

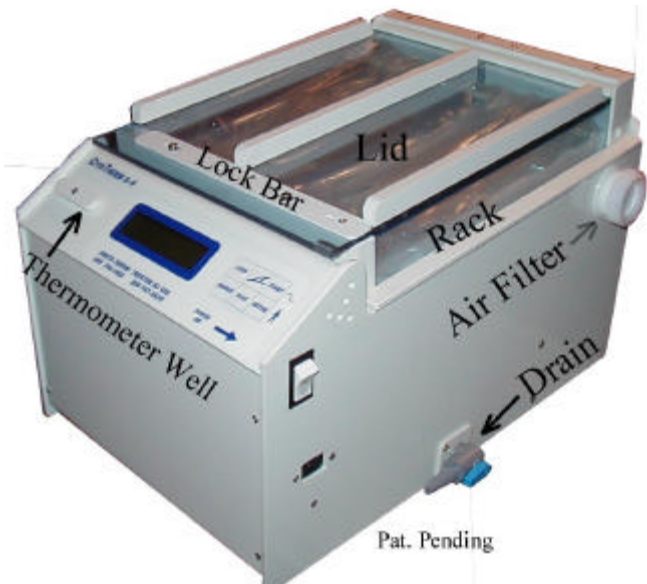
PhotoTherm

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CytoTherm-D4 Dry Plasma Thawing with Massaging Action

Model **CT-D4**

Owner's Manual



WARRANTY

Each PhotoTherm product is manufactured under rigid quality control standards. This unit is fully warranted for a period of one year from the date of purchase. Call 609 396-1456 or 800 747-9699 for assistance. If necessary send unit to:

PhotoTherm 110 Sewell Ave. Trenton, NJ USA Tel 609 396-1456 Fax 609 396-9395
Please record the following: Serial No. _____ Date of Purchase _____

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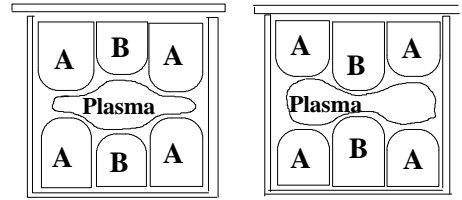
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SPECIFICATIONS

Temperature 37 °C. Accuracy 0.1 °C. Power: The 120 or 240 Vac., depending on the model. Uses 770W, 60Hz (must be grounded).

DESCRIPTION

The PhotoTherm CytoTherm D4 (Model CT-D4) is a dry plasma thawer. Tempered water is recirculated through a bladder. The plasma bag to be thawed lays on one part of the bladder, while rest of the bladder is folded over and covers the plasma bag. The bladder is divided into segments which are pressurized at different times to gently massage the plasma bag, thereby speeding thawing. The plasma bag remains dry.



There are 2 isolated sections. If a leak is detected, the thawing stops and an alarm sounds. The plasma bag in the other section remains sterile.

A digital timer displays the time to completion of the thawing. The plasma bag is also visible during thawing so you can check when it has been fully thawed.

Each of the 2 chambers can thaw two 450ml. bags or one 1,000ml. Jumbo bag for a total of 4 x 450ml. or 2 Jumbo bags.

All the air that comes in contact with the internal water passes through a 0.3 micron AIR FILTER.

SETTING-UP

The unit comes packed in 1 box. Make sure you have received the following:

- | | |
|---|---|
| Main Bath | 6 Y shaped silicone accelerators |
| Rack | Inlet and Outlet Port Plugs (2 of each) |
| Lid | Instruction Book |
| 4 Bladders, 2 mounted inside RACK | Power Cord |
| Drain tubing | |

Place the Bath on a counter. Make sure that the DRAIN Valve is closed (horizontal) and fill with tap water to the mark inside the BATH. If you use dionized water, add a pinch of salt to make the water conductive. Add a little algaecide or a tablespoon of bleach to keep the water clean.

Place the RACK and LID on the BATH. Lift the front of the rack and attach the tubing from the Bath right side to the RACK left side fitting. Attach the BATH right side tubing to the RACK left side fitting.

The RACK has 2 bladders mounted inside. They are easy to remove and replace by just twisting the fittings.

Plug the unit in and turn it on. The bath will warm up and maintain 37°C.

OPERATION

Wait for the water to heat up to 37°C. Open the LID by pushing the LOCKBAR to the left, and lifting the front of the LID until it is vertical and then lowering it.

Lift the top of the BLADDER and place the plasma bags on the bottom part of the BLADDER. Place the "Y" accelerators on the middle of each plasma bag. Tuck in the top of the BLADDER.

Close the LID by lifting straight up until it stops and then rotating it down (forward). Lock it into place by pushing the LOCKBAR to the right.

Push START to begin thawing for the programmed time. The pumps will pump tempered water through the BLADDER and massage the plasma bags. The thawing time will be displayed. Use PLUS or MINUS to increase or decrease the thawing time. When the time has expired, the buzzer will call the operator back.

STOP ends the thawing and drains the bladders.

If more thawing time is needed, hold PLUS while pushing START and the unit will thaw for another 3 minutes.

Thawing time is mainly a factor of thickness of the plasma in the bag. Flat-frozen plasma thaws quicker than folded-frozen plasma, which is thicker. If your blood bank supplies you with folded-frozen plasma, you can do a fast 3 minute pre-thaw which will melt enough plasma to allow you to flatten the plasma bag and then do a regular thawing cycle.

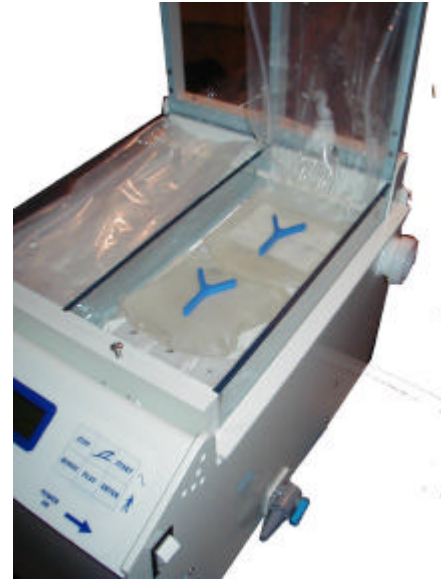
LEAKY PLASMA BAG

In case of a leak, the alarm will sound and the thawing will stop. Open the LID to see which bag leaked. The leak will be confined to only one of the sections. The other section is not contaminated. Remove the leaky plasma bag and wipe off the bladder as well as you can.

Remove the BLADDER by first lifting the bag up to drain out as much of its internal water as possible. Remove the INLET and OUTLET FITTINGS by holding the fittings and twisting them as you pull up.

If you want to continue thawing the rest of the plasma bags, place PLUGS on the PORTs, close the LID and press START.

You can rinse the contaminated exterior of the bladder with water and wipe it with a disinfectant (bleach).



MODES

STANDBY MODE. The unit maintains 37^oC, but does not rock.

THAWING MODE. The unit recirculates tempered water through the BLADDERS, and massages the plasma bags. The countdown timer indicates the remaining time. The plasma bags are monitored for leaks. Pushing START initiates thawing. Pushing STOP stops thawing.

PROGRAM MODE allows you to:

1. Set the preset thawing time.
2. Select whether to continue thawing when the unit times out.
 - a. If NO is selected, the unit stops heating and drains the bladders. The plasma is thawed, but remains at a lower temperature.
3. Calibrate the temperature. Calibration is very easy to do, just insert your thermometer in the hermetically sealed hole on the front panel. Use PLUS and MINUS to adjust the unit temperature to your thermometer temperature and push ENTER to record the calibration.

Enter PROGRAM MODE by holding ENTER while turning the unit ON. Follow the displayed instructions.

DIAGNOSTIC MODE will let you adjust the massaging cycle. See the instructions in PROGRAM MODE. You can also reset the unit to its factory settings.

Enter DIAGNOSTIC MODE by holding MINUS as you turn the unit on.

If you want to reset the unit, push START as you are holding MINUS before the unit starts displaying the pump times (2 seconds). If you reset the unit, you will have to perform a temperature calibration.

TROUBLESHOOTING

English: *Unit should be opened by qualified technicians only.*

French: *Ne puet être ouvert que un techicien autorize.*

Unit is "dead"	Verify that you are plugged into a live, grounded outlet. Have qualified technician check if fuse is blown or connectors are loose. The 120 VAC model unit uses 2 x 10A 3AG fuses. The 240 VAC model uses 2 x 5A 3AG fuses.
Display says "low water" but there is water.	The unit is not sensing that water is present. <ol style="list-style-type: none">a. Make sure you are using tap water or adding salt to deionized water to make it conductive.b. The level sensor (screw inside the BATH on the left side is dirty. Scrape it and then clean with alcohol.
Unit does not heat but "heating" is displayed	Check the Safety thermostat (#C-TH) and the heaters (#14-77) for continuity.
Temperature calibration changed unexpectedly.	Replace temperature sensor (#CT4-TS).

MAINTENANCE

CLEAN the bath every 3 months or as required. Add algicide (Cole Palmer (800) 323-4340 part #G-08796-00) or a table spoon of bleach.

Lift the front of the RACK and disconnect the tubing. Drain out the water.

Leakage is sensed through the 4 stainless steel spring rods that push against the rack. Bend them up a little every 3 months so that they maintain good contact.

The Bladders are made form a very special strong material. They should last for at least a year.

PARTS LIST

CTD4-PM	Pump, Magnetic	\$210.-	DP-SW	Switch, 2-pole	\$ 16.50
14-77	Heater (2 needed)	45.-	C-TH	Safety Thermostat	33.-
CT4-PC	Printed Circuit Board	330.-	CT4-DISP	Display	70.-
CTD4-BTH	Bath Section	600.-	CTD4-BL	Bladder (2 used)	47.-
CTD4-RK	Rack for Dry Thaw	700.-	CTD4-PM	Program Module	100.-
CT4-TS	Temperature Sensor	66.-	CTD4-Y	"Y" Silicone Accelerator	6 @ \$30

Always specify model and serial number when ordering. Prices subject to change.

SOURCES for SUPPLIES

ALGICIDE. Cole Palmer (800 323-4340), part #G-08796-00

FULL CALIBRATION

Adjust the 10-turn potentiometer so that the voltage between TP1 and Ground (Earth) is .395 V. Actual temperature calibration is then set in Programming Mode (see PROGRAMMING MODE).

The trimmer near the BODY connector adjusts the display contrast.

SAFETY FEATURES

WATER LEVEL SENSOR

The unit will display LOW WATER and beep if there is not enough water to cover the level sensor inside the bath, a screw located 3/4" above the temperature sensor. The heat will also turn off. The water must be conductive in order for the level sensor to work. Use tap water or add as few salt crystals if you are using de-ionized or distilled water.

OVER TEMPERATURE

The unit will display TOO HOT and emit double-beeps if the temperature reaches 38 °C. It will turn the heaters off and stop thawing by draining the water from the bladders into the bath.

SAFETY THERMOSTAT

An independent safety thermostat will turn heaters off if the temperature goes above 45 °C.

FUSING

The fuse is located on the Printed Circuit Board inside the CONTROL PANEL. Use standard 10A (5A for 240Volt) AG3 fuses. Correct the cause of the blown fuse.

ISOLATION

The circuitry is isolated from the power lines by a transformer and from the heaters by an opto-coupled solid state relay.

February 2002