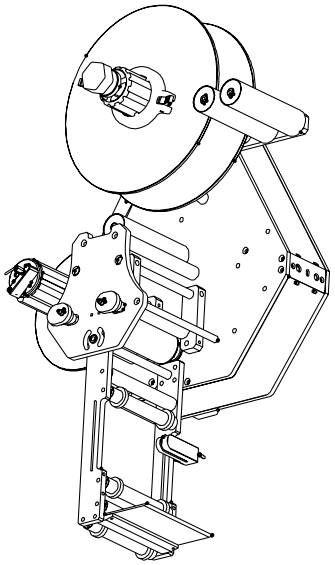
Shibuya Hoppmann™
INTEGRATION THROUGH INNOVATION

L410A Labeler

Installation & Maintenance Manual



Refer all servicing to qualified personnel.

This manual is intended for use by qualified mechanics and electricians who install or service the L510A Labeler.

Please copy this information from your labeler's serial plate:

Model Name:	**Model Inventory Number:**
L510A Label Applicator	

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Quick Start

About This Manual

Who Should Read

This manual is intended for those who need to install and/or operate the 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.

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Terms and Definitions

Term	Equivalent Terms, Definition or Abbreviation
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

Thank you for purchasing a label applicator. The applicator will meet the needs of the single label, the stand alone applications or the integration into an inline product handling system.

The applicator's patented head design has one of the lowest drive inertias in the industry. This means less wear and more accuracy and repeatability.

The following are some of the features of the label applicator:

- Rapid configuration and changeover of applicator modules.
- Accommodates a 14" (356mm) supply roll diameter to minimize down time for reloading.
- Label head is converted from left-hand to right-hand justified without any additional parts.
- Gear powered label drive and torque clutch adjustable rewind.
- One button auto-teach for fast, easy, repeatable changeover.
- Speed matching of label and product.
- Easy access to main components for maintenance and changeover.

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 applicator includes a controller, operator LCD interface and product detector.

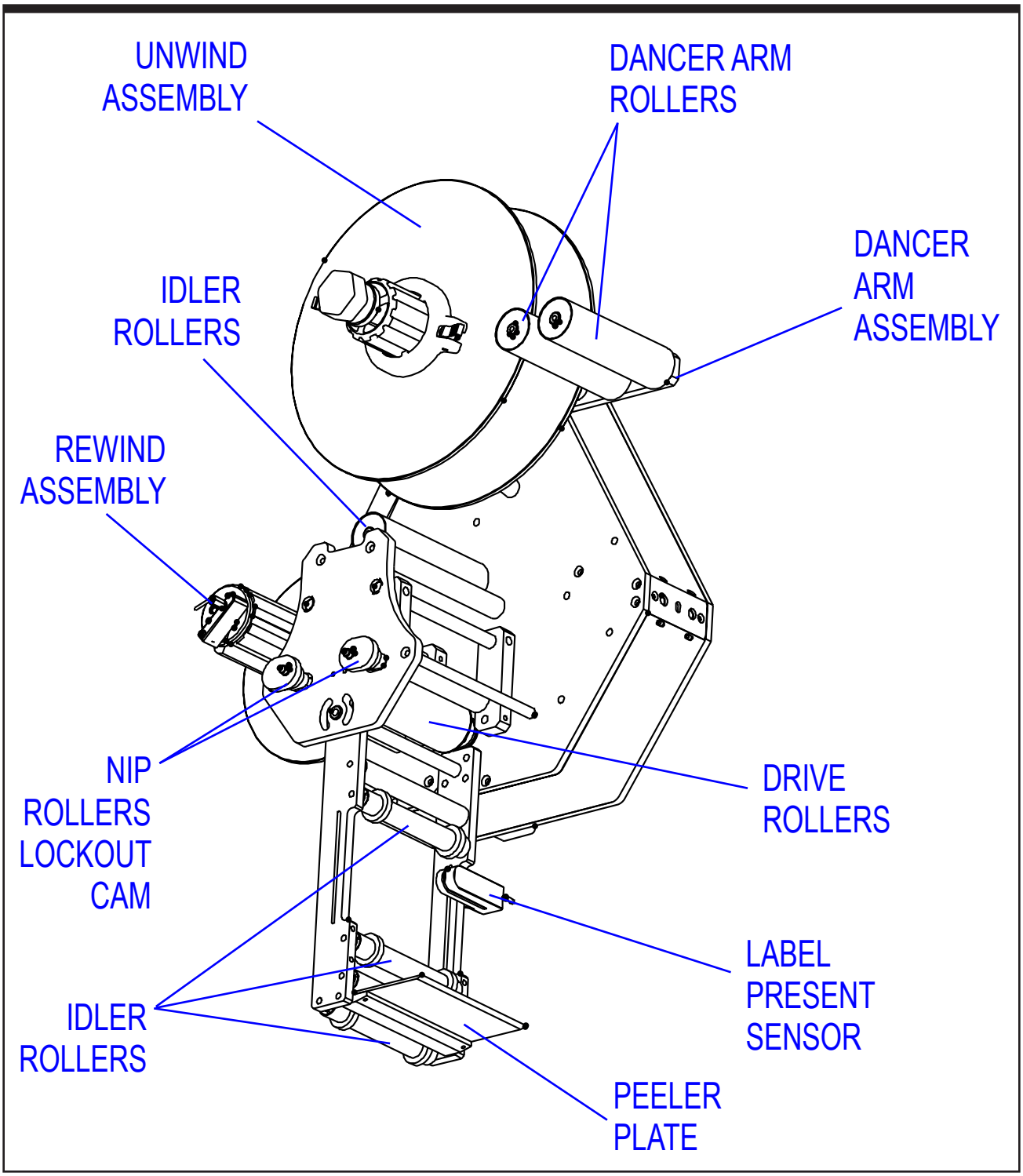


Figure 1-1. The Label Applicator

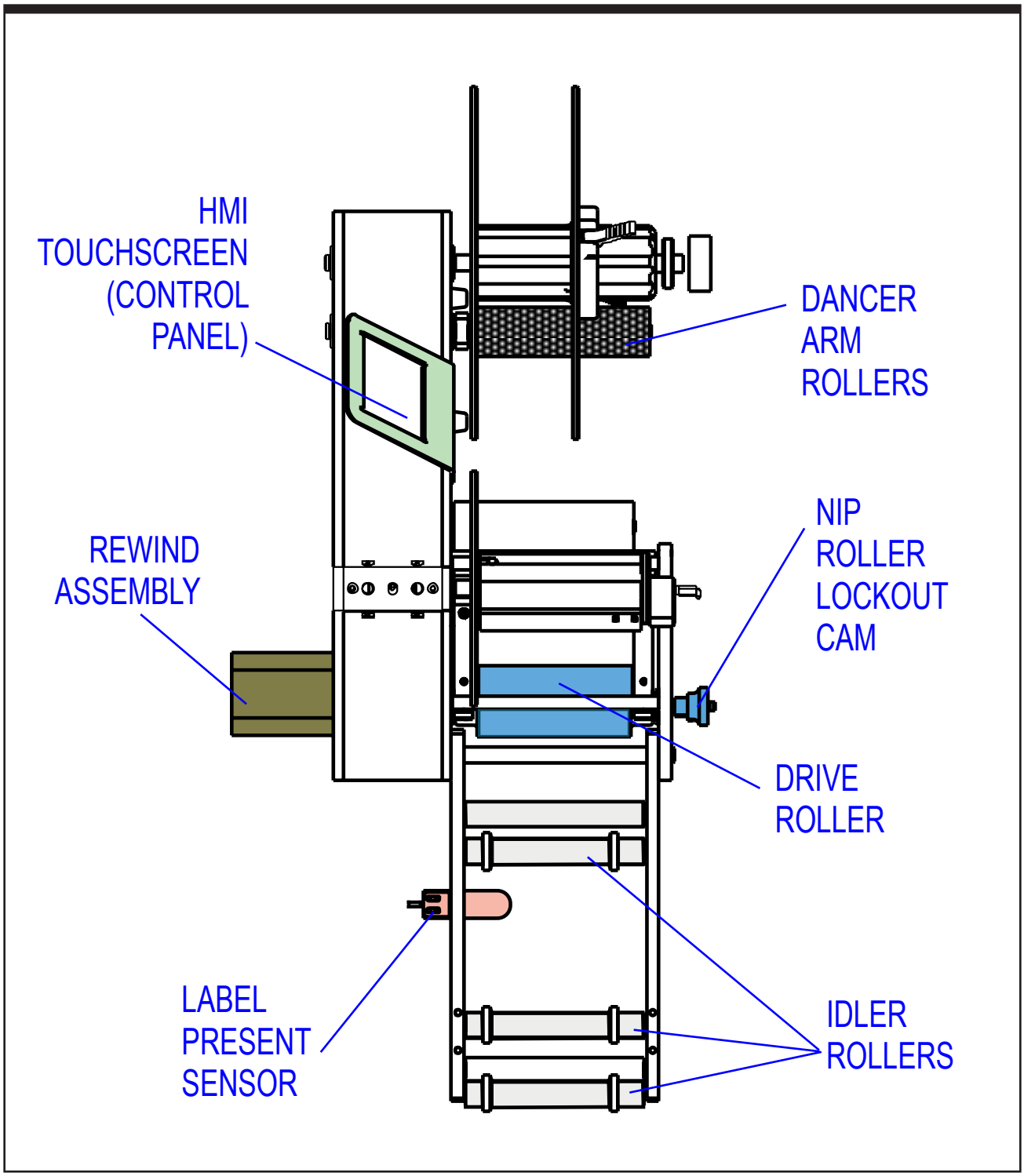


Figure 1-2. Side View of the L410A Labeler

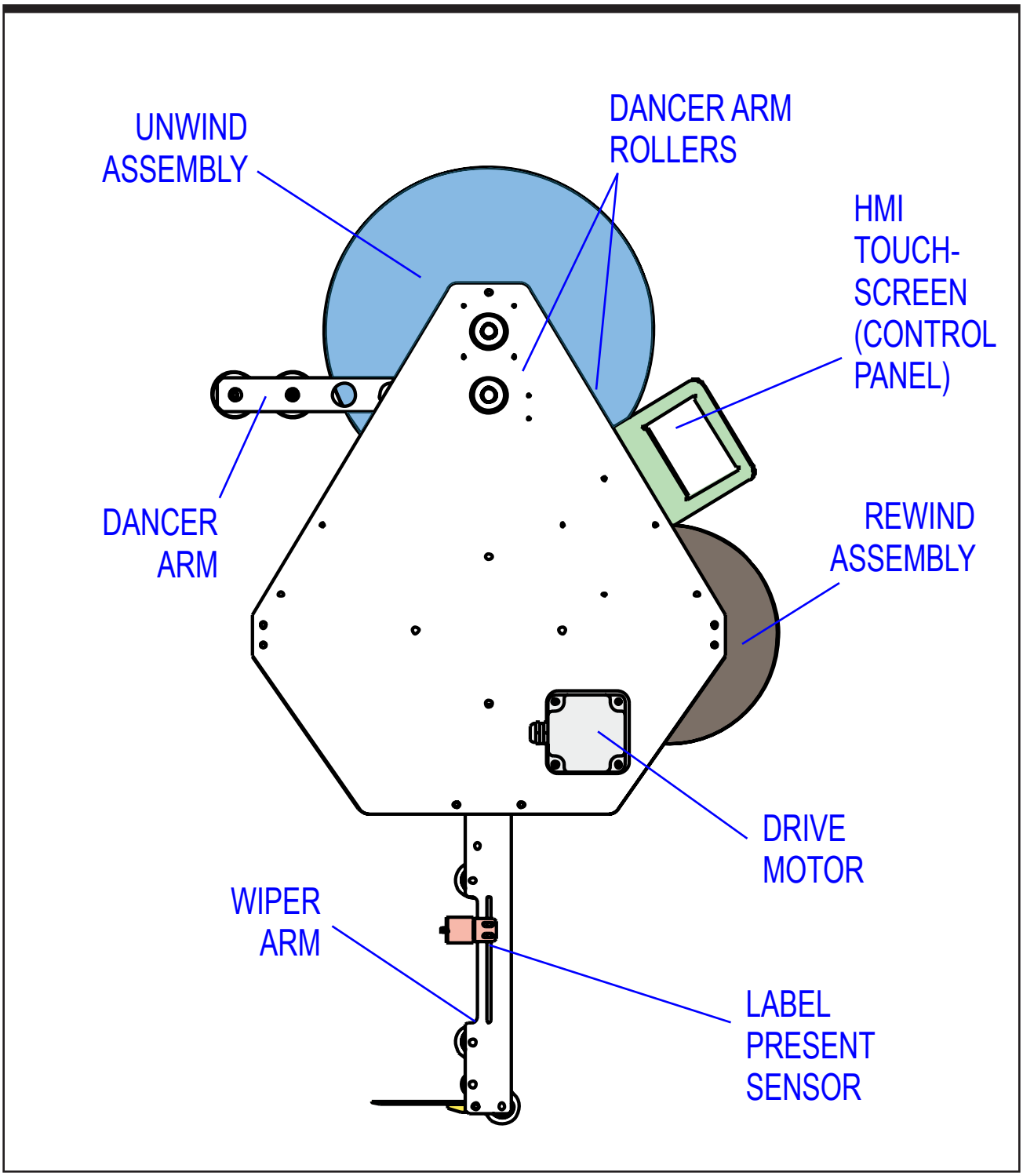


Figure 1-3. Different Views of the L410A Labeler (Back View)

Applicator Specifications

The manufacturer or distributor may have changed specifications to match your application. Please refer to Table 1-1 for applicator specifications.

Applicator Specifications	
Accuracy	±0.02" (±0.5mm) depending on the application module
Controls	Programmable Logic Controller
Product Detection	Photo sensor
Label Sensor	Photo electric
Power Requirements	115 VAC, 60 Hz, single phase, 6 Amp
Shop Air (For Modules Only)	80 psi minimum, 100 psi maximum 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	14" (356mm) outer diameter with 3" (76mm) spool inner diameter
Overall Dimensions of Applicator	30.9" wide x 28.5" tall x 18" deep (784.9mm x 723.9mm x 457.2mm)
Weight	Approximately 150 lbs (68kg)

Table 1-1. Applicator Specifications

Notes

Safety Precautions

2

Warnings and Condition

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. Wait at least two (2) minutes after disconnecting the electrical power to discharge the motor start capacitor before performing any electrical servicing with the rear cover removed.

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 near the tamp, corner wrap, print head, or any other movable parts when the machine is operating.

Install Safety Covers! Make sure the machine remains safe to operate. Be sure all safety covers have been installed before operating this machine. Safety covers include any covers installed by your direct supplier, as well as the main cover and the print engine cover. Each helps protect the operator from potential pinch points and moving parts.

Avoid Pinch Points! Exposed pinch points include the unwind and take up assemblies, air tamp, and corner wrap modules. Pinch points exposed when the main cover is removed include the dual clutch assemblies.

Avoid Dangerous Conditions! The standard labeler should not be placed in washdown environments. Dry conditions are critical for long life. Normal operator inherently causes static electricity to build up. Avoid explosive or potentially explosive environments.

Figure 2-1. Additional Safety Warning Labels - Hand Crush, Finger Cut, Hand in Gears.

Notes

Applicator Installation

3

This chapter covers unpacking, inspection, positioning and power 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 any crate or equipment damage to the shipping carrier immediately.

The Applicator can weigh in excess of 150 lbs (68kg).

Step 2. **Unpack the 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 mounting procedure uses the two mounting holes that are located on each side of the applicator. The optional U-arm supports the applicator at those mounting locations. The mounting holes are tapped to M12 x 60.

Positioning of the labeler may vary if an application module was purchased with your unit.

The labeler must be positioned so that labels are applied to the product with the proper orientation. Once the correct orientation is obtained, the labeler is ready to be placed into position. The product and labeling surface should be parallel with each other at point of contact. (Refer to Figure 3-1.)

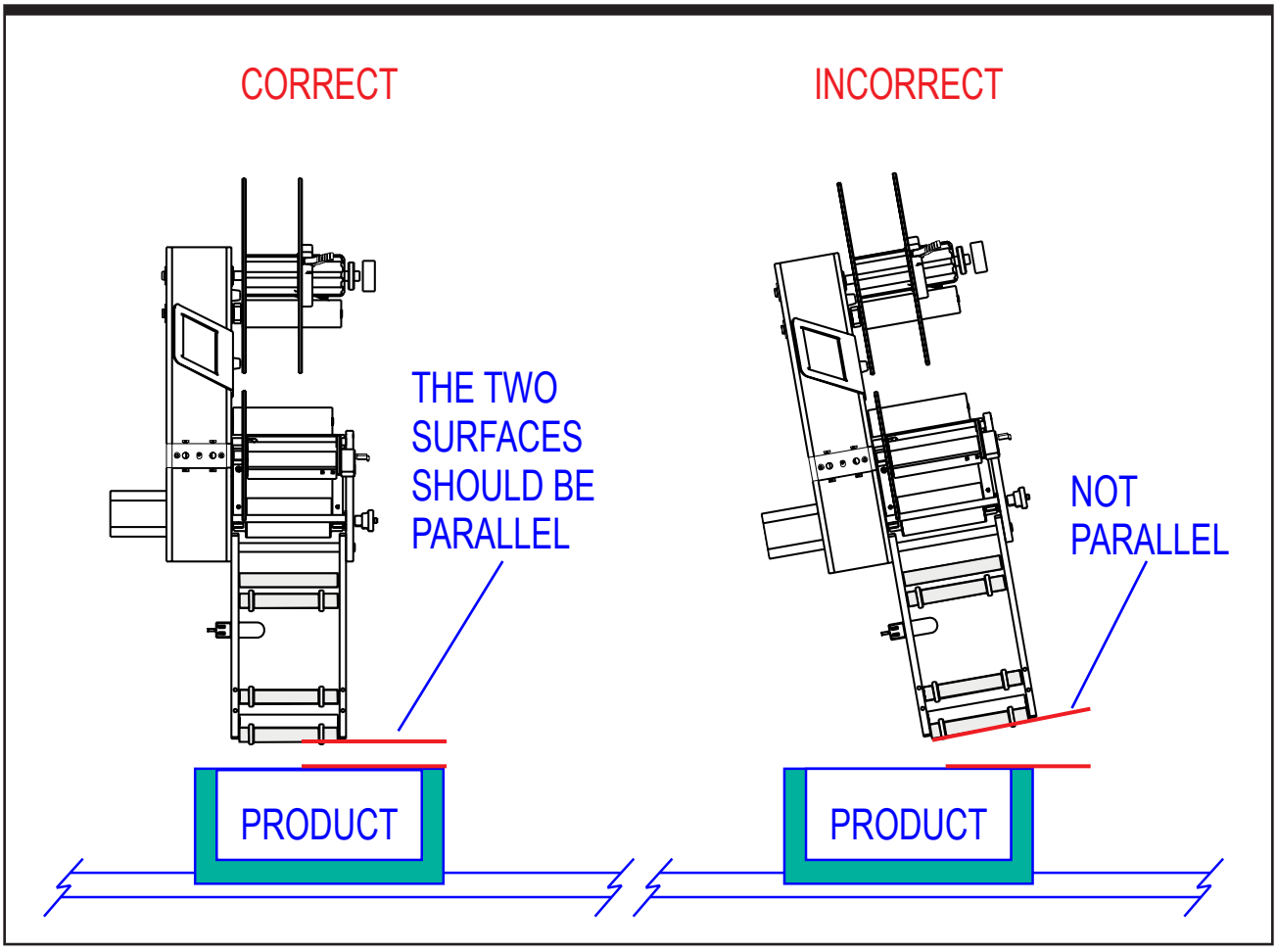


Figure 3-1. Correct/Incorrect Positioning

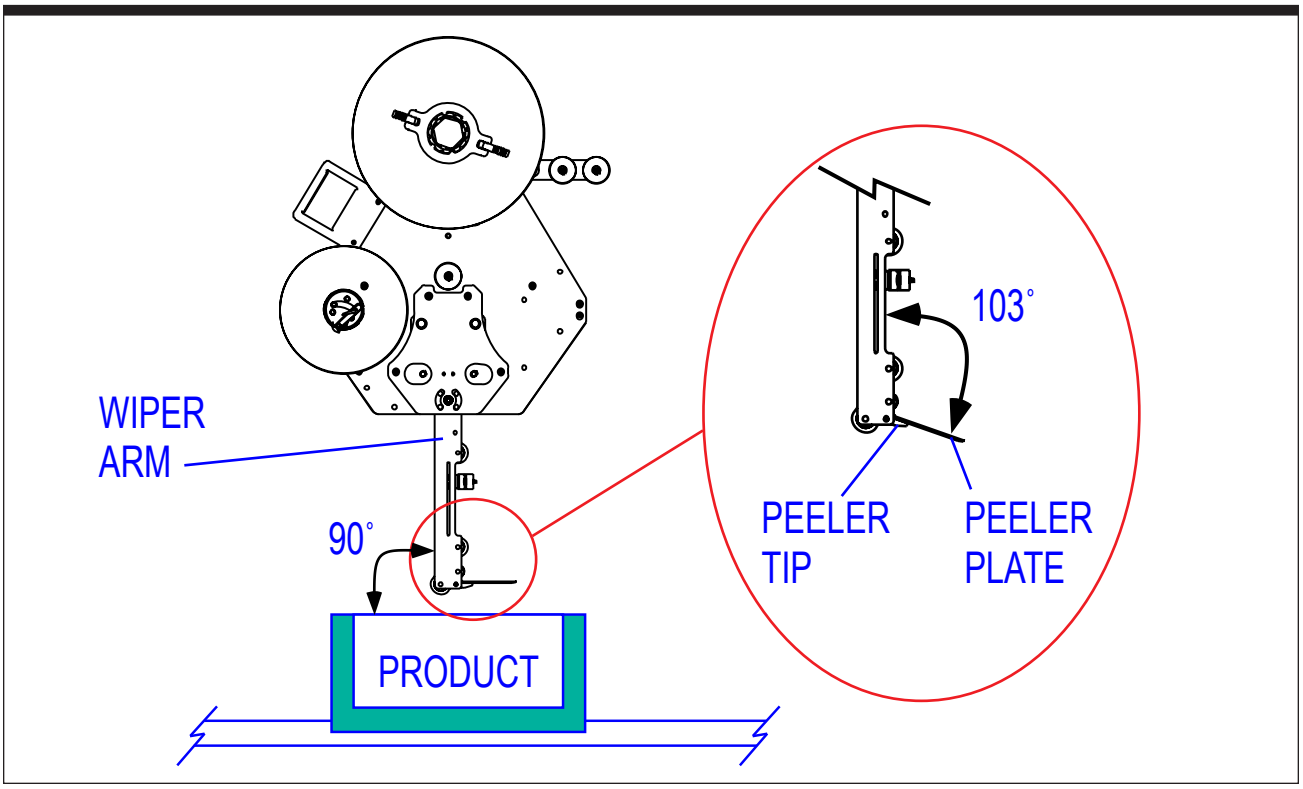


Figure 3-2. Rotation Adjustment

Rotation adjustment of the wiper arm and peeler tip (refer to Figure 3-2) should be made to locate the flag of the label as close to the product as possible. The peeler tip should be located just above the product. A reference of 0˚ (zero degrees) from the product is suggested on the wiper arm. Then, rotate the peeler tip as needed.

Note: The flag of the label is the amount of label protruding past the peeler tip.

Placing the peeler tip in the path of the product may cause damage to the applicator.

The applicator needs to be mounted in such a way that there is minimum vibration and rotation, or else the accuracy of the labeling may be compromised. It is also suggested that fine tuning adjustments be made after mounting.

U-Arm & T-Stand

If a T-stand and/or U-arm is purchased with your unit, refer to Figures 3-3 and 3-4 for proper positioning.

To pivot the applicator up or down, loosen the large hex nut which fastens the U-arm to the T-stand. This allows the unit to rotate the peeler tip up or down. Tighten the same nut to secure the applicator's position. (Refer to Figure 3-4.)

The applicator may also be positioned for top, side, or bottom panel labeling. Loosen the two large socket head bolts that fasten the U-arm to the labeler. Rotate the applicator into a position where the application module is parallel to the surface of the product to be labeled.

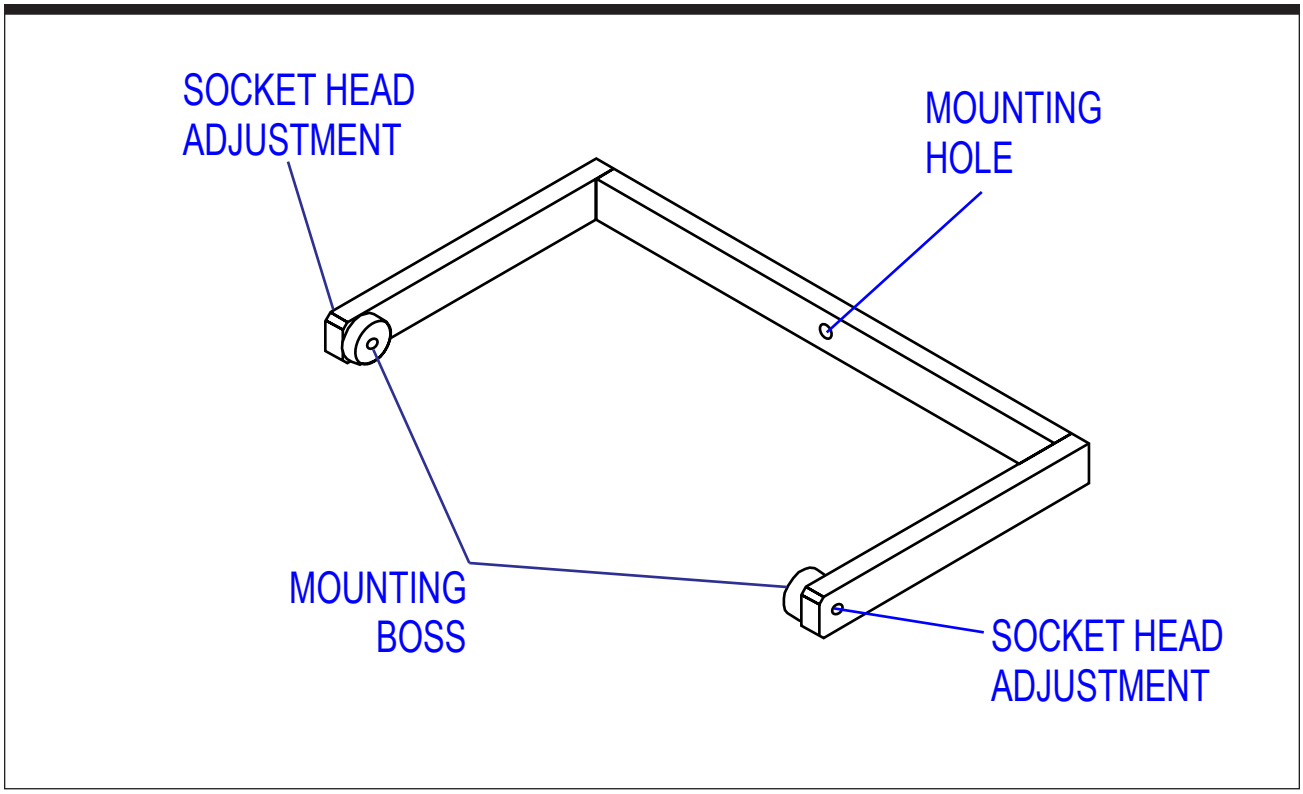


Figure 3-3. U-Arm

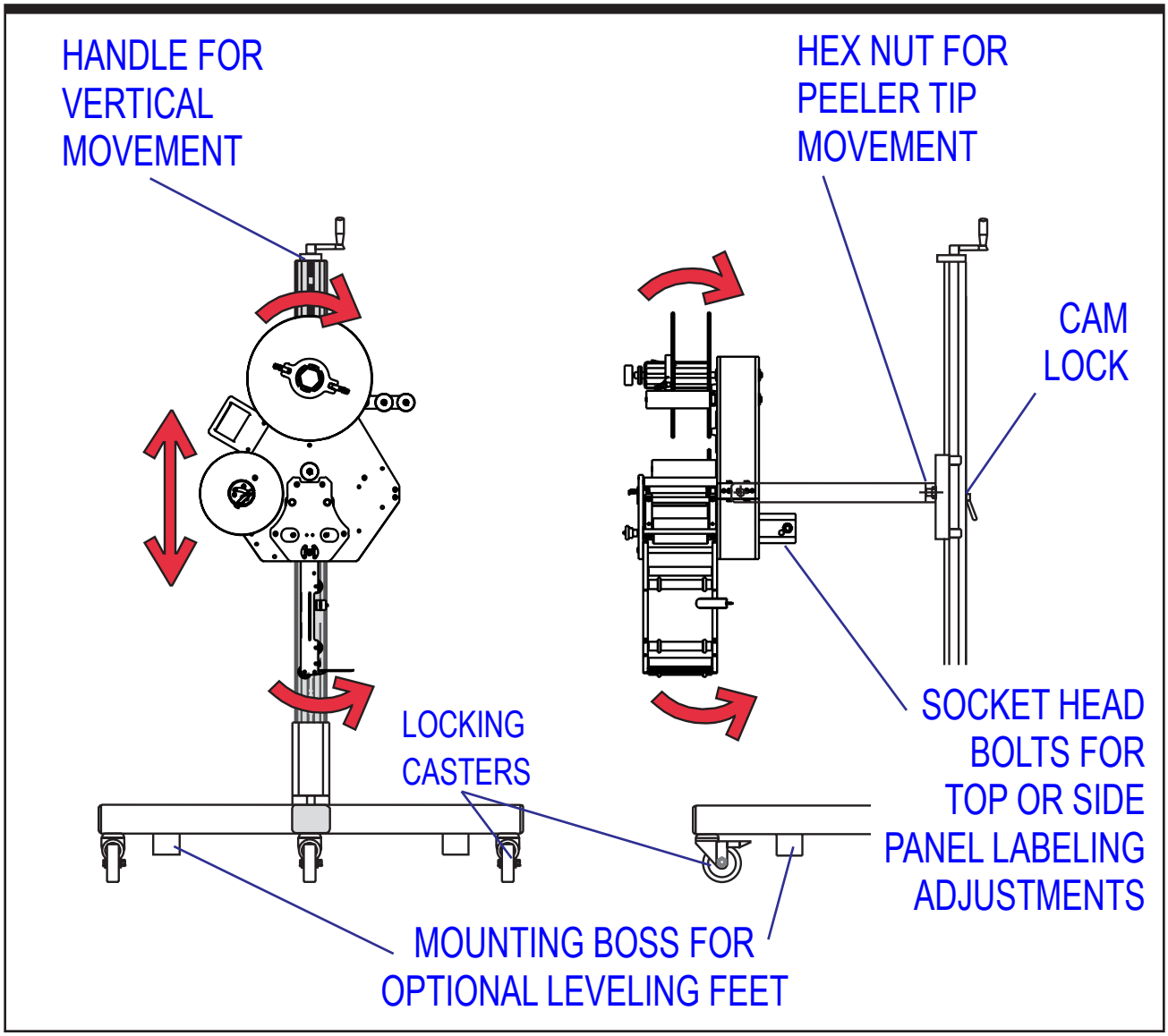


Figure 3-4. Adjustment for T-Stand and U-Arm

Use the handle at the top of the T-stand to raise or lower the applicator to the desired height relative to the product. (Refer again to Figure 3-4.)

To change the horizontal position of the unit, simply unlock the casters on the bottom of the T-stand and roll the unit to the desired location. Lock the casters down once in position.

Power Supply

Supplying the unit with the correct supply voltage and compressed air (if necessary) permits safe and efficient operation. (Refer to Table 1-1 for exact specifications.)

Note: Compressed air is only needed with certain applicator modules.

Applicator Setup

4

Label Threading

Only use pressure sensitive labels. More information on label and web specifications are available in Table 4-1.

Before installing a label roll please read Table 4-1 to insure the selection of proper label stock.

Label & Web Specifications	
Label Style	Pressure sensitive label with a minimum spacing of 0.125" (3 mm). 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" (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" (6 mm) wider than label to be dispensed.
Roll Put-Up	Maximum O.D. of roll is 14" (356mm) with a core I.D. of 3" (76 mm). Label orientation is based on equipment and product orientation. The labels must be wound 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 and 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 ±0.05" (0.02mm) can be maintained provided that: (A) Labels are manufactured to the right label specification with no die cuts into liner. (B) Lateral position of labels are within 0.0025" (0.06 mm) on the x and y axes.
	Do not use foil or metal labels with capacitance sensor. They will damage the label sensor.

Table 4-1. Label & Web Specifications

Refer to Figure 4-1 to assist in proper label threading. A label threading diagram is supplied on the front of the labeler.

Store label stock in a cool, dry place to avoid heat damage.

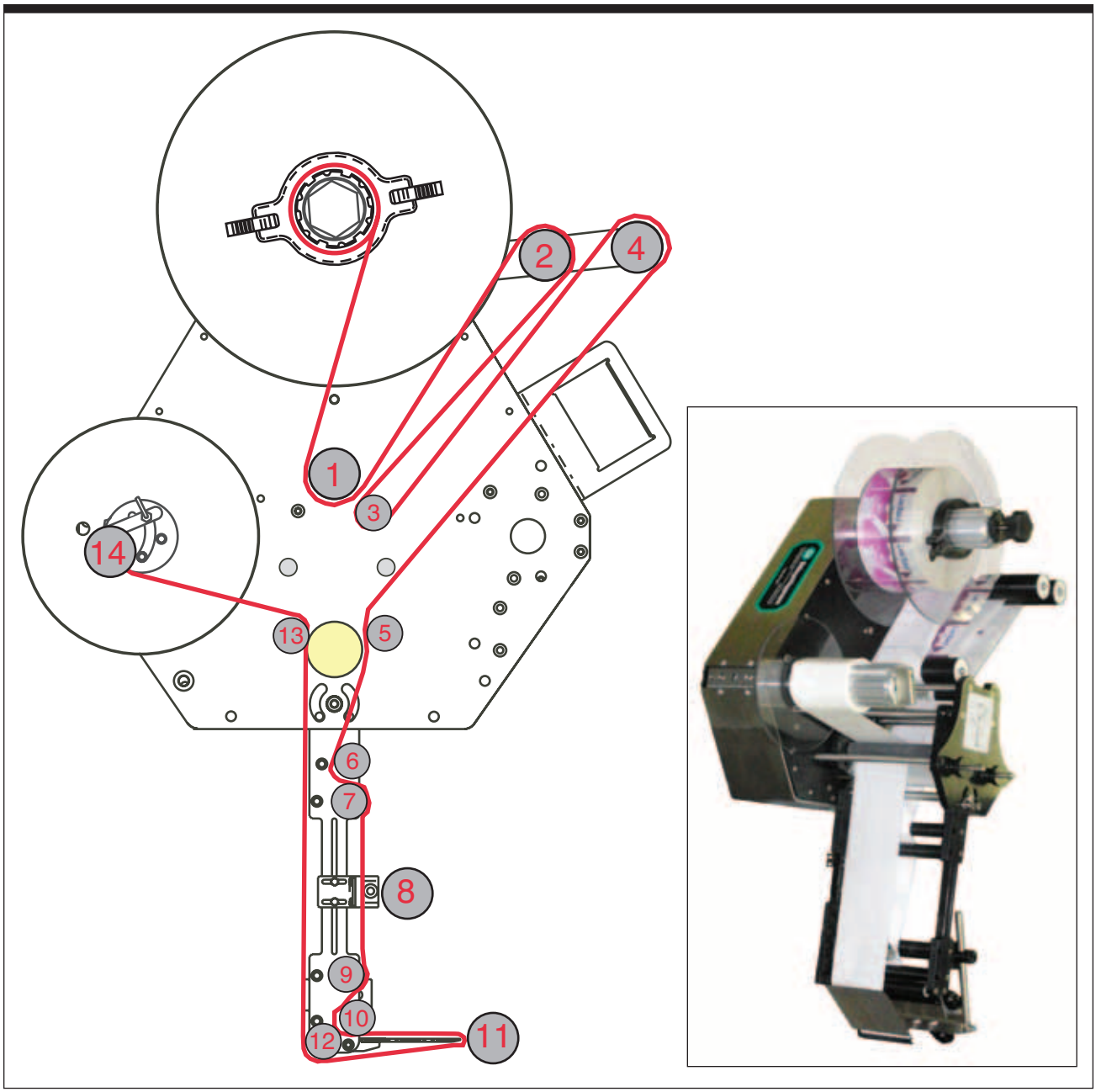


Figure 4-1. Web Path (Label Threading Path)

Procedure Refer to the circled numbers (1 through 14) on the front of the Labeler as shown in Figure 4-1 to assist you in following this label threading procedure.

Step 1. **Remove Outer Flange.** With the power off, remove the outer disk from the unwind roller by releasing the handles and lifting the cover up and off the unwind extrusion. If there is any unused spool, remove that from the extrusion.

Step 2. **Install Label Core.** Install a new spool of labels. Make sure the supply roll is pushed to the inner unwind flange of the assembly. Replace the outer flange by aligning the tabs with the grooves on the extrusion (see Figure 4-2). Once the outer flange is slid down over the spool along the grooves, firmly seat the outer flange down over the spool, and push the tabs into the core of the spool.

Step 3. **Start to Thread the Label Stock.** While holding the inner flange, grab and tug the label stock to make sure the roll does not slip. Once secure, loop the label stock under the idler roller (refer to position #1). Then loop the label stock over the first dancer arm roller (position #2). Route the stock to the inside of the idler shaft (position #3) and back up to the outside dancer arm roller at position #4).

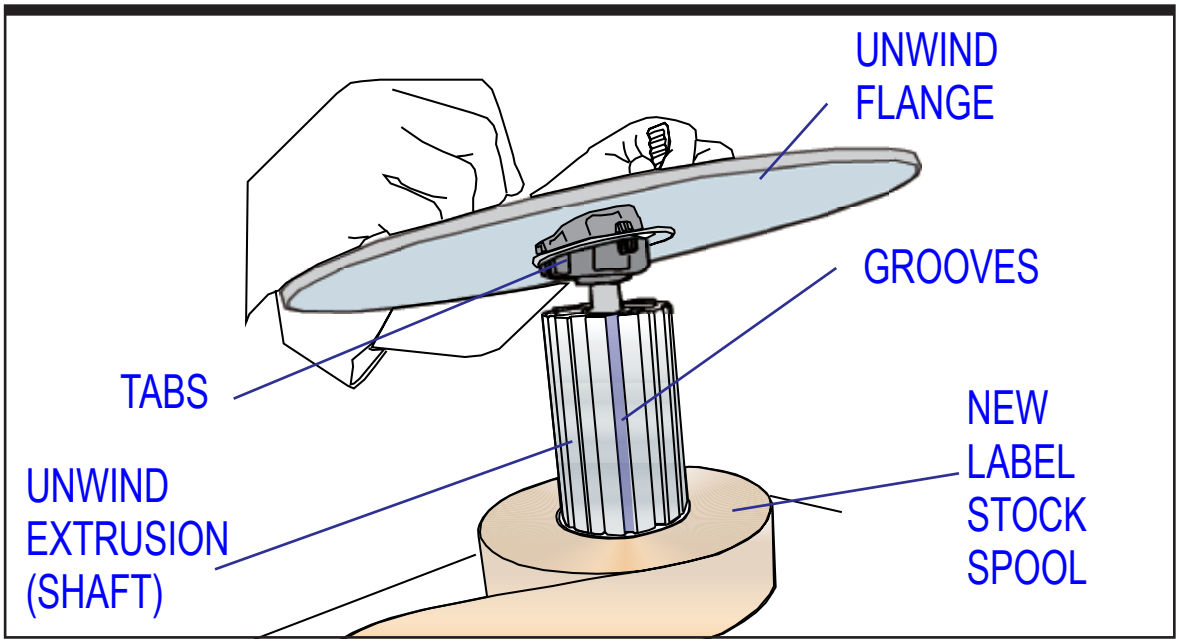


Figure 4-2. Unwind Assembly - Installing New Label Spool

Step 4. **The Nip Roller.** To thread the stock between the drive roller and the nip roller, you must first release the tension on the nip rollers. Lift up on the lockout knob on top of the face plate cover (see Figure 4-3) and rotate them 180˚. Move each cam outward until the cams' locks drop back down into the slots. This locks the nip rollers away from the drive shaft. Thread the label stock between the nip roller (position #5) and the drive shaft.

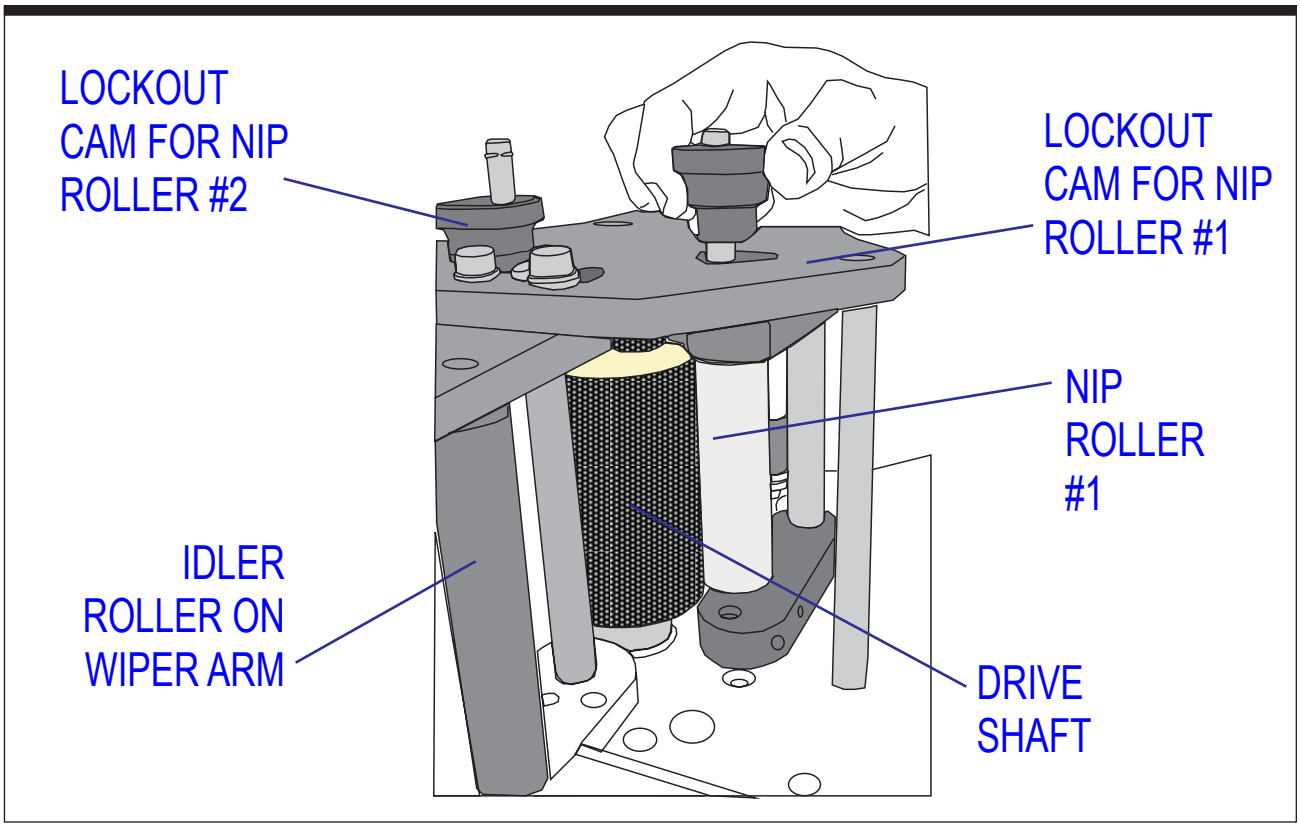


Figure 4-3. Lockout Knobs for Nip Rollers

Step 5. **Wiper Arm.** Thread the label stock under the first idler roller (refer to position #6), and then through the second roller (position #7). The label then is threaded through the label sensor (position #8) and under the third idler roller (position #9), then around the 4th roller (position #10). The label stock over the end of the label peeler plate (position #11), and back to the last wiper arm idler roller (position #12) at the base of the wiper arm.

Do not use foil or metal labels with capacitance sensor. They will damage the label sensor.

Step 6. **Second Nip Roller.** Thread the label back up towards the drive shaft, feeding the label between the drive shaft and the 2nd nip roller (refer to position #13).

Step 7. **Open the Cam on the Rewind Assembly.** Open the cam (refer to Figure 4-4) on the extrusion shaft of the rewind assembly. Insert a portion of the end of the label into the cam, and rotate the wheel to wrap up excess label stock. The label stock (media) should be riding evenly on the rollers and the tension should be fairly secure, but not too tight.

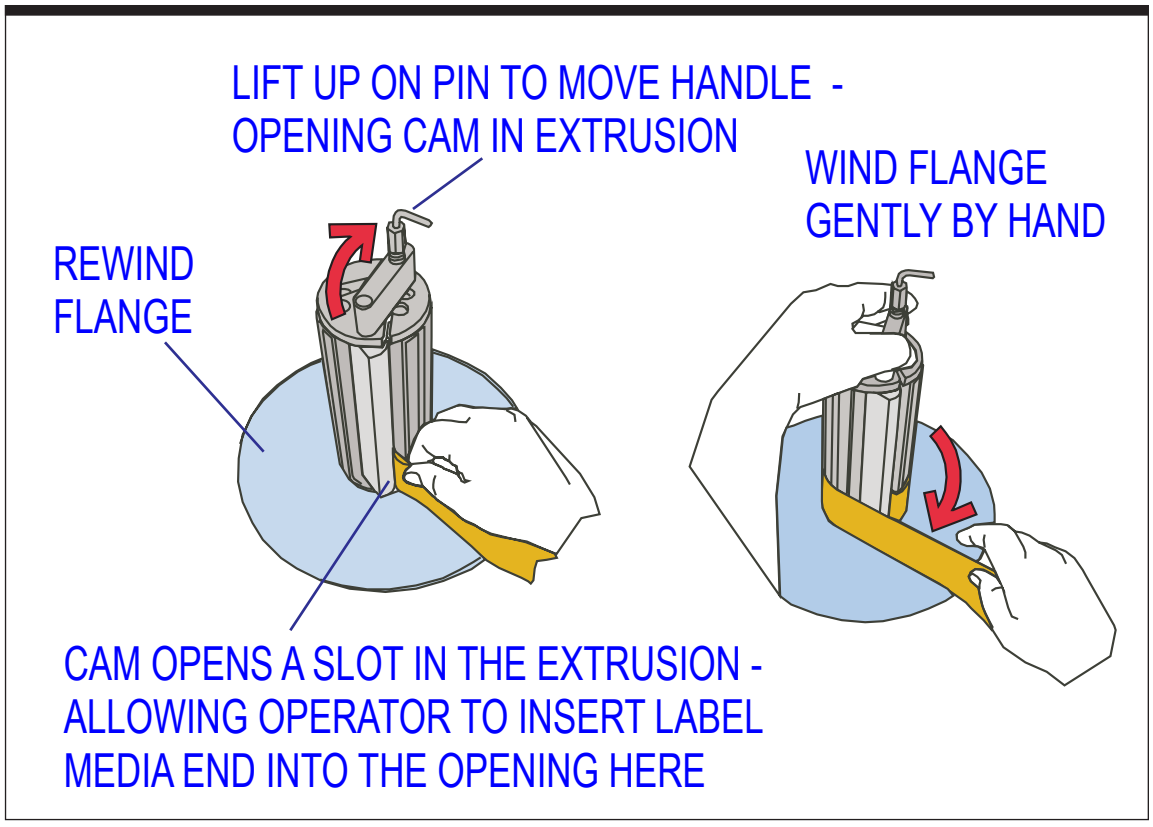


Figure 4-4. Rewind Assembly - Threading

Step 8. **Re-engage the Nip Roller Lockout Knobs.** Re-engage the nip roller lockout knobs by turning the knobs 180˚, lifting up on the knobs and pulling them center towards the drive shaft (this should be tight, and maintain a firm grip on the knobs). Once the nip rollers are in place, push the knobs down into the openings on the front cover (see Figure 4-3).

Step 9. **Power Up and Jog the System.** Turn the disconnect switch to "ON". On the keypad, use the JOG command to run labels through at high speed to help the label stock find its proper label path through the labeler. Once the label stock is properly positioned, jog the labeler at low speed to position the label on the peeler plate appropriately.

Step 10. **Using Label Teach in the Control Screens.** Once the label is correctly situated on the peeler plate, go to the Label Teach screen and press "ENTER". This allows the labeler to "learn" the label position. The labeler should dispense three labels off the end of the peeler plate. Refer to Chapter 6, Operator Interface, for further information.

Note: The aforementioned information is also valid if the labeler is still running (power not turned "OFF"), but to obtain label stock to thread, the dancer arm will have to be pulled clockwise. The dancer arm will dispense the necessary label stock to thread through the labeler.

Light Tower (Optional)

Figure 4-5. Light Tower

The optional light tower (refer to Figure 4-5) can be connected to the labeler to indicate different conditions of the labeler at any given time.

Figure 4-6. Low Label Sensor

Low Label Sensor (Optional)

The low label sensor is installed as shown in Figure 4-6 on the back side of the labeler near the unwind shaft (it is not visible unless the side covers of the labeler are removed). This sensor detects when the label roll is depleted. When the sensor detects the low level of media, it sends a signal and illuminates the amber light on the light tower (refer Figure 4-5). This sensor is hard wired to terminals in the electrical enclosure (see Appendix for details).

Rewind Clutch Adjustment

Adjust the rewind assembly so the label stock rewinds smoothly. No snapping or slack should occur. Adjust the rewind assembly by turning the hex nut on the end of the rewind shaft clockwise or counterclockwise.

To increase feed rate, turn the nut clockwise to apply more friction to the friction washer located on the rewind assembly. To decrease feed rate, turn the nut counterclockwise which applies less friction to the friction washer (see Figure 4-7.)

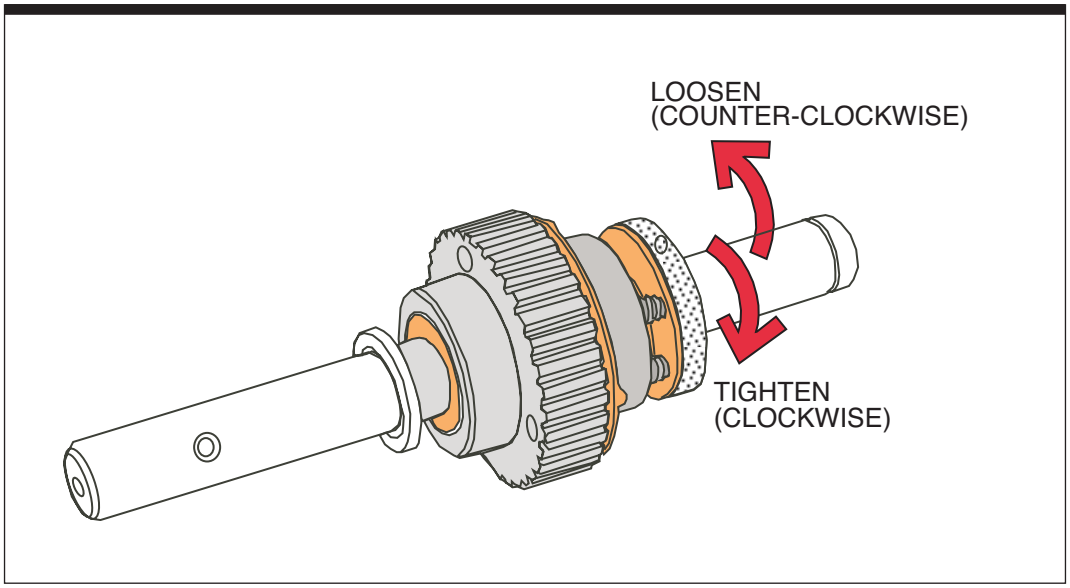


Figure 4-7. Rewind Clutch Adjustment

As the rewind assembly fills, the rewinding speed may become too slow. This is due to the increased weight of web waste on the rewind assembly. To prevent a slowdown from occurring, adjust the rewind speed as if the rewind assembly was full. Initially, the rewind assembly may exert substantial tension on the web. This will ease as the rewind assembly fills with collected web waste.

Product Sensor

The sensor supplied with the applicator is hard wired directly to the electrical enclosure. A quick disconnect is provided on the sensor which allows for quick changeover of sensor style as applications dictate.

The sensor should be mounted slightly upstream from the applicator.

The alignment and method of mounting is critical to the performance of the sensor (see Figure 4-8.) Excessive vibration may cause false readings. Anything behind the product that could cause a false sensor reading should be moved or placed as far away as possible.

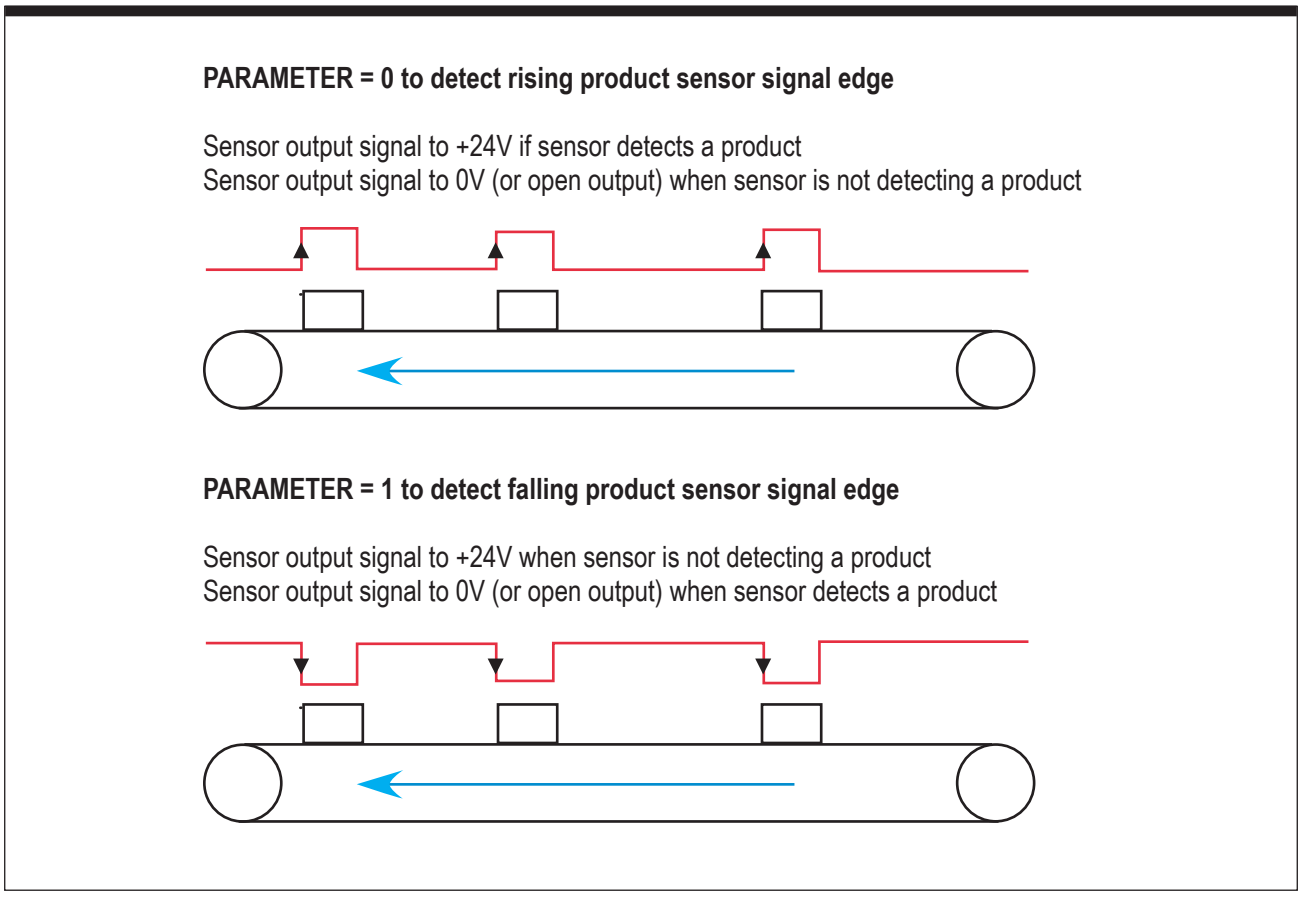


Figure 4-8. Product Sensor Setup

To select between sensing the leading edge or the trailing edge of a product leave the operate switch (found on the body of the sensor) set to "light operate" at all times. In the PRODUCT SENSOR EDGE screen of the operator interface (refer to Chapter 5) select "LIGHT ON" to detect the leading edge, or select "DARK ON" to detect the trailing edge. The default setting is "LIGHT ON". The standard sensor that is shipped with the labeler is set up for "light operate." Refer to Figure 4-9 for adjustments.

Changing the sensor setting from light operate to dark operate will drastically affect the operation of the applicator and any modules being used.

Once the sensor is mounted and the product is in place, apply power and advance the GAIN control to maximum (clockwise rotation). If the sensor is “seeing” its reflected light, the sensor alignment red LED

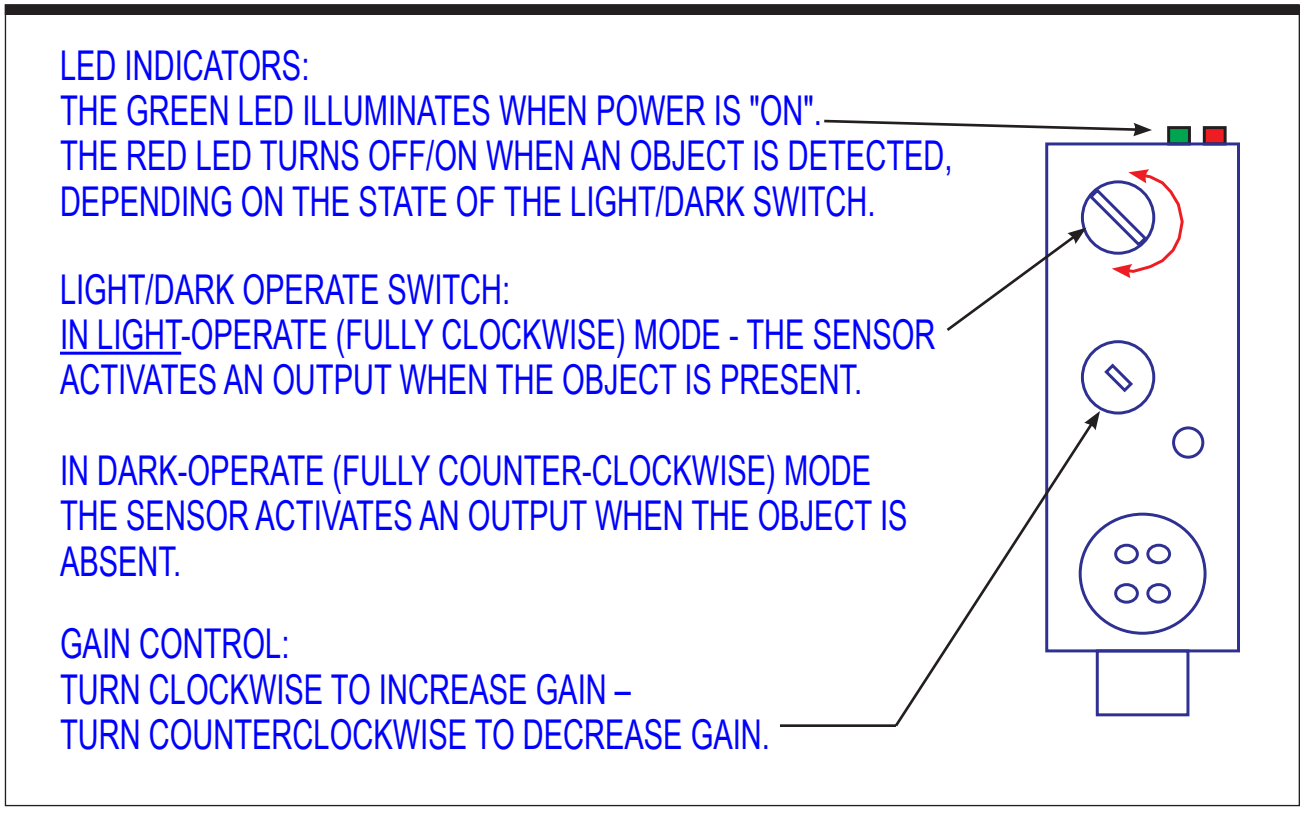


Figure 4-9. Product Sensor Setup

should be on. If a red pulse is not observable, reduce the GAIN control (counterclockwise rotation) to obtain a countable pulse rate.

Once you feel comfortable with the set GAIN, test by removing the object from the sensing position. The red LED indicator should go “off”. If the LED indicator does not go “off”, the sensor is reacting to light reflected from a background surface.

Note: If DARK operate is selected, the red LED should turn "ON" if the object is removed.

Reduce the GAIN until the indicator goes “off” and check the sensor with the object once again. If the sensor indicator does not come “on”, when the object is placed in position, then the sensor is receiving more light energy from the background than the object. Consider the following alternatives:

- Move the sensor closer to the object and reduce the sensitivity (GAIN).
- Reduce background reflectiveness by painting the background with flat, black paint, scuffing the background or cutting a hole in it.
- Tilt the sensor or the background so that the sensing beam is not perpendicular to the background.

Set-Up Instructions for the Label Sensor

The L410A Labeler uses the Label•Eye sensor, designed specifically for the detection of labels. The sensor, affixed to the wiper arm of the label applicator, has an Autoset™ program for easy setup.

Normal Backing

To start Autoset™, use the external alignment guides to position the gap between labels in line with the dot in the detection zone (see Figure 4-10 on the following page). Once the label is in place, push the Autoset™ button marked "NORMAL."

If the red and green LED indicators blink four times, the sensor cannot penetrate the backing materials or the presence of labels.

Translucent Backing

The sensor cannot always detect transparent labels on transparent backing. However, in some cases it may detect the label. Use the Autoset™ procedure above, placing the gap between the label between the external alignment guides, so that it is in line with the dot in the detection zone (see Figure 4-10). Once the label is in place, push the Autoset™ button marked "TRANSLUCENT." If it is detectable, the red LED indicator should go on when the label passes through the detection zone.

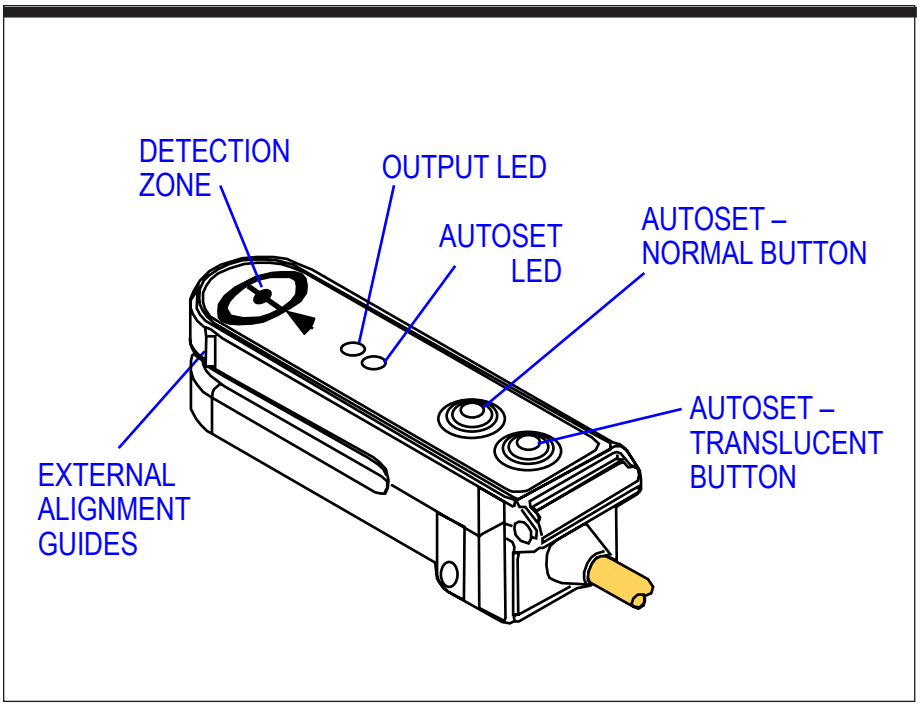


Figure 4-10. Label-Eye Label Sensor (Located on Wiper Arm) Mode Alignment

Labeling System Setup

The 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 intended to be dispensed.

Step 2. **Move Label to Dispense Position.** Move the label with the JOG function (see Chapter 5, Operation Procedures) to the dispense position (label flag). Using the JOG feature, press and hold the ENTER button to forward labels.

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 **ACCEL/DECEL** until the stalling stops.

Default setting for **ACCEL/DECEL** is 200 Hz/ms.

The system is now set up for maximum performance.

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 **ACCEL/DECEL**, 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. **Setup Complete.** As a result of the actions 1 to 6, 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.***

Operator Interface

5

Operator Interface Map

The following information explains the different parameters found within the 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. On the following page you will find a brief illustration of the program layout.

Figure 5-1. Operator Screen

Operating Mode

The two wipe-on operating modes available are **synchronous** and **asynchronous**. The operator may change between modes by simply choosing the appropriate setting within the operating display.

When **synchronous** mode is chosen, the labeler will dispense labels at the speed determined by the encoder pulses 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.

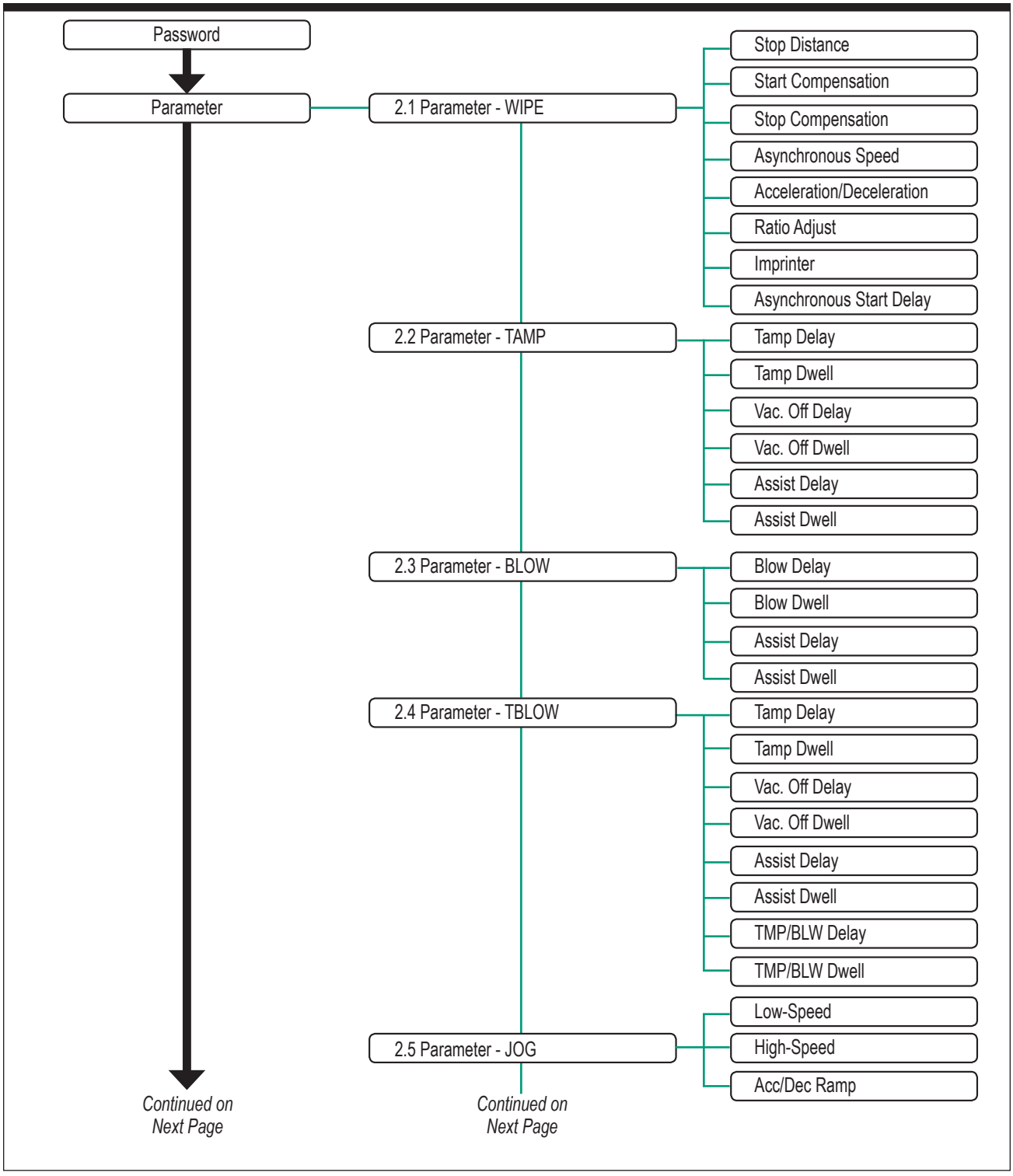


Figure 5-2. Mapping of the Operator Interface

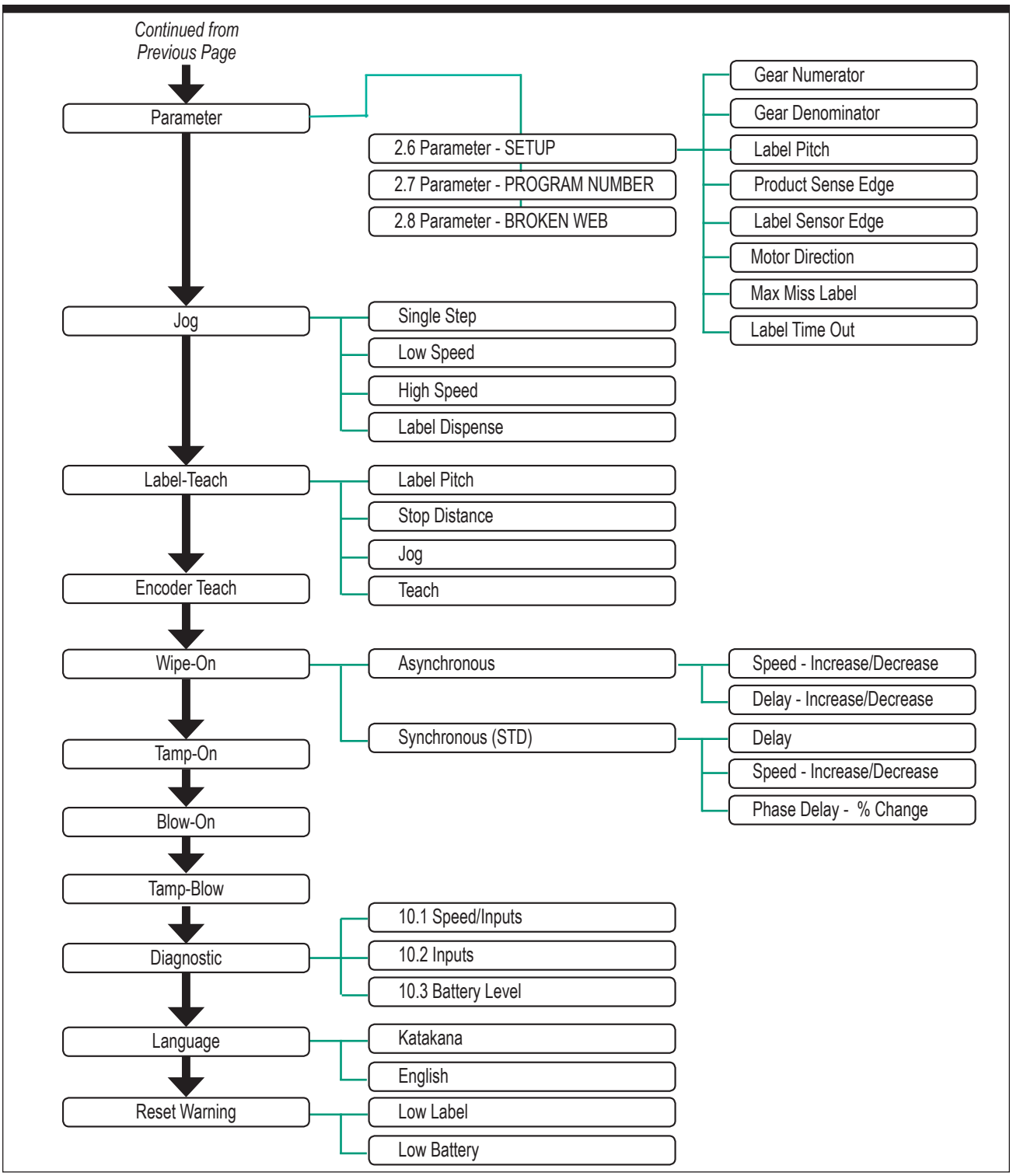


Figure 5-2. Mapping of the Operator Interface (Continued)

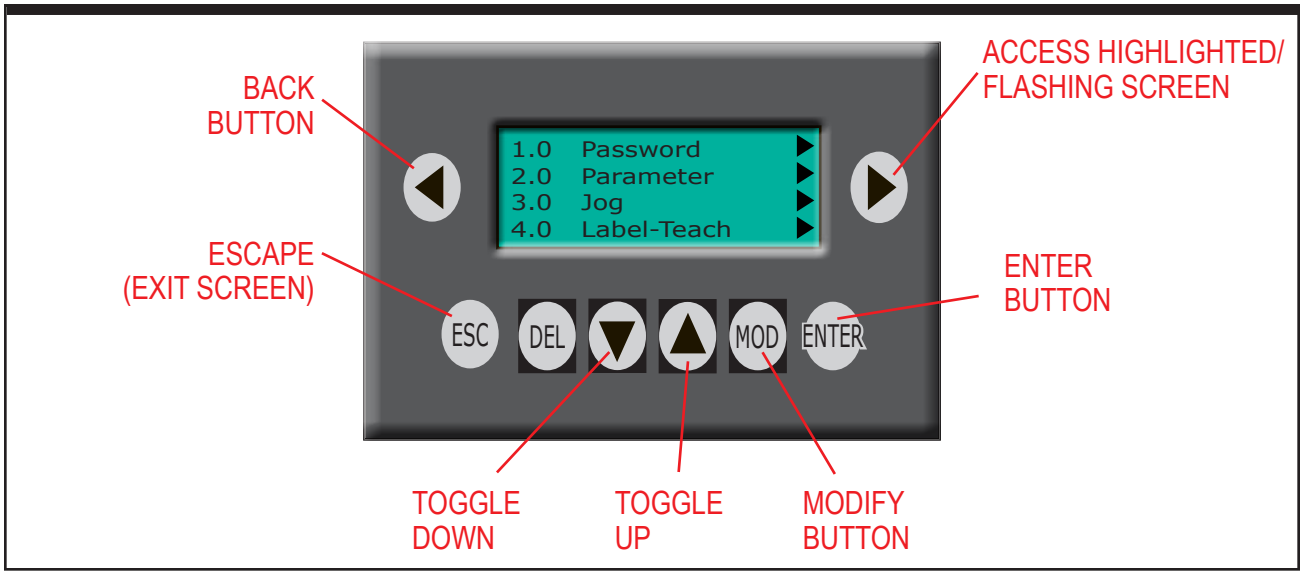


Figure 5-3. Operator Screen

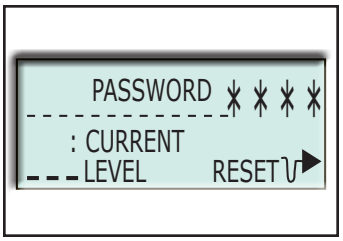
Operating Screen

When the labeler has been loaded and the power supplied to the equipment, the Operator Interface will boot up to the main operating screen. A list of different screens will show, screen 1 (Password) through 11 (Language). Refer to Figure 5-3. Use the "up"[ ]and "down" [ ] arrows to go through the screens (as you move down, each line will flash as you toggle over it).

The various operating screens are shown below:

Screen 1.0 **Password**
Screen 2.0 **Parameter** (Parameter screen is password protected and cannot be randomly accessed).
Screen 3.0 **Jog**
Screen 4.0 **Label-Teach**
Screen 5.0 **Encoder Teach**
Screen 6.0 **Wipe-On**
Screen 7.0 **Tamp-On**
Screen 8.0 **Blow-On**
Screen 9.0 **Tamp-Blow**
Screen 10.0 **Diagnostic**
Screen 11.0 **Language**
Screen 12.0 **Reset Warning**

Password Screen



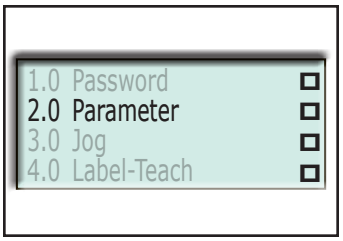
To enter the Parameter screens the operator must first enter the password. Use the toggle arrows to move up and down the screen list until the password screen (1.0) is flashing. Use the right "arrow" [▶] to enter the password screen.

To enter the current password, press the MOD button [MOD]. Use this button whenever a modification to a Value needs to be made during operation. The " * * * *" (password value) will be highlighted and flashing. Use the right and left arrows to move the cursor over the four asterisks. When just one asterisk is flashing, use the up and down arrows to input the password Value, then use the right or left arrow to move the cursor to the next Value. Once the password is correct, press enter [ENTER], and then to leave this screen, use the ESC button [ESC].

The operator can now access the parameter screens.

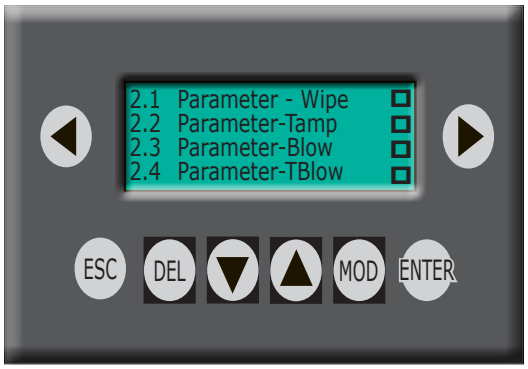
- **Default password: 0000**

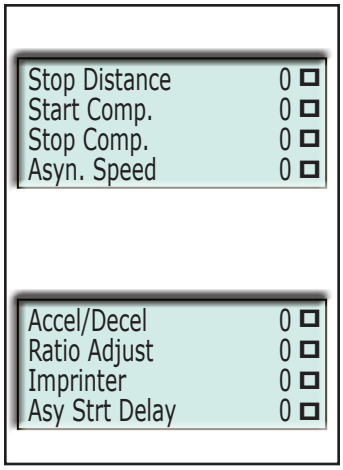
Parameter Display Screen



The Parameter Group Screens allows the operator to select the group (parameter) to display or edit. Use the up and down arrows (❑❑) to choose the parameter. The choices are as follows:

- 2.1 Parameter - Wipe
- 2.2 Parameter - Tamp
- 2.3 Parameter - Blow
- 2.4 Parameter - TBlow
- 2.5 Parameter - Jog
- 2.6 Parameter - Setup
- 2.7 Program Number
- 2.8 Broken Web





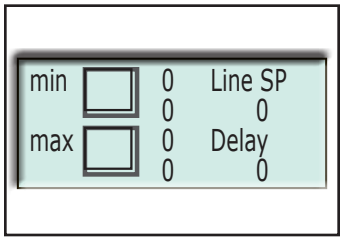
Parameter Menu - Wipe

STOP DISTANCE

The Stop Distance parameter defines the position of the label sensor relative to the label. It references the position from which each dispensing cycle is started.

The "Label-Teach" function acquires this Value automatically based on the label flag requirement. Refer to Label-Teach operation further in this chapter.

- **Min Value: 0 (steps); Max Value: 65535 (steps)**
- **Default setting: 0**
- **Setting is retained when power is turned off.**



START COMPENSATION

The Start Compensation is a linear interpolation of the product delay between low speed and high speed in Synchronous mode. As the product speed increases while in Synchronous mode, the label will tend to drift back on the product. This can be overcome by determining a compensation Value between low speed and high speed. By executing the below procedure, a linear interpolation is calculated, and will assist in maintaining the correct label position when adjusting the product/conveyor speed from low to high.

How to Setup the Start Compensation:

Step 1: Enter into Start Comp. within the Parameter Screen or within the Delay screen in Synchronous (std) screens.

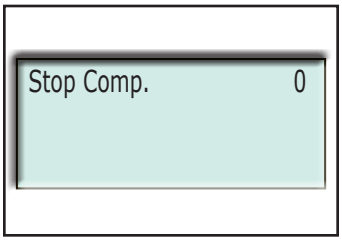
Step 2: Run the product/conveyor at the lowest production speed required and begin to adjust the "Delay" until the label is in the correct position. To dispense a label, press the "Enter" button. To adjust the "Delay", press "Mod" button until the "Delay" value is flashing. Adjust the up and down arrows to change the value, then press "ESC" to exit the delay adjust. Press "Enter" to see label location change and continue this delay adjustment until the label is in the correct position at this speed.

Step 3: Once the "Delay" Value is correct at the lowest production speed, press "Enter". To enter this established Value into memory, press "Mod" until the "Min" Value is flashing and then hit "Enter". You will see the Value reside in the "Min" parameter.

Step 4: Run the product/conveyor at the highest production speed required and begin to adjust the “Delay” until the label is in the correct position. To dispense a label, press the "Enter" button. To adjust the "Delay" press "Mod" button until the "Delay" value is flashing. Adjust the up and down arrows to change the value, and press "ESC" to exit the delay adjust. Press "Enter" to see label location change and continue this delay adjustment until the label is in the correct position at this speed.

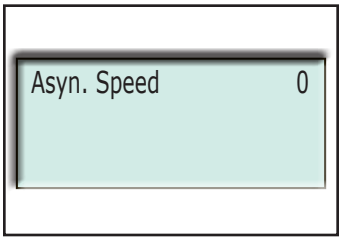
Step 5: Once the “Delay” Value is correct at the highest production speed, press “Enter”. To enter this established Value into memory, press “Mod” until the “Max” Value is flashing and then hit “Enter”. You will see the Value reside in the “Max” parameter.

At this point you have completed the Start Compensation for Synchronous Mode. Please note this procedure is not necessary for Asynchronous Mode.



STOP COMPENSATION

The Stop Compensation Value is set by the factory and should not be adjusted.



ASYNCHRONOUS SPEED

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

- **Min Value: 100 (Hz)**
  Max Value: 20000 (Hz)
- **Default Value: 7000**

Note: Screen input is only relevant in the ASYNCHRONOUS mode. It cannot exceed the maximum speed of the labeler.

The asynchronous speed Value (Hz) is dependent on the motor resolution setting and gear factor. Please see example of calculating asynchronous speed at left.

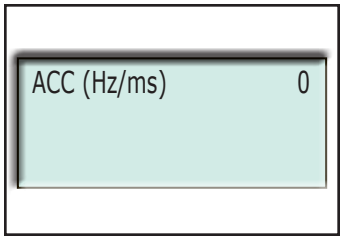
ASYNCHRONOUS SPEED CALCULATION:

Product/Conveyor Speed: 100ft/min
Resolution of Applicator: 0.05mm/step* *(*Factory Setting based on gearing)*

CALCULATION:

$$\left(\frac{100\text{ft}}{\text{min}}\right)\left(\frac{12\text{in}}{1\text{ft}}\right)\left(\frac{25.4\text{mm}}{1\text{in}}\right)\left(\frac{1\text{min}}{60\text{sec}}\right)\left(\frac{\text{Step}}{0.05\text{mm}}\right) = 10160\ \text{step/sec (or 10160 Hz)}$$

Conveyor/Product Speed — Unit Conversion — Applicator Resolution

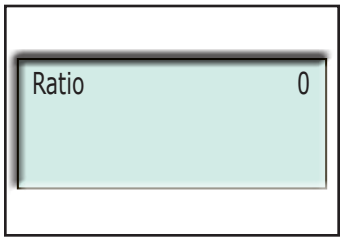


ACCEL./DECEL

This defines the acceleration and deceleration ramp for the synchronous and asynchronous dispensing operation mode.

A ramp that is set too high can cause the stepping motor to stall and a loss of position will occur.

- **Min Value: 1 (Hz/ms); Max Value: 1000 (Hz/ms)**
- **Default Value: 320**

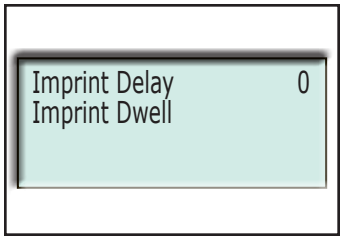


RATIO ADJUST

The Ratio Adjust is used to override the gear factor set by the gear numerator and gear denominator (thereby overriding the encoder pulses). This parameter is only used in the synchronous dispensing mode and represents a percentage of the theoretical speed.

- **Min Value: 50 (%); Max Value: 150 (%)**
- **Default Value: 110**

To slow the label dispense speed enter a Value less than 100.
To increase the label dispense speed, enter a Value greater than 100.



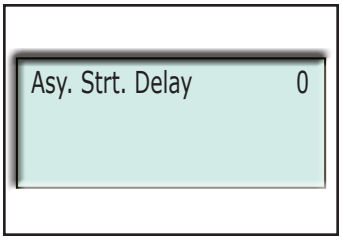
IMPRINTER

The Imprinter timer is started in Wipe-On mode when the label cycle is completed. It can be used to trigger peripheral equipment (counters, etc.).

Imprint Delay is a time in milliseconds (ms) that the signal is delayed in being sent to the device.

Imprint Dwell is the length of time in milliseconds (ms) of the signal duration that is sent to the device.

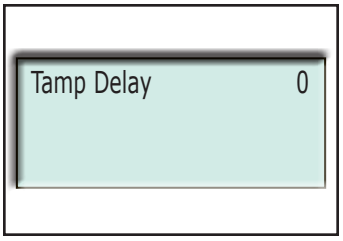
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 10**



ASYNCHRONOUS START DELAY
The start delay parameter is used to adjust the position of the label on the product. Once the product sensor detects the product, the Asynchrounous start delay (in ms) is the amount of time until the label dispenses.

- **Min Value: 1 (ms); Max Value: 2000 (ms)**
- **Default Value: 250**

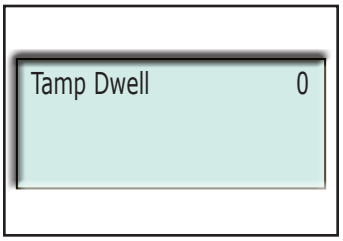
Parameter Menu - Tamp



TAMP DELAY
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.

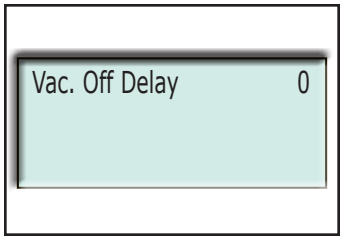
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 1000**



TAMP DWELL
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.

- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 500**

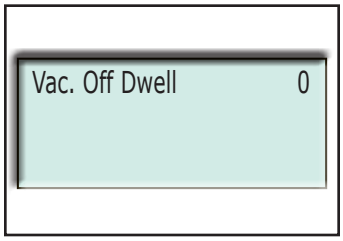


VACUUM DELAY

The Vacuum Delay sets the amount of time the vacuum stays off while the label is fed onto the pad. Setting is initiated when the tamp home sensors goes "high" (tamp is retracted).

Larger number to keep the vacuum off for a longer period of time.
Smaller number to turn the vacuum on sooner.

- **If the leading edge of the label does not arrive all the way to the far edge of the vacuum pad, it is recommended to increase the setting.**
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 1000**

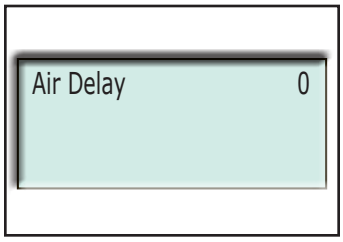


VACUUM DWELL

Sets how long the vacuum stays on as the tamp is applying a label to the product. Setting is initiated when the tamp home sensor goes "low" (tamp begins to extend).

A larger number keeps the vacuum on longer during the tamp cycle.
A lower number turns the vacuum off sooner during the tamp cycle.

- **If the label is retracting with the vacuum pad instead of being applied to the product, lower this value to ensure vacuum is not still on during label application.**
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 500**

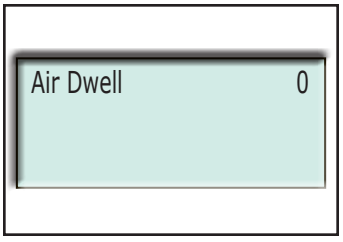


AIR (ASSIST) DELAY

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).**
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 1000**

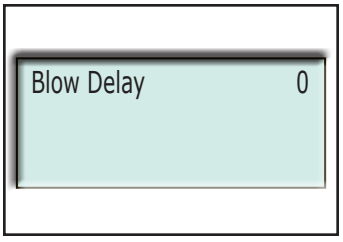


AIR (ASSIST) DWELL
Used to help push the label further onto the tamp pad.

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.**
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 500**

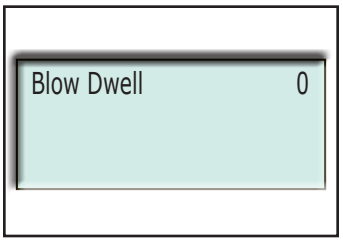
Parameter Menu - Blow



BLOW DELAY
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.

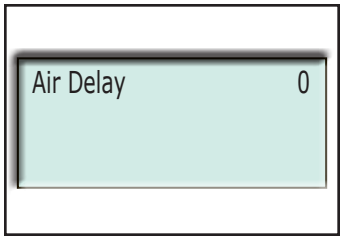
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 1300**



BLOW DWELL
Sets dwell time for the blow assembly.

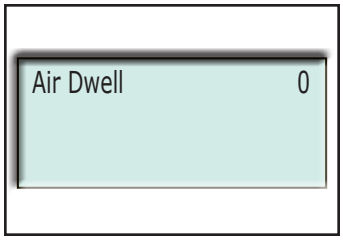
Larger number to extend the time the blow assembly is activated.
Smaller number to reduce the time the blow assembly is activated.

- **When a blow assembly is installed, VACUUM DWELL affects how firmly the label is affixed to the product.**
- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 500**



AIR (ASSIST) DELAY
Used to smooth the transition of the label from the peeler tip to the blow assembly.

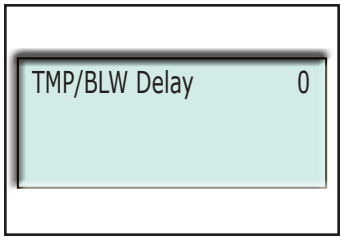
Larger number to turn the air assist valve on later.
Smaller number to turn the air assist valve on earlier.
- **Delays activation of the air assist valve.**
- **Min Value: 0 (ms); Max Value: 65535 (ms). Default Value: 500**



AIR (ASSIST) DWELL
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.**
- **Min Value: 0 (ms); Max Value: 65535 (ms). Default Value: 1000**

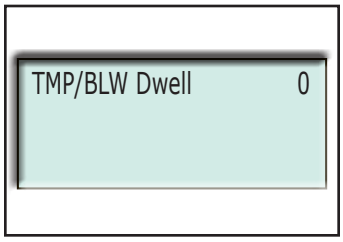
*Parameter Menu - Tamp-Blow**



TMP/BLW (TAMP-BLOW) DELAY
Sets delay before the blow is activated.

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

- **Min Value: 0 (ms); Max Value: 65535 (ms). Default Value: 1300**

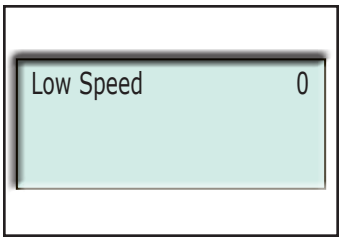


TMP/BLW (TAMP-BLOW) DWELL
Sets dwell time (how long the blow is activated) for the tamp-blow assembly.

- **Min Value: 0 (ms); Max Value: 65535 (ms)**
- **Default Value: 500**

**Other parameter settings, such as Tamp-Delay, Vacuum Off Delay, etc., are covered in the above parameter menus (Parameter-Tamp, Parameter-Blow, etc.). Refer to those sections for more information*

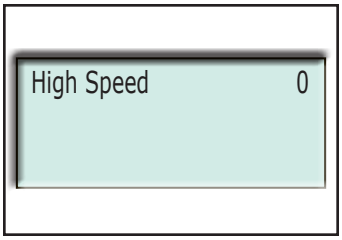
Parameter Menu - Jog



LOW SPEED

Sets the low speed in the jog mode. It also defines the speed in LABEL TEACH mode.

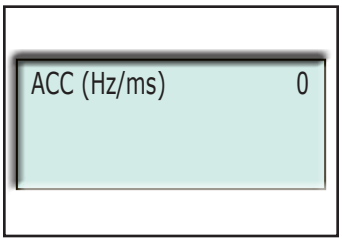
- **Min Value: 1 (Hz); Max Value: 20000 (Hz)**
- **Default Value: 500**



HIGH SPEED

Sets the high speed in the jog mode.

- **Min Value: 1 (Hz); Max Value: 20000 (Hz)**
- **Default Value: 5000**



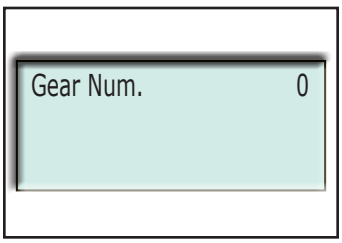
ACCEL./DECEL

This defines the acceleration and deceleration ramp for the jog speed mode.

A ramp that is set too high can cause the stepping motor to stall and a loss of position will occur.

- **Min Value: 1 (Hz/ms); Max Value: 1000 (Hz/ms)**
- **Default Value: 250**

Parameter Menu - Setup

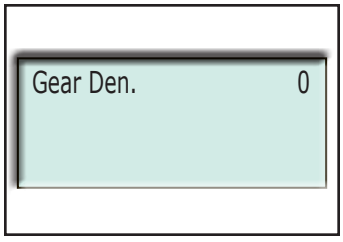


GEAR NUMERATOR

This is the factory default Value established from the size of the drive roller and gearing of the labeler.

- **Min Value: 0; Max Value: 65535**
- **Default Value: 2000**

The value shouldn't changed unless authorized by the manufacturer.

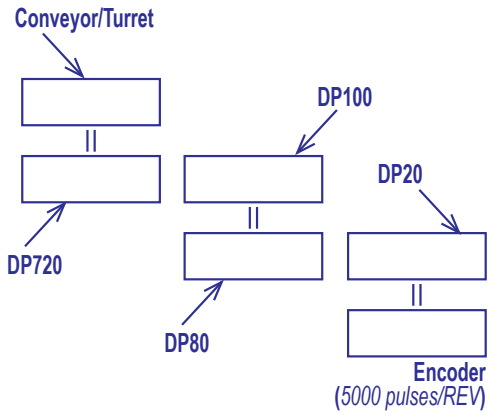


GEAR DENOMINATOR

This factor defines the rate of "incoming" encoder increments to the stepper drive. It is used to speed match the label dispense speed to the product speed.

Using the ENCODER TEACH, this Value can automatically be obtained. When using a non-manufacturer supplied encoder, refer to the section in this chapter for the ENCODER TEACH instructions.

To manually calculate required Value for a certain encoder connection, see examples below:



RATIOS:

720/100 = 7.2 : 1 ratio Total Ratio = 28.8 : 1
80/20 = 4:1 ratio

Therefore, 20 RPM Turret = 576 RPM Encoder Shaft

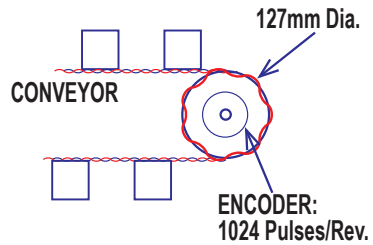
CALCULATION:

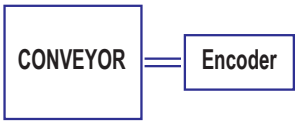
720mm dia. = (720mm) * (π) = 2262mm Circumference

$$\left(\frac{2262\text{mm}}{\text{Rev}}\right)\left(\frac{\text{Rev}}{5000\ \text{Inc}}\right)\left(\frac{1}{28.8}\right) = 0.0157\ \text{mm/inc.}$$

Resolution of Encoder

REQUIRED INCREMENTS FOR 100mm: $\left(\frac{100}{0.0157}\right) = 6369$



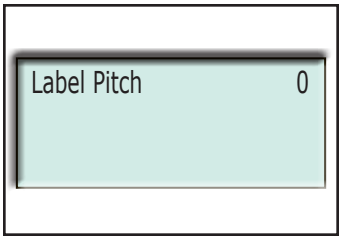


CALCULATION:

(127mm diameter) * (π) = 398.98mm Circumference

$$\left(\frac{398.98\text{mm}}{\text{REV}}\right)\left(\frac{\text{REV}}{1024\text{pulses}}\right) = 0.0389\text{mm/inc.}$$

REQUIRED INCREMENTS FOR 100mm: $\left(\frac{100}{0.0389}\right) = 2570$

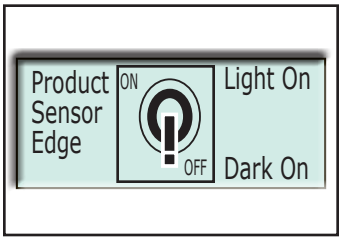


LABEL PITCH

The label pitch is the sum of the label length and the gap between the label and the next label. If known, the pitch can be manually entered as a parameter.

This is calculated automatically using the LABEL-TEACH programming which will determine the exact pitch length and will automatically enter the information into the operator system.

Min Value: 1 (steps); Max Value: 65535 (steps)
Default Value: 5300



PRODUCT SENSOR EDGE

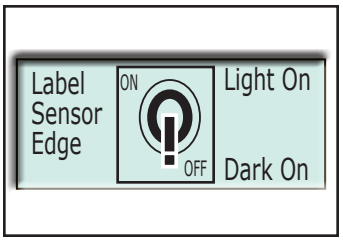
Toggles between Lead and Trail detection on the product sensor. Press "MOD" then use "ENTER" to switch to "Light On" for leading, or "Dark On" for trailing.

(Light On) – Lead (Default)
(Dark On) – Trail

Lead – Initiates timing on the leading edge of the product.
Trail – Initiates timing on the trailing edge of the product.

Note: Settings valid if product sensor is set to light operated mode.

Default Value: Leading Edge



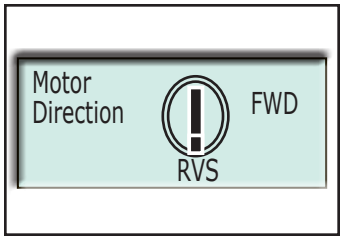
LABEL SENSOR EDGE

Toggles between Lead and Trail detection on the label sensor. Press "MOD" then use "ENTER" to switch to "Light On" for leading, or "Dark On" for trailing.

(Light On) – Lead (Default)
(Dark On) – Trail

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

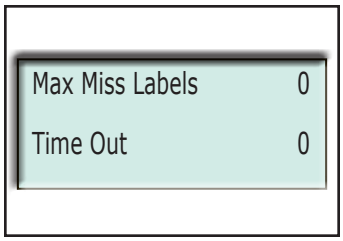
Default Value: Leading Edge



MOTOR DIRECTION
Allows the motor rotation to switch from clockwise (forward) to counterclockwise (reverse). Press "MOD" then use "ENTER" to switch to between FWD and RVS.

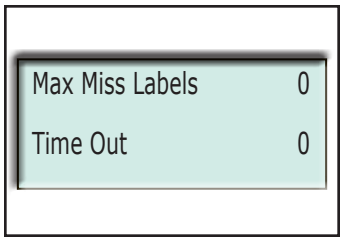
(FWD) – CW Rotation (positive) [Looking on top of motor shaft]
(RVS) – CCW Rotation (negative) [Looking on top of motor shaft]

Default Value: CW (Forward)



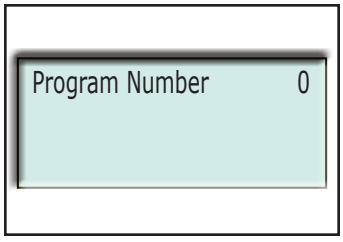
MAX. MISSING LABELS
Defines how many consecutive missing labels (on the web, or media) that can occur before the controller will show a label error situation.

Min Value: 0 (select); Max Value: 65535 (select)
Default Value: 0



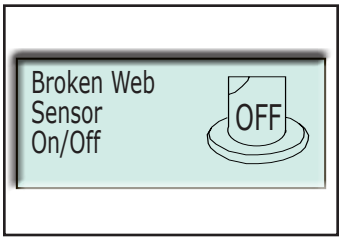
LABEL TIMEOUT
This parameter is used to ensure the controller does not fault out when dispensing long labels. If the label sensor does not see an edge of a label in a certain period of time, the controller will fault on the assumption of max missing labels. If a long label is being dispensed, the time can be increased using this parameter, which allows the label sensor additional time to detect the label edge. If after this time the label sensor still does not detect the edge, the controller will fault with the max missing label message.

Parameter Menu - Program Number



PROGRAM NUMBER
The HMI controller can store up to 10 different labeling programs. The program selection is from 0 to 9. You select the program number you want, then set up your parameters for that particular program. The parameters will be saved even if the unit loses power or is shut down. The only way the programs can be erased is if the software program resets it.

Parameter Menu - Broken Web



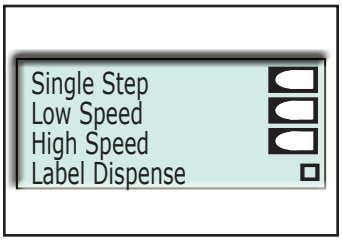
BROKEN WEB SENSOR
The broken web sensor (optional) can be turned on or off. The sensor will detect if the web is broken at any point and the labeler will stop.

To activate the sensor, press MOD, then ENTER. The display will show the sensor to be "on".

Default Value: Off

Note: Broken web sensor is optional and the parameter is only valid if installed.

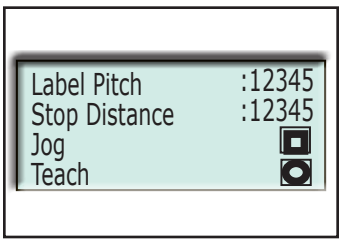
Jog Menu



The JOG function allows the operator to jog the labeler when loading labels into the labeler, to line up the labels, or to use LABEL-TEACH. The different levels (set in the Parameter Jog – Menu) of JOG are:

- **SINGLE STEP –** Labeler cycles one single motor step.
- **LOW SPEED –** Labeler cycles slowly to dispense one label.
- **HIGH SPEED –** Labeler cycles faster (yet still slow) to dispense one label.
- **LABEL DISPENSE –** Once JOG speed has been chosen, press ▶, and then press ENTER to dispense one label.

Label-Teach Menu



This function is used to determine the length of a label pitch and the stop distances used for the labeling process. It begins when START is pressed. The speed for the Label-Teach mode is the low jog speed. The stepper controller determines the position of the motor while the motor is running in relation to the label sensor input signal.

There are two ways to enter the label pitch and stop distance for the Label-Teach operation (Automatic and Manual):

Option 1. **[Automatic Entry - Recommended]** Place label web using jog to the dispensing position. Then activate the LABEL-TEACH to start teach in procedure (Note: motor moves with the low jog speed).

While setting up the labeling machine, the JOG operation is required to move the label to the correct position at the peel plate. The LABEL-TEACH learning movement function is used to determine the requested label position for the AUTOMATIC OPERATION.

The LABEL-TEACH learning movement is started by selection LABEL-TEACH in the main menu. The function advances the web 3-4 label lengths with the manual low speed.

With feedback from the LABEL SENSOR, a total of 3 label lengths including the gaps between the labels are measured and the average length of the 3 label lengths is then calculated as a set Value (LABEL PITCH) then later used in the actual labeling operations. In addition, the position of the label sensor is determined and automatically entered into the STOP DISTANCE parameter.

Problems with the adjustment of the label sensor or with label web itself can be detected with the learning movement. It is recommended to move the label sensor further away from the label edge if the sensor is located close to the leading edge or trailing edge of the label. The close proximity to the label edges may cause false errors during operation.

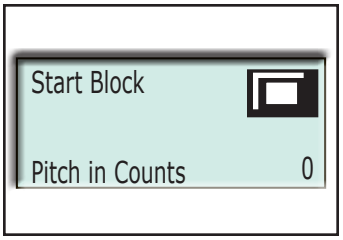
Only after an error free LABEL-TEACH learning movement all the measuring results are accepted by the controller and saved as operating parameters permanently.

1. The label pitch (pitch = label length + gap between labels)
2. The stop distance.

Option 2. **[Manual Entry - Not Recommended]** Measure label pitch (length + gap) and stop distance and enter as parameters using the terminal. Note: All Values are in motor steps.

STOP DISTANCE is the distance from the end of the previous label to the label sensor. If the label sensor is too close to the edge of the label, it may not read the edge. The operator may need to move the sensor.

Encoder-Teach Menu



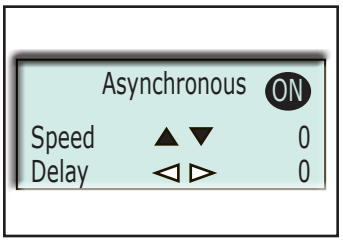
This function is used in conjunction with the encoder and the product conveyor. Using a 100mm block on the conveyor, start the ENCODER TEACH. The labeler's product sensor will detect the leading edge of the block and the trailing edge of the block and calculate the encoder pulses received throughout the 100mm. A Value is then automatically calculated and entered into the Gear Denomination Value.

Note: It is recommended to run the conveyor and 100mm block at the slowest operating speed when performing this operation.

Operational Modes - Wipe-On Mode

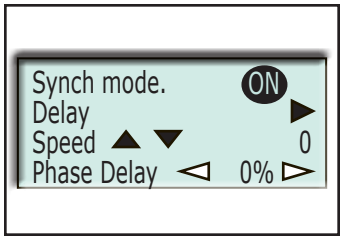
The WIPE-ON mode can operate in either Asynchronous or Synchronous mode. The mode is selected by entering the Wipe-On screen and using the up/down arrows until the required mode is flashing. Then use the arrow [▶] to enter the mode selected. To enable this mode, press MOD on the keypad until the flashing cursor is on the ON object. Press ENTER, and at this point, the labeler is now active and labels will dispense if product is presented to the product sensor.

Ensure hands and clothing are clear of labeler's moving parts prior to entering the Asynchronous Mode or Synchronous Mode screen.



<u>*ASYNCHRONOUS MODE*</u>
This mode is used when an encoder is not connected. The label dispense speed is manually entered based on the product/conveyor speed. See Asynchronous Speed parameter within this manual to determine the appropriate Value to enter.
NOTE: To enable, press ON to activate mode.

The Speed and Delay can be adjusted "on the fly" while labeling continues. To adjust these parameters, use the MOD key to toggle through the Speed and Delay up/down arrows. For example, to increase the Delay, press the MOD key until the flashing cursor is over the arrow [▶], then press the ENTER [ENTER]key to increase the existing Value. This process is identical for increasing or decreasing the Speed or Delay Values.



SYNCHRONOUS MODE

This mode is used when an encoder is connected and automatic tracking of the product/conveyor speed is necessary. The GEAR DENOMINATOR Value must be correct to ensure proper label speed tracking and label placement. See GEAR DENOMINATOR parameter within this manual to determine the correct Value. In addition, it is recommended to setup the START COMPENSATION prior to labeling production. See START COMPENSATION parameter within this manual to determine the correct Values.

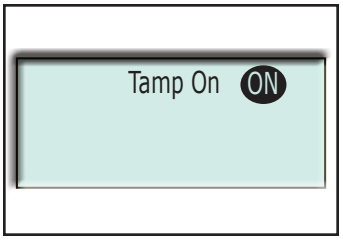
NOTE: To enable, press ON to activate mode.

The Speed and Delay can be adjusted "on the fly" while labeling continues. To adjust these parameters, use the MOD key to toggle through the Speed and Phase Delay up/down arrows. For example, to increase the Delay, press the MOD key until the flashing cursor is over the right arrow [▶], of the Phase Delay, then press the ENTER [ENTER] key to increase the existing Value. This process is identical for increasing or decreasing the Speed or Delay Values.

You will note there is both a Phase Delay and Delay option.

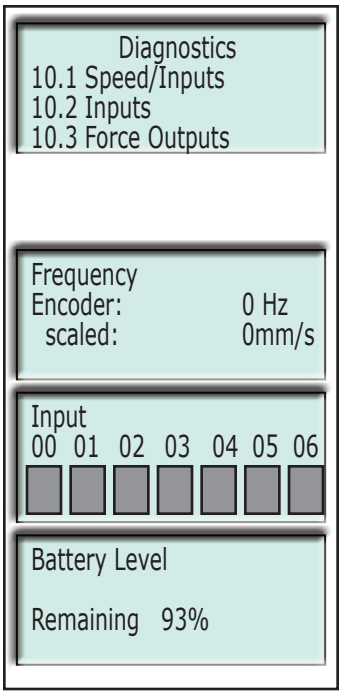
Delay When selecting the Delay option, you will be prompted with the START COMPENSATION screen. This is the same screen as found in the Parameter menu and is used to compensate label placement between low and high speeds. See START COMPENSATION parameter within this manual for further explanation of this operation. When performing this operation, it can be accommodated through the Synchronous Mode or the Parameter screens, the Values obtained are stored in both locations. The Phase Delay option adjusts the label placement once the delay (START COMPENSATION) is executed.

Phase Delay Use the MOD key to toggle to the arrow keys [◀ or ▶] and press the ENTER [ENTER] key to adjust the Value. This adjusts the label placement location on the product and is used in conjunction with the Start Compensation. Please note the Delay (Start Compensation) should be executed before adjusting the Phase Delay.



Operational Modes: Tamp-On, Blow-On, and Tamp-Blow

Using the main screen, different operating modes can be chosen: Tamp-On, Blow-On, Tamp-Blow or Wipe-On (previously discussed.) To enable this mode, press MOD on the keypad until the flashing cursor is on the ON object. Press ENTER, and at this point, the labeler is now active and labels will dispense if product is presented to the product sensor.



Diagnostics

DIAGNOSTICS

The diagnostics mode can be used to check the function of all the sensors, encoder status and battery level status.

SPEED/INPUTS shows the Encoder speed (in Hz) and the scaled speed in millimeters per second.

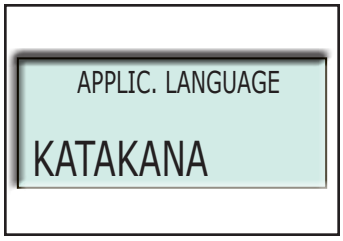
INPUTS shows the inputs occurring in the system. Reference electrical schematic for details of inputs.

BATTERY LEVEL shows the battery level remaining of the external battery. Once level goes to 0% a battery warning will be displayed as a flashing green on the light beacon (optional). This warning can be reset through the "Reset Warning" screen. The battery level can also be viewed on the PLC within the electrical control, if the percentage is less then 50%, the "Batt" led on the front face will flash. If the battery level is at 0%, the "Batt" led will be a steady "red".

Caution – Once the external battery level is depleted, if power remains Off for more then three days, the PLC has the potential to boot in "Stop" mode. Therefore it is recommended to replace the external battery per controller's instructions once these warning conditions arise.

Note – Replacement external battery for PLC is 1/2AA, 3.6V, lithium battery. Please call factory for pricing and availability.

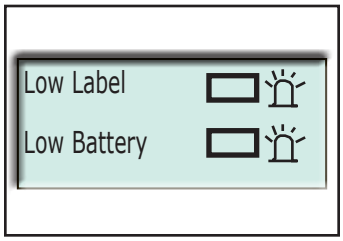
Language



LANGUAGE

The language function allows the operator to choose the display language used on the operations screens. Press MOD, then use the ▲ or ▼ keys to switch between Katakana (Japanese) and English. Once the language is selected, press ENTER, then ESC to return to the main menu.

Reset Warning



RESET WARNING

This screen provides means to reset Low Label and Low Battery warning lights on the light beacon (optional). If one or both of the conditions are true, the light icon within the screen will be ON. To reset, use the MOD button to select the appropriate icon and press the ENTER key on the membrane.

Note – The warning condition must be satisfied to reset the light.

Maintenance & Troubleshooting

6

Preventive Maintenance

The following are guidelines for preventative maintenance on the applicator. This information can be used for producing a maintenance schedule, which should be performed routinely. Once familiar with the unit, operators or technicians may add additional items to the list. If there are any service questions, please contact your distributor.

- Examine the drive roller, idler rollers and peeler tip for excessive adhesive buildup or dust collection. Rubbing alcohol may be used to clean problem areas. Do not use compressed air to blow dust from the labeler.
- Examine the nip rollers for excessive adhesive buildup or dust collection. A mild detergent solution may be used to clean problem areas. Do not use compressed air to blow dust from the labeler.
- Inspect all electrical plugs for secure connections.
- Verify that all components and modules are securely fastened.
- Inspect the unit for loose screws, guides, or covers and tighten as necessary.
- Gently clean dust from the lens of the product sensor.
- Inspect the drive belt for proper tension. Adjust idler if additional tension is needed.

Controller Maintenance

Disconnect power supply before performing any maintenance.

Controller components are very sensitive to touch. Do not touch the components of the controller except in an electrostatically protected environment.

Troubleshooting

Drive Errors

Drive errors, or "fatal errors" that stop each action immediately and involve the stepper motor. If a "fatal error" occurs, your current label may not be applied properly.

Stepper driver errors can be: over-temperatures (of motor or power amplifier), short circuit (between two motor phases or between motor phase against PE), over-voltage, low-voltage, rotation monitoring (RM) fault, power amplifier deactivation, or motor current free. Refer to the LED status display of the stepper motor drive inside the electrical cabinet (see Figure 6-1).

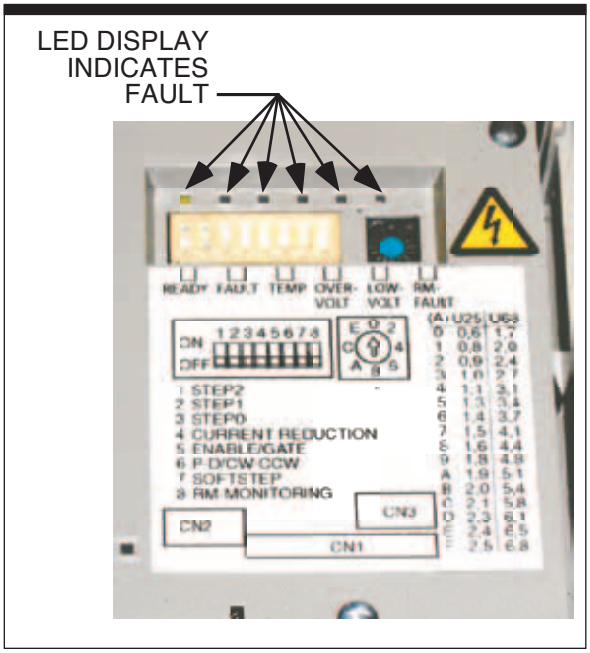


Figure 6-1. Stepper Drive Motor Fault Display

Labeling Errors

Labeling errors can be caused by missing labels on the label web, label paper in the gaps, wrongly adjusted or defective label sensor or an empty supply roll.

Motor Rotation Positive motor direction is defined as the direction on which the label web is moved forward towards the peeler plate.

How to Check the Motor Rotation:

Step 1. Make sure adequate jog speeds are set in the parameters. Recommended are 100 Hz for the slow speed and 1000 Hz for the high speed.

Step 2. Press the JOG button to start movement in positive direction.

Step 3. Check if the web is moving forward towards the peeler plate.

Step 4. Release JOG button to stop web at desired position.

If the motor is rotating in the wrong direction, you will need to follow the steps below to correct:

Solution 1: The hardware solution: If using a 3 phase BERGER LAHR stepping motor system interchange two motor wires (only at shut down system with no mains power connected). For other systems refer to the manual. Some of the drives (e.g. BERGER LAHR 5 phase stepper systems have a direction switch).

Solution 2: The software solution: Change the corresponding parameter with the terminal. See chapter parameter setup for this.

Notes

Replacement Parts

7

How to Order Spare Parts

When ordering spare parts, please reference the serial number at front of this manual. This information will help expedite your order.

You may order your system's spare parts directly from Shibuya Hoppmann by email, phone or FAX at the numbers listed below. Or, contact our Spare Parts Coordinator at our address.

Email: spares@ShibuyaHoppmann.com
Telephone: (540) 829-2564
Fax: (540) 829-1726

Shibuya Hoppmann Corporation
Attn: Spare Parts Coordinator
13129 Airpark Drive, Suite 120
Elkwood, Virginia 22718 USA

spares@ShibuyaHoppmann.com

L410A Labeler Spares		
Part Number	**Description**	**Qty.**
L030120106	Stepper Motor	1
L020100001	Bearing Ball, 3/8" ID x 7/8" OD x 9/32"	1
L020800505	Spring Collar, 1"	1
BELTV1UK50	Timing Belt, Kevlar, 1/2" Wide	1
L030340102	Brake Armature	1
BUMPRUB002	Rubber Bumper, Tapered	1
BUSHFB1012	Flange Bearing	1
TORQPOLY03	Slip Clutch, 2 Disc, 5/8" Bore	1
BRNGBALL18	Ball Bearing, 5/8" Bore	1
L020670202	Brake Rotor, 24V	1
L030400101	Micro Switch	1
LER	Sensor	1
L050601334	Brake Belt, High Speed, 19"	1
L020800509	Spring Collar, 2"	1
80688	Spring, 1/2 OD x 1.75" Long, .049" Wire Diameter	1
L050602008	Inner Unwind Flange	1
L050602009	Outer Unwind Flange	1
BRNG000036	Bearing, 3/8" ID x 1 1/8" OD	1
KNOB000039	Knob	1
L050600049	Locking Collar Assembly	1
TM238LDD24DT	Stepper Controller	1
SD326DU25S2	SD3 Stepper Drive, 2.6A	1
L050701115	Belting, Modification, Rewind Assembly	1
L050701237	Rewind Flange	1
B462	Bushing, 1/4" ID x 3/8" OD x 1/4" Long	1
FRN375	Handle, Index Plunger	1
DR4524	Power Supply, 24VDC, 2.4A	1
8533640000	Relay	1

L410A 4" Head Spares		
Part Number	**Description**	**Qty.**
L050601331	1" Idler, Peeler Arm, 4" Head	1
L050400901	Nip Friction Roller, 4"	1
L050490011	Drive Roller, 4"	1
L050601703	Standoff Sleeve, 4"	1
L050601330	Idler Roller, 2", Modified	1

L410A 6" Head Spares		
Part Number	**Description**	**Qty.**
L050601332	1" Idler, Peeler Arm, 6" Head	1
L050400906	Nip Friction Roller, 6"	1
L050490012	Drive Roller, 6"	1
L050601704	Standoff Sleeve, 6"	1
L050400004	Idler Roller, 2"	1

L410A Labeler - Callouts

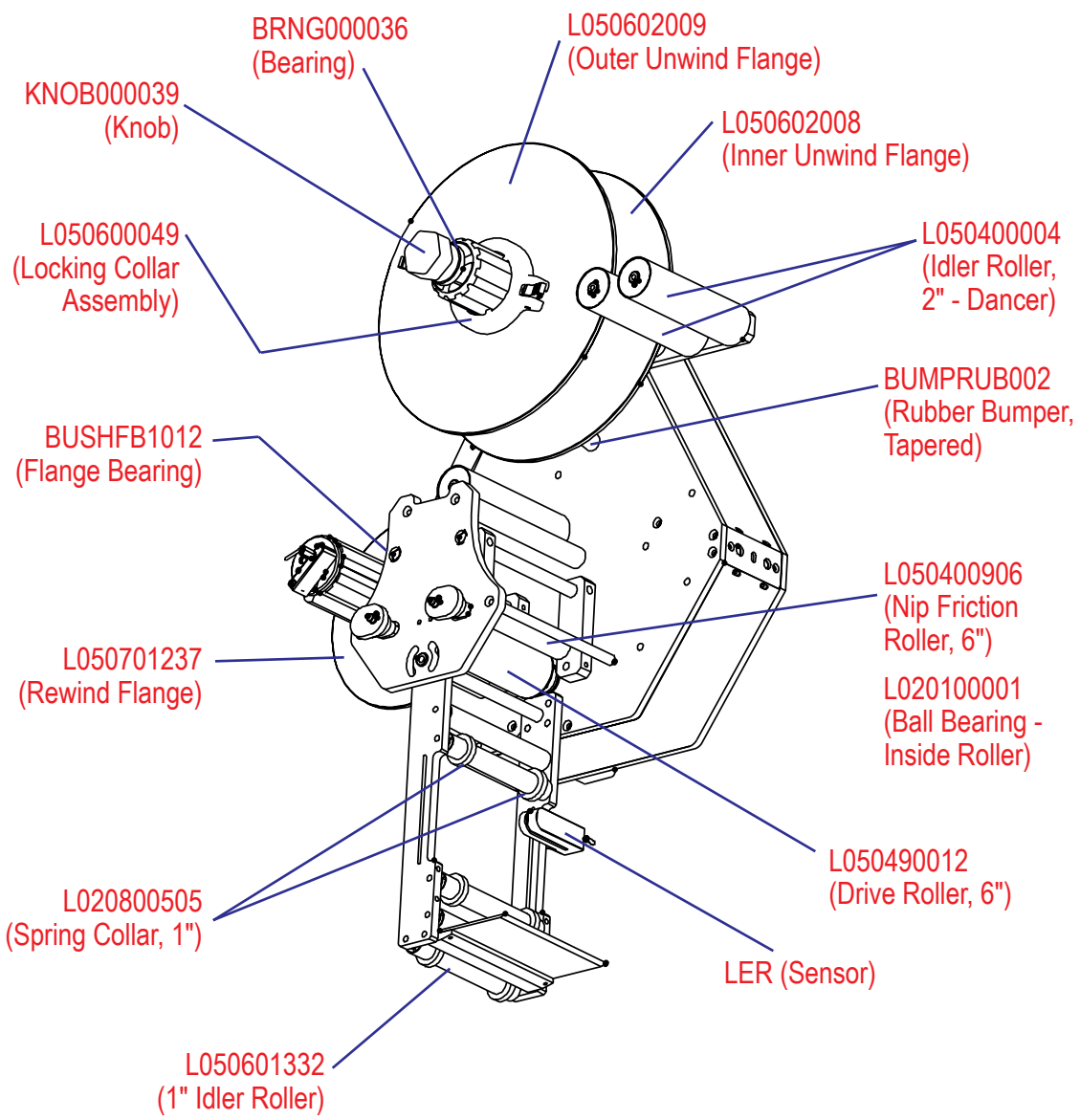
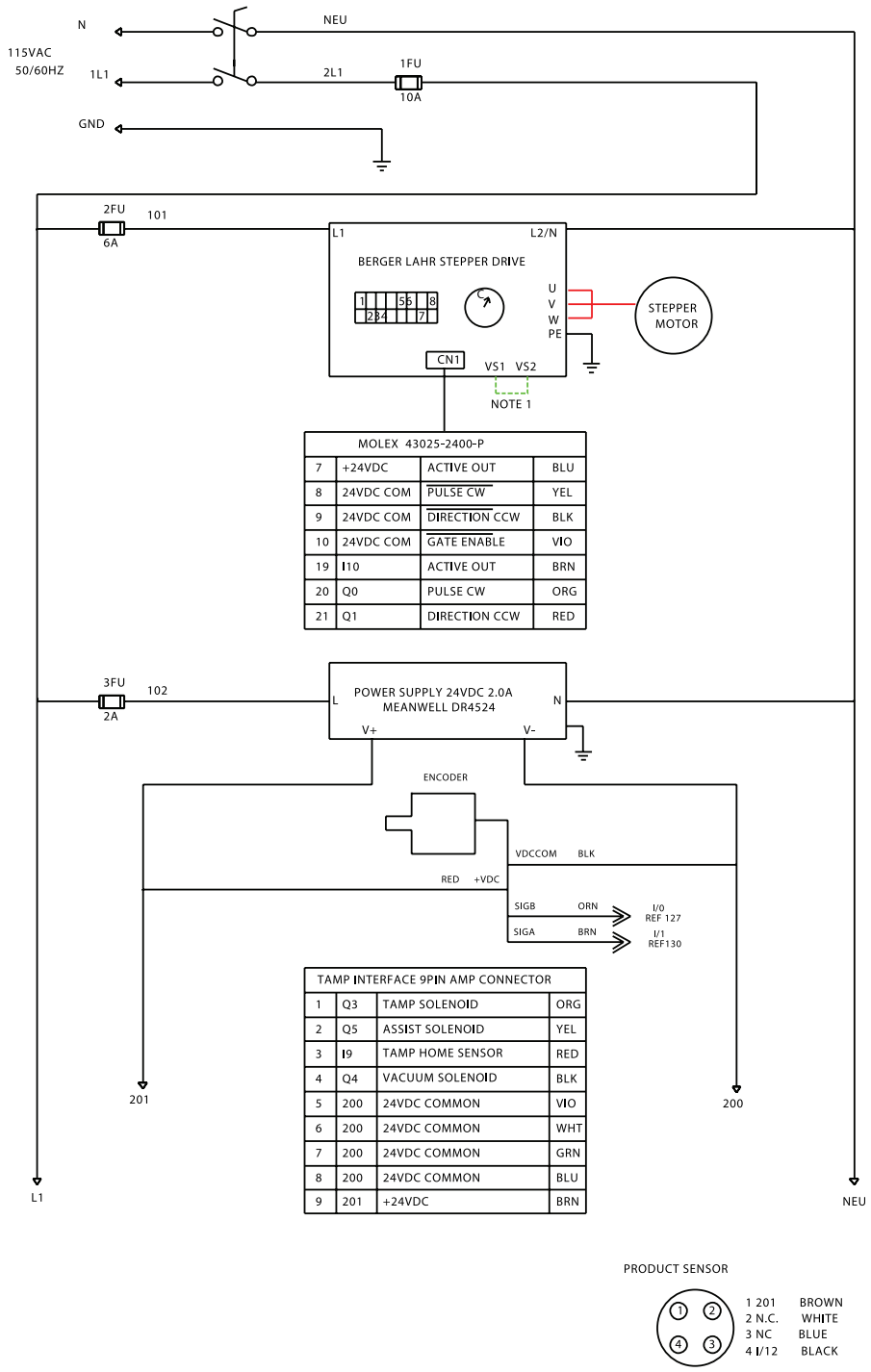


Figure 7-1. L410A Labeler with 6" Head - Front and Side Views - Callouts

Appendix

8



MOLEX 43025-2400-P

7	+24VDC	ACTIVE OUT	BLU
8	24VDC COM	PULSE CW	YEL
9	24VDC COM	DIRECTION CCW	BLK
10	24VDC COM	GATE ENABLE	VIO
19	I10	ACTIVE OUT	BRN
20	Q0	PULSE CW	ORG
21	Q1	DIRECTION CCW	RED

TAMP INTERFACE 9PIN AMP CONNECTOR

1	Q3	TAMP SOLENOID	ORG
2	Q5	ASSIST SOLENOID	YEL
3	I9	TAMP HOME SENSOR	RED
4	Q4	VACUUM SOLENOID	BLK
5	200	24VDC COMMON	VIO
6	200	24VDC COMMON	WHT
7	200	24VDC COMMON	GRN
8	200	24VDC COMMON	BLU
9	201	+24VDC	BRN

Figure 8-1. Wiring Diagram

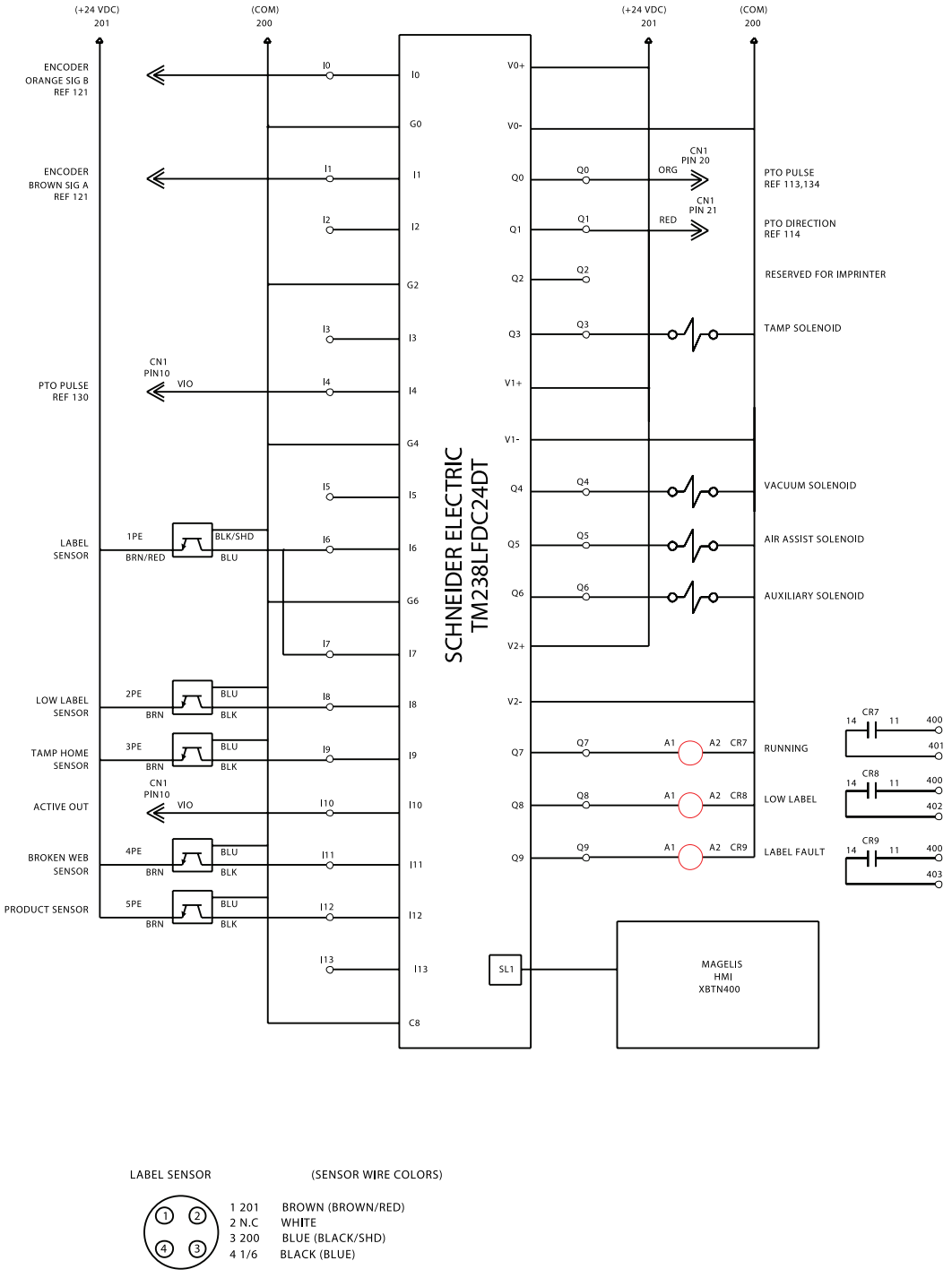


Figure 8-2. Wiring Diagram

Warranty

Shibuya Hoppmann Corporation warrants that each item of its own manufacture delivered hereunder shall, at the time of delivery and for a period of twelve (12) months thereafter, be free from defects in materials or workmanship; and if any such item shall prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, upon examination by Shibuya Hoppmann Corporation, then Shibuya Hoppmann Corporation shall repair or replace, at its sole option, such defective item at its own expense; provided, however, that the owner shall be required to ship such defective item, freight prepaid, to Shibuya Hoppmann Corporation's plant in Elkwood, Virginia. The warranty on components not manufactured by Shibuya Hoppmann Corporation, but a part of the system, is limited to the warranty provided by the original manufacturer of said components to the extent, and only to the extent, that such original manufacturer actually honors such warranty.

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