



Tissue-Tek[®] TEC[™] 5

Tissue Embedding Console System

**Operating
Manual**

MODEL NUMBERS

- 5100 (115 VAC, America)
- 5229 (230 VAC, Europe)
- 5232 (220-240 VAC, Asia)
- 5235 (115 VAC, Asia)
- 5238 (100 VAC, Asia)

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Manufactured for:
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Made in Japan

0001338-01 / Rev. A

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GENERAL DESCRIPTION

The Tissue-Tek® TEC™ 5 Tissue Embedding Console System is used to embed processed tissue in paraffin, forming paraffin blocks ready for sectioning. The System consists of:

- Embedding Module
- Cryo Module
- Tampers (1 large and 1 small)
- Transfer Tray
- Plastic Scraper
- Foot Pedal (sold separately, see Section 8)
- Magnifying Lens (sold separately, see Section 8)
- Electric Forceps (sold separately, see Section 8)
- Base Molds (sold separately, see Section 8)
- Tissue Cassettes (sold separately, see Section 8)

FEATURES

- **A large insulated work space** (allows you to manipulate more samples comfortably and efficiently)
- **Individual temperature control in six areas** (hot plate, paraffin chamber, left and right chambers, Cryo Module, optional electric forceps)
- **Up-front keypad and LCD display** (for easy access)
- **Two 3-hole forceps holders** located on each side of the paraffin dispenser (for right or left hand operations)
- **Menu-driven software** simplifies setup of the Automatic Timer (you specify the time you require paraffin to be ready. The instrument calculates the time it should automatically turn the heaters on)
- **Embedding and Cryo Modules work areas of the same height** (so modules can be placed side by side, in any order to facilitate your choice of “right-to-left” or “left-to-right” work flow)
- **Large capacity (4L) paraffin reservoir** with optimized paraffin dispensing rates (do more work, faster)
- **Larger cold spot** (accepts larger base molds)
- **Hinged, thermal chamber doors** move completely out of the way (allows full access to both thermal chambers)
- **Optional magnifying lens** (enhances visibility while positioning tissue specimen)
- **Optional foot pedal** (for hand-free operation)
- **Optional electric forceps** (always at the right temperature to allow for more efficient workflow)

INTRODUCTION

OPERATION:

WARM UP and READY TIMES

Embedding Module

When the Embedding Module is turned on, *either* manually or automatically, 4 hours* is required for paraffin to liquefy and reach set temperature.

The Embedding Module stores the instrument settings in memory whenever power is turned off or is lost. When power is restored or turned on, a Power Outage message will appear on the display if power was turned off or lost when the instrument status was <READY>, <WARMING UP>, or <CRYO>. A Power Outage message will not be given if the instrument status was <STANDBY>.

Manual Mode: Set power switch on front panels to ON; press AUTO/MAN key to MAN (green indicator illuminates). Five areas begin to heat when the HEAT key is pressed ON. All areas, *except* the paraffin chamber and the left and right chambers, reach set temperature within 60 minutes. The paraffin and the left and right chambers reach set temperature in 4 hours.* Using paraffin already in the molten state will significantly reduce the warming up time. The instrument status will be <WARMING UP>. When all heated areas reach set temperature, the instrument status will change to <READY>. The heat remains ON until you manually press the HEAT key again.

Automatic Timer Mode: The Embedding Module can be preset to be ready to use at *your* specified time. The instrument calculates an automatic "turn on" time from your preset ready time. When the instrument automatically turns ON, only the paraffin chamber begins to heat. The remaining four areas begin to heat 60 minutes prior to the preset ready time. During that time, the instrument status will be <WARMING UP>. When all set temperatures are reached, the instrument status will change to <READY>. The module automatically turns OFF at *your* preset "Shut down" time or if you select the MANUAL mode and press HEAT.

*May be longer depending on current source and environmental factors.

Cryo Module

The Cryo Module is ready to use (reaches set temperature) 15 minutes after the compressor is turned ON. It can also be turned on automatically using the automatic timer mode.

Temperature can be set down to -10°C in 1°C increments. The Cryo Module must be connected to the Embedding Module to operate.

NOTE: Make sure the Cryo Module is connected to the Embedding Module and that the power is on. If the Cryo Module is not powered up or not connected to the Embedding Module, and if the CRYO key on the Embedding Module key is pressed ON or the Automatic Timer software tries to turn the Cryo Module ON, the following error message will be given within 15 seconds:

<CRYO ERROR> CRYO POWER IS OFF OR COOLING FAN ERROR
--

To silence the alarm press any key.

To operate the Cryo Module if this situation occurs, first turn the Embedding Module power switch to OFF, verify that the Cryo Module is connected to the Embedding Module, and turn the Cryo Module power switch to ON. Then turn the Embedding Module ON again.

NOTE: The Cryo Module's power indicator will stay on when the Cryo Module is turned off using the Cryo key on the Embedding Module.

Ensure your safety! Comply with all WARNING and CAUTION statements found in this manual.

SPECIFICATIONS

	EMBEDDING MODULE	CRYO MODULE
Ambient Operating Temperature and Relative Humidity Range	10° – 40° C 30% – 85% RH, (noncondensing)	10° – 40° C 30% – 85% RH (noncondensing)
Dimensions/Weight	Width 57.5 cm (22.6 in) Depth 64.2 cm (25.3 in) Height 37.7 cm (14.8 in) Weight approx. 26 kgs (57 lbs)	Width 33.0 cm (13.0 in) Depth 61.7 cm (24.3 in) Height 37.7 cm (14.8 in) Weight approx. 22 kgs (48 lbs)
Power Required	Model No. 5238: 100 VAC ±10% or less, @ 9.0 amps 50/60 Hz Model Nos. 5100, 5235: 115 VAC ±10% or less, @ 9.0 amps 60 Hz Model Nos. 5229, 5232: 220 – 240 VAC ±10% or less, @ 9.0 amps 50 Hz	100 VAC ±10% or less, @ 2.0 amps 50/60 Hz 115 VAC ±10% or less, @ 2.0 amps 60 Hz 220 – 240 VAC ±10% or less, @ 2.0 amps 50 Hz
Chamber Capacity	Paraffin Chamber: approx. 4 liters Left and Right Chambers: approx. 1.5 liters	(no chambers)
Temperature Range Available	Paraffin Chamber, Right and Left Chambers, Hot Plate: 50°C – 75°C Electric Forceps(optional): 1 to 5	Cooling Plate: –10°C to 0°C
Factory Set Temperature	Paraffin Chamber, Left and Right Chambers, Hot Plate: 62°C Cold Spot: approx. 15°C at 25°C room temp. and 40% R.H. Electric Forceps(optional): 3	Cooling Plate: – 5°C
Circuit Breaker/ON-OFF Switch	15 amps	
Memory Backup	Long-life battery	
Safety Standards	Tested and listed by Intertek Testing Services (ITS) Complies with: UL 3101-1, 1st ed., IEC 1010-1 and CAN/CSA-C22.2 No. 1010.1-92	

UNPACKING, SYSTEM DESCRIPTION

UNPACKING

The Tissue-Tek® TEC™ 5 Tissue Embedding Console System arrives in *two* cartons tied together.

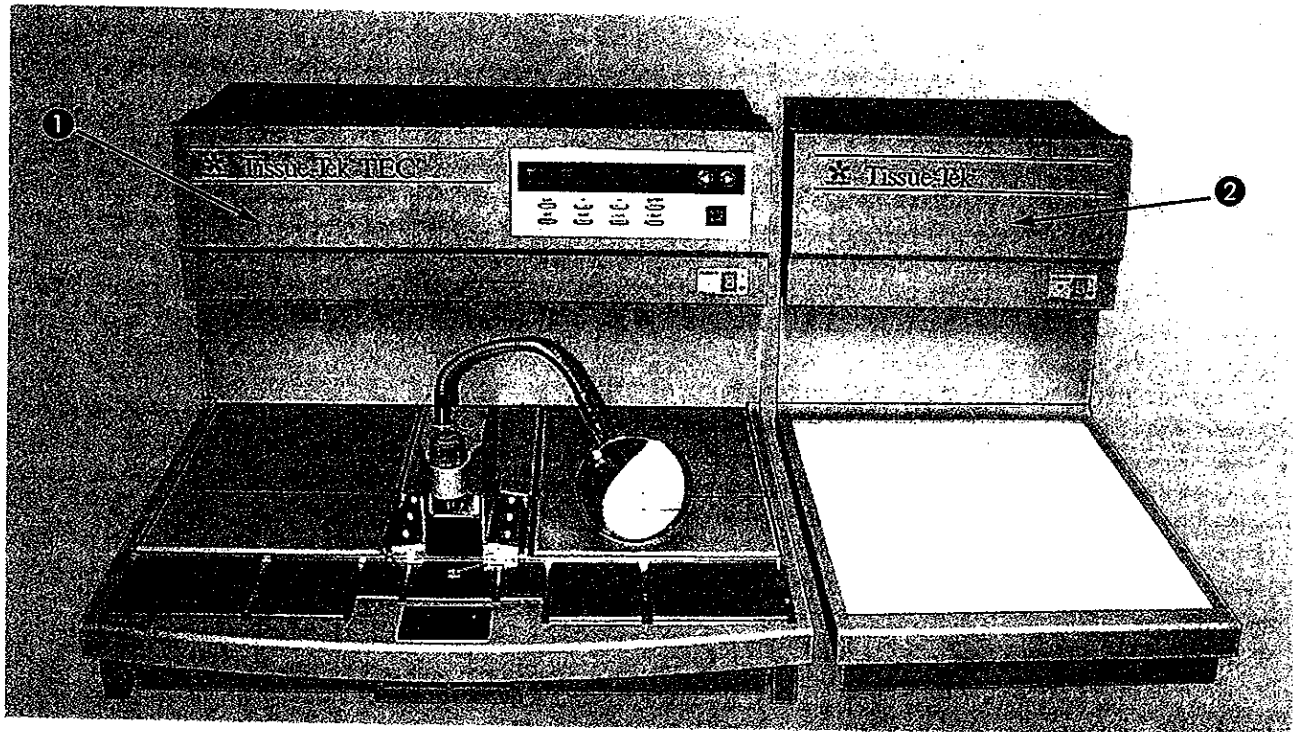
Inspect each carton for shipping damage.

Unpack each carton.

- Use extreme care when unpacking each module. Each module contains sensitive electronic parts.

Check each item for shipping damage.

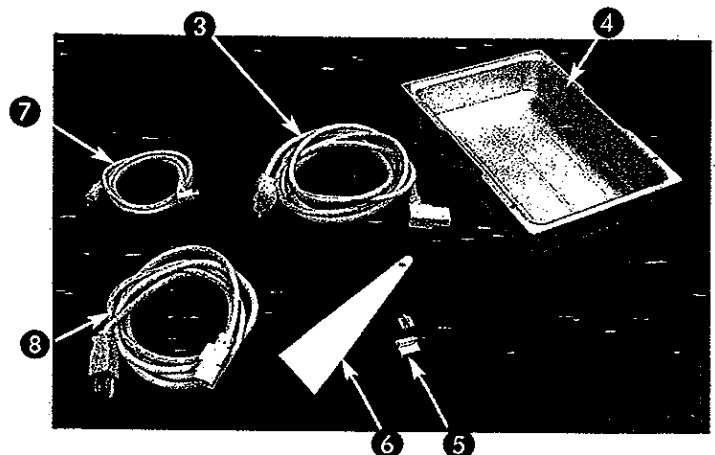
- If there is visible shipping damage, immediately file a complaint with the carrier. Then, notify your nearest Tissue-Tek instrument distributor.



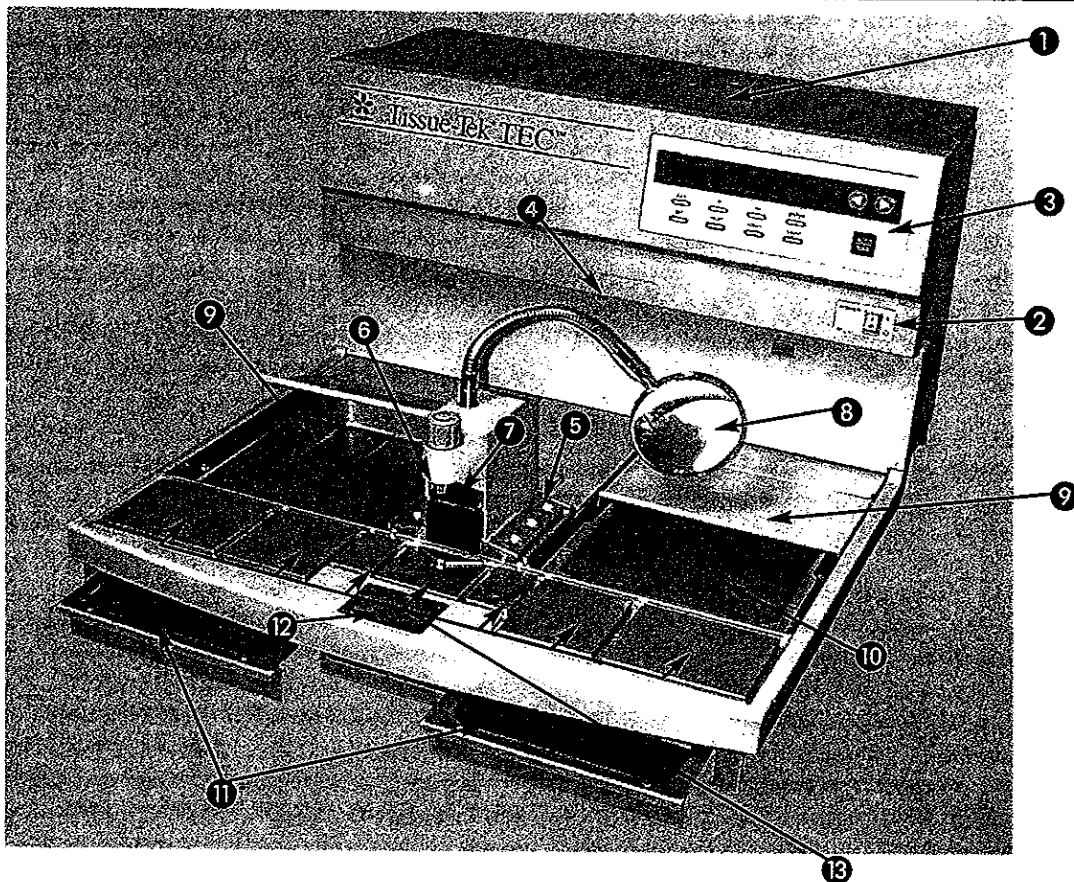
CARTON CONTENTS

- 1 Embedding Module
 - 2 Cryo Module
 - 3 Cryo Module Power Cord
 - 4 Transfer Tray
 - 5 Tampers (1 large and 1 small)
 - 6 Plastic Scraper
 - 7 Connecting Cable to Embedding Module
 - 8 Embedding Module Power Cord
- Operating Manual (not shown – instructions for both Embedding and Cryo Modules)

Missing items?...Dial 1-800-725-8723 (U.S. Customers, only). If located outside the U.S., contact your nearest Tissue-Tek instrument distributor.



UNPACKING, SYSTEM DESCRIPTION



SYSTEM DESCRIPTION

Embedding Module (FRONT PANEL)

- ❶ **Paraffin Chamber** – holds up to four liters of molten paraffin; fine mesh filter at bottom of chamber catches debris; can be set to any temperature at or between 50°–75°C (122°–167°F); factory set at 62°C (143.6°F).
- ❷ **Power Switch** – turns the power to the module ON or OFF; circuit breaker.
- ❸ **Control Panel** – consists of an LCD display and keypads (each component discussed in detail later in this section).
- ❹ (Optional) **Electric Forceps** – (Connector shown only) connects underneath the control panel. Adjustable to 5 different temperature levels.
- ❺ **Forceps Warmer Holders** – hold forceps; can be set to any temperature at or between 50°–75°C (122°–167°F) using the Hot Plate temperature settings; factory set at 62°C (149°F).
- ❻ **Paraffin Dispenser** – molten paraffin is dispensed here; press fingerplate to dispense paraffin or use the optional foot pedal; turn knob “clockwise” to *decrease flow* or “counterclockwise” to *increase flow*. Optional foot pedal (not shown) can be used instead of the fingerplate to dispense paraffin.
- ❼ **Work Light** – increases visibility in hot plate area making tissue positioning easier.
- ❽ (Optional) **Magnifying Lens Assembly** – increases visibility while positioning tissue.

- 9 **Left and Right Chambers** – can be set to any temperature at or between 50° – 75°C (122°–167°F); each chamber can be used for *one* of the following at any one time (preference depends on your chosen work flow direction):

- *warming area* for various sized base molds (close lid to keep heat in and dust out)

OR

- *paraffin bath* to keep processed tissue specimens at the appropriate temperature (close lid to keep heat in, and dust out, when embedding process is finished or temporarily stopped).

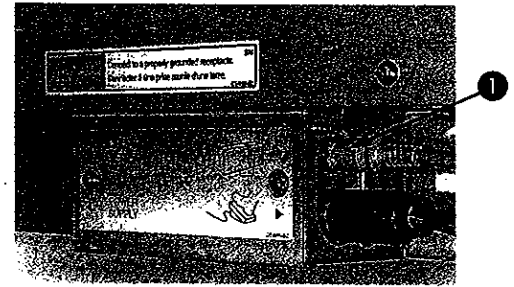
- 10 **Transfer Tray** – may be used to transfer processed specimens to the Embedding Module or may be half-filled with paraffin and then used as a paraffin bath.

- 11 **Waste Drawers** – catch molten paraffin that drains through two holes in grooves around hot plate area.

- 12 **Cold Spot** – cools liquid paraffin at the bottom of a base mold so tissue can be correctly positioned.

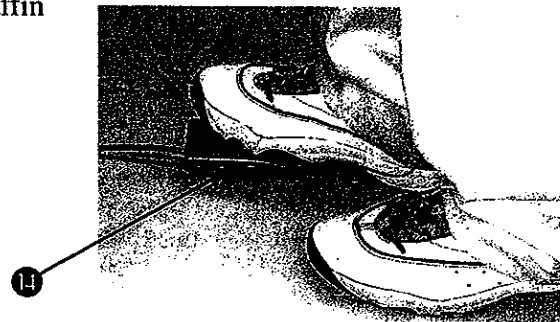
- 13 **Hot Plate** – ensures that paraffin does not solidify during embedding process; can be set to any temperature at or between 50° – 75°C (122°–167°F); factory set at 62°C (143°F). This temperature setting is also used for the Forceps Warmer Holders.

- 14 **(Optional) Foot Pedal** – for hands-free paraffin dispensing.



Embedding Module (BACK PANEL)

- 1 **Cryo Module Connector** – accepts the plug to the Cryo Module. The Cryo Module operation is controlled by the Embedding Module.
- 2 **Power Cord Connector** – accepts the plug for connecting the power cord to the module.



UNPACKING, SYSTEM DESCRIPTION

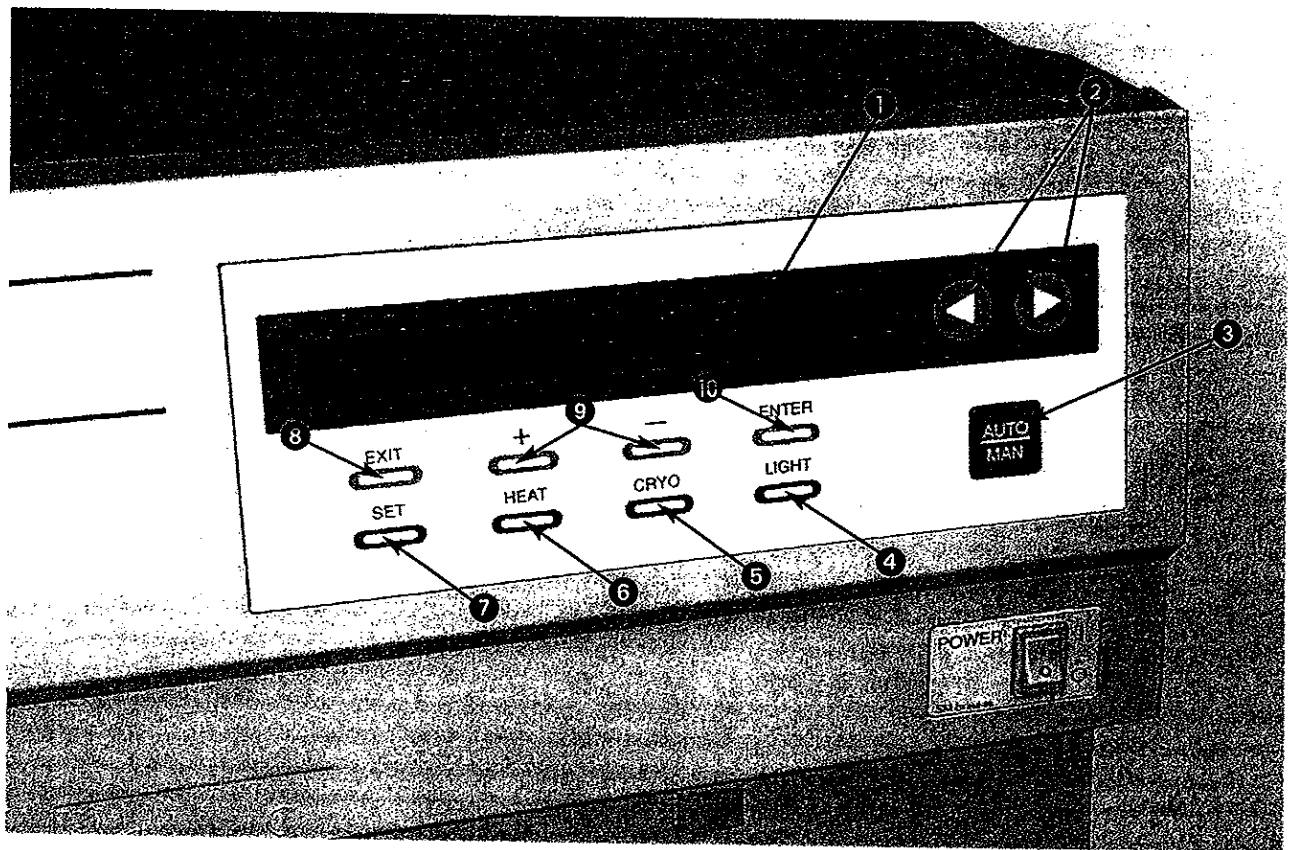
Accessories

(found inside paraffin chamber; refer to photo on page 2.1)

Embedding Module Power Cord – carries electrical current to Embedding Module

Tampers (1 large and 1 small) – used (as necessary) to press tissue firmly against the bottom of the base mold

Plastic Scraper – used to remove frost from cooling plate of Cryo Module



Embedding Module (CONTROL PANEL)

- ❶ **LCD Display** – consist of two lines of up to 40 characters per line.

Displays (depending on the mode):

- (a) current time of day
- (b) On or Off times
- (c) current temperatures
- (d) actual preset temperatures
- (e) actual operating mode
- (f) system status information and error conditions

- ❷ **Left and right arrow keys**– move the display cursor left and right. Rapid scrolling is enabled by holding these keys for more than 2 seconds.

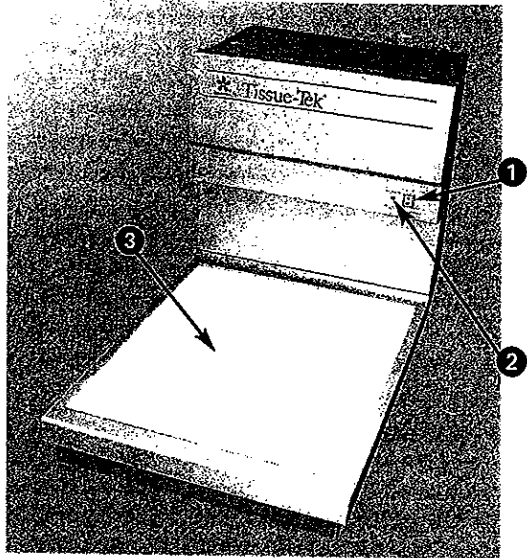
- ❸ **AUTO/MAN key** – selects between automatic and manual operation. The corresponding LED will be lit to indicate the current mode of operation. Selecting the Manual Mode of operation does not permanently cancel the automatic timer On/Off times.

- ❹ **LIGHT key**– turns Work Light ON or OFF.

- ❺ **CRYO key** – turns the Cryo Module ON or OFF. The independent operation of the CRYO Module can be restricted if the Automatic Timer has been programmed to also control the ON and OFF times of the Cryo Module. Under this condition, the CRYO key will not operate when the system operating mode is in AUTO (AUTO LED indicator is ON). See Section 3, SET UP to change the setting. **NOTE:** Power to the Cryo Module must be turned on before the Embedding Module is turned ON.

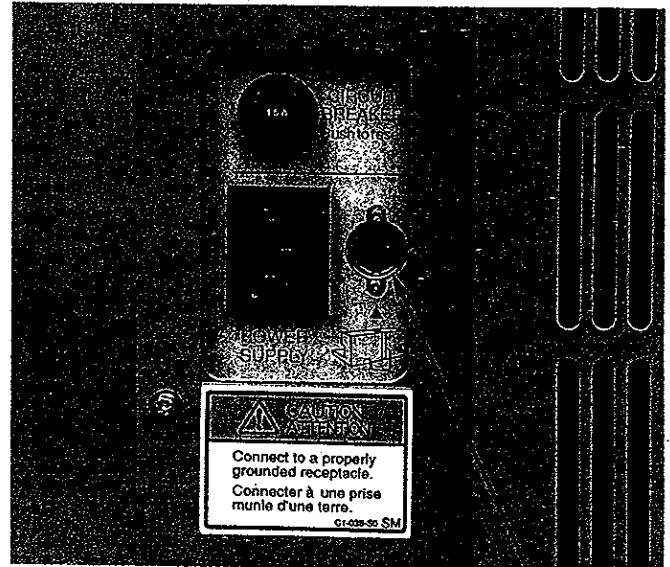
UNPACKING, SYSTEM DESCRIPTION

- ⑥ **HEAT Key** – turns the heating components of the Embedding Module ON or OFF.
- ⑦ **SET key** – allows operator to enter the SETUP mode (See Section 3, Set Up).
- ⑧ **EXIT key** – allows to return to the previous menu item without saving the changes made in the SETUP mode.
- ⑨ **+ and – keys** – increase or decrease numerical values and add or delete days when in the SETUP mode. Holding these keys for more than 2 seconds enables rapid scrolling.
- ⑩ **ENTER key** – when pressed, stores data into memory in the SETUP mode.



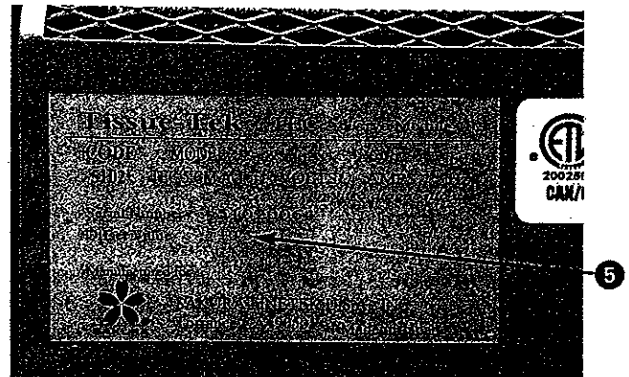
Cryo Module (FRONT PANEL)

- ❶ **Power On Switch** – turns the Cryo Module ON.
- ❷ **Power Indicator** – illuminates when the Cryo Module switch is set to ON.
- ❸ **Cooling Plate** – holds up to 60 base molds (each containing an embedded specimen); provides for optimum solidification of liquid paraffin; cools embedded specimen prior to sectioning; factory set at -5°C (23°F); can be preset to any temperature at or between -10° to 0°C (14° to 32°F).



(BACK PANEL)

- ❹ **Embedding Module Connector** – accepts the plug for connecting to the Embedding Module.
- ❺ **Cryo Offset Label** – The Cryo offset value printed on this label must be entered in the CRYO OFFSET selection of the SETUP mode (See Section 3, Set Up).



Audible Alarms (Embedding and Cryo Modules)

An audible alarm sounds for ten seconds to signal an error condition (refer to Section 6).

INSTALLATION

CAUTION: Do not place the Tissue-Tek® TEC™ 5 Embedding System where it would be subjected to direct sunlight and/or direct heat, an open flame source, excessive humidity or air current, excessive particulate matter, or electrical noise (such as from refrigerators, centrifuges, ultrasonic cleaners and microwave ovens).

1. Select a level surface near one properly grounded electrical outlet in a well-ventilated area of minimum humidity.

CAUTION: Make sure the electrical outlet supplies the proper voltage (within $\pm 10\%$). Refer to the rating label on the Embedding Module.

2. Place the Embedding Module next to the Cryo Module. It is not necessary to leave any space between the two modules.

NOTE: The working area of each module is of the same height. This allows you to place the modules next to each other, *in any order*, to accommodate your choice of “right-to-left” or “left-to-right” work flow.

3. Check to make sure the power switches on the front panel of the Embedding Module and the Cryo Module are set to OFF (O).
4. Connect the Cryo Module to the Embedding Module using the provided cable. The end of this cable having the right-angle connector is plugged into the Cryo Module. The end of this cable having the straight connector is plugged into the Embedding Module.

5. Connect the Cryo Module and Embedding Module power cords into properly grounded outlets. The power cord with the right angle connector plugs into the Cryo Module.
6. Connect the Foot Pedal (sold separately, refer to section 8) to the back of the Embedding Module.
7. Move the modules into place on the designated work space.

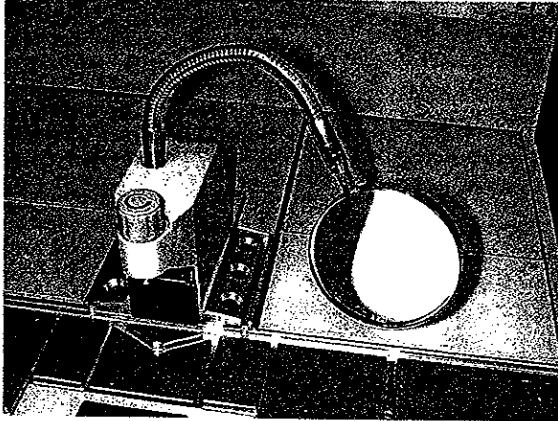
CAUTION: For cooling purposes, allow at least 76 mm (3 in) of space between the wall (or other surface) and the back panel of each module.

SET UP

ATTACH MAGNIFYING LENS ASSEMBLY

(sold separately, refer to Section 8)

1. Remove the screw from the top of the paraffin dispenser.



2. Mount assembly in the threaded hole of the paraffin dispenser. The end of the flexible attachment screws directly into the hole. Tighten.
3. Adjust magnifying lens to preferred focal range (pull lens forward and down).

CONNECT ELECTRIC FORCEPS

(sold separately, refer to section 8)

1. Connect the wire underneath the Embedding Module control panel.

VERIFY PROPER INSTALLATION AND SYSTEM FUNCTION

1. Set the power switch on the front panel of the Cryo Module to ON (I).
2. Set the power switch on the front panel of the Embedding Module to ON(I).

The MAN indicator is illuminated.

The following appears on the LCD display:
(The time and day may be different)

<STAND BY>	6:30PM WED
------------	------------

3. Press HEAT key (on Embedding Module control panel). The following appears on the LCD display:

<WARMING UP> CRYO IS OFF 6:30PM WED PLEASE WAIT.

4. Press CRYO key (on Embedding Module control panel).

The "CRYO IS OFF" message will disappear from the display and the compressor will start.

If System functions properly:

- press CRYO key to turn off compressor (the message CRYO IS OFF is back on the display);
- continue with "Set Day and Time" procedure (next page).

NOTE: Paraffin will not be dispensed and an audible alarm will sound if the fingerplate or the optional foot pedal is pressed unless <READY> is displayed on the top left end corner.

If System does not function properly:

Dial 1-800-725-8723 (U.S. Customers, only). If located outside the U.S., contact your nearest Tissue-Tek instrument distributor.

SET UP

ACCESS SET UP MODE

Access the SET UP mode by pressing the SET key. The first two menu items are displayed.

```
SETUP MODE> SELECT MENU (1-7)
1. TEMPERATURE  2. CRYO MODULE
```

The other five menu items are:

- 3. TIMER
- 4. CLOCK
- 5. TIME FORMAT
- 6. ERROR LIST
- 7. CRYO OFFSET

Pressing the ENTER key will allow access to the item number highlighted by the cursor.

SET DAY AND TIME

- Clock settings are not lost when a power failure occurs or when the Embedding Module power switch (*on the front panel*) is set to OFF. The instrument memory is backed-up by a battery. At installation and periodically as required, it may be necessary to set the clock.

To select a 12-hour or 24-hour time format, use the arrow keys to move the cursor to item "5. TIME FORMAT" and press ENTER. Then, use the arrow keys to select the desired format and press ENTER.

When ready to set the actual day and time, use the arrow keys to move the cursor to item "4. CLOCK" and press ENTER. Use the Arrow keys to highlight the actual day of the week and press ENTER. A prompt will then appear to input the current time. Use the Arrow keys to move the cursor between "Hour" and "Minutes". Use the + and - keys to set the actual values. When finished, press ENTER to save the values into memory. If you do not want to save the changes, press the EXIT key instead.

SET CRYO MODULE MODE OF OPERATION

The Cryo Module can be operated independently of the Embedding Module when the MAN/AUTO keys is set to MANUAL (MAN LED is illuminated). The CRYO key can then be used to turn the Cryo Module ON or OFF.

NOTE: The Cryo Module power switch must be turned ON first. The Embedding Module power switch must then be ON to operate the Cryo module.

When AUTOMATIC operation is selected (AUTO LED is illuminated) control of the Cryo Module ON and OFF times can be synchronized with the ON and OFF times of the Embedding Module or can be independent. To synchronize the operation of the Cryo Module with the Embedding Module, enter the SETUP mode by pressing, the SET key and highlight "2. CRYO MODULE". Press ENTER and select item "1. TIMER ON" using the Arrow keys and pressing ENTER. If independent operation of the Cryo Module is preferred, select "2. TIMER OFF". If the Timer OFF option is selected, the CRYO key must be pressed to turn the Cryo Module on.

INPUT CRYO OFFSET VALUE

Since the Embedding Module computer controls the operation of the Cryo Module, an offset value must be entered to ensure temperature accuracy.

Write down the offset value found on the Cryo Offset Label located at the back of the Cryo Module. The range is -4.9 to +4.9.

Enter the SETUP mode by pressing the SET key and highlight "7. CRYO OFFSET". Press ENTER and use the + and - keys to set the actual value. When finished, press ENTER to save the value into memory. If you do not want to save the changes, press the EXIT key instead.

CHANGE OR VIEW SET TEMPERATURES

- Temperature settings are retained in memory and are not lost when a power failure occurs or when the Embedding Module power switch (*on the front panel*) is set to OFF.
- During operation, actual temperatures will be displayed and the Arrow keys can be used to scroll through all six temperature controlled components. If the AUTO MODE is on, the SHUTDOWN time will also appear under item 7.

To change or view the set temperatures*, access the SETUP mode by pressing the SET key. Highlight "1. TEMPERATURE" and press ENTER. The following information will be displayed:

```
<SET TEMPERATURES> SET UP (1-6) (50°C-75°C)
1. PARAFFIN:   **°C  2. CRYO   : **°C
```

Use the Arrow keys to select the desired component and use the + and - keys to set the temperatures. When finished, press ENTER to save the values into memory or EXIT to discard the changes. Temperature can be set for the following components in 1°C increments:

1. Paraffin Paraffin Chamber from 50°C to 75°C
2. Cryo Cryo Module from -10°C to 0°C
3. Hot Plate Hot Plate from 50°C to 75°C (The Hot Plate setting also controls the Forceps Warmer Holders)
4. Left Left Chamber from 50°C to 75°C
5. Right Right Chamber from 50°C to 75°C
6. Forceps Optional Electric Forceps from 1 to 5

*Factory set temperatures:

Paraffin Chamber	62°C (143.6°F)
Hot Plate	62°C (143.6°F)
Left and Right Chambers	62°C (143.6°F)
Cryo Module	-5°C (23.0°F)
Electric Forceps (optional)	3

It is recommended that factory set chamber temperatures be verified prior to first use of the System.

SET UP

ADD PARAFFIN (Embedding Module)

*Do not use paraffin with a melting point higher than 75°C (167°F).**

*or paraffin will not liquefy; the maximum temperature of the paraffin chamber is $75 \pm 2^\circ\text{C}$ ($167.0 \pm 3.6^\circ\text{F}$)

WARNING: MOLTEN PARAFFIN IS HOT AND MAY CAUSE BURNS. DO NOT OVERFILL PARAFFIN CONTAINER.

1. **Open** Paraffin Chamber Lid.
2. **Add** approximately 4 liters of clean molten paraffin (or equivalent volume of paraffin chips/flakes) to the chamber. *Do not overfill.*

NOTE: 2 parts dry flakes/chips = 1 part molten paraffin

3. *If using the transfer tray as the paraffin bath,* add equivalent of 50 mL of molten paraffin** to either right or left chamber (whichever you select depending on your work flow direction)

**added to increase heat conductivity between tray and chamber

Place transfer tray into the chamber (over 50 mL molten paraffin).

4. **Add** paraffin to the paraffin bath to a depth of about 13 mm (0.5 in), or about .9 liter (.24 gal) molten paraffin or equivalent in dry chips/flakes.

NOTE: The paraffin bath may be either the right or left chamber or transfer tray (whichever you select).

NOTE: Change paraffin frequently to prevent build-up of tissue debris.

5. **Pour** about 1 mL of clean molten paraffin into each well in forceps holder.
6. **Place** one forceps into each well.

PLACE BASE MOLDS INTO CHAMBER

Place base molds (sold separately, see Section 8) into empty chamber (either right or left depending on your chosen work flow direction).

WHAT HAPPENS WHEN POWER IS TURNED OFF

Embedding Module

When the power is turned off for maintenance procedures, etc. (*via power switch on front panel*) or interrupted by a power failure:

- current time of day and all instrument settings are not lost
- preset On/Off times will be retained and will occur as scheduled

Cryo Module

To protect the compressor from damage, the compressor **will not restart for 3 to 5 minutes** if power is interrupted or turned off while the compressor is ON. The fan will start immediately.

When the Cryo Module is intermittently not in use during the day, turn the compressor OFF by pressing the CRYO key *on the Embedding Module control panel*. This action will not be allowed if the Cryo Module operation was set to synchronize with the Embedding Module and the mode of operation selected is AUTO (AUTO LED is illuminated).

WHEN TO SET POWER SWITCH ON FRONT PANEL TO OFF

Set power switch to OFF when modules are not in use for *extended* periods of time (e.g., over a month), and when performing designated maintenance procedures.

ON AND OFF TIMES FOR SELECTED DAYS OF THE WEEK:

- can be preset*
- can vary daily (for up to 7 days)
- is automatically reused from week to week
- can be overridden at any time using the MAN/AUTO key
- can be easily cancelled
- can be used to also turn the Cryo Module on and off automatically

*The System calculates an automatic "ON" time from your preset "ready" time. The calculation is based on normal room temperature conditions. "Ready" time may be delayed as much as 1 to 1½ hours, if room temperature approaches the low end of the operating temperature specification.

SETTING THE AUTOMATIC TIMER

- Automatic Timer settings are stored in memory and are not lost if a power failure occurs or when the power switch on the front panel is set to OFF.
- To control the Cryo Module ON/OFF times the Cryo Module Operation must be set as "TIMER ON". (See page 3.4, set Cryo Module Mode of operations).

IMPORTANT--In the following instructions: "ON" time refers to the time you want the modules to be "ready to use" and "OFF" time refers to the time you want to turn them off.

To program the Automatic Timer, access the SET UP mode by pressing the SET key and highlight menu item "3. TIMER." Press ENTER. The following information will be displayed:

```
<SET TIMER> SELECT DAYS OF OPERATION.  
>MON >TUE >WED >THU >FRI SAT SUN
```

Days already programmed will be annotated by a ">" symbol. The current day of the week will be highlighted. In the above example, the Automatic Timer will turn on and off the TEC 5 from Monday to Friday but not during the weekends; the current day is Tuesday.

Use the Arrow keys to select a day of the week. Press the + key to add to the list of days where automatic operation is performed. An asterisk will appear, indicating that day has been selected. To remove a day from the list, move the cursor to highlight it and press the - key.

Add to the list all days that will be controlled by the Automatic Timer. When done, press ENTER to save the list into memory. Days can be set individually or as a group. The display will then prompt you to input the ON and OFF times.

The following example uses the 12 hour clock format:

```
<SET TIMER> INPUT ON AND OFF TIMES  
10:00 AM [ON] - 5:00 PM [OFF]
```

Use the Arrow keys to move between the fields and use the + and - keys to set the desired times. When finished, press the ENTER key to save the values into memory or press EXIT if you do not want to save the changes.

AUTOMATIC TIMER (optional use)

CHECKING THE STATUS OF THE AUTOMATIC TIMER (WHAT TIME IS SET?)

To view these times whatever the current operating mode is, press the SET key and use the arrow keys to move the cursor to item "3. TIMER". Press the ENTER key. Then, highlight any day annotated with a ">" and press the + key and then ENTER. The ON and OFF times will be displayed. Use the EXIT key to return to any previous menu.

If the operating mode is AUTO (AUTO LED is illuminated), and the system is in Standby, the following information will be displayed.

<STANDBY>	6:00 PM WED
NEXT ON/OFF CYCLE: 8:00AM -5:00PM TUE	

When the instrument is in STANDBY, all heaters are off and the Cryo module is off. To turn the heaters on before the next scheduled ON cycle, press the HEAT Key. To turn the Cryo Module ON, press the AUTO/MAN key to illuminate the MAN LED, then press the CRYO key (NOTE: The CRYO key can be pressed to turn the CRYO Module ON even if the AUTO LED is illuminated if the "2. TIMER OFF" item was programmed in the SETUP Mode).

EMBEDDING PROCEDURE (Example)

NOTE: The following procedure is an example only. You may prefer to use your own method.

Before proceeding, make sure:

- both modules are properly set up according to instructions in Section 3 (and Section 4, if automatic timer is used)
- both modules are ready to use (check temperature indicators, paraffin volume, base molds, paraffin tray)
- tissues have been processed and are in the paraffin bath of the Embedding Module.

Embedding Procedure (example)
<p>1. Press LIGHT key to turn on Work Light.</p> <p>Optional: Properly position magnifying glass for best view</p>
<p>2. Using heated forceps, remove one cassette from the paraffin bath and place on either right or left hot plate (depending on your work flow direction).</p>
<p>3. Remove cassette cover, if required.</p>

<p>4. Select (and remove from heated chamber) one base mold that would best fit the tissue(s) in the cassette. Place under the paraffin dispenser.</p>
<p>5. While holding base mold under paraffin dispenser, press fingerplate or use the optional pedal to dispense only enough paraffin to half-fill base mold.</p>
<p>6. Place base mold on hot plate under paraffin dispenser.</p>
<p>7. Using forceps, place tissue(s) from cassette into base mold.</p> <p>If tissues do not sink to bottom of mold, use tampers or forceps to lightly push tissue(s) down (into proper position) on the bottom of base mold.</p>
<p>8. Move the base mold to the cold spot. Bottom of the base mold rapidly cools and a thin layer of paraffin solidifies.</p> <p>NOTE: If the tissue is not correctly positioned, move base mold back to hot plate; then use forceps to reposition tissue(s). Return base mold to cold spot. Repeat this procedure as necessary until tissue(s) are properly oriented.</p> <p>NOTE: Never allow paraffin to completely solidify during this process.</p>
<p>9. Place one cassette over properly positioned tissue(s) in base mold.</p> <p>Embedded tissue(s) adhere to cassette.</p>

EMBEDDING PROCEDURE

10. Move the base mold to the hot plate under paraffin dispenser.

11. While holding the cassette under paraffin dispenser (and above center hot plate), press fingerplate or use optional foot pedal to dispense paraffin into base mold until the cassette is filled with paraffin.

NOTE: Do not overfill base mold.

12. Place base mold containing embedded tissue(s) onto cooling plate.

NOTE: The surface of the cooling plate will usually be covered with a light layer of frost (depending on ambient humidity). This enhances heat exchange between the warmed base mold and the cooling plate.

13. Check to make sure the paraffin block is completely solidified; then remove paraffin block from base mold.

NOTE: The paraffin block should easily release from the base mold. If not, the base mold may need cleaning. Use of the Tissue-Tek® Mold Release Concentrate (product code 4141) will make demolding easier.

14. If the paraffin block is not to be sectioned immediately, the block may be stored on the cooling plate.

15. Press LIGHT key to turn off Work Light.

NOTE: To extend life of light bulbs, always turn off Work Light after embedding procedure is completed.

Error conditions are listed in alphabetical order.

Use the table below to quickly determine if this section addresses your particular instrument problem.

Cryo Module	Page
Alarm sounds.....	6.2
Cooling plate does not function.....	6.2
Cooling plate does not reach set temperature	6.2
Power indicator will not illuminate.....	6.2
 Embedding Module	 Page
Alarm sounds and error message is displayed.....	6.3
Paraffin will not dispense correctly.....	6.4
Power indicator/other indicators will not illuminate.....	6.4

In the event this section cannot assist you in solving your instrument problem, call:

1-800-725-8723
(U.S. Customers, only)

If located outside the U.S., contact your nearest Tissue-Tek® instrument distributor or representative.

TROUBLESHOOTING

CRYO MODULE

ERROR

CONDITION	CAUSE	SOLUTION
-----------	-------	----------

Alarm (tone) sounds for 10 seconds or error message appears on the Embedding Module display

Cryo Module has malfunctioned or Cryo Module power is OFF or is not connected to the Embedding Module

Turn Embedding Module power to OFF. Verify that the Cryo Module is connected to the Embedding Module. Turn the Cryo Module power ON. Turn the Embedding Module power ON.

If the error persists, press "SET" key. Highlight menu item 6. ERROR LIST and press ENTER. Record the error indication and press EXIT.

Contact Customer Support.

Cooling plate does not function

Power outage occurred or compressor has malfunctioned.

Check to make sure:

- the power cord is connected to a "live" outlet
- the connecting cable is securely attached to the Cryo and the Embedding Modules.
- the power switch on the front panel of the Embedding Module is set to ON and power indicator is illuminated
- the CRYO key on the Cryo Module control panel is ON

If the problem persists, contact Customer Support.

Cooling plate does not reach set temperature

Cryo Module has malfunctioned.

Check to make sure:

- at least 76 mm (3 inches) of space exists between the wall and module
- the module is not in an area of excessive air current, direct heat or sunlight, excessive humidity, excessive particulate matter, or electrical noise

If the problem persists, contact Customer Support.

**EMBEDDING
MODULE ERROR**

CONDITION	CAUSE	SOLUTION
Power indicator will not illuminate	Power outage occurred or Cryo Module has malfunctioned.	<p>Check to make sure:</p> <ul style="list-style-type: none">■ power cord is securely plugged into a "live" power outlet.■ the power switch on the front panel of Cryo Module is set to ON.■ The cable connecting both modules is firmly inserted at both ends. <p>If the problem persists, contact Customer Support.</p>

Alarm (tone) sounds for 10 seconds;	Temperature is out-of-range by more than 5°C (9°F)	<p>Press "SET" key. Highlight menu item "6. ERROR LIST" and press ENTER. Record the error indication and press EXIT.</p> <p>If more than one error code is shown, use the arrow keys to move the cursor to highlight the next error code number, and record the error indication.</p>
--	--	---

Embedding Module status never reaches <READY>		<p>Check to make sure:</p> <ul style="list-style-type: none">■ if you have recently added cold paraffin, base molds, install a cool forceps warmer, etc., that may have caused more than a 5°C drop in an area temperature. If so, wait a few minutes for the temperature to stabilize and the error condition will then cease.■ that at least 76 mm (3 inches) of space exists between the wall or other surface and the back panel of the module.■ that you have checked the temperature of the room. Adjust the temperature if necessary■ the AUTO/MAN key is set to MANUAL and the HEAT key is pressed ON.■ The AUTO/MAN key is set to AUTO and the ON and OFF times for the current day are set properly. <p>If the error condition persists, contact Customer Support.</p>
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TROUBLESHOOTING

EMBEDDING MODULE ERROR

CONDITION	CAUSE	SOLUTION
Paraffin will not dispense	Paraffin may not be molten.	<ul style="list-style-type: none">■ Check that the LCD display shows <READY>■ Check the temperature of the room; adjust temperature if necessary.■ If using the automatic timer, check to verify that the correct AM or PM "On" time is set.■ If using the manual mode, wait at least 4* hours after the module is turned ON for paraffin to liquefy and reach set temperature.■ Check the temperature of the paraffin chamber. If the temperature is slightly below the set temperature and decreases over a long time period, the heater has failed. Contact Customer Support. <p>*May take longer depending on current source and environmental factors.</p>
	Paraffin filter may need cleaning.	<p>If paraffin is molten and set temperature has been reached, paraffin flow may be obstructed by a clogged paraffin filter. Refer to Section 7 for cleaning instructions.</p> <p>If the problem persists, contact Customer Support.</p>
Power indicator/other indicators will not illuminate	Power outage or Embedding Module has malfunctioned.	<p>Check to make sure:</p> <ul style="list-style-type: none">■ power cord is securely connected to the module and plugged into a "live" power outlet.■ the power switch on the front panel is set to ON. <p>If the problem persists, contact Customer Support.</p>

CARE OF THE INSTRUMENT AND MINOR REPAIRS

INSTRUMENT CARE

The Tissue-Tek® TEC™ 5 Embedding and Cryo Modules contain sensitive electronic parts.

- Handle modules with extreme care. Severe mechanical shock can damage and/or dislodge internal parts and connections.
- Do not place the system where it would be subjected to direct sunlight and/or heat, an open flame source, excessive air currents, excessive humidity, excessive particulate matter, or electrical noise (such as from refrigerators, centrifuges, ultrasonic cleaners, and microwave ovens).
- Make sure the cable connecting both instruments together is properly inserted at both ends and that the cable is not crimped.
- Do not block the ventilation panels on the back panel of each module. Allow at least 76 mm (3 in) of space between the wall (or other surface) and back panels.
- Set the power switch on the front panel of both Modules to OFF when modules are not in use for long periods of time.
- During the day, when the Cryo Module is not being used, turn OFF the compressor (use CRYO key on control panel).
- Do not place anything on the top panels of either module. Placing items on the top panels interferes with proper ventilation and heat exchange.
- **WARNING: MOLTEN PARAFFIN MAY CAUSE BURNS. DO NOT MOVE THE EMBEDDING MODULE WHEN THE PARAFFIN CHAMBER (OR PARAFFIN BATH) IS FILLED WITH MOLTEN PARAFFIN. TURN THE POWER OFF, THEN ALLOW THE PARAFFIN TO SOLIDIFY BEFORE MOVING THE MODULE. DO NOT REMOVE THE TRANSFER TRAY IF IT IS FILLED WITH MOLTEN PARAFFIN. ALLOW PARAFFIN TO SOLIDIFY BEFORE REMOVING TRAY.**

ROUTINE MAINTENANCE CHART (Summary)

Daily	Periodic and As Required (by spillage, troubleshooting or contamination)
<p>Replenish Paraffin (<i>Embedding Module</i>)</p> <p>Remove Spilled Paraffin/Debris from insulated workspace and hot plate area (<i>Embedding Module</i>)</p> <p>Turn off compressor (<i>press CRYO key on Embedding Module Control Panel</i>)</p> <p>Remove condensate from cooling plate (<i>Cryo Module</i>)</p>	<p>Clean Paraffin Bath, Paraffin Chamber and Filter, Forceps Wells, Exterior Surfaces and Ventilation Panels, Waste Drawer, and Chamber storing Base Molds; add clean paraffin (<i>Embedding Module</i>)</p> <p>Clean Magnifying Lens Assembly (<i>optional purchase for Embedding Module</i>)</p> <p>Clean exterior surfaces (<i>Cryo Module</i>)</p>

CARE OF THE INSTRUMENT

DAILY MAINTENANCE

Embedding Module

◆ REPLENISH PARAFFIN

WARNING: MOLTEN PARAFFIN MAY CAUSE BURNS. DO NOT OVERFILL PARAFFIN CONTAINER.

- 2 parts dry paraffin = 1 part molten paraffin.
- The paraffin chamber holds 4 liters (1.06 gal) of molten paraffin.
- The paraffin bath (either transfer tray or chamber, whichever you are using) should be half-filled or about .9 liter (.24 gal) with paraffin.

NOTE: Refer to Section 3 for complete instructions regarding "Adding Paraffin."

◆ REMOVE SPILLED PARAFFIN/DEBRIS

WARNING: XYLENE IS FLAMMABLE.

- Using the provided plastic scraper, remove solidified paraffin from the gray insulated work space and hot plate area.
- As necessary, wipe the insulated work space and hot plate area with a xylene-dampened cloth.
- Clean the grooves surrounding the hot plate areas with a xylene-dampened cotton swab.

Cryo Module

Turn off compressor (press CRYO key on Embedding Module Control Panel).

Allow cooling plate to reach ambient temperature.

Remove condensate from cooling plate (use an absorbent cloth/towel).

DISINFECTION

After performing daily maintenance, you may disinfect the surfaces and keypads (if desired) as follows:

- Wipe area using a soft cloth dampened in alcohol (70 – 75% solution isopropyl or ethyl).
- Do not wipe dry. Allow area to air dry to maximize disinfection.

PERIODIC MAINTENANCE (AS REQUIRED)

Embedding Module

◆ **CLEAN TRANSFER TRAY (IF USED AS THE PARAFFIN BATH); ADD CLEAN PARAFFIN**

1. Allow paraffin in transfer tray to solidify.

NOTE: Check to make sure AUTO/MAN key is set to MAN (MAN LED is illuminated) and the HEAT key is OFF. If using automatic timer, perform this procedure during a time period when module is not set to come on.

2. After paraffin is solidified, press AUTO/MAN key to MAN (MAN LED is illuminated) and press the HEAT key ON.

Allow paraffin between chamber and transfer tray to liquefy (just enough to be able to remove tray); remove tray. Press the HEAT key OFF.

3. Turn tray upside down over a waste container and "slightly twist" tray to eject solidified paraffin.

4. **WARNING: BEFORE PROCEEDING, MAKE SURE THE HEAT KEY IS OFF.**

Allow paraffin (in chamber where tray was located) to solidify. Using the plastic scraper, remove as much solidified paraffin as possible from this chamber.

5. **WARNING: XYLENE IS FLAMMABLE. BE SURE MODULE IS COOL BEFORE USING XYLENE.**

Wipe transfer tray and appropriate chamber with xylene-dampened cloth. Dry transfer tray and chamber with a soft, clean, dry cloth.

NOTE: To add paraffin, refer to "Adding Paraffin" in Section 3 of this manual.

CARE OF THE INSTRUMENT

◆ **CLEAN THE FOLLOWING (AND THEN ADD CLEAN PARAFFIN WHERE APPROPRIATE)**

**Paraffin Chamber
Paraffin Filter
Forceps Wells
Exterior Surfaces
Waste Drawer
Paraffin Bath (right or left chamber)
Chamber Storing/Heating Base Molds**

WARNING: MOLTEN PARAFFIN MAY CAUSE BURNS.

1. Allow solidified paraffin to liquefy

NOTE: Press AUTO/MAN key to MAN and the HEAT key ON to turn heater ON if paraffin is not molten.

2. Using a cup (or similar device) remove as much paraffin as possible from the paraffin chamber and "right or left chamber" paraffin bath. Do not tilt module.

3. Place container under paraffin dispenser. Press fingerplate or optional foot pedal to drain remaining paraffin from chamber.

4. Using cotton swabs, remove liquefied paraffin from each forceps well. Turn the HEAT key OFF.

5. **WARNING: BEFORE PROCEEDING, MAKE SURE THE HEAT KEY IS OFF.**

Allow Embedding Module to cool; allow remaining paraffin on surfaces to solidify.

Remove base molds from either right or left chamber.

6. Remove solidified paraffin from exterior surfaces, waste drawer, paraffin bath and paraffin chamber (use plastic scraper).

Using a clean cloth, remove loose debris from the chamber used to store/heat base molds.

7. Using a xylene-dampened cloth, wipe exterior surfaces, ventilation panels and inside surfaces of paraffin chamber, paraffin bath, base mold storage chamber and waste drawer.

Wipe each forceps well with a xylene-dampened cotton swab.

WARNING: XYLENE IS FLAMMABLE. BE SURE THE MODULE IS COOL PRIOR TO USING XYLENE.

CAUTION:

(a) **Do not pour xylene into paraffin chamber. Xylene will damage the gasket and sealing materials.**

(b) **Excessive use (soaking) of xylene or other organic solvents will destroy the painted surfaces of each module. Minimize use of such solvents on painted surfaces.**

8. Dry surfaces (as necessary) with a soft, clean, dry cloth. Replace base molds.

9. Using a curved tipped forceps (or similar device) remove metal ring over paraffin filter in paraffin chamber; then remove paraffin filter.

10. Remove as much foreign particulate matter and paraffin debris as possible from the paraffin filter.

11. Immerse the paraffin filter and metal ring in xylene. Use a stiff nylon brush (or similar device) to remove remaining particulate matter from filter and metal ring.

-
12. Dry paraffin filter and metal ring with a soft, clean, dry cloth.
 13. Replace paraffin filter. Replace metal ring (place on top of filter).

WARNING: RETURN XYLENE AND XYLENE-DAMPENED CLOTH TO SAFE STORAGE PRIOR TO RESTORING POWER TO THE MODULE.

NOTE: To add paraffin, refer to "Adding Paraffin" in Section 3 of this manual.

◆ **CLEAN MAGNIFYING LENS ASSEMBLY (OBTAINED BY SEPARATE PURCHASE)**

The magnifying glass and assembly may be cleaned:

- while still attached to the Embedding Module
or
- when totally removed from Embedding Module.

To remove non-paraffin debris:

1. Dampen a soft cloth with household glass cleaner.
2. Wipe magnifying glass and entire assembly to remove fingerprints, dust particles and other non-paraffin debris.
3. Dry entire assembly using a soft, clean, dry cloth.

To remove paraffin debris:

1. Dampen a soft cloth with xylene.
2. Wipe assembly to remove paraffin and other debris.

WARNING: XYLENE IS FLAMMABLE. BE SURE THE MODULE IS COOL PRIOR TO USING XYLENE.

CAUTION: Do not immerse assembly in xylene or frame surrounding lens may soften or disintegrate.

3. Dry assembly using a soft, clean, dry cloth.

Cryo Module

◆ **Clean Exterior Surfaces/Ventilation Panels**

1. **WARNING: SET POWER SWITCH ON FRONT PANEL OF CRYO MODULE TO OFF. UNPLUG POWER CORD FROM OUTLET.**
2. Using a clean cloth dampened in water or mild soap solution, remove dust/debris from exterior surfaces, ventilation panels and work area (surfaces under and around module).
3. Rinse as necessary. Dry using a soft, clean, dry cloth.
4. Connect power cord to module. Plug power cord into outlet.

CARE OF THE INSTRUMENT

MINOR REPAIR

Replacing Light Bulbs

Tools Required:

None

Light Bulbs Required:

Use product code 1553 to reorder. Two light bulbs per package.

WARNING: Set the power switch on the front panel of the Embedding Module to OFF. Unplug the power cord. Allow module hot plate to cool to room temperature.

1. Remove clear plastic shield protecting lights.
2. Grasp light bulb and pull downward to remove light bulb. Repeat procedure for other light bulb (if it also requires replacement).

WARNING: Avoid touching hot plate.

3. Grasp new light bulb and insert upwards into socket. Repeat as required for other light bulb.
4. Plug power cord into wall outlet. Set power switch on front panel to ON.
5. Press LIGHT key.

NOTE: To extend light bulb life, turn off light when not embedding specimens.

SERVICE AND REPLACEMENT PARTS

SERVICE

When you have a problem with either module:

- Refer to “Troubleshooting” (Section 6).

If Section 6 cannot assist you in solving the problem, *continue* with “How To Report the Problem” (next page).

SERVICE AND REPLACEMENT PARTS

How to Report the Problem

STEP ONE

Record the following information.

Embedding Module Serial No. _____

Cryo Module Serial No. _____

Embedding Module Model No. _____

Cryo Module Model No. _____

Date of Installation _____

STEP TWO

Complete the following "Preservice Checklist" for the particular module that has malfunctioned.

EMBEDDING MODULE

1. Is the power cord plugged in? Yes No
2. Is the power switch on the front panel set to ON? Yes No
3. Is the "POWER" indicator lit? Yes No
4. Does the proper LED illuminate when the MANUAL MODE ON/OFF key is pressed? Yes No
5. Is an error message displayed? Yes No
6. Does the LCD display function? Yes No
7. Do keys properly function? Yes No

CRYO MODULE

1. Is the cryo module power cord plugged in? Yes No
2. Is the power switch on the front panel of both Modules set to ON? Yes No
3. Are the "POWER" indicators lit? Yes No
4. Is the connecting cable linking both modules inserted properly at both ends? Yes No
5. Does the cooling plate reach the correct temperature within 15 minutes? Yes No
6. If step "5" is NO, what is the lowest temperature reached? (record in blank) _____ °C

STEP THREE

Call 1-800-725-8723 for help (U.S. Customers, only).

If located outside the U.S., contact your nearest Tissue-Tek® instrument distributor or representative.

REPLACEMENT PARTS

Part	Part Number*
Plastic Scraper	1550
Tamper, Large (3/case)	1551
Tamper, Small (3/case)	1552
Light Bulbs (2/case)	1553
150-Cassette Transfer Tray	5781
65-Cassette Transfer Tray	5782
Operating Manual	0001338-01
Paraffin Drawer	N59-043-00
Embedding Power Cord	
100V/115V	A4-01-0500
220V/240V	A4-01-0502
Cryo Power Cord	
100V	A4-01-0503
220V	A4-01-0504
Cryo Connecting cable	A4-12-0001
Embedding Module	
115 VAC, America	5101
230 VAC, Europe	5230
220-230 VAC, Asia	5233
115 VAC, Asia	5236
100 VAC, Asia	5239
Cryo Module	
115 VAC, America	5102
230 VAC, Europe	5231
220-240 VAC, Asia	5234
115 VAC, Asia	5237
100 VAC, Asia	5240

*part numbers are subject to change
without notice

ACCESSORIES

(Available for use with your Tissue-Tek® Tissue
Embedding Console System)

Tissue-Tek® Uni-Cassette®
Embedding Cassettes

Tissue-Tek® II
Processing Embedding Cassettes

Tissue-Tek® Base Molds

Tissue-Tek® Mold Release Concentrate
(Product Code No. 4141, 12/case)

Magnifying Lens Assembly
(Product Code No. 5784)

Foot Pedal (Product Code No. 5785)

Electric Forceps (Product Code No. 5786)

Where To Order?

In the U.S., accessory and pricing information is
available directly from:

Customer Service
Sakura Finetek U.S.A., Inc.
1750 West 214th Street
Torrance, CA 90501 USA

or by calling

1-800-725-8723

If located outside the U.S., contact your nearest
authorized Tissue-Tek instrument distributor
for information on ordering accessories.

SERVICE AND REPLACEMENT PARTS

OTHER AVAILABLE TISSUE-TEK® EQUIPMENT and ACCESSORIES

An extensive line of Tissue-Tek equipment and accessory items is available. Refer to the "Tissue-Tek® Systems Catalog"* for complete information on each item listed below.

*Catalog is available in the U.S., by dialing 1-800-725-8723. If located outside the U.S., contact your nearest Tissue-Tek instrument distributor or representative.

Equipment and Accessories	Features
Tissue-Tek® VIP™ Vacuum Infiltration Processor	<ul style="list-style-type: none"> - processes and safeguards up to 300 specimens simultaneously - brings reagents to the specimen (eliminates the hazards of moving specimens) - air handling system isolates specimens from ambient air and keeps solvent fumes out of the working area
Tissue-Tek® Rotary Tissue Processor	<ul style="list-style-type: none"> - Timing Disk provides for automatic processing - handles approximately 100 specimens at a time

Tissue-Tek® Uni-Cassette®	<ul style="list-style-type: none"> - Available for use with mechanical imprinters and for manual identification - 11 distinctive colors
Tissue-Tek® Biopsy Cassette	<ul style="list-style-type: none"> - has 1 mm pores (no slots) - reduces the need to wrap specimens which reduces risk of specimen loss - seven contrasting colors assist in locating biopsy specimens
Tissue-Tek® Mega-Cassette®	<ul style="list-style-type: none"> - increased depth to accommodate larger specimens - used with mega base molds
Tissue-Tek® Filing Cabinets	<ul style="list-style-type: none"> - six drawers accommodating about 250 cassettes per drawer - data sheets affixed to each drawer, lightweight construction and molded ridges or stacking legs to permit stacking cabinets on top of one another