may vary.

The best temperature for Steam Monitor Strips to show quality control is 110 °C or above. It is at this temperature and relative pressure that a dark brown to black color is achieved (Figure 5b). Lower temperature and pressure will produce a lighter strip, which will remain consistent for runs of the same temperature and pressure, but it is easier to use the darker color that is achieved at higher temperature and pressure as a quality control.

Factory Settings	**Temperature**	**Time / Setting**
Delayed Start		OFF
Preheat (optional function)	80 °C	30 seconds
Autocontinue (optional function)		ON
P1	125 °C	30 seconds
P2 Fan ON	100 °C	
P2 Fan OFF	85 °C	
Setting Range	**Temperature**	**Time / Setting**
Delayed Start		OFF – 23:59:59
Preheat	20 – 80 °C 80.5 – 95 °C	0 – 23:59:59 0 – 3:59:59
Autocontinue		**ON / OFF**
P1	80 – 99.5 °C 100 – 125 °C	0 – 1:59:59 0 – 0:29:59
P2 Fan ON	86 – 100 °C	
P2 Fan OFF	37 – 95 °C	

Changing the Default Settings

To change the factory settings press and hold the DISPLAY/SET button for 3 seconds. The first screen displayed is DELAYED START. If a delayed start is desired press the DISPLAY/SET button once and the time HH (hours) will begin flashing. Use the UP or DOWN buttons to adjust the hours. Press the DISPLAY/SET button again and the MM (minutes) will begin flashing. Adjust the minutes in the same manner as the hours. Press the DISPLAY/SET button again and the SS (seconds) will begin flashing. Adjust the seconds in the same manner as the minutes and hours. Press the DISPLAY/SET button again to move to the next screen. All other screens are programmed the same way. When all screens have been programmed press and hold the DISPLAY/SET button to save the settings and return to the main screen.

USB Flash Drive Feature

The USB flash drive feature (flash drive not included) of the Decloaking Chamber Plus creates and saves data files for every run, logging time, temperature and process events at one minute intervals for the entire run. The data file also includes the system date and time and an unique file number for every run. The data file created as a *.TXT file that can be downloaded to MS Excel, saved as .xls or other standard Excel file formats and printed as a report of the run.

Note: The USB flash drive feature requires the use of a USB 2.0 flash drive with a minimum capacity of 512 MB. Older flash drives (USB 1.0 or 1.1) will operate unreliably or not at all on this instrument.

To use the USB flash drive feature, the current time and date must be programmed into the Decloaking Chamber controller. If this is not done prior to the run, the report will reflect the default time and date. To set the clock and date follow these steps:

1. Turn the power off to the Decloaking Chamber. Make sure the Pan Assembly is in place.
2. Depress and hold the DOWN arrow button while turning ON the power switch. The Clock Set screen will be displayed.
3. The HH under the hour display will be blinking. Push the UP or DOWN arrow button until the correct hour is displayed.
4. Press the DISPLAY SET button to change to minutes; the MM will now begin blinking.
5. Push the UP or DOWN arrow button until the correct minute is displayed.
6. Press the DISPLAY SET button to change to seconds; the SS will now begin blinking.
7. Push the UP or DOWN arrow button until the correct second is displayed.
8. Press the DISPLAY SET button to change from the Clock Set Screen to the Date Set Screen; the Day, DD, will now begin blinking.
9. Push the UP or DOWN arrow button until the correct Day is displayed.
10. Press the DISPLAY SET button to change to Month; the MM will now begin blinking.
11. Push the UP or DOWN arrow button until the correct Month is displayed.
12. Press the DISPLAY SET button to change to Year; the YY will now begin blinking.
13. Push the UP or DOWN arrow button until the correct Month is displayed.
14. Pressing the DISPLAY SET button will cycle through all settings in the order described above as often as required by the user.
15. When the time and date are set, press and hold the DISPLAY SET button for 3 seconds to return to the Main Display Screen.

How to use the USB flash drive

In order to record complete run data, a flash drive must be inserted into the Decloaking Chamber controller and allowed to initialize for a minimum or 30 seconds before starting the run. The flash drive will continue to record data every minute until the run has been stopped. To stop the run press and hold the STOP button for 3 seconds.

USB Flash Drive Feature (continued)

Start Program

1. Turn on power.

2. Insert the USB flash drive and allow 30 seconds to initialize before starting the program.

3. Press the START/STOP button. If the Delayed Start feature is enabled the screen will display “DELAYED START” and count down the time to the start of the program.

4. When the set-point temperature is attained, the time will count down (at this time it is recommended the User record the temperature and pressure for quality control). The instrument will typically overshoot the programmed temperature by 2 – 4 ° C, then settle down to the set-point. When the counter reaches zero, the program will move to the next step (P2 Fan ON/OFF) until the end of the run when the alarm will sound for approximately 1 minute and the heat will turn off (at this time it is recommended the User record the temperature and pressure for quality control).

The amount of time required to reach the programmed temperature and pressure are variable, depending upon the voltage source and frequency, the number of slides in the chamber and the altitude at which the instrument is operated.

End Program

1. Press and hold the START/STOP for 3 seconds to end the run. This is important - the instrument will continue posting data to the run report until the program is stopped. Before unlocking the lid, confirm the pressure gauge reads zero (0). Tip the Weight (petcock) to release any residual pressure.

USB Flash Drive Feature (continued)

Run Report

The data file created on the Decloaking Chamber can be downloaded to a computer using Microsoft (MS) Office Excel. This will create a report that can be saved or manipulated as any Excel file. **To download the data files follow these steps:**

1. Remove the USB drive from the Decloaking Chamber and insert into an available USB port on a computer with MS Excel installed.

2. Start Excel, select the location of the data file and then open the desired data file.

3. Since the data file is saved originally as a *.TXT file, the Text Import Wizard dialog box will open:

   Step 1 – Original Data Type – select “Delimited" – click on the Next button
   Step 2 – Delimiters – select Comma – click on the Next Button
   Step 3 – Change the "Column data format" (of the first default column) to "DATE" – select "YMD"
   Step 4 – Click the Finish button and the report will be displayed

   The report will show:
   Column A – Run Date
   Column B – Run Time
   Column C – Process Event
   Column D – Run Temperature

The Report Column C displays a code for the process events. The key to this code is:

Event	Description
STA	CYCLE START
DSS	DELAYED START (NO LOGGING TIME AND TEMPS BETWEEN DSS & DSF)
DSF	DELAYED START FINISH
PHH	PREHEAT HEATING TO SET POINT
PHS	PREHEAT START
PHR	PREHEAT RUNNING
PHF	PREHEAT FINISH
P1P	P1 PAUSED (HOLDING AT PREHEAT TEMP)
P1H	P1 HEATING
P1S	P1 START
P1R	P1 RUNNING
P1F	P1 FINISH
F1C	FAN ON (1) COOLING TO FAN ON SET POINT
F1S	FAN ON (1) START
F1R	FAN ON (1) RUNNING (COOLING TO FAN OFF TEMP)
F1F	FAN ON (1) FINISH (COOLED TO FAN OFF TEMP)
F0S	FAN OFF (0) START (FAN OFF TEMP HAS BEEN REACHED)
DON	CYCLE DONE MESSAGE ON SCREEN
END	CYCLE STOPPED BY USER

Maintenance

Daily
Pour the water out of the pan, rinse it with deionized water and dry.
Inspect the gasket for wear. The lid may be left atop the chamber, but should be slightly ajar.

Monthly
Preventative maintenance should be done once a month. Unplug the instrument before cleaning. Use only a mild dish detergent, as abrasive powders or metal scrubbers will damage the surface and may cause contamination. Do not attempt to wash the instrument in a dishwasher.
DO NOT IMMERSE THE BODY OR ELECTRICAL CORD IN WATER!

Pan, Gasket, Lid, Vent and Nozzle
Remove the pan, lid and weight and soak them in warm water. Wash thoroughly with a sponge and dry well. Inspect the gasket for tears or wear. If the vent nozzle becomes blocked with debris, clear the path with a toothpick or similar device then wash clean.

Heat Plate and Heat Sensor
Wipe off anything stuck to the heat plate or heat sensor and dry with a soft cloth.

Body
Wipe the surface with a damp, warm soft cloth, making sure that no water gets into the body.

Safety and Electrical Precautions

Electrical Precautions

- Basic safety precautions should always be followed when using electrical equipment.
- Do not immerse cord or plug or the body of the Decloaking Chamber in water or attempt to clean in a dishwasher.
- Unplug the instrument when not is use and before cleaning.
- Do not operate the instrument with a damaged cord or plug.
- Do not let the cord hang over the edge of a table or counter or touch hot surfaces.
- Do not place near a heat source, an open flame or gas outlet.

Safety Precautions
Decloaking Chamber infectious sample use is limited to tissues/specimens that are specified on Biocare's product datasheets. Handle control slides and test FFPE slides as if capable of transmitting infectious agents, and dispose with proper precautions. It is recommended that the specimens are handled using established good laboratory working practices. No flammable or corrosive solvents are to be used in the Decloaking Chamber.

Disposal of the Decloaking Chamber
Dispose of the Decloaking Chamber in accordance with local, state and federal regulations. Decontaminate with an antibacterial cleansing agent.

Quick Instructions

Assembly and Setup

1. Plug the Decloaking Chamber into appropriate power source with surge protection.

2. Check that the gasket has already been placed into the groove on the top of the pan.

3. Place the Decloaking Chamber pan into the Decloaking Chamber shell (body). Pour 500 ml of deionized (DI) water into the pan. Place rack holder into the pan.

4. Place slides into Tissue Tek racks. Place Tissue Tek racks into Tissue Tek containers containing 250 ml of desired retrieval buffer (Example: Diva) and place into the rack holder. Alternatively, place slides into plastic Coplin jars containing 50 ml retrieval solution. Containers must not be covered. Do not use glass containers.
   Note: If heat shield is used, place the slide containers on top of the heat shield off center to avoid heat concentration.

5. Place a Steam Monitor Strip across the edge of the Tissue Tek containers.

6. Align the shell and pan handles. Match the etching “OPEN” that appears on the lid with the white dot on the pan handle.

7. Hold both the shell and pan handle with your left hand while turning the lid clockwise with the right hand until the lid etching that reads “CLOSED” is aligned with the white dot of the pan handle on the left side.

8. The metal tabs on the lid should be tightly seated against the pan’s lip.

Programming

1. Turn the instrument on by flipping the red toggle to the right of the control panel.

2. Press and hold the "Display Set" button for 3 or more seconds to access the program-mode.

3. To verify or change your program, follow instructions in “Default Settings” or “Changing the Default Settings” (page 13).

4. To exit the program-mode, press and hold the "Display Set" button for three or more seconds.

5. Optional: Insert a USB flash drive (USB 2.0 with minimum 512 MB capacity) and allow 30 seconds to initialize before starting the program. For more information about the USB flash drive feature, begin following instructions on page 14.

To Initiate a Run

1. Push “Start/Stop” button to initiate programmed run.

2. If USB flash drive is not used, when P1 temperature is reached (approximately 10-15 minutes), record temperature and pressure. Note that the USB flash drive, if used, will automatically record run (except pressure) data.

3. When the alarm sounds a second time (approximately 20 minutes) the temperature has cooled to your programmed P2 fan off temperature.

Quick Instructions (continued)

After Run Completion

1. Confirm that the “Cycle Done!” message is displayed.
2. Visually confirm that the pressure has dropped to 0 (zero) psi.
3. Turn the unit off. Toggle the weight (petcock) to release any residual pressure.
4. Open the lid with the steam directed away from yourself.
5. Confirm that run has completed successfully by the following:

   a. Steam Monitor Strip has changed to a dark brown or black color

   b. Pressure gauge has reached between 17-24 psi.
6. Carefully remove the plastic slide containers from the instrument.
7. Place the plastic slide containers on the counter top to cool down for a at least 10 minutes.
8. Decant half of hot retrieval solution and add DI water. Do five complete changes of DI water.
9. Proceed with immunohistochemistry (IHC) staining.

Symbol Glossary

IVD	In-vitro diagnostic medical device
LOT	Batch code
SN	Serial number
⚠	Caution, consult accompanying documents
	Main power, On / Off
	Hot surface warning
EC REP	Authorized representative European Community
CE	CE Marking
	Manufacturer
	Consult instructions for use
	Power
	USB connector
	Power socket
	ETL Approved

Troubleshooting and Service

If, for any reason, the Decloaking Chamber fails to function correctly, first double check the power connection; then check the program for correct display of operating parameters. There are no user serviceable parts, only qualified trained personnel can service this equipment.

Please contact Biocare Medical Technical Support if any problems arise: 800-799-9499 Option 3.

BIOCARE
MEDICAL

800.799.9499
60 Berry Drive
Pacheco CA 94553

www.biocare.net

904-003-071817