

PhotoTherm

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CytoTherm-DR

Plasma Thawing

with

Rocking Action

Model **CT-DR**

Rack with External Ribs

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

Do not forget to mail in your warrantee card.

Please record the following: Serial No. _____ Date of Purchase _____

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CtdrInsB Jul/2002

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SPECIFICATIONS: Temperature 37 °C. Accuracy 0.1 °C. Power: 100, 120 or 240 Vac., depending on the model. Uses 770W, 60Hz (must be grounded).

DESCRIPTION

The PhotoTherm CytoTherm DR (Model CT-DR) is a laboratory instrument for thawing plasma while keeping the plasma bag dry. Tempered water is recirculated through a bladder. The plasma bag to be thawed lays on one part of the bladder, while the rest of the bladder is folded over to cover the plasma bag. The plasma bag remains dry throughout. The rocking action speeds thawing. Plasma bag leakage is isolated to one of 3 separate chambers. If a leak is detected, the thawing stops and an alarm sounds.

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 3 chambers can thaw two 450ml. bags or one 1,000ml. Jumbo bag for a total of 6 x 450ml. or 3 Jumbo bags.

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

SETTING-UP

Make sure you have received the following:

..... Control Panel Bath
..... Rack 2 Arms
..... Lid Sensor Connector
..... 6 Bladders, 3 mounted inside RACK	
..... Extension Tubing Inlet and Outlet Port Plugs (3 of each)
..... Power Cord Instruction Book

Screw the ARMS to the side of the CONTROL SECTION. The notched side of the ARMS face up.

Place the BATH in front of the CONTROL SECTION so that the chassis on the BATH is next to the indented portion of the CONTROL SECTION.

Connect the umbilical cord of the CONTROL SECTION to the plug receptacle on the back of the BATH section.

**** THE POWER SWITCH MUST BE OFF
WHEN CONNECTING OR DISCONNECTING THIS CONNECTION ****

Lift the BATH and position it so that the pivots on the side of the BATH slip into the notches on the ARMS.

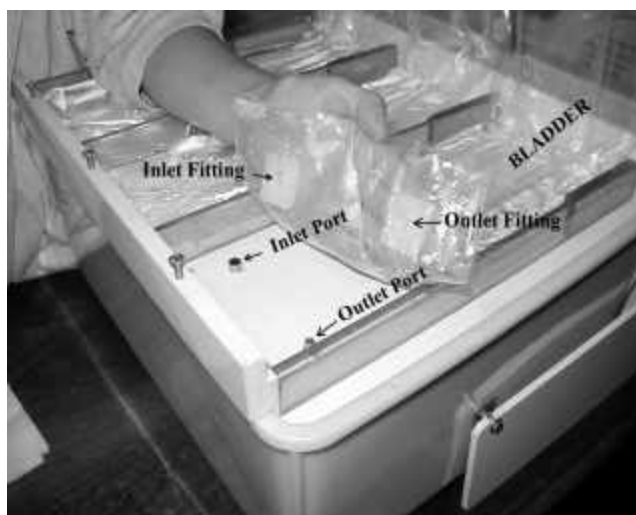
Make sure the power switch is OFF. Connect the power cord to a properly grounded electrical outlet.

Fill the BATH with 4" (10cm) of tap water (1" (2.5cm) above the pivot). If your tap water contains a lot of lime, use distilled or de-ionized water, but add a pinch of salt to make the water conductive so that the level sensors will work.

Connect the pump output tubing to the input fitting on the bottom of the RACK. Place the RACK into the top the BATH.

Connect one side of the SENSOR CONNECTOR to the CONTROL PANEL and the other end to the 2 rods on the left side of the RACK. The SENSOR CONNECTOR senses if the LID is closed and if there is a leak.

Open the RACK by pushing the LOCK BAR to the left. Lift the LID by rotating it back, and when it is vertical, slowly lower it straight down.



Mount the BLADDER by pushing the INLET and OUTLET FITTINGS down and twisting back and forth on the INLET and OUTLET PORTS . Slip the other end of the bladder under the white rod and lay over the bottom part of the bladder. If you are not using all 3 BLADDERS you must cover any open PORTS with a plug.

Turn the power switch ON. The heater will heat to maintain 37°C. The pump will start recirculating the water periodically and the display will indicate the temperature.

INSTALLATION CHECK LIST.

1. Make sure that the electrical outlet is properly wired. It must be grounded and the polarity must be correct.
2. Make sure that you use water from the tap or if you use de-ionized water, add a pinch of salt.
3. Make sure that the rocking motion is balanced. Start a thawing cycle (see OPERATION) watch the water flowing back and forth in the BLADDERS. It should flow forward and backward evenly as it rocks. If not place a shim under the front or back of the ARMS so that the flow is balanced.

OPERATION

Wait for the water to heat up to 37°C. A thermometer hole is provided on the right side of the RACK to verify the water temperature.

Open the LID. Lift up the top layer of the bladder with one hand and lay the plasma bag(s) to be thawed on the bottom part of the BLADDER. Cover the plasma bag(s) with the top layer 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 LOCK BAR to the right.

Push START to begin thawing for the programmed time. The Rocking Motor will turn on, the tempered water will be pumped through the bladder and 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 rocking. It then drains the bladders.

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

LEAKY PLASMA BAG

The alarm will sound and the thawing will stop when a leak is detected. Open the LID to see which bag leaked. The leak will be confined to only one of the three sections. Remove the leaky plasma bag and wipe off the bladder as well as you can.

Remove the BLADDER by lifting the top part of the BLADDER to let it drain the water back. Remove the INLET and OUTLET FITTINGS by holding the fittings and twisting them as you pull up. Pull out the BLADDER

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

You can rinse the contaminated exterior of the bladder with water and wipe it with a disinfectant (10% bleach).

MODES

STANDBY MODE. The unit maintains 37°C, but does not rock. Holding ENTER will turn on the rocking motor.

Enter **DRAINING MODE** by pushing MINUS while in STANDBY MODE . MINUS then controls the pump.

THAWING MODE. The unit recirculates tempered water through the bladders, rocks the BATH and RACK, times the thawing and monitors for leaks. Pushing START initiates thawing. Pushing STOP stops thawing.

DIAGNOSTIC MODE. Restores the unit to initial factory settings. Hold MINUS as you turn the unit on. Press ENTER while still holding MINUS. The display will show UNIT RESET. Turn the unit off. You have to re-calibrate the temperature after resetting the unit.

PROGRAM MODE allows you to:

1. Set the preset thawing time.
2. Select whether to continue thawing when timed out.
3. Calibrate the temperature.

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

TROUBLESHOOTING

English: Unit should be opened by qualified technicians only.

French: Ne puet etre 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 120/100 VAC model unit uses 2 x 8A 3AG fuses. The 240 VAC model uses 2 x 5A 3AG fuses.
Unit is not responding, but the display is backlit.	Turn the unit off for 10 seconds and then turn it back on. This reboots the computer.
Display says "low water" but there is water.	The unit is not sensing that water is present. a. Make sure you are using tap water or adding salt to deionized water to make it conductive. b. The level sensor (screw 3/4" (2 cm.) above the stainless tube temperature sensor) inside the bath 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. Check for loose connections in the umbilical connector.
Temperature calibration changed unexpectedly.	Replace temperature sensor (#CT4-TS).
Pump does not circulate. No hum.	No power to pump or pump winding open. Check the umbilical connector. Check the pump (#14-PM). DO NOT DISASSEMBLE.
Pump does not circulate. Makes humming noise.	Blow air through pump outlet tubing to clear small obstruction. Check pump (#14-PM). DO NOT DISASSEMBLE. Any evidence of leaking on motor side means pump must be replaced.
Waterbath not rocking.	Check if cam is loose on motor. Check the rocking motor (#C-RM).

MAINTENANCE

CLEAN the bath as required. Add 10 ml. of household bleach or an algicide to the water to prevent slime growth. (Cole Palmer (800) 323-4340 part #G-08796-00). Add 5 ml. of glycerine (not rose water and glycerin).

Lift off the RACK and disconnect the pump tubing.

If your unit has a blue drain valve on the BATH: Turn the unit off. Attach a drain tube to the valve and put the other end in a sink or a bucket. Open the drain valve and let most of the water drain out.

If your unit does NOT have a drain valve on the BATH: Connect extension tubing to the pump tubing. Turn the unit on and push MINUS to operate the pump. Empty as much of the bath as possible into a sink. An empty bath is much lighter and safer to handle.

TURN THE POWER SWITCH OFF. Lift the bath up slightly and then toward you until the PIVOT clears the ARMS and rest the bath on the counter. Disconnect the umbilical cord.

Clean the bath section. **DO NOT IMMERSE THE WHOLE BATH.**

WIPE THE PUMP SCREEN FROM THE OUTSIDE ONLY. DO NOT REMOVE THE SCREWS.

Connect the umbilical cord, place the PIVOT of the BATH into the notches of the ARMS and refill with tap water (if you are using de-ionized water, remember to add a pinch of salt).

PARTS LIST

14-PM	Pump, Magnetic	\$147.-	DP-SW	Switch, 2-pole	\$ 16.50
14-77	Heater (2 needed)	60.-	C-TH	Safety Thermostat	33.-
C4D-PC	Printed Circuit Board	330.-	C4-DISP	Display	70.-
C4D-BTH	Bath Section	600.-	C4-UMB	Wiring Harness	60.-
C-RM	Rocking Motor	75.-	CDR-PM	Program Module	100.-
C4-TS	Temperature Sensor	66.-	CDR-SCN	Sensor Connector	150.-
CDR-RK	Rack for Dry Thaw	990.-	CDR-LID	Lid for Rack	250.-
CDR-BL	Bladder (3 needed)	33.-			

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

.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" (2 cm.) 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 if you are using de-ionized or distilled water, add a few salt crystals.

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 and 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 8A (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.

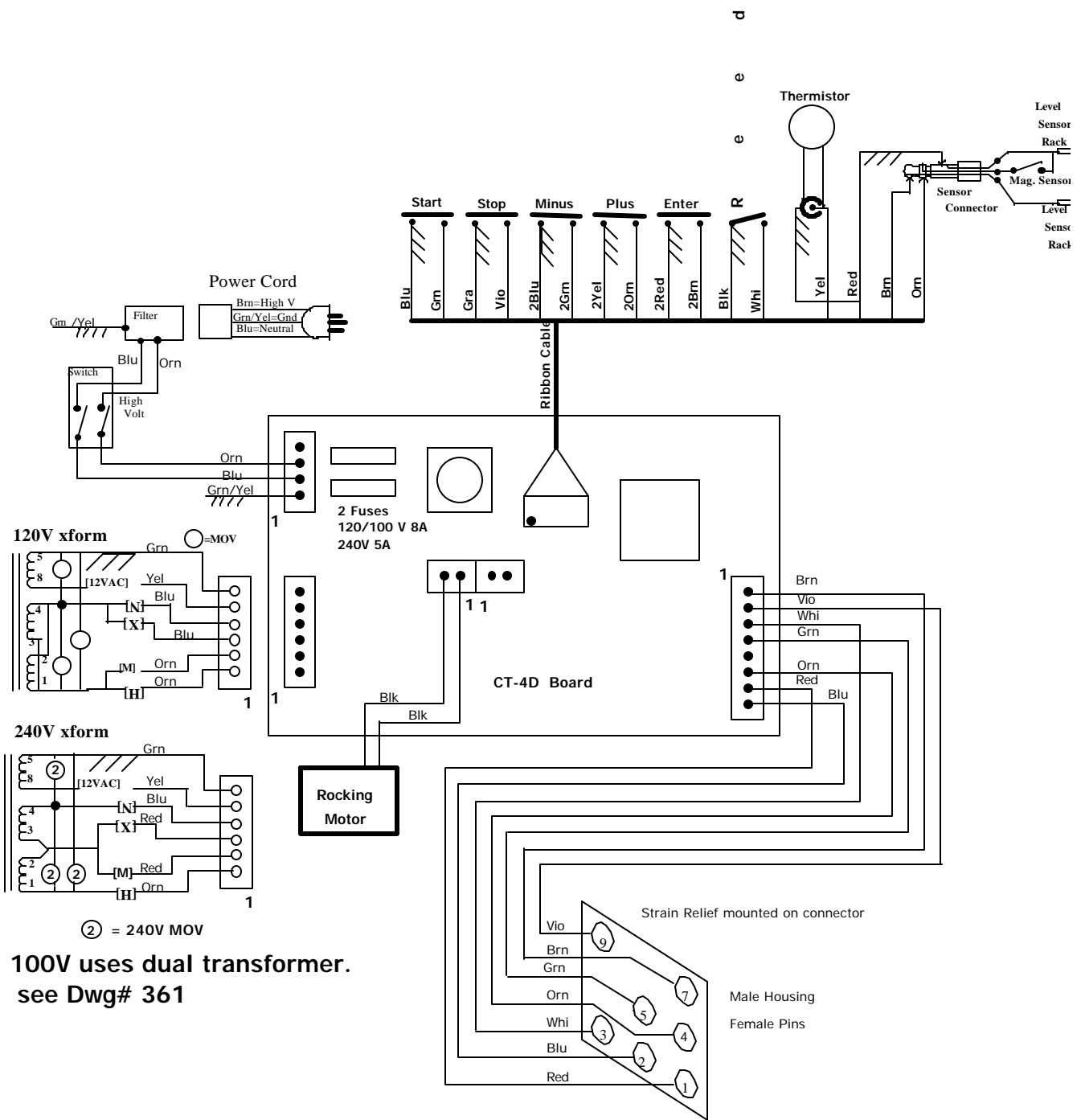
SAFETY TESTING

This unit is equipped with a Line Filter whose impedance draws about 210 uA. This is not leakage. Any leakage current measurement should have the 210 uA subtracted from the reading. **OR** the Line Filter should be bypassed when making the leakage measurement. The power cord plugs into the Line Filter on the unit.

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.

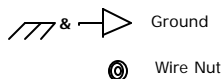


Wiring CT-DR

Dwg # 351

File \Draw#\D#351.kcw Home
 30 Nov 2000
 1 Jul 02. 8A Fuses for 120/100

Ground is Green with Yellow stripe



Bath Section

120/100V wired as show
 240V the 2 heaters are in

