# Tissue-Tek® VIP® 6

### Vacuum Infiltration Processor

0002604-01

# TABLE OF CONTENTS

# TABLE OF CONTENTS

# INTRODUCTION

## Safety Instructions

The Tissue-Tek® VIP® 6 Vacuum Infiltration Processor operating manual includes important instructions and information related to the operating safety and maintenance of the instrument. It is important to read the operating manual carefully prior to the operation of the instrument for the first time and to keep the manual with the instrument at all times.

This instrument has been built and tested with the following safety regulations on electrical measuring control, regulating and laboratory devices:

IEC 61010-1 2nd Ed.
IEC 61010-2-010:2003
IEC 61010-2-101:2002
CAN/CSA C22.2 No. 61010-1 2nd Ed.
CAN/CSA C22.2 No. 61010-2-010:04
CAN/CSA C22.2 No. 61010-2-101:04
UL 61010-1 2nd Ed: 2004

In order to ensure safe operation, the operator must always comply with the instructions and warnings contained in the operating manual.

WARNING: THIS SYSTEM USES ORGANIC SOLVENTS WHICH MAY IGNITE WHEN IN CONTACT WITH SOURCE OF FLAME. KEEP ALL INCENDIARY DEVICES AWAY FROM THIS UNIT.

CAUTION: Please allow full access to the main power cable as the power supply cable can be used to disconnect the power source in case of emergency.

NOTE: The protective devices installed on both the instrument and accessories may neither be removed nor modified. Only authorized and qualified persons may access and repair the internal components of the instrument.

The safety devices installed in this instrument by the manufacturer only establish the basis for accident prevention. Primary responsibility for accident-free operation lies, above all, with the institution that owns the instrument and, in addition, the designated personnel that operate, service, or repair the instrument.

## Safety Precautions

WARNINGS, CAUTIONS and NOTES are provided throughout this manual to indicate levels of potential hazards or helpful information as defined below.

WARNING: INDICATES A POTENTIAL HAZARD IN WHICH FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN SERIOUS INJURY TO THE OPERATOR AND/OR OTHER PERSONNEL.

CAUTION: Indicates a potential hazard in which failure to follow instructions may result in damage to the VIP and/or other property.

NOTE: Indicates a reminder or other helpful information.

### Safety Features

The Tissue-Tek VIP 6 Vacuum Infiltration Processor is equipped with several safety features, which help to keep the operator and the instrument safe from harm.

- The VIP instrument is designed as a closed-system tissue processor to minimize the release of reagent fumes into the environment. It also contains a fume control system.

- An electric interlock mechanism is provided with the retort lid. When an automatic operation (tissue-processing, retort cleaning, warm water flush, rinsing, or solution exchange) is in progress or when the retort is manually pressurized or vacuumed, the retort lid is electronically locked.

- If the unit is unable to pump a reagent into the retort (e.g., the bottle is empty or not properly connected), the reagent from the next station in the same solution group will be pumped into the retort until the level sensor in the retort is turned on. If the next station cannot be used, a new solution is supplied from the external bulk reservoir linked (this is the factory default setting).

- When selected and certain safeguard conditions are met, the solution manager function will allow the instrument to complete a processing run even if a faulty pump-in or pump-out condition occurs.

- Level sensors are provided to ensure positive fluid level sensing during special procedures such as continuous mixing.

- The instrument will stop processing and an alarm will sound whenever there is an error condition. The instrument can also be connected to an external alarm. This alarm will alert personnel in case of an error during the night or weekend when the laboratory is not occupied.
- Two levels of password, administrator and user, can be entered into the software to prevent access to the program settings and processing function by unauthorized personnel.

## General Description

The Tissue-Tek® VIP® 6 Vacuum Infiltration Processor is a self-contained, automatic, tissue processor, used to process tissue specimens (Figure 1-A). It holds up to 300 tissue cassettes.

The VIP has a 10.4-inch color touch screen display for programming ease and process monitoring. It is programmable for up to fifty different programs for use in fixation, dehydration, clearing, and paraffin infiltration of a variety of human, animal, or plant tissue specimens. The operator can program the instrument to begin processing either immediately or in a delay mode. In delay mode, the operator enters a desired end time and the instrument then automatically calculates the program start time.

The VIP consists of the following major components:

**Control Panel** – Comprises the controls and indicators necessary to program and operate the instrument and monitor the instrument during processing.

**Retort** – An enclosed chamber that holds the tissue specimens and in which all processing occurs.

**Reagent Cabinet** – Holds reagent bottles.

**Paraffin Oven** – Maintains molten paraffin at the appropriate temperature for use in the paraffin infiltration steps.

**Bulk Reagent System** – Supplies solution to a station where solution levels have become too low during tissue processing.

**Fume Filter Access Door** – Provides access to the fume control system and external Fill/Drain plugs.

The operator places baskets containing tissue cassettes into the retort. The instrument then sequentially moves processing reagents and molten paraffin into and out of the retort through the use of vacuum and pressure. The heat of the paraffin causes the evaporation of clearing reagent from the paraffin. A degassing feature aspirates the air from the oven after every automatic pump-in cycle. This action sends the vapor-laden air through the VIP's air filtration system. The closed-system design along with the air filtration system, ensure a sealed, moist environment for the tissues and an essentially fume-free environment outside the VIP. Reagent bottles can be filled either manually or through the external drain and fill port.

**Control Panel**

**Retort**

**Fume Filter
Access Door**

**Bulk Reagent
System**

**Paraffin Oven**

**Reagent
Cabinet**
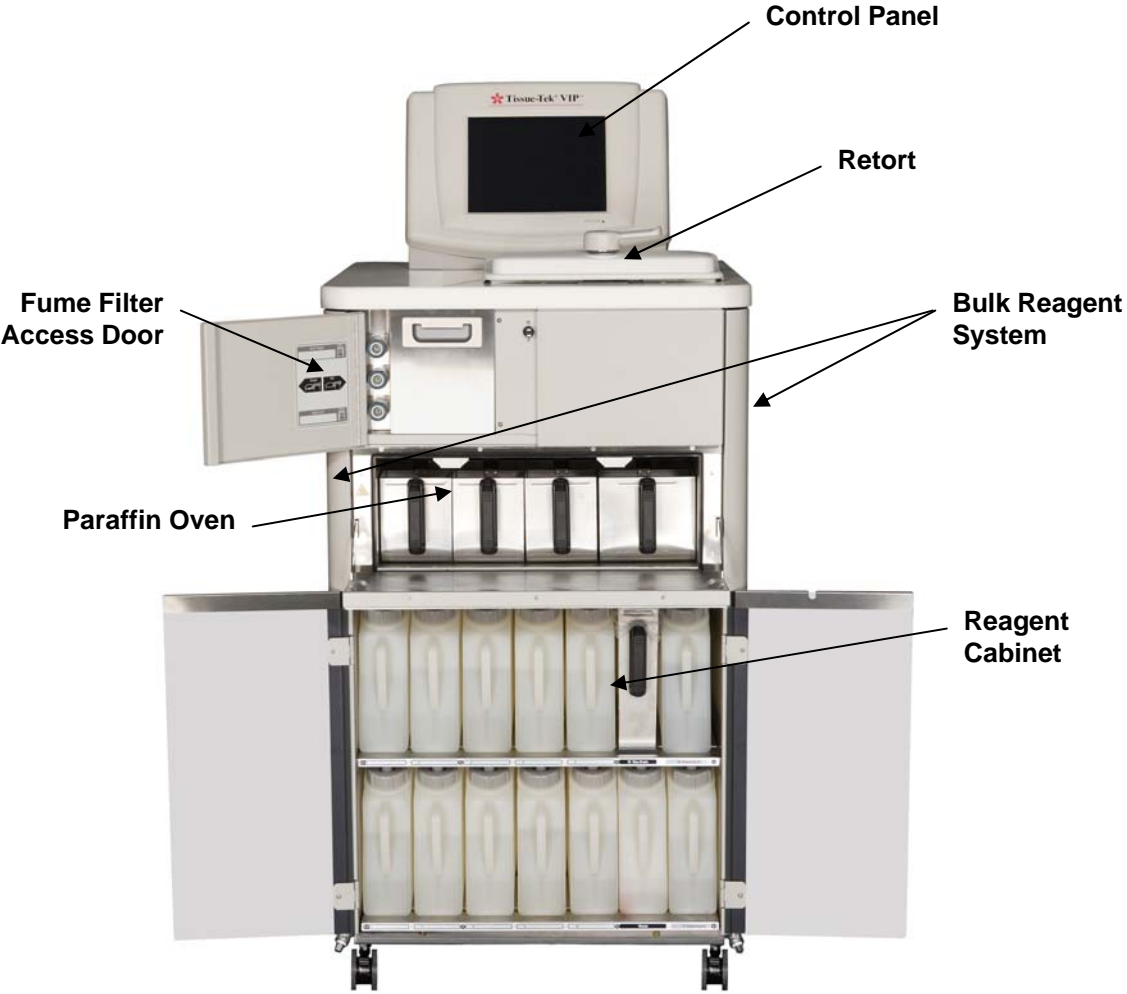
Figure 1-A

# INTRODUCTION

## Physical Characteristics

### Control Panel

The control panel (Figure 1-B) contains the screen display, which the operator uses to communicate with the instrument software. The display screen is a 10.4-inch VGA (Video Graphics Array) TFT color touch screen. All operating functions are controlled through the display screen (e.g. displays end time, processing steps, and processing methods, etc.).



Figure 1-B

### Reagent Cabinet

The reagent cabinet (Figure 1-C) holds ten bottles of processing reagents, designated as stations 1 through 10. There are four additional stations: station 15 is a paraffin waste reservoir used in an automated paraffin transfer procedure. Stations 16 and 17 hold bottles for Xylene, and alcohol, used during the cleaning cycle. The final bottle is a condensation bottle used to collect condensate from the fume condenser system.



Figure 1-C

## Retort

The retort (Figure 1-D) is the chamber where tissue processing occurs. One or two baskets, which hold the specimens, are placed into the retort. During processing the retort lid is held securely closed by a latch located on top of the retort. An electronic interlock mechanism is integrated into the retort lid. When an automatic operation (tissue processing, retort cleaning, warm water flush, rinsing, or solution exchange) is in progress or when the retort is manually pressurized or vacuumed, the retort lid is electronically locked. When the automatic operation is finished or suspended or when the manual operation is completed, the system verifies that the pressure in the retort returned to ambient before releasing the retort lid interlock.

Solutions are introduced from the top of the retort and drained from the bottom. Level sensors detect proper solution levels during pump-in.



Figure 1-D

## Paraffin Oven

The paraffin oven (Figure 1-E) maintains a set temperature to hold molten paraffin at the proper temperature for use in the infiltration step. The oven holds a total of four paraffin reservoirs, 3 small and 1 large. These reservoirs are designated as stations 11 through 14. They are drainable and can be easily removed for refilling. The small reservoirs 11 through 13 hold a maximum of 4.2L of molten paraffin. The large reservoir station #14 holds a maximum of 5.6L of molten paraffin. Station #14 can replenish stations 11 through 13, if needed.



Figure 1-E

# INTRODUCTION

## Activated Carbon Cartridges

The activated carbon cartridges (Figure 1-F) are part of an effective fume control system. As air circulates throughout the inside of the instrument, fumes generated by various solutions are captured and extracted by the carbon cartridges. The fume control housing can be accessed through the fume filter access door. It is recommended that the carbon cartridges be replaced monthly.



Figure 1-F

## Leveling Feet/Casters

There are four casters (Figure 1-G) for instrument mobility; positive locks on the front casters hold the instrument securely in place for stationary use.



Figure 1-G

## User Interface

### Power Switch

The power switch (Figure 1-H) is located on the right side of the control panel below the USB port. The power switch also acts as an emergency stop switch.

### USB Port

The USB port (Figure 1-H) is located on the right side of the control panel. Use a USB drive to store programs, solution configurations, solution names, etc.



Figure 1-H

## External Interface

The external interface (Figure 1-I) is located on the back of the control panel and includes the following:

- External Alarm output
- Printer output (RS232)
- Ethernet (10-BaseT) port



Figure 1-I

## Power Cord

The power cord (Figure 1-J) is located on the left rear of the control panel and is used to connect the instrument to a power source. The power cord must be plugged into an appropriately grounded AC electrical outlet.



Figure 1-J

# INTRODUCTION

## Specifications

### Models Covered by this Manual

| Product Code | Name/Description |
|---|---|
| 6030 | Tissue-Tek VIP 6 Vacuum Infiltration Processor |
| 6031 | Tissue-Tek VIP 6 Vacuum Infiltration Processor |
| 6032 | Tissue-Tek VIP 6 Vacuum Infiltration Processor |

### Power Supply Requirements

Rated Voltage and Current:

| | |
|---|---|
| Model 6030 | Single phase, AC 115V ± 10%, 50/60 Hz, 12 Amps |
| Model 6031 | Single phase, AC 115V ± 10%, 50/60 Hz, 12 Amps |
| Model 6032 | Single phase, AC 230V ± 10%, 50/60 Hz, 6 Amps |

### Safety Standards

**For Model 6030 -**

Complies with:

IEC 61010-1 2nd Ed.
IEC 61010-2-010:2003
IEC 61010-2-101:2002
CAN/CSA C22.2 No. 61010-1 2nd Ed.
CAN/CSA C22.2 No. 61010-2-010:04
CAN/CSA C22.2 No. 61010-2-101:04
UL 61010-1 2nd Ed: 2004

**For Model 6031 -**

Japanese Pharmaceutical Law

Complies with:

Quality Management System: ISO 13485
Electrical Safety Standards:
JIS C 1010-1:2005
IEC61010-1:2001(ed.2)
IEC61010-2-010:2003
IEC61010-2-101:2002.
EMC standard: JIS C1806-1:2001
Risk Management: JIS T 14971:2003

**For Model 6032 –**

Complies with:

LVD, IVD

EN 61010-1:2001(ed.2),
EN 61010-2-010:2003 (ed.3),
EN 61010-2-101:2002

EMC

EN61326-1:2006

Risk Management

ISO 14971:2003

### Dimensions

| | |
|---|---|
| Centimeters: | 60 (W) x 68 (D) x 136 (H) cm |
| Inches: | 24 (W) x 27 (D) x 54 (H) in. |
| Weight: | 160 kg (352 lbs.)-Without accessories and reagents |

### Environmental Requirements

| | |
|---|---|
| Operating Temperature: | 10º C to 40º C (50º F to 104º F) |
| Relative Humidity: | 30-85% (non-condensing) |
| Atmospheric Pressure: | 70 to 106 kPa |

### Storage Conditions

| | |
|---|---|
| Storage Temperature: | -10º C to 65º C (14ºF to 149º F) |
| Relative Humidity: | 30-95% (non-condensing) |
| Atmospheric Pressure: | 70 to 106 kPa |

### Reservoir Capacity/Fill Volumes

| | |
|---|---|
| Cassettes: | 150 or 300 |
| Cassette Baskets: | 1 or 2 |
| Processing Reagent Reservoirs: | 10 |
| Paraffin Reservoirs (Small): | 3 |
| Paraffin Reservoirs (Large): | 1 |
| Cleaning Reagent Reservoirs: | 2 |
| Condensate Reservoir: | 1 |
| Paraffin Waste Reservoir: | 1 |
| Bulk Reagent Reservoirs: | 2 |
| Capacity: | up to 300 Uni-Cassettes |

## P/V Cycle

30-180 Seconds Pressure; 30-180 Seconds Ambient; 30 Seconds Ambient, 90 Seconds Pressure

30-180 Seconds Vacuum; 30-180 Seconds Ambient, 30 Seconds Ambient, 90 Seconds Pressure

Vacuum:

30-180 Seconds Vacuum; 30-180 Seconds Ambient, 30 Seconds Ambient, 90 Seconds Pressure

## Mixing

Pump In and Pump Out in every 12 or 20 minutes, continuous, or Off. User-selectable for each processing station.

## Pollution Degree

| | |
|---|---|
| Electrical Safety Standard (IEC 6101-1, 5.4 2nd Ed) | Pollution degree 2 |

## Transient Overvoltage

| | |
|---|---|
| Electrical Safety Standard (IEC 6101-1, 5.4 2nd Ed) | Category II |

### Maximum Level of Sound Pressure

| | |
|---|---|
| Sound pressure generating | 60 dBA or less from equipment |

## *Performance Data:*

## Operator Password

Up to 20 operators (22 characters per name).
Up to 4 administrators (22 characters per name).

## Programs/Methods

Up to 50 programs can be stored in memory.
Up to 14 steps can be programmed for each method.

## Solution Names

Up to 100 solution names (22 characters per name) can be stored in memory.

## Solution Configurations

Up to 5 solution configurations can be stored in memory.

## Cleaning Programs

Up to 3 programs can be stored in memory.

## Reagent Compatibility

- Complete: 10%-20% Formalin, VIP Fixative, up to 20% NBF, alcoholic formalin, S.T.F., Tissue-Fix™, Omni-Fix®, Formol-Free™, Pen-Fix™, zinc formalin, Millionigs BF, ethyl alcohol, isopropanol alcohol, methanol, reagent grade alcohol, Xylene, ProPar™, toluene, benzene, Ameri-Clear, Histo-Clear, Tissue-Clear, chloroform, Histo-Sol™, Clearite™, Hemo-D™, VIP® Paraffin, Para-Plast™, Tissue-Prep™, Ameriffin™.

- Partial (off-line fixation, rinse): Zenkers, Bouin's, B-5.

- Incompatible reagents: Bleach, Per-fix™, Helly's, Acetone, Tissue-Dry, 5% or greater acetic acid solution, re-distilled Xylene from cleaning stations, reagents containing more than 0.5% chloride, paraffin substitutes.

# INTRODUCTION

# INSTALLATION

## General Information

This section provides detailed installation and setup instructions for the Tissue-Tek® VIP® 6 Vacuum Infiltration Processor. The installation steps must be followed correctly to ensure proper operation and service. Read this operating manual carefully before attempting to operate the instrument. Follow all instructions carefully.

The Tissue-Tek VIP is a precision instrument and must be handled accordingly. Rough handling or dropping the instrument will disturb or damage internal components. Always handle the instrument with care.

Select a place where sufficient clearance can be provided around the instrument. Ample working space is necessary in front and on top of the instrument.

## Environmental Factors

As with all sensitive electronic instruments, prolonged exposure to excessive humidity and temperature should be avoided. Temperature and humidity should be held relatively constant. The ambient temperature for operating the instrument is 10º C to 40º C (50º F to 104º F). The ambient operating humidity range is 30-85% relative humidity.

## Unpacking

Unpack the instrument in accordance with the instructions provided with the instrument.

### Unpacking Check List

Confirm that all accessories are provided with the instrument.

| Description & Product No. | Quantity |
|---|---|
| Operating Manual P/N 0002604-01 | 1 |
| Warranty Card (located inside the operating manual (USA only) | 1 |
| USB Memory P/N A3-60-4304 | 1 |
| Power Cord P/N A4-01-0518 | 1 |
| Complete Reagent Bottles P/N 6035 | 13 |
| Condensation Reservoir P/N F60-5-1-00 | 1 |
| Paraffin Reservoir, Large P/N 1550 | 1 |
| Paraffin Reservoir, Small P/N F60-492-00 | 3 |
| Fume Filters P/N 6160 | 2 |
| Cassette Baskets P/N 5265 | 2 |
| External Drain & Fill Hose P/N F60-528-00 | 3 |
| Reagent Bottle Labels P/N F60-529-00 | 1 set |
| Paraffin Waste Bags P/N 6045 | 1 case |
| External Drain and Fill Hose clip P/N D9-80-0115 | 1 |
| Paraffin Scraper, Large P/N 1550 | 1 |
| Paraffin Scrapper, Small P/N 6034 | 1 |
| Paraffin Waste Reservoir with Lid P/N F60-499-00 | 1 |
| Spare Solution Bottle P/N O71-411-00 | 1 |
| Screen Protection Sheet P/N O70-626-00 | 1 |
| Basket Transport Tray P/N 7109 | 1 |

# INSTALLATION

## Positioning the Instrument

Locate the instrument in a well-ventilated area, avoiding exposure to corrosive vapors and extreme variations in temperature or humidity. The area should be clean, and dust free. Be sure it is near a power source that meets the electrical requirements specified on the rating label located on the right side of the instrument. The power receptacle must be grounded and should be a dedicated line. Avoid proximity to direct sunlight, open windows, ovens, hot plates, open burners, or radiators.

### *Positioning the Accessories*

### Installing the Activated Carbon Filters

CAUTION: Make sure that the instrument is switched off and the power cord is unplugged before beginning.

1. Open the fume filter access door.
2. Pull out the fume filter drawer.
3. Remove the plastic wrapping from both carbon filters.
4. Place the carbon cartridges side by side in a vertical position in the appropriate location (Figure 2-A).
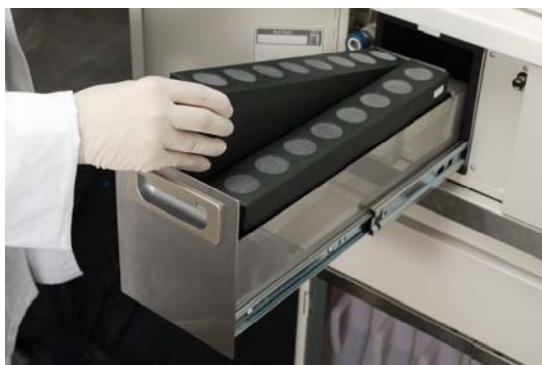


Figure 2-A

5. Push firmly to close the drawer.

> **NOTE:** It is recommended that the carbon filters be replaced monthly.

### Installing the Reagent Bottles

1. Insert a bottle coupler and tube into each reagent bottle. (Figure 2-B).



**Fill Cap**

**Bottle Coupler**

Figure 2-B

2. Color-coded labels are provided for reagent identification. Affix a label and mark each according to the desired solution type.
3. Open the doors of the reagent cabinet by pushing the magnetic latch located on the upper inside corner of each door (Figure 2-C).



Figure 2-C

4. Place the bottle in the appropriate position and push it into the rear of the instrument until it snaps in place (Figure 2-D).



Figure 2-D

5. Ensure that that bottle is securely connected by gently pulling it out. It should not budge. If there is any movement, try connecting bottle again.

6. If filled bottles need to be moved to another location, flip the small cap located on the top of the bottle screw cap to remove. Affix the small cap to the connector end of the bottle.

## Filling the Reagent Bottles

Bottles can be filled manually or through the external drain and fill port.

### To fill the bottles manually

1. Be sure the bottles are placed on a level surface. Remove the bottle cap by turning it counterclockwise. Fill the bottle with the appropriate reagent to the desired solution level. Replace the cap when finished.

### To fill or top off the bottle using the external drain and fill port

1. Connect the drain/fill hose to the external drain port located behind the fume filter access door. Push gently on the door to get access to the port (Figure 2-E).

2. Insert the other end of the drain/fill hose into a reagent container with at least 5 liters of reagent. Maker sure the reagent in the container is the same as the one programmed for that station.



Figure 2-E

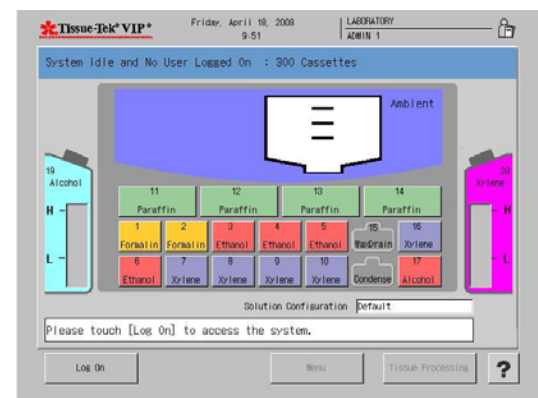3. From the Main Menu screen, touch the **Log On** button (Figure 2-F).



Figure 2-F

4. Enter the default password "100000".

5. Touch the **Menu** button.

# INSTALLATION

6. Touch the **Process Menu** tab.

7. Touch **Exchange Solution** button.

8. Touch the **Single Solution** tab.

9. Touch the solution to be filled.

10. Touch the **External Fill** button.

11. Touch the **View as a List** button to view the solution list and then touch **Exit** to continue.

12. Choose the volume of the solution for the station chosen (150 cassettes or 300 cassettes).

13. Touch **Start** to begin the solution exchange or **Exit** to exit the screen.

    * If desired, the drain/fill port can be rinsed using the Rinse function.

14. Exchange Confirmation:

    * Touch **Yes** if connection is secure.

    * Touch **No** if connection is not secure and then connect the drain/fill hose.

15. Start Confirmation:

    * Touch **Yes** when ready to exchange.

16. Start Notice:

    * Touch **Exit**.

17. End Notice:

    * Touch **Exit**.

## Installing the Waste Paraffin Reservoir Liner

1. Take one liner out from the package.

2. Spread out the folded liner (Figure 2-G).



Figure 2-G

3. Unfold the stiffened portion of the liner (Figure 2-H).



Figure 2-H

4. Hold both ends and insert the liner into the waste paraffin reservoir (Figure 2-I).



Figure 2-I

5. Fold the edge of the liner along the edge of the waste paraffin reservoir (Figure 2-J).



Figure 2-J

6. Fold both the front and back edges of the stiffened portion of the liner (Figure 2-K).



Figure 2-K

7. Put the lid on the waste paraffin reservoir (Figure 2-L).



Figure 2-L

## *Installing the Paraffin Reservoirs*

The default temperature for the paraffin oven is 62º C (143.6º F). If this temperature is not suitable for the paraffin being used, set the appropriate temperature, as described in Section 3, page 3-21, "Modifying Program Steps". If it is suitable, the paraffin reservoirs can be filled with molten or solid paraffin pellets.

1. Fill to the embossed line with molten or solid paraffin pellets.
2. If using solid paraffin pellets or flakes, enter the menu screen by touching the **Menu** button on the Main Menu screen.
3. Touch the **Process Menu** tab.
4. Touch the **Start Paraffin Melt** button.

**NOTE:** When filling with solid paraffin pellets, it may be necessary to add more paraffin later to reach the fill level.

5. Carefully replace each paraffin container into the oven.
6. Close the oven door. When the door is closed, it will push against the containers making sure that they are properly connected.

**WARNING: USE EXTREME CARE WHEN FILLING THE PARAFFIN CONTAINERS. MOLTEN PARAFFIN IS VERY HOT AND CAN CAUSE SEVERE BURNS.**

## Precautions

There are several precautions that must be observed before operating the instrument:

1. Check the fill level of each reagent bottle to ensure the specified volumes.
2. Check the screw caps of each bottle to ensure tightness. Check each connection to ensure that it is properly seated.
3. Check the paraffin containers for proper fill level. Use only paraffin with the same melting point, not to exceed 70º C (158º F). Ensure that all tanks are properly seated in their connections.
4. Never attempt to open the retort lid if "vacuum" or "pressure" is being displayed for the retort atmosphere. Open the lid only when "ambient" is being displayed.

**NOTE:** The pressure and vacuum are released automatically through a safety relief valve when the retort latch is moved to the open position. Wait for "ambient" to be displayed before opening the lid.

5. Do not obstruct the ventilation louvers on the top of the control panel. This area must be kept clear to ensure proper ventilation. Also, do not place any liquid containers on top of the control panel; spillage could cause extensive damage to the instrument.

# INSTALLATION

# CUSTOMIZATION OF SETTINGS

## General Information

The Tissue-Tek® VIP® 6 Vacuum Infiltration Processor allows for the customization of a number of system options and the configuration of certain operating parameters to suit the specific requirements of a given installation. The VIP Menu provides the means of viewing and modifying current system settings.

This section outlines the procedures to perform initial setup of Tissue-Tek VIP system settings. Factory default settings for each parameter are listed where applicable.

Perform the following setup procedures prior to initial use of the system. In addition, perform these procedures as needed to reset system settings, add or remove system users, etc.

## Accessing the Menu

**NOTE:** You must login as an Administrator in order to modify system settings and operating parameters.

**To access the Menu:**

1. From the main system screen, touch the **Log On** button. The Enter Password dialog box displays.

2. Use the touch keypad to enter your password and then touch the Enter button.

   • The default password for the system is set to "100000".

   **NOTE:** For security reasons, your password will display on the screen, as entered, as a series of asterisks.

   • If your login is unsuccessful: Re-enter your password and then press the Enter button to resubmit your login request.

   • If your login is successful: The Main Menu screen displays (Figure 3-A).
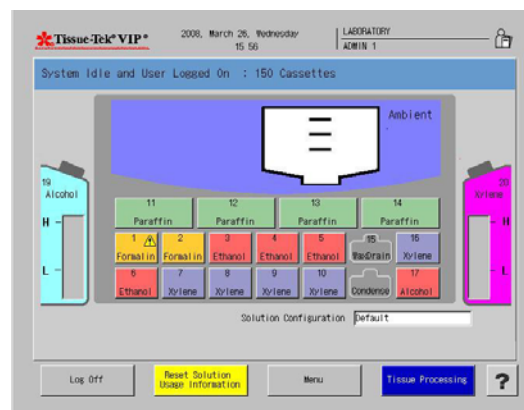


**Figure 3-A**

3. Touch the **Menu** button to display the main menu (Figure 3-B).
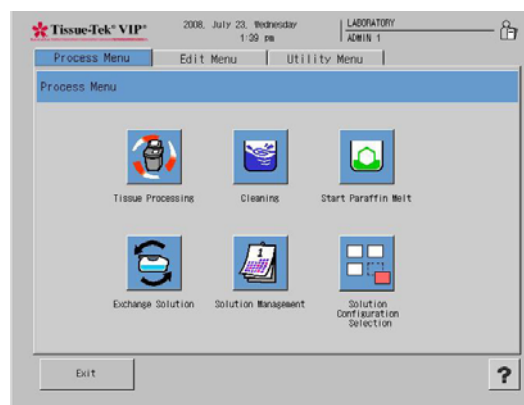


**Figure 3-B**

The Tissue-Tek VIP Menu consists of three tabbed pages that provide access to the following submenus Utility Menu, Edit Menu, and Process Menu. System configuration and setup are performed from these three menus.

# CUSTOMIZATION OF SETTINGS

## Configuring System Utilities

The Utility Menu is used to configure and setup the Tissue-Tek VIP 6 system options.

**To access the Utility Menu:**

1. Log on.
2. From the Main Menu, touch the **Menu** button and then touch the **Utility Menu** tab to display the Utility Menu (Figure 3-C).
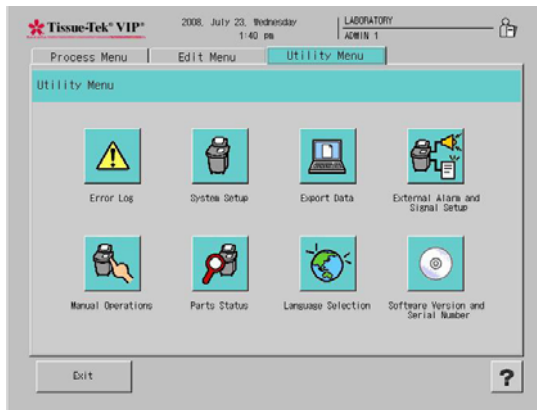


### Figure 3-C

The following options are available:

 **System Setup** – allows for the configuration of user-selectable options and operating parameters (see System Setup on page 3-2)

 **Language Selection** – allows the user to select the system display language. Sixteen language options are available.

 **Export Data** – provides options for exporting Tissue-Tek VIP data to a USB port or to a printer.

 **External Alarm and Signal Setup** – allows the user to set alarms and signals

 **Manual Operations** – allows the user to manually: pump in, pump out, and move rotary valve.

 **Error Log** – allows the user to view the error log.

 **Part Status** – this option is only available to certified Sakura service personnel.

 **Software Version and Serial Number**- displays information for the instrument.

### System Setup

The System Setup option from the Utility Menu lets you make changes to "user-selectable" and "user-specified" system settings and parameters.

1. From the main menu, touch the **Utility Menu** tab, and then touch the **System Setup** button.

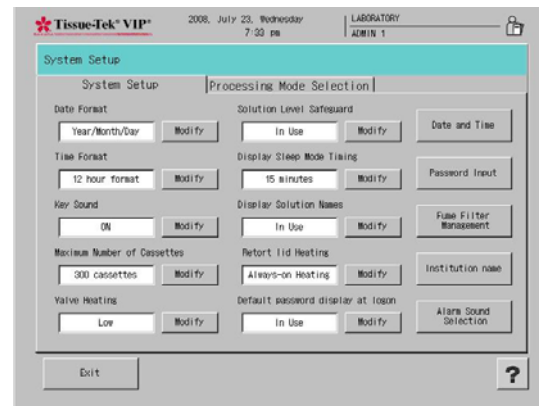   - The System Setup screen displays (Figure 3-D).



### Figure 3-D

The System Setup screen allows users to adjust the date and time, set user passwords and access authorizations, manage fume filters, and change the institution name that appears on each screen.

2. Make changes to the following system settings/parameters, as desired:

   **Date Format** – sets the format for the date display shown at the top of the instrument display screens. Touch the modify button until the desired format displays. Available choices are Year/Month/Day, Month/Day/Year and Day/Month/Year.

   The factory default setting is Month/Day/Year.

**Time Format** – sets the format for the time display shown at the top of all instrument display screens. Touch the modify button until the desired format displays. Available choices are 12-hour format and 24 hour format.

The factory default setting is 12-hour format.

**Key Sound** – sets the sound off or on. If the sound is on, an audible tone is heard each time a key or button is touched on the screen.

The factory default setting is ON.

**Maximum Number of Cassettes** - sets the number of cassettes to be run. Available choices are 300 cassettes or 150 cassettes.

The factory default setting is 300 Cassettes.

**Valve Heating** – sets the rotary and gate valve heat high (70°C), low (40°C), or off.

The factory default setting is *OFF*.

**Solution Level Safeguard** – sets the solution level safeguard in use or not in use. The solution level safeguard is in place to guarantee that all cassettes are covered by solution during a run.

The factory default setting is *In Use*.

**Display Sleep Mode Timing** – sets the length of time before extinguishing the backlight of the display when the system is left unattended. Available options are 15 minutes, 30 minutes, 45 minutes, 1 hour, 2 hours, 3 hours, and 4 hours.

The factory default setting is 1 hour.

**Display Solution Names** – sets the solution names to be displayed or not. Available choices are In Use or Not In Use.

The factory default setting is *In Use*.

**Retort Lid Heating** – sets the retort lid heating as automatic heating, always on heating, or no heat.

The factory default setting is *Always ON Heating*.

## Changing Date and Time

1. From the System Setup screen, touch the **Date and Time** button (Figure 3-E).
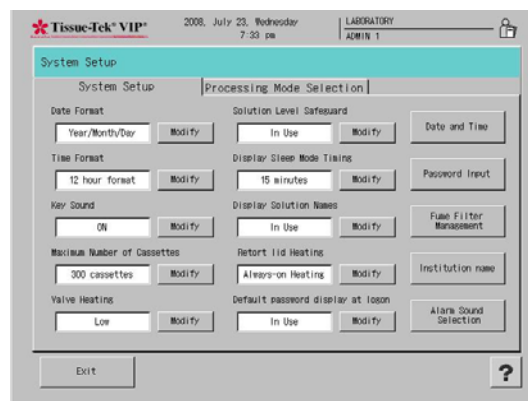


Figure 3-E

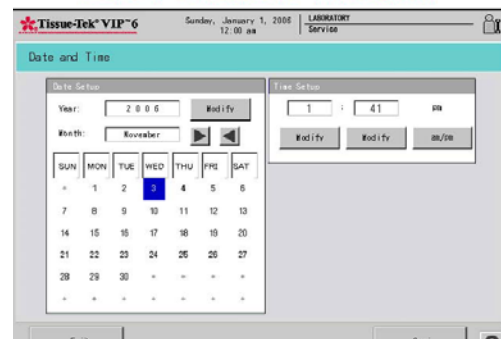- The Date and Time Screen displays (Figure 3-F).



Figure 3-F

2. Under Date Setup, touch the **Modify** button to change the Year setting. An input screen displays (Figure 3-G).



Figure 3-G

# CUSTOMIZATION OF SETTINGS

- Touch the **Clear** button to clear the year being displayed and then use the keypad to touch the appropriate numbers to represent the current year. If you make a mistake, use the **Clear** button to clear the selection and start over.

- Use the arrows to change the current month.

- Use the touch screen to select the current date.

- Touch **Enter** to save your changes or **Cancel** to exit the screen without saving.

3. Under Time Setup, touch the **Modify** button beneath the current hour to modify hour.

4. Touch the **Modify** button beneath the current minutes to modify minutes.

- Touch the **am/pm** button to change from am to pm.

- Touch **Save** and then **Exit** to save your settings or

- Touch **Exit** to leave the screen without saving your changes.

## Setting User Names and Passwords

The system allows for four Administrators and twenty Users.

1. From the System Setup screen touch the **Password Input** button.

- The Password Setup screen displays (Figure 3-H). This screen allows you to create user IDs (user ID is the name that appears on all screens when a given user is logged in) and passwords, grant or deny screen access and modify existing users.
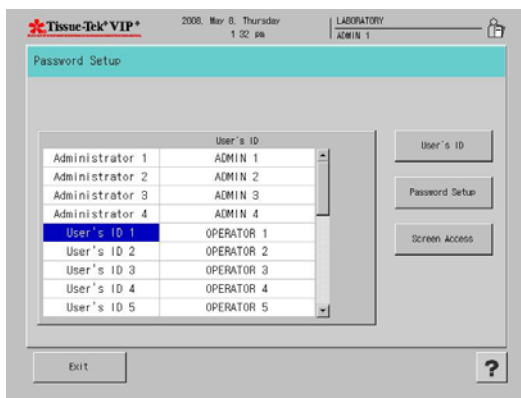


Figure 3-H

## To change User ID

1. From the Administrator/User list on the left of the screen, select the user or administrator for whom you want to create a user ID then touch the **User's ID** button.

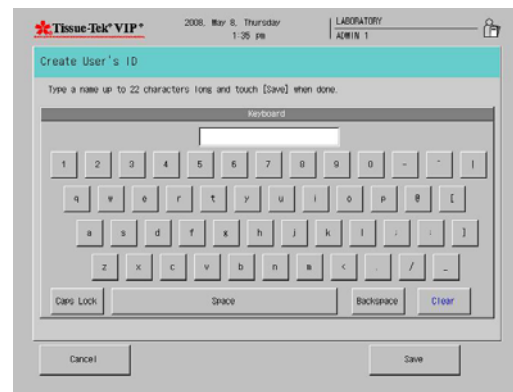- The Create User's ID screen displays (Figure 3-I).



Figure 3-I

2. Touch the **Clear** button to erase the existing name and then use the keypad to enter the new ID.

- Touch the **Save** button to save your changes and return to the Password Setup screen or

- Touch **Cancel** to return without saving your changes.

## To add or change user passwords:

1. From the Administrator/User list on the left of the Password Setup screen, select the user or administrator for whom you want to add or change a password and then touch the **Password Setup** button.

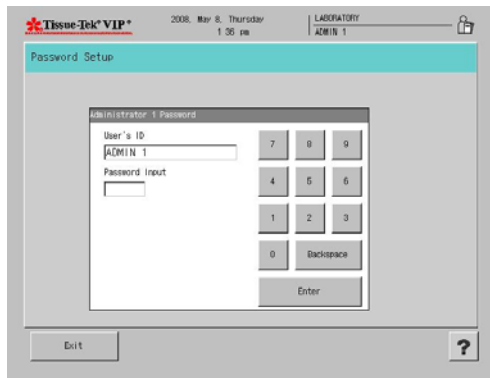- The Password Setup screen displays (Figure 3-J).

Figure 3-J

2.  Use the keypad to enter a numeric password between 1 and 6 digits and then touch the **Enter** button.

    • The Password Confirmation screen displays.

3.  Use the keypad to re-enter the new password, then touch **Enter**.

    • Touch **Save** to save the new password and return to the Password Setup screen or

    • Touch **Exit** to return without saving.

**To grant screen access:**

Users can be allowed or denied access to certain system screens and functions.

1.  From the Administrator/User list on the left of the Password Setup screen, select the user for whom you want to change screen access permissions, then touch the **Screen Access** button.

    • The Password Setup>Screen Access screen displays (Figure 3-K). This screen displays three tabbed pages: Process, Utility, and Edit. Each tabbed page enables the administrator to grant or deny a user access to specific functions.
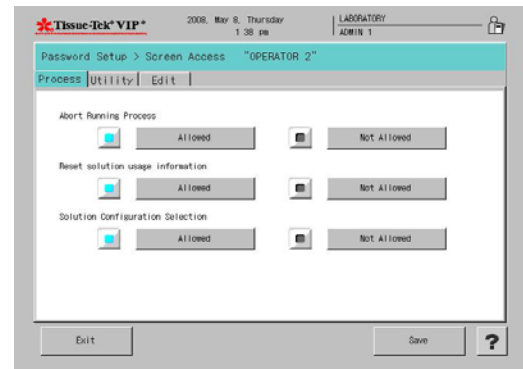


Figure 3-K

**Process Tab** (Figure 3-K) – sets permissions for Abort Running Process, Reset Solution Usage Information, and Solution Configuration Selection. The default setting for each function is "Allowed". Touch each function as necessary to change permissions from Allowed to Not Allowed. Touch Save to save settings and return to the Password Setup screen or touch exit to return without saving changes.

**Utility Tab** (Figure 3-L) – sets permissions for System Setup, Language Selection, External Alarm and Parts Status. The default setting for each function is "Allowed". Touch each function as necessary to change permissions from Allowed to Not Allowed. Touch Save to save settings and return to the Password Setup screen or touch exit to return without saving changes.
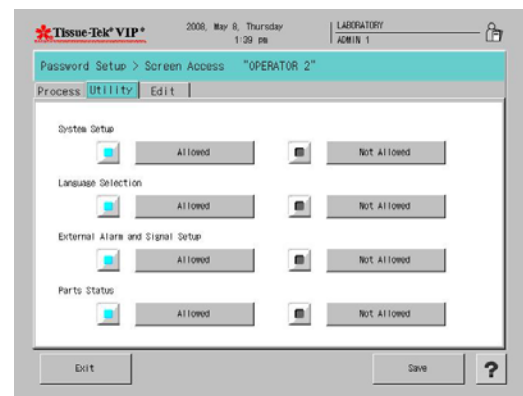


Figure 3-L

# CUSTOMIZATION OF SETTINGS

**Edit Tab** (Figure 3-M) – sets permissions for Edit Solution Configurations, Solution Names, Edit Programs, and Delete Data. The default setting for each function is "Allowed". Touch each function as necessary to change permissions from Allowed to Not Allowed. Touch Save to save settings and return to the Password Setup screen or touch Exit to return without saving changes.
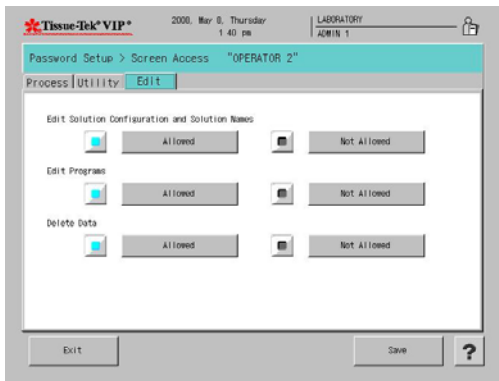


**Figure 3-M**

## Changing Fume Filter Management Settings

1. From the System Setup screen, touch the **Fume Filter Management** button.

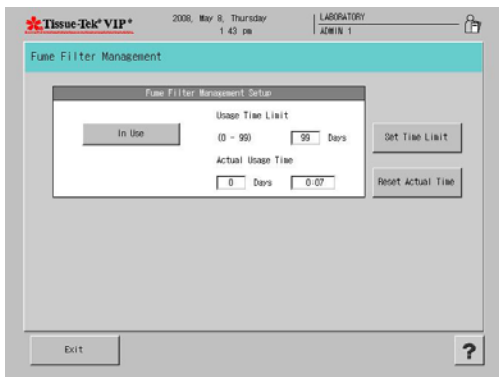   • The Fume Filter Management screen displays (Figure 3-N).



**Figure 3-N**

Fume Filter Management can be enabled or disabled.

**To use fume filter management:**

   • Toggle the button at the top-left of the screen until it reads **In Use**.

**To disable fume filter management**

   • Toggle the button until it reads **Not in Use**.

**To adjust fume filter usage time limit:**

1. Touch the **Set Time Limit** button.

   • An input dialog box appears (Figure 3-O). The default Usage Time Limit is 40 hours.



**Figure 3-O**

2. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting.

   • Touch **Enter** to save the new setting and return to the Fume Filter Management Setup screen or

   • Touch **Cancel** to return without saving new settings.

**To reset actual time**

1. To reset the actual usage time for the current filters, touch the **Reset Actual Time** button.

   • A confirmation dialog box appears (Figure 3-P).



**Figure 3-P**

2. Touch **Yes** to confirm that actual time is to be reset to 0 or **No** to abort the action.

## Creating or Changing Institution Name

The name of the institution that appears on the top of each of the instrument display screens can be modified as follows:

1. From the System Setup screen, touch the **Institution Name** button.

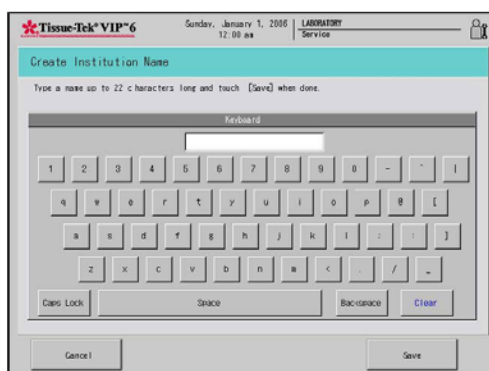   - The Create Institution Name screen displays (Figure 3-Q).



Figure 3-Q

2. Touch **Clear** to clear the current display and then use the touch keypad to enter a new name up to twenty-two characters long.

   - Touch **Save** to save changes and return to the system setup screen or

   - Touch **Cancel** to return without saving changes.

## Alarm Sound Selection

1. From the System Setup Screen touch the **External Alarm and Signal Setup** button.

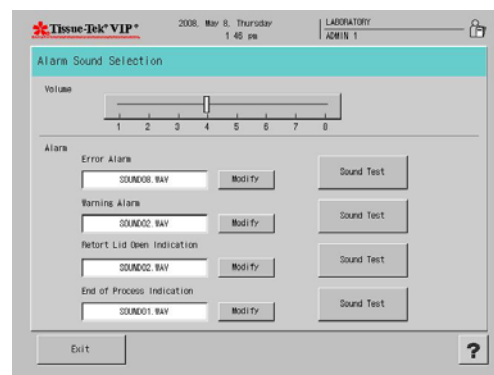   - The Alarm sound screen displays (Figure 3-R).



Figure 3-R

1. Touch the **Alarm Sound Selection** button.

2. Adjust the volume by moving the slider.

3. Choose an alarm type for the following alarms:

   - Error Alarm

   - Warning Alarm

   - Retort Lid Open Indication

   - End of Process Indication

4. Touch **Modify**.

   - The Select Alarm Sound Screen displays (Figure 3-S).

5. Touch to select an alarm sound.

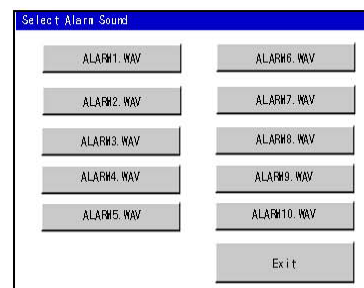6. Touch **Exit** to return to the Alarm Sound Selection Window.



Figure 3-S

7. Touch the **Sound Test** button to hear each of the alarms.

# CUSTOMIZATION OF SETTINGS

## Processing Mode Selection

The Processing Mode Selection option from the Utility Menu allows a user to make changes to the "user-selectable" and "user- specified" system setting and parameter.

1. From the main menu, touch the Utility Menu tab, and then System Setup, and then touch the Processing Mode Selection tab.

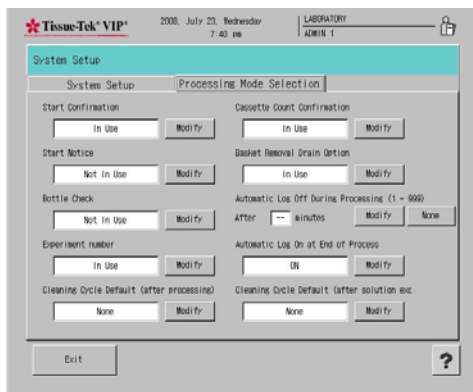   - The Processing Mode Selection screen displays (Figure 3-T)



**Figure 3-T**

The Processing Mode Selection screen allows users to adjust the start confirmation, start notice, bottle check, experiment number, cleaning cycle defaults, cassette count confirmation, basket removal drain option, automatic log off during processing and automatic log on options.

2. Make changes to the following system setting/parameters, as desired:

   **Start Confirmation** - displays a start confirmation window when a program is started.

   - Touch **Modify** to toggle between In Use or Not In Use.

   **Start Notice** – Notifies the user when a program has been started.

   - Touch **Modify** to toggle between In Use or Not In Use.

   **Bottle Check** – Allows the user to select whether or not to have the instrument check the connections of solution bottles

- Touch **Modify** to toggle between In Use or Not In Use.

**Experiment Number** – Allows a user to enter an experiment number at the start of a tissue processing run.

- Touch **Modify** to toggle between In Use or Not In Use.

**Cleaning Cycle Default** (after processing) – Selects which Cleaning Program will automatically start after a tissue processing program has been completed.

- Touch **Modify** to toggle between available cleaning programs or **None** to exit without making changes.

**Cassette Count Confirmation** – Verifies how many cassettes are being processed in run. This option is only available when the solution control method is set to "cassettes".

- Touch **Modify** to toggle between In Use or Not In Use.

**Basket Removal Drain Option** – Drains reagents upon completion of a processing program to solution safeguard levels.

- Touch **Modify** to toggle between In Use or Not In Use.

**Automatic Log Off During Processing** – Enables the system to automatically log off a user during processing within a given time period.

- Touch **Modify** to enter the amount of minutes the system is to wait before logging off a user.

- Enter the number of minutes between 1 and 999.

- Touch **None** to exit without making changes.

**Automatic Log On at End of Process** – Enable the system to require a user to log on at the end of a processing run.

- Touch **Modify** to toggle between On or Off.

**Cleaning Cycle Default** (after solution exchange) – Selects which Cleaning Program will automatically start after a solution exchange has been completed.

- Touch **Modify** to toggle between available cleaning programs or **None** to exit without making changes.

## Selecting System Language

1. From the main menu, touch the **Utility Menu** tab, and then touch the **Language Selection** button.

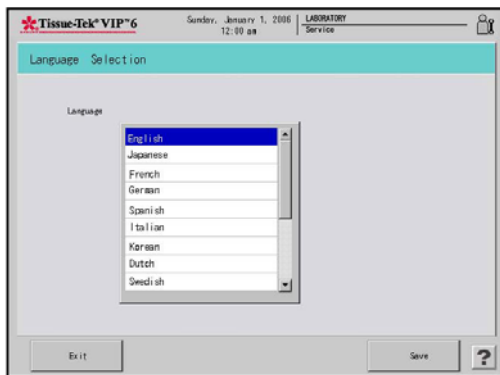   - The Language Selection screen displays (Figure 3-U).



**Figure 3-U**

2. Use the touch screen to select the language to be used for system display. Options are English (default), Japanese, German, French, Italian, Spanish, Korean, Dutch, Swedish, Finnish, Danish, Russian, Norwegian, Czech, Greek, and Portuguese.

   - Touch **Save** to save the selection and return to the Utility menu or

   - Touch **Exit** to return without saving changes.

   **NOTE:** If Korean is selected, a special notice appears regarding copyright of the font used (Figure 3-V). Touch Exit to close the Notice screen.
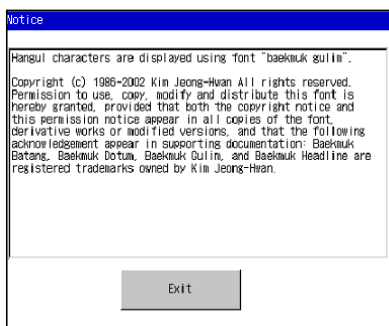


**Figure 3-V**

## *Exporting System Setup Data*

Once system setup procedures have been completed, data can be exported to either a USB flash drive or a printer. It is recommended that data be exported into one of these formats so that a record of system setup settings is maintained. This data can be used to recreate system settings in the event of system failure or can be used to set up similar systems.

## To Export Data

1. From the main menu, touch the **Utility Menu** tab, and then touch the **Export Data** button.

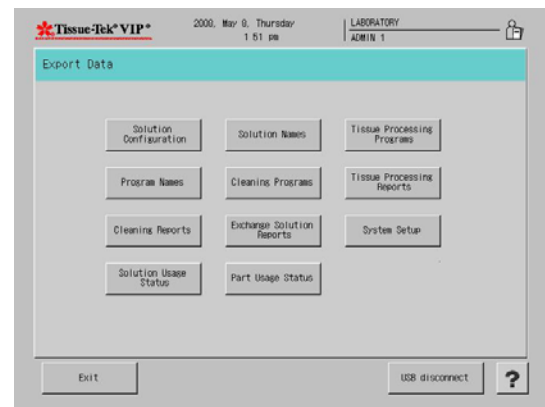   - The Export Data screen displays (Figure 3-W).



**Figure 3-W**

### To export solution configuration(s)

1. From the Export Data screen, touch the **Solution Configuration** button.

   - A Solution Configuration List displays.

2. Touch to select the solution configuration to be exported and then touch the **Export Data** button.

   - To export all configurations, touch the **All Data** button and then touch the **Export Data** button.

3. An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

# CUSTOMIZATION OF SETTINGS

**To export program names**

1. From the Export Data screen, touch the **Program Name** button.

   - A Program List displays.

2. Touch to select the program to be exported and then touch the **Export Data** button.

   - To export all programs, touch the **All Data** button and then touch the **Export Data** button.

3. An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export a cleaning reports**

1. From the Export Data screen, touch the **Cleaning Report** button.

   - A Program List displays.

2. Touch to select the program to be exported and then touch the Export Data button.

   - To export all programs, touch the **All Data** button and then touch the **Export Data** button.

3. An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export solution usage status**

1. From the Export Data screen, touch the **Solution Usage Status** button.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export a tissue processing reports**

1. From the Export Data screen, touch the **Tissue Processing Reports** button.

2. Touch **All Data** to select all reports, or touch to select a specific report(s).

3. Touch **Export Data**.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export solution names**

1. From the Export Data screen, touch the **Solution Names** button.

   - A Program List displays.

2. Touch to select the program to be exported and then touch the **Export Data** button.

   - To export all programs, touch the **All Data** button and then touch the Export Data button.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export cleaning programs**

1. From the Export Data screen, touch the **Cleaning Programs** button and then touch **Export Data**.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export an exchange solution reports**

1. From the Export Data screen, touch the **Exchange Solution Report** button and then touch **Export Data**.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export parts usage status**

1. From the Export Data screen, touch the **Parts Usage Status** button.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To export a system setup data**

1. From the Export Data screen, touch the S**ystem Setup** button.

   - An export confirmation dialog box displays, touch the **Exit** button to return to the Export Data screen.

**To remove the USB flash memory**

   Once the data has been placed on the USB drive:

1. Touch the **USB disconnect** button before removing the USB drive.

2. Touch the **Exit** button to return to the Menu screen.

## External Alarm and Signal Setup

The External Alarm and Signal Setup allows the user to set system errors to output externally as an alarm. When an error listed in the external alarm trigger list takes place, the system outputs an external alarm.

1. From the main menu, touch the **Utility Menu** tab, and then touch the **External Alarm and Signal Setup** button.

   • The External alarm and Signal Setup screen displays (Figure 3-X).
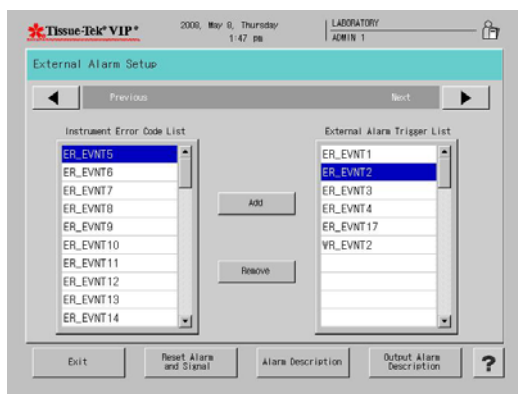


Figure 3-X

2. Touch a desired error code in the instrument error code list.

3. Touch **Add** to add the error code external alarm trigger list.

4. Touch **Remove** to remove the error code from the external alarm trigger list (Figure 3-Y).
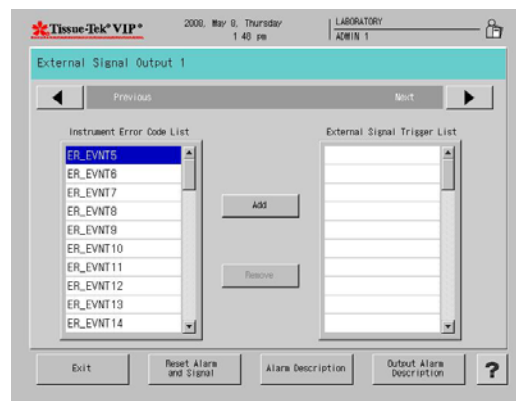


Figure 3-Y

5. Touch **Reset Alarm and Signal** to reset trigger list.

6. Touch **Signal Description or Output Signal Description** to view the descriptions of the external alarm and signals (Figure 3-Z).
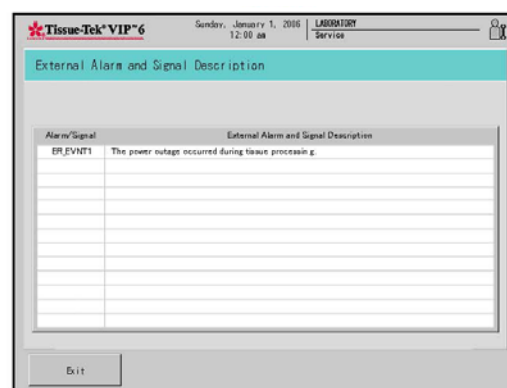


Figure 3-Z

# CUSTOMIZATION OF SETTINGS

## Manual Operations

The Manual Operations feature allows the user to manually perform functions normally done automatically. It is not used during normal operation of the instrument; however, manual operation may sometimes be necessary. Three functions can be achieved through the Manual Operations Mode:

- Change Station-Moves the rotary valve to any station selected by the user.

- Fill Retort-Pumps a reagent into the retort.

- Drain Retort-Pumps a reagent out of the retort.

1. From the main menu, touch the **Utility Menu** tab, and then touch the **Manual Operations** button

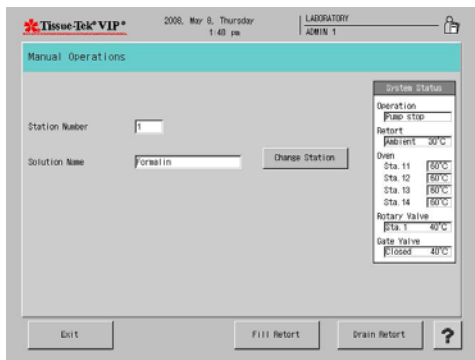   - A Manual Operations screen displays (Figure 3-AA).



**Figure 3-AA**

2. Touch the **Change Station** button.

   - A Change Station screen displays.

3. Touch the desired station button and touch **Start**.

   - To cancel the operation, touch **Cancel**.

4. Touch the **Fill Retort** button to fill the retort in the station desired.

5. Touch the **Drain Retort** button to drain the retort back into the desired reagent bottle.

6. Touch the **Change Drain** Station to drain the retort into a different reagent bottle.

The function chosen begins immediately, either pumping the reagent into the retort from the station number displayed, pumping the reagent out of the retort in the station displayed, or moving the rotary valve to the next station.

The System Status Area is located on the right side of the screen and contains data such as operation, retort status, oven temperature, rotary valve position and temperature, and gate valve status and temperature.

When the operation is complete, another operation can be selected by touching the appropriate key or repeat the Change Station operation. To abort the operation, touch the **Exit** button.

> **NOTE:** If a Fill Retort function was performed (reagent was pumped into the retort) a Drain Retort function must be performed before a Change Station operation or exit is allowed.

> **NOTE:** If any of the stations 11-14 (paraffin stations) is pumped into the retort, a clean cycle will be required before any automatic functions are allowed.

7. Touch **Exit** to return to the Main Menu screen.

## Software Version and Serial Number

The Software Version and Serial Number feature allows the user to access the software version and serial number of the instrument.

1. From the main menu, touch the **Utility Menu** tab, and then touch the **Software Version and Serial Number** button.

   - Software version and serial number screen displays.

## *Error Log*

This function allows the user to view the error log.

1. From the Utility Menu, touch the **Error Log** button.

   - The Error Log screen displays (Figure 3-BB).



Figure 3-BB

- Touch the *right/left* arrow button to toggle between pages in the error log.
- To select a specific error touch the *error*.
- Touch **Error Description** for specific information on that particular error.
- Touch **Exit** to return to error description.
- Touch **Clear** to clear all errors listed.

  A confirmation dialog box displays.

   - Touch **Yes** to confirm deletion or **No** to cancel.
   - Touch **Exit** to return to the Process Menu.

## Customizing System Operating Parameters

The Edit Menu provides access to several options that allow the user to configure the system operating definitions, settings and programs that should be established prior to system use.

**To access the Edit Menu:**

1. Log on.
2. From the Main Menu, touch the **Menu** button and then touch the **Edit Menu** tab to display the Edit Menu (Figure 3-CC).
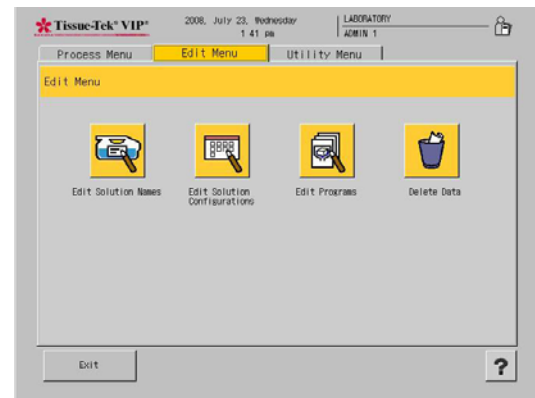


Figure 3-CC

The following options are available from the Edit Menu.

**Edit Solution Names** – allows the user to modify the name of the solution.

**Edit Solution Configurations** – provides a means to add or edit solution configurations.

**Edit Programs** – allows the user to add or edit existing programs for routine operation.

**Delete Data** – Allows the user to delete unwanted information (solution names, programs and solution configurations) from the system.

# CUSTOMIZATION OF SETTINGS

## Creating or Changing Solution Names

The Edit Solution Name option from the Edit Menu tab lets the user add, edit, copy, or export solution names. The system stores up to 100 solution names.

**To add a new solution name:**

1. From the main menu, touch the **Edit Menu** tab, and then touch **Edit Solution Name** button.

   - The Edit Solution Name screen appears (Figure 3-DD).



**Figure 3-DD**

2. Touch **Add Solution Names**.

   - The Create Solution Name screen displays (Figure 3-EE).



**Figure 3-EE**

3. Use the touch keyboard to enter a new solution name up to twenty-two characters long.

4. Touch **Edit Solution** to save the new solution name and return to the Edit Menu or

   - Touch **Cancel** to return to the Edit Menu without saving the new name.

   - The Create Abbreviated Solution Name screen displays (Figure 3-FF).



**Figure 3-FF**

5. Use the touch keyboard to enter an abbreviated name for the new solution up to eight characters long. This name is used for on-screen display.

6. Touch **Edit Abbreviated Solution** to save the abbreviated solution name and return to the Edit Menu or

   - Touch **Cancel** to return to the Edit Solution Name Menu without saving the new name.

**To edit solution name:**

1. From the main menu, touch the **Edit Menu** tab, and then touch **Edit Solution Name**.

   - The Edit Solution Name screen appears (Figure 3-GG).

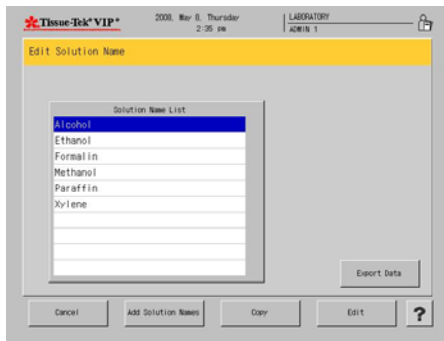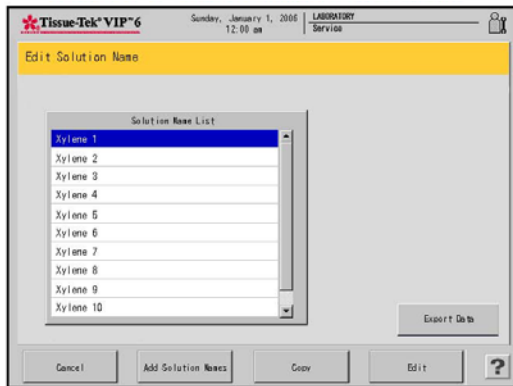Figure 3-GG

2. On the Solution Name List, touch to highlight the solution name to be edited, and then touch the **Edit** button.

- The Edit Solution Name screen displays (Figure 3-HH).



Figure 3-HH

3. Use the touch keyboard to modify the solution name using up to twenty-two characters.

4. Touch **Edit Solution** to save the solution name and return to the Edit Menu or

- Touch **Cancel** to return without saving the new name.

- The Create Abbreviated Solution Name screen displays (Figure 3-II).



Figure 3-II

5. Use the touch keyboard to enter an abbreviated name for the new solution up to eight characters long. This name is use for on-screen display.

6. Touch **Edit Abbreviated Solution** to save the abbreviated solution name and return to the Edit Menu or

- Touch **Cancel** to return without saving the new name.

## *Creating or Changing Solution Configurations*

The Edit Solution Configuration option from the Edit Menu tab provides the means to add or edit solution configurations. The system can store up to 5 solution configurations.

**To add a new solution configuration:**

1. From the Edit Menu, touch the **Edit Solution Configuration** button.

- The Solution Configuration Setup screen displays (Figure 3-JJ).
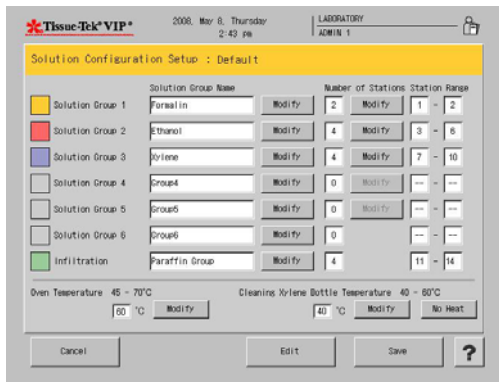
# CUSTOMIZATION OF SETTINGS



**Figure 3-JJ**

2. Touch the **Modify** button next to the Solution Group to modify the solution group name of Group 1.

   - The Create Solution Group Name Screen displays (Figure 3-KK).



**Figure 3-KK**

3. Use the touch keyboard to modify the solution name using up to twenty-two characters.

4. Touch **Edit Solution Group** to save the solution name and return to the Solution Configuration Setup screen or

   - Touch Cancel to return without saving the new name.

   - The Create Abbreviated Solution Name screen displays.

5. Use the touch keyboard to enter an abbreviated name for the new solution up to eight characters long. This name is used for on-screen display.

6. Touch **Edit Solution Group** to save the abbreviated solution name and return to the Solution Configuration Setup screen or

   - Touch **Cancel** to return without saving the new name.

7. Touch the **Modify** button next to the Number of Stations to modify the number of stations for the solution group.

   - The Number of Stations screen displays (Figure 3-LL).
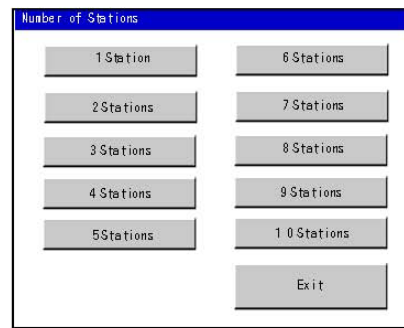


**Figure 3-LL**

8. Touch the button for the appropriate number of stations in selected solution group.

   - Touch **Exit** to return without saving the selection.

9. Touch the **Modify** button next to the Oven Temperature.

   - The Oven Temperature Window Screen displays (Figure 3-MM).



**Figure 3-MM**

10. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (45º-70º C).

11. Touch **Enter** to save the new setting and return to the Solution Configuration Setup screen or

    - Touch **Cancel** to return without saving new settings.

12. Touch the **Modify** button next to the Cleaning Xylene Bottle Temperature

    - The Xylene Input Temperature Window Screen displays (Figure 3-NN).



**Figure 3-NN**

13. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (40º-60º C).

14. Touch **Enter** to save the new setting and return to the Solution Configuration Setup screen or

    - Touch **Cancel** to return without saving new settings.

15. Touch the **No Heat** button on the solution configuration setup screen to disable the heating function for cleaning Xylene.

16. Touch the **Edit** button located on the bottom of the Solution Configuration Setup Screen.

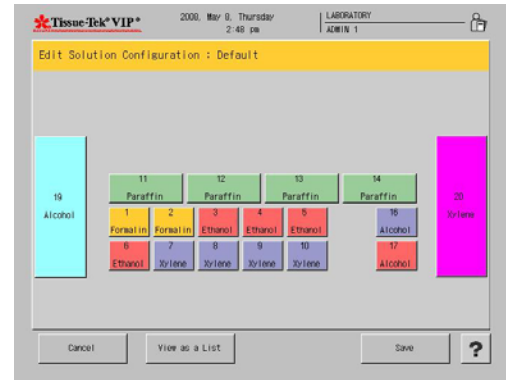    - The Edit Solution Configuration Screen displays (Figure 3-OO).



**Figure 3-OO**

17. Touch a station button to assign solution names.

    - The Edit Solution Configuration>Solution Station Screen displays (Figure 3-PP).
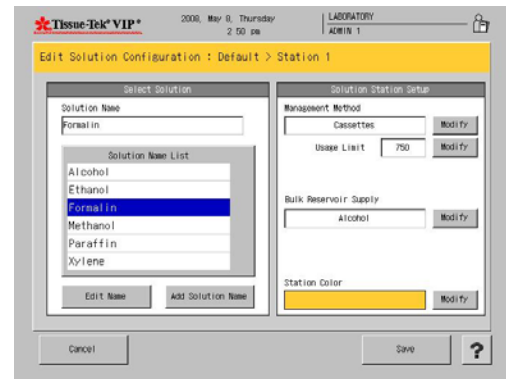


**Figure 3-PP**

18. Set the following parameters for the solution configuration:

    - **Solution Name**:  Select a solution name from the solution name list.  Touch the Edit Name button to edit the solution name.  Touch the Add Solution Name button to add a solution name.

    - **Solution Management Method**:  Select a solution management method for the chosen station.

    **NOTE**:  The control method is selectable only when editing stations 1-14, 16, and 17.

# CUSTOMIZATION OF SETTINGS

To change the method, touch the Modify button until the desired method appears.

- **Runs** – the solution is managed by the number of runs done.

- **Days** – the solution is managed by the number of days that the solution was used.

- **Cassettes** – the solution is managed by the number of cassettes processed.

- **None**.

- **Usage Limit Field**: Touch the Modify button to modify the usage limit.

- The Input Usage Limit window displays (Figure 3-QQ).



**Figure 3-QQ**

- Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (Runs: 1-99, Days: 1-99, and Cassettes: 1-9999).

- Touch **Enter** to save the new setting and return to the Edit Solution Configuration Setup screen or

- Touch **Cancel** to return without saving new settings.

> **NOTE:** The Usage Limit Field is only editable when a management method is chosen.

- **Bulk Reservoir Supply**: Select a bulk solution reservoir supply if a link is desired between either one of the two bulk solution tanks and the chosen station. To link the bulk solution tank to the chosen station, open the drop-down menu and touch desired bulk solution reservoir (Bulk Tank (19), Bulk Tank (20), None).

> **NOTE:** The solution volume is selectable only when editing stations 1-14, 16, and 17. When the bulk solution tank supply is in use, the solution level in that tank is displayed in the color selected for the solution group including the solution station that is being edited.

- **Station Color Button**: Select a station color by touching the Modify button. Touch the button to switch between 8 colors (Beige, Cyan, Dark Red, Gray, Green, Magenta, Navy Blue, and Orange).

- Touch **Save** to return to the Edit Solution Configuration Screen.

- Touch **Exit** to return to the Edit Solution Configuration Screen without saving.

- Touch **View** as a List to view the solution configuration as a list.



**Figure 3-RR**

- Touch **Export Data** (Figure 3-RR) to export data (see Exporting System Setup Data-Section 3).

- Touch **Exit** to return to the Edit Solution Configuration Screen.

**To edit a solution configuration:**

1. From the Edit Menu, touch the **Edit Solution Configuration** button.

   - The Solution Configuration Setup screen displays.

2. Touch the **Modify** button next to the Solution Group to modify the solution group name of Group 1.

   - The Create Solution Group Name Screen displays.

3. Use the touch keyboard to modify the solution name using up to twenty-two characters.

4. Touch **Edit Solution Group** to save the solution name and return to the Solution Configuration Setup screen or

   - Touch **Cancel** to return without saving the new name.

   - The Create Abbreviated Solution Name screen displays.

5. Use the touch keyboard to enter an abbreviated name for the new solution up to eight characters long. This name is used for on-screen display.

6. Touch **Edit Solution Group** to save the abbreviated solution name and return to the Solution Configuration Setup screen or

   - Touch **Cancel** to return without saving the new name.

7. Touch the **Modify** button next to the Number of Stations to modify the number of stations for the solution group.

   - The Number of Stations screen displays.

8. Touch the button for the appropriate number of stations in selected solution group.

   - Touch **Exit** to return without saving the selection.

9. Touch the **Modify** button next to the Oven Temperature.

   - The Oven Temperature Window Screen displays.

10. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (45º-70º C).

11. Touch **Enter** to save the new setting and return to the Solution Configuration Setup screen or

   - Touch **Cancel** to return without saving new settings.

12. Touch the **Modify** button next to the Cleaning Xylene Bottle Temperature.

   - The Xylene Input Temperature Window Screen displays.

13. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (40º-60º C).

   - Touch **Enter** to save the new setting and return to the Solution Configuration Setup screen or

   - Touch **Cancel** to return without saving new settings.

   - Touch the **No Heat** button next on the configuration set up screen to disable the heating function.

14. Touch the **Edit** button located on the bottom of the Solution Configuration Setup Screen.

   - The Edit Solution Configuration Screen displays.

15. Touch a station button to edit the station information.

   - The Edit Solution Configuration>Solution Station Screen displays allowing you to set the following parameters for the solution configuration:

16. Set the following parameters for the solution configuration:

   - **Solution Name**: Select a solution name from the solution name list. Touch the Edit Name button to edit the solution name. Touch the Add Solution Name button to add a solution name.

   - **Solution Management Method**: Select a solution management method for the chosen station.

   **NOTE**: The control method is selectable only when editing stations 1-14, 16, and 17.

   To change the method, touch the Modify button until the desired method appears.

   - **Runs** – the solution is managed by the number of runs done.

   - **Days** – the solution is managed by the number of days that the solution was used.

   - **Cassettes** – the solution is managed by the number of cassettes processed.

   - **None**.

   - **Usage Limit Field**: Touch the Modify button to modify the usage limit.

   - The Input Usage Limit window displays (Figure 3-SS).

# CUSTOMIZATION OF SETTINGS



**Figure 3-SS**

- Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (Runs: 1-99, Days: 1-99, and Cassettes: 1-9999).

- Touch **Enter** to save the new setting and return to the Edit Solution Configuration Setup screen or

- Touch **Cancel** to return without saving new settings.

    **NOTE:** The Usage Limit Field is only editable when a management method is chosen.

- **Bulk Reservoir Supply**: Select a bulk solution reservoir supply if a link is desired between either one of the two bulk solution tanks and the chosen station. To link the bulk solution tank to the chosen station, open the drop-down menu and touch desired bulk solution reservoir (Bulk Tank (19), Bulk Tank (20), None).

    **NOTE:** The solution volume is selectable only when editing stations 1-14, 16, and 17. When the bulk solution tank supply is in use, the solution level in that tank is displayed in the color selected for the solution group including the solution station that is being edited.

- **Station Color Button**: Select a station color by touching the Modify button. Touch the button to switch between 8 colors (Beige, Cyan, Dark Red, Gray, Green, Magenta, Navy Blue, and Orange).

- Touch **Save** to return to the Edit Solution Configuration Screen.

- Touch **Exit** to return to the Edit Solution Configuration Screen without saving.

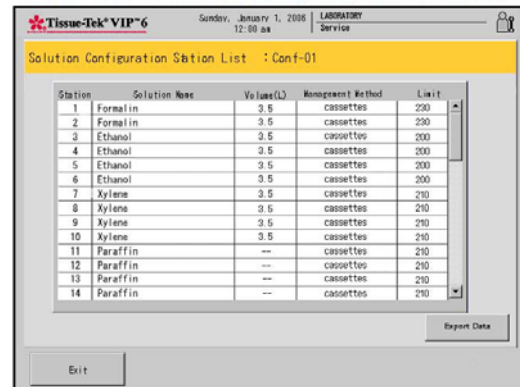- Touch **View** as a List to view the solution configuration as a list.



**Figure 3-TT**

- Touch **Export Data** (Figure 3-TT) to export data (see Exporting System Setup Data-Section 3).

- Touch **Exit** to return to the Edit Solution Configuration Screen.

## Programming the Tissue-Tek VIP

Programs are used to instruct the Tissue-Tek VIP. Programs can be added, copied, and exported. Up to 50 programs can be stored on the system.

## Adding New Programs

1. From the Edit Menu, touch the Edit Program button.

   - The Select Program screen displays (Figure 3-UU).
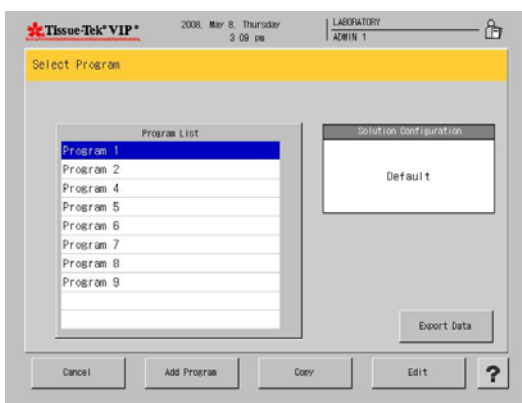


Figure 3-UU

2. To add from the Edit Program screen, touch the **Add Program** button.

   - The Create Program Name screen displays (Figure 3-VV).



Figure 3-VV

3. Use the touch keyboard to enter or modify the program name using up to twenty-two characters.

   - Touch **Edit Program** to save the program name and return to the Edit Menu or

   - Touch **Cancel** to return without saving the new name.

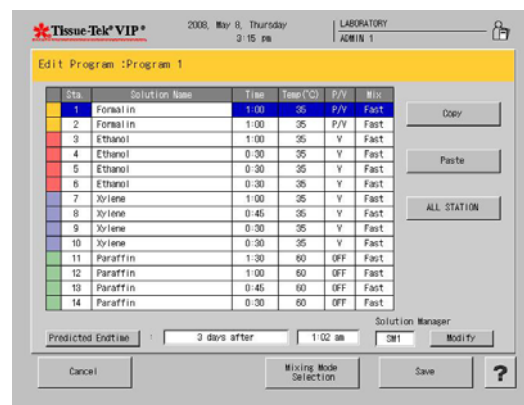   - The Edit Program "Program Name" Screen displays (Figure 3-WW).



Figure 3-WW

4. Create program steps, see paragraph Modifying Program Steps on page 3.21.

## Modifying Program Steps

Program steps are modified using the Edit Program "Program Name" screen.

This screen displays immediately after a new program is added or can be accessed as follows:

1. From the Edit Menu, touch the **Edit Program** button.

   - The Select Program screen displays (Figure 3-XX).
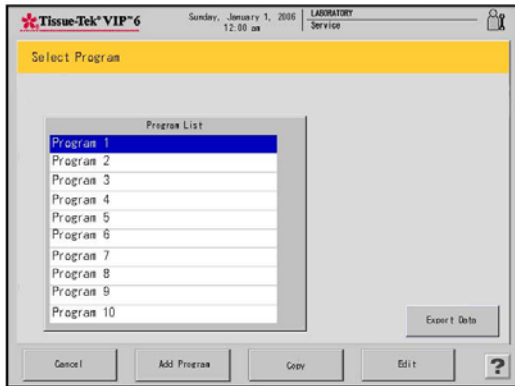
# CUSTOMIZATION OF SETTINGS



**Figure 3-XX**

2. From the Program List, select to highlight the program to be modified.

   • The Edit Program "Program Name" screen displays (Figure 3-YY).



**Figure 3-YY**

## Setting Process Time

🛑 **NOTE:** At least one step must have a programmed process time.

1. Touch the Time field for the step to be modified (Figure 3-ZZ).

🛑 **NOTE:** If the wrong step was selected touch the correct step.



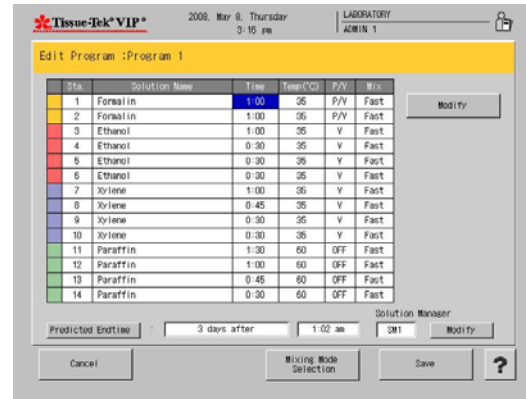**Figure 3-ZZ**

2. Touch the **Modify** button.

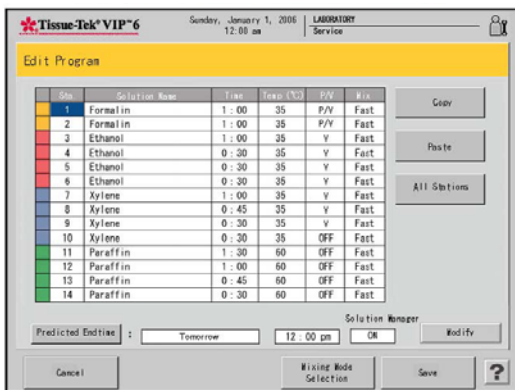   • The Input Time dialog box displays (Figure 3-AAA).



**Figure 3-AAA**

3. Use the touch keypad to select hours and minutes and adjust accordingly.

   • Touch **Enter** to save the settings.

   • Touch **Clear** to erase the settings.

   • Touch **Cancel** to exit without saving.

## Setting Temperature

1. Touch to highlight the temperature field in the step to be modified (Figure 3-BBB).
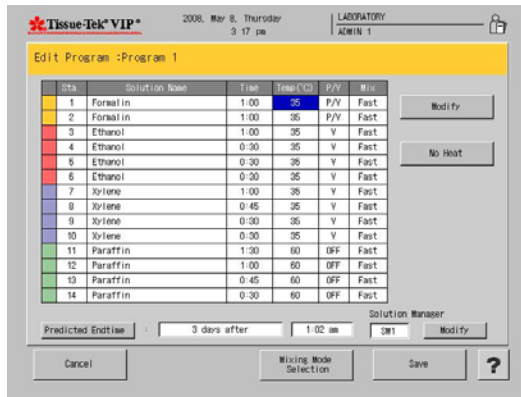


Figure 3-BBB

2. Touch the **Modify** button to modify the temperature (Figure 3-CCC) or the No Heat button for no temperature in that station.



Figure 3-CCC

3. Use the touch keypad to enter the desired temperature.

   • Touch **Enter** to save the settings.

   • Touch **Clear** to erase the settings.

   • Touch **Cancel** to exit without saving.

## Setting P/V Function

Use of vacuum and pressure during tissue processing will speed up the rate of penetration by processing reagents.

The following options are selectable in the P/V cycle field.

**OFF** – neither the P/V cycle nor the V cycle is performed.

**P/V** – the default P/V cycle is performed.

**P/V1** – the user-defined P/V cycle is performed.

**P/V2** – the user-defined P/V cycle is performed.

**P/V3** – the user-defined P/V cycle is performed.

**V** – the default V cycle is performed.

**V1** – the user-defined V cycle is performed.

**V2** – the user-defined V cycle is performed.

**V3** – the user-defined V cycle is performed.

The default P/V cycle is 90 seconds (pressure), 30 seconds (ambient) and 90 seconds (vacuum). The default V cycle is 90 seconds (vacuum) and 30 seconds (ambient).

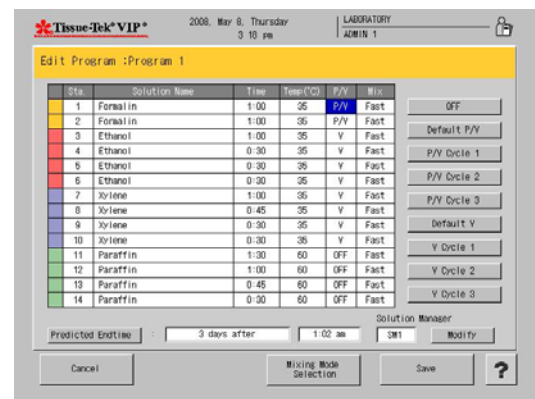1. Touch the P/V field for the step to be modified (Figure 3-DDD).



Figure 3-DDD

# CUSTOMIZATION OF SETTINGS

2. Select one of the following settings:

   - Off, Default P/V, P/V Cycle 1, P/V Cycle 2, P/V Cycle 3, Default V, V Cycle 1, V Cycle 2, V Cycle 3.

   - Touch **Cancel** to exit without saving.

   - Touch **Save** to save and exit.

## Setting Mix Mode

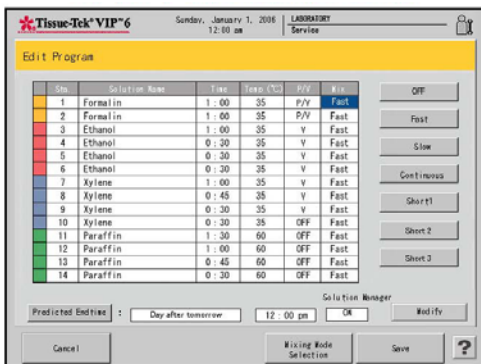1. Touch the Mix field in the step to be modified (Figure 3-EEE).

**Figure 3-EEE**

2. Select one of the following settings:

   **Off** – the mixing is not performed

   **Fast** – complete drain and fill at 12-minute intervals

   **Slow** – complete drain and fill at 20-minute intervals

   **Cont** – partial drain and fill for 10 minutes followed by complete mixing at 12 minute intervals

   **Short 1** – complete drain and fill #1 at user-defined intervals (every 3 to every 10 minutes)

   **Short 2** – complete drain and fill #2 at user-defined intervals (every 3 to every 10 minutes)

   **Short 3** – complete drain and fill #3 at user-defined intervals (every 3 to every 10 minutes)

   - Touch **Cancel** to exit without saving.

   - Touch **Save** to save and exit.

### Mixing Mode Selection

The Mixing Mode Selection allows the user to change the mixing mode selection and the pressure and vacuum settings for a program.

1. Touch **Short 1**, **Short 2**, or the **Short 3** field.
2. Touch the **Modify** button.

   - The Short Mixing Window displays (Figure 3-FFF).
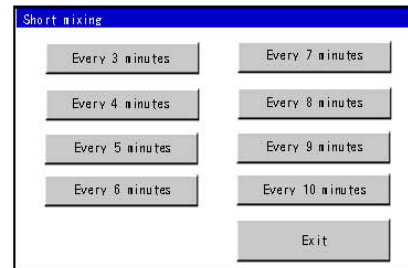
**Figure 3-FFF**

3. Touch to choose between Every 3 minutes, Every 4 minutes, Every 5 minutes, Every 6 minutes, Every 7 minutes, Every 8 minutes, Every 9 minutes, and Every 10 minutes.

   - Touch **Exit** to close window and exit back to Mixing Mode Selection.

4. Touch the field under the Pressure, Ambient, or Vacuum.
5. Touch the **Modify** button to modify the time.

   - The Detailed Setting Window is displayed (Figure 3-GGG):

**Figure 3-GGG**

6. Use the touch keypad to enter the time. The setting is 30 - 180 seconds.

   - Touch **Enter** to save the settings.

   - Touch **Clear** to erase the settings.

   - Touch **Cancel** to exit without saving.

## *To Modify the Predicted End Time*

1. Touch the Predicted End Time button

   - The Predicted End Time Screen displays (Figure 3-HHH):



**Figure 3-HHH**

   - Touch the **Today** button if the program end time is scheduled to end today.
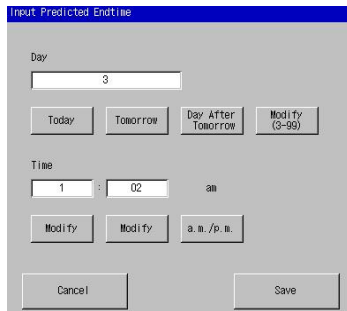
   - Touch the **Tomorrow** button if the program end time is scheduled to end tomorrow.

   - Touch the **Day After Tomorrow** button if the program end time is scheduled for the day after tomorrow.

   - Touch the **Modify** (3-99) button if the program end time is scheduled for more than 3 days up to 99 days.

   - The Input Date Window is displayed (Figure 3-III):



**Figure 3-III**

2. Use the touch keypad to enter the number of days.

   - Touch **Enter** to save the settings.

   - Touch **Clear** to erase the settings.

   - Touch **Cancel** to exit without saving.

3. Touch the **Modify** button under the hour field to modify the time at which the processing time will be completed.

   - The Input Hour Window is displayed (Figure 3-JJJ):



**Figure 3-JJJ**

4. Use the touch keypad to enter the hour. The settings are 1-12 in the 12-hour format and 0-23 in the 24-hour format.

   - Touch **Enter** to save the settings.

   - Touch **Clear** to erase the settings.

   - Touch **Cancel** to exit without saving.

5. Touch the **Modify** button under the minutes field to modify the time at which processing will be completed.

   - The Input Date Minutes is displayed (Figure 3-KKK).



**Figure 3-KKK**

6. Use the touch keypad to enter the minutes. The setting is 0-59.

- Touch **Enter** to save the settings.
- Touch **Clear** to erase the settings.
- Touch **Cancel** to exit without saving.

7. Touch the AM/PM button to select either "am" or "pm". When the 24-hour format is used, this button is not displayed.

- Touch **Save** to save the predicted end time settings.
- Touch **Cancel** to exit without saving.

## *Copying Existing Programs*

Existing programs can be used as a template to create a new program. When a program is copied, program steps and settings are duplicated to create a new program.

1. From the Edit Menu, touch the **Edit Program** button.

- The Edit Program screen displays.

2. From the Program List, select to highlight the program to be copied and then touch the **Copy** button.

- The Copy Program screen displays.

3. Select to highlight the program to copy the information to or touch **Add Program** to add a new program to the list.

## Solution Manager

Two types of solution management are available:

### Solution Manager 1

**Low Fluid** – When the system detects a shortage during the pump-in phase during processing or cleaning, solution is supplied from the next station in the same group until the solution safeguard level sensor (2.7L for 150 cassettes/3.5L for 300 cassettes) is activated. If the next station cannot be used, new solution is supplied from the linked bulk reservoir.

**Substitute Processing –** When the system detects an empty bottle or is unable to pump-in during the pump-in phase during processing, the solution from the previous station of the same group is substituted.

If there is not a previous station, the solution in the next station is used.

**NOTE:** For the retort cleaning, this function supplies a solution from the bulk solution reservoir linked to the retort until the upper limit level sensor (4.2L) is turned on. If the bulk solution reservoir is not linked, the solution manager feature is not operated during the retort cleaning.

### Solution Manager 2

**Low Fluid** – When the system detects a shortage during the pump-in phase during processing or cleaning, solution is supplied up to the solution safeguard level (2.7L for 150 cassettes/3.5L for 300 cassettes) from the linked bulk reservoir. If a bulk tank reservoir is not available, the solution is supplied from the next station within the same solution group.

**Substitute Processing** – When the system detects an empty bottle or is unable to pump-in during the pump-in phase during processing, the solution from the previous station of the same group is substituted. If there is not a previous station, the solution in the next station is used. this option is only available during tissue processing. When the system detects a shortage or a disconnected bottle during the pump-in phase, solution from the previous station of the same group is substituted. If no previous station is available, the solution in the next station is used.

1. Touch the **Modify** button to select a desired setting for the Solution Manager function.

- The settings are SM1, SM2, or OFF.

## *Deleting Data*

Solution names, solution configurations, programs, tissue processing reports, cleaning reports, and exchange solution reports can be deleted from the system.

**NOTE:** *** in the check column indicates that it is in use.

1. From the Edit Menu, touch the **Delete Data** button.
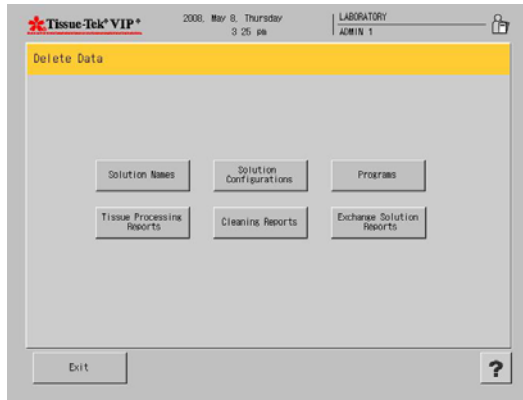
   - The Delete Data screen displays (Figure 3-LLL).



**Figure 3-LLL**

**To delete a solution configuration:**

2. From the Delete Data screen, touch **Solution Names**.

   - A Deletion Procedure screen displays (Figure 3-MMM).
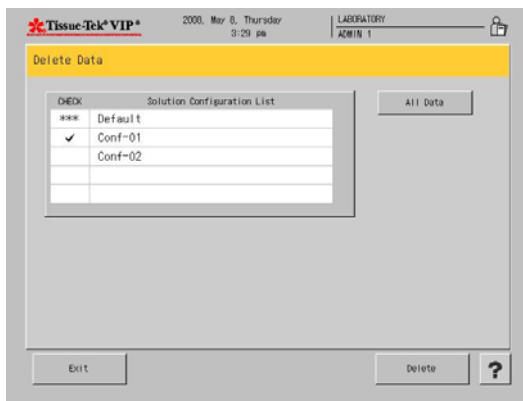


**Figure 3-MMM**

3. From the Solution Name List, select the configuration to be deleted, or touch the **All Data** button to delete all solution configurations.

   - A Confirmation dialog box displays (Figure 3-NNN).



**Figure 3-NNN**

4. Touch **Yes** to confirm deletion or **No** to cancel the delete procedure.

**To delete a preset program:**

1. From the Delete Data screen, touch **Program**.

   - A Deletion Procedure screen displays.

2. From the Program List, select the program to be deleted, or touch the **All Data** button to delete all programs.
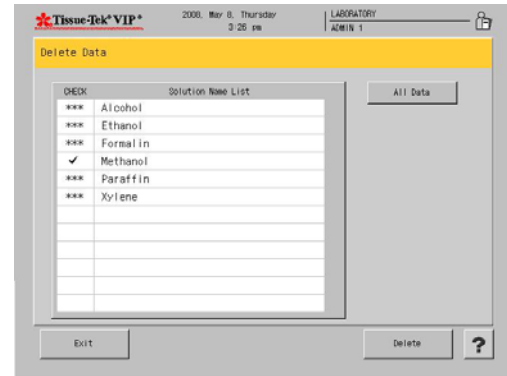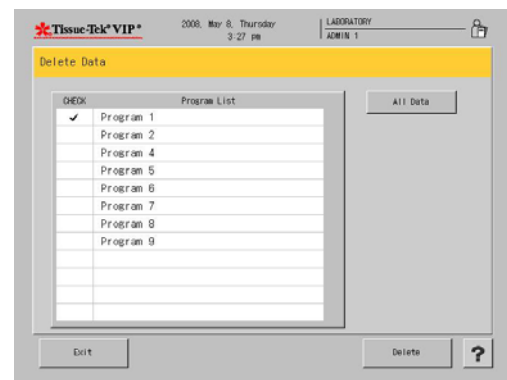
   - A Confirmation dialog box displays (Figure 3-OOO).



**Figure 3-OOO**

3. Touch **Yes** to confirm deletion or **No** to cancel the delete procedure.

# CUSTOMIZATION OF SETTINGS

**To delete tissue processing reports:**

1. From the Delete Data screen, touch Tissue **Processing Reports**.

2. From the list, select the report to be deleted, or touch the **All Data** button to delete all programs.

   - A Confirmation dialog box displays.

3. Touch **Yes** to confirm deletion or **No** to cancel the delete procedure.

**To delete cleaning reports:**

1. From the Delete Data screen, touch **Cleaning Reports**.

2. From the list, select the report to be deleted, or touch the **All Data** button to delete all reports.

   - A Confirmation dialog box displays.

3. Touch **Yes** to confirm deletion or **No** to cancel the delete procedure.

**To delete exchange solution reports:**

1. From the Delete Data screen, touch **Exchange Solution Reports**.

2. From the List, select the report to be deleted, or touch the **All Data** button to delete all reports.

   - A Confirmation dialog box displays.

3. Touch **Yes** to confirm deletion or **No** to cancel the delete procedure.

## Process Menu

The following options are available from the Process Menu.

**Cleaning** – allows the user to access all cleaning operations.

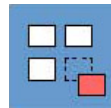**Exchange Solution** – allows the user to access the solution exchange operations.

**Tissue Processing** – allows the user to set up the automatic operation mode.

**Start Paraffin Melt** – begins the paraffin melting process.

**Exchange Solutions Calendar** – allows the user to view the calendar for scheduling the solution exchange.

**Solution Configuration Selection** – allows the user to select solution configuration.

## Cleaning

This option allows the user to access the cleaning operations: Clean Retort, Warm Water Flush, and Rinse Cycle.

**Clean Retort**: Removes paraffin from the retort and inside tubing of the instrument by rinsing with Xylene and alcohol.

**Warm Water Flush**: Removes precipitates created by the combination of alcohol and NBF by flushing the tubing, rotary and gate valves with warm water.

**Rinse**: A rinse removes residual Xylene from the retort and tubing by flushing the instrument with cleaning alcohol from Station #17 or an external alcohol source connected to the fill/drain port.

**To edit clean retort settings**

1. From the Process Menu, touch the **Cleaning** button.

   - The Cleaning screen displays (Figure 3-PPP).
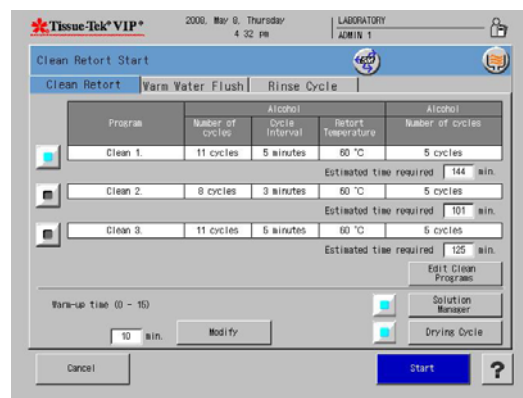


Figure 3-PPP

2. Select a Program and touch **Edit Clean Programs**.

   - Touch **Edit Clean Program** to edit each clean program.

3. Touch the **Number of Cycles** field under Xylene and touch **Modify**.

   - The Input Cycles Window displays (Figure 3-QQQ).



Figure 3-QQQ

4. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting 1-15.

   - Touch **Enter** to save the new setting and return to the Clean Retort screen or

   - Touch **Cancel** to return without saving new settings.

5. Touch the **Cycle Interval** field under Xylene and touch **Modify**.

   - The Input Time Window displays (Figure 3-RRR).



Figure 3-RRR

6. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting 0-5.

   - Touch **Enter** to save the new setting and return to the Clean Retort screen or

   - Touch **Cancel** to return without saving new settings.

7. Highlight the field under **Retort Temperature** under Xylene and touch **Modify**.

   - The Input Temperature Window displays (Figure 3-SSS).



Figure 3-SSS

8. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting (45-60º C) (Figure 3-TTT).

   - Touch **Enter** to save the new setting and return to the Clean Retort screen or

   - Touch **Cancel** to return without saving new settings.

9. Touch the **Number of Cycles** field under alcohol and touch **Modify**.

   - The Input Cycles Window displays.



**Figure 3-TTT**

10. Touch **Clear** to clear the current setting and then use the touch keypad to enter the new setting 1-15.

   - Touch **Enter** to save the new setting and return to the Clean Retort screen or

   - Touch **Cancel** to return without saving new settings.

11. Repeat steps to set all clean cycle programs.

12. Touch **Save** once completed.

## Warm Water Flush Tab

The first five reagent stations can be rinsed with warm water. The warm water flush is dependent on the solution configuration. A user can select all or none of the reagent stations to perform a warm water flush.

**NOTE:** Warm water must be placed in the reagent container prior to starting a warm water flush.

13. Station names and numbers for each station, #1 through #5, are displayed. Touch to select the station(s) to perform the warm water flush.

   - The lamp icon illuminates for the selected station(s).

14. Touch the **Drying Cycle** button to activate the drying cycle following the warm water flush cycle.

   - The drying cycle icon displays in the upper right of the screen.

15. Touch **Start** to being the warm water flush.

## Rinse Cycle Tab

The Rinse Cycle rinses the retort and tubing with cleaning alcohol after a solution exchange.

The Drain/Fill Port Rinse, rinses the retort and tubing with cleaning alcohol connected to an external solution container.

1. Touch to select the Rinse or Drain/Fill Port rinse button.

   - The lamp icon illuminates when selected.

2. Touch the **Drying Cycle** button to activate the drying cycle following the rinse cycle.

   - The drying cycle icon displays in the upper right of the screen.

3. Touch **Start** to being the rinse cycle.

## *Exchange Solution*

Reagents gradually become diluted and deteriorate after repeated use. To keep reagent purity consistent users may wish to "rotate" the reagents by discarding the first reagent of a particular group or set then transfer the remaining reagents to the beginning of the cycle to be the first used reagent of the particular group. The reagent bottle which held the discarded reagent should be cleaned and/or rinsed with clean reagent. Refill the reagent bottle with fresh reagent and place it at the end of the group.

The freshest reagent of a group will always be the final reagent to complete that particular chemical exposure to or infiltration of the specimens.

This process can be performed manually by physically changing the bottle locations, or it can be done automatically by the instrument through the Exchange Solution screen. The Exchange Solution feature allows reagents to be rotated automatically during a processing run or on request.

If a specific count was entered during Solution Setup, the software will automatically notify you when it is time to exchange solutions.

There are five tabs available under Solution Exchange"

**Group Exchange** – exchanges solutions in all stations of a designated solution group.

**Single Solution** – exchanges a solution in a singe designated station.

**Automatic Transfer** – allows solutions to be rotated among stations of the same solution group.

> **NOTE:** There are two types of automatic transfer, Automatic Transfer during processing and Independent Automatic Transfer.

**Paraffin Drain** – drains paraffin from a designated paraffin station to the waste paraffin drain container.

**Reservoir Fill** – supplies a new solution to a designated bulk solution reservoir.

## Setting up Exchange Solutions:

### Reagents

This option allows the user to access the solution exchange operations.

1. From the Process Menu, touch the Exchange Solution button.

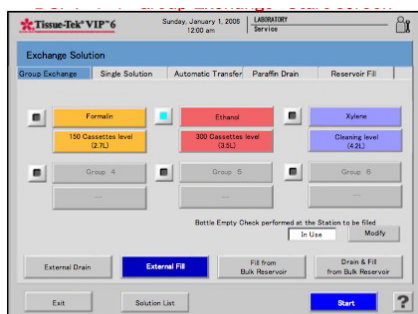   • The Exchange Solution screen displays (Figure 3-UUU).



**Figure 3-UUU**

2. Touch to select one of five tabs: Group Exchange, Single Solution, Automatic Transfer, Paraffin Drain, and Reservoir Fill.

**To perform a group exchange:**

1. Under the Group Exchange Tab, touch a solution group to be exchanged.

2. Select the desired type of exchange: External Drain, External Fill, Fill from Bulk Reservoir, and Drain & Fill from Bulk Reservoir.

> **NOTE:** Fill from Bulk Reservoir and Drain & Fill from Bulk Reservoir are not available for the solution groups where the bulk reservoir supply has not been selected.

3. Touch the **View as a List** button to view the stations as a list.

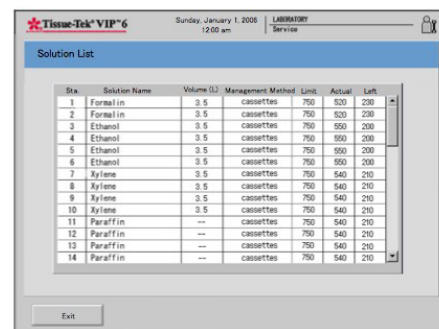   • The Solution List screen displays (Figure 3-VVV).



**Figure 3-VVV**

4. Touch **Exit** to return the process menu.

5. Touch **Start** to begin the process.

   • The Exchange Start Confirmation Window displays (Figure 3-WWW).



**Figure 3-WWW**

6. Touch **Yes** to start the Solution Group Exchange.

7. Touch **No** to return back to the Exchange Solution Screen.

   • The Exchange Solution Overview Monitor Screen displays (Figure 3-XXX).
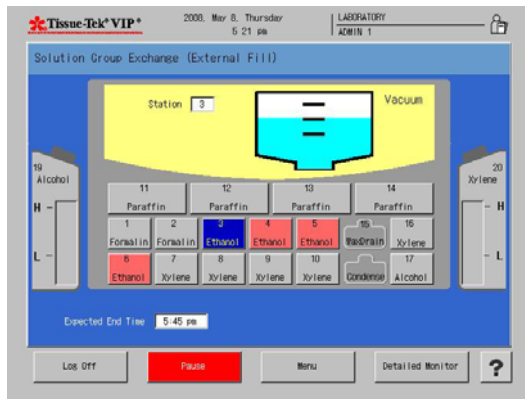
# CUSTOMIZATION OF SETTINGS



**Figure 3-XXX**

**Solution Group Exchange Detailed Monitor**

The Solution Group Exchange Detailed Monitor allows users to view the Solution Exchange Status, Set Volume field, Station Number Field, Overview Monitor button, Pause button, menu button, Log off button, and help button.

1. Touch **Menu** to display the Process Menu Screen.

2. Touch **Detailed Monitor** to view the Solution Group Exchange Detailed Monitor Screen (Figure 3-YYY).
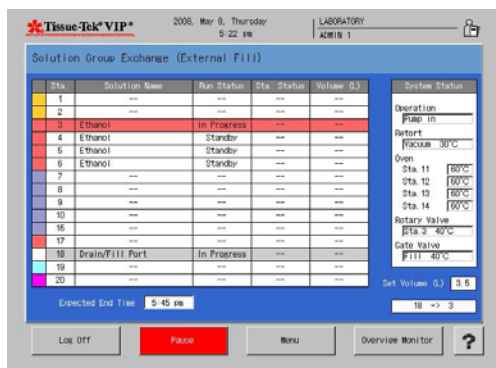


**Figure 3-YYY**

**System status area -** the current status of the system is displayed in this area.

**Solution Exchange Status area:** - the current status of the station in progress is displayed:

- **Station color** - indicates the station color selected for that station.

- **Station number** - indicates the station number of that station.

- **Solution name** - indicates the solution name assigned to that station.

- **Run status** - indicates the status of the solution exchange action at that station (Standby or In Progress or Hold or Completed).

- **Station Status** - Indicates the status of the solution in that station (Full or Low or Empty).

- **Volume (L)** - indicates the solution volume of the level of any of level sensors that the solution reached in the retort before draining to that station.

**Overview Monitor:** touch this button to return to the Exchange Solution Overview Monitor (Group Exchange) screen.

**Menu:** - touch this button to display the Process Menu Screen.

**Pause:** - touch the pause button to pause the solution group exchange.

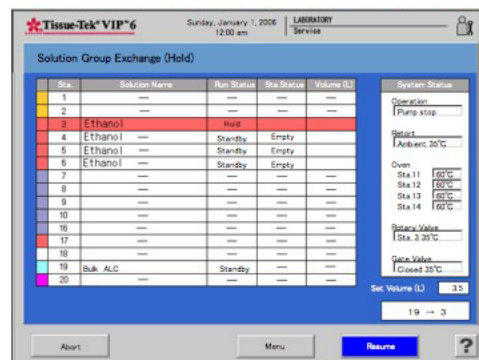- The Exchange Hold (Solution Group Exchange) screen is displayed (Figure 3-ZZZ).



**Figure 3-ZZZ**

1. Touch **Resume** to resume the Solution group exchange.

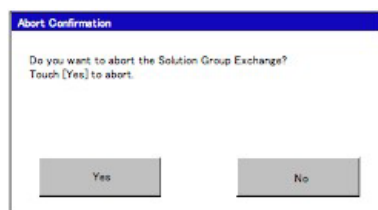2. Touch **Abort** to abort the process (Figure 3-AAAA).



**Figure 3-AAAA**

- Touch **Yes** to abort.

- Touch **No** to disregard request.

**To perform a single solution exchange:**

1. Under the Single Solution Tab, touch the *solution* to be exchanged.

2. Touch the **Solution Level** button below the selected solution to choose the correct solution level (150 cassettes (2.7 L), 300 cassettes (3.5 L), Cleaning Level (4.2 L)).

3. Select the desired type of exchange: External Drain, External Fill, Fill from Bulk Reservoir, and Drain & Fill from Bulk Reservoir.

> **NOTE:** Fill from Bulk Reservoir and Drain & Fill from Bulk Reservoir are not available for the solution groups where the bulk reservoir supply has not been selected.

4. Touch Exit to return the process menu.

**To perform an independent automatic transfer:**

Independent automatic transfer can rotate up to four different groups of solution, including paraffin, during one solution exchange operation. When using this function, it does not matter whether or not the stations of a particular solution group to be rotated are linked to the bulk solution reservoir. For a solution group which is not linked to the bulk solution reservoir, the automatic transfer is completed after emptying the solution bottle at the last station of that solution group. In this case, the last station needs to be filled with a new solution manually or by using the *Fill* function of the solution exchange feature.

The independent automatic transfer allows the operator to designate the solution volume to be rotated. When a solution is the source station is more that the solution volume designated for the destination station, only the designated solution volume is rotated to the destination station. When the source station is not full enough to supply the designated volume to the destination station, a solution is rotated first from the source station and then from the next station in order to fill the destination station. When the source station is the last station of the solution group, an appropriate amount of solution is supplied from the bulk reservoir.

1. Touch the solution group button to select the group to automatically rotate.

> **NOTE:** The first station of the group must be emptied prior to the start of operation.

> **NOTE:** If paraffin is being rotated, the paraffin waste reservoir must be emptied prior to operation.

2. Touch the **Level** button below the station group to choose the correct solution level (150 cassette level (2.7 L), 300 cassette level (3.5 L), or cleaning level (4.2 L).

3. Touch **View** as List to view as a list.

4. Touch **Start** to begin the process.

5. Touch **Exit** to return to the process menu.

**To perform a Paraffin Drain:**

1. Touch **Station** button to select the paraffin station to drain.

> ⚠ **WARNING:** EMPTY PARAFFIN WASTE RESERVOIR AND REPLACE THE PARAFFIN WASTE INSERT (SEE SECTION 2 FOR INSTRUCTIONS).

2. Touch **View** as List to view as a list.

3. Touch **Start** to begin the process.

4. Touch **Exit** to return to the process menu.

# CUSTOMIZATION OF SETTINGS

**To perform a Reservoir Fill:**

1. Select the bulk reservoir to fill.
2. Connect external tube to the appropriate bulk reservoir external drain/fill port.
3. Touch **View** as list to view as a list.
4. Touch **Start** to begin the process.
5. Touch **Exit** to return to the process menu.

## *Reset Solution Usage Information*

This function allows users to reset the solution stations that have reached their usage limit.

1. From the Process Menu, touch the **Reset Solutions Usage Information** button.

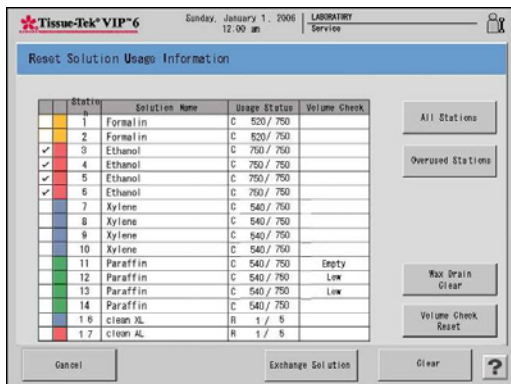   - The Reset Solution Usage Information screen displays (Figure 3-BBBB).



**Figure 3-BBBB**

- Select a specific station by touching the station number.
- Select the stations that have reached their usage limit, by touching **Overused Stations**.
- To select all stations, touch **All Stations**.

2. Once the station(s) have been selected, touch **Clear** to reset the solution usage.

   - A confirmation dialog box appears. Touch **Yes** to reset the solution usage information.

3. Touch **Cancel** to return to the Process Menu.

## Wax Drain Clear

Touch the **Wax Drain Clear** button to reset the paraffin drain container to empty. The wax drain usage clear confirmation screen displays (Figure 3-CCCC).
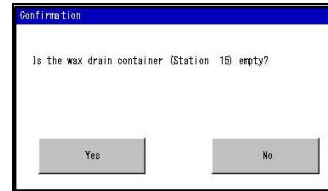


**Figure 3-CCCC**

- Touch **Yes** if the paraffin container is empty.
- Touch **No** if there is paraffin still in the container.

### Volume Check Reset

1. Touch the **Volume Check Reset** button to clear the volume check results *empty* or *low* in the Volume Check column.

## Exchange Solution

Touch the **Exchange Solution** button to perform the solution exchange operation.

## *Exchange Solutions Calendar*

**To view the Exchange Solution Calendar**

1. Touch the **Solution Management** button on the Process Menu.

   - The Exchange Solution calendar screen displays (Figure 3-DDDD).
   - **Green** filled days represent the next scheduled solution exchange.
   - **Blue** filled days represent the days solutions have been exchanged.
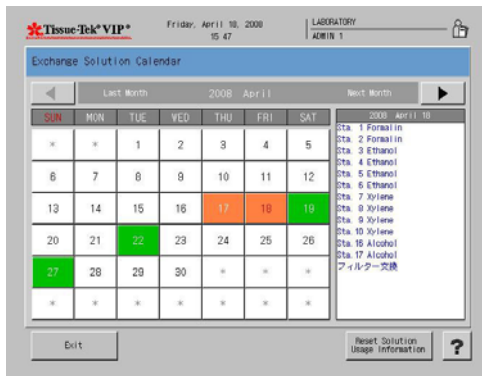
**Figure 3-DDDD**

The current month is displayed use the left/right arrow buttons to toggle between months.

- Touch any **green** or **blue** filled day to view detailed information regarding the solution exchange or the scheduled exchange. A list of stations and solutions to be exchanged for that day is displayed on the right.

- Touch **Exit** to return to the Process Menu screen.

## *Solution Configuration Selection*

Solution configuration selection is used to select the solution configuration to be used on the Tissue-Tek VIP. Up to 5 configurations can be saved on the system.

1. Touch the **Solution Configuration Selection** button on the Process Menu.

   - The Solution Configuration Selection screen displays (Figure 3-EEEE).
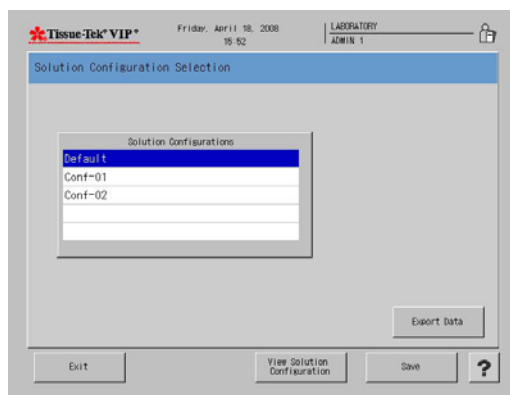


**Figure 3-EEEE**

2. Select the configuration to be viewed by touching configuration.

3. Touch the **View Solution Configuration** button.

   - The view solution configuration screen displays (Figure 3-FFFF).



**Figure 3-FFFF**

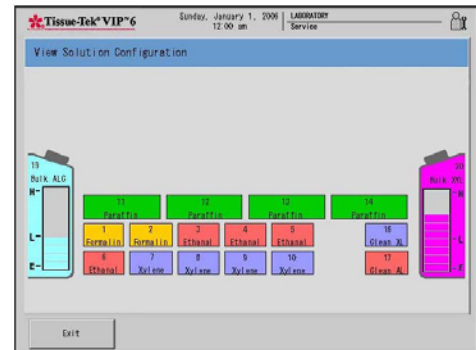- Touch **Exit** to return back to the solution configuration selection screen.

- Touch **Save** to save the selected solution configuration.

- Touch **Export Data** to export the solution configuration data.

- Touch **Exit** to return to the process menu screen.

# CUSTOMIZATION OF SETTINGS

## *Start Paraffin Melt*

The Start Paraffin Melt button starts the paraffin melting process.

> **ⓘ** **NOTE:** When solid paraffin is added to the VIP 6 it is necessary to perform this step.

4. From the Process Menu, touch the **Start Paraffin Melt** button.

- The start paraffin melt screen displays (Figure 3-GGGG).
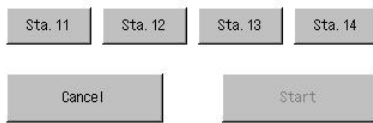


**Figure 3-GGGG**

- Select the stations where solid paraffin was added 11-14.
- Touch the **Start** button.
- Touch **Cancel** to return to the Process Menu.

# OPERATING INSTRUCTIONS

## Initial Setup

Ensure that the initial setup procedures have been performed in accordance with the requirements of Section 3, Customization of Settings, prior to operating the Tissue-Tek® VIP® 6.

Once the instrument software has been customized for your laboratory needs, the Tissue-Tek VIP 6 Vacuum Infiltration Processor is ready for use in routine processing. The instrument is designed to be powered on at all times, as this maintains the oven temperature to prevent solidification of the paraffin. This section provides the steps to follow for each processing run.

## Accessing the Start Tissue Processing Screen

The Process Monitor Screen (Figure 4-A) is displayed when the system is ready for operation. It allows for log on and to monitor any processes currently running.
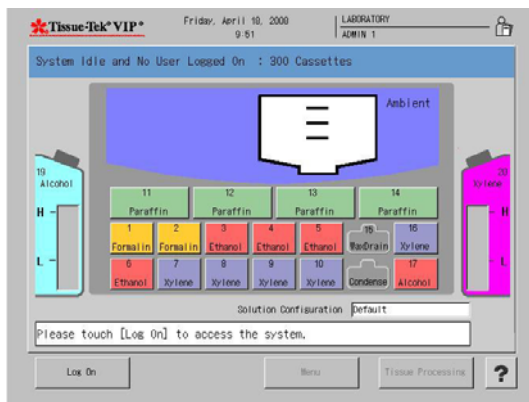


**Figure 4-A**

**NOTE:** You must login as an Administrator in order to modify system settings and operating parameters.

### To Log On:

1. From the main (Process Monitor) screen, touch the **Log On** button. The Enter Password dialog box displays.

2. Use the touch keypad to enter your password, and then touch the **Enter** button.

- The default password is set to "100000".

    **NOTE:** For security reasons, your password will display on the screen, as entered, as a series of asterisks.

- If your login is *unsuccessful*: Re-enter your password and then press the **Enter** button to resubmit your login request.

- If your login is *successful*: The Process Monitor screen displays (Figure 4-B).
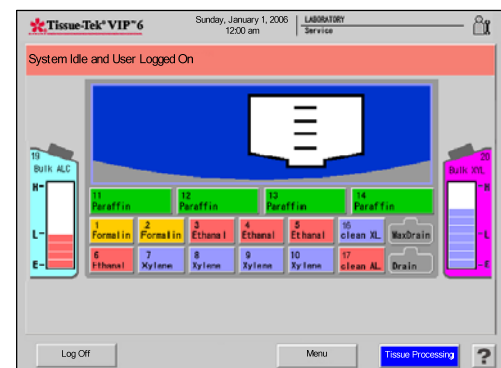


**Figure 4-B**

3. Touch the **Tissue Processing** button to access the Start Tissue Processing screen (Figure 4-C).

    **NOTE:** If multiple solution configurations have been set up, make certain to first select the corresponding solution configuration in the Process Menu tab in the main menu, otherwise the program list will have "***" to the left of each program name that does not correspond to the solution configuration displayed and will not respond to the touch screen command.

# OPERATING INSTRUCTIONS



Figure 4-C

## Understanding the Start Tissue Processing Screen

The **Program List** is a list of executable processing programs. When the screen appears, the program that was run last will be highlighted by default.

The **Icons** located in the title bar are as indicated:

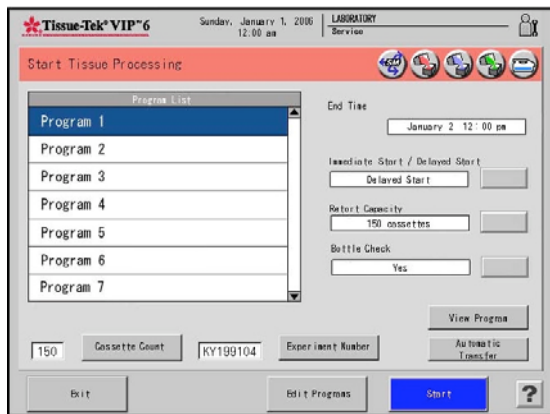| | |
|---|---|
|  | Indicates the Solution Manager has been set to ON or New for the selected program. |
|  | Indicates Auto Transfer is on for the dehydration group. |
|  | Indicates Auto Transfer is on for the clearing group. |
|  | Indicates the Auto Transfer is on for the infiltration group. |
|  | Indicates the bottle connection check has been set to **Yes**. |

**End Time** - displays the predicted end date and time designated for the selected program. The end date and time will vary depending on the start mode that is selected. The end time can only be edited in the Edit Program field.

**Start Mode** - allows the user to choose to start processing in the **Immediate** or **Delayed Start** modes.

- Touch **Modify** to choose either Immediate or Delayed Start.

**Retort Capacity** - allows the user to temporarily change the preset system workload for a processing run.

- Touch **Modify** to choose either 150 Cassettes or 300 Cassettes. If the number of cassettes is changed from 150 to 300, a confirmation window appears to request whether or not to permit the change.

**Bottle Check** - allows the user to select whether or not to have the instrument check the connection of solution bottles.

- Touch the **Modify** button to select either Yes or No.

**Cassette Count** - is used to enter the number of cassettes to be processed. This button is only displayed when the solution control method is set to "Cassettes".

**Experiment Number** - is used to enter a desired experiment number. This button is only displayed when the "Experiment Number" is set to "In Use" in the Processing Mode Selection screen.

**Automatic Transfer** - is used to select whether or not to perform the Auto Transfer during processing. Touching this button will display the View Program screen.

**Start** - is used to start the selected program.

**Edit Programs** - is used to edit a processing program.

- Touch this button to display the Select Program screen.

**View Program** - is used to view the contents of the selected program.

- Touch this button to display the View Program screen.

**Exit** - is used to end the operation and return to the Main log in screen.

**? (Help)** - is used to display the help screen showing operating information and instructions.

**Cassette Count** - is used to display the number of cassettes to be processed.

**To adjust cassette count:**

> **NOTE:** This option is available *only if* "Cassette Count Confirmation" has been set to "In Use" under the "Processing Mode" in System Setup under Utility.

- Touch the **Cassette Count** button. The Input Cassette Count screen is displayed (Fig. 4-D).
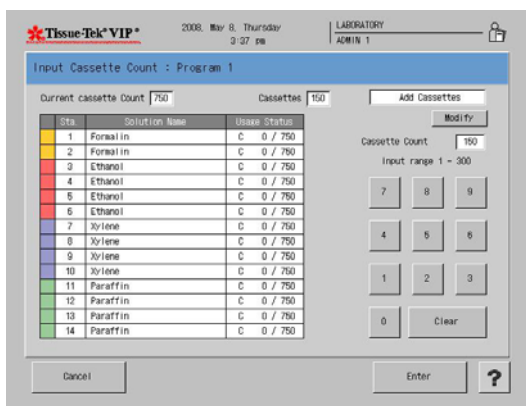


**Figure 4-D**

- **Station Color** indicates the color selected for that specific reagent group.

- **Station Number** indicates the station number of that station.

- **Solution Name** indicates the name of a solution assigned to that station.

- **Usage Status** indicates the preset solution control method (C=Cassettes) and the current usage status of a solution in that station (Actual usage/Usage limit).

1. Use the touch keypad to enter the cassette count. The input range is 1-300.

- Touch **Enter**.

- Touch **Clear** to erase the settings.

- Touch **Cancel** to exit without saving.

- The Experiment Number field is used to display a reference number associated with the tissue samples.

**To adjust the experiment number:**

> **NOTE:** This option is available *only if* "Experiment Number" has been set to "In Use" under the "Processing Mode" in System Setup under Utility.

1. Touch the **Input Experiment Number** button.

- The Experiment Number screen is displayed (Figure 4-E).



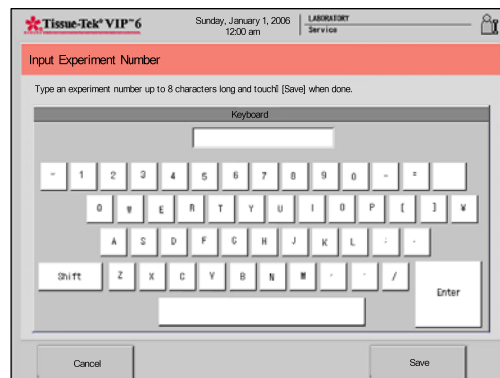**Figure 4-E**

2. Use the touch keyboard to enter the experiment number using up to eight characters.

- Touch **Save** to save the experiment number and return to the Processing Menu or

- Touch **Cancel** to return without saving the experiment number.

- The **View Program** button is used to display the *View Program screen* that allows a user to view details of the currently selected program.

# OPERATING INSTRUCTIONS

**To view program information:**

3.  Touch the **View Program** button.

    - The View Program screen is displayed (Fig. 4-F). The screen includes the following details:



Figure 4-F

**Station Color** indicates the color selected for that station.

**Station Number** indicates the station number of that station.

**Solution Name** - indicates the name of a solution assigned to that station.

**Set Time** - indicates a processing time preprogrammed for that station.

**Temperature**: - indicates the preset retort temperature for the selected station.

**P/V** - indicates the preset P/V setting for the selected station.

**Mix** - indicates the preset mixing settings for the selected station.

**Exit** - closes current screen.

**Temporarily Edit Program:** any changes made to the program here will apply only to this particular run. Following completion of the run, the program will revert to its original settings.

**Ethanol** - represents reagent in bulk reservoir that will be automatically transferred, if selected. Titles vary depending on system setup.

**Xylene** - represents reagent in bulk reservoir that will be automatically transferred, if selected. Titles vary depending on system setup.

**Paraffin** - indicates the paraffin group will be automatically transferred if selected.

> **NOTE:** The Ethanol and Xylene bulk reagent buttons display *only if* Automatic Transfer has been selected.

**Automatic solution transfer:**

Automatic transfer during processing can rotate solutions of up to seven different solution groups including paraffin during one processing run. To operate this function, solution supply must come from the bulk solution reservoirs which should contain a sufficient amount of solution. New solution is supplied from the bulk solution reservoir to the last station of the particular solution group. If the solution manager is activated the solution group that the automatic transfer has been selected to perform, the automatic transfer is discontinued.

Solution and paraffin rotations occur differently when using Automatic transfer.

**Solution rotation** - automatic Transfer can be selected for multiple groups of reagents however, no waste solution station is available. When this function is selected, the VIP requires the first regnant bottle of a specific group to be emptied before processing can be started. During processing, the VIP draws reagent from the next full reagent bottle of a specific group into the retort for processing then drains into the empty bottle. The process continues until it reaches the last station of the group, which is now empty at that point reagent is drawn in from the linked bulk reservoir.

**Paraffin rotation** - During processing, paraffin from the first paraffin station is used to process the run then pumped out into the waste paraffin container. Paraffin in the subsequent stations is rotated. Following the completion of the run, paraffin in station 14 needs to be replenished by a user.

1.  Touch the **Automatic Transfer** button.

    - The View Program screen is displays.

-   Touch the solution group button to select the group to automatically rotate.

> **NOTE:** The first station of the solution group must be emptied prior to the start of operation.

**NOTE:** If paraffin is being rotated, the paraffin waste reservoir must be emptied prior to operation.

- An icon appears in the top right of the screen to indicate which solution groups are set for automatic transfer.

# Tissue Processing

## Preparation

Ensure that the retort is drained and the Clean Cycle has been run if paraffin was pumped into the retort during the previous run see *Cleaning* below. These steps must be performed before the instrument will allow a new processing run to be performed.

Prepare the specimens for processing as follows:

1. Properly fill and close the Tissue-Tek Cassettes, ensuring that there is a sufficient ratio between the size of the specimen and the volume of the cassettes.

2. Place the divider into the sample basket, and then load the cassettes with the slanted end up. Cover the basket with the basket lid. Fill the other baskets if applicable.

3. Open the retort by moving the retort handle located on the top of the retort to the right. Place the basket(s) into the retort, rotating the handles so they lay flat against the retort sides. Close and lock the retort lid, and then turn the latch by turning the handle to the left until a click is heard. Make sure the message "Retort Lid Unlocked" has disappeared from the display.

## Routine Operation

1. From the Start Tissue Processing screen, touch the **Start** button.

- The Start Tissue Processing Confirmation screen displays (Figure 4-G).
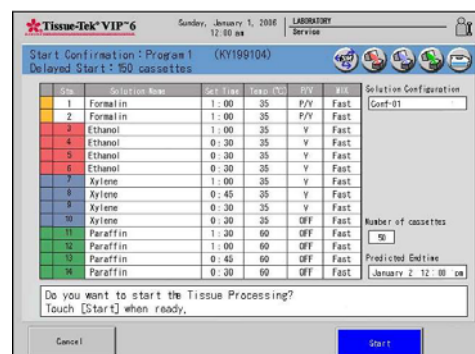


Figure 4-G

- Touch the **Start** button to start a processing run.

- Touch **Cancel** to return to the Start Tissue processing Confirmation screen.

If "Immediate Start" was selected, the Tissue Processing Screen will appear. The current time will be displayed as the "Start Time" and the predicted "End Time" will be calculated and displayed and processing will begin immediately.

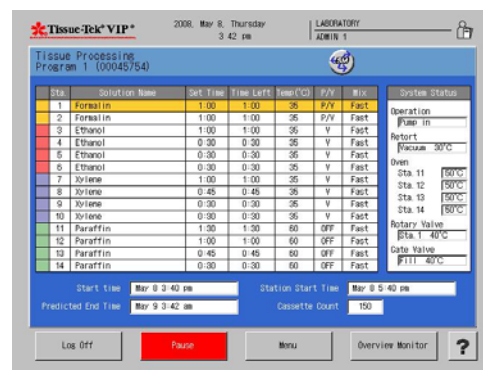- The Tissue Processing Detailed screen displays (Figure 4-H).



Figure 4-H

The Tissue Processing Detailed Screen displays the current status of the system.

- Touch **Overview Monitor** to return to the Tissue Processing Overview screen.

# OPERATING INSTRUCTIONS

If "Delayed Start" was selected, the "Delayed Start Overview" screen will display (Figure 4-I).
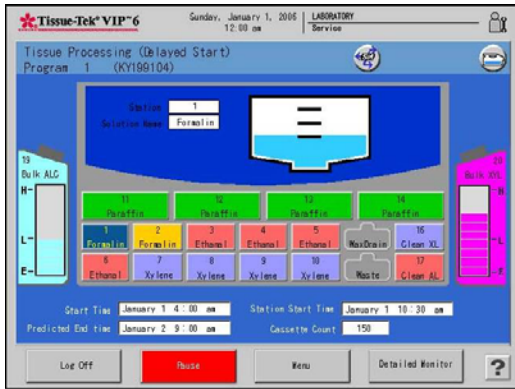


**Figure 4-I**

The "Delayed Start" Screen displays the following information:

**Start Time** - indicates the date and time tissue processing was started.

**Station Start Time** - calculates the predicted date and start time of tissue processing, following the delayed countdown.

**Predicted End Time** - indicates the predicted date and time that processing will finish.

**Cassette Count** - indicates the number of cassettes entered at the start of processing.

- Touch the **Pause** button to interrupt the delayed start.

- Touch the **Menu** button to view the Process Menu screen.

- Touch **Log Off** to log off of the system.

- Touch the **Detailed Monitor** button to view the "Tissue Processing Delayed Start Detailed" screen (Figure 4-J).



**Figure 4-J**

The Tissue Processing Delayed Start Detailed screen displays the current status of the system.

- Touch **Overview Monitor** to return to the Tissue Processing Overview screen.

When tissue processing is completed a Notice window displays.

- Touch the **Exit** button.

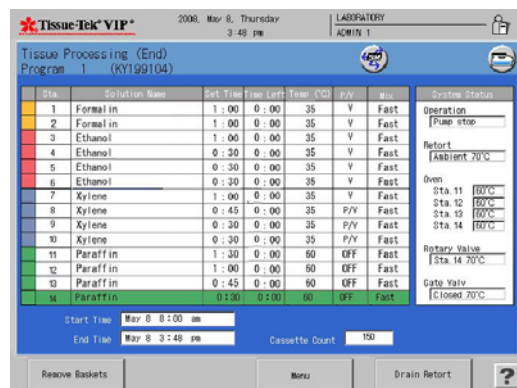- The Tissue Processing End screen displays (Figure 4-K).



**Figure 4-K**

The Tissue Processing End screen displays the current status of the system.

- Touch the **Remove Baskets** button. The Basket Removal confirmation screen displays.

- Touch **Yes** if all of the baskets have been removed from the retort.

- Touch **No** if there are baskets still in the retort.

- Touch the **Drain Retort** button to initiate the retort drain. A Drain Retort confirmation window displays.

- Touch **Abort** to abort. A second Drain Retort Abort Confirmation Window opens.

- Touch **Yes** to abort or No to continue with the retort drain.

- Touch **Menu** to open the Process Menu screen.

# Cleaning

After a processing run the Clean Cycle Start Screen displays (Figure 4-L). The Clean Cycle Start Screen consists of three tabs, Clean Retort, Warm Water Flush and Rinse Cycle. When a program is selected the lamp icon illuminates.
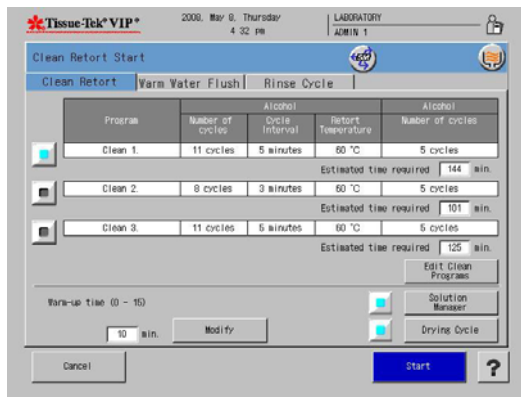


Figure 4-L

## The Clean Retort Tab

On the Clean Retort Tab information pertaining to the clean cycle is displayed.

- Touch the **Edit Clean Programs** button to edit the current cleaning program.

- Touch the **Modify** button to change the warm-up time. The setting is 0-15 minutes.

- Touch the **Solution Manager** button to enable or disable the solution manager function. If the solution manager is enabled the lamp icon is illuminated and the solution manager icon is displayed in the upper right of the screen.

- Touch the **Drying Cycle** button to enable or disable the drying function. If the drying cycle is enabled the lamp icon is illuminated and the drying cycle icon is displayed in the upper right of the screen.

### To Start the Cleaning Cycle

1. Touch **Start** to begin the selected clean cycle.

   - The Clean Start Confirmation Screen displays.

2. Touch **Yes** to start.

   - The Clean Start Notice Window displays.

   - Touch **No** to return to Clean Cycle Start Screen

3. Touch the **Exit** button to close the window.

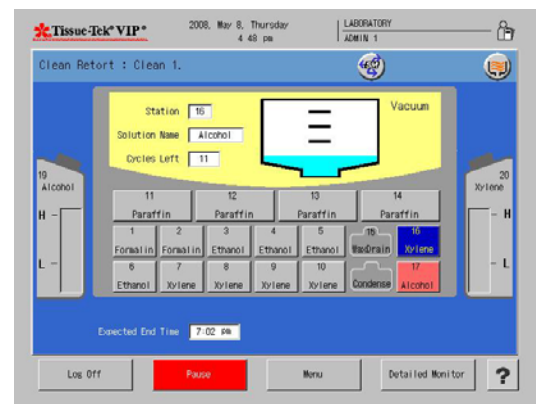   - The Clean Retort Overview Monitor Screen displays (Figure 4-M).



Figure 4-M

4.  Touch **Log off** to log out of the system. When the system is in the log off condition, the Log On button will display.

## Clean Retort Detailed Monitor

The Clean Retort Detailed Monitor allows users to view the system status, cleaning status, remaining warm-up time and expected end time of a clean cycle.

1.  Touch **Menu** to display the Process Menu Screen.
2.  Touch **Detailed Monitor** to switch the display to the Clean Retort Detailed Monitor Screen (Figure 4-N).
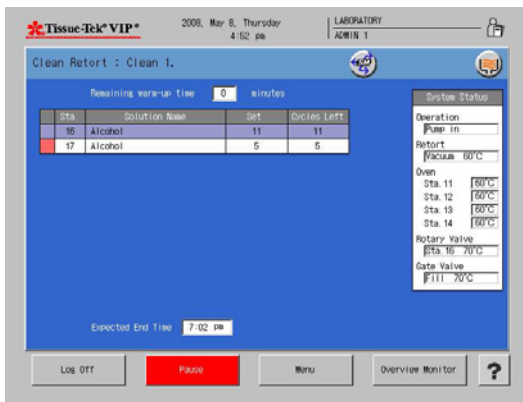


### Figure 4-N

The Clean Retort Detailed Monitor displays the following information:

**System status area** - The current status of the system is displayed in this area.

**Cleaning status area** - The current status of the cleaning in progress is displayed.

**Station color** - indicates the station color selected for that station.

**Station number** - indicates the station number of that station.

**Solution name** - indicates the solution name assigned to that station.

**Set** - indicates the preset number of cleaning cycles.

**Cycles Left** - indicates the remaining number of cleaning cycles.

**Remaining Warm-up Time** - The remaining warm-up time is displayed.

**Expected End Time** - This field indicates the estimated time the retort cleaning is completed.

**Overview Monitor** - Touch this button to return to the Clean Retort Overview Monitor screen.

**Pause** - Touch the pause button to pause the clean cycle.

- The Clean Retort Hold screen is displayed (Figure 4-O).



### Figure 4-O

- Touch **Resume** to resume the clean cycle.
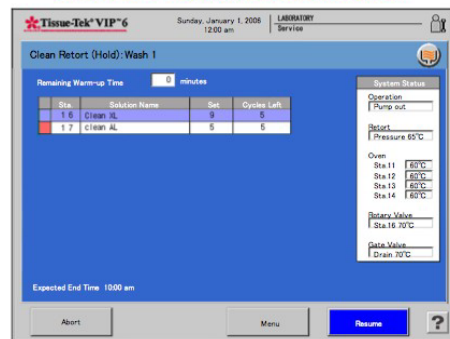
- Touch **Abort** to abort the clean cycle. The Clean Abort Confirmation Window displays (Figure 4-P).



### Figure 4-P

- Touch **Yes** to abort.

- Touch **No** to return to the clean retort hold screen.

## *Warm Water Flush Tab*

The Warm Water Flush Tab (Figure 4-Q) displays the solution name and station numbers of the reagents where a warm water flush can performed.
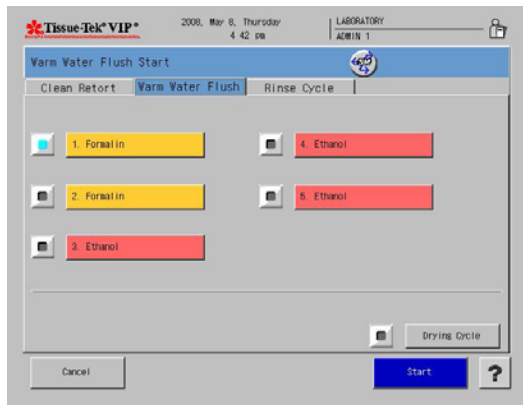
**Figure 4-Q**

- Touch the station were you would like to perform the warm water flush, the lamp icon illuminates.
- Touch the **Drying Cycle** button to enable or disable the drying cycle. If the drying cycle is enabled the lamp icon is illuminated and the drying cycle icon is displayed in the upper right of the screen.

**To start the warm water flush:**

1. Under the Warm Water Tab, touch to select one of the listed stations.

- The Warm Water Flush Start Screen displays.

2. Place warm water in the selected stations.
3. Touch the **Drying Cycle** button if drying is desired upon completion.
4. Touch the **Start** button to start the warm water flush.

- The Warm Water Flush Preparation Confirmation screen displays (Figure 4-R).
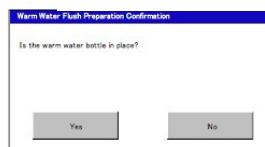


**Figure 4-R**

5. Touch the **Yes** button when warm water bottle(s) are in place. The Warm Water Flush Confirmation Screen Displays.

- Touch **No** to exit back to the Cleaning Menu without starting the warm water flush.

6. Touch the **Yes** button when ready to start. The Warm Water Flush Start Notice displays.

- Touch **No** to exit back to the Process Menu without starting.
- Touch **Exit** to close the window.
- The Warm Water Flush Overview Monitor Screen displays (Figure 4-S).
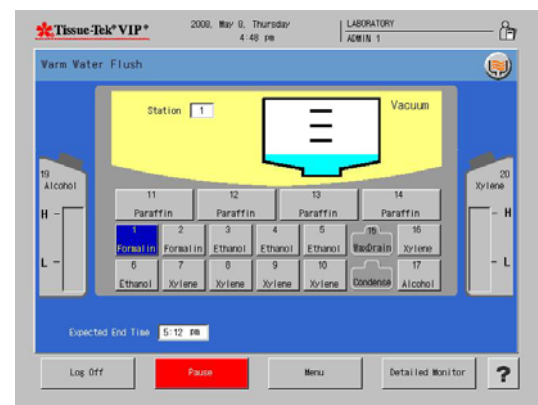


**Figure 4-S**

7. Touch **Log off** to log out of the system. When the system is in the log off condition, the Log On button will display.

# OPERATING INSTRUCTIONS

**Warm Water Flush Detailed Monitor**

The Warm Water Flush Detailed Monitor allows users to view the system status, cleaning status, remaining warm-up time and expected end time for a warm water flush.

1. Touch **Menu** to display the Process Menu Screen.

2. Touch **Detailed Monitor** to switch the display to the Warm Water Flush Detailed Monitor Screen. The following information is displayed (Figure 4-T).
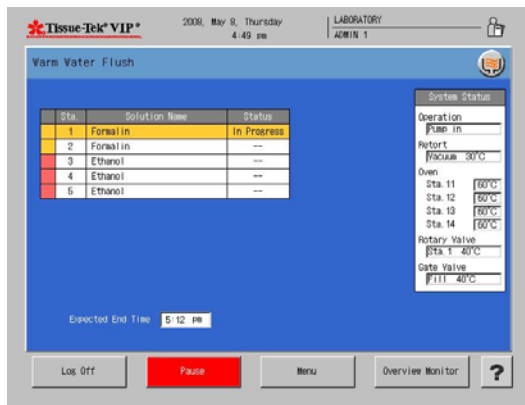


Figure 4-T

**System status area** - The current status of the system is displayed in this area.

**Cleaning status area** - The current status of the cleaning in progress is displayed:

**Station color** - indicates the station color selected for that station.

**Station number** - indicates the station number of that station.

**Action** - indicates whether the warm water flush is selected for that station (clean or No).

**Status** - indicates the status of the warm water flush at that station (standby or in progress or Hold or Completed).

**Overview Monitor:**

Touch this button to return to the Warm Water Flush Overview Monitor screen.

**Pause:**

1. Touch the **Pause** button to pause the warm water flush.

- The Warm Water Flush screen is displayed (Figure 4-U).
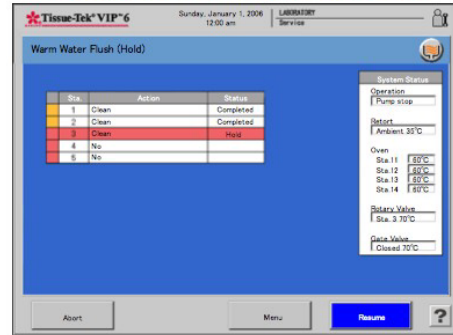


Figure 4-U

- Touch **Resume** to resume the warm water flush.

- Touch **Abort** to abort the warm water flush.

## Rinse Cycle Tab

The Rinse Cycle tab (Figure 4-V) allows the user to rinse the retort and tubing with alcohol after completion of a solution exchange.
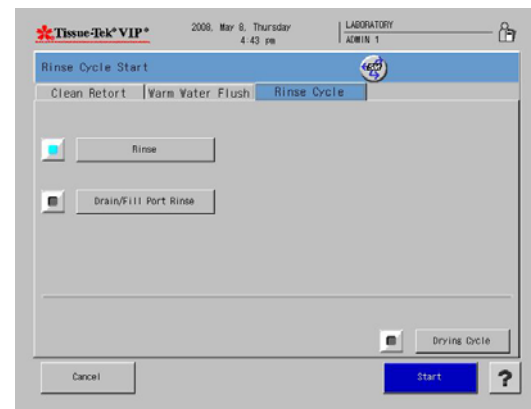


Figure 4-V

- Touch the **Rinse** button to rinse the retort and tubing with alcohol from station #17.

- Touch the **Drain/Fill Port Rinse** button to rinse the retort and tubing with alcohol from an external solution container connected to the Drain/Fill Port.

**To start the rinse cycle:**
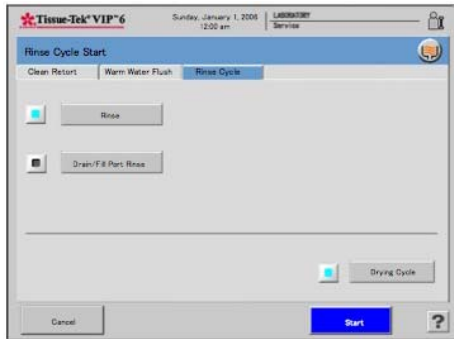


**Figure 4-W**

1. Touch **Drain/Fill Port Rinse** (Figure 4-W) if using alcohol from an external container to rinse the retort and lines after a solution exchange.

2. Touch **Drying Cycle** to perform a drying process following the cleaning.

3. Touch **Start** to begin the process.

   - The Rinse cycle Overview Monitor Screen displays (Figure 4-X).

   - Touch **Cancel** to exit to the process menu.
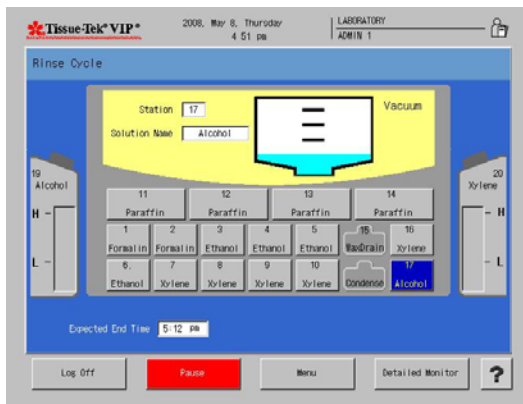


**Figure 4-X**

4. Touch **Log off** to log out of the system. When the system is in the log off condition, the Log On button will display.

## Rinse Cycle Detailed Monitor

The Rinse Cycle Detailed Monitor allows users to view the system status, cleaning status, remaining warm-up time and expected end time for a rinse cycle.

1. Touch **Menu** to display the Process Menu Screen.

2. Touch **Detailed Monitor** to switch the display to the Rinse Cycle Detailed Monitor Screen. The following information is displayed (Figure 4-Y).
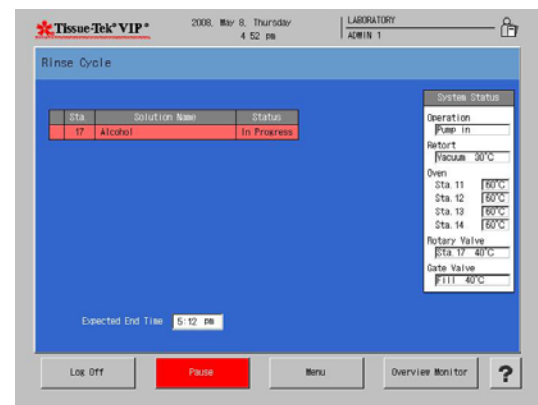


**Figure 4-Y**

**System status area** - The current status of the system is displayed in this area.

**Cleaning status area** - The current status of the cleaning in progress is displayed.

**Station color** - indicates the station color selected for that station.

**Station number** - indicates the station number of that station.

**Solution name** - indicates the solution name assigned to that station.

**Status** - indicates the status of the rinse cycle (Standby or In Progress or Hold or Completed).

**Overview Monitor:**

Touch this button to return to the Rinse Cycle Overview Monitor screen.

# OPERATING INSTRUCTIONS

**Pause:**

1.  Touch the **Pause** button to pause the rinse cycle.

    *   The Rinse Cycle Hold screen is displayed (Figure 4-Z).
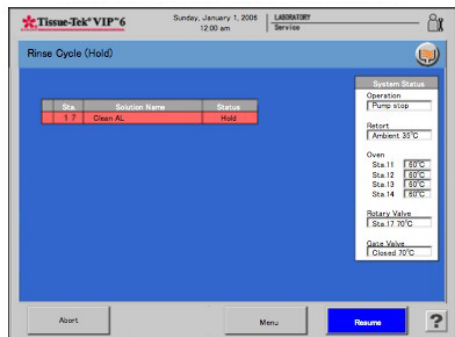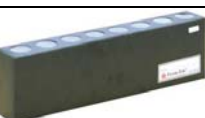


**Figure 4-Z**
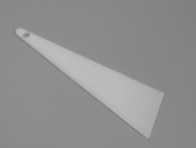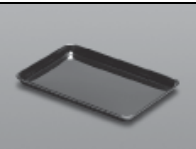
*   Touch **Resume** to resume the rinse cycle.
*   Touch **Abort** to abort the rinse cycle.

# CONSUMABLES AND ACCESSORIES
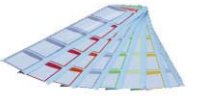
## Consumable Materials

| Product Code | Description | |
|---|---|---|
| 4170-01, white<br>4120-01, aqua<br>4157-01, blue<br>4119-01, gold<br>4156-01, green<br>4118-01, lime<br>4117-01, orange<br>4155-01, pink<br>4135-01, red<br>4153-01, tan<br>4154-01, yellow<br>4180-01, gray | Tissue-Tek® Uni-Cassettes-12 colors available | |
| 6160 | Fume Filter (2/pk) | |
| 6045 | Paraffin Waste Bags | |

## Accessories Items

| Product Code | Description | |
|---|---|---|
| 1550 | Paraffin Scrapper, Large | |
| 6034 | Paraffin Scrapper, Small | |
| 7109 | Basket Transport Tray | |
| 5265 | Cassette Baskets with Dividers and Handles | |

| Product Code | Description | |
|---|---|---|
| F60-500-00 | Reagent Bottle | |
| F60-501-00 | Condensation Bottle | |

| Product Code | Description | |
|---|---|---|
| F60-529-00 | Reagent Bottle labels | |
| F60-492-00 | Paraffin Reservoir, small | |
| F60-493-00 | Paraffin Reservoir, large | |
| F60-499-00 | Paraffin Waste Reservoir | |
| A3-60-4304 | USB Memory | |
| 6163 | Screen Protection Sheet | |
| 0002604-01 | Operating Manual | |

# CONSUMABLES AND ACCESSORIES

## *Where to Call to Order Consumables and Accessories*

If located within the United States, contact the Order Management Department of Sakura Finetek U.S.A, Inc., by calling toll-free: 1-800-725-8723. Alternately, or in countries other than the United States, contact the nearest authorized Sakura distributor.

# CARE OF THE INSTRUMENT

## General Maintenance

This section provides information on how to care for and maintain the Tissue-Tek® VIP® 6. The instrument must be maintained correctly to ensure proper operation.

Read this section carefully before attempting to perform maintenance. Follow all instructions carefully.

### *Daily Maintenance*

#### Retort

WARNING: MAY CONTAIN BIO-HAZARDOUS WASTE. DISPOSE OF CONTENTS IN ACCORDANCE WITH LOCAL REGULATIONS.

1. Clean the inside of the retort lid, the rim of the retort, and the retort lid gasket by wiping with a clean cloth. After cleaning, inspect the gasket carefully for cracks, splitting, tearing, or other signs of deterioration that could cause leaks. Replace the gasket if necessary.

2. Clean the outlet filter on the bottom of the retort, as follows:

   a. Grasp the screw and turn counterclockwise, then remove it from the retort (Figure 6-A).



**Figure 6-A**

   b. Remove any debris, and then thoroughly clean the filter by soaking in Xylene. Clean the bottom of the retort by wiping with a cloth moistened with Xylene.

   c. Reinstall the filter.

## Exterior Surfaces

Keep the exterior of the cabinet free of dust and clutter. Generally, wiping with a clean cloth moistened with water is all that is needed to keep the cabinet dust free. Do not use solvents to clean the exterior, especially the control panel. To disinfect the touch pane screen, spray 70%-80% alcohol onto a soft cloth and gently wipe the screen. Do not spray any liquid directly onto the screen. The acrylic doors may be cleaned with a glass cleaner and soft cloth.

### *Weekly Maintenance*

#### Reagent Exchange and Warm Water Flush

1. All the reagents should be replaced or exchanged on a weekly basis. If replacing, empty each bottle and refill with the appropriate concentration of fresh reagent. If exchanging, empty the first bottle of each reagent type, then move the remaining reagents up one station each (see "*Automatic Transfer*" in Section 3).

2. Unless the Tissue-Tek VIP Formalin reagent is used, other commercial formalin and the first alcohol become contaminated with precipitated buffer salts. These salts also create blockages in the lines and in the rotary valve. Therefore, the formalin and the first alcohol should be replaced, rather than exchanged, on a weekly basis. While replacing these reagents, a warm water flush should be performed to dissolve any salt buildup in the lines and on the rotary valve:

   a. Discard the contents of each bottle of formalin and the first bottle of alcohol. Rinse each bottle with tap water. Reinstall the bottles into the appropriate stations.

   NOTE: Stations 1 through 5 can be selected for a warm water flush procedure.

   b. From the Process Menu, touch the Cleaning icon then the Warm Water Flush Tab. (see "*Warm Water Flush*" in Section 4).

# CARE OF THE INSTRUMENT

c. When the water has been pumped from all appropriate stations, discard the water from each bottle and fill with appropriate concentration of fresh reagent. Replace the bottles into their appropriate stations, ensuring a secure connection.

## Clean Cycle Reagents

Xylene, and alcohol used in the Clean Cycle will quickly become contaminated with residual paraffin: therefore, these reagents need to be **replaced after every five uses**. (If local regulations require the use of Xylene substitute, it should be replaced more often; also extra cleaning cycles may be needed to attain proper cleaning.) Discard the contents of each bottle in an appropriated manner, and then fill with fresh reagent to the appropriate line. Reinstall the bottles into their proper stations, ensuring a secure connection.

## *Monthly Maintenance*

### Fume Control System Filter Replacement

⚠️ WARNING: AN ACTIVATED CARBON FILTER MUST BE INSTALLED IN THE INSTRUMENT AS ALL TIMES TO ENSURE PROPER FILTERING OF FUMES GENERATED DURING PROCESSING.

The fume control system serves to reduce formalin and Xylene fumes generated by the instrument to acceptable levels. To ensure proper filtering and fume control, replace the fume control system filter monthly.

To replace the fume control system activated carbon filter:

1. Open the Fume Control Access Door.
2. Pull out the Fume Control access drawer (Figure 6-B).



Figure 6-B

3. Remove the fume filters from the instrument (Figure 6-C).



Figure 6-C

4. Install new fume filter in the instrument.

5. Push the Fume Filter Drawer back into the instrument (Figure 6-D).



**Figure 6-D**

6. Close the Fume Control Access Door.

7. Discard used filters according to local regulatory regulations.

## *Periodic Maintenance*

## Bottle Connectors

Carefully inspect all bottle connectors for cracks and worn threads. Inspect the bottle connection fitting for cracks and deterioration. An initial indication of a connection problem will be a failure of the bottle connection check. Replace bottles that are cracked or deteriorated (see Section 8, "Service and Replacement Parts").

## Disinfection

The instrument can be disinfected, if necessary, by the following procedure:

1. Spray or wipe a thick coating of 70-85% ethanol or isopropanol onto the walls and base of the retort and the inside of the retort lid. Do not use absolute (100%) alcohol, as this is a less effective disinfectant than is a concentration of 70-85%.

    **NOTE** The use of sodium hypochlorite (i.e., bleach) is *NOT* recommended, since any residue in the retort can contaminate the reagents and tissues.

2. Allow the alcohol to air dry before closing the retort lid.

# CARE OF THE INSTRUMENT

# TROUBLESHOOTING

## General Information

The following Troubleshooting Chart contains general problems that could occur during operation of the Tissue-Tek® VIP® 6 instrument. Probable causes and recommended remedies are included for each problem listed, to aid in diagnosis and correction. If additional assistance is required concerning a Tissue-Tek VIP 6 instrument problem, or if a problem cannot be corrected or is beyond the scope of this manual, contact the Sakura Finetek Technical Support Representative for information or assistance.

## Monitored Errors

Certain components, operating parameters and system conditions are monitored while the system is powered on, and during operation, to ensure the instrument is in operational condition. When a monitored component or parameter falls outside the established limits or operating criteria, an alarm sounds continuously until the error is cleared, and an error number or warning message is shown on the Tissue-Tek VIP screen. To cancel (turn off) the alarm, press the **EXIT** button on the warning message. Each error that results in the display of an error number generates an entry in the system Error Log. The Error Log stores the 100 most recent errors, arranged by date, and provides a description of each error (see "*Error Log*" on page 7-3 for details).

# TROUBLESHOOTING

## TROUBLESHOOTING CHART

| Problem | Probable Cause | Remedy |
|---------|---------------|--------|
| Power indicator is not illuminated. | 1. Line cord is not plugged. Power failure.<br>2. Main power switch is off. | 1. Make sure power is available at the power source. Make sure the line cord is properly connected to the electrical power source.<br>2. Turn the main power switch ON. |
| LCD Screen does not display when power is on. | 1. Display backlight is off. | 1. Touch the screen to turn on the backlight. |
| Buttons are displayed or do not respond to touch. | 1. The user is logged off.<br>2. A user does not have rights to perform administrator duties.<br>3. The retort contains solution. | 1. Log on to the system.<br>2. An administrator must log on to perform certain duties.<br>3. Perform a manual pump-out. |
| Characters cannot be entered from the onscreen keyboard. | 1. The permitted number of characters is exceeded. | 1. Touch the backspace button or clear button and re-enter up to 22 characters. |
| Alarm sound does not turn off. | 1. The system detected an error that has not been addressed by the user. | 1. Touch the Alarm Off button to stop the alarm.<br>2. Check for errors. |
| Pump-in does not complete after 6 minutes. | 1. The solution bottle is detached.<br>2. External hose was not connected to the drain/fill port if reagent supply is coming from an external source.<br>3. Tubing is clogged. | 1. Reconnect the solution bottle.<br>2. Properly close the retort lid.<br>3. Connect the hose to the fill/drain port.<br>4. Contact Sakura Technical Support. |
| Low solution was detected during pump-in. | 1. The solution bottle or paraffin container did not contain solution or paraffin. | 1. Add at least the specified volume of solution or paraffin to the reagent bottle or paraffin container. |
| Solution did not reach the level sensors. | 1. There was not enough solution in the reagent bottles or paraffin container. | 1. Add at least the specified volume of solution or paraffin to the reagent bottle or paraffin container. |
| Pump-out does not complete after 6 minutes | 1. The solution bottle is detached.<br>2. External hose was not connected to the drain/fill port if reagent supply is coming from an external source. | 1. Reconnect the solution bottle.<br>2. Connect the hose to the fill/drain port.<br>3. Contact Sakura Technical Support. |
| Unable to establish pressure or vacuum inside the retort. | 1. Retort latch is not secured.<br>2. Retort gasket is leaking.<br>3. A line connection or union is loose. | 1. Close the retort lid properly ensuring the handle is in the closed position.<br>2. Check the retort gasket if the gasket appears cracked or worn, replace the gasket.<br>3. Contact Sakura Technical Support. |
| The temperature of paraffin station 11-14 reached 80°C or above. | 1. Paraffin heated to 80°C or above was placed in station 11-14. | 1. Wait for stations 11-14 temperatures to come down. Do not place paraffin (or other substance) heated to 80°C or above in station 11-14. |

# TROUBLESHOOTING

## ERROR LOG

| Error Code | Message | Possible Causes | Action |
|---|---|---|---|
| 3 | Power was input following a power outage. | The system power was turned on. | Since recovery of power cannot be recognized, when the power is turned on "Error 3" is registered as error information. This is not a problem. |
| | | The power cable was disconnected. | Provide a dedicated power outlet to prevent inadvertent pull-out of the cable, or implement measures to prevent the power cable from getting caught by a leg, etc. |
| | | The power-supply facility is lacking capacity. | Connect to a power-supply facility of 15 A or more. |
| 7 | A power outage occurred. | The power was cut off during tissue processing or retort cleaning (the power switch was turned off or power outage occurred), and subsequently the power has been restored. | Recovery of power is recognized, so when the power is turned on "Error 7" is registered as error information. This is not a problem. |
| 8 | An atmospheric pressure recovery error occurred. | Contact the dealer. | |
| 10 | Solution was detected by an overflow sensor during pump-in, so pump-in was stopped. | The solution level reached the overflow sensor during supply to the retort. | This is not a problem if the solution level in the retort was actually at the overflow sensor. |
| | | The solution level in the retort does not reach the 4.2L level sensor (second sensor from the top) during supply to the retort. | Contact the dealer. |
| 11 | Pump-in does not complete after 6 minutes. | The solution bottle is detached. | Reconnect the solution bottle. |
| | | Line is clogged. | Contact Sakura Technical Support. |
| | | Hose was not connected to the drain/fill port when an attempt was made to supply from the external container connected to the drain/fill port (station 18). | Connect a hose to the drain/fill port. |
| | | Paraffin melt check was performed when paraffin was not yet molten, and consequently paraffin was pumped in. Accordingly, the pipe was clogged. | Before performing paraffin melt check, confirm that paraffin is fully molten. Confirm that paraffin is molten, and then try pumping in paraffin via manual operation. Clogging of the pipe may be resolved. |
| | | The preset temperature of the paraffin oven is low relative to the paraffin in use, and therefore solid paraffin pellets were pumped in as a result, the pipe was clogged. | Set a higher paraffin oven temperature. After confirming that paraffin is molten, try pumping in paraffin via manual operation. Clogging of the pipe may be resolved. |

# TROUBLESHOOTING

| Error Code | Message | Possible Causes | Action |
|---|---|---|---|
| 11 (cont'd) | Pump-in does not complete after 6 minutes. | Highly viscous solution was used. | If any solution not specified in "Usable Solutions" is to be used, consult the dealer. |
| | | Other than the above | Contact the dealer. |
| 12 | Pump-in did not complete after 3 times. | Check the cause and action for Error 11. | |
| 13 | The preset pressure is not reached after 1 minute of decompression through pump-in. | The retort lid gasket is leaking. | Check the retort lid gasket. If the gasket is installed in reverse or partially projecting, install the gasket correctly. If the gasket is damaged or significantly worn (collapsed), replace it with a new one. Normally, the retort lid gasket should be replaced every six months. |
| | | Other than the above | Contact the dealer. |
| 14 | Low (empty) solution was detected during pump-in. | The solution bottle or paraffin container did not contain solution or paraffin. | Add at least the specified volume of solution or paraffin to the solution bottle or paraffin container. |
| | | Other than the above | Contact the dealer. |
| 16 | A "pump-in failure" occurred during the second or subsequent pump-in. | Check the cause and action for Error 11. | |
| 17 | Solution did not reach the level sensor at the assurance position after pump-in. | Solution did not reach the level sensor at the assurance position during tissue processing when the system was set to assure solution level. | Add at least the specified volume of solution or paraffin to the solution bottle or paraffin container that generated the error. This is not a problem if Solution Manager was activated and added solution or paraffin automatically. |
| 20 | Preset pressure is not reached after 1 minute of pressurization with the gate valve closed. | Check the cause and action for Error 13. | |
| 21 | Preset pressure is not reached after 3 repeated pressurizations for 1 minute each with the gate valve closed. | Check the cause and action for Error 13. | |

| Error Code | Message | Possible Causes | Action |
|---|---|---|---|
| 22 | Pump-out does not complete after 6 minutes. | The solution bottle is detached. | Reconnect the solution bottle. |
| | | Line is clogged. | Contact Sakura Technical Support. |
| | | Hose was not connected to the drain/fill port when an attempt was made to drain to the external container connected to the drain/fill port (station 18). | Connect a hose to the drain/fill port. |
| | | Highly viscous solution was used. | If any solution not specified in "Usable Solutions" is to be used, consult the dealer. |
| | | Other than the above | Contact the dealer. |
| 23 | Pump-out did not complete after 2 attempts of 6 minutes each | Check the cause and action for Error 22. | |
| 111 | Temperature control of paraffin station 11 was disabled (temperature dropped). | Addition was not touched on the operation screen with solid paraffin in station 11. | Wait for the station 11 temperature to rise or put molten paraffin. |
| 112 | Temperature control of paraffin station 12 was disabled (temperature dropped). | Addition was not touched on the operation screen with solid paraffin in station 12. | Wait for the station 12 temperature to rise or put molten paraffin. |
| 113 | Temperature control of paraffin station 13 was disabled (temperature dropped). | Addition was not touched on the operation screen with solid paraffin in station 13. | Wait for the station 13 temperature to rise or put molten paraffin. |
| 114 | Temperature control of paraffin station 14 was disabled (temperature dropped). | Addition was not touched on the operation screen with solid paraffin in station 14. | Wait for the station 14 temperature to rise or put molten paraffin. |
| 131 | The temperature of paraffin station 11 reached 80°C or above. | Paraffin (or other substance) heated to 80°C or above was placed in station 11. | Wait for the station 11 temperature to come down. Do not place paraffin (or other substance) heated to 80°C or above in station 11. |
| 132 | The temperature of paraffin station 12 reached 80°C or above. | Paraffin (or other substance) heated to 80°C or above was placed in station 12. | Wait for the station 12 temperature to come down. Do not place paraffin (or other substance) heated to 80°C or above in station 12. |
| 133 | The temperature of paraffin station 13 reached 80°C or above. | Paraffin (or other substance) heated to 80°C or above was placed in station 13. | Wait for the station 13 temperature to come down. Do not place paraffin (or other substance) heated to 80°C or above in station 13. |

# TROUBLESHOOTING

| Error Code | Message | Possible Causes | Action |
|---|---|---|---|
| 134 | The temperature of paraffin station 14 reached 80°C or above. | Paraffin (or other substance) heated to 80°C or above was placed in station 14. | Wait for the station 14 temperature to come down. Do not place paraffin (or other substance) heated to 80°C or above in station 14. |
| 210 | Pump-in did not complete within the specified time, but the level sensor at the assurance position is detecting solution. | Paraffin melt check was performed when paraffin was not yet molten, and consequently paraffin was pumped in. Accordingly, the pipe was clogged. | Before performing paraffin melt check, confirm that paraffin is fully molten. Confirm that paraffin is molten, and then try pumping in paraffin via manual operation. Clogging of the pipe may be resolved. |
| | | The preset temperature of the paraffin oven is low relative to the paraffin in use, and therefore solid paraffin pellets were pumped in. as a result, the pipe was clogged. | Set a higher paraffin oven temperature. After confirming that paraffin is molten, try pumping in paraffin via manual operation. Clogging of the pipe may be resolved. |
| | | Highly viscous solution was used. | If any solution not specified in "Usable Solutions" is to be used, consult the dealer. |
| 241 | Supply to the left bulk reservoir (station 19) does not complete after 6 minutes. | Hose is not connected to the drain/fill port used for supplying to the left bulk reservoir (station 19). | Connect a hose to the drain/fill port used for supplying to the left bulk reservoir (station 19). |
| | | Highly viscous solution was used. | If any solution not specified in "Usable Solutions" is to be used, consult the dealer. |
| | | Other than the above | Contact the dealer. |
| 244 | The external solution container did not contain enough solution when supply to the left bulk reservoir (Station 19) was started. | The external solution container became empty during supply, before the solution level reached the "Full" position sensor in the bulk reservoir. | Replace the external solution container with one containing solution. |
| 251 | Supply to the right bulk reservoir (station 20) does not complete after 6 minutes. | Hose is not connected to the drain/fill port used for supplying to the right bulk reservoir (station 20). | Connect a hose to the drain/fill port used for supplying to the right bulk reservoir (station 20). |
| | | Highly viscous solution was used. | If any solution not specified in "Usable Solutions" is to be used, consult the dealer. |
| | | Other than the above | Contact the dealer. |

| Error Code | Message | Possible Causes | Action |
|---|---|---|---|
| 801 | The file is not found in the USB flash memory. | Data export was attempted without connecting the USB flash memory. | Connect the USB flash memory supplied with the system. |
| | | Data was exported when the connected USB flash memory was already storing the maximum number of files. | Delete unnecessary files in the USB flash memory or connect a different USB flash memory. |
| | | Data was exported by connecting a USB flash memory formatted by a file system other than FAT. | Connect a FAT-formatted USB flash memory. |
| | | A USB flash memory other than the one supplied with the system was connected. | Connect the USB flash memory supplied with the system. |
| 804 | The USB flash memory cannot be recognized. | No USB flash memory is connected to the system. | Connect the USB flash memory supplied with the system. |
| | | A USB flash memory other than the one supplied with the system was connected. | Connect the USB flash memory supplied with the system. |
| 806 | The USB flash memory was not removed according to the correct procedure. | The user removed the USB flash memory without following the correct removal procedure. | Remove the USB flash memory according to the correct removal procedure. |

# SERVICE AND REPLACEMENT PARTS

## Service Information

### When a Problem Occurs

When a problem occurs during operation of the Tissue-Tek® VIP® 6 Vacuum Infiltration Processor, refer to Section 7, Troubleshooting, to determine the most likely cause of the malfunction and to obtain recommended corrective actions. (Avoid problems by carefully following the proper operation and maintenance procedures described in this manual). If the problem cannot be solved and an instrument failure is apparent, our Technical Support Department is available to assist you.

Before calling for instrument service, please have **model number, installation date, and warranty period** ready for our Technical Support Department Representative. For your convenience and reference, record this information in the blanks below.

Model Number _____
Serial Number _____
Installation Date _____
Warranty Period _____

### Where to Call for Service

If located **within the United States**, contact the Technical Support Department of Sakura Finetek USA, Inc. by calling toll free:

(800) 725-8723, Option 2

**In countries other than the United States**, contact the nearest authorized Sakura instrument distributor or representative for service information and assistance.

## Replacement Accessory Items

| Product Number | Description |
|---|---|
| 1520 | Retort Gasket |
| 1550 | Paraffin Scraper, large |
| 5265 | Cassette Baskets |

## Replacement Parts

| Product Number | Description |
|---|---|
| 6034 | Paraffin Scraper, small |
| 6035 | Reagent Bottle, complete |
| 6036 | Reagent Bottle Labels |
| 6045 | Paraffin Waste Bag (12/cs) |
| 6160 | Fume Filters (2/pk) |
| 7109 | Basket Transport Tray |
| A3-60-4304 | USB Memory |
| F60-528-00 | Solution Exchange Hoses |
| F60-499-00 | Paraffin Waste Reservoir |
| F60-493-00 | Paraffin Reservoir, large |
| F60-492-00 | Paraffin Reservoir, small |
| D9-80-0115 | Solution Exchange Hose Clip |
| 0002604-01 | Operating Manual |
| 070-626-00 | Control Panel Protection Sheet |

### Where to Order

**In the United States**, the above replacement accessory items and replacement parts may be ordered directly from:

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

By calling toll free:
1-800-725-8723, Option 1

**Outside of the United States**, contact the nearest authorized Tissue-Tek instrument dealer.

## Tissue-Tek® VIP® 6
## Preservice Checklist

For reference, record the following information:

Model/Serial Number: _____     Installation Date: _____

1.  Has Section, 7, Troubleshooting been reviewed?  ☐ Yes  ☐ No

2.  When the power is turned ON, does the screen show an appropriate display?  ☐ Yes  ☐ No

    ● If NO, is the unit plugged into a live AC electrical outlet?  ☐ Yes  ☐ No

3.  Are all reagent bottles securely connected to the quick-release connectors?  ☐ Yes  ☐ No

4.  Are all reagent bottles filled to their proper levels?  ☐ Yes  ☐ No

5.  Are any warnings being displayed?  ☐ Yes  ☐ No

    ● If so, have they all been corrected and cleared?

    ● If you are unable to clear a warning, what does it say?

    _____

    _____

6.  Are any errors listed in the "Error Information" screen?  ☐ Yes  ☐ No

    ● If so, please list the information from that screen"

7.  Do the oven and retort temperatures regulate properly?  ☐ Yes  ☐ No
    Oven Temp:___°C
    Retort Temp:____°C

8.  Which station number is highlighted?  _____

9.  Is an "Operation" being displayed? If YES which?  ☐ Yes  ☐ No

    Pump In ☐      Pump Out ☐      Move Station ☐

10. Does the "Retort" display show an operation? If YES which?  ☐ Yes  ☐ No

    Vacuum ☐      Ambient ☐      Pressure ☐

11. Is there fluid in the retort?  ☐ Yes  ☐ No

    ● If YES, how much? _____
      CAUTION: Do not attempt to open the retort if the display shows either "Vacuum" or "Pressure."

12. Does the pump operate?  ☐ Yes  ☐ No

13. What is the level of vacuum and/or pressure?

    Pressure: _____kg/cm$^2$    Vacuum: _____cm Hg

14. Are the time and date being displayed?  ☐ Yes  ☐ No

# EXAMPLE PROCESSING

## Sample Programs

Following are two examples of programs, one for a routine overnight run and the other for a rush or biopsy run. Example reagents and concentrates are shown also. The programs are intended to be used as a guide only; modify them to satisfy the individual needs of your laboratory. Following the example programs are several pages on which you can write your own individual programs.

# EXAMPLE PROCESSING (TO BE USED AS A GUIDE ONLY)

## ROUTINE OVERNIGHT RUN

| Station No. | Solution | Code No. | Conc. | Time (hr:min) | Set Temp. | P/V | Mix |
|---|---|---|---|---|---|---|---|
| 1 | Neutral Buffered Formalin | 05 | 10% | 2:00 | 40° | On | Slow |
| 2 | Neutral Buffered Formalin | 05 | 10% | 2:00 | 40° | On | Slow |
| 3 | Ethanol | 12 | 65% | 0:30 | 40° | On | Slow |
| 4 | Ethanol | 12 | 80% | 0:30 | 40° | On | Slow |
| 5 | Ethanol | 12 | 95% | 0:45 | 40° | On | Slow |
| 6 | Ethanol | 12 | 95% | 0:45 | 40° | On | Slow |
| 7 | Ethanol | 12 | 100% | 0:45 | 40° | On | Slow |
| 8 | Ethanol | 12 | 100% | 0:45 | 40° | On | Slow |
| 9 | Xylene | 20 | 100% | 0:45 | 40° | On | Slow |
| 10 | Xylene | 20 | 100% | 0:30 | 40° | On | Slow |
| 11 | VIP Paraffin | 30 | | 0:30 | 58° | On | Slow |
| 12 | VIP Paraffin | 30 | | 0:30 | 58° | On | Slow |
| 13 | VIP Paraffin | 30 | | 0:30 | 58° | On | Slow |
| 14 | VIP Paraffin | 30 | | 0:30 | 58° | On | Slow |

Total Processing Time:     12.7 Hours

## ROUTINE OVERNIGHT RUN

| Station No. | Solution | Code No. | Conc. | Time (hr:min) | Set Temp. | P/V | Mix |
|---|---|---|---|---|---|---|---|
| 1 | Neutral Buffered Formalin | 05 | 10% | 0:30 | 40° | On | Cont |
| 2 | Neutral Buffered Formalin | 05 | 10% | 0:30 | 40° | On | Cont |
| 3 | Ethanol | 12 | 65% | 0:10 | 40° | On | Cont |
| 4 | Ethanol | 12 | 80% | 0:10 | 40° | On | Cont |
| 5 | Ethanol | 12 | 95% | 0:10 | 40° | On | Cont |
| 6 | Ethanol | 12 | 95% | 0:15 | 40° | On | Cont |
| 7 | Ethanol | 12 | 100% | 0:15 | 40° | On | Cont |
| 8 | Ethanol | 12 | 100% | 0:15 | 40° | On | Cont |
| 9 | Xylene | 20 | 100% | 0:15 | - | On | Cont |
| 10 | Xylene | 20 | 100% | 0:15 | - | On | Cont |
| 11 | VIP Paraffin | 30 | | 0:15 | 58° | On | Cont |
| 12 | VIP Paraffin | 30 | | 0:15 | 58° | On | Cont |
| 13 | VIP Paraffin | 30 | | 0:15 | 58° | On | Cont |
| 14 | VIP Paraffin | 30 | | 0:15 | 58° | On | Cont |

Total Processing Time:     5 Hours

PROGRAM

| Station No. | Solution | Code No. | Conc. | Time (hr:min) | Set Temp. | P/V | Mix |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |

Total Processing Time:

PROGRAM

| Station No. | Solution | Code No. | Conc. | Time (hr:min) | Set Temp. | P/V | Mix |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |

Total Processing Time: