



Vante®

**INSTRUCTION
MANUAL**

TPE TUBE SEALER

Model 4160

Generator/Controller

Vante®

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Preliminary Information

Document Scope

Use this manual as a guide for setting up, adjusting, and operating the model 4160 TPE Tube Sealing System generator. The information in this manual is based on technical data that has been verified and validated by Vante.

Intended Audience

This manual is intended for skilled personnel who understand the procedures for welding and forming thermoplastic materials. Users assume any risks associated with setup and operation of this product. Use the model 4160 TPE Tube Sealing System generator at your own discretion.

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

The TPE Tube Sealing System is protected by U.S. patent numbers 77026592, 7084382, 7151243, 7211776, and 7326897. All rights are reserved. Copying of the protected designs associated with the TPE Tube Sealing System is strictly prohibited without the prior written consent of Vante.

User Alerts

Throughout this document, WARNINGS, CAUTIONS, and NOTES notify the reader of important and critical information.

WARNING: A warning indicates a condition or procedure that could cause bodily harm. Warnings are enclosed in bold-line boxes.

CAUTION: A caution indicates a condition or procedure that could result in damage to the unit. Cautions are enclosed in thin-line boxes.

NOTE: A note indicates important, useful information.

Safety symbols



Warning, risk of electric shock



Warning (general)

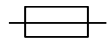
NOTE: When the general warning symbol appears on a device label, refer to this user manual for warning details.



Warning, hot surface



Earth (ground) terminal



Fuse



On



Off

CE Marking Information

For inquiries related to the CE marking of this product, please contact Vante at:
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1. Product Overview

1.1. Overview

The Model 4160 TPE sealer generator includes a controller which, when coupled with the Model 4161 or Model 4162 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 PVC) tubing or parts in a controlled environment.

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

NOTE: “Sealer/generator” refers to the model 4160. “Sealing head” refers to the models 4161 and 4162.

Table 1.1 Product specifications

Manufacturer name	Vante®
Device name	TPE Tube Sealer
Mechanical	Dimensions
Controller: 4160	15.2 × 10.9 × 6.4 in. (38.6 × 27.7 × 16.2 cm)
Sealing Head: 4162	13 × 2.75 × 2.25 in. (33 × 7 × 5.7 cm)
4161	12.3 × 2.75 × 2.25 in (31.2 × 7 × 5.7 cm)
Operating weight:	14 lbs. (6.3 kg)
Shipping weight:	20 lbs (9 kg)
Electrical	
Power Input	100VAC +/-10% 50/60 Hz 4A 115VAC +/-10% 50/60 Hz 4A 230VAC +/-10% 50/60 Hz 2A
Fuses	2 × 250 VAC, 5 × 20 mm T4A 2 × 250 VAC, 5 × 20 mm T4A 2 × 250 VAC, 5 × 20 mm T2A
Power output	< 200 watts DC
Air Supply Requirements	
Clean, dry, regulated and filtered constant pressure air source	
Line pressure(regulated)	90 psi (max)
CFM (min)	5 CFM

Particulate filter	5 µm (maximum allowable particle)
Environmental Specifications	Controlled environment
Use	Indoor use only
Operational temperature	15°C – 35°C
Storage temperature	-25 °C – 60°C
Humidity	70% maximum relative humidity, non-condensing
Altitude	2000m (max)
Over-voltage category	II
Pollution degree	2
Seal time (max)	180 seconds
Seal temperature	100°C – 195 °C (max)

1.2. Component Identification

The sealing system must contain a model 4160 TPE generator/controller coupled with a model 4161 or a model 4162 sealing head. Table 1.2 on page 5 lists each component and describes the function.

The sealing system includes the following items:

- Generator/controller
- Remote sealing head
- AC power cord (not shown)

Figure 1.1 on page 3 and Figure 1.2 on page 4 indicate components of the sealing system. Figure 1.3 on page 4 shows sample voltage and fuse labels.

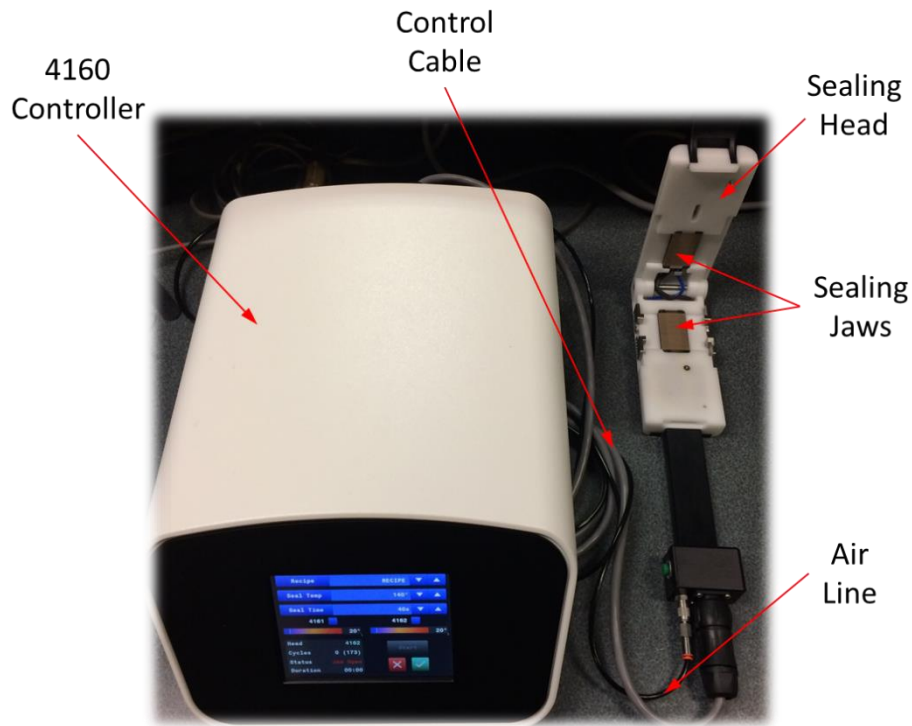


Figure 1.1 TPE Sealing system components

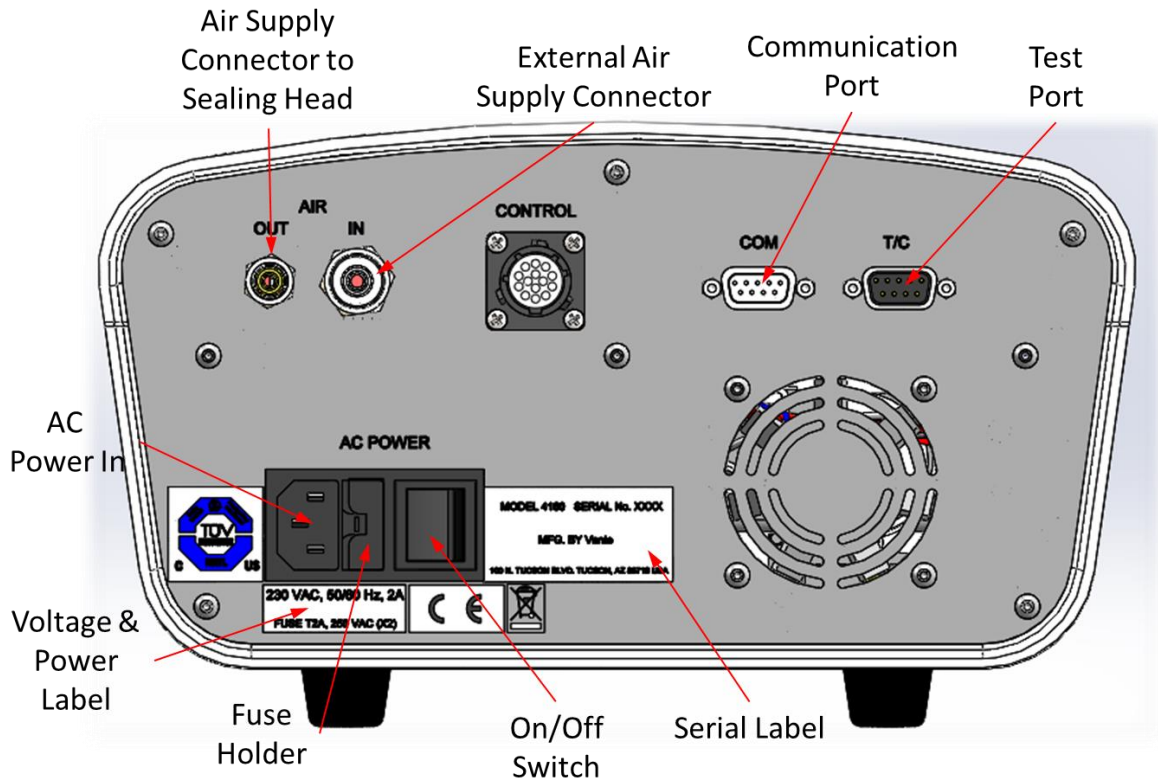


Figure 1.2 Product labeling and components: rear view

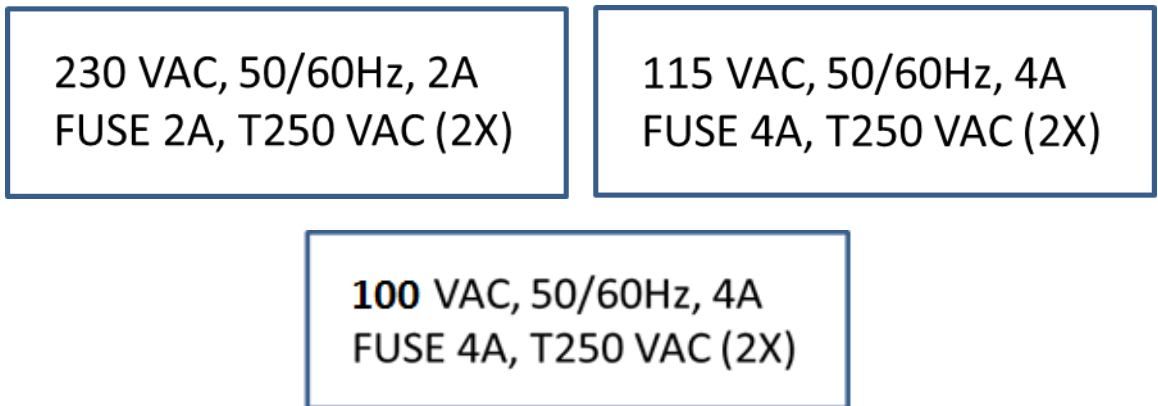


Figure 1.3 Voltage and fuse labels

Table 1.2 Product component list

Component	Function
AC power cord	<p>Detachable AC power cord. Plug end varies with country in which Power Source is used to provide AC power connection to the country-specific AC power source. To disconnect the power from the generator, disconnect the power supply cord set from the ac inlet.</p> <p>The length power supply cord set used shall not be greater than 3 m.</p> <p>The power supply cord set used shall be a certified and appropriate type for an intended market”</p>
AC power switch	Turns AC power “ ” (on) or “O” (off). Rocker-type switch located on the rear of the power source.
Power input receptacle and fuse holder	Located at the rear of the generator/controller. Connects the power source to detachable AC power cord and houses the user-replaceable fuses.
Model 4161 thin wall remote sealing head	Seals 1/16” – 3/32” wall thickness tubing, 1/2” diameter max
Model 4162 thick wall remote sealing head	Seals 1/8” wall thickness tubing, 1” diameter max
Sealing head jaws	Dual plated heating mechanism, connected to the generator/controller by the cable assembly, which performs a tube seal.
Serial and fuse labels	Located on the back of the generator/controller. Indicates the model number, the serial number, and the required power input to the sealer.
Air supply in	Provides air supply for cooling the sealing head jaws and tubing after a seal has occurred. Located at the rear of the generator/controller beside the power input receptacle and fuse holder. The unit also has a built-in compressor for cooling (low capacity).
Air supply out	Port for the model 4161 or 4162 sealing head ¼” (outer diameter) air supply tube that attaches to the generator/controller. Located on the front of the generator/controller.
Electrical cable connector	Port for the model 4161 or 4162 sealing head electrical cable to attach to the generator/controller. Located on the front of the generator/controller.

1.3. Operating Environment

The model 4160 TPE sealing system will perform effectively in indoor an indoor working environment. Significant variations in environmental conditions and contamination or moisture on the sealing head jaws or tubing exterior may affect sealer performance. The sealing head works best when the head and the tubing are dry and clean.

In hot, cold, or humid environments, work slowly and check the sealing head and tubing frequently to ensure that they are clean and dry. Frequently verify the quality of the tubing seals when working in hot, cold, or humid environments.

1.4. Recommended Tubing

Table 1.3 lists tubing size categories and corresponding dimension details for each sealing head model. The system is designed to seal TPE and other low- or non-RF-reactive thermoplastic tubing that is typically used in biopharmaceutical manufacturing environments.

Table 1.3 Tubing specifications

Sealing head model	Tubing size category	Outside diameter range	Wall thickness
4161	Thin wall	0.125" – 0.500"	0.062" and 0.093"
4162	Thick wall	0.500" – 1.000"	0.125"

1.5. Operational and Performance Safety Features

The model 4160 generator/controller and sealing heads are designed with the following safety features, which reduce safety risks and improve performance.

- The sealer has a thermal protection circuit, which limits operational temperatures to 200°C.
- The software will automatically abort the sealing process and register an error if it detects a temperature difference of greater than 50°C between the heating elements during an operational check.
- Models 4161 and 4162 sealing head jaws completely enclose the heating elements, preventing direct user contact with the heating elements while the jaws are latched shut.
- A latch locking mechanism on the model 4161 and 4162 is activated during the sealing process, preventing accidental opening and interruption of the sealing process.
- The user may abort sealing process at any time by pressing the STOP button on the display or the GREEN button on the sealing head handle.
- A snap action switch on the 4161 and 4162 sealing heads prevents the sealing cycle from starting unless the sealing head is properly closed. See Figure 1.4 on page 7.

WARNING: Only sealing systems with serial numbers ending in “SS” are designed with the snap action switch (“safety switch”) feature.



Example: SN: 1234SS

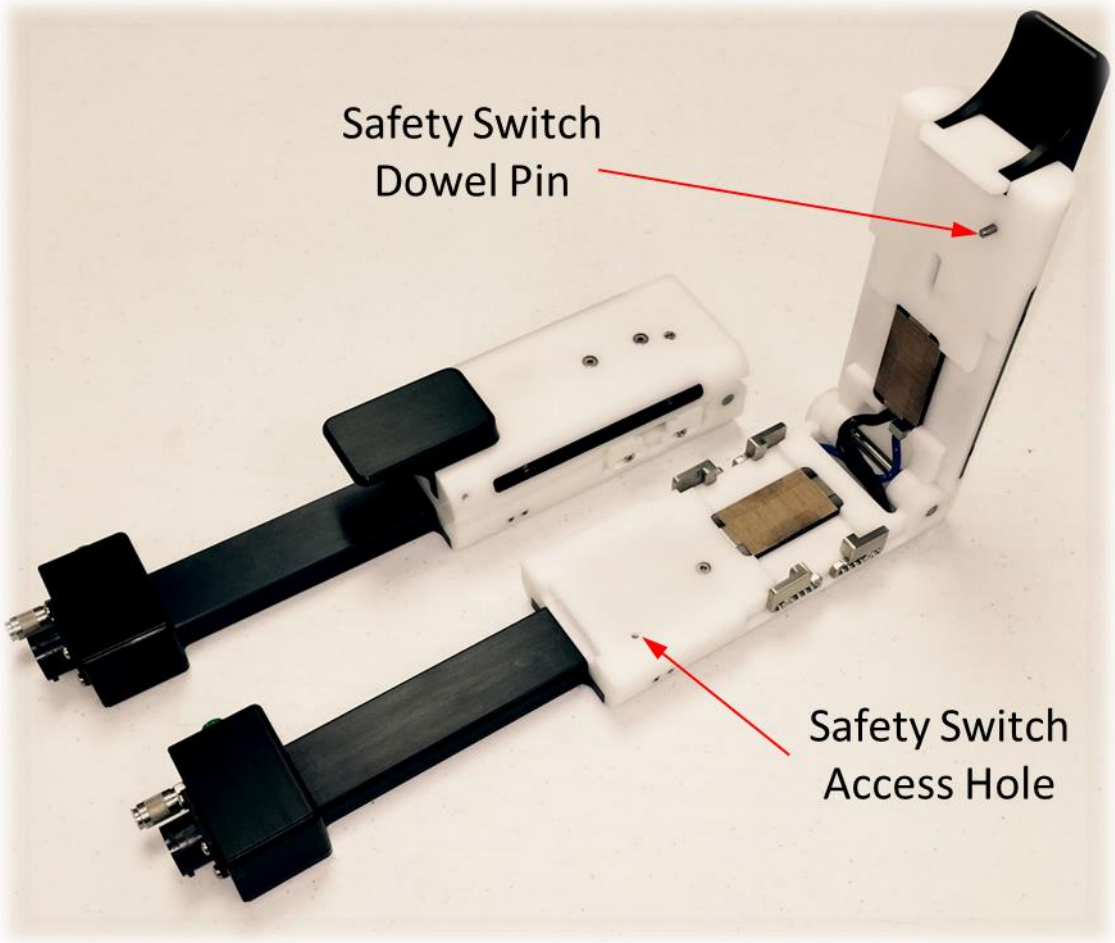


Figure 1.4 Sealing head with safety switch

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2. Procedures for Use

2.1. Installation

- 2.1.1. Remove the sealing system and components from their shipping containers. Visually inspect all components for obvious damage. Contact Vante if any components are damaged. If possible, retain shipping containers and packing materials for future use.
- 2.1.2. Set up the generator/controller on a flat secure surface near the area of intended operation.

NOTE: Leave space to the rear of the unit to allow easy connection and disconnection of the AC cord. Secure the cord to prevent tripping hazards.

- 2.1.3. Connect the sealing head to the generator/controller by aligning the notch of the plug (the 8 foot cable) with the receptacle. Turn the ring on the male connector clockwise until the connectors lock.
- 2.1.4. Firmly press the air connector into the matching connector on the front of the controller until it snaps and locks into place.

CAUTION: Never power on the generator/controller without a sealing head attached.

Connect and disconnect the sealing head while the generator/controller is powered off. Never connect or disconnect a sealing head while the generator/controller is on.

- 2.1.5. Connect the 3/16" outer diameter air supply tube (included) to the back of the generator/controller by pressing the tube firmly into the labeled, orange, tube fitting. Connect the other end of the air supply tube to a compressed air source. (80 – 90 psi filtered air is optimal. See Table 1.1 on page 1 for air supply requirements.) If external air is not available, the unit has an internal compressor for low pressure air.

CAUTION: Incorrect air pressure, or improper air supply connection, can damage the equipment and cause poor sealing results.

- 2.1.6. Connect the AC cord to the power input receptacle on the back of the generator/controller. Plug the cord into an appropriate power source. Refer to the ratings on the sealer label.

NOTE: Verify that the power cord plug is compatible with the outlets in your facility. If the power cord is not compatible, contact Vante.

- 2.1.7. Power on the system by switching the power switch on the back of the generator/controller to on (|).

2.2. Startup

2.2.1. Authentication: when the generator/controller powers on, the first screen to appear is the authentication screen. See Figure 2.1.

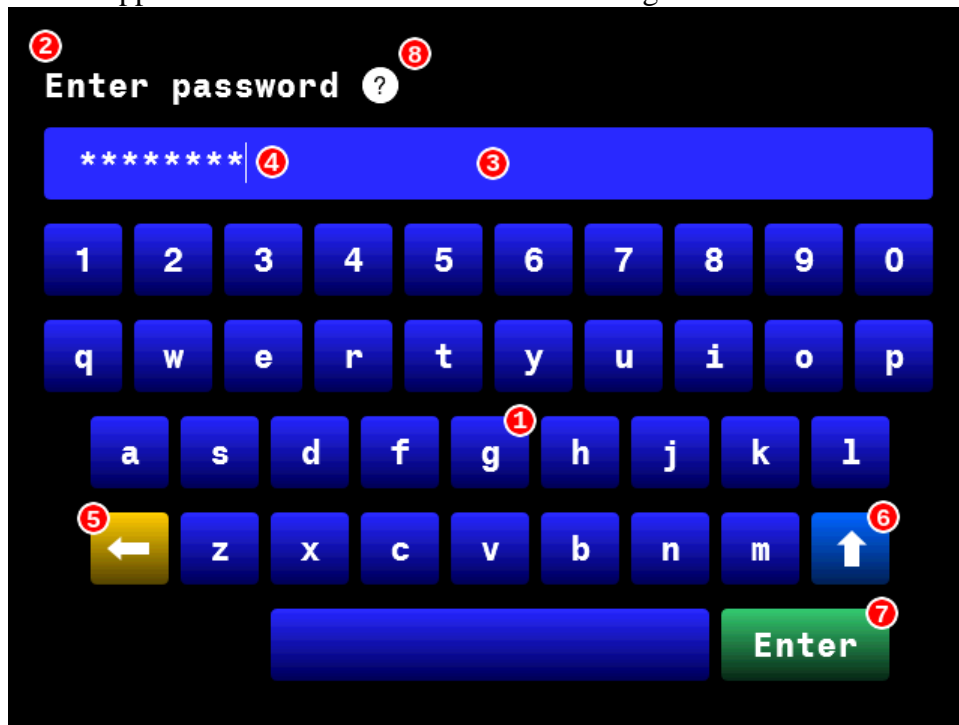


Figure 2.1 Authentication screen diagram

2.2.2. The 4160 system features 2 access levels: operator and administrator. Enter either password using the touchscreen as follows:

NOTE: The default administrator password for the 4160 system is 0000000#.

1. **Character keys** work like keys on a keyboard.
2. The **prompt** at the top of the screen instructs the user.
3. The **entry field** displays content.

NOTE: When entering a password, the content field masks the characters in the password with asterisks.

4. The **cursor** indicates the entry position for the next character. Touch the entry field to move the cursor position.
5. The **backspace key** deletes one character at a time from the entry field.
6. The **shift key** switches between the lowercase/number keyboard and the uppercase/symbol keyboard.
7. The **Enter key** completes the content entry and initiates the next software process.

8. The **question mark button** generates a temporary key for users who have lost or forgotten their password. The temporary key is not a password. Contact Vante or your distributor to obtain the temporary password associated with the temporary key. See Figure 2.2.

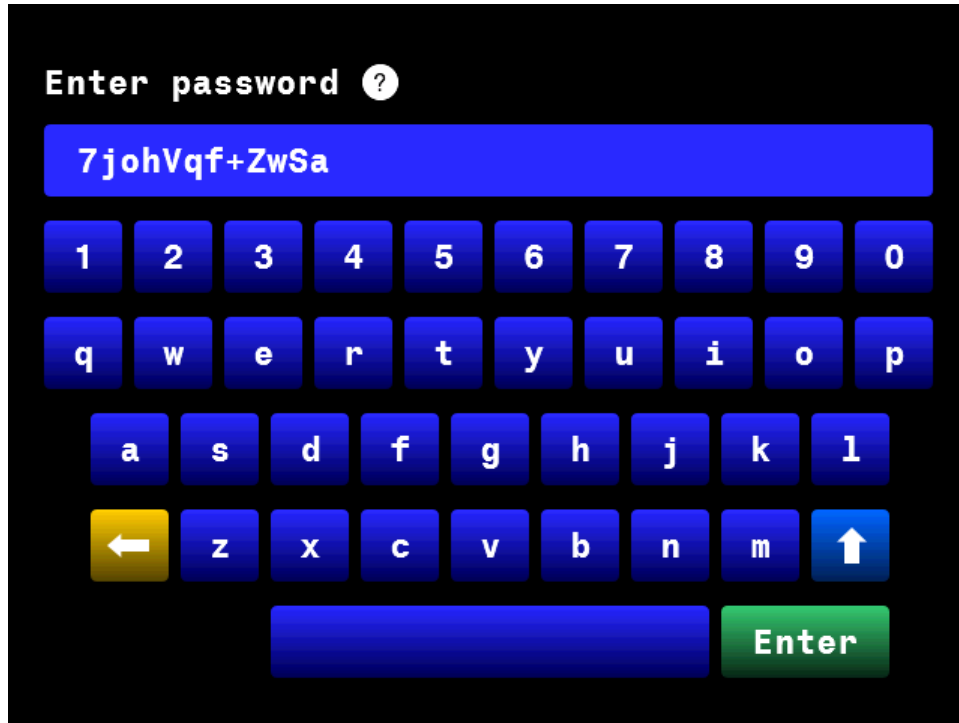


Figure 2.2 Automatically generated temporary key

2.3. Run Cycle

2.3.1. The generator/controller displays information about the run cycle on the main control screen. See Figure 2.3.



Figure 2.3 Main control screen

- 2.3.2. The main control screen contains the following controls:
1. **Recipe:** this field displays the name of the active recipe. Touch the field to change the name of the active recipe.
 2. **Seal Temp:** this field displays the target temperature for the sealer.
 3. **Seal Time:** this field displays the duration, in seconds, that heat will be applied to the sealing head.
 4. **Recipe selection buttons:** use the ▼ and ▲ buttons to scroll through all the recipes stored in the generator/controller hard drive. The recipe shown in the display field is the active recipe.
 5. **Seal temperature adjustment buttons:** use the ▼ and ▲ buttons to adjust the target temperature for the recipe.
 6. **Seal time adjustment buttons:** use the ▼ and ▲ buttons to adjust the heat duration time for the recipe.
 7. **4161 checkbox:** touch the box to check or uncheck. Use the checkmark to enable the recipe for use with a 4161 sealing head (i.e. thin-wall product processing).
 8. **4162 checkbox:** touch the box to check or uncheck. Use the checkmark to enable the recipe for use with a 4162 sealing head (i.e. thick-wall product processing).

9. **Temperature meter—upper jaw:** this graphic indicates the approximate temperature, in °C, of the heating element in the upper jaw of the sealing head. The white bar moves from side to side to indicate whether the element is heating or cooling, while the text displays the temperature measurement.
10. **Temperature meter—lower jaw:** this graphic indicates the approximate temperature, in °C, of the heating element in the lower jaw of the sealing head. The white bar moves from side to side to indicate whether the element is heating or cooling, while the text displays the temperature measurement.
11. **Head:** this field indicates which sealing head model is currently connected to the generator/controller.
12. **Cycles:** this counter indicates how many cycles the generator/controller has completed. The value inside parentheses represents the number of cycles since the last reset (total count). The value outside parentheses represents the number of cycles since the generator/controller was powered on (session count).
13. **Status:** this field indicates the current functional status of the sealing system.
14. **Duration:** this field indicates the duration of the last cycle executed during the current session. During a cycle, the field acts like a stopwatch counter.
15. **Start/stop button:** the start button is enabled when the generator/controller status is *idle*. Press *start* to initiate a run cycle. The stop button is enabled during a cycle. Press *stop* to abort the run cycle.

NOTE: The button on the sealing head functions like the start/stop button on the generator/controller touch screen. Press and hold the sealing head button for 2 seconds to start or abort a run cycle.

NOTE: The system may initiate a cooling phase when a run cycle is aborted.

16. **Log-out button:** press this button to exit the main control screen and navigate back to the authentication screen.
17. **Settings:** press this button to navigate to the system settings screen.

NOTE: Access to the system settings screen is restricted to users with an administrative password.

- 2.3.3. The main control screen allows users to adjust the process parameters for each recipe. See numbers 1 – 8, above. When a user changes a parameter, he or she must confirm the change before the modified process can run. Press the *check* button to confirm changes; press the X button to restore the existing parameter values. See Figure 2.4.

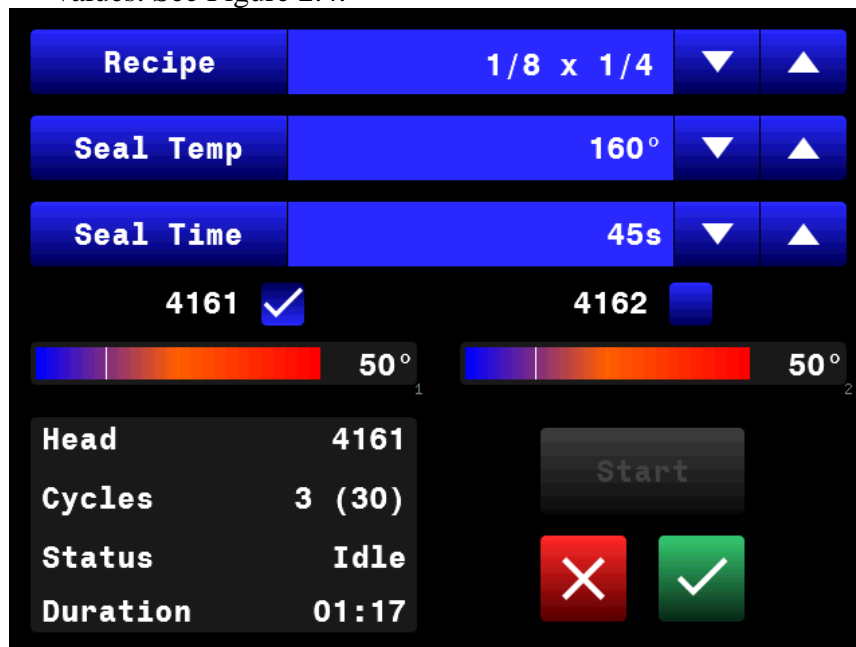


Figure 2.4 Confirm or cancel recipe changes

2.4. Cycle Interrupt Indicator

WARNING: Do not open the sealing head after a cycle is interrupted. The seal may be incomplete, and the user risks a fluid spill and contamination of the fluid.



- 2.4.1. If power is not restored to the system, secure the tubing in a manner that will prevent any fluid spill. Carefully open the sealing head and remove the tubing.
- 2.4.2. If power is restored, the interrupt indicator activates when the system powers on. The screen displays the following alarm: “WARNING: PREVIOUS CYCLE LOST TO POWER FAILURE.”
- 2.4.3. If power is supplied to the system, press *Start* on the main control screen or press and hold the green button on the sealing head for 3 seconds to initiate the sealing cycle. After the sealing cycle completes, open the sealing head to remove the tubing.

2.5. System settings

- 2.5.1. Only users with an administrative password can access the system settings screen. Log in to the system with the administrator password. On the main control screen, press the *settings* button (#17 in Figure 2.3 on page 12).

NOTE: It is not necessary to verify thermocouple temperature verification or adjustment when system settings are changed. Refer to Product Certification on page 23 for more information.

- The system settings screen opens. See Figure 2.5.

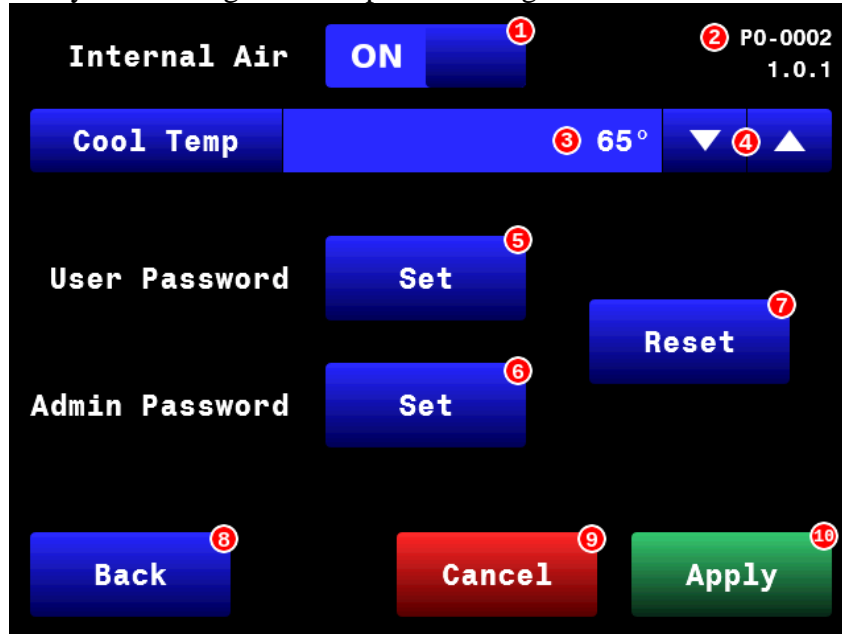


Figure 2.5 System settings screen

- 2.5.2. The systems settings screen contains the following controls:
 1. **Internal air switch:** press the button to select the air pressure source. When the switch is on, the internal air compressor is activated. When the switch is off, the internal air compressor is deactivated.

CAUTION: If the internal air switch is off, then an external air supply must be connected to the generator/controller.

2. **Serial number and software version:** the generator/controller serial number and software version are displayed on the system settings screen. Refer to this screen when contacting Vante for service.
3. **Cool temp:** this field displays the target temperature for cooling during a run cycle. The value in this field automatically changes, depending on the air source (internal compressor or external supply).

4. **Cool temperature adjustment buttons:** use the ▼ and ▲ buttons to adjust the target temperature.
5. **User Password Set:** press *set* to enable, disable, or change the user-level password. The user-level password must meet the following criteria:
 - Contain at least 8 characters
 - Contain at least one numeric digit
 - Contain at least one non-alphanumeric symbol
6. **Admin Password Set:** press *set* to change the administrative password. When changing the administrative password, the user is required to enter the new password twice. Press *cancel* to close the password entry keyboard and revert to the previous administrative password.
7. **Reset:** press this button to revert all system recipes and system settings to default values. When you press *reset*, all passwords are cleared. Press the *check* button to confirm a system reset; press the *X* button to cancel.
8. **Back:** press this button to navigate back to the main control screen.
9. **Cancel:** press this button to cancel any changes in the system settings screen and revert to previous settings.
10. **Apply:** press this button to implement any changes in the system settings screen.

NOTE: Change any field to enable the *cancel* and *apply* buttons. Press either *cancel* or *apply* to disable these buttons. Once changes are applied, the user can no longer use the *cancel* button to revert to previous settings.

2.6. Errors

- 2.6.1. If the system loses power during a cycle, the screen displays an error message once power is restored. See Cycle Interrupt Indicator on page 14.
- 2.6.2. If the heating elements fail to ramp up to the target temperature during the process seal time, or if the sealing head temperature exceeds the maximum temperature tolerance, then the screen displays a temperature error message. Allow the sealing head temperature to drop to the cool temp, then restart the system to clear the error.

2.7. Air sources

- 2.7.1. Internal compressor: the internal compressor is selected as the default air source, which helps prevent system damage in case an external air source is not connected.
- 2.7.2. The sealing system is more efficient when connected to an external air source. If your facility has an external air source, refer to Installation on page 9 for instructions on connecting the air supply to the generator/controller. Navigate to the system settings screen (see System settings on page 15), and switch off internal air.

2.8. COM port

If your system is optimized with the Vante Data Management feature, you can connect an external computer to the COM port on the rear panel of the generator, and transfer run process data to the computer's storage. This feature can be useful for process development and production metrics. Refer to the Vante Data Management System for additional instructions.

2.9. T/C port

This port should only be used by certified Vante service providers.

2.10. Sealing Head

2.10.1. Status indicator

- The sealing head is designed with a status indicator light to help the user operate the system safely and effectively. See Figure 2.6.

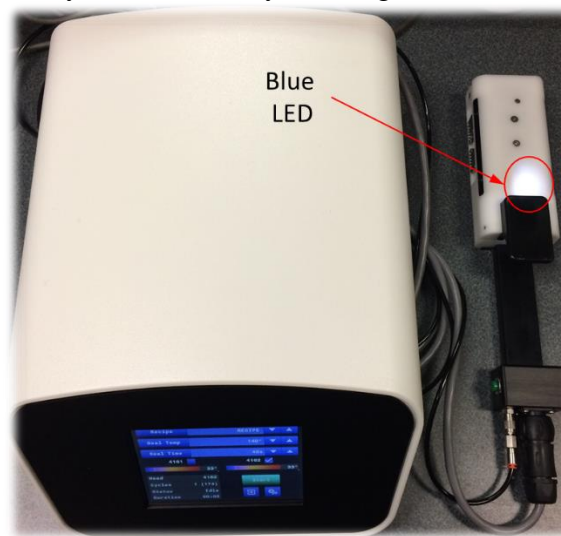


Figure 2.6 Sealing head indicator light

- The blue LED lights up with the sealing head is closed.
- The blue LED turns dark with the sealing head is open.

NOTE: A “Jaw open” message on the generator/controller display screen also indicates that the sealing head is open.

- 2.10.2. Open/Close:
To open or close the sealing head, use the aluminum lever. See Figure 2.7.

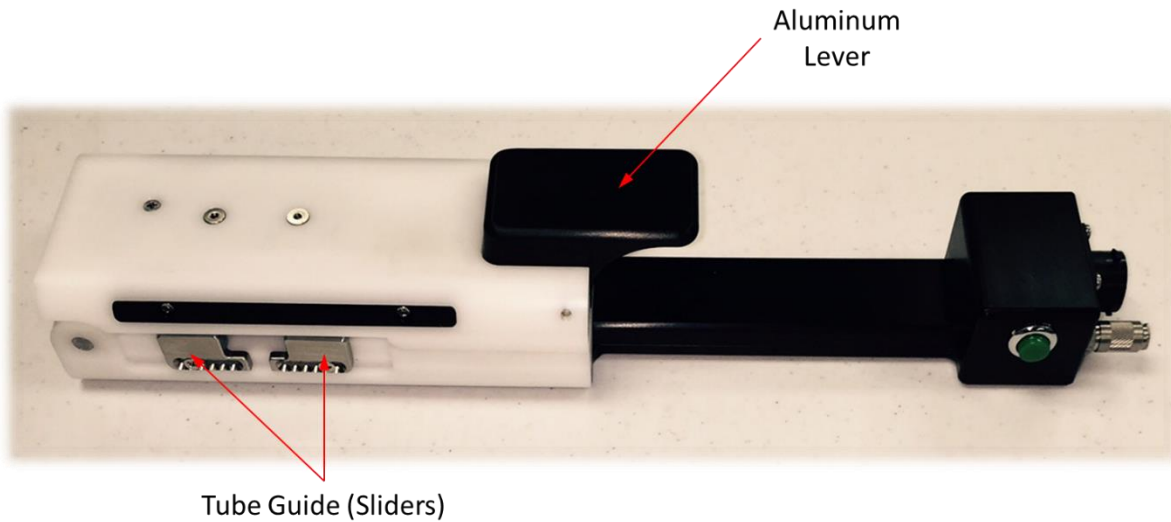


Figure 2.7 Sealing head open/close

- The blue LED flashes on and off when the run cycle is initiated, either with the green button on the sealing head handle or with the *start* button on the generator/controller screen. See Figure 2.8.

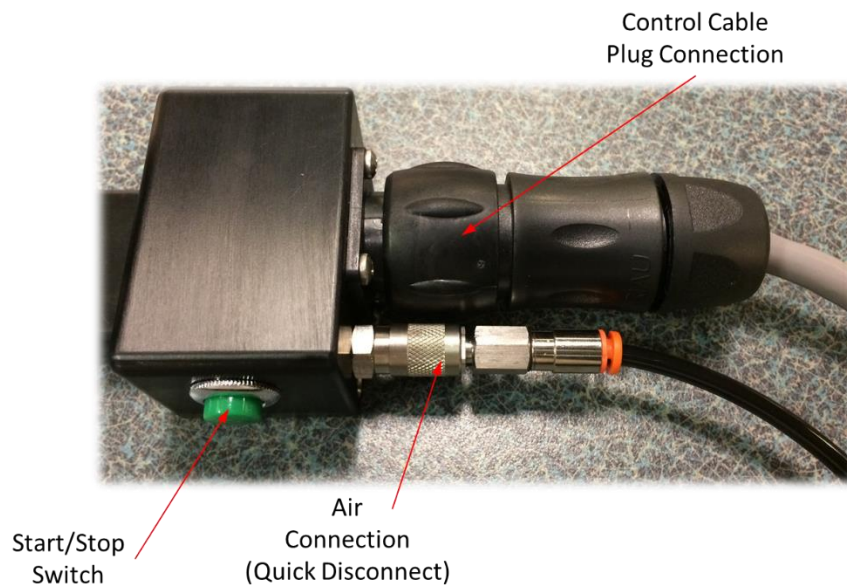


Figure 2.8 Sealing head activation switch

NOTE: As soon as a run cycle is initiated, the sealing head latch locks the sealing head shut. The latch releases the sealing head once the temperature cools to the safe level.

2.11. Teflon Fiberglass Adhesive Barriers

- 2.11.1. A set of Teflon fiberglass adhesive barriers is included with the sealing head. The barriers can be used to prevent the tubing material from sticking to the sealing head plates during the sealing process. Organizations are responsible for validating the sealing process with or without the Teflon fiberglass adhesive barriers.
Contact Vante to order replacement Teflon fiberglass adhesive barriers.
- 2.11.2. To change or apply the barrier, first remove power from the system. Ensure that the sealing head plates are at room temperature before applying the barrier.
- 2.11.3. Remove the backing from the adhesive side of the barrier.
- 2.11.4. Apply the adhesive side of the barrier to the clean, dry plate.
- 2.11.5. Smooth the barrier onto the plate. Repeat this process on the other plate. See Figure 2.9.



Figure 2.9 Teflon fiberglass adhesive barrier application

- 2.11.6. To remove the barrier, simply lift a corner of the barrier and peel it off the plate. Avoid scratching the surface of the plate while removing the barrier.

NOTE: Do not remove the barrier unless replacing it due to wear. The adhesive barrier is not re-usable; it will not stick to the plate once it is removed.

2.12. General process information

NOTE: In hot, cold, or humid environments, work slowly and check the sealing head and tubing frequently to ensure that they are clean and dry. Frequently verify the quality of the tubing seals when working in hot, cold, or humid environments.

NOTE: Temperature and dwell time settings vary for different tube materials and sizes. Adjust and validate your process settings for each application in your facility.

NOTE: The 4160 system displays a warning when the internal compressor runs for 5 minutes or longer. The warning states that the system is at risk of overheating. Press *OK* to close the warning message. The compressor design uses a PTC thermistor to automatically prevent the internal compressor from overheating.

WARNING: Do not place fingers or objects near or between the sealing head jaws when the controller power is on. Severe burns can occur.



CAUTION: Keep the outside of the tubing and equipment clean and dry.

CAUTION: Allow the tubing to cool completely before releasing the sealing head. Releasing the sealing head before the tubing cools can result in fluid leak.

NOTE: Vante provides system customization as needed. If your organization requires additional controls in your tube sealing process, contact Vante for assistance.

2.13. Troubleshooting

Table 2.1 4160 TPE sealing system 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 not damaged.
	Blown fuse	Replace the fuse. Refer to Fuse Replacement on page 26.
Error message	Heater or sensor failure.	Send to Vante for repair.
Bad or incomplete seal	Incorrect settings	Verify the correct material is selected. Verify 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	Possible obstruction in air supply	Look for any kinks in the black air hose leading to upper heating plate. If the air supply is clear, contact Vante customer service for more instructions.

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3. Maintenance

3.1. Cleaning

CAUTION: Never submerge the sealing head in liquid. Submersion of the sealing head in liquid will damage the heater assembly. Submerging the sealing head in liquid voids the product warranty.

- 3.1.1. Sealing head: apply isopropyl alcohol to a cotton swab. Gently wipe the sealing head plates with the damp swab. Ensure the plates are completely dry before returning the sealer to service.

NOTE: Wipe the plates clean frequently during operation if you are not using the Teflon fiberglass adhesive barriers. See Teflon Fiberglass Adhesive Barrier on page 19.

3.1.2. Generator/controller:

- Power off the generator/controller. Verify that the main power switch is in the off (O) position.
- Disconnect the AC power cord from the power outlet. Disconnect the air supply line and the AC power cord from the generator/controller.
- Apply a cleaning solution made with water and a mild detergent or household cleaner, such as Formula 409, to a clean, soft towel. Wipe the exterior generator/controller case with the damp towel. Ensure that the generator/controller is completely dry before returning to service.

CAUTION: Do not spray or pour liquid directly onto the controller/generator or the sealing head. Always apply liquid to a towel or cotton swab.

Do not over-saturate the towel or swab with liquid.

Do not allow excess liquid to flow into the internal parts of the system. If any liquid contacts the electronic components of the system, the system will malfunction.

3.2. Product Certification

Vante recommends annual recertification of the 4160 TPE sealing system. Contact Vante to request a return material authorization (RMA) number. See Returning Materials to Vante on page 27.

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4. Repair

4.1. General

CAUTION: The 4160 TPE sealing system is designed to require minimal maintenance. Field repairs are not recommended, unless performed by a certified Vante service technician. Contact an authorized Vante service center for questions about system repairs.

CAUTION: Do not attempt to replace internal components of the generator/controller or the sealing head. Internal repairs and replacements should only be performed by authorized Vante service providers.

CAUTION: Both fuses must be removed from the generator/controller unit before the unit is opened. Only Vante service technicians are authorized to open the generator/controller unit.

WARNING: To prevent electric shock, always ensure that the main power switch on the generator/controller is in the off (O) position before opening the fuse holder. Replace fuses only with fuses of the type and electrical rating specified on the unit label.



4.2. Fuse Replacement

- 4.2.1. If the unit is properly connected to a working electrical outlet, and the display does not activate with the power switch is in the on (|) position, there may be a blown fuse.
- 4.2.2. Turn the power switch to off (O). Disconnect the AC power cord from the electrical outlet and the generator/controller.
- 4.2.3. Release the fuse holder by pressing down the latch at the top of the fuse holder next to the AC port. Pull the fuse holder out to access the fuse. See Figure 4.1.



Figure 4.1 Fuse holder

- 4.2.4. Use the following type of replacement fuse:
 - For 100 VAC and 115 VAC units:
 - Littelfuse, time delay, rated 250V, 4A, Cat. No. 218.04.0
 - Cooper Bussmann, time delay, rated 250V, 4A, Cat. No. GMG-4.0A
 - For 230 VAC units:
 - Littelfuse time delay, rated 250V, 2A, Cat. No. 218.01.6, 218.02.0
 - Cooper Bussmann, time delay, rated 250V, 2A, Cat. No. GMG-2.0A
- 4.2.5. Replace the fuse in the fuse holder. Replace the fuse holder in the power input receptacle on the generator/controller. Ensure that the latch engages. Reconnect the AC power supply. Power on the generator/controller.
- 4.2.6. If fuses continue to blow, contact Vante.

4.3. Returning Materials to Vante

- 4.3.1. Contact Vante before returning the unit for repair or certification. When you contact Vante, be prepared to provide the model number and serial number of the unit, which are printed on the serial label beside the power switch.
- 4.3.2. Vante will provide shipping instructions and a return material authorization (RMA) number. Include the RMA number in the shipping documentation.
- 4.3.3. If possible, place the 4160 TPE sealing system into the original shipping container. If the original container is not available, wrap all components separately in plastic bubble wrap, or another packing material that provides sufficient shock protection. Place the wrapped components in one or more containers.

CAUTION: If the system is damaged during shipping, additional repair costs may apply.

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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, 4160 TPE Sealer—One year
- Sealing Head, 4161 thin-wall sealing head or 4162 thick-wall 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. Refer to Returning Materials to Vante on page 27 for instructions.

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

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

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