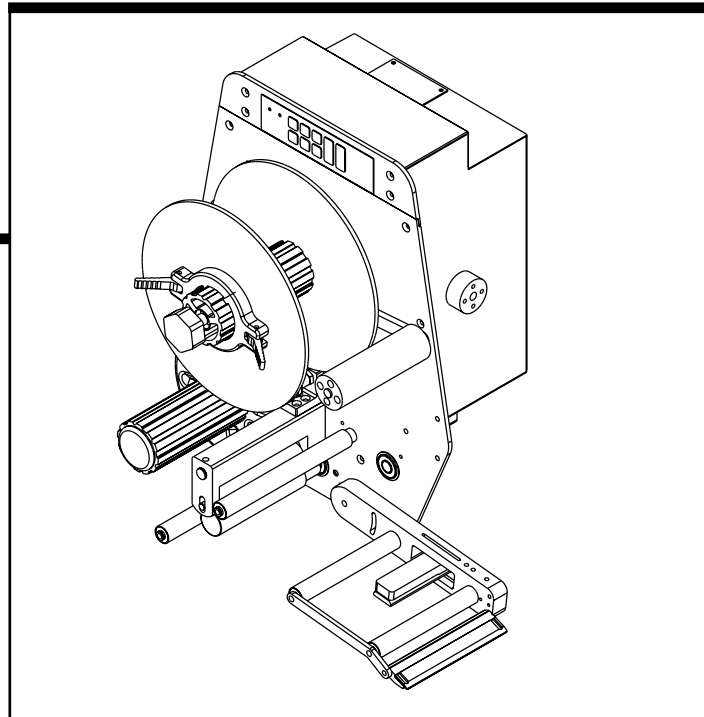


L250A Label Applicator

User's Manual



*Refer all servicing to
qualified personnel.*

*This manual is intended for
use by qualified mechanics
and electricians who install or
service the L250A
Label Applicator.*

*Please copy this
information from the
Applicator's serial plate.*



Model Number:

Serial Number/Date:

Inventory Number:

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13129 Airpark Drive, Suite 120
Elkwood, Virginia 22718
Phone: (540) 829-2564
Toll Free: (800) 368-3582
Fax: (540) 829-1724
www.hoppmann.com

Quick Start

About This Manual

Who Should Read This manual is intended for those who need to install and/or operate the L250A label applicator. The manual is not intended to meet the training needs of persons new to labeling; nor is it intended to meet the needs of personnel who wish to completely overhaul the unit. These needs will require assistance of experienced personnel and are outside the scope of this manual.

Note: Please carefully read this entire manual before operating your label applicator.

Caution Symbols and Messages Caution symbols and messages in this manual call attention to hazardous voltages, moving parts, and other hazardous conditions.



The exclamation point caution symbol denotes possible personal injury and/or damage to the equipment.



The lightning bolt caution symbol denotes possible personal injury and/or damage to the equipment from electrical hazards.

Other Documentation

Product specifications and vendor subcomponents are incorporated into this manual at the discretion of the manufacturer.

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Terms and Definitions

<u>Term</u>	<u>Equivalent Terms, Definition or Abbreviation</u>
Blow-On Module	Blow Module; Label Blow-On Applicator Module
Tamp-On Module	Tamp Module; Label Tamp-On Applicator Module
FR Filter	Combination Pneumatic Pressure Regulator and secondary particle filter
Peeler Plate	Peeler Bar
Product	Any medium to which labels are applied (Boxes, Bottles, etc.)
Web	Webbing, Backing, Label Strip, Label Stock, Label Ribbon, Waste, Continuous Backing
Flag	Before the label is completely removed from the webbing, the part of label with the adhesive exposed, is the flagged part of the label
Labeler	Applicator

Description and Specifications

1

The Label Applicator

The label applicator will integrate into an inline product handling system, stand-alone, or dispense single labels as needed.

This applicator is designed to dispense blank or pre-printed labels. The standard L250A applicator will dispense labels up to 5 1/2" wide.

Designed features of the label applicator are:

- ◆ Membrane or push button control
- ◆ Label to product speed matching
- ◆ Up to 12" diameter rolls of labels
- ◆ Powered label drive and torque clutch adjustable rewind
- ◆ Rapid configuration and changeover of applicator modules
- ◆ One button auto-teach for fast, easy, repeatable changeover
- ◆ Access to main components for maintenance and changeover
- ◆ Convertible from left-hand to right-hand without any additional parts

The label applicator is offered as a stand-alone unit or as a module which can be integrated into a product handling system. In either case, the labeler includes a controller, operator interface and product detector.

See *Table 1-2, Applicator Options and Upgrades*, to expand the L250A label applicator's capabilities.

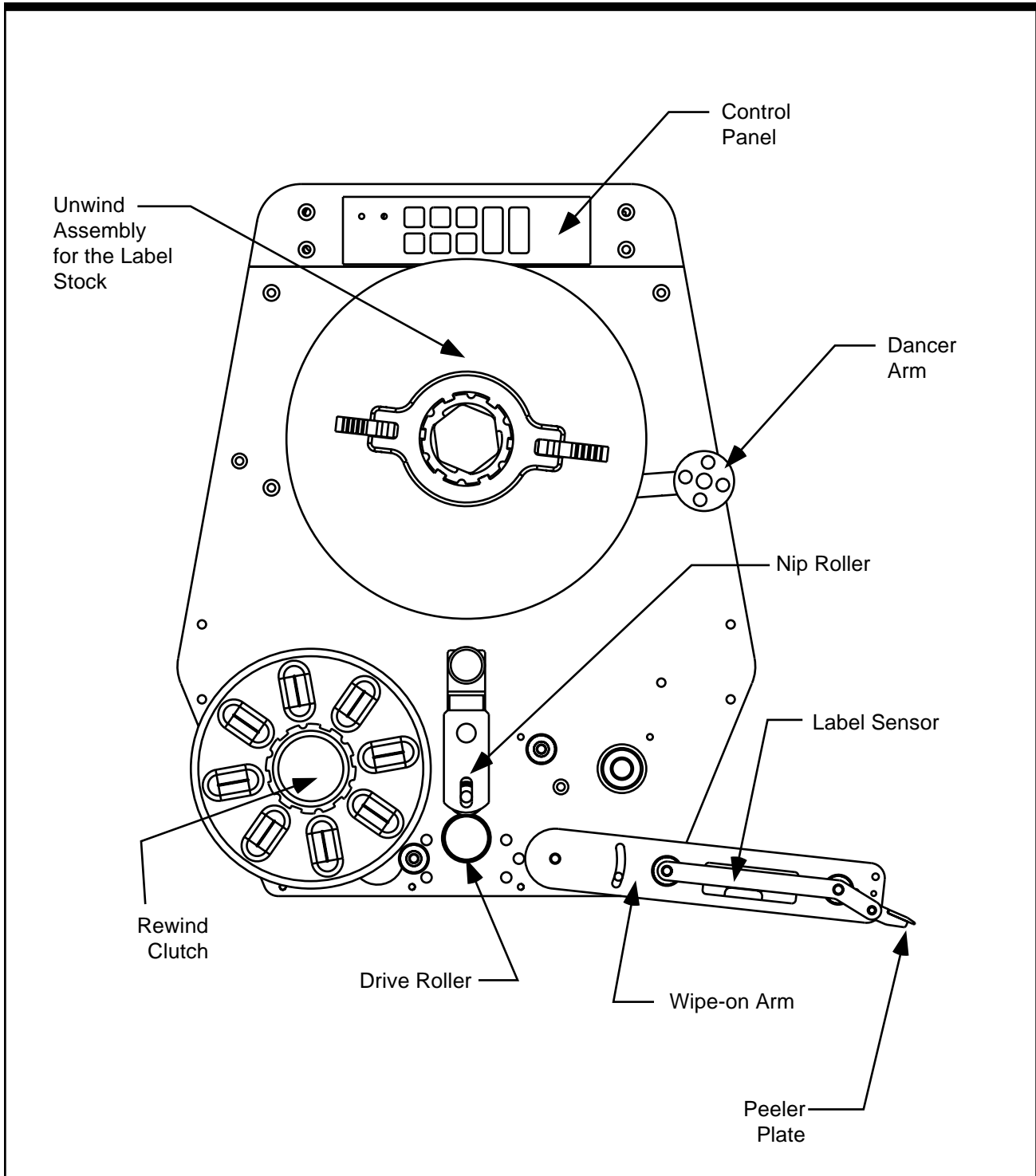


Figure 1-1. Right Hand Label Applicator

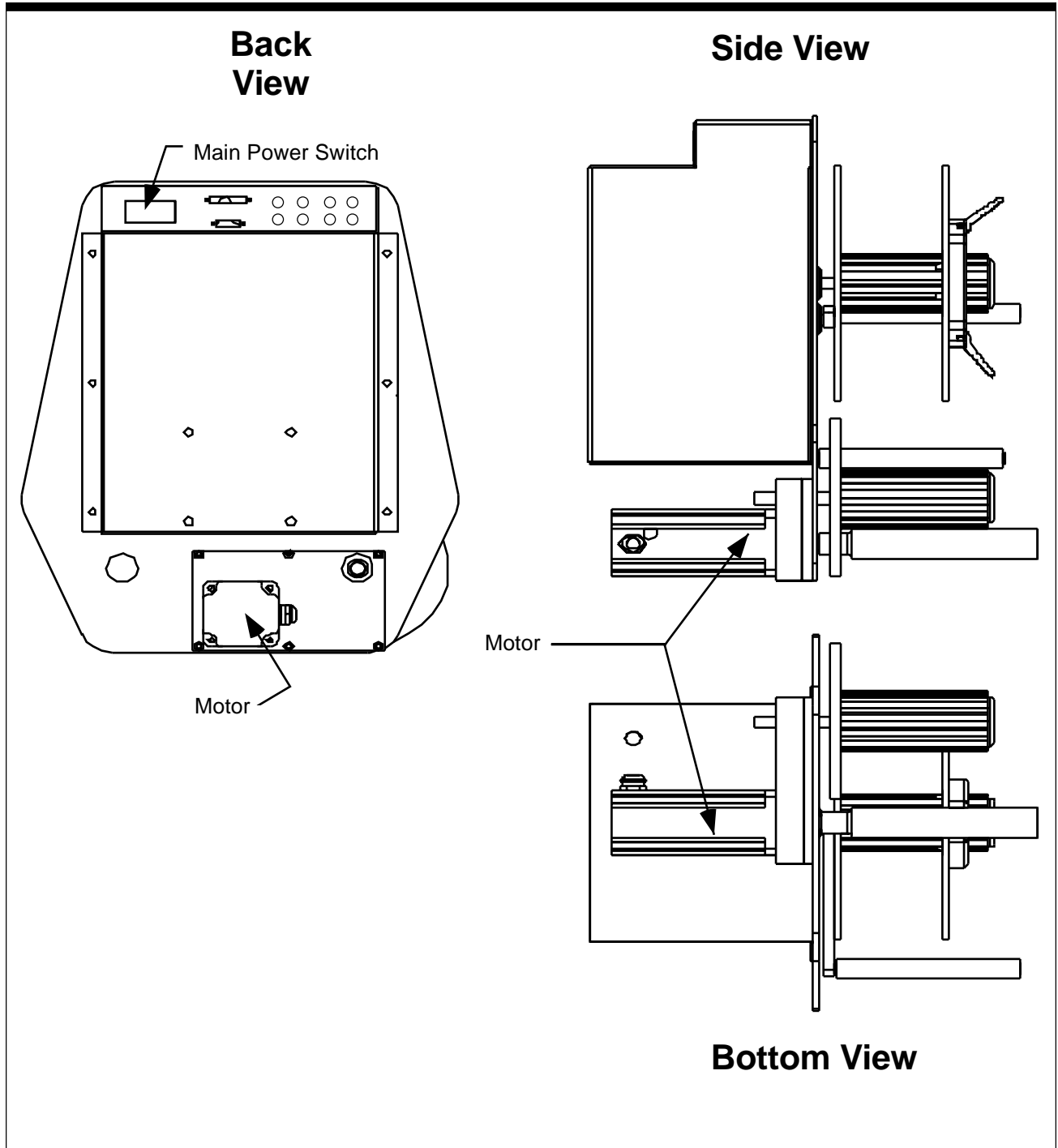


Figure 1-2. Back View, Side View and Bottom View Of Label Applicator

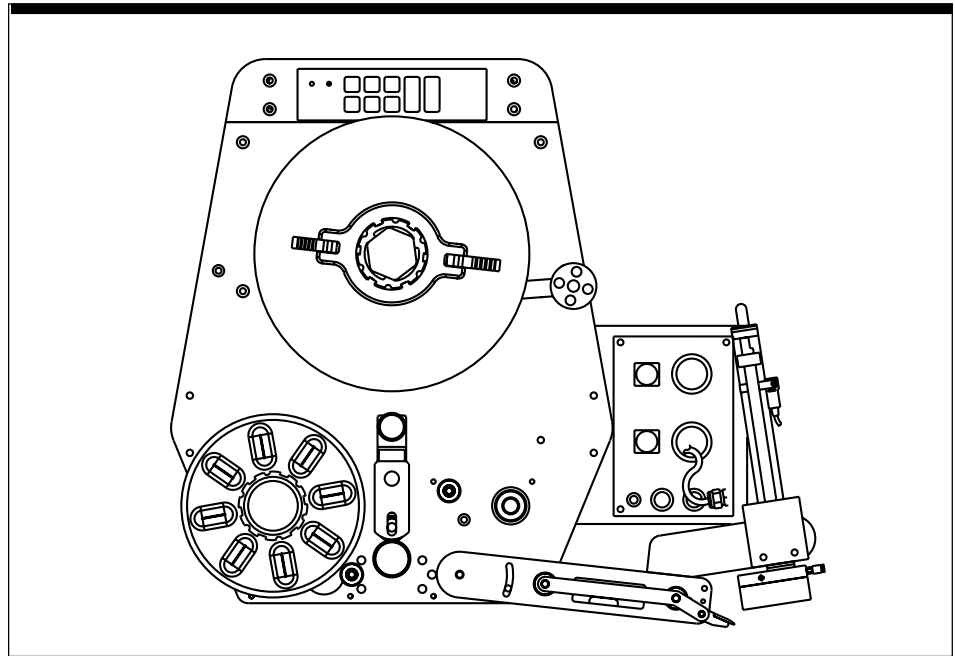


Figure 1-3. Label Applicator with Optional Tamp-On Module

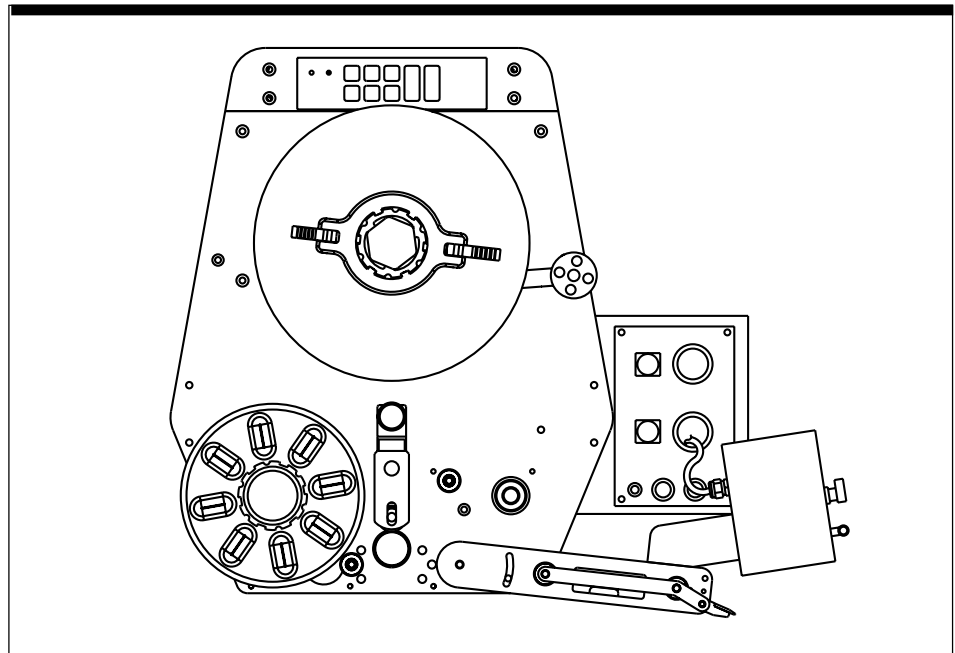


Figure 1-4. Label Applicator with Optional Blow-On Module

Applicator Specifications and Upgrades

The manufacturer or distributor may have changed specifications to match your application. Refer to *Tables 1-1* and *1-2* (on the following page) for applicator specifications.

<i>Applicator Specifications</i>	
Accuracy	± 0.032" (0.8 mm) depending on the application module
Controls	Dual processor
Product Detection	Photo sensor
Label Sensor	Photo electric
Power Requirements	115/220V, 50/60 Hz, single phase, 6 AMP
Shop Air for Modules	80 psi min, 100 psi max to the Filter/Regulator
Environment	41-104°F (5 to 40°C) operating temperature
Relative Humidity	25-85% relative non-condensing humidity
Label Supply Roll	12" (305mm) OD with 3" (76mm) spool ID
Overall Dimensions of Applicator	19.25" wide x 23.75" tall x 18.5" deep (489mm x 604mm x 470mm)
Electrical Box (back)	12.25" wide x 17.5" tall x 9.125" deep (311mm x 445mm x 232mm)
Weight	Approx. 50 lbs (23 kg)

Table 1-1. Applicator Specifications

L250A Applicator Manual

<i>Description</i>	<i>Part Number</i>
Low Label Detector/Sensor, Tri Color Beacon Lamp for Fault Conditions	L100LTBICM
T-Stand, Light Duty, 60" (1524mm) Tall w/39" (990mm) of Vertical Adjustment	L100VST001
T-Stand Gusset Kit to Convert Light Duty Stand to Heavy Duty	L100GK6001
T-Stand, Heavy Duty, 60" (1524mm) Tall w/39" (990mm) of Vertical Adjustment	L100WVST01
U-Arm	L100UVILIT
Horizontal Liner Adjuster (Single Axis)	L100HLA001
Blow-On Module (4.5" x 5.5" Grid)	LBOMVILF01
Peeler Plate Brush Accessory (4" Wide)	L100VILFBA
Line Encoder Kit	
Tamp-On Module Kit	LTOMVILF07

Table 1-2. Applicator Options and Upgrades

Safety Precautions

2

Warnings and Conditions



Turn Off Power! Before servicing, make sure you have turned off the compressed air and electrical power in a way which prevents accidental reactivation. Padlock and clearly tag the appropriate electrical and pneumatic disconnects. After disconnecting the electrical power, wait at least two minutes for the motor capacitor to discharge.



Dress Appropriately! Reduce the risk of injury from moving parts by securing loose sleeves and other clothing. Do not wear loose jewelry or neckties near the machine. Wear safety glasses or other protective eyewear at all times. Never place hands or tools in the tamp, corner wrap, print head, or any other movable parts when the labeler is operating.



Avoid Pinch Points! Exposed pinch points include the unwind and rewind assemblies, nip and drive shafts, dancer arm, pull pin and wipe-on arm.



Avoid Dangerous Conditions! The standard labeler should not be placed in washdown environments nor is it designed to be used in explosive conditions. The standard applicator will be damaged when sprayed by a fire suppressant sprinkler system. Dry conditions are critical for long life duration of the machine. Potentially explosive environments, such as areas where flammable gas and vapors are present, should be avoided due to static electricity caused by normal operation.

Applicator Installation

3

This chapter covers unpacking, inspection, positioning and power and air hookups for the label applicator.

Unpacking and Inspection

Step 1—Check the Shipping Container. The shipping container protects the applicator under most circumstances. Visually inspect the outside of the shipping container. Report damage to the Shipping Carrier immediately.



The Applicator can weigh in excess of 100 lbs (68 kg).

Step 2—Unpack Applicator. Remove the top and sides of the shipping crate to expose the Applicator. Remove the packing material. Inventory the container.

Applicator Positioning

The standard applicator has two mounting holes that are located on each side of the applicator. The optional U-arm supports the applicator at those mounting locations.

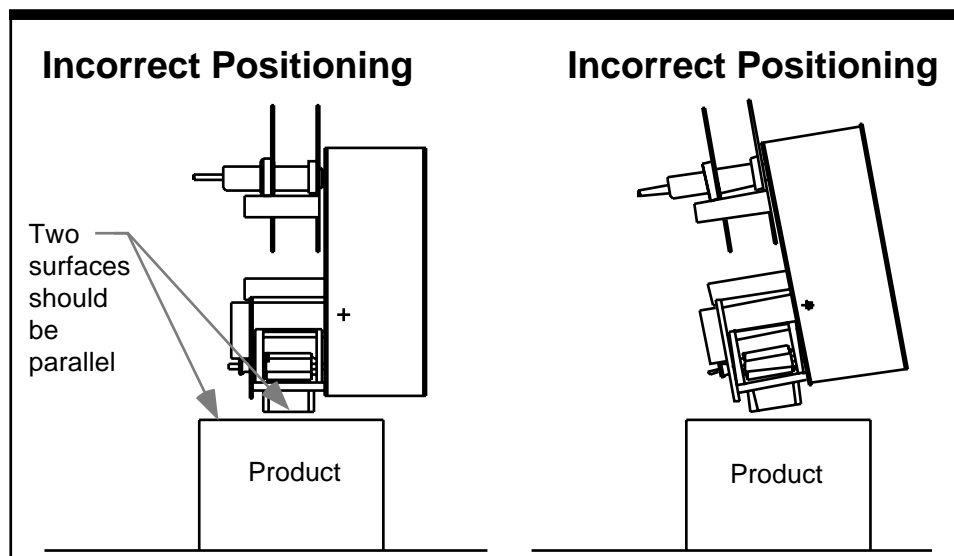


Figure 3-1. Correct/Incorrect Positioning

A smooth labeling operation requires correct positioning. Keep the applicator parallel to the product surface. Refer to *Figure 3-1*.

The rotational adjustment of the wiper arm places the flagged label as close to the product as possible. Adjust the wiper arm

to an angle of 13 degrees relative to the product. Then, rotate the peeler tip as needed. Refer to *Figure 3-2*. The peeler tip is located just above the product.

Note: Any adjustments of the label placement to the product must result in a smooth, non-vibrating process.

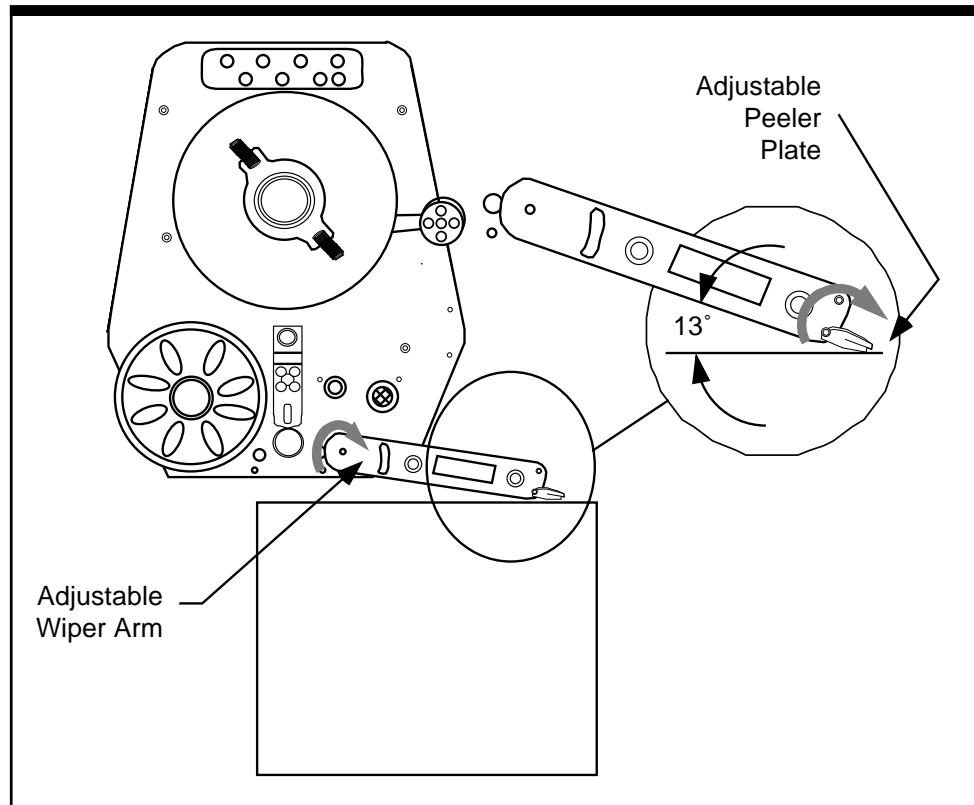


Figure 3-2. Peeler Tip Rotational Adjustment



The wiper arm and peeler plate do not float. Damage to the Applicator, Peeler Plate and the Product will occur when the product hits them.



Position the applicator to prevent or minimize vibration and movement during operation. Vibration to the applicator during operation directly affects label placement accuracy. Make adjustments after mounting.

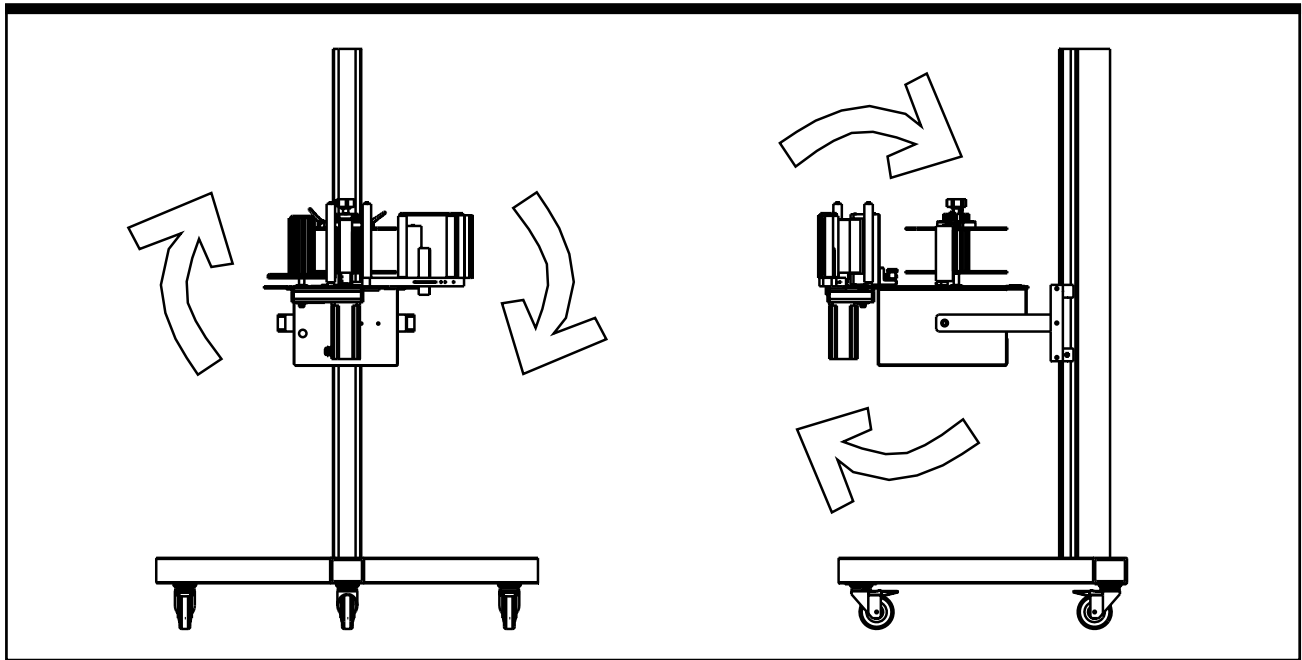


Figure 3-3. T-Stand and U-Arm Adjustments

To position the peeler tip closer or further away from the product, rotate the applicator or the peeler plate or both. To rotate the applicator, loosen the large hex nut that fastens the U-arm to the applicator. Adjust the two long setscrews on the anti-rotation bracket. Retighten the nut to secure the applicator's position. The amount of rotation is limited. Do not remove the anti-rotation bracket unless absolutely necessary (see *Figure 3-3*).

To position the applicator for top, side, or bottom panel labeling; loosen the two socket head cap screws that fasten the U-arm to the applicator. Rotate the applicator into a position where the peeler plate or application module is parallel to the surface of the product. Retighten the Applicator Mounting screws.

Use the handle at the top of the T-stand to raise or lower the applicator to the desired height relative to the product.

To change the horizontal position, unlock the casters on the bottom of the T-stand and roll the applicator to the desired location. Relock the casters.

Applicator Setup

Label Specifications Only use labels that can be removed from the webbing. See the table below (*Table 3-1*) for label and web specifications additional requirements.



Before installing a label roll, read Table 3-1, Label & Web Specifications to insure the selection of proper label stock.

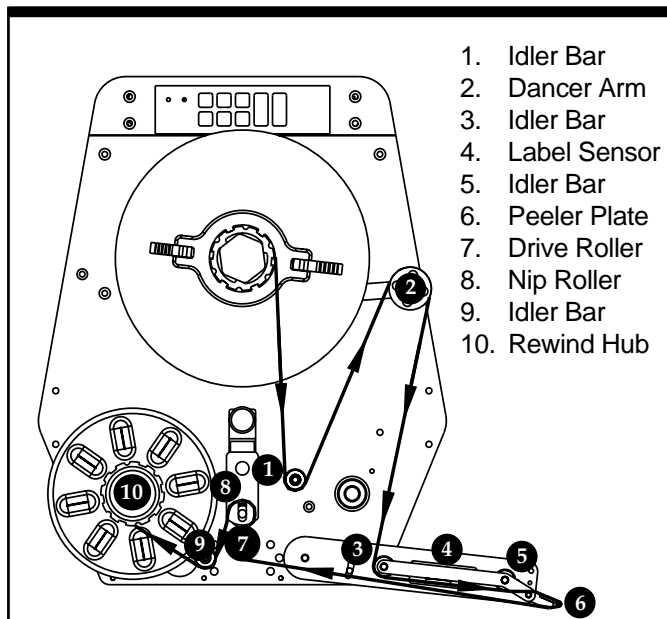
<i>Label and Web Specifications</i>	
Label Style	Stripped out form only. Minimum spacing of 0.125" (8") (3mm). Remove all die cut waste (skeleton). Label backing must have a release agent such as silicon. Label must free peel when pulled around a standard peeler plate with a minimum label gap of 0.125" (8")(3 mm).
Accuracy	(A) Linear position of label relative to web or backing must be centered. (B) Die cutting and edge slitting must be controlled to avoid cutting or nicking of the web backing. Failure to regulate this will result in web failure and label dispensing problems. (C) Web must be a minimum of 0.25" (4") (6 mm) wider than label to be dispensed.
Roll Put-Up	Maximum O.D. of roll is 12" (305 mm) with a core I.D. of 3" (76 mm). Label orientation is based on equipment and product orientation. Wind labels to the outside of the roll.
Splices	Splices should be avoided as much as possible, but when splices are needed, please use "Angle" style, flush to the edge on both sides of backing, using 1" (25 mm) cellophane splice tape. Replace the label in the spliced area.
Label Tolerance	A label tolerance of ± 0.032 " (Q") (0.81 mm) can be maintained provided that: (A) Labels are manufactured to the right label specification with no die cuts into the webbing. (B) Lateral position of labels are within 0.0025" (0.06 mm) on the x and y axes.
	The capacitance sensor will be damaged by metal or foil labels.

Table 3-1. Label and Web Specifications

Label Threading

Refer to numbered sequences in *Figure 3-4* to thread labels through the labeler (shown: Righthand labeler). To thread a lefthand labeler, it is a mirror image.

- Step 1.** Remove the outside Lexan Cover on the Unwind Shaft by pulling the outside tabs forward. Place the Label Stock spool onto the Unwind Shaft. Secure the outside Lexan Cover by pressing the Lexan cover against the label stock and pushing the tabs back so they are parallel with the Lexan cover. For the Right Hand Applicator, the labels run over the top and down the Right Hand side. For Left Hand, the labels run over the top and down the left side.
- Step 2.** The webbing is routed (CCW) under the first idler bar (1) and up to the Dancer Arm (2).
- Step 3.** The webbing goes (CW) over and around the Dancer Arm (2).
- Step 4.** The webbing is routed through the Wiper Arm (3, 4 & 5). The labels go (CCW) under the first idler bar (3), through the middle of Label Sensor (4) and under the second idler bar (5).



Step 5. The webbing is routed (CW) around the peeler plate (6).

Step 6. With the Nip Roller disengaged, route the webbing under and then over the knurled Driver Roller (7). Engage the Nip roller and route the webbing over the top of the Nip Roller (8) to form a reverse S.





Step 7. The webbing is routed (CW) under the last idler bar (9).

Step 8. Remove the Pull Pin and wrap the webbing (CW) around the Rewind Shaft (10). Replace the Pull Pin so that the Label Stock is captured.

Table 3-4. Label Threading Sequence

Control Buttons

The control buttons perform the following functions (refer to *Figure 3-5 and Figure 3-6*):

- STOP** Immediately stops the applicator. Electrical power remains on.
- RESET** Press the RESET button to clear the controller. Correct the cause of a fault or error indication before resetting the applicator.
- FEED** Manually feeds label web while the button remains depressed. The drive motor's speed increases incrementally.
- AUTO TEACH** Automatically determines the length of the label pitch and stop distance.
- PRODUCT DELAY** **Increase/Decrease:** Increase  or decrease  the Label Delay Time, which starts to countdown after the product sensor inputs a signal.
- LABEL SPEED** **Increase/Decrease:** Increases  or decreases  the speed at which a label is advanced. Clockwise to increase, and counterclockwise to decrease.
- JOG** Manually feeds a single label.
- SAVE** Press this button to save parameters above before machine is powered off.
- Synchronous / Asynchronous** (Located on the rear of the unit). Selects between synchronous and asynchronous mode.

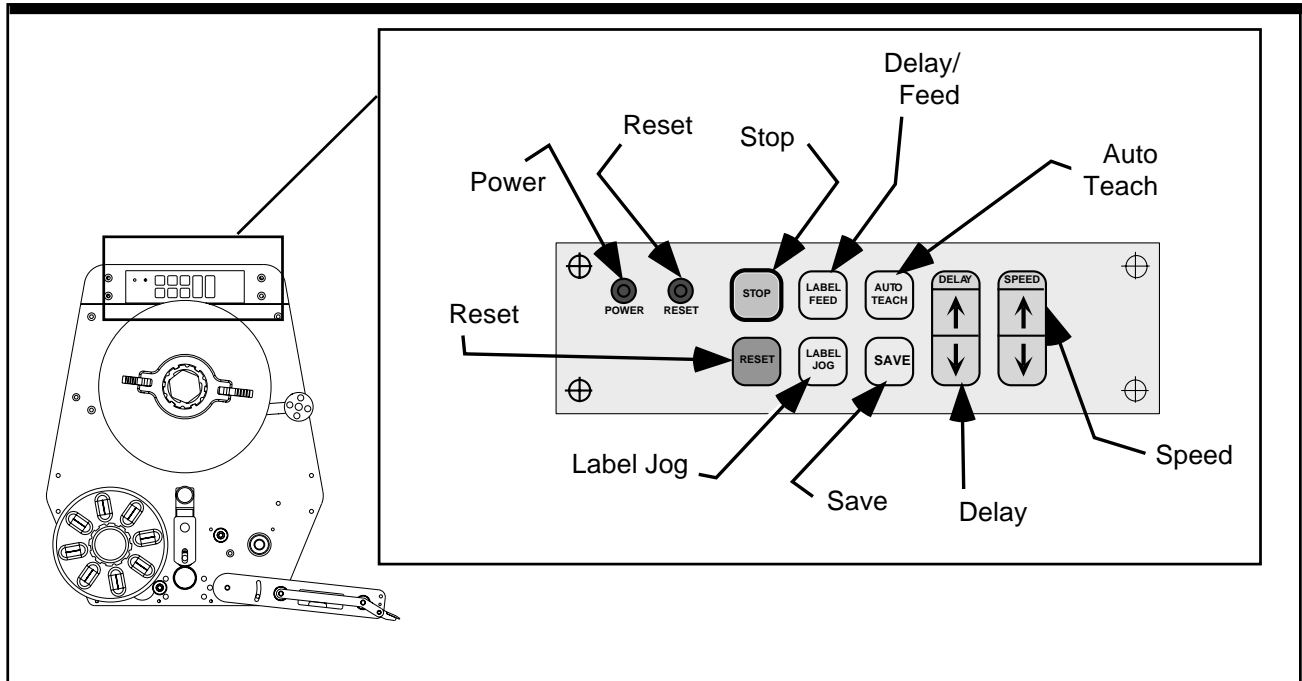


Figure 3-5. Interface Buttons - New Style Membrane Panel

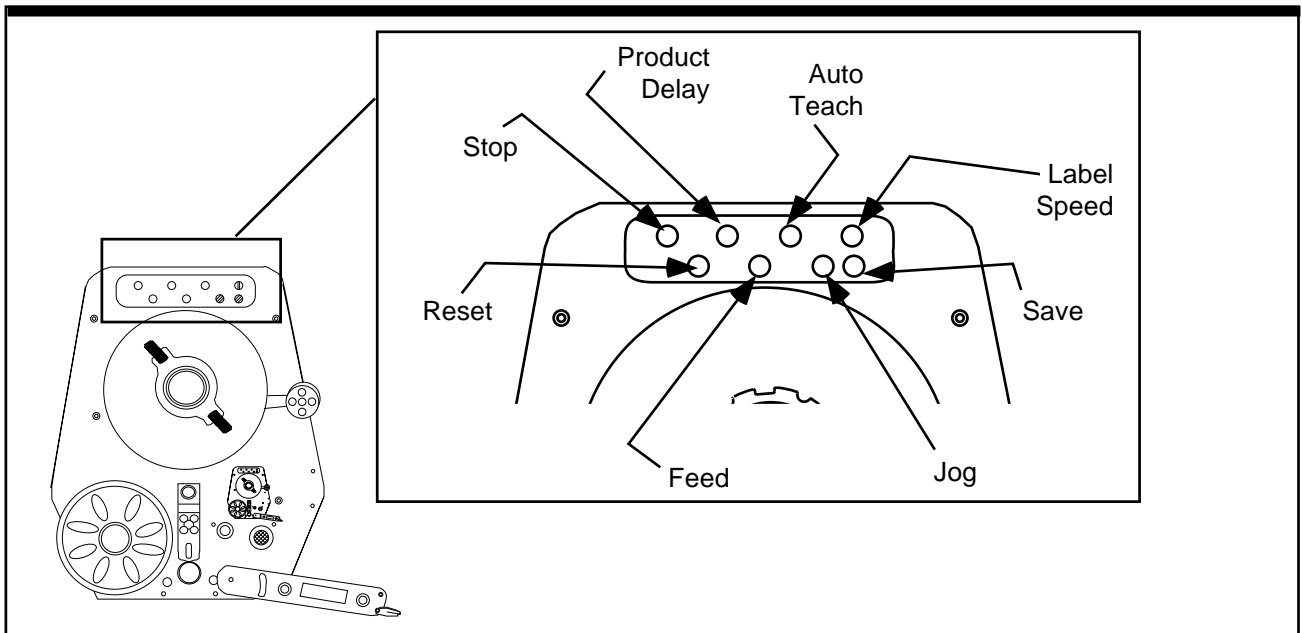


Figure 3-6. Interface Buttons - Old Style Control Panel

Interface Panel

Connections for the interface panel are found on the side of the labeler (refer to *Figure 3-7* below). These connections are easily accessible for quick changeover between modes of operation. The following is an explanation of each device:

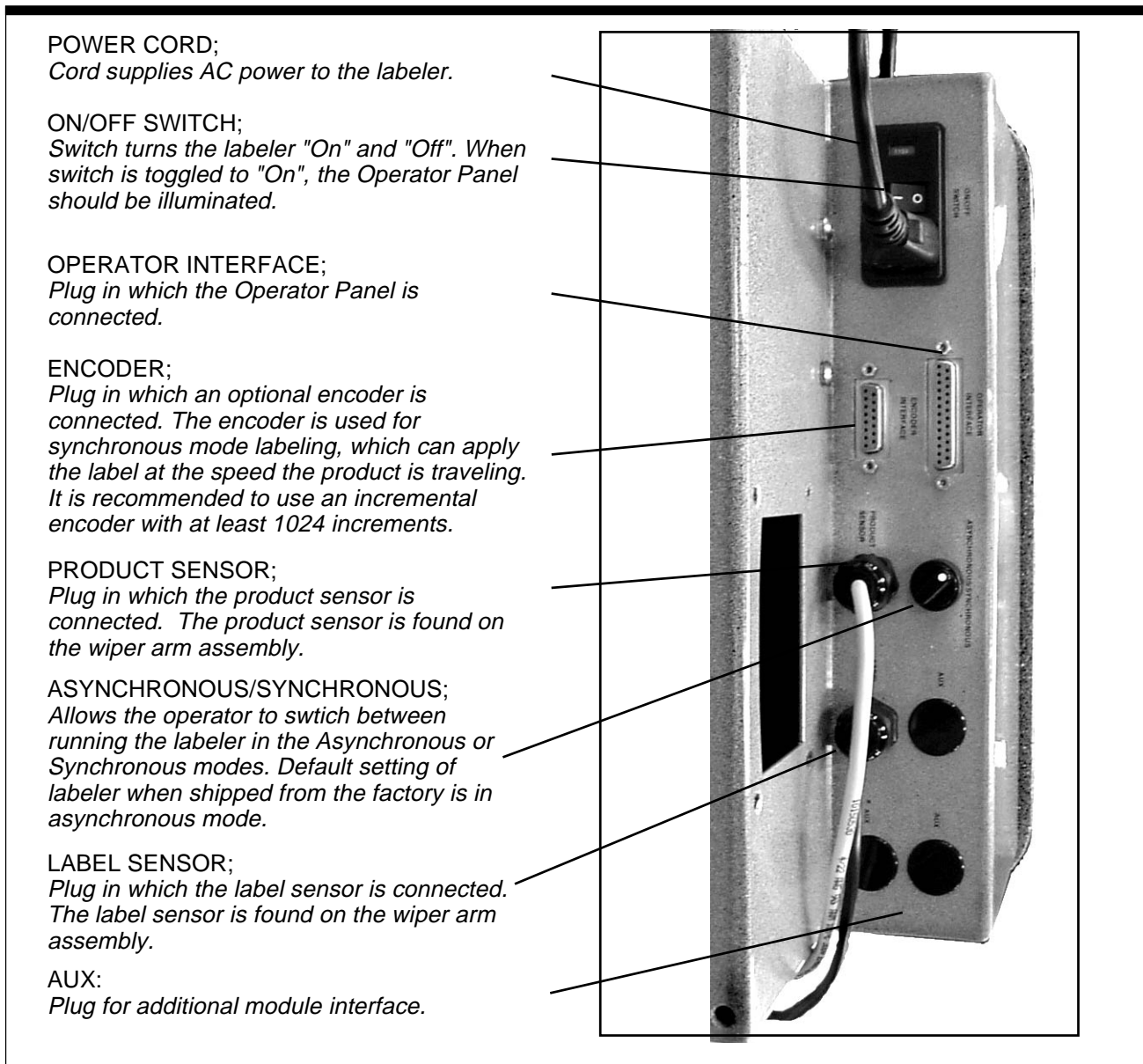


Figure 3-7. Interface Panel

Power Supply

Supply the unit with the correct supply voltage permits safe and efficient operation. Refer to *Table 1-1* for exact specifications.

Verify Main Power

The labeler is supplied with a power cord for AC operation. Plug the power cord into an outlet with the proper voltage (115 VAC) and ground (if 220 VAC is required, refer to the section, "Converting to 230VAC 50Hz Power" below.) Make sure the power cord is securely connected to the labeler and the outlet.



Due to the wide variety of plugs used worldwide, the power cord that is shipped with the labeler has a standard U.S. plug. If you need a power cord with a different type of plug, purchase a power cord approved by local government or identified with an HAR (Harmonized Standard) label.

115 VAC and 220 VAC are the two voltages accommodated for in the labeler. Improper voltage may cause harm and/or damage to the operator and/or labeler.

Converting to 230VAC 50Hz Power:

- Step 1.** Remove the power cord from the main power switch (*Figure 3-7*).
- Step 2.** Facing the back of the labeler, remove the hole plug from the bottom left hand side of the electrical enclosure.
- Step 3.** Move the voltage select slide switch to the "230" position.
- Step 4.** Replace the hole plug.
- Step 5.** Open the access door which reads 115 on the bottom of the main power switch.
- Step 6.** Remove the red fuse holder from power switch.
- Step 7.** Rotate the fuse holder 180 degrees and re-install the fuse holder.

- Step 8.** Close the door on the main power switch and verify that "230" is visible on the switch.
- Step 9.** Re-install the power cord to the main power switch and connect to 230VAC. Restart your labeler.

Refer to the wiring schematics located in Chapter 7 for more information.

Rewind Clutch Adjustment

The Rewind Clutch is located behind the large cap on the end of the Rewind Shaft (see *Figure 3-8 below*). Although the clutch can be adjusted by turning the knurled end ring, a clutch tool is recommended. The clutch tool will allow adjustments with little effort and greater accuracy.

To increase take-up rate, turn the clutch on the rewind shaft clockwise to apply more pressure on the friction washer (less slip).

To decrease take-up rate, turn the clutch on the rewind shaft counterclockwise to reduce the pressure on the friction washer (more slip).

As the rewind shaft fills, the rewinding speed will slow. This is due to the increased diameter of web waste on the rewind shaft. To compensate for the slowdown, adjust the rewind speed as if the rewind shaft was full.

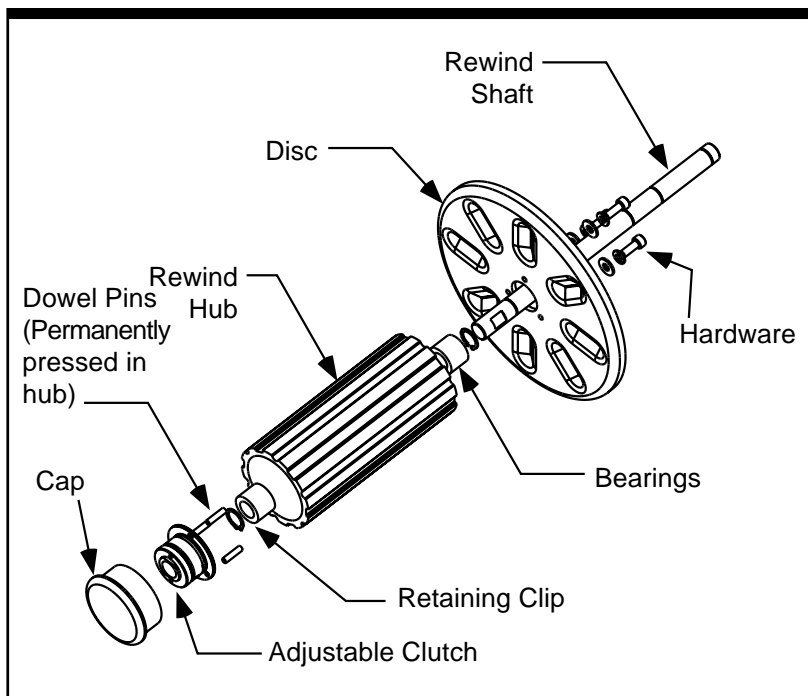


Figure 3-8. Rewind Assembly

Label Sensor

Overview The CS2000 Label Sensor will automatically adjust label sensitivity to the optimal setting by simply depressing a pushbutton. This adjustment process is referred to as “Easy Setup.” Adjusting the sensitivity for each new roll is recommended due to differences in label rolls.

Easy Setup To adjust label sensitivity for a new roll follow steps 1-4.

Step 1. Peel off a label and position the web under the sensing area.

Step 2. Depress the push-button until the yellow LED comes on for 1 second and then release..

Step 3. The yellow LED will be flashing.

Step 4. Move the label under the sensing area and the green LED will come on..

The sensor is now adjusted and should function correctly.

Note: If in the Adjusting Label Sensitivity mode by mistake, the push-button may be depressed to exit with no changes made.

<i>CS2000 Label Sensor Troubleshooting</i>		
<i>Problem</i>	<i>Possible Cause</i>	<i>Solution</i>
Red LED light flashes after the pushbutton is released.	The sensor cannot adjust to the label backing. Probable cause is a build up of paper, dust or some other obstruction is under the sensing area.	<i>Blow out the paper dust using the paper dust escape holes or remove any obstruction from under the sensing area.</i>
Yellow LED continues flashing even after a label is placed under the sensing area.	There is not enough contrast between the label and the label backing (webbing).	<i>Try the Low Contrast setting.</i>

Table 3-2. CS2000 Troubleshooting

Labeling Error

This error can occur when the label sensor is placed just after the trailing edge of the label. Then, the stop distance may be too short and the motor cannot stop in the correct target position. This error is especially seen at higher labeling speeds with short labels.

Another reason for this error is a ramp parameter setting that is too low. This also requires more stop distance that may not be available.

In the error condition, the controller “locks up” and displays a flashing 42 on the controller display.

Controller display:



The following graphic shows a sensor placement with a stop distance that may be inadequate for higher speeds.

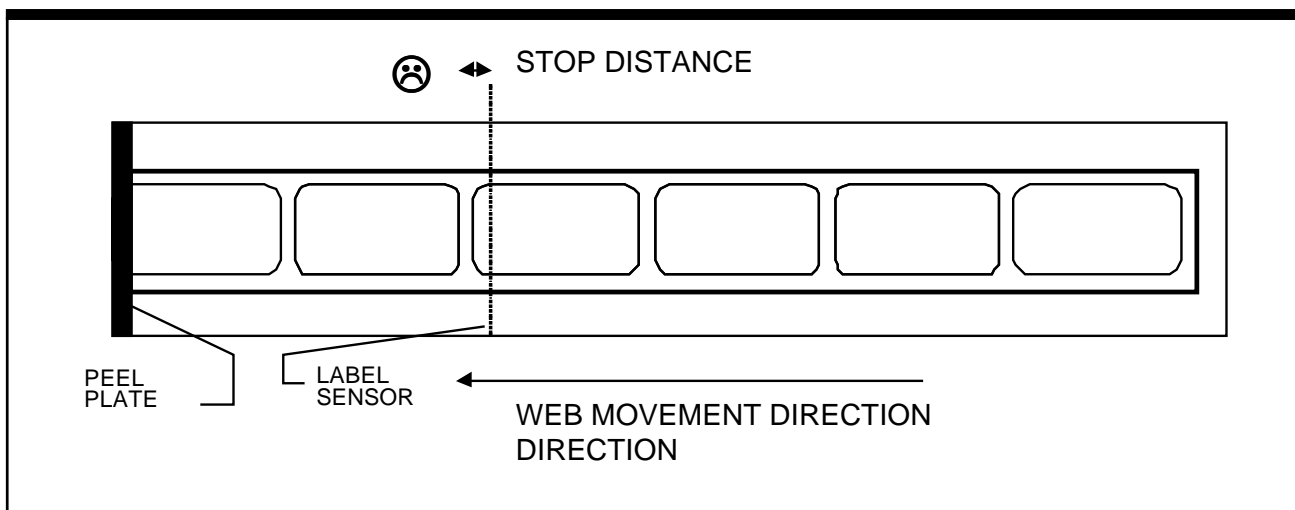


Figure 3-9. Inadequate Stop Distance for Sensor Placement

Try moving the sensor against the web direction for increasing the stop distance.

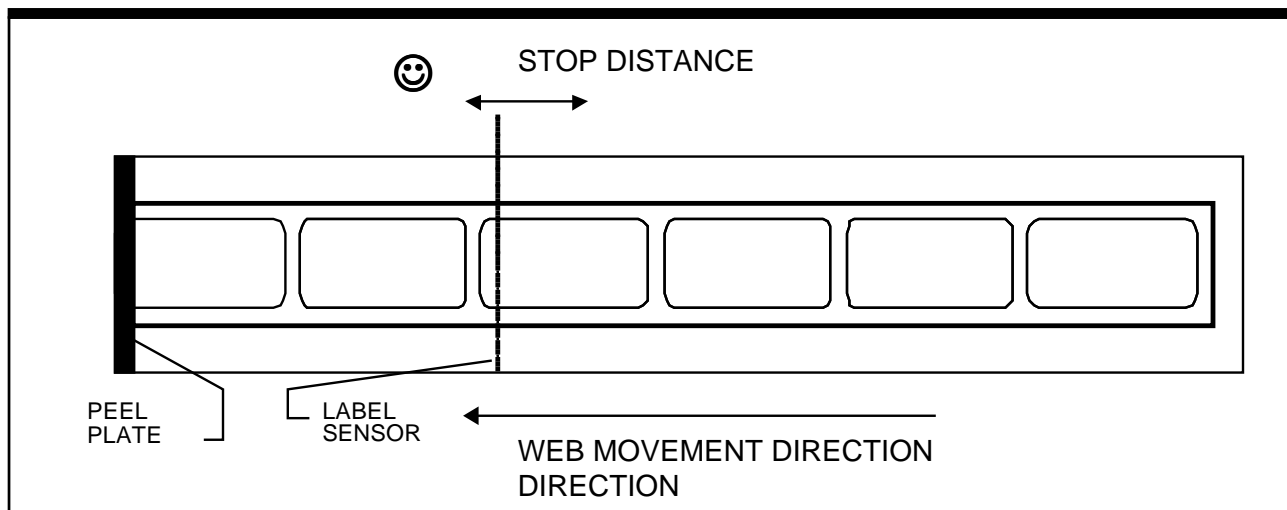


Figure 3-10. Adequate Stop Distance for Sensor Placement

The goal should still be to place the sensor in the center position of the label. For very short labels dispensed at a high speed even this position may not give enough stop distance. In this case try to move the sensor only as much as required against the web direction to gain more stop distance.

Labeling System Setup

A labeling system is setup for dispensing the maximum number of labels at the maximum applicator speed.

There are different ways to set up a labeling system. A setup for maximum performance is described below.

- Step 1. Select Spool Size.** Use the largest spool with the largest label size you plan to dispense.
- Step 2. Move Label to Dispense Position.** Move the label with the LABEL FEED function to the dispense position (label flag).

Step 3. Place Label Sensor. Place label sensor to the middle of a label.

Step 4. Run Auto-Teach Function. If system stalls, reduce the **ACCELERATION/DECELERATION RAMP** and **START STOP SPEED** until the stalling stops.

Default setting for **ACCELERATION/DECELERATION RAMP** and **START STOP SPEED** is 200 Hz/ms

The system is now set up for maximum performance.



Note: If you have purchased the optional keypad interface and cable, follow the steps below to complete your labeler setup.

Step 5. Set Asynchronous Speed. If you know the maximum labeling speed already, set it as the **ASYNCHRONOUS SPEED** in the parameters then dispense labels in asynchronous mode. If you don't know the maximum labeling speed or should the system stall, increase the labeling speed step-by-step starting from 250 mm/sec (e.g. 250, 400, 508) and find out at which point the stepping motor stalls. If the motor stalls, reduce the maximum speed back to a safe rating.

Step 6. Increase Acceleration/Deceleration Ramp. Continue dispensing labels. Now increase the **ACCELERATION/DECELERATION RAMP**, step-by-step, starting from the default 200 Hz/ms. If the motor stalls, reduce the maximum acceleration / deceleration ramp back to a safe rating.

Note: Please consider that a high acceleration rate may stress the web and create a loose condition.

Step 7. Increase the Start-Stop Frequency. Dispense labels in the asynchronous mode and increase the **START-STOP** frequency, step-by-step, starting from the default 200 Hz. If the motor stalls, reduce the maximum start-stop frequency back to a safe rating.

Note: Please consider that a high acceleration rate may stress the web and create a loose condition.

Step 8. Setup Complete. As a result of the actions 1 to 7, the system is now set up for maximum performance (most likely required on labeling machines).

*Note: Reference all **BOLD CAPPED** terms in *Operator Interface Chapter*.*

LH & RH Conversion

Conversion of the L250A requires the following tools:

- ◆ External Snap Ring Pliers
- ◆ L-Key metric Allen wrench set and a $\frac{9}{64}$ " Allen wrench
- ◆ 14" T-handle metric Allen wrench set
- ◆ Small flat blade screw driver
- ◆ Rubber mallet
- ◆ Arbor Press
- ◆ Taps: 5mm x 0.8 tpi and 8mm x 1.25 tpi.

Overview Disconnect power cables
Remove label stock
Remove wipe arm
Remove front face plate
Remove the motor
Switch the rewind location
Switch the motor location
Switch the motor direction
Switch the dancer arm internals
Reinstall front plate
Switch the dancer arm
Reconnect power cables
Test the applicator

As with all disassembly and reassembly, attention to details is important. Most of following steps must be performed in the order presented. The manufacturer has determined this procedure is the quickest and most efficient method of converting the applicator.

The applicator is hard wired. This means caution must be used since the motor, label sensor, and product sensor will always be attached, thus limiting the freedom of movement. A workbench that is twice the size of the L250A is recommended.

Note: All of the hardware is metric EXCEPT the label sensor mounting socket head cap screw, which requires a $\frac{9}{64}$ " Allen wrench. Some components are shimmed. Be sure to return any shims to their original location. Bag and tag the shims to be sure.

Step 1. Turn Off Power. Turn the main power switch off and unplug power cord.



Wait two minutes for the motor start capacitor to discharge. Use caution after the front panel is removed. When disassembled in accordance with the instructions, the electrical components, electrical wiring, terminal blocks, and their connectors are exposed. Do not disrupt, bang, snag or otherwise damage the electrical components.

Step 2. Wiper Arm. Place the applicator on a workbench with the faceplate up.

- ◆ Remove any label stock.
- ◆ Remove the label sensor, coil the wire and tape or wire tie the sensor in a safe location.
- ◆ Remove any Modules such as the Tamp-On Module.
- ◆ Remove the wiper arm.

Step 3. Remove the Drive Roller. Disengage the nip roller. The nip roller may already be disengaged from removing the label stock. Loosen the two threaded setscrews and slide the knurled drive roller off the motor shaft.

Step 4. Remove the Faceplate. The faceplate is attached to the electrical box with six screws. One of the screws is accessed by rotating the rewind back plate until the hole in the rewind back plate is aligned with the screw. Flip the faceplate over to work on the backside.
Note: Extra motor power cord is available by loosening the strain relief and pulling the cord. This allows the faceplate to be worked with less restriction.

Step 5. Removing the Drive Motor. (See *Figure 3-9* and *3-10*.)

- ◆ Remove the snap ring on the back end of the rewind shaft. The rewind shaft may be shimmed. Keep the shims together.
- ◆ Remove the tensioner cover plate.

- ◆ Remove the tensioner.
- ◆ Remove the six-socket head cap screws holding the three-plate assembly in place.

Note: In the next step the drive belt remains with the motor and is removed from the rewind drive gear.

Note: The three-plate assembly is defined as Top Plate—plate that holds the motor; Middle Plate—a spacer ring plate; and the Bottom Plate—the plate that is next to the back of the Face Plate.

- ◆ With the motor still attached to the top plate, lift the motor away from the middle plate. Be prepared to work the drive belt off the rewind drive gear.
- ◆ Remove the middle plate.

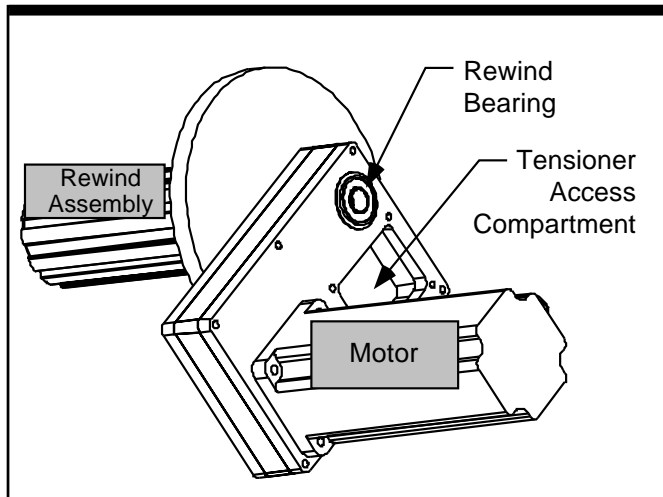


Figure 3-11. Removing Drive Motor

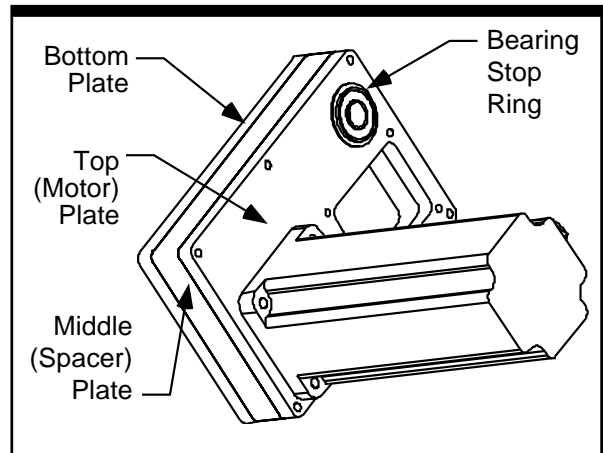


Figure 3-12. Three Plate Assembly

Step 6. Removing the Rewind Shaft.

- ◆ Loosen the setscrew that holds the drive gear to the rewind shaft.
- ◆ Remove the drive gear from the rewind shaft.
- ◆ Remove the bottom plate.
- ◆ Pull the rewind shaft through the bearing. The faceplate may have to be tilted or set on one side.

Step 7. Relocate the Idler Bars. There are two idler bars that must be relocated.

- ◆ Remove the flat head screw and relocate the idler bar to the countersunk hole on the other side of the nip roller drive bearing.

- ◆ Remove the socket head cap screw and relocate the idler bar to the opposite side of the faceplate.

TIP: An Allen Wrench placed in the Button Head Screw will keep the idler bar from spinning freely.

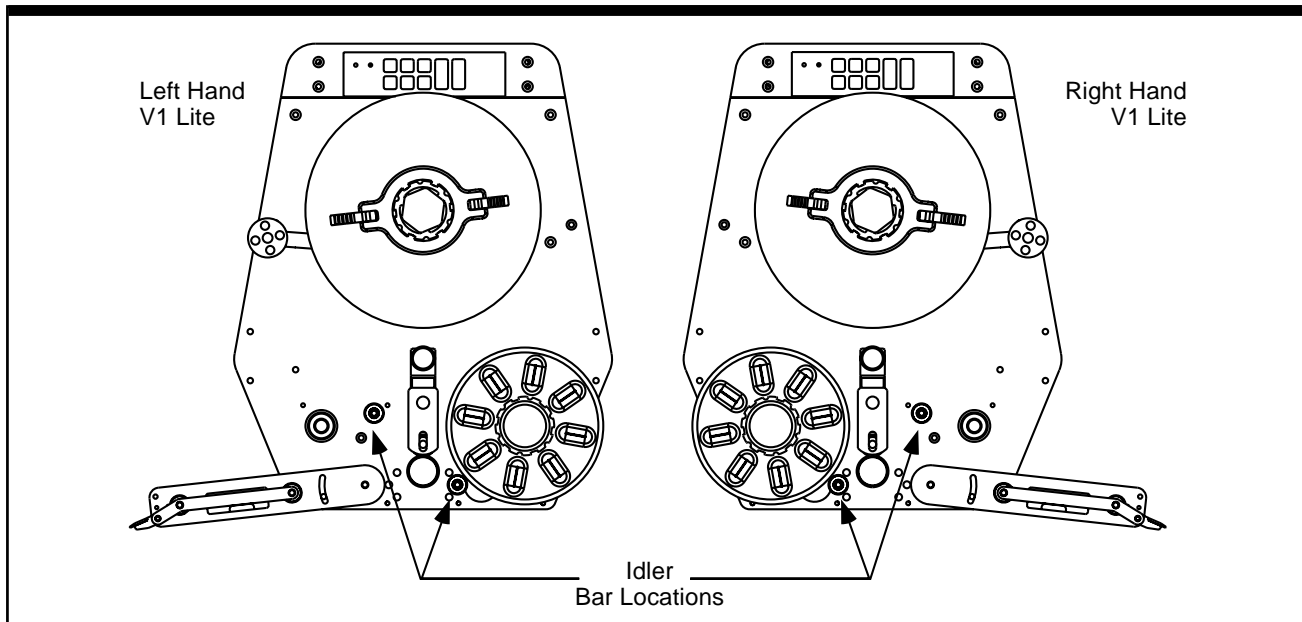


Figure 3-13. Idler Bar Relocation

Step 8. Relocate the Drive Assembly.

- ◆ Remove and relocate the bearing plug.
- ◆ Insert the Rewind shaft through the new bearing location.
- ◆ Orient the bottom plate so the drive hole and the rewind holes are aligned with the bearings. The tensioner holes are orientated at the bottom.
- ◆ Attach the rewind drive gear. Make sure the snap ring is against the bearing (on the front of the face plate) and then set the gear in place and tighten the threaded setscrew – no gap is necessary.
- ◆ Place the middle plate into position. The machined corner of the plate surrounds the rewind drive gear.
- ◆ Mark the plate to prevent attaching the motor to the same side.
- ◆ Both the bearing and the motor will be relocated to the other side of the Top Plate. Remove the motor from the top plate.
- ◆ Press the bearing out and reinstall on the other side.
- ◆ Reinstall the motor to the other side.

Note: Use the following technique to reattach the Drive Belt.

Step 9. Relocate Motor Drive Assembly *(continued.)*



- ◆ Place the belt around the motor drive gear and keep tension on the belt.
- ◆ With the belt in tension and top plate approximately one inch above the middle plate, set the belt on the rewind drive gear allowing only enough slack to accomplish the job. Once the belt is attached to the rewind drive gear, set the top plate onto the middle plate. *Note: Once the top plate is set down onto the middle plate the belt will not come off the gears.*
- ◆ Secure the plates by replacing the six socket head cap screws.
- ◆ Reinstall the tensioner and tension the belt. The tensioner is best described as an idler and the amount of tension needed is minimal. Do not over tension the belt.
- ◆ Reinstall the tensioner cover plate.
- ◆ Reinstall any shims and the snap ring to the end of the Rewind Shaft.

Step 10. Reverse the Motor Direction. Follow the motor wiring harness from the motor to the controller. See the Appendix for the photograph of the Internal Electrical Components. At the green plug, there are four wires. Swap the following two wires: The clear insulated and the red insulated wires. Those positions are U and W as read on the controller. Leave the black wire and shielded wire in place.

Step 11. Dancer Arm.

- ◆ Remove the spring at the shoulder bolt and remove the spring mounting block.
- ◆ Relocate the green friction belt to the opposite side of the spring bar.
- ◆ Reinstall the spring mounting block to the opposite side. Unless additional tension is required, position the shoulder bolt close to the dancer arm spring bar to allow adjustments in the future.
- ◆ Reattach the spring to the shoulder bolt.

Step 12. Remount Faceplate to Electrical Box. Be sure to install the screw that is located under the rewind flange.

- Step 13. Relocate Dancer Arm to Opposite Side.**
- ◆ To remove the inner disk and unwind spool as an assembly, loosen the two threaded setscrews a half a turn. Then rotate the knob counterclockwise until the unwind shaft is free.
 - ◆ Remove the dancer arm.
 - ◆ Reinstall the dancer arm in the new orientation.
- Step 14. Reattach the Unwind Shaft.** Align the setscrews with the unwind shaft's flat and slide the unwind shaft on. Press on the knob while turning until the threads engage. Turn the knob clockwise until snug. Retighten the setscrews one half a turn.
- Step 15. Attach Knurled Drive Shaft.** Attach the Knurled Drive Shaft to the Motor's drive shaft.
- Step 16. Remove Peeler Plate.** Remove the Peeler Plate from the Wiper Arm and reattach the Wiper Arm on the other side. Otherwise, the peeler plate would be upside down.
- Step 17. Reinstall Label Sensor.**
- Step 18. Reinstall Peeler Plate.** Reinstall the peeler plate to the new orientation.
- Step 19. Test the Applicator.**
- ◆ Hold the dancer arm down and turn the label stock by hand. While turning the unwind assembly slowly allow the dancer arm to return to the home position. The unwind assembly should become more difficult, but not impossible, to turn.
 - ◆ Plug in the power cord and turn the main switch on.
 - ◆ After 30 seconds, to allow the controller time to boot, start the motor, and make sure the motor is turning in the desired direction.
 - ◆ Feed excess motor wire into the electrical box by loosening the strain relief, feeding the wire in and retightening the strain relief nut.
- Step 20.** Turn the applicator off and remove the power cord.
- Step 21.** Return the applicator to service.

Operator Interface

4

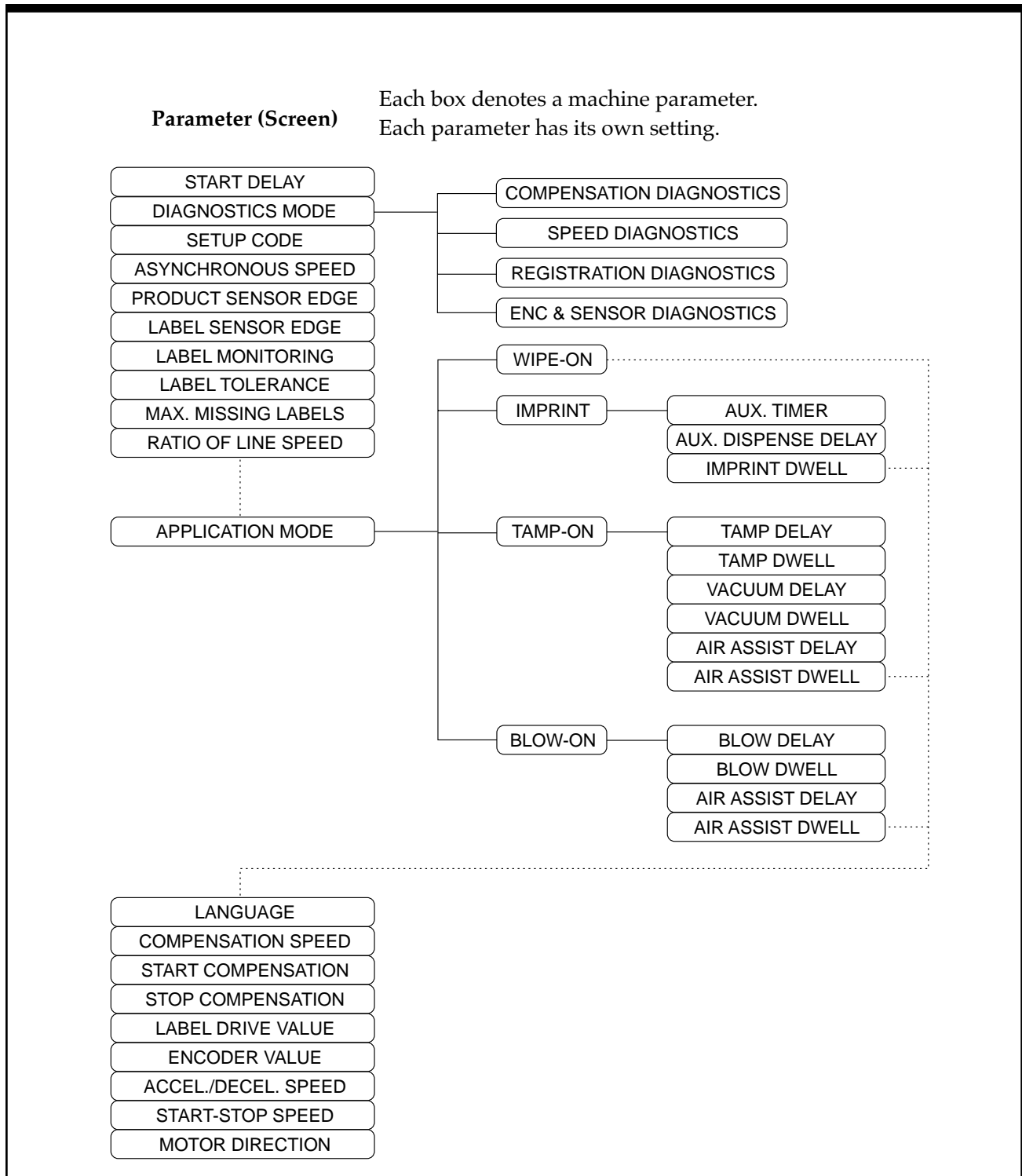


Figure 4-1. Mapping of the Operator Interface

Operator Interface Map

The previous page contains a brief illustration of the program layout. Note that some screens are only accessible through the Remote Operator Panel. The front membrane is used for basic setting changes.

Operator Interface Operation

The following information explains the different parameters found within the Remote Operator Panel. These parameters are extremely important in obtaining a reliable labeling operation. The operator should take time to sample various settings and observe how they affect the performance of the labeler. The more the operator understands the following information, the easier the transition from application to application will become.

Operating Mode

The two operating modes available are **synchronous** and **asynchronous**. The operator may change between modes by simply connecting the product sensor to the corresponding plug found on the Interface Panel.

When **synchronous** mode is chosen, the labeler will dispense labels at the speed determined by the encoder data sent to the controller. This mode is used for high speed, precise labeling or varying conveyor speed applications.

When **asynchronous** mode is chosen, the labeler will dispense labels at a constant speed determined by the values entered into the operator panel.



The settings the operator enters into the operator panel will affect the labeler differently depending on the mode the operator has chosen.

Remote Operator Panel Arrangement

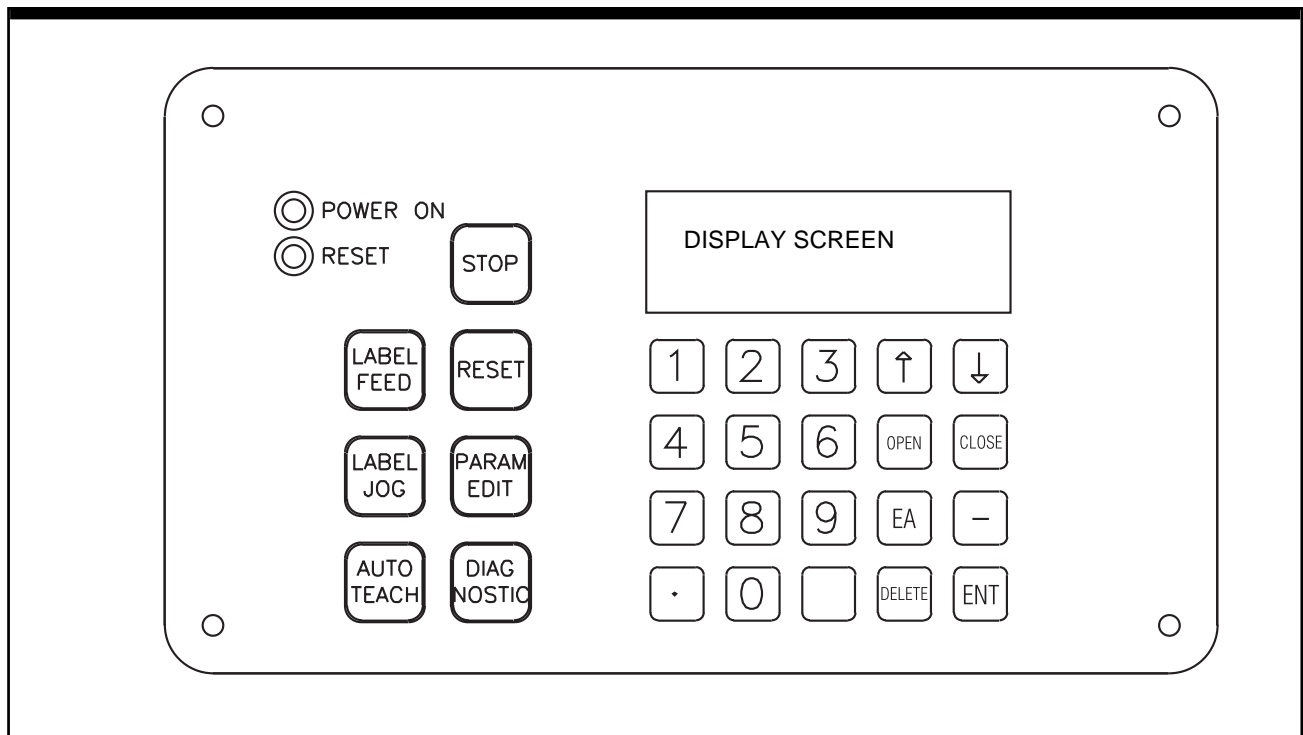


Figure 4-2. Operator Panel (New Style)

Power On: LED that illuminates when power is "On".

Reset: LED that illuminates when labeler needs to be reset.

Note: Quick release of button may cause controller error. If this condition happens, press "Reset" again.

Stop: Button used to stop the labeling process. Power stays on to labeler.

Reset: Button used to reset labeler faults or errors.

Param Edit: Button used to enter into the Edit Parameter screens to change values and application modes.

Diagnostics: Button used to see certain diagnostics while labeling is in process. See Diagnostics screen for details.

- Label Feed:** Button used to incrementally feed a label by increasing the speed of the drive motor.
- Label Jog:** Button used to feed one label at a time.
- AutoTeach:** Button used to automatically determine the length of a label pitch and the stop distance of the label. Depress this button once the label is properly aligned on the peeler tip using the Label Feed button.
- ↑ / F1:** Used to scroll up through the Parameter Edit screens.
- ↓ / F2:** Used to scroll down through the Parameter Edit screens.
- Open / F3:** Used to edit the value that is on the screen display. Pressing this button initiates the edit process, then Delete is used to edit individual digits.
- Close / F4:** Used to exit the Parameter Edit menu.
- Delete / Bksp:** Used to edit the value that is on the screen display. Pressing this button deletes one digit at a time.
- Ent / Enter:** Used to save the change to the value that is on the screen display.
- :** Used to signify negative value for ratio of line speed.
- EA:** Used to initiate "autoteach" for an encoder (see encoder value).

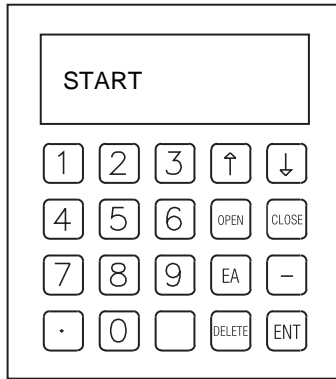
Main Menu

BOOT screen

Mode – shows the mode of the labeler.

System - Controller number.

I – Monitor %: should display 90%.



"START" screen

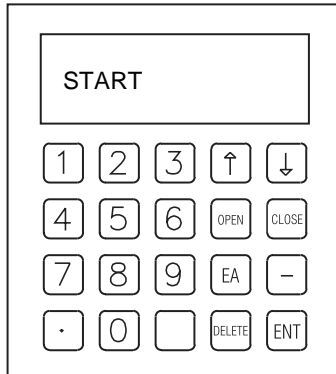
States labeler company name, mode number and maximum speed the labeler can obtain.

This is the default screen while the labeler is "On".

- ▶ Speed is in units of millimeters /second (mm/sec).

Note: Labeler speed will not exceed maximum shown on display.

Parameter Menu



"START DELAY" screen

Adjusts the position of the label onto the product.

Mode: Asynchronous

The distance from the product sensor to the peeler tip.

Increase value to position label closer to trailing edge of product.

Decrease value to position label closer to leading edge of product.

Note: Predicated on product sensor located upstream of peeler plate.

Mode: Synchronous

The number of encoder pulses the labeler receives, once the product sensor senses the product, before the label starts to dispense from the peeler tip.

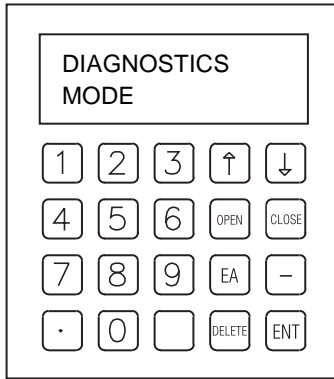
Increase value to position label closer to trailing edge of product.

Decrease value to position label closer to leading edge of product.

- ▶ Max: 750 (mm) Min: .1 (mm).

- ▶ Setting is retained when power is turned off.

Note: Labeler automatically changes delay if conveyor speed changes.



Diagnostics Mode

Selects between various diagnostic modes that will be viewed when the Diagnostics button is depressed on the operator panel.

- (1) – **Compensation Diagnostics**
- (2) – **Speed Diagnostics**
- (3) – **Registration Diagnostics**
- (4) – **ENC & Sensor Diagnostics** – information not available

COMPENSATION DIAGNOSTICS (1)

This diagnostic function is activated and is displayed once the Diagnostics button is depressed, with the diagnostics mode parameter set to 1, and a label is dispensed with the Jog or Product sensor.

Screen	Compensation Parameter	Unit
STARTCOMP	STARTCOMP ensation	Increments
EXP.COMP	EXP ponential COMP ensation (non linear compensation)	Increments
STOPCOMP.	STOPCOMP	Steps

SPEED DIAGNOSTICS (2)

This diagnostic function is activated and is displayed once the Diagnostics button is depressed, with the diagnostics mode parameter set to 2, and the product conveyor is running and a label is being dispensed.

Screen	Speed Parameter	Unit
ENC.SPEED	ENC oder SPEED	Increments/sec
MOT.SPEED	MOT or SPEED	Steps/sec

REGISTRATION DIAGNOSTICS (3)

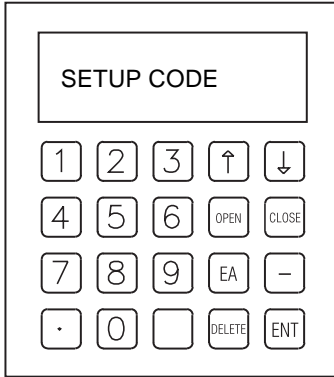
This diagnostic function is activated and is displayed once the Diagnostics button is depressed, with the diagnostics mode parameter set to 3, and a label is dispensed with the Jog or Product sensor.

Screen	Registration Parameter	Unit
SEARCHDIS	SEARCHDIS tance	Steps
TRIG.POS	TRIG ger POS ition	Steps
DEVIATION	DEVIATION	Steps

ENC & SENSOR DIAGNOSTICS (4)

This diagnostic function is activated and is displayed once the Diagnostics button is depressed, with the diagnostics mode parameter set to 4, and product conveyor is running.

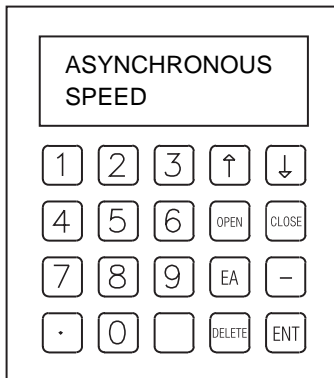
Screen	Registration Parameter	Unit
ENCODER SPEED	ENC oder SPEED	Steps
ENCODER POSITION	ENC oder POS ition	Steps
S: XXX A: XXX L: XXX		



"SETUP CODE" screen

Operator enters the code to edit the values on the remaining screens. The operator can view all the screens if code is not available.

Code 1 (91654) – Operator may change values on screens.

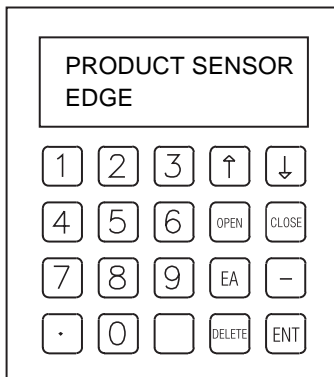


"ASYNCHRONOUS SPEED" screen

The speed at which the label dispenses from the peeler tip. This speed is typically set to the product line speed.

Speed is in units of millimeters/second (mm/sec).

Note: *Screen input is only relevant in the Asynchronous mode. Cannot exceed maximum speed of labeler.*



"PRODUCT SENSOR EDGE" screen

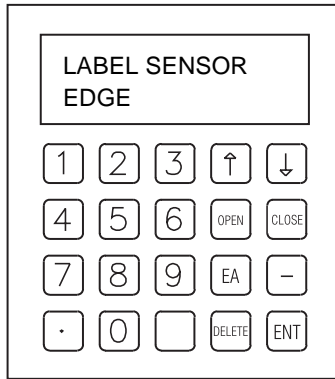
Toggles between Lead and Trail detection on the product sensor.

(0) – Lead (Default)

(1) – Trail

Lead - Initiates timing on the leading edge of the product.

Trail - Initiates timing on the trailing edge of the product.

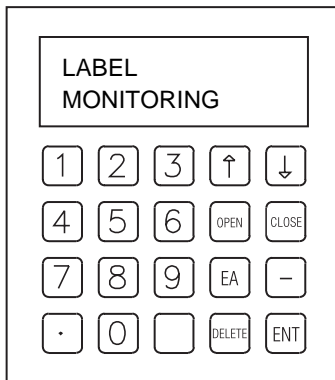


"LABEL SENSOR EDGE" screen

Toggles between Lead and Trail detection on the label sensor.

- (0) – Lead (Default)
- (1) – Trail

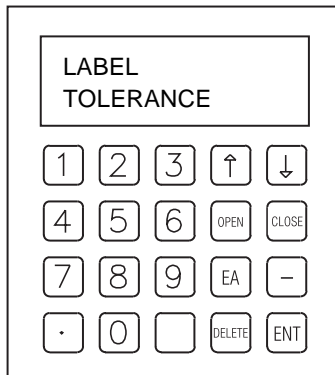
Lead - Detects leading edge of the label.
Trail - Detects trailing edge of the label.



"LABEL MONITORING" screen

Enables or disables the label monitoring function. If enabled, the Label Tolerance and Maximum Missing Label value is then initiated to keep track of missing labels.

- (0) – Off
- (1) – On (Default)



"LABEL TOLERANCE" screen

Sets a maximum distance that the label sensor does not see a label before giving an error.

- ▶ Max. 20 (mm) Min. 0
- ▶ Setting is retained when power is turned off.
- ▶ Distance is in units of millimeters (mm).

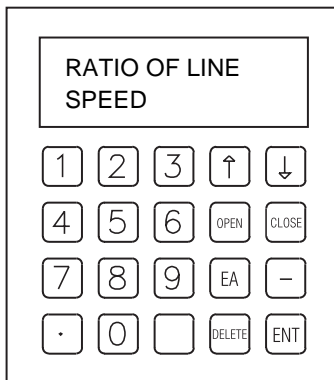
Note: Relevant only if Label Monitoring is turned "On".



"MAXIMUM MISSING LABELS" screen

Defines how many consecutive missing labels can occur before the labeler indicates a label error situation.

- ▶ Max. 100 Min. 0
- ▶ Setting is retained when power is turned off.

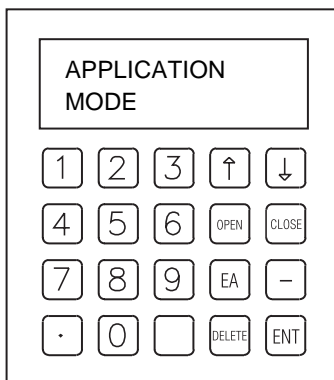


"RATIO OF LINE SPEED" screen

Increases or decreases the labeling feed rate relative to product speed by 15%.

- ▶ Max. +15 Min. -15
- ▶ Setting is retained when power is turned off.

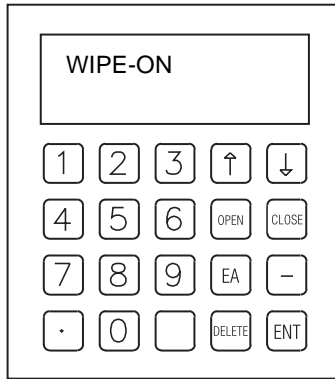
This allows the operator to change the speed of the labeling process if the conveyor line would increase or decrease for different products. It also allows labels to be "stretched" onto products when set to a negative value.



Application Mode

Chooses between various application modules.

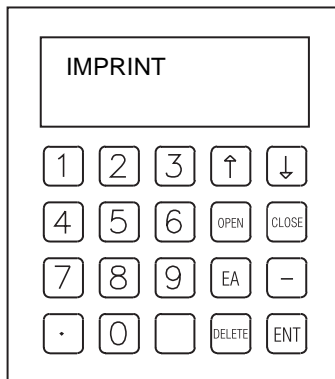
- (0) – Wipe-On (Default)**
- (1) – Imprint**
- (2) – Tamp-On**
- (3) – Blow-On**



"**WIPE-ON**" screen

Mode (0)

Mode which dispenses a label from the peeler tip in Asynchronous or Synchronous mode.



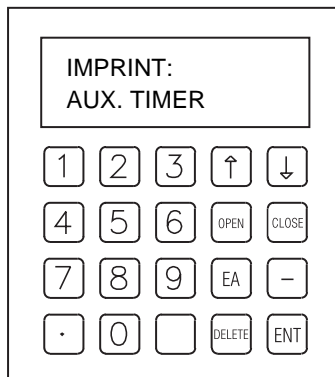
"**IMPRINT**" screen

Mode (1)

Mode which stamps or labels onto another label being dispensed.

The imprint function is used to enable secondary print on preprinted labels. This secondary print can be done by hot stamping or imprinting using the appropriate devices. After a label dispenses, a timer (**IMPRINTER DWELL**) starts and activates the device for the amount of time entered by the operator. After the time expires, the device is released from the label and the applicator is ready to label a product.

Note: During activation of Imprinter Dwell, the applicator will not dispense label if the product sensor detects the product.



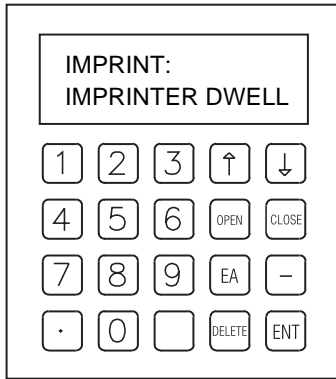
"**AUXILIARY TIMER**" screen

Mode (1)

Initiates an output which is activated once product sensor detects.

- ▶ Maximum 1000000 (msec.) Min. 0(msec.)
- ▶ Time is in milliseconds (msec.)

Note: Minimum value is the total label move.



"*IMPRINTER DWELL*" screen

Mode (1)

Amount of time imprinter activates at the end of label move.

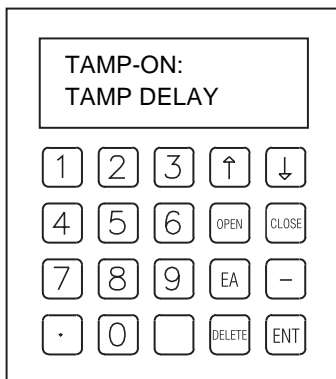
- ▶ Maximum 1000000(msec.) Min. 0(msec.)
- ▶ Time is in milliseconds (msec.)



"*TAMP-ON*" screen

Mode (2)

Mode which initiates the tamp module.



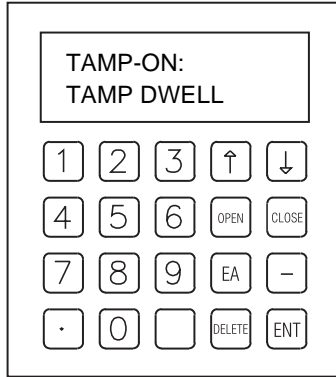
"*TAMP DELAY*" screen

Code (2)

Sets delay between sensing of product and activation of tamp assembly.

Larger number to position label closer to trailing edge of product.
Smaller number to position label closer to leading edge of product.

- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



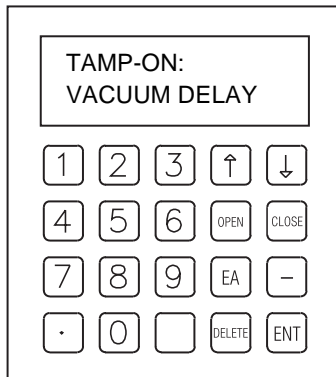
"*TAMP DWELL*" screen

Mode (2)

Sets dwell time for the tamp assembly.

Larger number to extend the time the tamp is extended.
Smaller number to reduce the time the tamp is extended.

- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



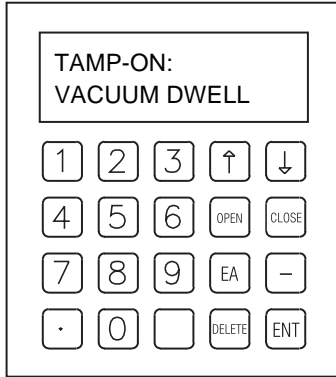
"*VACUUM DELAY*" screen

Mode (2)

*Delays activation of the vacuum that pulls the label onto the tamp assembly. Used to smooth the transition of the label from the peeler bar to the tamp pad. See also **AIR ASSIST DELAY** screen.*

Larger number to turn the vacuum on later.
Smaller number to turn the vacuum on earlier.

- ▶ Delay starts when tamp assembly gets to home position. If the leading edge of the label does not arrive all the way to the edge of the tamp, increase this setting.
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



"*VACUUM DWELL*" screen

Mode (2)

Sets how long vacuum stays activated as the tamp is applying the label.

Larger number to keep the vacuum activated for more time.
Smaller number to keep the vacuum activated for less time.

- ▶ When a tamp is installed, *VACUUM DWELL* is used to prevent the retraction of a label or lightweight product on the "up" stroke of the applicator.
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.
- ▶ Always set at a lower value than the tamp dwell.



"*AIR ASSIST DELAY*" screen

Mode (2)

Used to smooth the transition of the label from the peeler tip to the tamp pad. See also VACUUM DELAY screen.

Larger number to turn the air assist valve on later.
Smaller number to turn the air assist valve on earlier.

- ▶ Delays activation of the air assist valve. Delay starts when the tamp assembly is fully retracted (tamp home position).
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



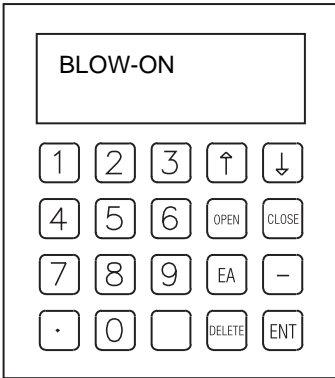
"AIR ASSIST DWELL" screen

Mode (2)

Used to help push the label further onto the tamp pad.

Larger number to keep the air assist valve activated for more time.
Smaller number to keep the air assist valve activated for less time.

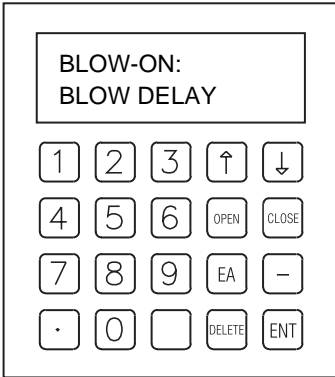
- ▶ Sets how long air assist valve stays activated to blow the label up onto the tamp pad.
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



"BLOW-ON" screen

Mode (3)

Mode which initiates the blow module.



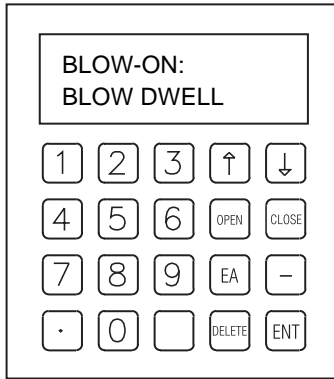
"BLOW DELAY" screen

Mode (3)

Sets delay between sensing of product and activation of blow assembly.

Larger number to position label closer to trailing edge of product.
Smaller number to position label closer to leading edge of product.

- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



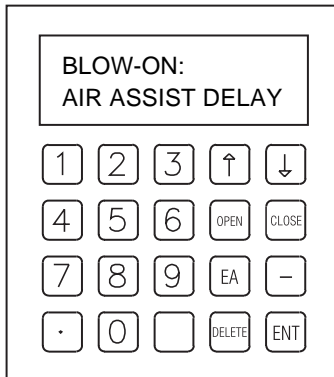
"**BLOW DWELL**" screen

Mode (3)

Sets dwell time for the blow assembly.

Larger number to extend the time the blow assembly is activated.
Smaller number to reduce the time the blow assembly is activated.

- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.
- ▶ When a blow assembly is installed, **VACUUM DWELL** affects how firmly the label is affixed to the product.



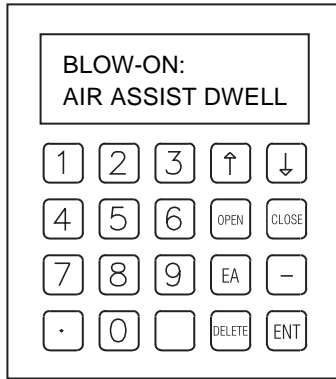
"**AIR ASSIST DELAY**" screen.

Mode (3)

*Used to smooth the transition of the label from the peeler tip to the blow assembly. See also **VACUUM DELAY** screen.*

Larger number to turn the air assist valve on later.
Smaller number to turn the air assist valve on earlier.

- ▶ Delays activation of the air assist valve.
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



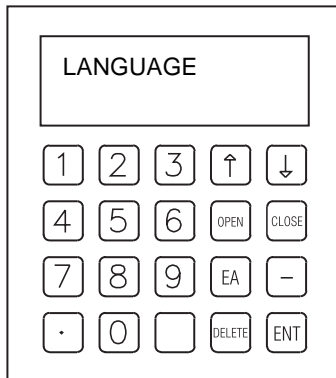
"*AIR ASSIST DWELL*" screen

Mode (3)

Used to help push the label further onto the blow assembly.

Larger number to keep the air assist valve activated for more time.
Smaller number to keep the air assist valve activated for less time.

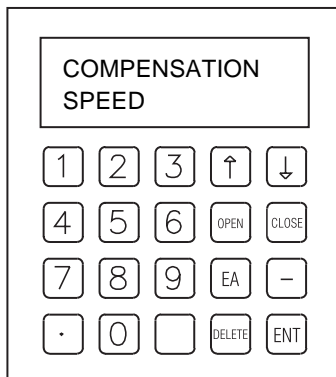
- ▶ Sets how long air assist valve stays activated to blow the label up onto the blow assembly.
- ▶ Maximum: 100000 (1000.00 sec) Minimum: 0 (0 sec) units .01 sec.
- ▶ The setting is retained when power is turned off.



"*LANGUAGE*" screen

Changes the language from English to Spanish.

- (1) – English (Default)
- (2) – Spanish

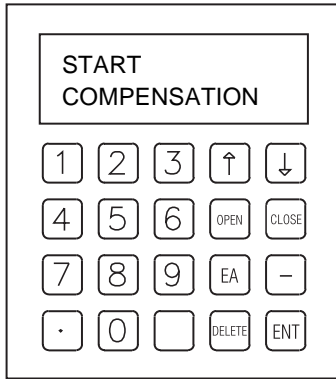


"*COMPENSATION SPEED*" screen

Value is factory set to the maximum web speed (508 mm/sec).



This value should not be changed unless authorized by manufacturer.



"START COMPENSATION" screen

Setup the maximum and minimum product speed and measure the variation of placement of a label onto the product. This value compensates the reaction time of the start signal from the arriving product on the conveyor.

- ▶ Max. 20 (mm) Min. 0 (mm)
- ▶ Default value : 7



The default value should not be changed unless authorized by manufacturer.

If this value requires changing then perform the following steps.

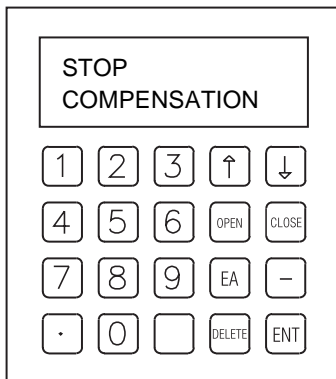
How to set up the Start Compensation:

Step 1—Dispense labels in *synchronous* labeling mode at low speed. Mark the position of the labels on the product.

Step 2—Dispense labels at the highest labeling speed you want to reach with your labeling head.

Step 3—Measure the offset distance between the two variations in millimeters and input value into screen.

Note: Acquire STOP COMPENSATION value before the START COMPENSATION Value.



"STOP COMPENSATION" screen

Sets up the maximum and minimum labeler speed and measures the label flag change with respect to the peeler tip. This value compensates for the reaction time of the label sensor and the controller input.

- ▶ Max. 20 (mm) Min. 0 (mm)
- ▶ Default value : 1



The default value should not be changed unless authorized by manufacturer.

If this value requires changing, then perform the following steps.

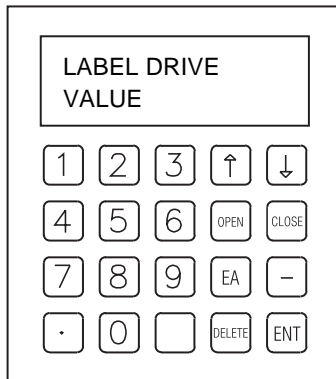
How to set up the Stop Compensation:

Step 1—Feed the labels in *ASYNCHRONOUS* labeling mode at the lowest required labeling speed. Set the label such that it is flush with the front of the peeler plate, and press the *AUTOTEACH* button.

Step 2—Label Jog one additional label. Then, set the labeler to the highest required labeling speed, and press the Jog button.

Step 3—Measure the distance, in millimeters, from the front of the peeler plate to the new edge of the label.

Step 4—Enter this value into the screen.

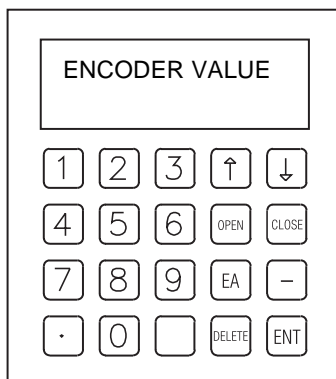


"*LABEL DRIVE VALUE*" screen

Factory default value established from size of drive roller and gearing of labeler.



This value should not be changed unless authorized by the manufacturer.



"*ENCODER VALUE*" screen

When using a manufacturer supplied encoder, reference the encoder drive chart in the appendix.

► Default value : 2816 (set for manufacturer standard encoder)

When using a non-manufacturer supplied encoder, use the following procedure:

Step 1—Install the product sensor in the *SYNCHRONOUS* plug found on the interface panel.

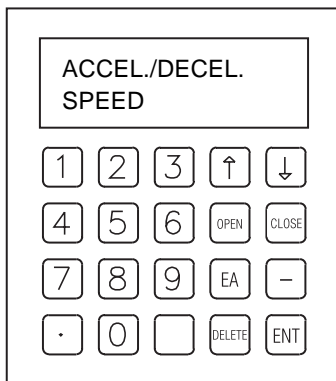
Step 2—Enter the "*ENCODER VALUE*" screen and press the "*YES*" or "*EA*" button to activate the encoder autoteach

Step 3—Insert the 100 mm block (or any 100 mm object) upstream of the product sensor and run conveyor at low speed. The product sensor detects the leading and trailing edge of the block and automatically sets the value.

Note: This encoder autoteach can be used for a manufacturer supplied encoder also.



Encoder value should be the same value or larger than the label drive value.



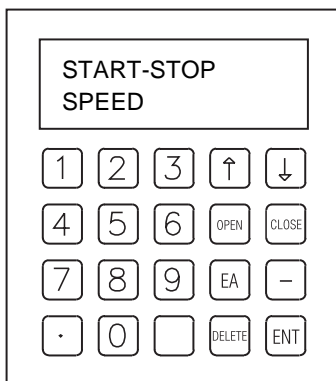
"ACCELERATION / DECELERATION SPEED" screen

Time that the motor takes to obtain operating speed.

Larger value decreases the time the motor obtains speed. Smaller value increases the time the motor obtains speed.

- ▶ Max. 500 (Hz/msec) Min. 1 (Hz/msec)
- ▶ Default value: 200

Note: Larger labels usually require more torque and therefore a lower rate.



"START – STOP SPEED" screen

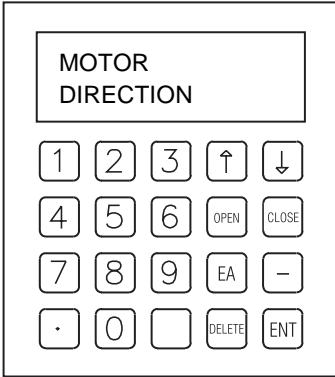
Speed at which the motor starts at the instant Acceleration/Deceleration initiates.

Larger value increases the initial speed. Smaller value decreases the initial speed.

- ▶ Max. 500 (Hz) Min. 1 (Hz)
- ▶ Default value: 200



The Start-Stop Speed can improve the dynamics of a system, because no acceleration/deceleration time is required in the lower frequency range. However, relatively high Start-Stop speeds may be harmful to the system mechanics, because mechanical shocks can be generated. It is recommended to adjust this parameter carefully.



"MOTOR DIRECTION" screen

Changes the direction of the motor.

- (0) – Right hand labeler head (Default)
- (1) – Left hand labeler head

Preventive Maintenance

5

Preventive Maintenance

The following guidelines are for preventive maintenance. Use this information for producing a maintenance schedule. Follow the schedule. Once familiar with the applicator, operators or technicians may add additional items to the list. For any service questions, contact your distributor.

- ◆ Examine the drive roller, nip rollers, idler rollers and peeler tip for excessive adhesive buildup or dust collection. Use rubbing alcohol to clean problem areas. Do not use compressed air to blow dust from the applicator.
- ◆ Inspect all electrical plugs for secure connections.
- ◆ Verify that all components and modules are securely fastened.
- ◆ Inspect the applicator for loose screws, guides, or covers and tighten as necessary.
- ◆ Inspect the clutch on the rewind assembly for excessive wear. Adjust the friction by using the clutch tool on the end of the knurled ring. Replace the clutch if desired adjustment cannot be achieved.
- ◆ Gently clean dust from the lens of the product sensor.
- ◆ Inspect the timing belt for proper tension. Adjust idler if additional tension is needed.

Spare Parts

6

Notice to Hoppmann Customers

To ensure receiving the right part, refer to the labeler's model and serial number, which was recorded on the front of this manual, when ordering replacement or service parts for your applicator. *This information is necessary when ordering replacement parts or service.*

Notice to Dealer & OEM Customers

Some components listed might have been changed by your dealer or OEM to work better with your application. To ensure receiving the right part, verify the part number listed in this manual when you place your order with your dealer or OEM.

L250A Applicator Spares

<i>Qty.</i>	<i>Description</i>	<i>Part Number</i>
1	Power Supply, 24VDC	L030300100
1	Fan, 24VDC	FAN24VDC01
1	Product Sensor	SENS312DQD
1	Label Sensor Through Beam	L100CS2000
2	Retaining Ring, 3/8" Ext. (4 Pack)	RRNGETR375
1	Retaining Ring, 0.625" Dia. (4 Pack)	RRNG000004
1	Slip Clutch, 2 Disc	TORQPOLY01
1	Timing Belt, 1/5" P, 1/4" W, 17" L	BELT000039
4	Ball Bearing	L0201000001
1	Brake Belt	L050600780
1	Spring Extension, 0.625" OD x 2.0" Lg (4)	SPREXT0007
1	5/8" ID Ball Bearing	BRNGBALL18
2	Bushing, Dancer Arm	BUSHFB8104
1	Stepper Motor	L030120106
1	Stepper Controller	L030120107
1	Spring Closure, 1/2"	L020800501
1	Spring Closure, 5/8"	L020800502

Electrical Wiring

7

Controller Codes

The following lists the possible malfunctions indicated with an error code in the status display and their possible causes. If several errors occur, the corresponding error codes are stored in the controller.

No.	Flashing	Description	Rectification
03	YES	Motor lead short circuit	Check the motor wiring
04	YES	Combined message for controller power fault	Toggle power to controller
05	YES	Controller over voltage (use external bleed resistor)	Connect an external bleed resistor
07	YES	Power drive over temperature	Allow the power controller to cool down
11	YES	Power drive low voltage	Check the voltage supply
12	YES	Contouring error Reduce acceleration	Check encoder or wiring of encoder interface
14	YES	Power drive without supply voltage internal drive is broken	Check the voltage supply
17	YES	System without reference	Contact Manufacturer
20	YES	Incorrect limit switch LIMP sense of rotation of the motor	Check wiring and function of limit switch
21	YES	Incorrect limit switch LIMN sense of rotation of the motor	Check wiring and function of limit switch
22	YES	CW limit switch LIMP actuated	With manual movement
23	YES	CW limit switch LIMN actuated	With manual movement
29	YES	Both limit switches activated or reference switch malfunction	Check function, wiring and voltage supply of limit switch or reference switch
30	YES	Stop via STOP input new movement	Continue interrupted movement
40	YES	System error (INIT)	Contact Manufacturer
41	YES	System error (SEQ)	Contact Manufacturer
42	YES	System error (PLC)	Contact Manufacturer
51	YES	Link via serial interface or field bus interface disrupted	Check wiring and master function
54	YES	Only for on-line command processing: Invalid address when accessing inputs/outputs	Check the command transfer parameters
57	YES	EEPROM write error	Contact Manufacturer
80	NO	No error, but system is in reset condition (Low signal at input 7)	Toggle power to controller
81	NO	E-STOP error (Low signal edge at input 19)	
82	NO	Controller error (Power drive not ready or defective)	
83	NO	Labeling error (Missing labels etc. or auto teach move not correct)	Load labels and autoteach
88	NO	No error, but system is initializing	Toggle power to controller

Table 7-1. Controller Codes

L250A Applicator Manual

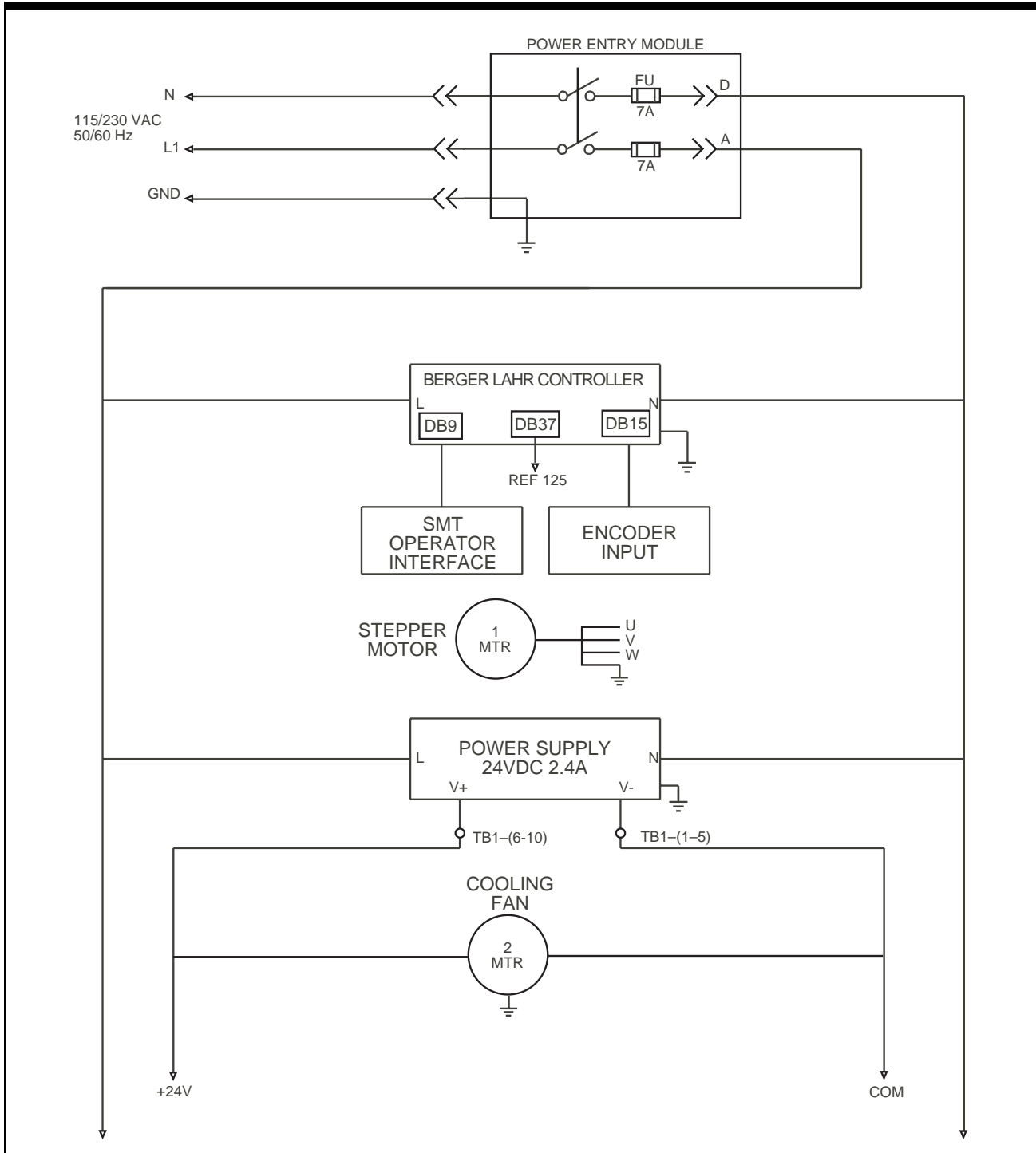


Figure 7-1. Wiring Diagram

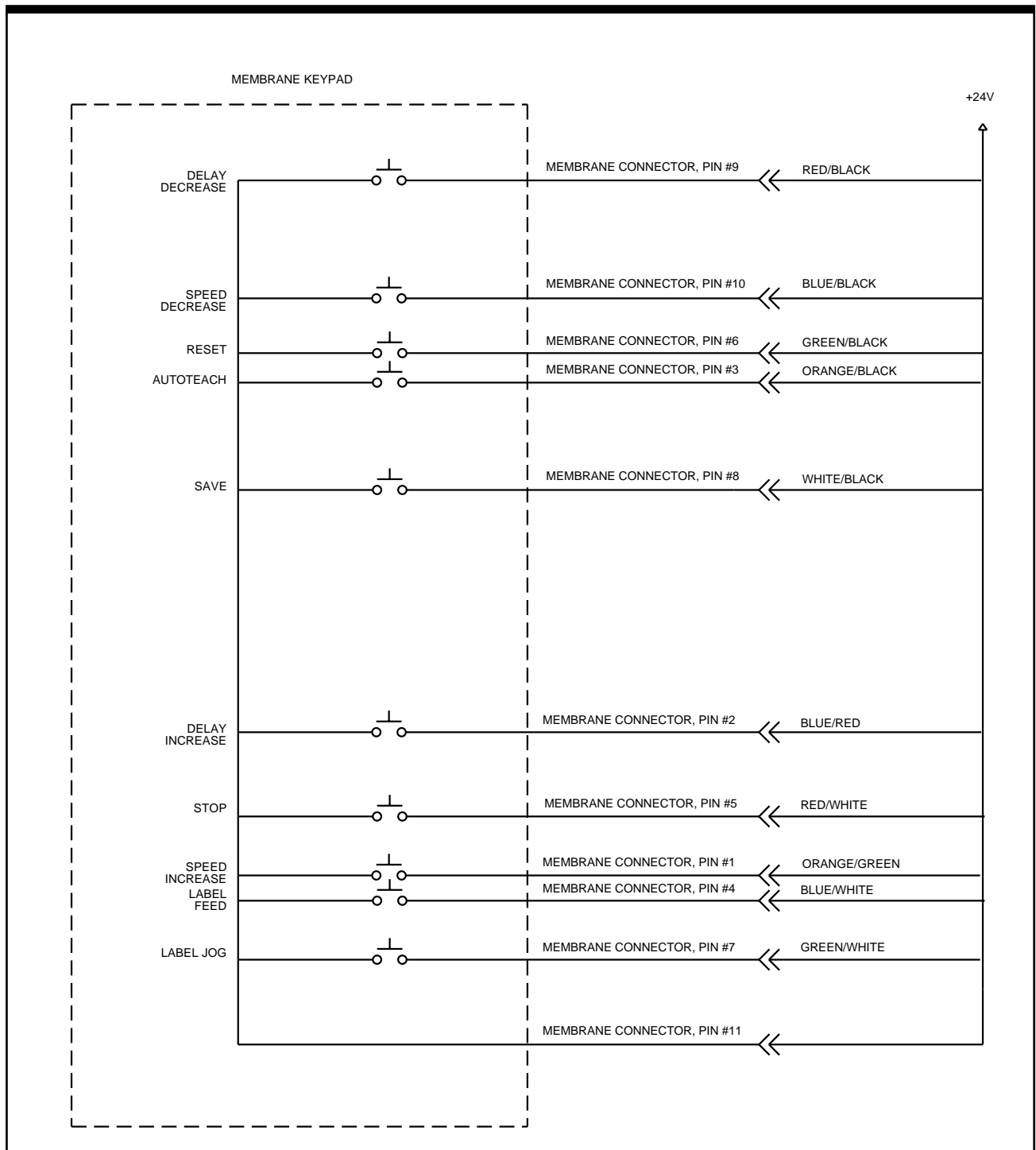


Figure 7-1. Wiring Diagram (continued)

L250A Applicator Manual

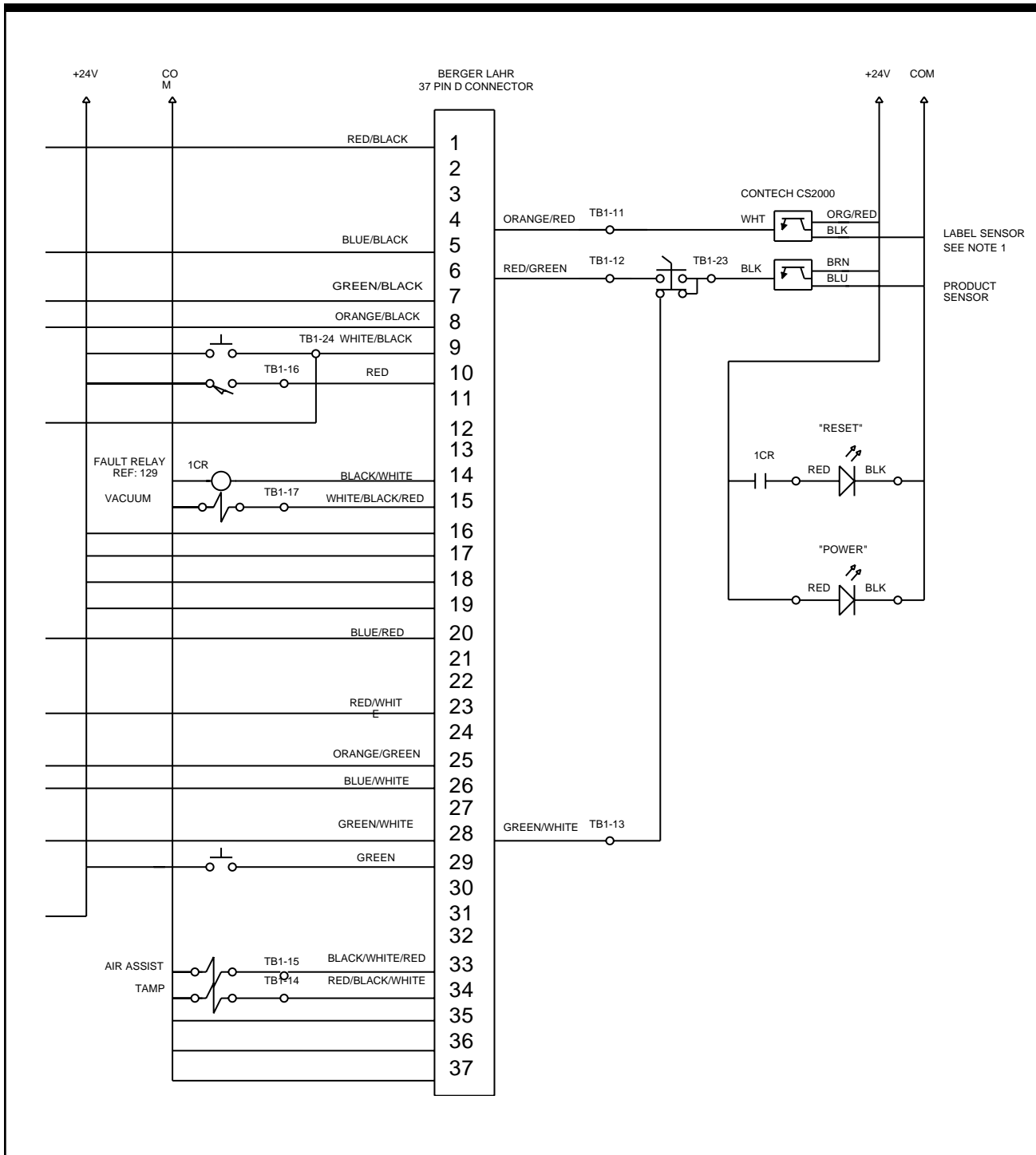
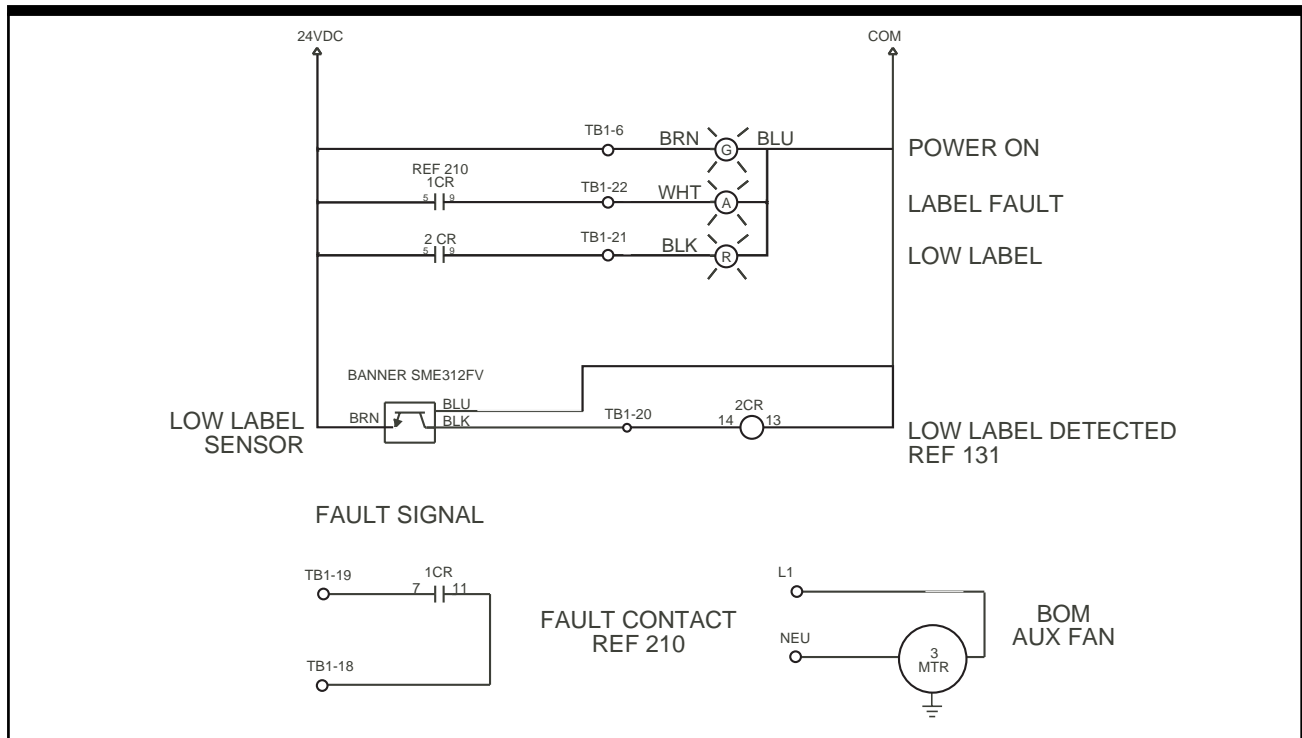


Figure 7-1. Wiring Diagram (continued)

Light Tower



**Figure 7-2. Applicator Light Tower Wiring Diagram
(For both Pushbutton Controlled and Membrane Units)**

Encoder Wire		
Brown	Signal A	PIN 1
Orange	Signal B	PIN 12
Yellow	Signal Z	Capped Off
Red	+ 5V	PIN 2/10
Black	Common	PIN 3/11
Green	CASE	Solder to Case
Brown/White	Signal A INV	PIN 9
Orange/White	Signal B INV	PIN 5
Yellow/White	Signal Z INV	Capped Off
Black/White	Not Connected	Capped Off
Drain	Drain	Solder to Case

Note: The encoder is one directional; determine the direction for the application before permanently mounting.

Note: To reverse the counting direction, swap the brown wire on PIN 1 with the Brown/White wire on PIN 9.

Table 7-2. Encoder Connector

Cut Lists

DB-37 CONNECTIONS

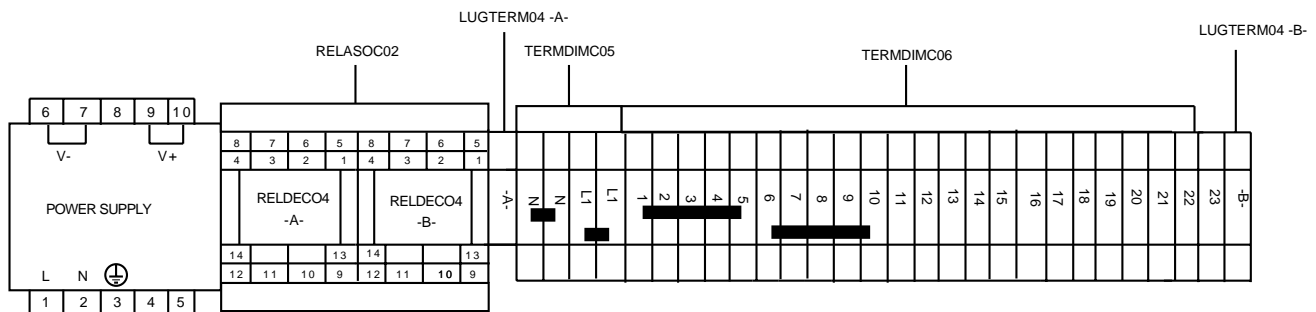
PIN #	COLOR	END
1	RED/BLACK	2SS DELAY/SPEED NO.
2		NOT USED
3		NOT USED
4	ORANGE/RED	TERMDIMC06#11
5	BLUE/BLACK	2SS DELAY/SPEED NO
6	RED/GREEN	TERMDIMC06#12
7	GREEN/BLACK	DB-25 PIN #10
8	ORANGE/BLACK	DB-25 PIN#11
9	WHITE/BLACK	TB1-23
10	RED	TERMDIMC06#16
11		NOT USED
12		NOT USED
13		NOT USED
14	BLACK/WHITE	RELASOCK02 #A14
15	WHT/BLK/RED	TERMDIMC06#17
16	WHITE/RED	TERMDIMC06#17
17	WHITE/RED	DB-37 PIN#17
18	WHITE/RED	DB-37 PIN#17
19	WHITE/RED	DB-37 PIN#18
20	BLUE/RED	DELAY/SPEED NO
21		NOT USED
22		NOT USED
23	RED/WHITE	DB-25 PIN#14
24		NOT USED
25	ORANGE/GREEN	DELAY/SPEED NO
26	BLUE/WHITE	DB-25 PIN#15
27	ORANGE	SPEED DELAY NO
28	GREEN/WHITE	DB-25 PIN#17
29	GREEN	DB-25 PIN#18
30		NOT USED
31		NOT USED
32		NOT USED
33	BLK/WHT/RED	TERMDIMC06#15
34	RED/BLK/WHT	TERMDIMC06#14
35	BLK/RED	TERMDIMC06#5
36	BLK/RED	DB-37 PIN#35
37	BLK/RED	DB-37 PIN#36

DB-25 CONNECTIONS

PIN #/WIRE	FROM	TO
1 GREEN		DB-9 PIN#1
2 BLUE		DB-9 PIN#2
3 BROWN		DB-9 PIN#3
4 ORANGE		DB-9 PIN#4
5 YELLOW		DB-9 PIN#5
6 RED		DB-9 PIN#6
7 BLACK		DB-9 PIN#7
8 VIOLET		DB-9 PIN#8
9 WHITE		DB-9 PIN#9
10 GREEN/BLK	DB-37 PIN#7	1PBL RESET NO
11 ORANGE/BLK	DB-37 PIN#8	2PB AUTOTEACH NO
12 WHITE/BLK	TB1-23	
13 GRN/WHT/BLK	RELASOCK02-A#6	1PBL RESET+
14 RED/WHT	DB-37 PIN#23	1PB STOP NO
15 BLUE/WHT	DB-37 PIN#26	3PB LABEL FEED NO
16	NOT USED	
17 GREEN/WHT	DB-37 PIN#28	TERMDIMC06 #13
18 GREEN	DB-37 PIN#29	
19 WHITE/BLUE	TERMDIMC06 #4	
20 BLUE	TERMDIMC06 #8	
21	NOT USED	
22	NOT USED	
23	NOT USED	
24	NOT USED	
25	NOT USED	

MOTOR RIGHT HAND - NOTE 1

RED	CONTROLLER 24U
BLACK	CONTROLLER 24V
CLEAR	CONTROLLER 24W
SHIELD	CONTROLLER 24



Cut Lists

DB-9 CONNECTIONS

1	GREEN	DB-25 PIN#1
2	BLUE	DB-25 PIN#2
3	BROWN	DB-25 PIN#3
4	ORANGE	DB-25 PIN#4
5	YELLOW	DB-25 PIN#5
6	RED	DB-25 PIN#6
7	BLACK	DB-25 PIN#7
8	VIOLET	DB-25 PIN#8
9	WHITE	DB-25 PIN#9

DB-15 CONNECTIONS

1	GREEN	DB-15 PIN#1
2	BLUE	DB-15 PIN#2
3	BROWN	DB-15 PIN#3
4	ORANGE	DB-15 PIN#4
5	YELLOW	DB-15 PIN#5
9	RED	DB-15 PIN#9
10	BLACK	DB-15 PIN#10
11	VIOLET	DB-15 PIN#11
12	WHITE	DB-15 PIN#12

1SW MAIN POWER SWITCH

TOP GREEN	LUGTERM04 -B-
A BLACK	TERMDIMC05 #L1
B WHITE	TERMDIMC05#N

POWER SUPPLY

1	BLACK	*PLUG L
2	WHITE	*PLUG N
3	GREEN	*PLUG PE
7	WHT/BLUE	TERMDIMC06 #1
9	BLUE	TERMDIMC06 #6
* PLUG TO CONTROLLER		

PRODUCT SENSOR

BLUE	TERMDIMC06 #3
BROWN	TERMDIMC06 #8
BLACK	TERMDIMC06 #13
WHITE	NOT USED

LABEL SENSOR

RED	TERMDIMC06 #9
WHITE	TERMDIMC06 #11
ORANGE	TERMDIMC06 #10
BLACK	TERMDIMC06 #4

RELASOCK02 -A-

5	WHITE/GRAY	TERMDIMC06 #21
6	GRN/WHT/BLK	DB-25 PIN #13
7	YELLOW	TERMDIMC06 #19
9	BLUE	RELASOCK02 - B#9
10	BLUE	RELASOCK02 - A#9
11	YELLOW	TERMDIMC06 #18
13	WHITE/BLU	RELASOCK02 - B#13
14	BLACK/WHT	DB-37 PIN#14

RELASOCK02 -B-

5	RED	TERMDIMC06 #22
9	BLUE	TERMDIMC06 #7
13	WHITE/BLU	TERMDIMC06 #2
14	VIOLET	TERMDIMC06 #20

COOLING FAN

RED	TERMDIMC06 #7
BLACK	TERMDIMC06 #2

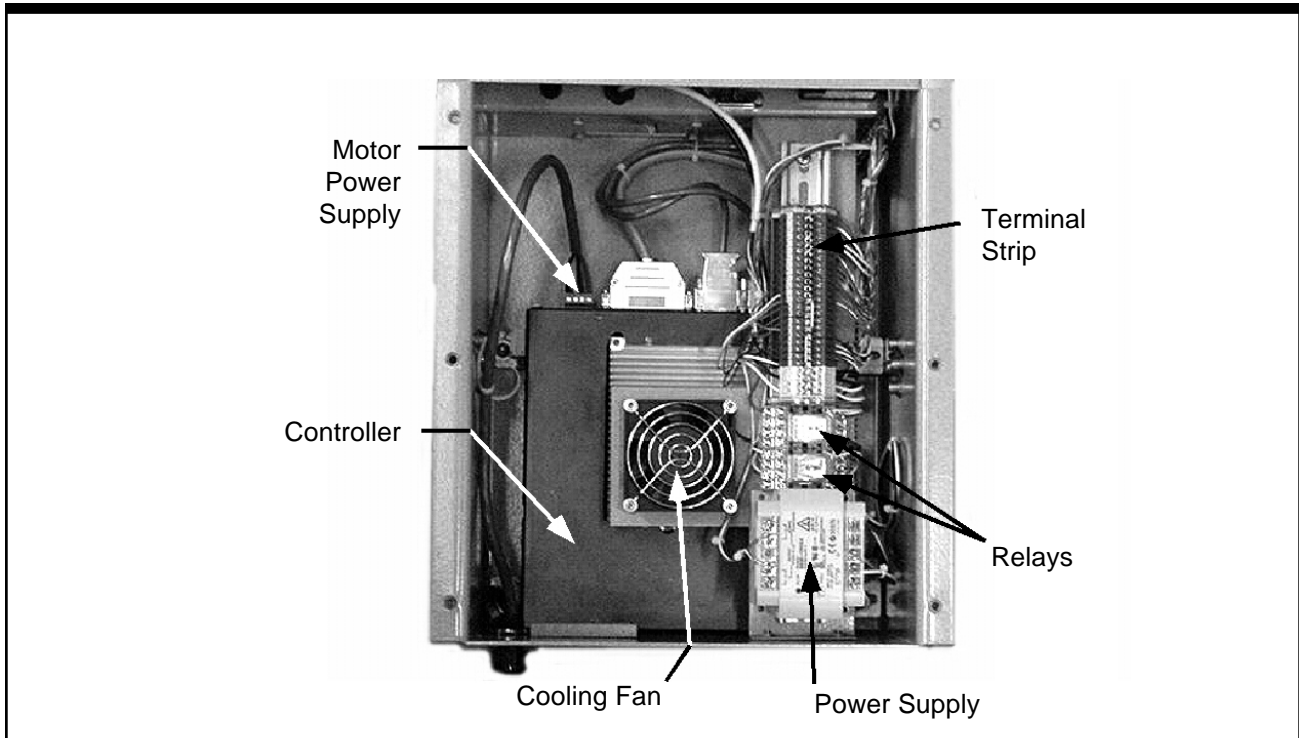


Figure 7-3. Internal Electrical Connections

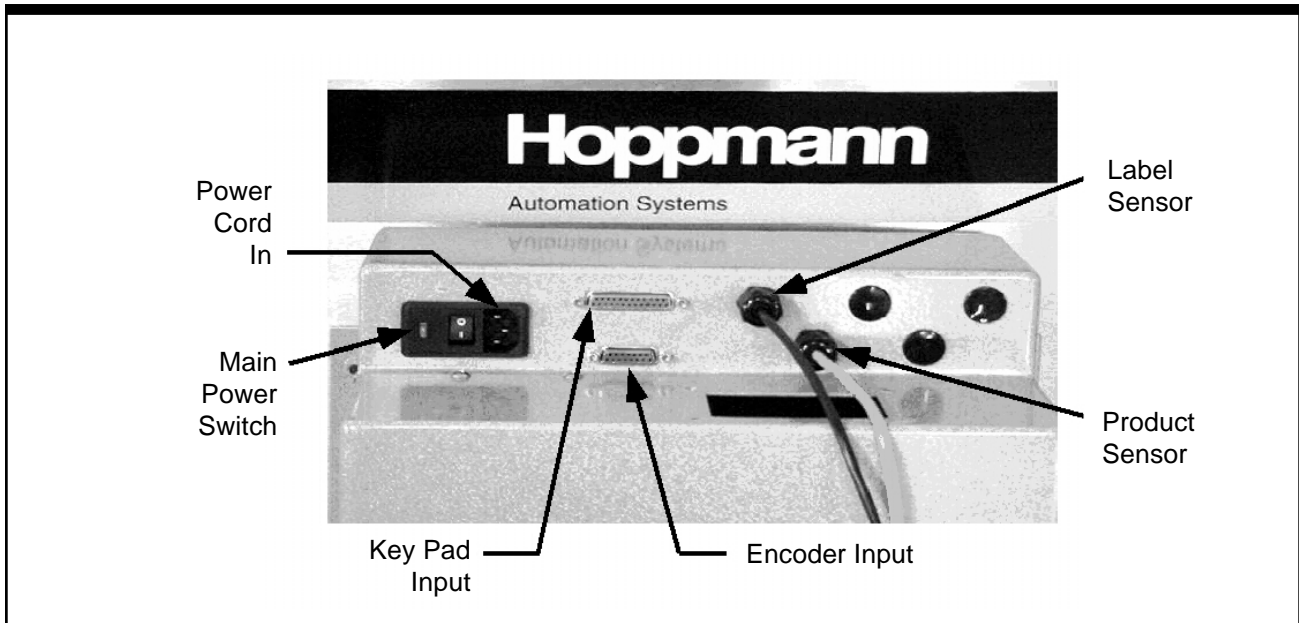


Figure 7-4. Back Panel Electrical Connections