INSTRUCTION MANUAL

TPE TUBE SEALER XL

Model 5160 Controller

Model 5163 Sealing Head

51600833-01 Rev. B

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Vante®

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Part No. 51600833-01 Rev. B

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Preliminary Information

Document Scope

This manual is intended as a guide for the setup, adjustment and operation of the Model 5160 TPE Sealing System. The information contained herein is based upon technical data that has been verified and validated by Vante and is believed to be adequate for the intended use of the product.

Intended Audience

This manual is intended for use by personnel who have technical skills in, and a thorough understanding of, the procedures for welding and/or forming thermoplastic materials, and who understand that this product is to be used at their own discretion and risk.

Exclusions and Limits of Liability

Vante makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information. Vante assumes no liability or obligation nor guarantees product performance. The contents of this manual are not to be construed as license to operate under, nor a recommendation to infringe upon, any patents.

Proprietary Information

User Alerts

Throughout this document, WARNINGS, CAUTIONS and NOTES are employed to notify the user of important and/or critical information.

WARNING:  A Warning indicates a condition or procedure that could result in bodily harm. A Warning is enclosed with a bold-line box.

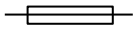
CAUTION: A Caution indicates a condition or procedure that could result in damage to the unit. A Caution is enclosed with a single-line box.

NOTE: A Note indicates important and/or useful information.

Safety Symbols

Caution, risk of electric shock

Caution (refer to accompanying documents)



Fuse

I

On

O

Off

Earth (ground) terminal

CE Mark Information

For inquires related to the CE marking of this product, please contact Vante® at 3480 E. Britannia Dr., Suite 120 Tucson, AZ 85706, +1-520-881-6555, +1-520-323-9055 (fax).

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List of Tables and Figures

1. Overview

The Model 5160 Controller which, when coupled with the Model 5163 Sealing Head, will provide automated sealing for a wide variety of thermoplastic materials and sizes.

This sealing system is intended for use by personnel, trained by their organization in using this equipment to seal thermoplastic elastomer (TPE) and other thermoplastic tubing or parts in a controlled environment. The sealing system must be always handled with proper care.

Vante devices meet or exceed appropriate electric safety standards and pose no electrical shock hazard when used with properly fused and grounded outlets.

Table 1-1.1 Product Specifications

Manufacturer Name	Vante®
Device Name	TPE Tube Sealer XL
Mechanical Controller: 5160 Sealing Head: 5163	Dimensions 15.2 x 10.9 x 6.4 in. (38.6 x 27.7 x 16.2 cm) 13 x 2.75 x 2.25 in. (33 x 7 x 5.7 cm)
Operating weight:	14 lbs. (6.3 kg) and 12.5lbs (6kg)
Shipping weight:	35 lbs (16 kg)
Electrical	
Power Input	120VAC +/-10% 50/60 Hz 6.3A 230VAC +/-10% 50/60 Hz 4A
Fuses	2 x 250 VAC, 5 x 20 mm T6.3A 2 x 250 VAC, 5 x 20 mm T4A
Power output	< 500 watts AC
Air Supply Requirements	
Line pressure (regulated)	90 PSI-100 PSI. Clean, dry, regulated and filtered constant air pressure.
CFM (min)	5 CFM
Environmental Specifications	Controlled environment
Use	Indoor use only
Operational Temperature	15°C to 35°C
Storage temperature	-25 °C to 40°C
Humidity	70% maximum relative humidity, non-condensing
Altitude	3000 meters max
Over-voltage Category	II
Pollution Degree	2
Seal Time (Max)	480sec
Seal Temp	100°C - 195 °C (Max)

1.1. Component Identification

The Model 5160 Controller, when coupled with the Model 5163 Sealing Head, becomes a system. The following figures: Figure 1-1, Figure 1-2, Figure 1-3, and Figure 1-4 identify the components of the system.

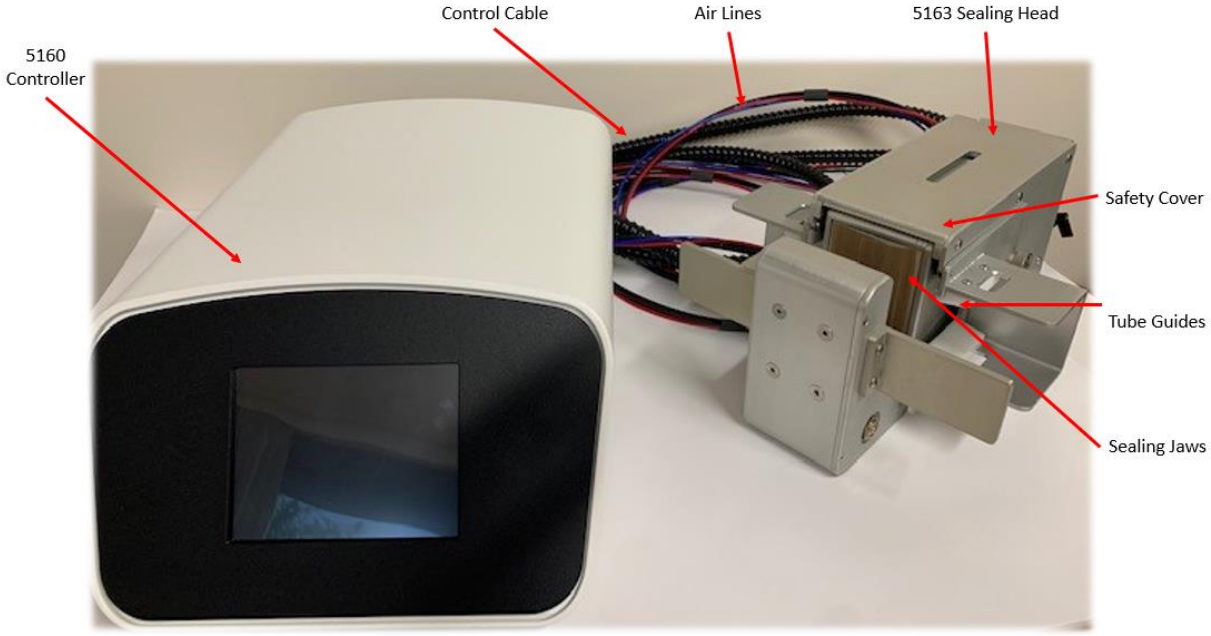

Figure 1-1 TPE Sealing System Components

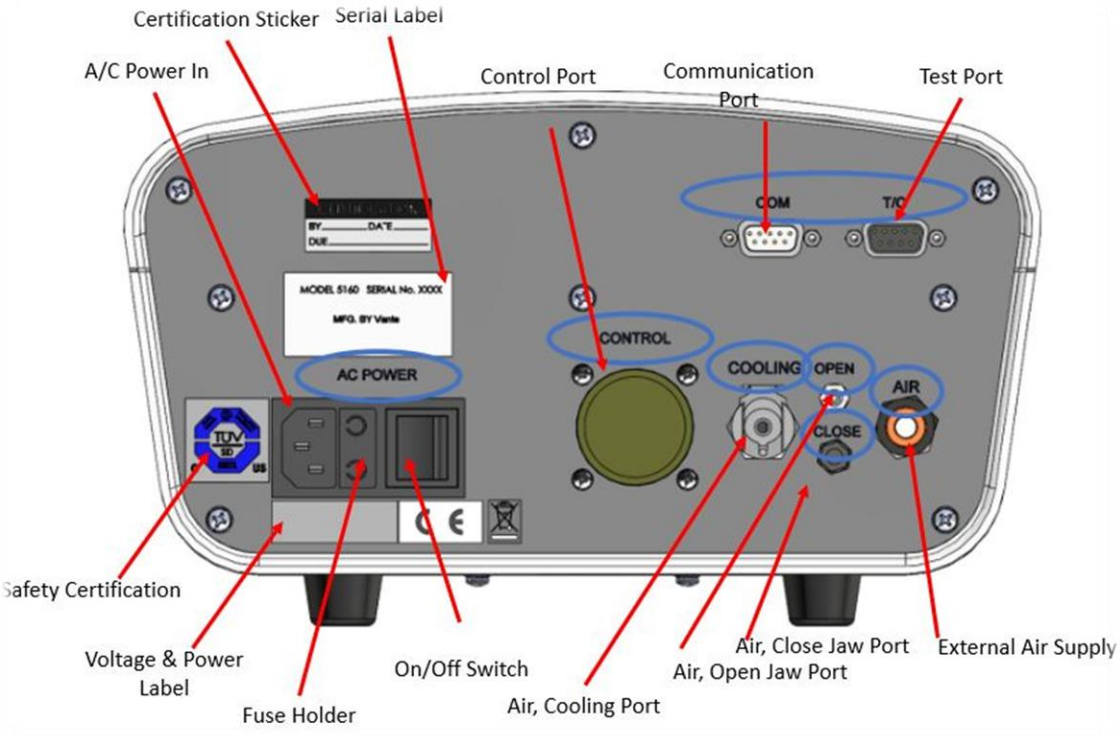

Figure 1-2 Product Labeling and Components – Rear View

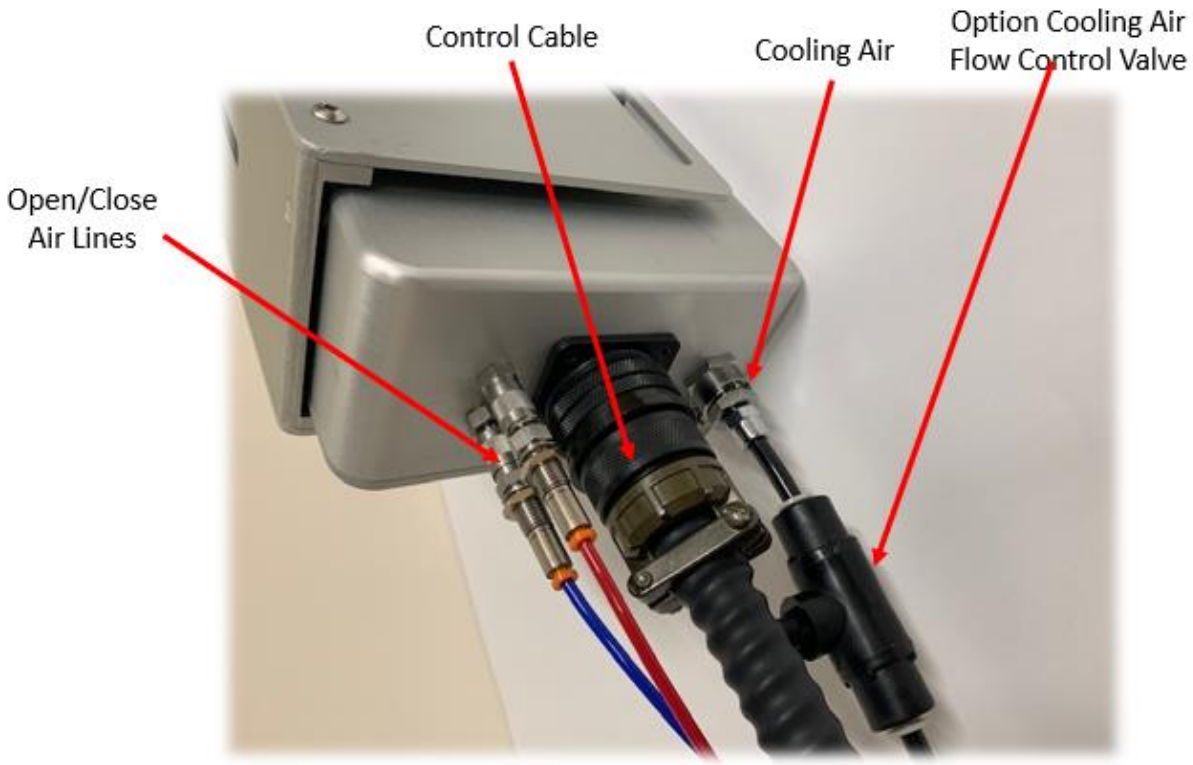

Figure 1-3 Sealing Head Connections

115 VAC, 50/60 Hz, 6.3A FUSE T6.3A, 250 VAC (X2)	230 VAC, 50/60 Hz, 4A FUSE T4A, 250 VAC (X2)

Figure 1-4 Voltage & Fuse Labels

1.1 Operating Environment

The Model 5160 TPE Sealing system will perform effectively when environmental conditions are considered comfortable. Variations in actual environmental conditions and/or the level of contamination and/or moisture on the Sealing Head jaws and/or tubing exterior may affect actual performance. The Sealing Head and the outside of tubing should be dry and clean.

1.2 Recommended Tubing

Table 1-2 Specifications of Tubing to be sealed, shows typical size category and dimension ranges of tubing. The system is designed to seal TPE and other low or non-RF reactive thermoplastic tubing typically found in biopharmaceutical manufacturing environments.

Table 1-2 Specifications of Tubing to be sealed

Sealing Head Model	Tubing Category	Outside Diameter Range	Wall Thickness
5163	TPE	1.0 – 1.5 in.	0.125 – 0.25 in.

More specifically, the following tube sizes can be processed with this device. Suggested recipes and process instructions can be provided by Vante.

Table 1-3 Applicable Tubes

TPE Tube Sizes	-¾" ID x 1.0" OD -¾" ID x 1.125" OD -¾" ID x 1.250" OD -1.0" ID x 1.375" OD -1.0" ID x 1.500" OD
TPE Tube Brands	Designed to work with any TPE Brand
TPE Tube Treatments	Natural, Autoclaved, Gamma Irradiated
TPE Tube Conditions	Dry, Wet, Filled Note: Pressure must be exhausted to allow successful filling on filled tubes.

1.3 Operational and Performance Safety Features

The Controller and Sealing Head have incorporated a number of operational and performance safety features to reduce the safety risk and to improve operational performance.

- The Controller has a thermal protection circuit, which will limit operational temperatures to 210°C. Note the programming temperature can only be set to 195°C.

- The software performs an operational check to abort the sealing process and register an error if it detects a temperature difference of greater than 50°C between the heating elements.
- Safety cover on the Sealing Head completely encloses the heating elements preventing any direct user contact with heating elements while the cover is locked shut.
- An automatic locking mechanism on the Sealing Head is activated during the sealing process preventing accidental opening of the safety cover and interruption of the sealing process.
- User may abort sealing process at any time by pressing the Abort button on the display.
- The Sealing Head is equipped with a magnetic sensor that will not allow the sealing cycle to start unless the safety cover is properly closed.

2. Procedures for Use

2.2 Installation

2.1.1 Remove the sealing system components from their respective shipping cartons and visually inspect them for obvious damage. Contact Vante if any damage is found. The sealing system must always be handled with care. If possible, retain shipping containers and packing materials for future use.

2.1.2 Setup the 5160 Controller on a flat secure surface near the area of intended operation.

NOTE: Be sure to leave adequate space to the rear of unit to allow the AC cord to be easily connected. Secure the cord so that it does not pose tripping or another type of hazard.

2.1.3 The Sealer Control Cable is configured the same on both ends. Connect the Sealing Head to the Controller by aligning the notch of the PLUG on the Sealer Cable and RECEPTACLE on the Controller and Sealing Head. Once the notch is aligned, turn the ring on the male connector clockwise fully (several rotations) until the connectors are fully seated and locked.

2.1.4 Attach the Pneumatic Cylinder Control Lines onto the appropriate matching quick connect fittings on the Controller and Sealing Head until they snap and lock into place. The connectors on the air hoses are such that they cannot be connected to the wrong connections on the Controller and Sealing Head.

2.1.5 Attach the Cooling Air Hose Assembly by inserting the male ends of the quick connect fittings on the hose assembly into the female connects on the Controller and Sealing Head. The connections on each end of the hose assembly are identical.

2.1.6 Connect the 1/4 in. outer diameter air supply tube (included) to the back of the Controller by pressing the tube firmly into the tube fitting labeled 'AIR IN'. Connect the other end of the air supply tube to a compressed air source (90 PSI filtered air recommended, see Table 1-1 for air supply requirements).

CAUTION: Failure to set the pressure correctly can result in poor seal results and/or damage to the equipment. **DO NOT** cycle power on the Controller if the Sealing Head is not attached. **DO NOT** connect or disconnect Sealing Head if power is on.

2.1.7 Connect the power cord to the power input receptacle on the back of the Controller and plug it into an appropriate power source (see Controller serial and fuse label).

NOTE: Check to see that the power cord plug matches the power receptacle for the country in which the sealer system is being used. If it does not, contact Vante.

2.1.8 If installed, the optional flow control valve can be adjusted. Note, the purpose of this valve is to limit the amount of compressed air used during cooling and also reduce the noise level when cooling. Slightly reducing this airflow may add some seconds to the cycle duration but does not affect seal quality provided there is at least half flow.

2.1.9 Turn on the unit by pressing the power switch on the back of the Controller.

2.3 Modes of Operation

2.3.1 USER Mode. The sealer is automatically in USER mode upon powering up of the machine. The control screen for user mode is shown in Figure 1-1. This mode allows users to select recipes and start/stop cycles. The USER may also press the log-out button to logon as an ADMIN provided a valid username and password is known.

2.3.2 ADMIN Mode. This mode allows for establishing and/or modifying recipe parameters, renaming recipes, resetting counters, and changing ADMIN password. To access this mode, press the logout key on the screen and enter a valid admin username and password. This will enable more features on the control screen as seen in Figure 2-3.
The system allows up to 10 unique ADMIN's. Factory default usernames are admin0, admin1, …. Admin9. Factory default passwords are 0000000# Both are case sensitive.

2.4 User Interface

Once the Controller is powered up, the user will be presented with the main control screen, which provides an interface to the core functions of the device, see Figure 2-1.

Seals are conducted in cycles, which are comprised of the following phases: heating, melting, and cooling. During the heating phase, the heating elements in the sealing head are activated and the temperature is monitored until a predetermined target, seal temperature, has been reached. This initiates the melting phase, in which the heating elements are dynamically controlled to maintain the seal temperature for a predetermined amount of time, seal time. Once the seal time has elapsed, the cooling phase begins and air is forced through the disabled heating elements until the temperature cools sufficiently to a temperature, cool temp, to stabilize and safely allow access to the tubing within.

Configurable pairs of seal temperature and seal time parameters are associated with a name and stored on the system. Such a named pair is called a recipe. Though up to sixteen distinct recipes may exist, exactly one is active at any given time. It is the parameters of the active recipe that are utilized throughout the different phases of the cycle.

Figure 2-1 USER Mode Main Screen

The following list describes the various components of the USER control screen shown in Figure 2-1.

1. **Active Recipe Name**. The name of the active recipe.
2. **Seal Temp**. The seal temperature, in degrees Celsius, that is associated with the active recipe.
3. **Seal Time**. The seal time, in seconds, that is associated with the active recipe. This is the amount of time of heating.
4. **Pressure**. This is the pressure setting utilized to define the amount of force applied by the device to create the seal.
5. **Active Recipe Selection Buttons**. These buttons allow the user to cycle through the available recipes. The recipe with the name that is currently displayed will become active by confirming the change to that recipe using the green checkbox. When the active recipe changes, its associated seal temperature and seal time parameters are displayed.
6. **Seal Temperature Selection Buttons**. This button is only enabled when logged in as an admin. It allows changing the seal temperature.
7. **Seal Time Selection Buttons**. This button is only enabled when logged in as an admin. It allows changing the seal time.
8. **Pressure Selection Buttons**. This button is only enable when logged in as an admin. It allows changing of the pressure level that effects the amount of force applied to create the seal.
9. **Moving jaw temperature meter**. This meter shows the approximate temperature, in degrees Celsius, of the heating element in the moving jaw of the currently connected sealing head. The thin white vertical bar moves horizontally across the color gradient as the temperature changes.

10. **Fixed jaw temperature meter**. This meter shows the approximate temperature, in degrees Celsius, of the heating element in the fixed jaw of the currently connected sealing head. The thin white vertical bar moves horizontally across the color gradient as the temperature changes.
11. **Cycle Count**. The number of cycles performed on the device. The value inside parentheses is the number of cycles performed since the device was last reset (total count). The value outside parentheses is the number of cycles performed since the unit was last powered on (session count).
12. **Status**. Displays the current status of the unit. When executing a cycle, the active phase will be shown. If the safety cover on the sealing head is in the open position, "JAW OPEN" will be displayed and a cycle will be prevented from initiating. If the safety cover is in the closed position, "IDLE" will be displayed and the start button will be illuminated green and will be active. Other status levels are "HEATING" when the Sealing Head jaws are coming up to the seal temperature, "MELTING" when the jaws are at temperature and the time is in progress, and "COOLING" when the cooling phase of the cycle is in progress.
13. **Cycle Duration**. The duration, in minutes and seconds, of the last cycle executed in the session. When a cycle is active, this becomes a stopwatch counter.
14. **Start/Stop Button**. If the unit is in the idle state, a cycle may be initiated by pressing the start button. If a cycle is already executing either the heating or melting phase, this button will become a stop button that can be used to abort the cycle. When aborting, the cycle will enter the cooling phase if necessary.
15. **Log-Out Button**. The log-out button is used to exit the main control screen and return to the login screen to logon as an admin.
16. **Settings Button**. This button is only enabled when logged in as an admin. Pressing this button will take the user to the system settings screen.
17. **Red X Button**, Reference Figure 2-2. This button is for discarding any changes made.
18. **Green Check Button**, Reference Figure 2-2. This button is for confirmation of any changes made.

2.5 Changing Recipe Selection

When logged in as a USER, the recipe selected may be changed by using the arrow up/down keys to scroll through the recipes. If changing the recipe, select the recipe you wish to use and confirm the change by pressing the green check mark button on the screen, reference Figure 2-2. To go back to the previous active recipe, press the red X button on the screen.

In addition to changing the recipe selection, the correct tube guides must also be installed. The tube guides are labeled according to the nominal outside diameter of the tubing.

Figure 2-2 Main Screen, Change Confirmation

2.6 Admin Login

To access this mode, press the logout key on the screen and enter a valid Admin Username and Admin Password. This will enable more features on the control screen as seen in Figure 2-3**.** The system allows up to 10 unique ADMIN's. Factory default usernames are ADMIN0, ADMIN1, etc. thru ADMIN9. Factory default passwords are *0000000#*

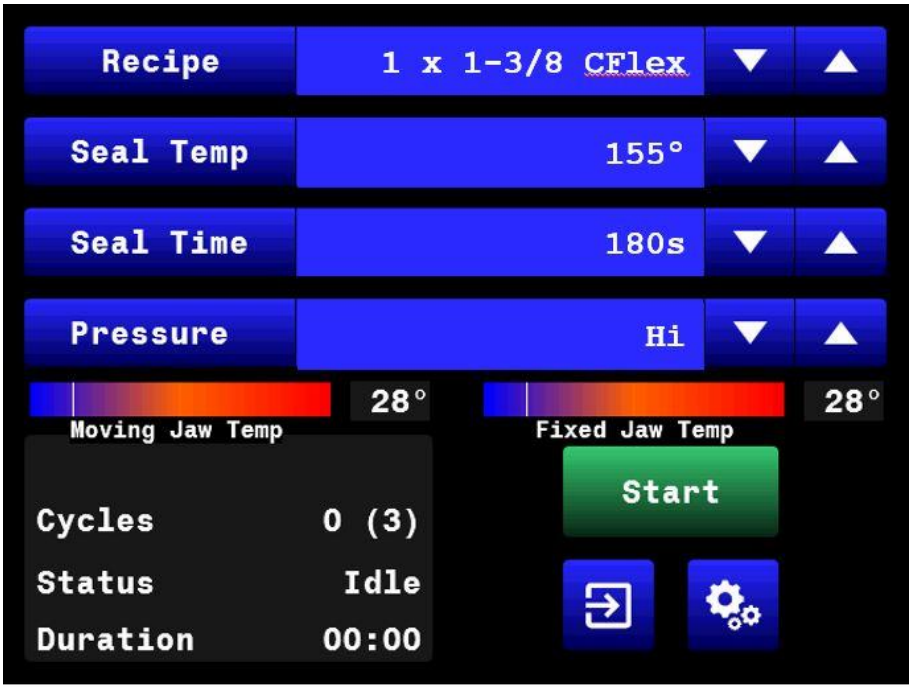

Figure 2-3 Admin Mode, Main Screen

2.7 Changing Recipe Names

When logged in as an ADMIN, changing the recipe names can be done by tapping the field that displays the existing recipe name. A page containing a full alpha-numeric keyboard and text box will appear, reference Figure 2-4. The recipe name can be any combination of text, digits, or special characters and is limited to a total of 18 characters in length (including spaces).

Figure 2-4 Recipe Naming

2.8 Changing Recipe Parameters

When logged in as an ADMIN, changes can be made to the recipe parameters. Making changes to recipe parameters requires explicit confirmation. Whenever changes are made, before those changes can be utilized and saved to the recipe, the admin must either confirm or cancel them by pressing either the Red X button or Green Check Button, reference Figure 2-2. While changes are pending, no cycles can be performed.

1. **Seal temperature increment/decrement buttons**. These buttons increment and decrement the seal temperature parameter associated with the active recipe. They are enabled only when an administrator is logged in.
2. **Seal time increment/decrement buttons**. These buttons increment and decrement the seal time parameter associated with the active recipe. They are enabled only when an administrator is logged in.
3. **Pressure increment/decrement buttons**. These buttons allow you to select options for the pressure setting that controls the amount of force applied when creating a seal.

2.9 System Settings

In addition to recipe parameters, an ADMIN may also change the system setting of Cool Temp, reset counters, and change their username and password. These settings are accessed from the system settings screen, Figure 2-5 which is reached by pressing the settings button on the main control screen, reference Figure 2-3.

Figure 2-5 System Settings Screen

The following list describes the various components of the system settings screen shown in Figure 2.6:

1. **Cool temperature**. The temperature at which the cooling phase of a cycle terminates (see Cycle Execution). This value is typically unchanging but it can be adjusted if the situation requires it.
2. **Cool temperature increment/decrement buttons**. Tap or hold these buttons increment and decrement the cool temperature value.
3. **Set Admin User button**. Tap this button to change the names of each Admin User for different administrators. A keyboard screen will be shown (see Figure 2.7). Each Admin User will be required to enter the new username twice. The action may be canceled at any time.
4. **Set Admin Password button**. Tap this button to change the password for administrators. A keyboard screen will be shown. Users will be required to enter the new password twice. The action may be canceled at any time. All passwords must meet the following criteria:
    a. At least eight characters long.
    b. Must contain at least one digit.
    c. Must contain at least one non-alphanumeric symbol.
5. **Reset Counters button.** The reset button allows an administrator to clear the total cycle count. Before the operation is actually performed, the administrator must explicitly confirm or cancel the decision.
6. **Back button**. Pressing the back button will return the user to the main control screen. Any pending changes are discarded.

7. **Cancel button.** This button becomes active whenever changes to the configuration occur. It stays active until all such changes have been submitted or canceled. Pressing this button performs the cancel function, which discards pending changes.
8. **Apply button.** This button becomes active whenever changes to the configuration occur. It stays active until all such changes have been submitted or canceled. Pressing this button submits the pending changes, causing them to be saved.
9. **Serial number.** The serial number of the controller unit.
10. **Software Version.** The version of the software running on the device.

2.10 Errors

- If power is lost during a cycle, an error message stating that the cycle was lost will be displayed when power is restored.
- There is a fixed amount of time allotted for the heating phase of a cycle. If the target temperature cannot be achieved within this allotted interval, or the temperature increases beyond the safe maximum, a heater malfunction is assumed and an error message is displayed. If this occurs, the device may prevent further cycles from being performed until the jaws have sufficiently cooled and the device is restarted. Contact an administrator to arrange for the servicing of the device.

2.11 The COM Port

The Model 5160 Controller can be factory-configured to output information about each cycle using the port labeled "COM" on the rear panel of the device, see Figure 1-2. The Vante Data Management software package can be used to collect and catalog this information, making it available for a variety of applications. For more information, consult the Vante Data Management System documentation.

2.12 The T/C Port

For VANTE use only.

2.13 Executing a sealing cycle

2.13.1 When the controller is turned on, the user Main screen will be visible on the controller.

WARNING: Do **NOT** place fingers or any other objects near or between the Sealing Head jaws when the controller power is on.

2.13.2 The operator should load tubing into the sealing jaws., reference Figure 2-6.

2.13.3 The operator should now manually slide the safety cover forward and into position. This will engage a sensor that will allow the START button to become enabled.

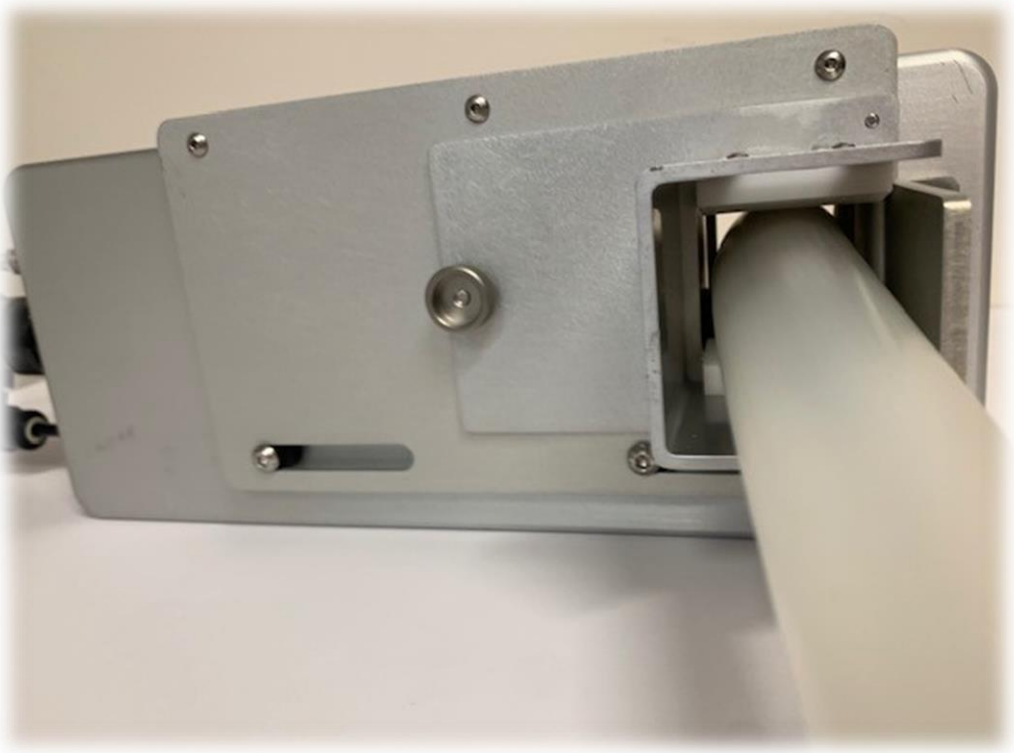

Figure 2-6 Safety Cover Forward

2.13.4 The operator should now press the START button to initiate the cycle.

2.13.5 The safety lock will engage and lock the safety cover forward.

2.13.6 Once the cycle is complete (when the jaw temperature cools back to the Cool Temp setting), the sealing jaws will retract, and the safety cover interlock will disengage.

2.13.7 The operator may now slide the safety cover back to remove the sealed tubing.

2.14 Understanding the Pressure Setting

2.14.1 The admin is able to choose between HI, MID, and LOW Pressure Settings. This pressure setting controls the amount of air pressure being applied to create the seal. The pressure automatically adjusts based on the position of the moving jaw and the pressure setting chosen. Effectively, the setting of HI is the highest amount of force applied and a setting of LOW is the lowest amount of force applied.

2.15 Recommended Process Settings

2.15.1 SEBRA recommends settings based on TPE brand, size, sterilization, and process conditions. Please contact SEBRA for details regarding recommend process settings for your application. As many sizes and brands have been tested and confirmed.

2.16 Considerations when sealing filled tubing

2.16.1 When sealing filled tubing, internal pressures inside the tubing must be considered. SEBRA recommends utilization of mechanical clamps when sealing filled tubing.

2.16.2 Internal tubing pressure from the pumping or gravity-feed of liquid must be prevented from the sealing area, and this is typically accomplished through the use of mechanical clamps. However, it is important that the use of the mechanical clamps do not become another cause of too much internal tubing pressure during a sealing cycle.

2.16.3 When a liquid-filled tube is clamped to stop the flow of liquid through the tubing, pressure inside the tube occurs when the sealing jaws close together. When the jaws close, there is a length of tubing of approximately 2.5 inches (6.4cm) of tubing that closes together, which has the ability to create an enormous amount of internal pressure. The liquid in that section of tubing must be displaced to prevent seal failure.

2.16.4 SEBRA has a recommended process to manage and mitigate the failures that are the primary cause of failed seals. Please note that this process was created using standard distilled water, and the user has a responsibility to determine compatibility with their overall process.

2.16.5 The mechanical tubing clamps that were used to develop this process are the Saint-Gobain Life Sciences Pure-Fit® TCL Large Tubing Clamps, PFTCL-250, shown below, Figure 2-7 Clamps.

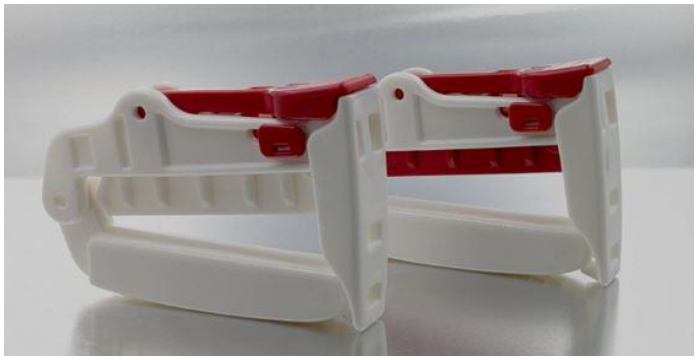

Figure 2-7 Clamps

2.16.6 The minimum recommended distance from mechanical clamp(s) to the center of the sealing head is 9 inches (23cm).

2.16.7 Process Steps to be utilized.

2.16.7.1 Close the sealing head guard and initiate the cycle start.

2.16.7.2 Shortly after the sealing jaws close, open the Pure-Fit® clamps just enough to allow the pressured liquid to move away from the sealing jaws.

2.16.7.3 From the clamp's completely-closed position, simultaneously press both of the Red Buttons in the front of the clamp.

2.16.7.4 While pressing the Red Push Buttons, pull the Red Cam-Lever back toward the hinge of the clamp (this allows the tubing to vent pressure).

2.16.7.5 Push the Red Cam-Lever back to the starting position to completely close the clamp.

2.16.7.6 If clamps are used on both sides of the sealing head, repeat this process on the second clamp.

2.16.7.7 This process can be repeated again during the sealing cycle to alleviate additional pressure created during the sealing cycle as the jaws continue to close while creating the seal.

2.17 Troubleshooting

2.17.1.1 The table below shows a basic troubleshooting guide.

Table 2-1 Troubleshooting Guide

Problem	Possible Cause	Solution
Not sealing.	No power to Sealer.	Make sure the unit is plugged in and the power switch is turned "ON". Ensure the power cord is in good shape.
	Blown fuse.	Replace fuse only with the following fuse types: **For 100 VAC and 115 VAC Units:** a) Littelfuse, time delay, rated 250V, 6.3A, b) Cooper Bussmann, time delay, rated 250V, 6.3A, **For 230VAC Units:** c) Littelfuse, time delay, rated 250V, 4A, d) Cooper Bussmann, time delay, rated 250V, 4A, e) If fuse continues to blow, contact Vante.
Error message	Heater or sensor failure.	Send to Vante for repair.
Bad or incomplete seal	Settings need adjustment.	Verify the correct material is selected and that the temperature, timing, and cooling settings are appropriate for the material and sealing conditions. Call Vante customer service for more information.
Very slow sealing cycle.	Air supply is disconnected.	Verify that the air supply tube is connected to an appropriate source.
Uneven cooling between heating plates	Air supply tubing is kinked or possible obstruction in air supply	Look for any kinks in the airlines. Verify all air connections are secure. Contact Vante for support.

2.17.1.2 The figures below show error messages that could occur.

Figure 2-8 Error Message – Power Interupt

Figure 2-9 Error Message – Cover Notification

Figure 2-10 Error Message – Temperature Rise

Figure 2-11 Error Message - Temperature Overheating

3. Maintenance

CAUTION: Do NOT, under any circumstances, submerge the Sealing Head in any kind of liquid. This voids the warranty and will likely damage the heater assembly.

3.1 Cleaning Model 5160 and 5163.

3.1.1 Ensure that the AC power switch located on the rear of the Generator/Controller is in the "**O**" (OFF) position. Disconnect the AC power cord from the AC power outlet. Disconnect the air supply line and the AC power cord from the Generator/Controller.

3.1.2 Apply a cleaning solution to a cloth and wipe the Generator/Controller case with the cloth. Most common disinfectants and sporicidal cleaners are compatible. Ensure the Generator/Controller is completely dry before returning to service.

WARNING: Do not apply fluids directly to the Generator/Controller case and do not over-saturate the cleaning solution applicator. The fluids may run into the electronic components and cause contamination of the electronics and subsequent unit malfunction. ***Never immerse the 5160/5163 System in any liquid.***

3.1.3 To maintain the Sealing Head, keep the plates in the sealing jaw and all thermoplastic materials being sealed clean and dry. Occasionally use isopropyl alcohol on a cotton swab to clean the plates Ensure plates are completely dry before operating the Sealer.

3.2 Product Certification

3.2.1 The recommended certification interval for the Model 5160 and Model 5163 is once a year. Call Vante prior to sending the unit in for repair or certification.

3.3 Use of Non-Stick Tape

The User shall validate their process and decide if the use of the nonstick tape helps the seal quality in their process. They are designed to eliminate the possibility of the tubing sticking to the sealer jaws and to minimize the need to clean plastic residue from the sealing jaws. Non-stick tape has been provided with the sealing head units and can be re-ordered thru Vante. The non-stick tape should be replaced regularly to keep the best performance and seal quality.

3.3.1 To apply the non-stick, simply remove the liner/backing and apply the adhesive directly over the heating element.

Then with your finger, gently apply pressure over the Teflon adhesive to ensure that it adheres sufficiently to heating element. Repeat process for upper heating element.

4. Repair

CAUTION: The Generator is designed to require minimum maintenance and field repairs are not recommended. Any questions regarding repairs should be directed to an authorized Vante service center and/or Vante field service engineers.

CAUTION: The Generator / Sealer, does not allow replacement of internal items. All internal repairs and replacements need to be directed to an authorized Vante service center.

WARNING: This unit is provided with dual fuses in the power entry module. Both fuses must be removed prior to opening the unit for any reason. Only authorized Vante service technicians should open Vante equipment.

CAUTION: For safety reasons, to avoid an electric shock, always turn the AC Power switch to the "O" position and disconnect power cord before removing and replacing fuses. Replace fuses only with the specified type and electrical ratings.

4.1 Cycle Interrupt Indicator

WARNING: Do not open sealing head when tubing is in the sealing head if **"PREVIOUS CYCLE LOST TO POWER FAILURE"** is displayed. If opened, there may be risk of fluid spill and contamination of the fluid. User shall use discretion at all times

4.1.1 In the event of a power failure, cycle reboot, or turning the unit off during a sealing cycle the cycle interrupt indicator will activate the next time the unit is powered on and will display "WARNING: PREVIOUS CYCLE LOST TO POWER FAILURE". DO NOT OPEN the sealing head when this warning occurs as the previous sealing cycle may not have been completed and thus may not have sealed the tubing properly.

4.1.2 When the warning appears, either re-initiate and complete another sealing cycle or secure the tubing in a manner that would prevent or contain any fluid spill once the sealing head has been opened. In order to clear the warning from the display, simply press the green button once.

4.2 Fuse Replacement

4.2.1 If the unit is plugged into the AC Power Source, and the display does not come on when the switch is in the "|" (ON) position, then the fuse may need replacement.

4.2.2 Turn the AC power switch to the "**O**" (OFF) position and disconnect the AC power cord from the AC outlet and Generator/Controller.

4.2.3 Release the fuse holder by pressing down, the latch at the top of the fuse holder (next to power cord). Pull the fuse holder out to access the fuse.

4.2.4 Examine the fuse and replace with the appropriate fuse indicated in the Trouble Shooting Guide in Table 2.1 for the unit's power supply. If the fuse is not blown, check again to be sure all other electrical connections are correct.

4.2.5 CAUTION – Replace fuses only with the Return the fuse holder into the Power Input Receptacle until the latch engages.

4.2.6 Reconnect the AC Power Supply and turn power switch to the "|" (on) position. If the fuse blows again, contact Vante.

4.3 Other Repair Issues

4.3.1 Other than external cleaning, fuse replacement and periodic calibration, the TPE Tube Sealer Model 5160 is designed to be maintenance free. Do not attempt repairs of any kind. Please notify Vante if unit requires maintenance. Call Vante *prior* to sending the unit in for repair or certification. Have the model and serial numbers available (serial label located beside the Power Input Receptacle and Fuse Holder) before calling Vante for a Return Material Authorization (RMA) number.

4.3.2 If possible, ship the Model 5160 system using the original shipping containers and packing material. If the original shipping materials are not available, wrap the components separately in plastic bubble wrap or other suitable packing material that will provide sufficient shock protection. Place components in a shipping container large enough to contain the individually wrapped components, or place each component in its own size relevant shipping container.

CAUTION:	Failure to properly package the components for shipping may increase any repair costs.

5. Manufacturer Warranty

The enclosed products, when used and handled under normal conditions and in accordance with written instructions are guaranteed to be free from defects in material and workmanship for the following periods based on the date of shipment:

- Controller, Model 5160 TPE Sealer – One year
- Sealing Head, 5163 Sealing Head – One year

This warranty policy may be changed by the Manufacturer at its own discretion.

Vante should be contacted for instruction regarding any necessary Warranty or Non-warranty repairs. For Non-warranty repairs, shipping and repair charges shall be paid by user. In the event, product is sent to Manufacturer, call first to obtain a Return Material Authorization number (RMA#).

There are no warranties, including any implied warranty and any warranty of merchantability or fitness for any particular purpose which extend beyond the description of the product and those expressly set forth in product labeling. Unless used in accordance with written instructions accompanying the product, all warranties are specifically excluded.

Modifications, alterations, recalibrations, abuse, or service by other than an authorized representative shall void the warranty.

The buyer or user's exclusive remedy for breach of such warranty shall be repair, replacement of such products by Manufacturer or, at Manufacturer's option, refund of the purchase price.

Manufacturer shall have no liability for consequential, incidental or exemplary damages of any description in connection with the products.