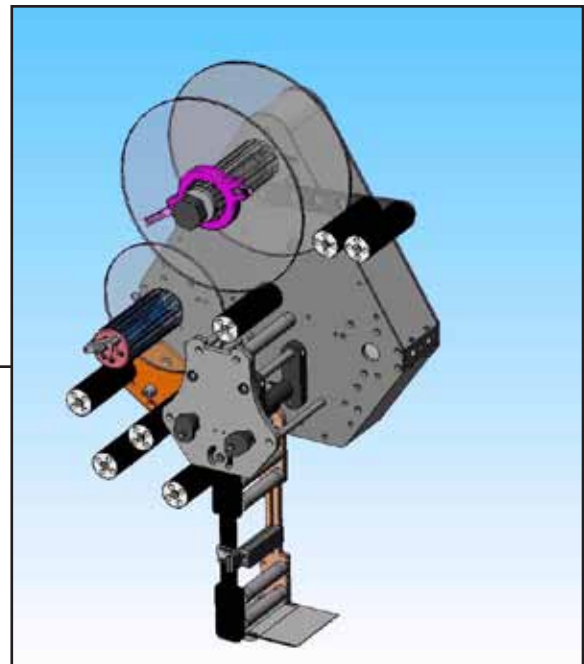


L500A V2 High Speed Labeler

Installation/Maintenance Manual



Refer all servicing to qualified personnel.

This manual is intended for use by qualified mechanic and electricians who install or service the L500A V2 High Speed Labeler.

Please copy this information from the L500A V2 High Speed Labeler's serial plate.



Model Name:

Model Inventory Number:

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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

<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

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 15" (381mm) 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.

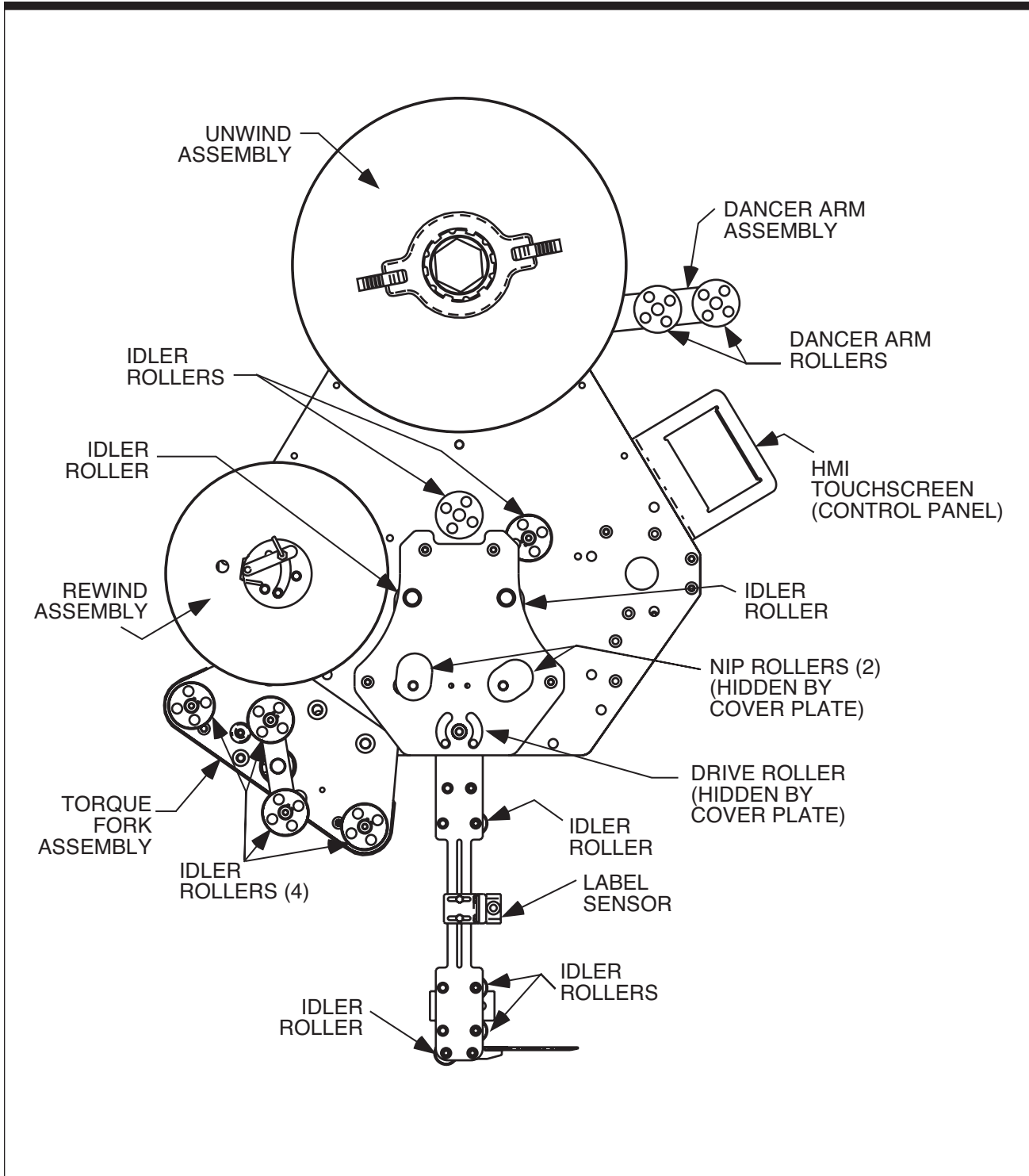


Figure 1-1. The Label Applicator

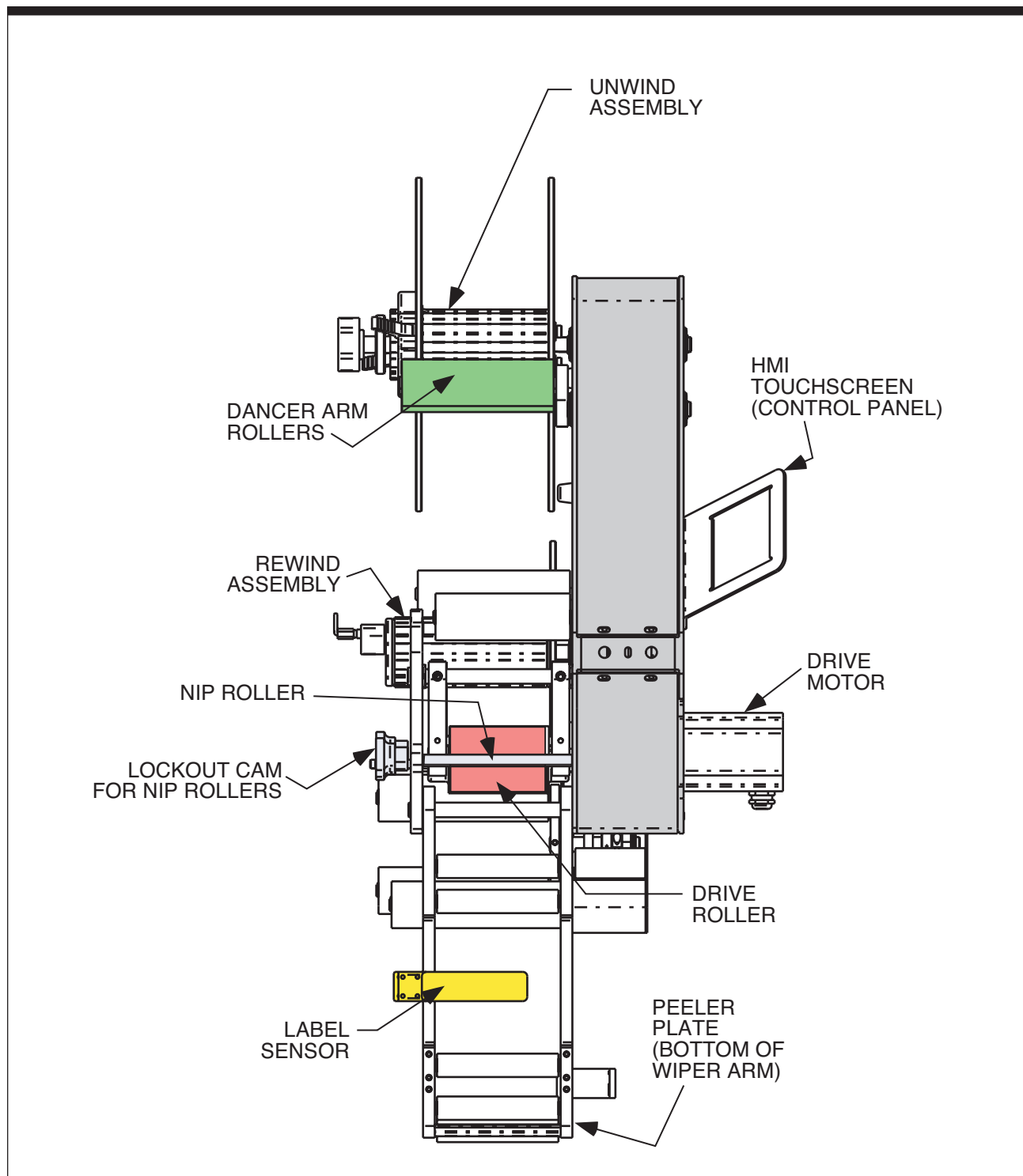


Figure 1-2. Side View of the L500A V2 Labeler

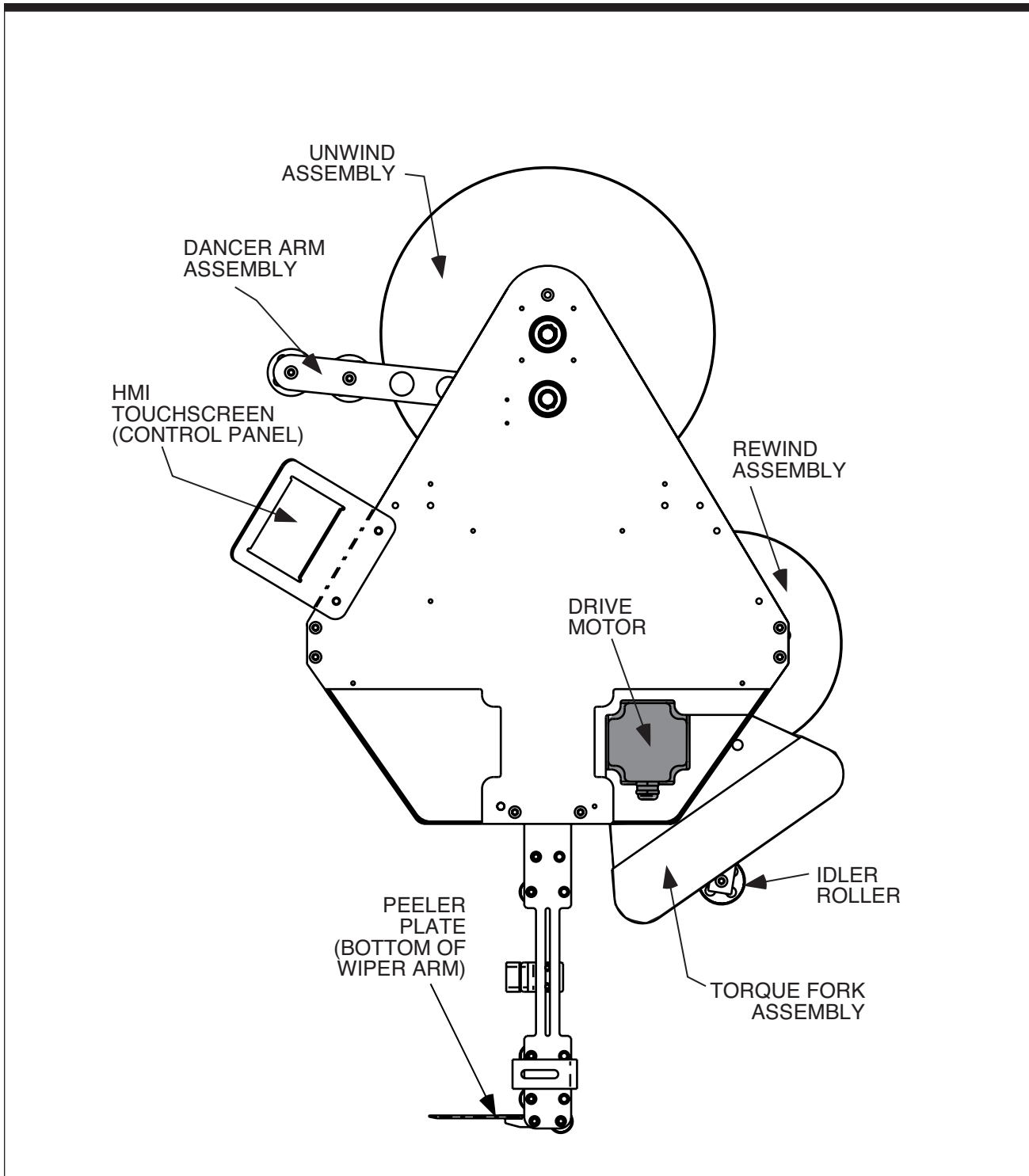


Figure 1-3. Different Views of the L500A V2 Labeler (Back View)



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

<i>Applicator Specifications</i>	
Accuracy	±0.02" (±0.5mm) depending on the application module
Controls	Dual processor
Product Detection	Photo sensor
Label Sensor	Capacitance
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 2-2. 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.)

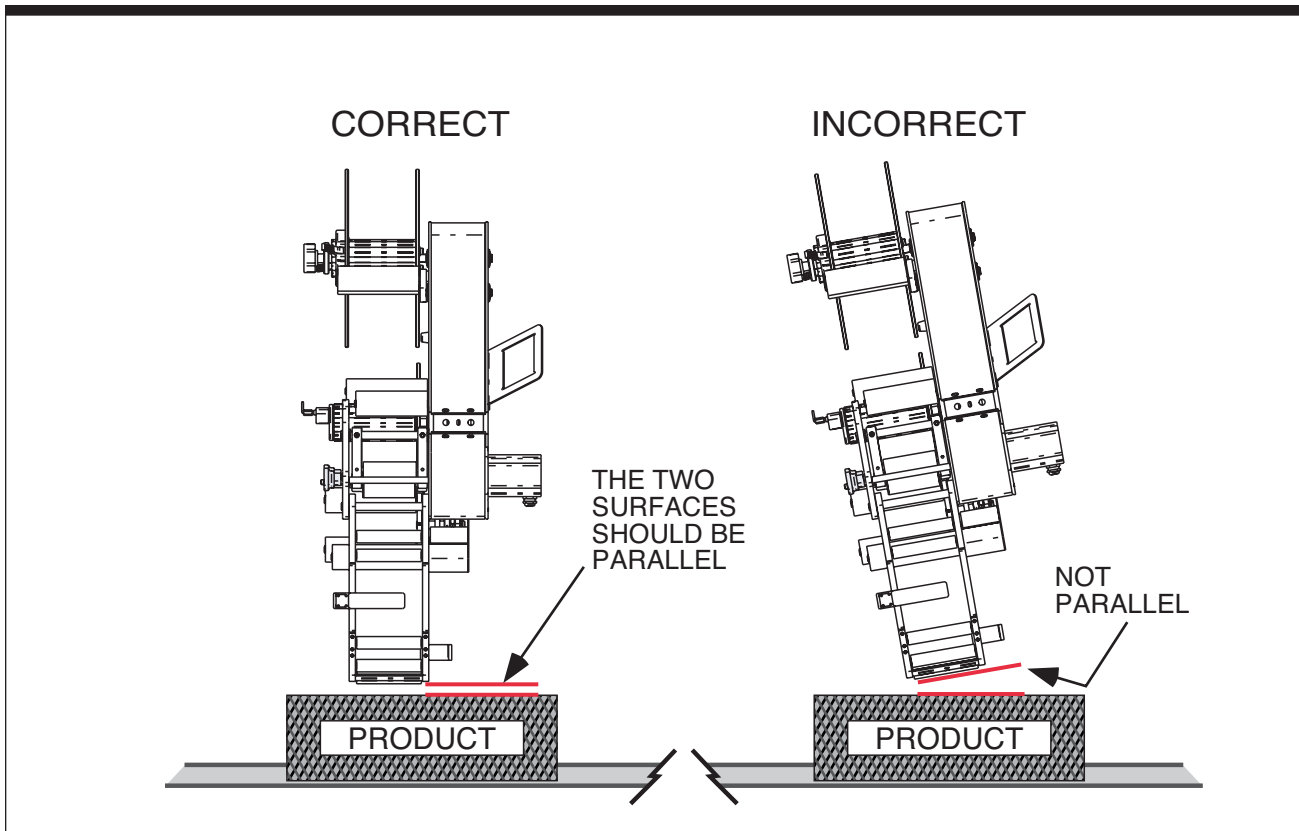


Figure 3-1. Correct/Incorrect Positioning

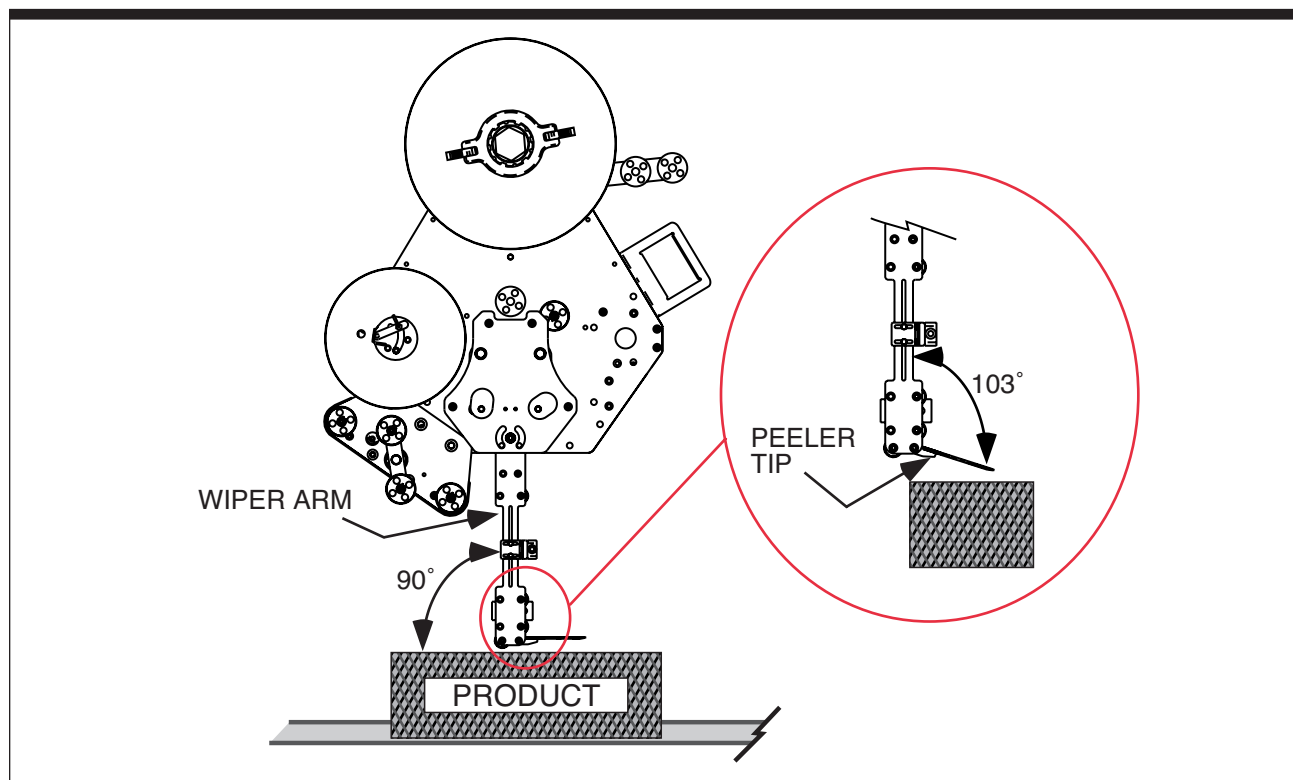


Figure 3-2. Rotation Adjustment

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.

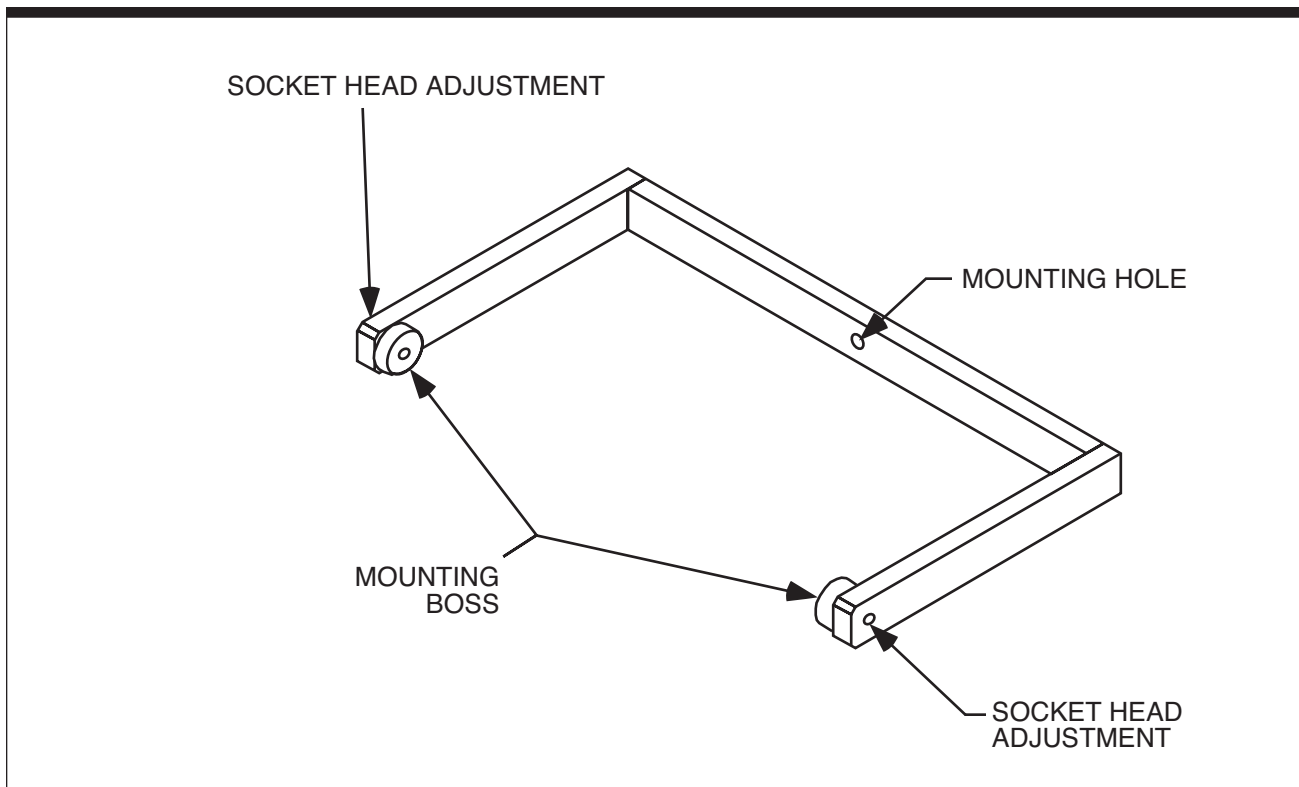


Figure 3-3. U-Arm

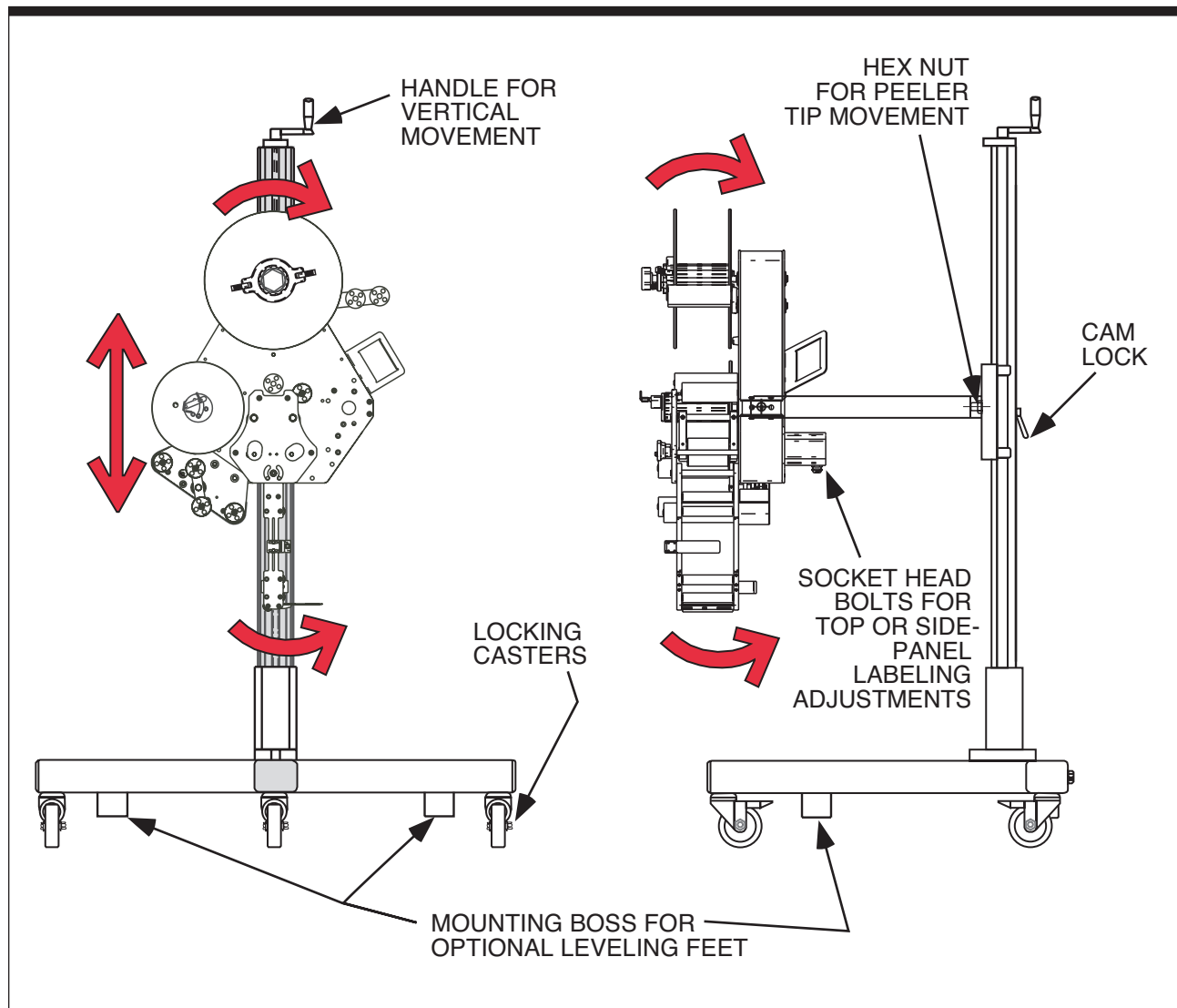


Figure 3-4. Adjustment for T-Stand and U-Arm

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.



Remote Electrical Enclosure /Interface Panel

Connections for the interface panel are found on the remote electrical enclosure (see to Figure 3-5.) These connections are easily accessible for quick changeover between modes of operation. The following is an explanation of each device:

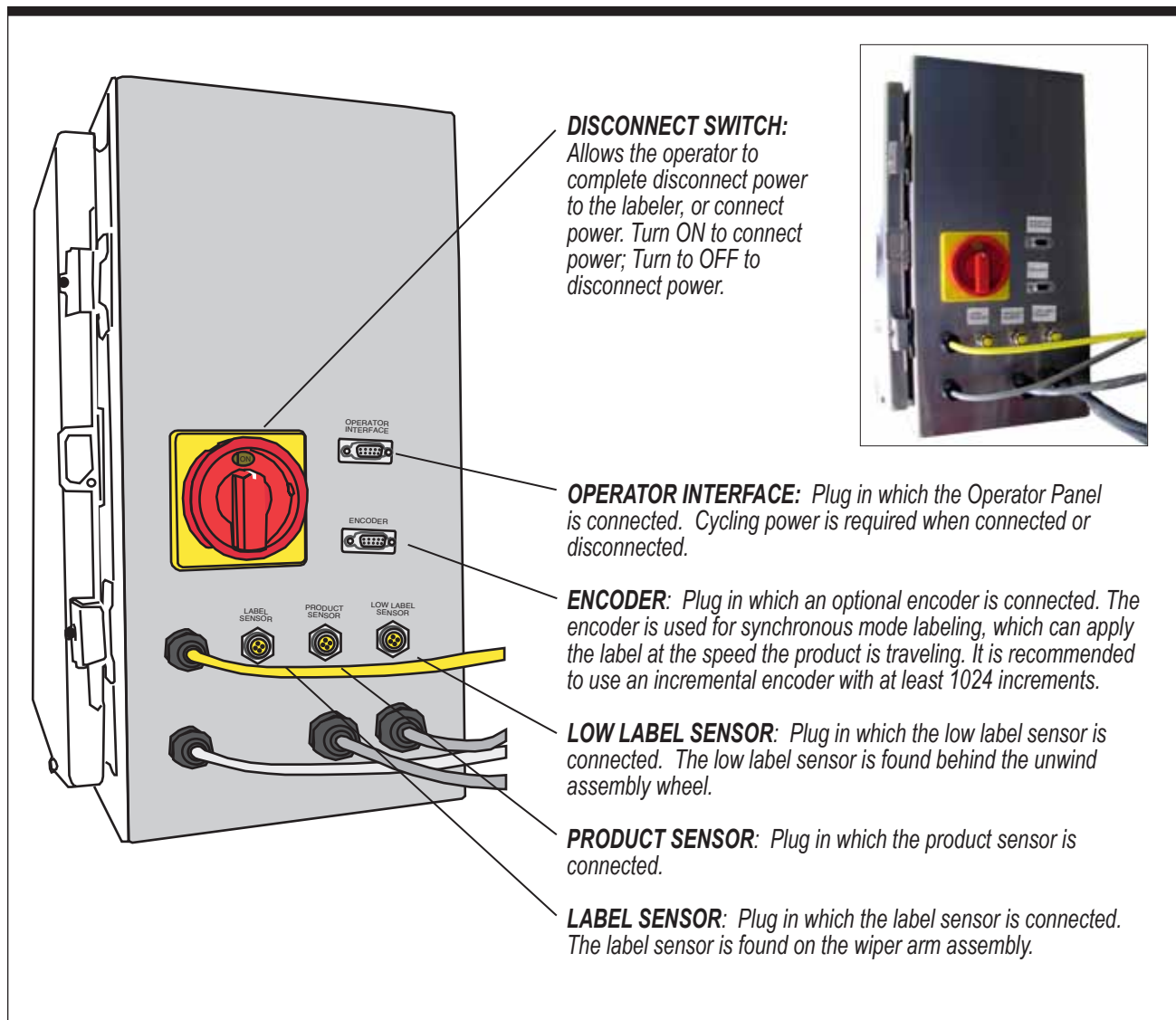


Figure 3-5. Interface Panel on Remote Enclosure

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.*

Verify Main Power The applicator is supplied with a power cord for AC operation. Plug the power cord into an outlet with the proper voltage and ground. Make sure the power cord is securely connected to the labeler and the outlet.

To test the connection, turn the disconnect switch to “ON” (see Figure 3-5). The HMI display will illuminate after approximately 30 seconds; this will verify the power connection.

Note: *It takes a minimum of approximately 30 seconds for system to boot.*



Notes

Applicator Setup

4

Label Threading

Only use labels that can be stripped out. 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.

<i>Label & Web Specifications</i>	
Label Style	Stripped out form only, 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 $\pm 0.05"$ (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.

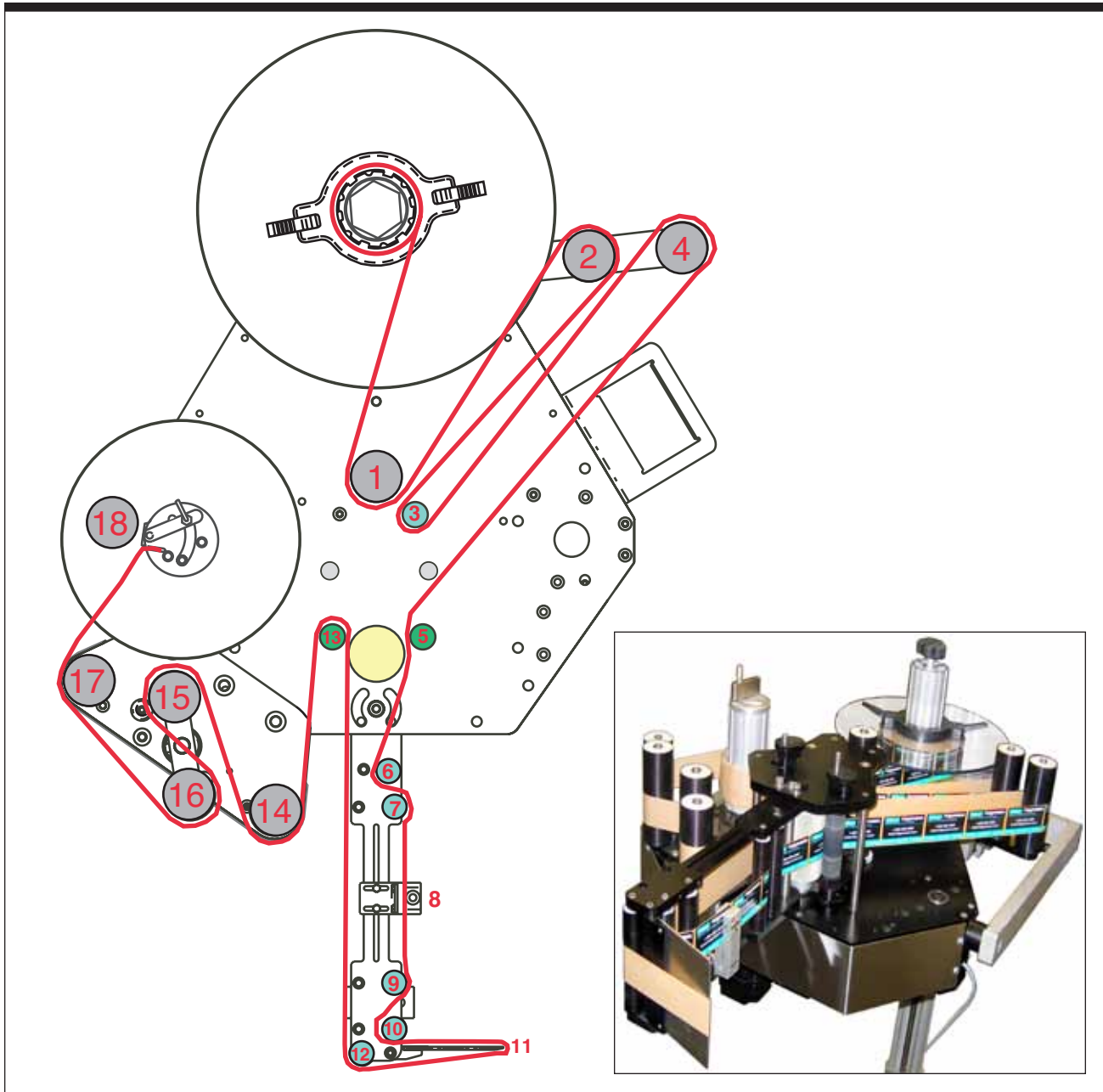


Figure 4-1. Web Path (Label Threading Path)



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.

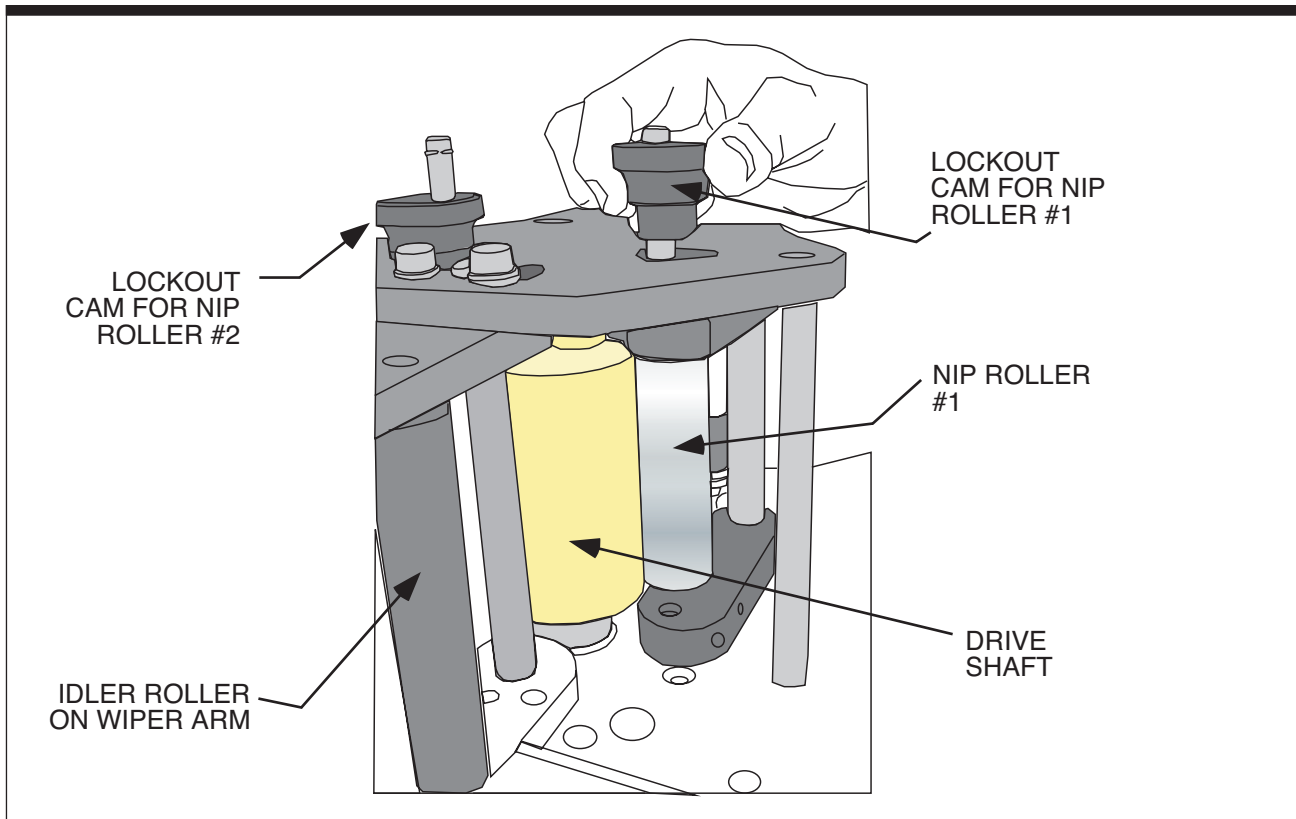


Figure 4-3. Lockout Knobs for Nip Rollers

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 #12).
- Step 7. Torque Fork Assembly.** Pull the label down to the first Torque Fork Assembly idler roller (refer to position #14), up to the 2nd idler roller (position #15), back down to the third idler roller (position #16), and finally, around the last idler roller (refer to position #17).
- Step 8. 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.

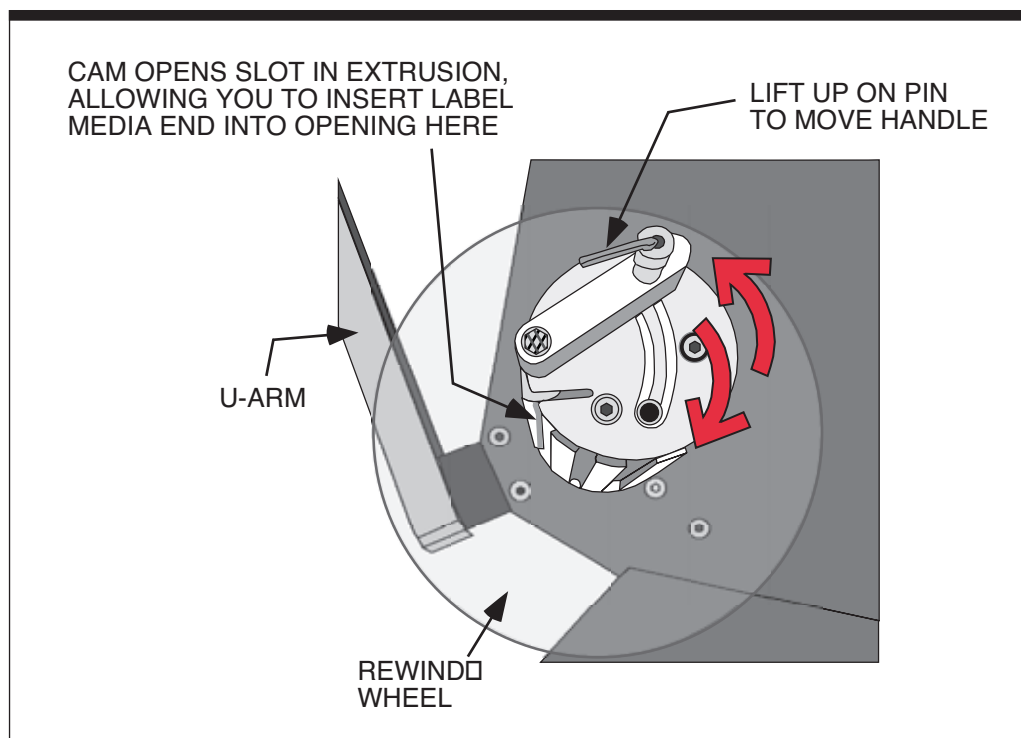


Figure 4-4. Rewind Assembly - Threading



- Step 9. 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 10. 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 11. 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)

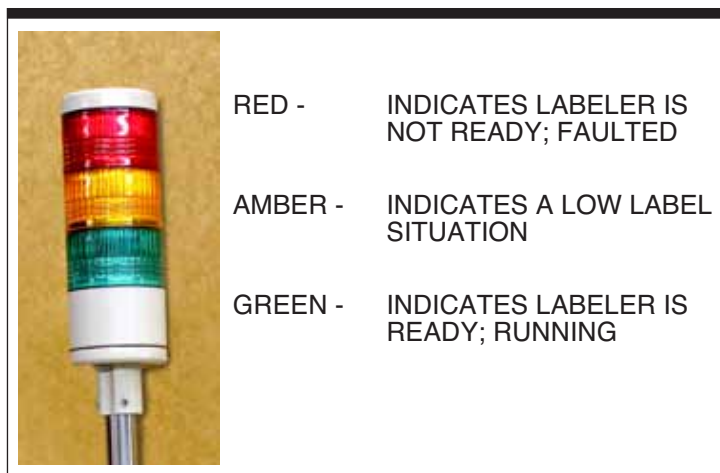


Figure 4-5. Light Tower

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.

Low Label Sensor (Optional)



Figure 4-6. Low Label Sensor

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.)

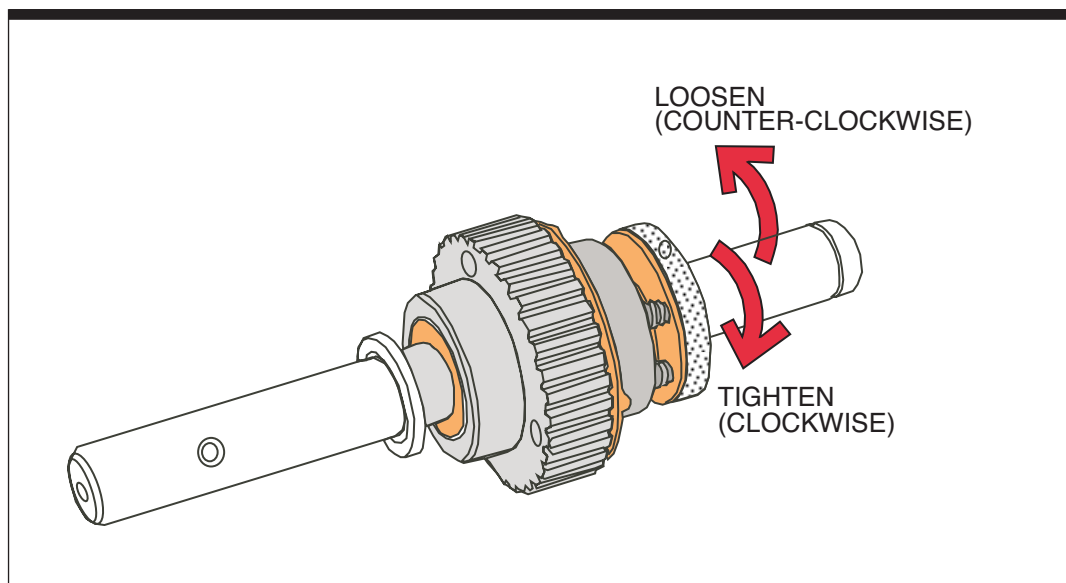


Figure 4-7. Rewind Clutch Adjustment

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 connected directly to the module interface panel. This allows for quick changeover of sensor style as applications dictate. (*Note: This is not used when the labeler is used in Rotary applications.*)

The sensor is shipped with a mounting bracket that 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.

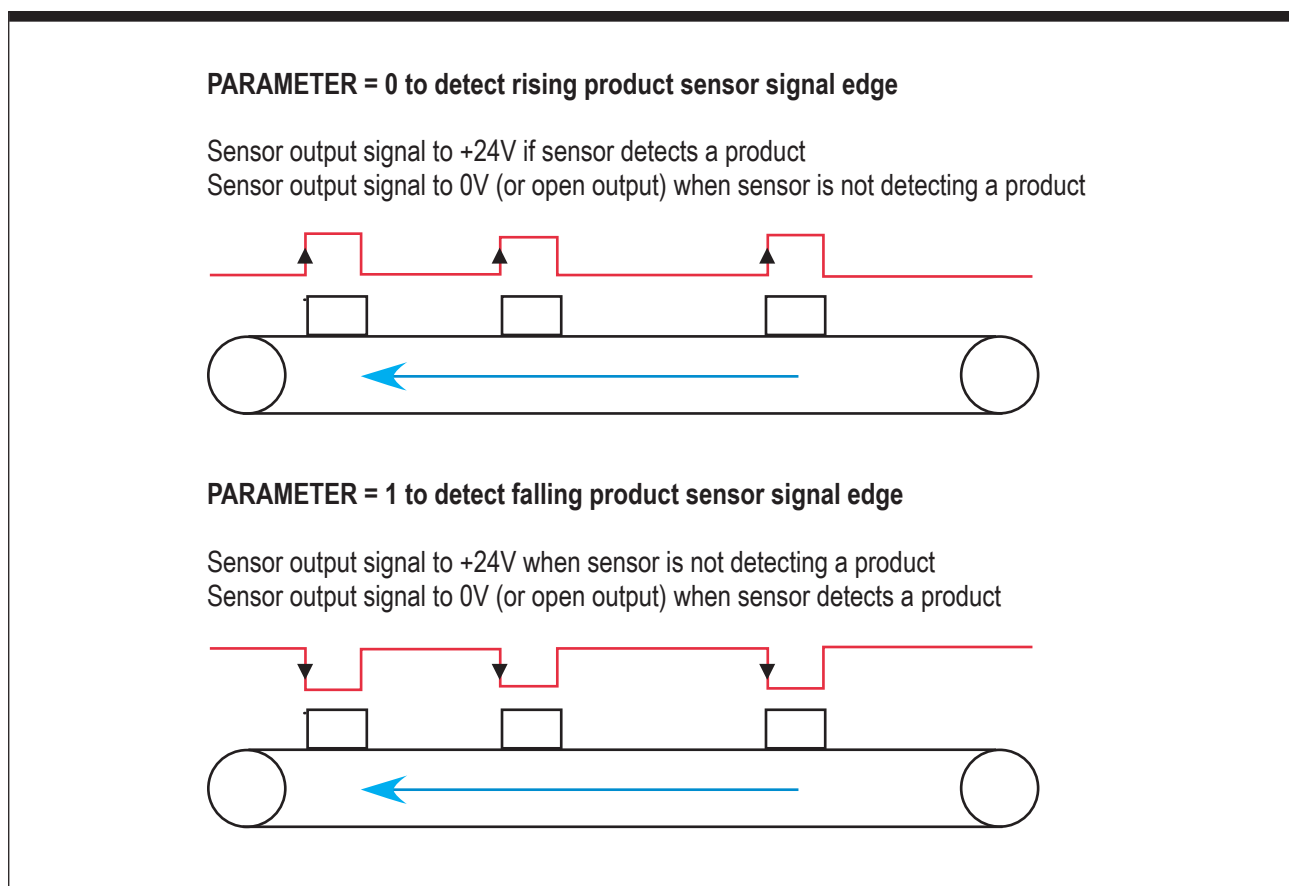


Figure 4-8. Product Sensor Setup



To select between sensing the leading edge or the trailing edge of a product leave the sensor operate switch set to "light operate" at all times. In the PRODUCT SENSOR EDGE screen of the operator interface select (0) (DETECT RISING PRODUCT SENSOR SIGNAL EDGE) to detect the leading edge, or select (1) (DETECT FALLING PRODUCT SENSOR SIGNAL EDGE) to detect the trailing edge. The default setting is (1). 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

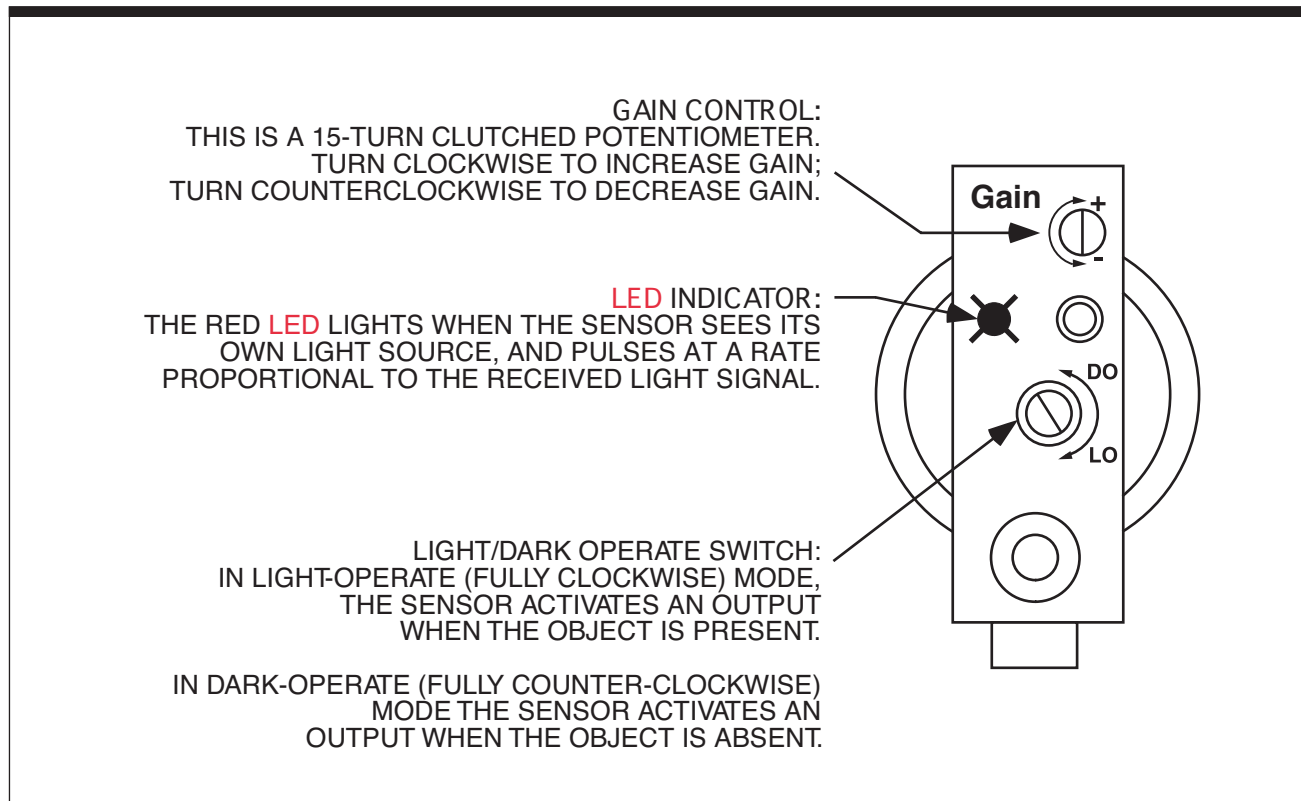


Figure 4-9. Product Sensor Setup

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.

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.

Lion LRD 2100 Label Sensor

Overview The Lion LRD 2100C Label Sensor is an electronic, capacitive sensor used to count labels and/or monitor label registration. The NPN and PNP outputs show whether the sensor sees the leading or trailing edge of the label as it passes through the sensor.

Warnings/Precautions

- Make sure sensor body is connect to GROUND.
- Unused wires must be insulated from contact with other objects.
- All power must be off when installing the sensor.
- Gray wire (Output Polarity, pin 5) must be connected to +V or Ground for operation.



Setup The sensor is stable and should not require re-adjustment after the first initial setup unless there is significant change in the shape and/or thickness of the label, or changes in power supply voltage.

Step 1. Remove all material from sensor.

Step 2. Gain Adjust. Center "GAIN ADJUST" (see Figure 4-10) - Turn GAIN ADJUST four (4) turns counter-clockwise, then turn GAIN ADJUST two (2) turns clockwise.

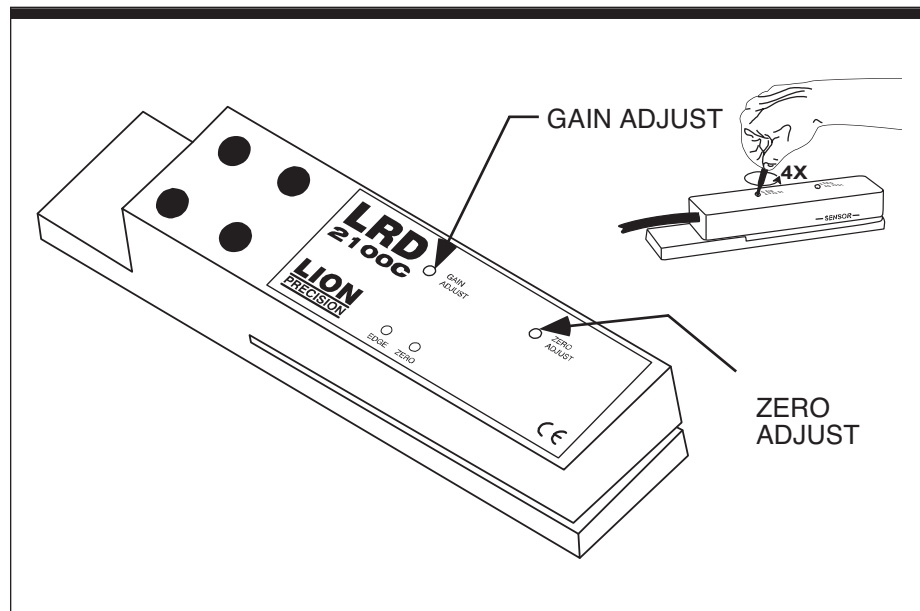


Figure 4-10. Retroreflective Mode Alignment

Step 3. Zero Adjust. Set ZERO ADJUST to the point where the ZERO light just begins to come on. It is not important if the light is on or off - what is important is that the light is very near the point where it changes from off to on.

Step 4. Final Gain Adjust.

Set GAINADJUST by inserting material into the sensor and moving them through the sensor. Set GAIN ADJUST at the point when the EDGE light starts to flash; then continue with a one-half (1/2) clockwise turn.

The sensor is now adjusted and should function correctly.

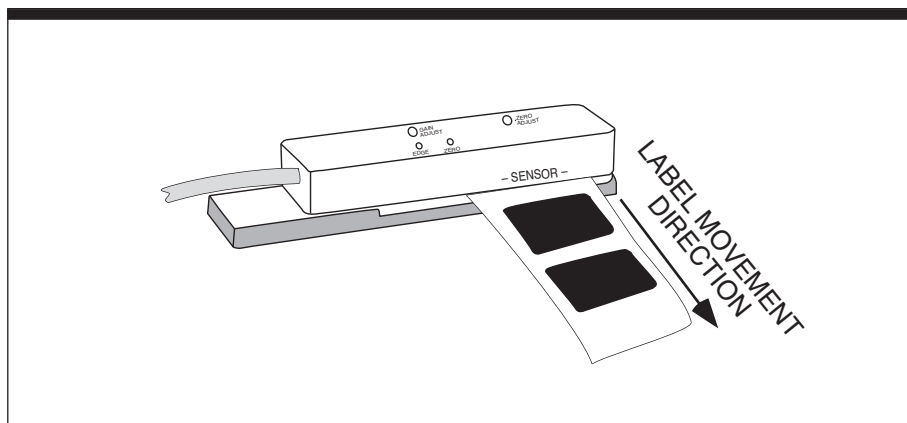


Figure 4-11. Labels Through the Lion LRD 2100 Sensor

Setting the Labeling System

Usually a labeling system is set up for dispensing a maximum number of labels at a maximum speed, with shortest acceleration and deceleration times and distances. See Chapter 5 for details. There are different ways to set up a labeling system. To achieve maximum performance, use the following method.

- Step 1. Select Spool Size.** Use the largest spool with the largest label size you plan to dispense with your label machine.
- Step 2. Move Label to Dispense Position.** Move the label with the LABEL FEED function to the dispense position (label flag).
- Step 2. Place Label Sensor.** Place label sensor in middle of a label.



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

Note: Default setting for ACCELERATION/DECELERATION RAMP and START STOP SPEED is 50.

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 do not know the maximum labeling speed, increase the labeling speed (from the Wipe-On Screen) step-by-step, and find out at which point the stepping motor stalls. If the motor stalls, reduce the maximum speed back to a safe rating.

Note: This value can be adjusted in the Wipe-On Screen - See Chapter 5.

Step 6. Decrease Acceleration/Deceleration Ramp. Continue dispensing labels. Now decrease the ACCELERATION/DECELERATION RAMP, step-by-step, starting from the default 50 ms. If the motor stalls, increase 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.

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

Right-Hand to Left-Hand Conversion

The L500A V2 Applicator can be converted from dispensing labels from the right, to dispensing labels to the left. The disassembly and reassembly of the applicator requires no additional parts. Attention to detail, a large clean workbench, and the following tools are recommended:

- ⇒ External Snap Ring Pliers
- ⇒ Metric Allen wrench set
- ⇒ Needle nose pliers
- ⇒ 10mm combination wrench
- ⇒ Slip Joint Adjustable pliers
- ⇒ Rubber mallet
- ⇒ Jewelers Flat Head screwdriver
- ⇒ Loctite "242" (removable) or equivalent

Overview: This is a shortened list of steps to complete changeover. Use the procedures on the following pages for complete changeover from Right Hand to Left Hand label applications.

- ⇒ Turn off Labeler (Use Disconnect Switch).
- ⇒ Disconnect External Cables.
- ⇒ Remove Wiper Arm Assembly.
- ⇒ Remove Side Covers.
- ⇒ Remove Torque Fork Assembly.
- ⇒ Remove Wiper Arm Assembly.
- ⇒ Remove Back Panel.
- ⇒ Remove the Rewind Components.
- ⇒ Remove Motor Assembly.
- ⇒ Switch Motor and Side Standoffs.
- ⇒ Reinstall Rewind Components.
- ⇒ Reinstall Motor Assembly.
- ⇒ Switch the Dancer Arm Components.
- ⇒ Reinstall Back Panel.
- ⇒ Reinstall Torque Fork Assembly.
- ⇒ Reinstall Wiper Arm Assembly.
- ⇒ Reinstall Bottom, Top, Side and Motor Covers.
- ⇒ Reconnect External Cables.
- ⇒ Test the Applicator.



Changeover Procedures

- Step 1.** Turn the power off (using the disconnect switch) and disconnect all of the remaining external cables from the Remote Electrical Panel. Remove any label media and the label sensor, and place the labeler horizontally on a table where you are able to access the entire labeler.
- Step 2.** Remove the wiper arm assembly by loosening and removing the two socket head bolts on the front of the face plate. The arm wiper can now swing freely. Loosen pivot bolt and reach inside the arm, pushing the pivot shaft upward through the opening on the top of the face plate so the wiper arm is freed (the arm may need to be "jiggled" to ease pressure on the pivot shaft. Once removed, slide the pivot shaft up and out of the hole (see Figure 4-12). Using both hands, slide the wiper arm out and set aside (see Figure 4-13).

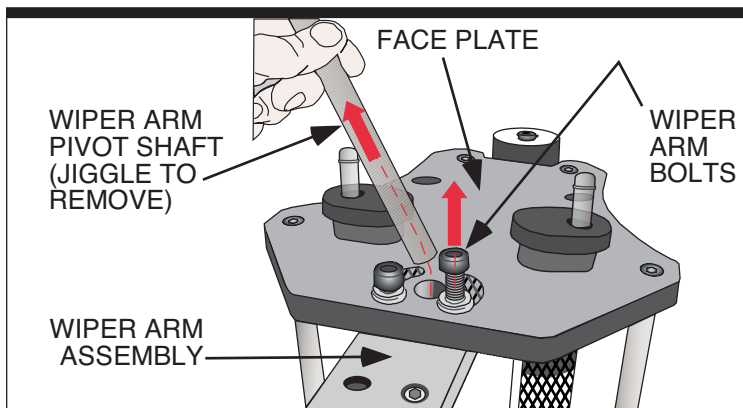


Figure 4-12. Wiper Arm Assembly Removal



Figure 4-13. Sliding Out Wiper Arm Assembly

- Step 3.** Remove all the covers on the side and bottom by removing the four (4) bolts on each cover using the allen wrench (see Figure 4-14). Remove also the two back plates on the back of the labeler (one of which is covering the motor - see Figure 4-14). Do not remove the Torque Fork assembly yet.



Figure 4-14. Side Cover Removal

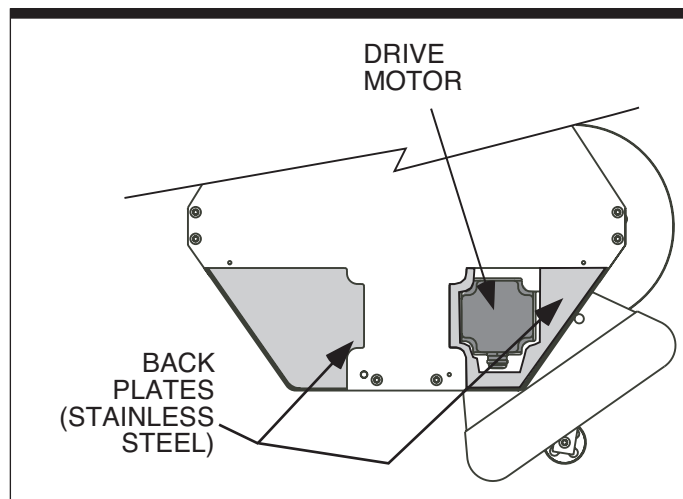


Figure 4-15. Side Cover Removal

- Step 4.** Remove the Torque Fork Assembly by loosening and removing the two hex nut screws on the face of the assembly (see Figure 4-16 and 4-17). Set the assembly aside.

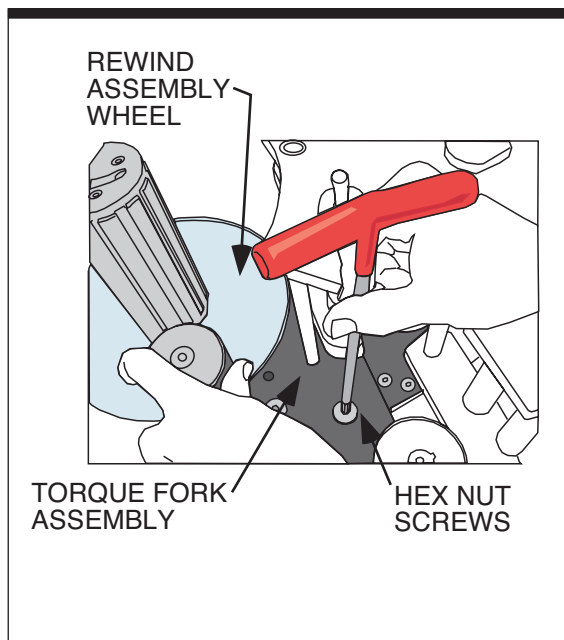


Figure 4-16. Torque Fork Assembly Hex Nuts

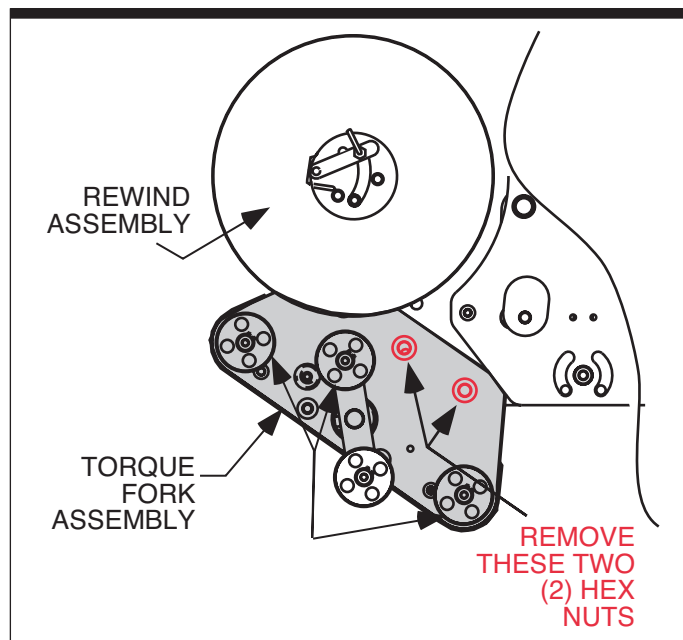
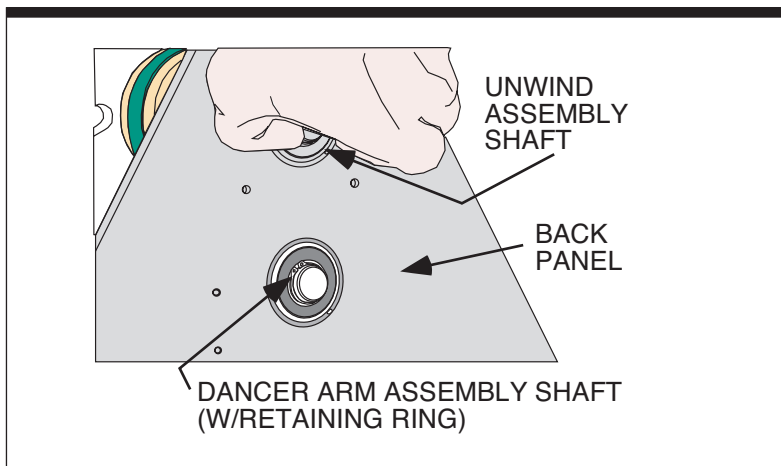


Figure 4-17. Torque Fork Assembly Hex Nuts Locations

Step 5. Turn the labeler to an “upright” or vertical position. At the top of the back panel, remove the retaining (snap) rings from the Unwind Assembly shaft and the Dancer Arm shaft (see Figures 4-18 and 4-19). *There may or may not be shims associated with the retaining rings. Make sure you bag and tag the retaining rings and the shims - marking their original location.*



Step 6. Loosen and remove the seven (7) screws on the back panel and set the back panel aside.



4-18. Unwind Assembly and Dancer Arm Assembly Shaft Removal

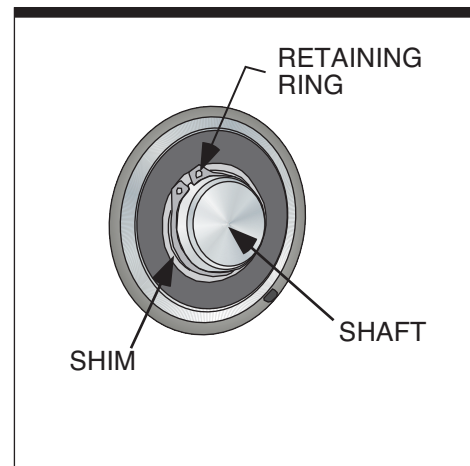
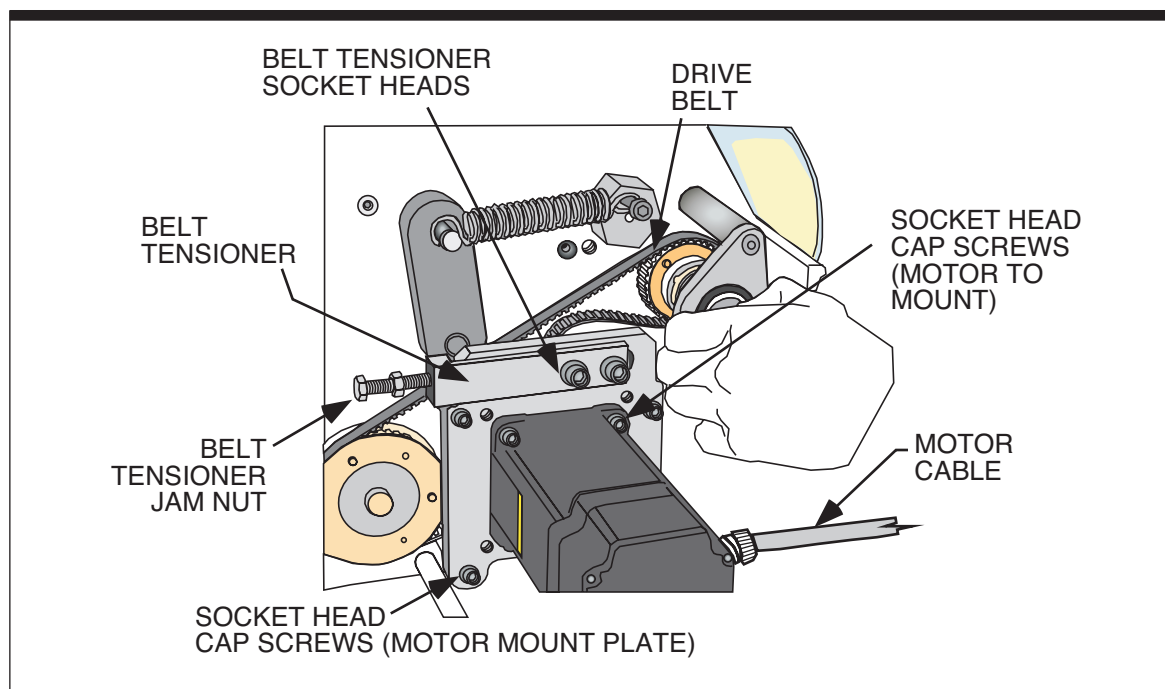


Figure 4-19. Retaining Ring, Shim and Shaft

Step 7. Relieve the drive belt tension by loosening the tensioner’s jam nut (see Figure 4-20) and then the tensioner bolt. Loosen, but do not remove, the two (2) socket head cap screws that holds the idler pulley.

Step 8. Support the motor and remove the four socket head cap screws which attach the motor assembly plate to the four standoffs (see Figure 4-20).

Step 9. Remove the motor and the mounting plate (with belt tensioner) as a single unit, from the back of the labeler and set aside.



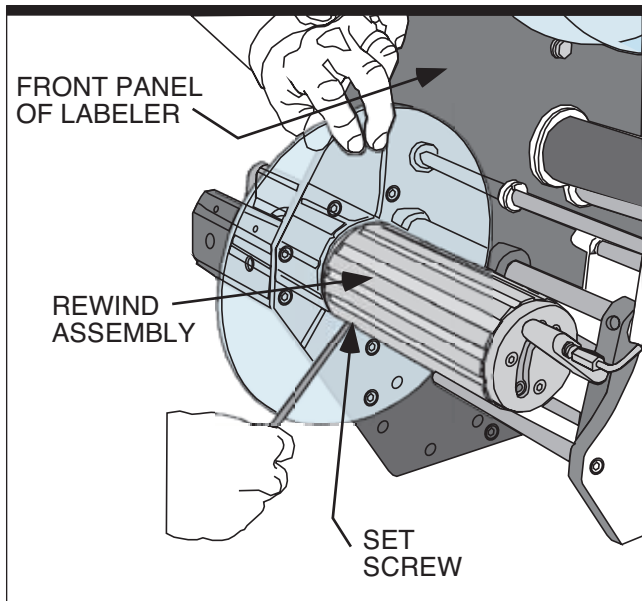
4-20. Belt Tensioner and Motor Mounting Plate with Motor

- Step 10.** Mark the motor mounting plate opposite the current motor side with a magic marker to identify the flip side for reassembly.
- Step 11.** Remove the four socket head cap screws to release the motor from the mounting plate.
- Step 12.** Remove the idler pulley from the mounting plate by removing the two socket head cap screws on the tensioner block.
- Step 13.** Mount the tensioner block to the flip (other) side of the motor assembly plate (where the mark has been made from Step 10). The two mounting holes, the slot, and the notch on the block will line up on the assembly plate. Finger tighten the idler pulley.
- Step 14.** Reinstall the motor to the motor mounting plate.

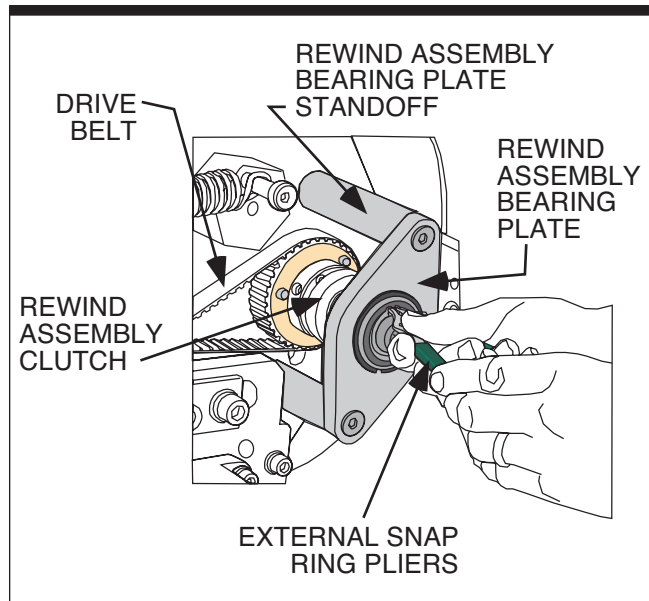


Ensure the motor cable is facing towards the outside of the machine (opposite of the previous location).

- Step 15.** Remove the Rewind Flange (Assembly) from the front of the labeler by removing the screw located on the side of the Rewind Flange (the extrusion - see Figure 4-21). *Note that the screw should be removed as shown in the drawing, in an “upside down” manner, or the screw will not come out of the shaft.*



4-21. Rewind Flange Removal



4-22. Rewind Assembly Bearing Plate

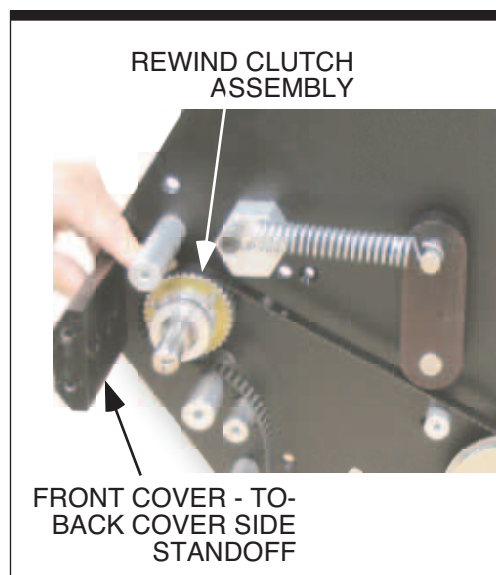
- Step 16.** On the back of the labeler, remove the retaining ring and any associated shim from the Rewind Shaft. Remove also the retaining ring and any associated shim from the front of the labeler (see Figure 4-22). *If shims are used, make sure you bag and tag the retaining rings and the shims - marking their original location and that they are used when reinstalling the Rewind Shaft and Rewind Assembly.*



- Step 17.** Remove the two flat head screws from the Rewind Bearing Plate on the rear of the labeler and set the plate aside.

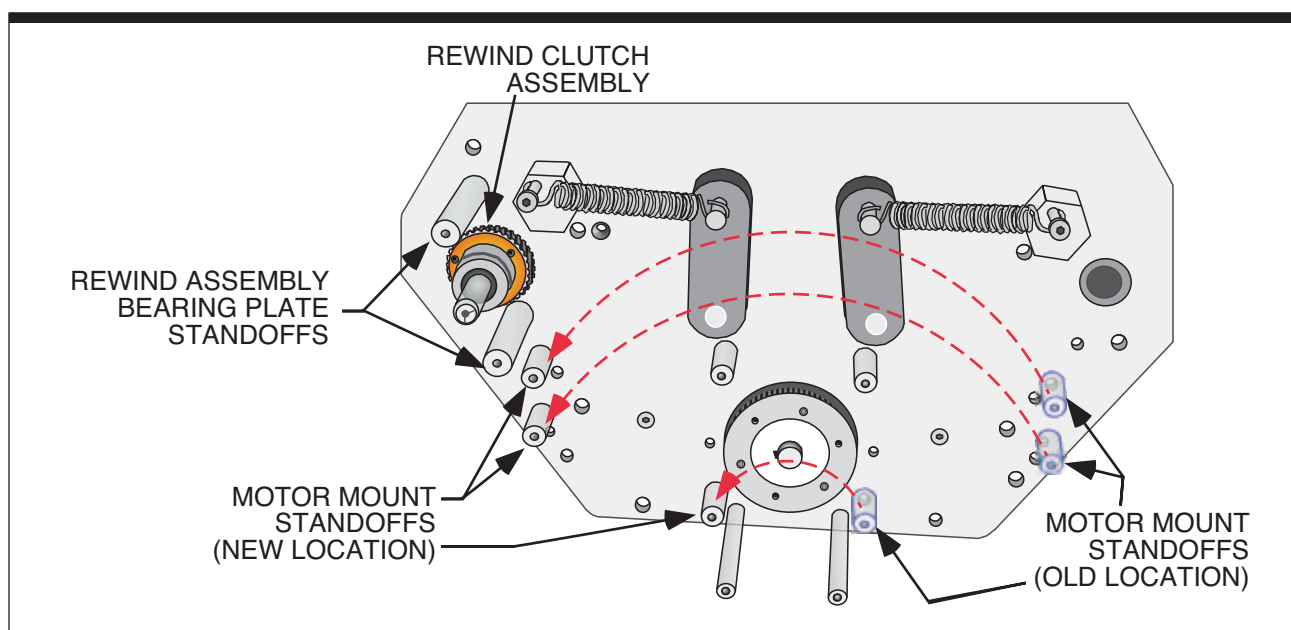
- Step 18.** Remove the drive belt and set it aside. Now remove the Rewind Shaft and Clutch Assembly. This assembly will relocate to the other side of the labeler.

- Step 19.** Remove the front cover-to-back cover side standoffs and switch to the other side of the labeler (see Figure 4-23). Move the three (3) motor standoffs on the rear of the labeler to the opposite side. Only three of the four standoffs need to be re-located. The manufacturer has preinstalled the other one (see Figure 4-24.)



4-23. Side Standoff Locations

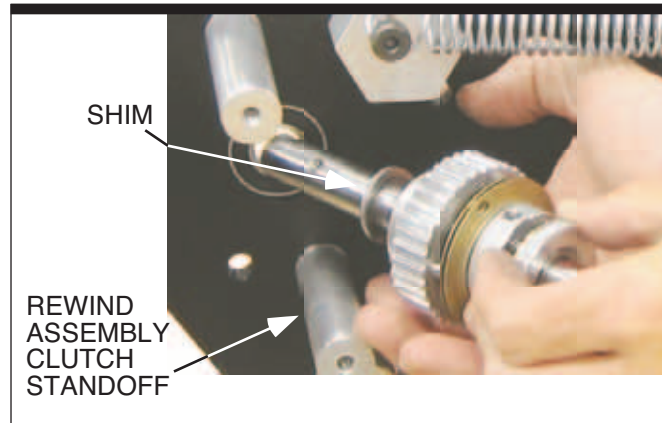
- Step 20.** Remove and reinstall the two (2) Rewind Assembly Clutch standoffs to the other side.



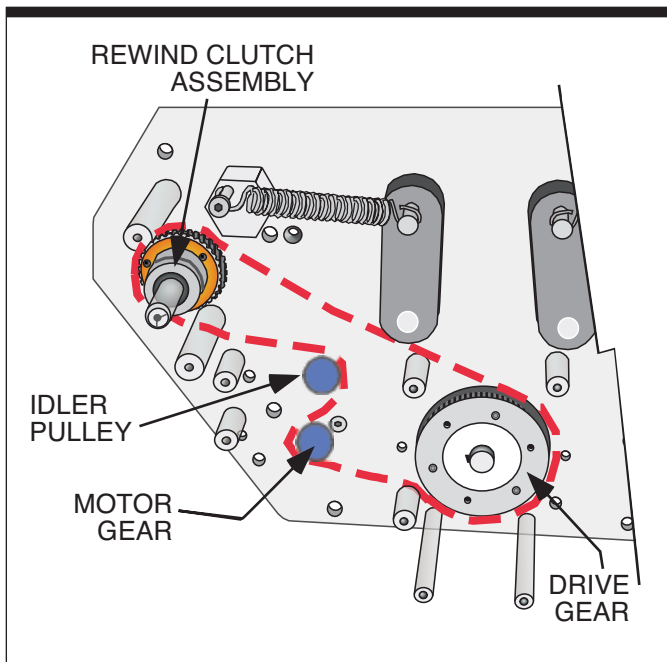
4-24. Standoff Relocation from One Side to the Other

Step 21. Remove the cap plug from the opposite side bearing and reinstall the cap plug into the bearing where the Rewind Shaft and Clutch was removed in Step 18.

Step 22. Slide the Rewind Shaft through the Clutch Assembly with the shim installed (if appropriate) and into the bearing at the new location on the opposite side of the labeler (see Figure 4-25).



4-25. Rewind Clutch Assembly Installation



4-26. Drive Belt Threaded (for Left Hand Running)

Step 23. Reinstall the retaining ring on the front side of the labeler (over the Rewind Shaft).

Step 24. Hang the drive belt around the drive gear and the newly installed Rewind Clutch Assembly (gear). Hanging the belt as shown will make the final routing easier. Use the standoff pins as references. The belt captures one standoff and excludes three (see Figure 4-26).

- Step 25.** Install the Rewind Clutch Bearing plate onto the end of the Rewind Shaft on the rear of the labeler.
- Step 26.** Reinstall the retaining ring and shim, if applicable, onto the end of the Rewind Shaft.
- Step 27.** Reattach the Rewind Flange to the front housing on the labeler (reversal of Step 15).
- Step 28.** Attach the Motor Assembly on the opposite side of the labeler. The belt path routing is critical and should be considered during this installation.
- Step 29.** Route the belt to engage the rewind drive gear, the idler pulley, the motor drive gear, drive roller gear - in that order. There is plenty of finger room to route the belt properly. Check that the belt runs true - making any adjustments as necessary.
- Step 30.** Retension the belt and tighten the jam nut. Do not over tighten. The pulley should be halfway or just beyond halfway of the slot's full travel. A deflection of 1/8" when checked half way between the drive gear and the rewind gear is acceptable.

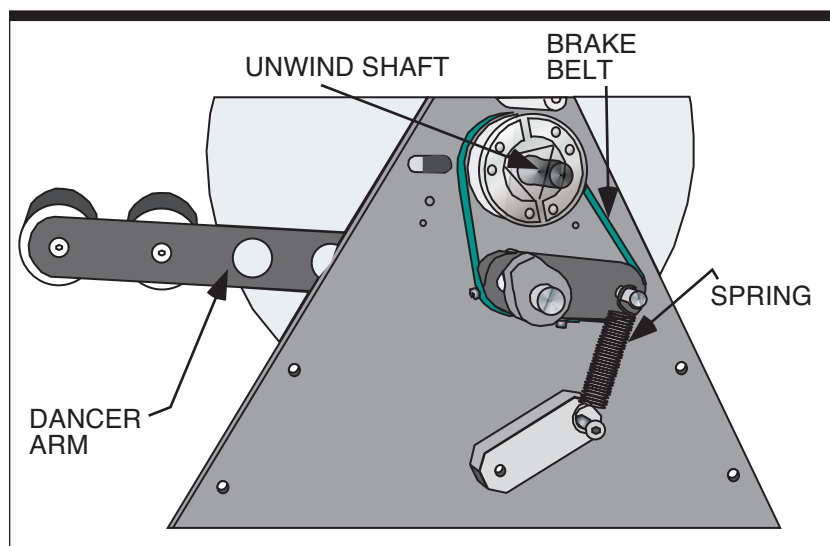


Figure 4-27. Dancer Arm Spring on Rear of Labeler

Step 31.

Recheck that the belt runs true. Manually turn the rewind shaft to test.

Step 32.

Unhook the spring between the dancer arm and the unwind shaft while supporting the dancer arm on the front of the labeler (refer to Figure 4-27).

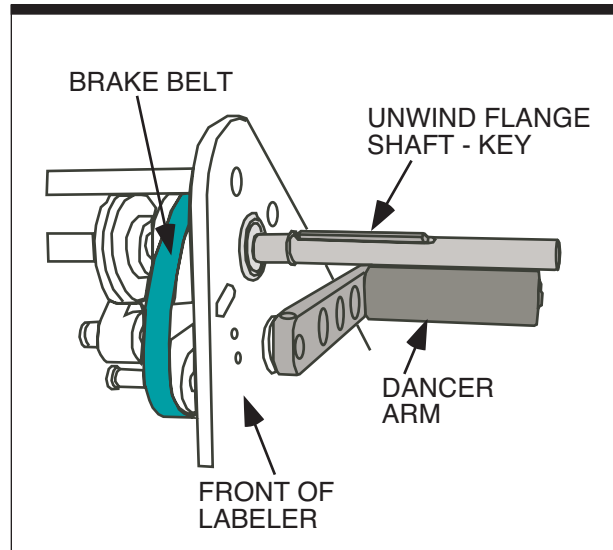


Figure 4-28 . Unwind Flange Shaft Key

- Step 33.** Remove the unwind assembly (front of labeler) by unscrewing the knob until the extrusions comes off the shaft. There is a key on the shaft of the unwind flange - set it aside (see Figure 4-28).
- Step 34.** Remove the socket head cap screw at the dancer arm shaft and remove the dancer arm. The dancer arm’s socket head cap screw was set using (removable) Loctite “242”.
- Step 35.** Relocate the dancer arm bumper(s) to the other side of the front plate (refer to Figure 4-29).

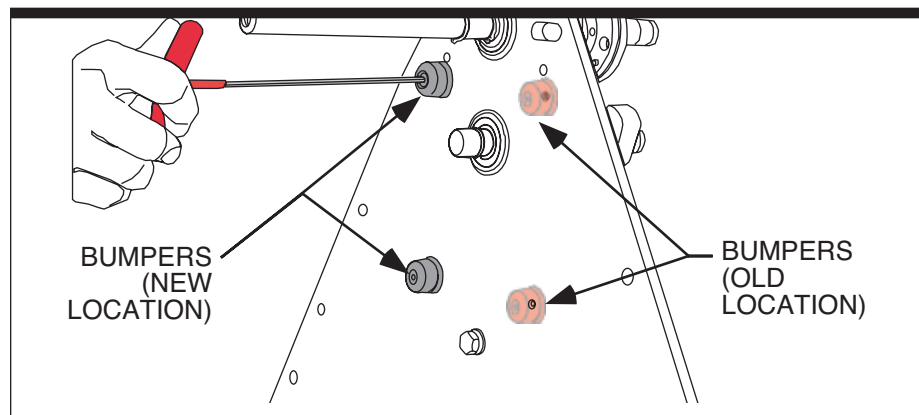


Figure 4-29. Dancer Arm Bumpers on Front of Labeler

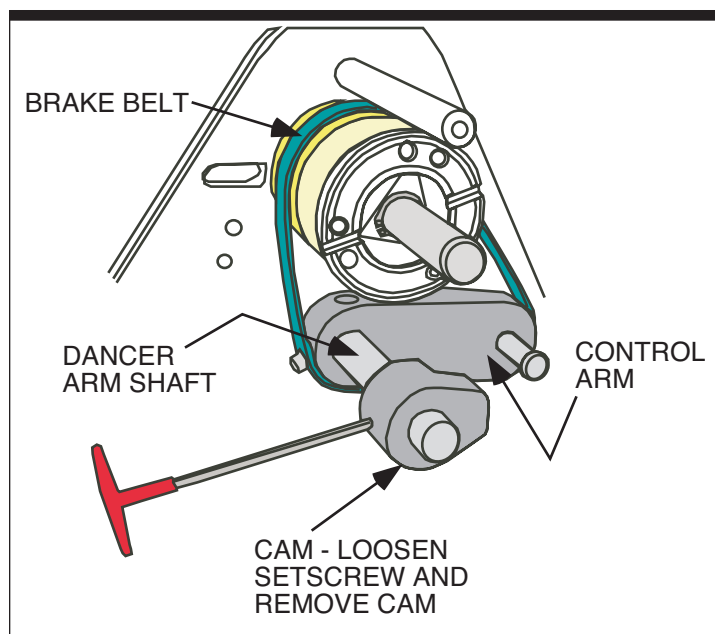


Figure 4-30. Reversing the Brake Control Arm

Step 36.

On the rear of the labeler, loosen the set screw in the cam at the end of the dancer arm shaft while supporting the control arm. Remove the cam (see Figure 4-30).

Step 37.

Remove the socket head cap screw in the control arm. Slide the control arm off the shaft.

Step 38.

Loosen the set screw in the control arm holding the Dancer Arm Spring shaft in place, and pull the shaft out of the control arm. Flip it over to the other side, and retighten the screw. (See Figure 4-31 and Figure 4-32).

Step 39.

Reinstall the Dancer Arm Shaft cam, but do not yet tighten.

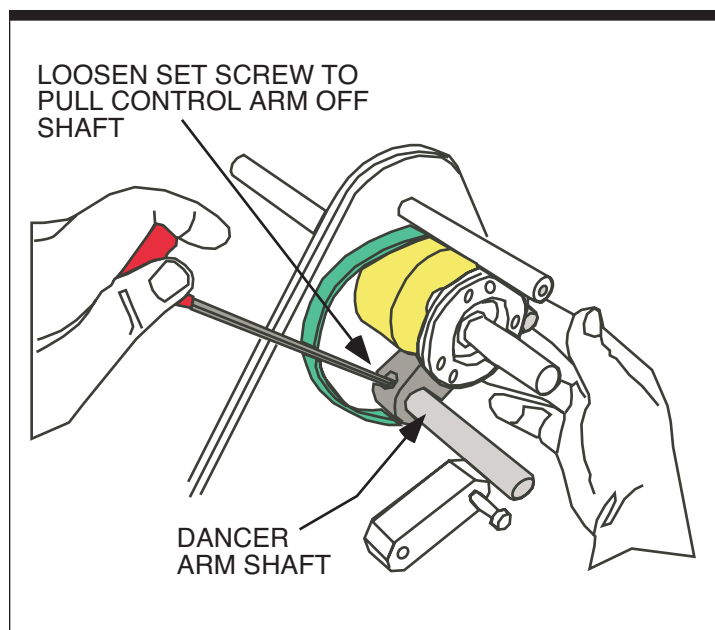


Figure 4-31. Removing the Brake Belt

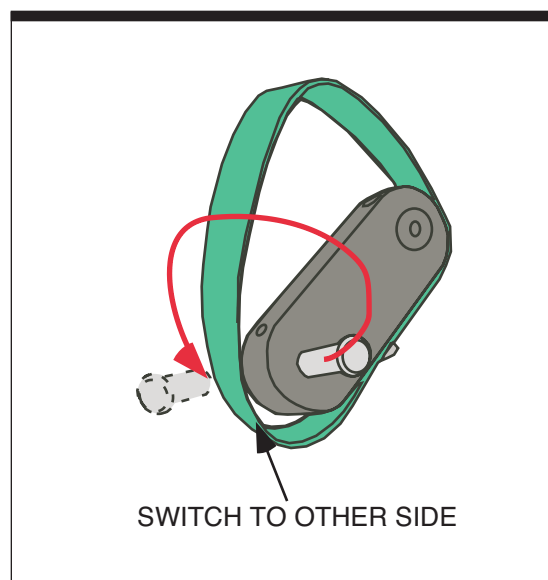


Figure 4-32. Reversing the Control Arm



- Step 40.** Reinstall the dancer arm by positioning it between the two bumpers on the front of the labeler and using the socket head screw. Reattach the spring to the spring arm (reversal of Step 34.)
- Step 41.** Reinstall the Unwind Wheel Assembly. Make sure you turn the knob until it is fully secured.
- Step 42.** Reinstall the back panel (including any shims.) Also reinstall the two small back panels covering the motor and opposite side where the motor was previously located.
- Step 43.** Reposition the cam toward the micro switch and retighten.

Note: The cam will engage the micro switch using a different contact point from previous configuration. On a left-hand applicator, the cam lob is at the 4:00 o'clock position when in contact with the micro switch lever. On a right hand applicator, the cam lob is at the 1:00 o'clock position when in contact with the micro switch lever.

- Step 44.** Set the Dancer Arm Limits.

Note: To adjust for the maximum adjustment and travel, pull the dancer arm down to the bottom rubber stop; rotate the cam until the electric brake disengages. Release the dancer arm and rotate the cam in the opposite direction until the brake comes on.

- Step 45.** Turn the labeler back into a horizontal position to reinstall the Torque Fork Assembly (reversal of Step 4). The Torque Fork Assembly will now be located on the opposite side of the labeler from where it was previously located.
- Step 46.** Reinstall the Wiper Arm in the opposite direction and sliding the pivot post into the hole at the top of the Wiper Arm. Once the pivot shaft is in place, reinstall the two shoulder bolts fixing the Wiper Arm in position for labeling. The Label Sensor must be reinstalled in the correct (reversed) position (refer to Step 2).
- Step 47.** Reinstall the top, bottom, side and motor covers.
- Step 48.** Attach all of external cables.



- Step 49.** Turn on the disconnect and power up the labeler. The applicator will take 30 seconds to boot up.
- Step 50.** The motor direction needs to be changed. Enter the “PARAMETER SETUP” menu and enter the appropriate code to change the “Motor Direction” value. Toggle to the “MOTOR DIRECTION” screen and change the current setting to the appropriate configuration. A setting of “0” is needed for a clockwise (CW) rotation (positive) of the motor shaft (looking on top of the motor - or right-hand application), and a setting of “1” is needed for a counterclockwise (CCW) rotation (negative) of the motor shaft (looking at the top of the motor shaft - or left-hand application.)



Notes

Operator Interface

5

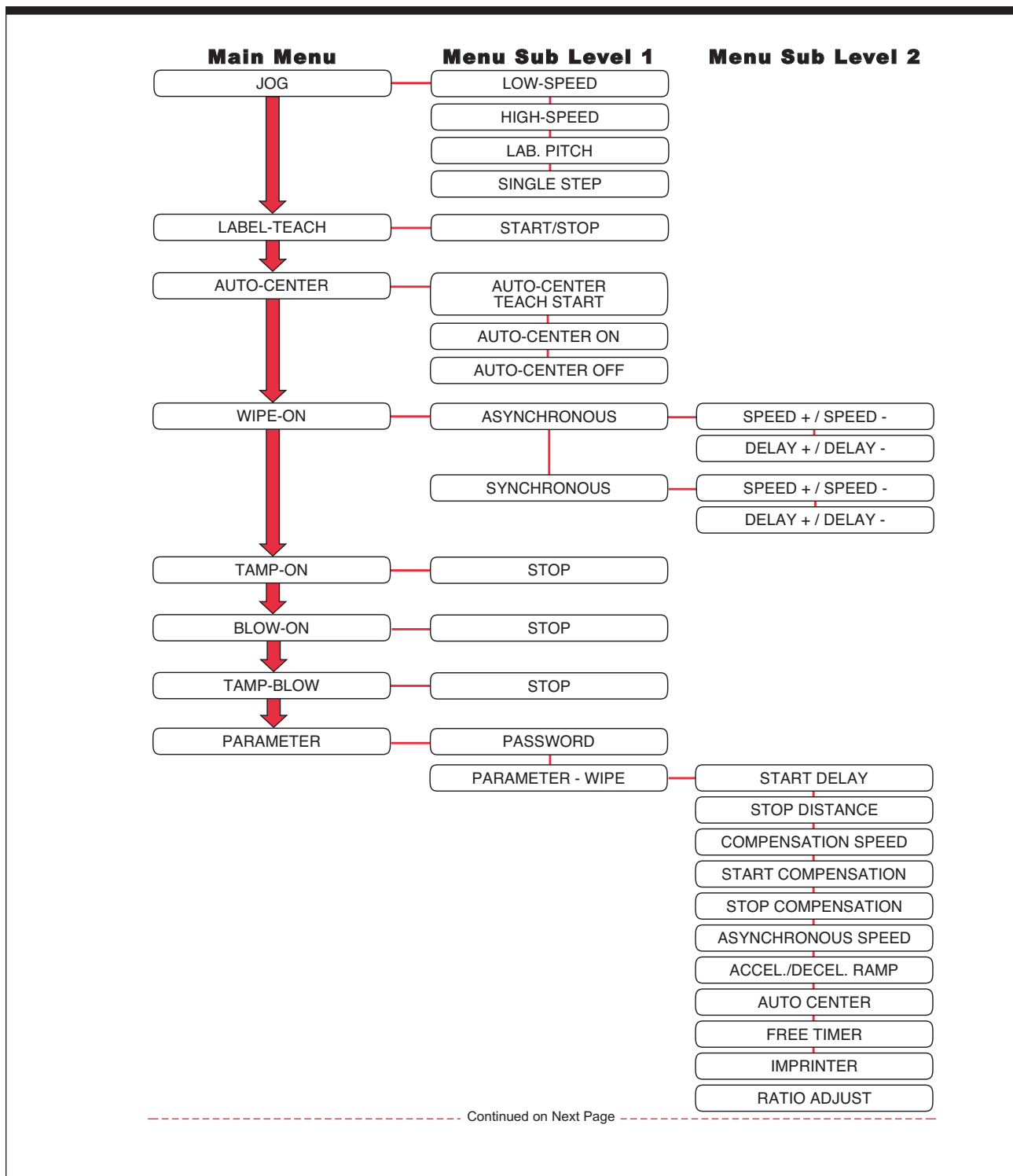


Figure 5-1. Mapping of the Operator Interface

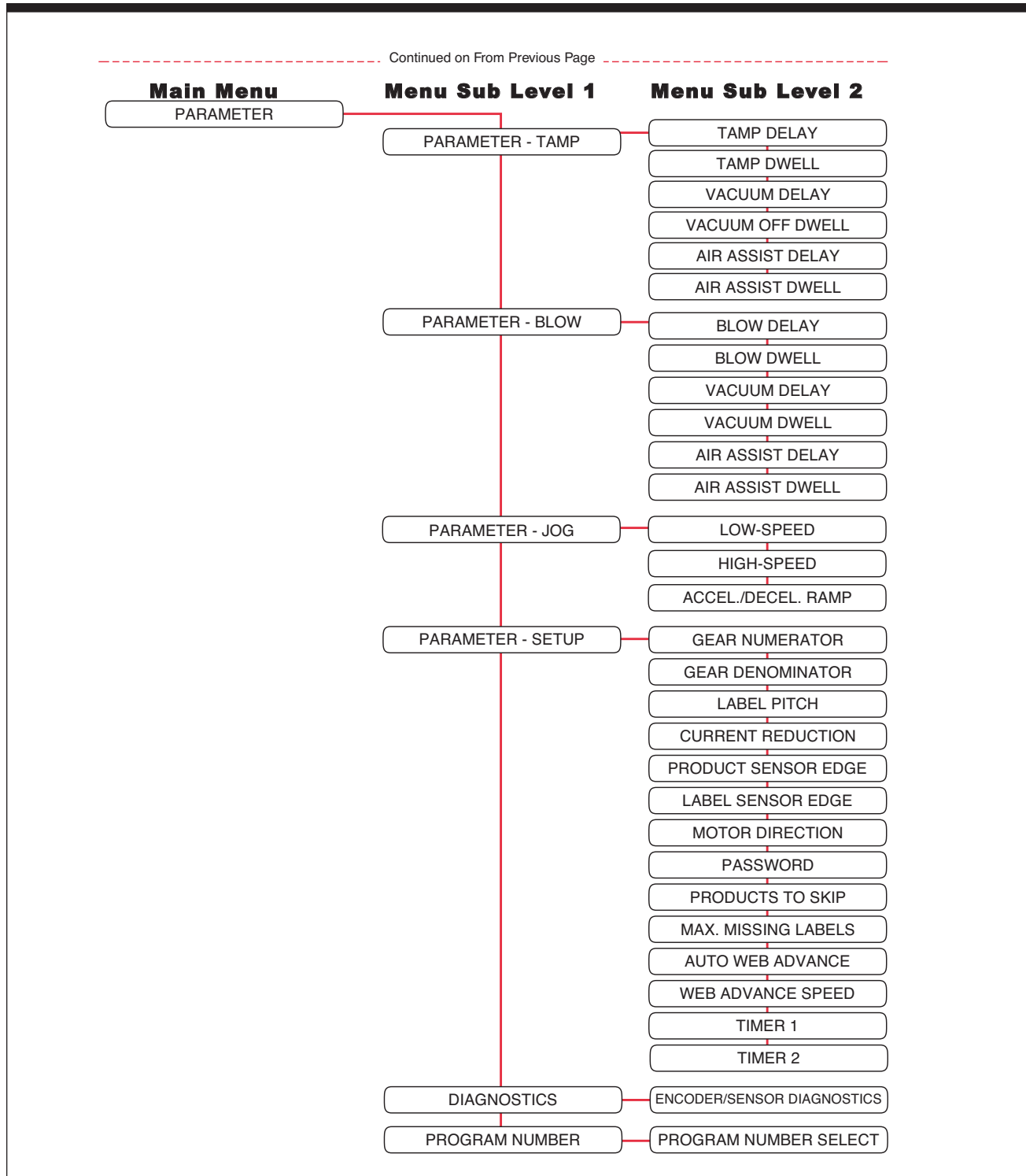


Figure 5-1 (continued). Mapping of the Operator Interface

Operator Interface Map

The previous page contains a brief flow chart of the program layout. Please note that all the screens are accessible through the Operator's Panel.



Note: Turn the labeler off (via the Disconnect Switch) before plugging the remote operator panel into the port. Then turn the power back on to access remote operator panel. Cycle power once remote operator panel is removed from the port.

Operator Interface Operation

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.

Operating Mode

The two operating modes available are **synchronous** and **asynchronous**. The operator may change between modes by simply selecting the appropriate mode in the "WIPE-ON" screen.

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.

Main Screen

Main Screen Once powering up the applicator, the main screen is accessible after thirty (30) seconds. Choose the operating function (JOG, LABEL-TEACH, etc.) in order to set up the parameters for the different operating modes (refer to Figure 5-2).

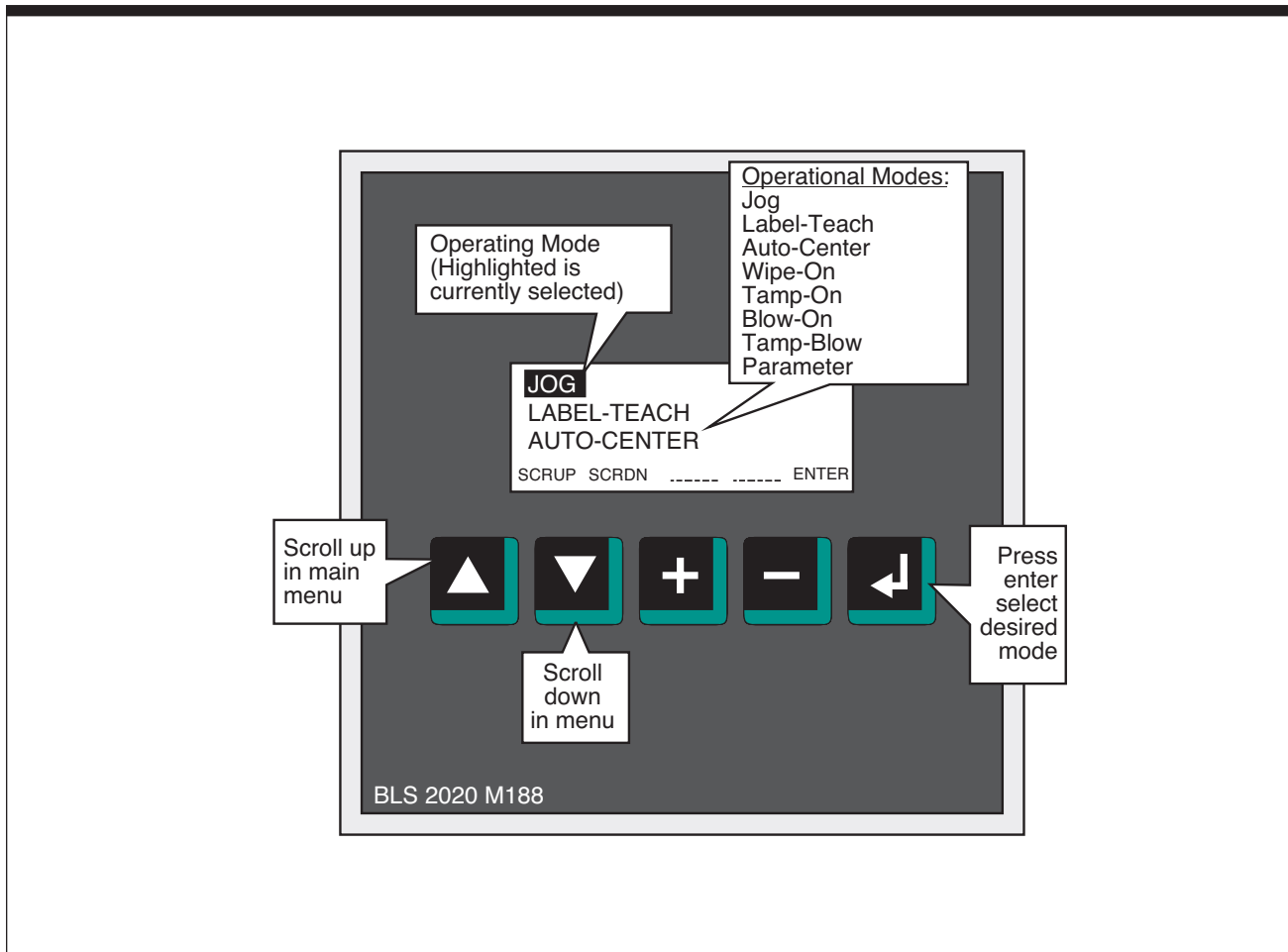


Figure 5-2. Main Screen

Parameter Display Screen

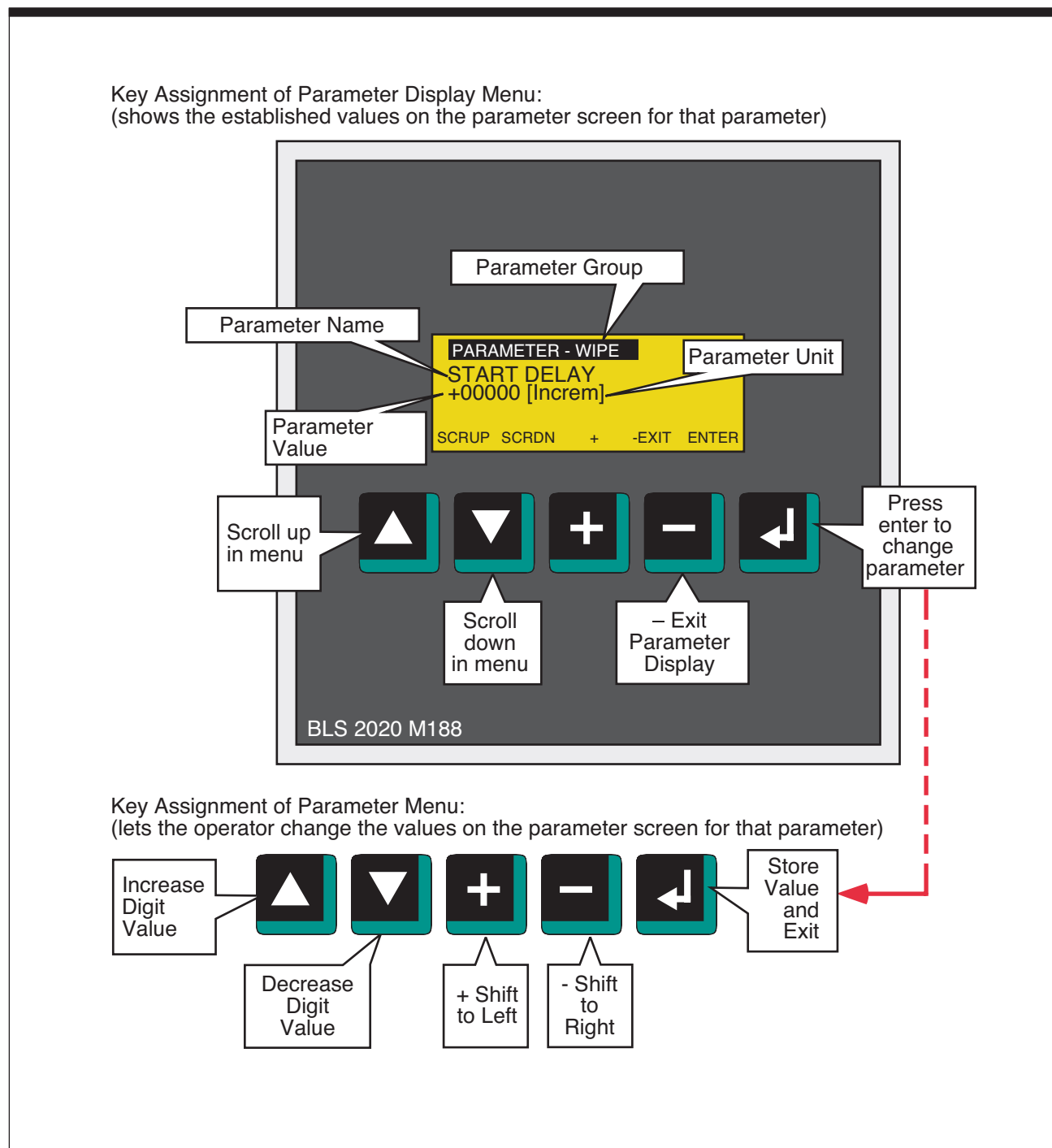


Figure 5-3. Parameter Display Screen/Edit Screen and Function of Buttons on Screen



Operational Modes - Jog

The JOG function is used to manually position the label to the correct position at the peeler plate. It can also help to adjust the labeler dispensing speed (using a tachometer) while in asynchronous labeling mode. Jog can only be used if you are not in any other Operational Mode (i.e.: Wipe-On).

<p>JOG HIGH SPEED +123</p> <p>MENU MODE JOG ---- ----</p>	<table border="1"> <tr> <td data-bbox="605 768 813 842"><i>HIGH SPEED JOG</i></td> <td data-bbox="813 768 1429 842">Dispenses labels at a speed as set in the Parameter Jog Section.</td> </tr> <tr> <td data-bbox="605 842 813 915"><i>LOW SPEED JOG</i></td> <td data-bbox="813 842 1429 915">Dispenses labels at a speed as set in the Parameter Jog Section.</td> </tr> <tr> <td data-bbox="605 915 813 1020"><i>LABEL PITCH</i></td> <td data-bbox="813 915 1429 1020">Dispense labels at a speed which ASYNCHRONOUS speed is set to in the parameter screen (simulates product sensor).</td> </tr> <tr> <td data-bbox="605 1020 813 1060"><i>SINGLE STEP</i></td> <td data-bbox="813 1020 1429 1060">Dispenses labels one motion step at a time.</td> </tr> </table>	<i>HIGH SPEED JOG</i>	Dispenses labels at a speed as set in the Parameter Jog Section.	<i>LOW SPEED JOG</i>	Dispenses labels at a speed as set in the Parameter Jog Section.	<i>LABEL PITCH</i>	Dispense labels at a speed which ASYNCHRONOUS speed is set to in the parameter screen (simulates product sensor).	<i>SINGLE STEP</i>	Dispenses labels one motion step at a time.
<i>HIGH SPEED JOG</i>	Dispenses labels at a speed as set in the Parameter Jog Section.								
<i>LOW SPEED JOG</i>	Dispenses labels at a speed as set in the Parameter Jog Section.								
<i>LABEL PITCH</i>	Dispense labels at a speed which ASYNCHRONOUS speed is set to in the parameter screen (simulates product sensor).								
<i>SINGLE STEP</i>	Dispenses labels one motion step at a time.								

To use JOG, enter the JOG screen and select one of the four modes: HIGH SPEED, LOW SPEED, LABEL PITCH or SINGLE STEP. The values for High Speed and Low Speed can be set in the parameter section (Parameter - Jog further in this chapter).

Once the desired speed is set, press the JOG button on the control panel to advance the label web.

The position counter displays the amount of steps that the motor has moved in positive direction after the JOG mode was started. The counter will be reset when the JOG mode is restarted.

Operational Modes - Label Auto-Teach

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. Stepping motor controllers determine 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:

- Option 1.** Measure label pitch (length + gap) and stop distance and enter as parameters using the terminal. Note: All values are in motor steps.
- Option 2.** Place label web with manual function to the dispensing position. Then activate the LABEL_TEACH to start teach in procedure (Note: motor moves with the low jog speed).

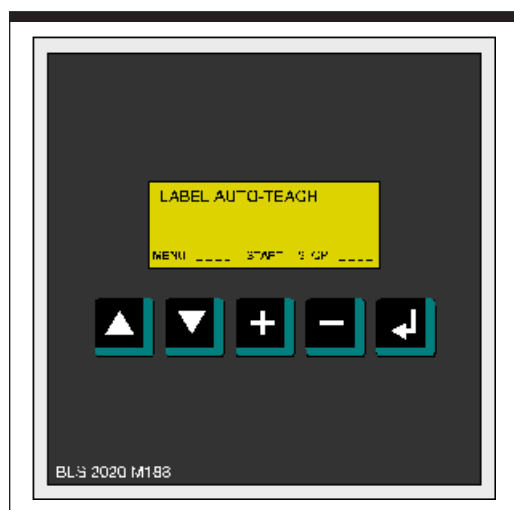


Figure 5-4. Label Auto-Teach Screen

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 manually adjusted operating 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 the digital input LABEL_SENS 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.

Problems with the adjustment of the label sensor or with label web itself can be detected with the learning movement. It is required to move the label sensor further away from the label edge if the sensor is placed just at the label end after a learning movement, because this is a disadvantageous position for the automatic 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 to EEPROM.

1. The label pitch (pitch = label length + gap between labels)
2. The stop distance after detecting a label end signal.

Operational Modes - Auto-Center Teach, Auto-Center and Encoder-Value Teach



This function is used to “teach” the product length and is used in combination with the AUTO-CENTER function. (Refer to the Parameter-Setup section later in this chapter for additional information on Auto-Center parameter). ***Auto-Center only works in WIPE-ON synchronous dispensing mode.***

The AUTO CENTER FUNCTION works properly if:

- ⇒ The RATIO ADJUST factor is set to the default value of 100%. The gear numerator and gear denominator must be set accurately for this. Please refer to the section PARAMETER SETUP.
- ⇒ The labeling mode is switched to synchronous.
- ⇒ The following steps are followed:
 1. Switch controller to WIPE-ON mode and synchronous dispensing mode first and make that AUTO CENTER function switched off. In case the AUTO-Center icon is displayed switch the AUTO-CENTER function off first.
 2. Start dispensing labels at low speed and by using the START DELAY parameter adjust the label position on the product so that the leading edge of the label is flush with the leading product edge.

LABEL IS PLACED AT THE LEADING EDGE OF THE PRODUCT AND AUTO CENTER IS SWITCHED OFF



3. Return to the main menu (AUTO-CENTER TEACH screen).
4. Press START and watch the screen.

At this time all the key descriptions in the M188 screen disappear except MENU. The controller expects a signal from the product sensor. In this state you cannot interrupt the AUTO-CENTER TEACH function except by switching the controller off.

5. Put the product on the conveyor and run it past the product sensor at low speed. The controller measures the length of the product in encoder increments. Product length: Leading product edge to trailing product edge detected by the product sensor.
6. The measured product length is displayed on the screen in increments. This value shows the encoder value. Enter this value for the Encoder value. If AUTO-CENTER is not required, exit at this point.
7. Switch AUTO-CENTER on by pressing the corresponding menu key on the screen. A symbol appears in the lower left screen corner to indicate that AUTO-CENTER is ON. The AUTO CENTER symbol is also displayed in the WIPE-ON function screen.

LABEL IS PLACED IN THE CENTER OF THE PRODUCT AND AUTO-CENTER IS SWITCHED ON.

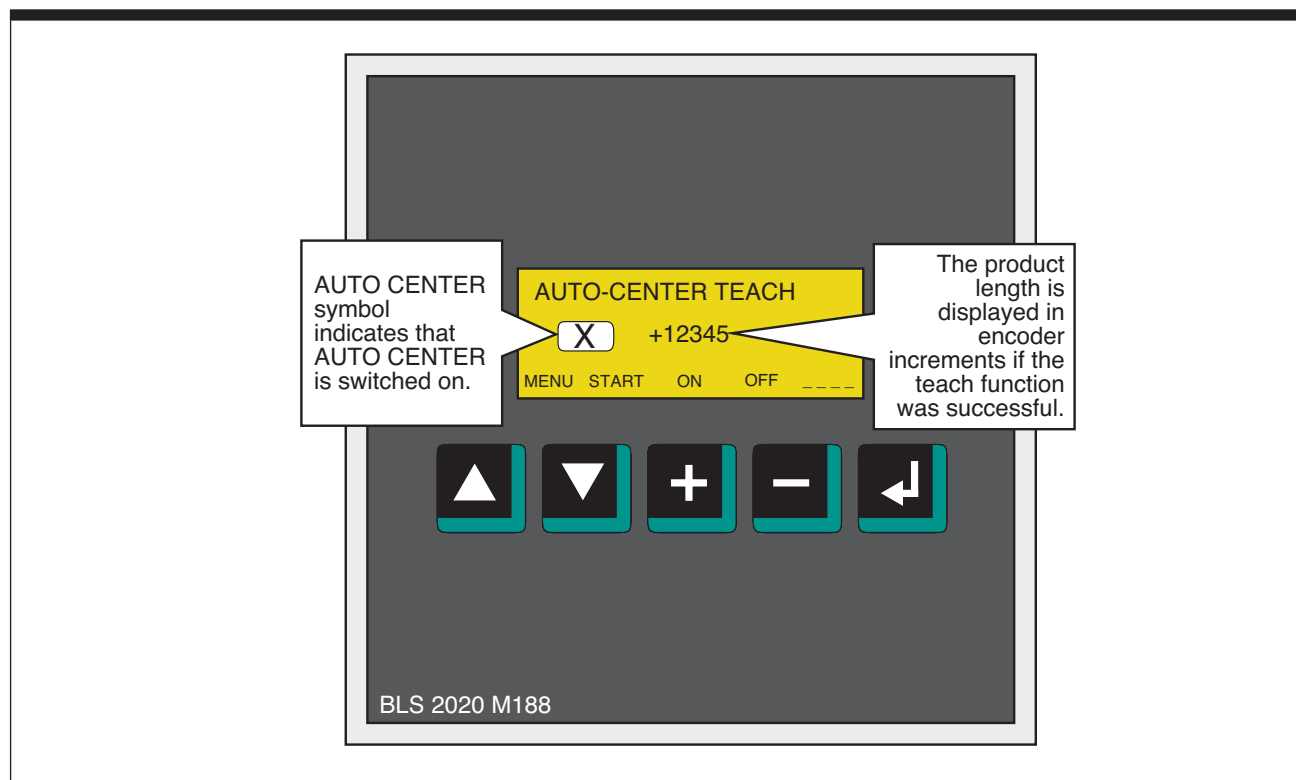


Figure 5-5. Auto-Center Teach Screen



Operational Modes - Wipe-On Mode

The WIPE-ON mode can run in either synchronous or asynchronous dispensing mode. Both modes can be used to dispense labels up to a high speed range.

While WIPE-ON mode is running, The DELAY and the SPEED can be adjusted with the M188 terminal. The ENTER key toggles between SPEED and DELAY adjust. In asynchronous dispensing mode the ASYNCHRONOUS SPEED is adjusted by increasing the speed + 1% or - 1% of the previously set value. In synchronous dispensing mode the gear RATIO ADJUST is also changed + 1% or -1% of the previously set value. All the values are stored in retain memory and the values can be viewed in the parameter setup menu. The DELAY is adjusted in single encoder increments.

Note: See also important information on the DELAY parameter in section PARAMETER setup describing the effects of the DELAY function in the dispensing modes ASYNCHRONOUS and SYNCHRONOUS.

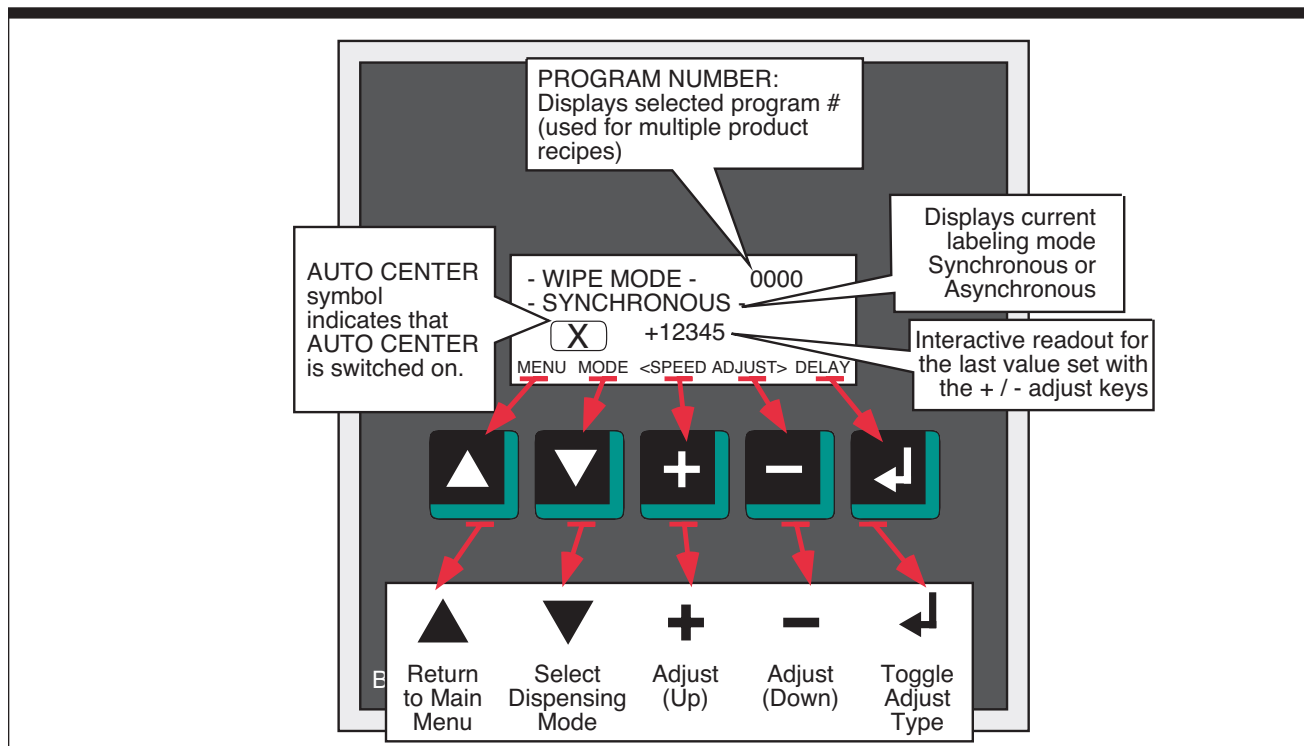


Figure 5-6. Wipe-On Mode Screen

How the adjust keys work:

- ⇒ **MOMENTARILY**
Push the adjust + or - key momentarily advances the selected parameter by one increment.
- ⇒ **HOLD**
Push and hold the adjust + or - key advances the selected parameter slowly.
- ⇒ **HOLD 5 seconds**
Push and hold the adjust + or - key for 5 seconds will advance the selected parameter fast.

Note: It is recommended to set the delay in the parameter menu first as close as possible to the desired position. Especially when there is a high encoder line count the change of the label position on the product is minimal for a single encoder increment and it will take a long time to adjust the label position.

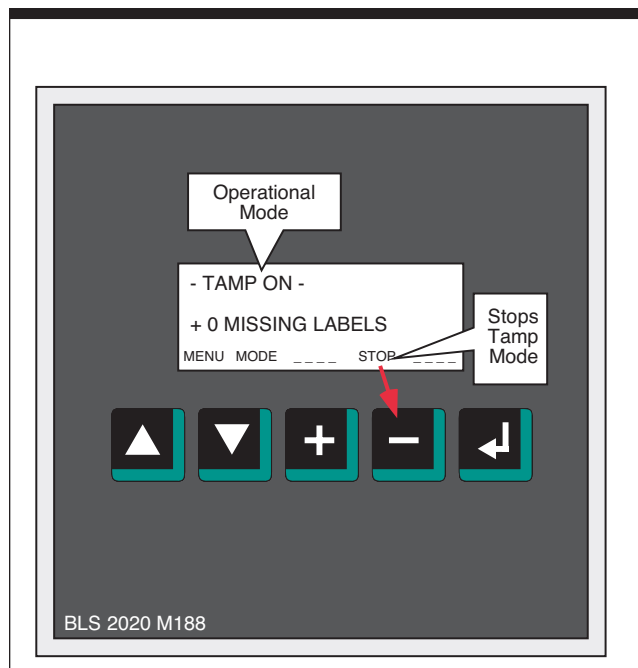


Figure 5-7. TAMP-On Screen

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.)

Operator Screens

Starting the Labeler

When the operator starts the labeler, the first screen is the Parameter Access Screen which requires the operator to enter a password to access the other screens to operator the labeler. Use function keys below the message (▼ ▲ + - ↵) to enter the password [default=00000]. Once you have entered the correct password, use the enter key to have the password accepted and move on to the Parameter Group Screen.

Parameter Group Screen

The Parameter Group Screens allows the operator to select the group (parameter) to display or edit. The up/down arrow function buttons (▼▲) allow the operator to move up and down the list to choose the parameter.

The choices are:

- ⇒ Parameter - Wipe
- ⇒ Parameter - Tamp
- ⇒ Parameter - Blow
- ⇒ Parameter - Jog
- ⇒ Parameter - Setup
- ⇒ Diagnostics
- ⇒ Program Number



Figure 5-8. Parameter Group Screen - Samples

Parameter Menu - Wipe

```

PARAMETER - WIPE
START DELAY
+00000 [Increm]
SCRUP SCRDN + -EXIT ENTER
    
```

START DELAY

The Start Delay parameter is used to adjust position of the label on the product.

Mode: **Asynchronous**

Value is a time-delay.

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.

Calculation internal to program is Asynchronous time delay =

$$\frac{[START DELAY (increments) \cdot (Gear Numerator/Gear Denominator)]}{Asynchronous Speed (Hz)}$$

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.

The value is based on the Encoder setup. Need to calculate encoder resolution (mm/increments) based on setup (see example under Encoder Setup page) and then value input is multiplied by encoder resolution to obtain distance in millimeters.

⇒ **Min Value: 0 (Increm); Max Value: 99999 (Increm)**

⇒ **Default setting: 100**

⇒ **Setting is retained when power is turned off.**



The manufacturer of the controller recommends that when no encoder is used and the labeling machine runs only in ASYNCHRONOUS MODE, that both the GEAR NUMERATOR and GEAR DENOMINATOR are set to 1000.



```
PARAMETER - WIPE
STOP DISTANCE
+00000 [Steps]
SCRUP SCRDN + -EXIT ENTER
```

STOP DISTANCE

The Stop Distance parameter defines the position of the labels at the peeler plate. It references the position from which each dispensing cycle is started.

The “Label-Teach” function learns the movement to determine the exact pre-dispensing position. Refer to Label-Teach operation further in this chapter.

- ⇒ **Min Value: 0 (steps); Max Value: 99999 (steps)**
- ⇒ **Default setting: 100**
- ⇒ **Setting is retained when power is turned off.**

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

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

```
PARAMETER - WIPE
COMPENSATION SPEED
+10000 [Hz]
SCRUP SCRDN + -EXIT ENTER
```

COMPENSATION SPEED

The Compensation Speed parameter defines the maximum motor speed for the synchronous dispensing operation.

- ⇒ **Min Value: 1 (Hz); Max Value: 99999 (Hz)**
- ⇒ **Default setting: 10000**

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

PARAMETER - WIPE START COMPENSATION +0 [Increm] SCRUP SCRDN + -EXIT ENTER
--

START COMPENSATION

The Start Compensation distance is the offset of the label position at the maximum synchronous dispensing speed (see above). Without the use of the controller, internal compensation routines the label placement varies with dispensing speeds. At higher speeds, the offset increases.

⇒ **Min Value: 0 (incred); Max Value: 99999 (incred)**

⇒ **Default value: 0**

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 (less or equal to 100 Hz). 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 encoder increments.
- Step 4.** Use the highest labeling speed used as the compensation speed and the amount of steps as a positive start compensation distance value. Enter this value into the screen.
- Step 5.** This compensation needs to be done only once since it is a fixed machine parameter. If you change anything in the mechanics or the product sensor, the start compensation will need to be set up again.



The start delay distance must be long enough to guarantee that the start compensation works efficiently since the determined increments are subtracted from the delay distance at higher speeds.

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



STOP COMPENSATION

The Stop Compensation 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.

⇒ **Min Value: 0 (steps); Max Value: 99999 (steps)**

⇒ **Default value: 0**

How to set up the Stop Compensation:

- Step 1.** Feed the labels in ASYNCHRONOUS labeling mode at the lowest required labeling speed (less than or equal to 100 Hz). Mark the position of the labels at the peeler plate.
- Step 2.** Dispense labels at the highest labeling speed you want to reach with your label head.
- Step 3.** Determine the offset distance in motor steps. Knowing the mechanical parameters and gear factors of the labeling head make it possible to calculate the amount of steps the label is off at high speeds.
- Step 4.** Use the highest labeling speed as the compensation speed and the amount of steps as a stop compensation distance value. Enter this value into the screen.
- Step 5.** This compensation needs to be done only once since it is a fixed machine parameter. If you change anything in the mechanics or the product sensor, the stop compensation will need to be set up again.



The stop distance must be long enough to guarantee that the stop compensation works efficiently. To start, place label sensor in the center or close to the trailing edge of the label.

PARAMETER - WIPE ASYNCHRONOUS SPEED +1000 [Hz]
SCRUP SCRDN + -EXIT ENTER

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: 1 (Hz); Max Value: 20000 (Hz)**

⇒ **Default value: 1000**

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. See examples below.

<p>MOTOR RESOLUTION 1000: Desired dispense speed is 100 ft/min, calculation is below:</p> $\left(\frac{100\text{ft}}{\text{min}}\right) \left(\frac{12\text{ in.}}{\text{ft}}\right) \left(\frac{25.4\text{mm}}{1\text{ in}}\right) \left(\frac{1\text{ min}}{60\text{ sec}}\right) \left(\frac{\text{STEP}}{.1\text{mm}}\right) = 5080\text{ Hz}$ <p> <small>↑ DESIRED DISPENSE SPEED</small> <small>CONVERSION FACTORS</small> <small>RESOLUTION OF LABEL HEAD</small> <small>ASYNCHRONOUS SPEED VALUE TO ENTER</small> </p> <hr/> <p>MOTOR RESOLUTION 2000: Desired dispense speed is 100 ft/min, calculation is below:</p> $\left(\frac{100\text{ft}}{\text{min}}\right) \left(\frac{12\text{ in.}}{\text{ft}}\right) \left(\frac{25.4\text{mm}}{1\text{ in}}\right) \left(\frac{1\text{ min}}{60\text{ sec}}\right) \left(\frac{\text{STEP}}{.05\text{mm}}\right) = 10160\text{ Hz}$ <p> <small>↑ DESIRED DISPENSE SPEED</small> <small>CONVERSION FACTORS</small> <small>RESOLUTION OF LABEL HEAD</small> <small>ASYNCHRONOUS SPEED VALUE TO ENTER</small> </p>

PARAMETER - WIPE ACCEL./DECEL. RAMP +50 [ms]
SCRUP SCRDN + -EXIT ENTER

ACCEL./DECEL. SPEED

Acceleration / Deceleration speed is the time the motor takes to obtain (reach) operating speed.

The smaller value = less time for the motor to reach speed.

The larger value = more time to reach maximum speed.

⇒ **Min Value: 1 (ms); Max Value: 1000 (ms)**

⇒ **Default value: 50**



Larger labels generally require more torque and therefore, a lower rate. A ramp set too high can cause the motor to stall.



```
PARAMETER - WIPE
AUTO CENTER
+0 [ms]
SCRUP SCRDN + -EXIT ENTER
```

AUTO CENTER

Auto Center enables the “AUTO-TEACH” function of the system.

Setting: 0 = Auto Teach is NOT enabled.

Setting: 1 = Auto Teach IS enabled.

⇒ **Min Value: 0; Max Value: 1**

⇒ **Default value: 0**



AUTO-CENTER only works in WIPE-ON mode.

```
PARAMETER - WIPE
FREE TIMER
+0 [ms]
SCRUP SCRDN + -EXIT ENTER
```

FREE TIMER

Free Timer is started in Wipe-On mode when a product is detected. The Free Timer is a parallel timer to the dispensing process and activates the TIMER_T1 output.

The smaller value = less time for the motor to reach speed.

The larger value = more time to reach maximum speed.

⇒ **Min Value: 1 (ms); Max Value: 1000 (ms)**

⇒ **Default value: 50**

Note: See WIPE-ON timing chart for more information.

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.).

```
PARAMETER - WIPE
IMPRINTER
+10 [ms]
SCRUP SCRDN + -EXIT ENTER
```

⇒ **Min Value: 0 (ms); Max Value: 99999 (ms)**

⇒ **Default value: 0**

```
PARAMETER - WIPE
RATIO ADJUST
+100 [%]
SCRUP SCRDN + -EXIT ENTER
```

RATIO ADJUST

The Ratio Adjust is used to override the gear factor set by the gear numerator and gear denominator (thereby overriding encoder values). It only works in synchronous dispensing mode.

- ⇒ **Min Value: 50 (%)**; **Max Value: 150 (%)**
- ⇒ **Default value: 100** (This means 100%. To decrease, the value must be less than 100 - such as 90%, or 80%.)

Parameter Menu - Tamp

```
PARAMETER - TAMP
TAMP DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

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: 99999 (ms)**
- ⇒ **Default value: 0**

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.

```
PARAMETER - TAMP
TAMP DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

- ⇒ **Min Value: 0 (ms)**; **Max Value: 99999 (ms)**
- ⇒ **Default value: 100**



```
PARAMETER - TAMP
VACUUM DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

VACUUM DELAY

The Vacuum Delay is the amount of time once the tamp home sensor goes "high" that the vacuum turns off.

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

- ⇒ Delay starts when tamp assembly gets to home position.
- ⇒ Min Value: 0 (ms); Max Value: 99999 (ms)
- ⇒ Default value: 0

```
PARAMETER - TAMP
VACUUM OFF DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

VACUUM OFF DWELL

Sets the amount of time the vacuum stays off as the label is fed onto the pad.

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

- ⇒ If the leading edge of the label does not arrive all the way to the edge of the tamp, increase this setting.
- ⇒ Min Value: 0 (ms); Max Value: 99999 (ms)
- ⇒ Default value: 100

```
PARAMETER - TAMP
AIR ASSIST DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

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: 99999 (ms)
- ⇒ Default value: 0

```

PARAMETER - TAMP
AIR ASSIST DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
  
```

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: 99999 (ms)**

⇒ **Default value: 150**

Parameter Menu - Blow

```

PARAMETER - BLOW
BLOW DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
  
```

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: 99999 (ms)**

⇒ **Default value: 0**

```

PARAMETER - BLOW
BLOW DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
  
```

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, VACUUMDWELL affects how firmly the label is affixed to the product.**

⇒ **Min Value: 0 (ms); Max Value: 99999 (ms)**

⇒ **Default value: 100**



```
PARAMETER - TAMP
VACUUM DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

VACUUM DELAY

Delays activation of the vacuum that pulls the label onto the blow assembly.

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

⇒ **Delay starts when blow assembly gets to home position. If the leading edge of the label does not arrive all the way to the edge of the peeler plate, increase this setting.**

⇒ **Min Value: 0 (ms); Max Value: 99999 (ms)**

⇒ **Default value: 0**

```
PARAMETER - TAMP
VACUUM OFF DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

VACUUM DWELL

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

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

⇒ **Min Value: 0 (ms); Max Value: 99999 (ms)**

⇒ **Default value: 0**

```
PARAMETER - TAMP
AIR ASSIST DELAY
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
```

AIR ASSIST DELAY

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.**

⇒ **Min Value: 0 (ms); Max Value: 99999 (ms)**

⇒ **Default value: 0**


```

PARAMETER - TAMP
AIR ASSIST DWELL
+00000 [ms]
SCRUP SCRDN + -EXIT ENTER
    
```

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: 99999 (ms)**

⇒ **Default value: 0**

Parameter Menu - Jog

```

PARAMETER - JOG
LOW SPEED
+100 [Hz]
SCRUP SCRDN + -EXIT ENTER
    
```

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: 100**

```

PARAMETER - JOG
HIGH SPEED
+100 [Hz]
SCRUP SCRDN + -EXIT ENTER
    
```

HIGH SPEED

Sets the high speed in the jog mode.

⇒ **Min Value: 1 (Hz); Max Value: 20000 (Hz)**

⇒ **Default value: 1000**

```

PARAMETER - WIPE
ACCEL./DECCEL. RAMP
+50 [ms]
SCRUP SCRDN + -EXIT ENTER
    
```

ACCEL./DECCEL. SPEED

Acceleration / Deceleration speed is the time the motor takes to obtain (reach) jog speed.

The smaller value = less time for the motor to reach speed.

The larger value = more time to reach maximum speed.

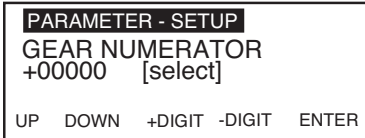
⇒ **Min Value: 1 (ms); Max Value: 1000 (ms)**

⇒ **Default value: 50**



Parameter Menu - Setup

GEAR NUMERATOR



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

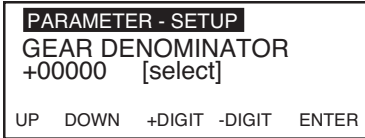
⇒ **Min Value: 1; Max Value: 99999**

⇒ **Default value: 1000**



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

GEAR DENOMINATOR



This factor defines the rate of “incoming” encoder increments to the power drive. It is part of the gear ratio between product speed and motor speed.

When using a non-manufacturer supplied encoder, refer to page 56 of this manual completing steps 1 - 6 (Step 6 equals the denominator value).

Note: Do not use step 7.

To calculate required value for a certain dispense speed, see example below:

Ratios

$\frac{720}{100} = 7.2:1$ ratio	Total Ratio =
$\frac{80}{20} = 4:1$ ratio	28.8:1

Therefore, 20rpm Turret = 576 rpm Encoder Shaft

Calculation

720mm ϕ = (720mm)*(π) = 2262mm circumference

$$\left(\frac{226\text{mm}}{\text{Rev}}\right) \left(\frac{\text{Rev}}{5000 \text{ Inc}}\right) \left(\frac{1}{28.8}\right) \left(\frac{1}{4}\right) = .0039 \text{ mm/inc.}$$

ENCODER RESOLUTION

ENCODER EVALUATION
(QUADRATURE ENCODER)

```
PARAMETER - SETUP
LABEL PITCH
+00000 [steps]
UP DOWN +DIGIT -DIGIT ENTER
```

LABEL PITCH

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

This can also be done using the LABEL-TEACH programming which will determine the exact pitch length and entering the information automatically.

⇒ **Min Value: 1 (steps); Max Value: 99999 (steps)**

⇒ **Default value: 1000**

```
PARAMETER - SETUP
CURRENT REDUCTION
+255 [Select]
SCRUP SCRDN + -EXIT ENTER
```

CURRENT REDUCTION

This parameter displays the current reduction setting of the power drive. Factory set is 255. It is recommended that this value not be changed.

⇒ **Min Value: 0 (select); Max Value: 255 (select)**

⇒ **Default value: 255**

```
PARAMETER - SETUP
PRODUCT SENSOR EDGE
+1 [select]
UP DOWN +DIGIT -DIGIT ENTER
```

PRODUCT SENSOR EDGE

Toggles between Lead and Trail detection on the product sensor.

(1) – Trail

(0) – Lead (Default)

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.

⇒ **Min Value: 0 (select); Max Value: 1 (select)**

⇒ **Default value: 0**



```
PARAMETER - SETUP
LABEL SENSOR EDGE
+1 [select]
UP DOWN +DIGIT -DIGIT ENTER
```

LABEL SENSOR EDGE

Toggles between Lead and Trail detection on the label sensor.

- (0) – Trail
- (1) – Lead (Default)

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

⇒ **Min Value: 0 (select); Max Value: 1 (select)**

⇒ **Default value: 1**

```
PARAMETER - SETUP
MOTOR DIRECTION
+0 [select]
UP DOWN +DIGIT -DIGIT ENTER
```

MOTOR DIRECTION

Allows the motor rotation to switch from clockwise to counterclockwise.

- (0) – CW Rotation (positive) [Looking on top of motor shaft]
- (1) – CCW Rotation (negative) [Looking on top of motor shaft]

⇒ **Min Value: 0 (select); Max Value: 1 (select)**

⇒ **Default value: 0**

```
PARAMETER - SETUP
PASSWORD
+00000 [select]
UP DOWN +DIGIT -DIGIT ENTER
```

PASSWORD

Sets the password for the parameter menu access. Allows the operator to change the password.

⇒ **Min Value: 0 (select); Max Value: 99999 (select)**

⇒ **Default value: 0**

```
PARAMETER - SETUP
PRODUCTS TO SKIP
+00000 [select]
SCRUP SCRDN + -EXIT ENTER
```

PRODUCTS TO SKIP

Allows the labeler to be programmed to “skip” or pass over a set number of products that should not be labeled.

⇒ **Min Value: 0 (select); Max Value: 99999 (select)**

⇒ **Default value: 0**

```

PARAMETER - SETUP
MAX. MISSING LABELS
+00000 [select]
SCRUP SCRDN + -EXIT ENTER
    
```

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: 99999 (select)**

⇒ **Default value: 0**

```

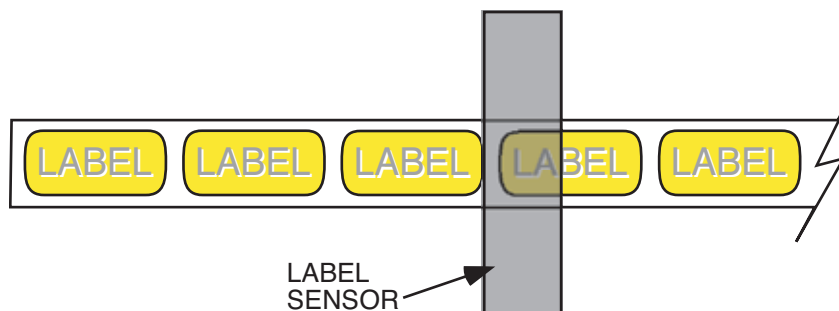
PARAMETER - SETUP
AUTO WEB ADVANCE
+16 [Select]
SCRUP SCRDN + -EXIT ENTER
    
```

AUTO WEB ADVANCE

Sets the number of labels from the peeler plate to the sensor (not including the label sensed) so that when a missing label is detected, the web will advance the correct distance quickly and no product is skipped or missing a label.

⇒ **Min Value: 0 (select); Max Value: 16 (select)**

⇒ **Default value: 0**



```

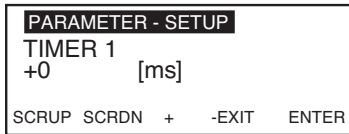
PARAMETER - SETUP
WEB ADVANCE SPEED
+00000 [Hz]
SCRUP SCRDN + -EXIT ENTER
    
```

WEB ADVANCE SPEED

Works in conjunction with the AUTO WEB ADVANCE. This parameter sets the speed at which the web advances when a missing label has been detected.

⇒ **Min Value: 0 (Hz); Max Value: 10000 (Hz)**

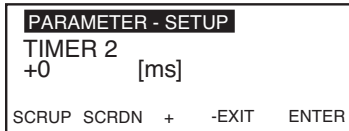
⇒ **Default value: 2000**



TIMER 1

This parameter helps to solve the problem of over-torquing the motor. Set the value to allow the motor to come to rest before “ramping up” to advance web if there is more than one consecutive missing label.

- ⇒ **Min Value: 0 (ms); Max Value: 10000 (Hz)**
- ⇒ **Default value: 0**



TIMER 2 - AUXILLARY TIMER

This parameter helps to solve the problem of over-torquing the motor. Set the value to allow the motor to come to rest before “ramping up” to advance web if there is more than one consecutive missing label.

- ⇒ **Min Value: 0 (ms); Max Value: 10000 (Hz)**
- ⇒ **Default value: 0**

Diagnostics

DIAGNOSTICS

The diagnostics function can be used to check the function of all the sensors in the labeling system (label sensor, product sensor, incremental encoder) in addition to displaying the label cycle count (see Figure 5-9).

To activate the diagnostics mode, switch to the Parameter menu, then select DIAGNOSTICS and press enter.

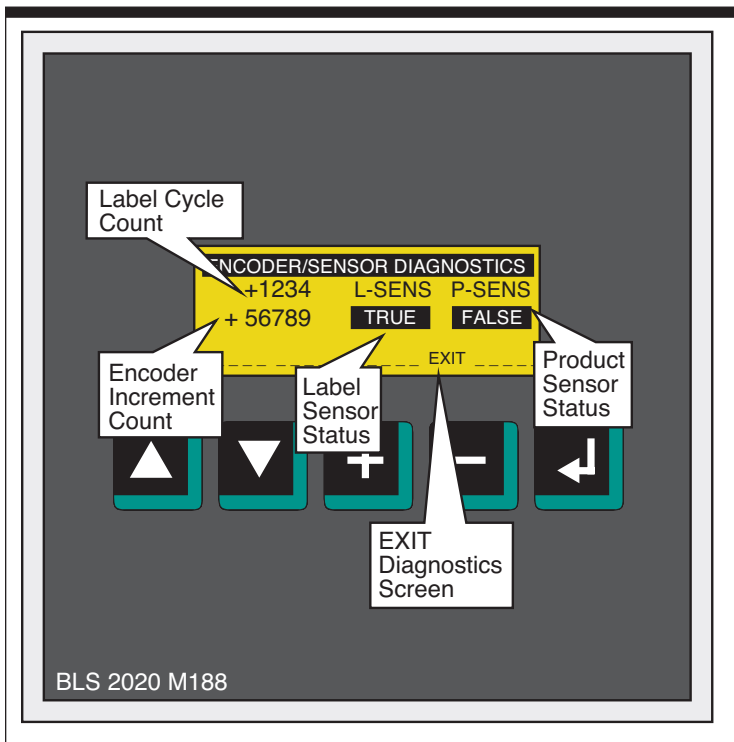


Figure 5-9. Diagnostics Screen

Sensor Test In the DIAGNOSTICS screen the condition of the label and product sensor can be monitored. The DIAGNOSTICS screen displays TRUE if 24 VDC is active at the product or label sensor input and FALSE if the input is at 0 VDC level.

Encoder Test The DIAGNOSTICS screen shows the current encoder position in increments.



If no change of position is recognized while the encoder wheel is turning, the wiring and the encoder output circuit must be checked. See the encoder connection diagram for this. The output circuit must be according the RS422- norm (= 5V - twisted pair line driver output signal) .

Label Cycle Count The controller counts all labeling cycles and writes the number to a retain memory location. This information can be helpful to determine the use of the labeling machine (e.g. for warranty or maintenance information). **The user cannot reset the label cycle count - only by reloading the labeling software program the counter can be reset.**



Program Number

PROGRAM NUMBER

PROGRAM NUMBER
PROGRAM NUMBER
+00 [select]
SCRUP SCRDN + -EXIT ENTER

The C229 controller can store up to 20 different labeling programs. The program selection is from 0 to 19. 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.

Note: This is shown on the Wipe-On Mode screen.



Notes

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

The controller is “maintenance free”, however, it is recommended to check the controller chassis once every 500 hours to guarantee the airflow through the controller. Clean the chassis if necessary.



Disconnect power supply before performing any maintenance.



Controller components are very sensitive to touch. Do not touch the controller PC (printed circuit) board or 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).

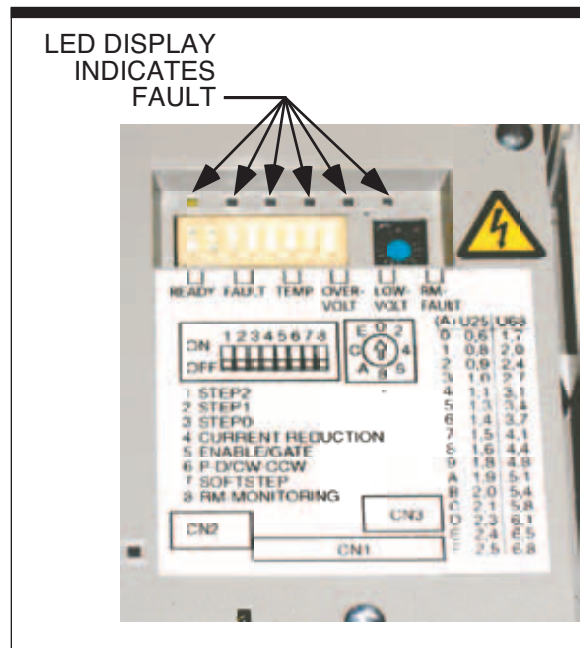


Figure 6-1. Stepper Drive Motor Fault Display

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



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

www.shibuyahoppmann.com



L500A V2 Label Head Spares

Part Number	Description	Quantity
L030120106	Stepper Motor	
L020100001	Bearing Ball, 3/8"IDx7/8"ODx9/32"	
L020800505	Spring Collar, 1"	
BELTV1UK50	Timing Belt, Kevlar, 1/2"wide	
L030340102	Brake Armature	
BUMPRUB002	Rubber Bumper Tapered	
BUSHFB1012	Bearing, Flange	
TORQPOLY03	Slip Clutch 2-disc, 5/8" bore	
BRNGBALL18	Bearing Ball 5/8" bore	
L020670202	Brake Rotor 24V	
L030400101	Mirco Switch	
L030410501	Sensor, Lion	
L050601334	Brake Belt, High Speed - 19"	
L020800509	Spring Collar, 2"	
80688	Spring, 1/2"OD, 1.75"L, .049"Wire dia.	
9540K16	Rubber Bumper, 21/32"dia. x 1/2"t	
L050602008	Inner Unwind Flange	
L050602009	Outer Unwind Flange	
BRNG000036	Bearing, 3/8"ID x 1-1/8"OD	
KNOB000039	Knob	
L050600049	Locking Collar Assy.	
FAN24VDC01	Fan, 24VDC	
L030300100	Power Supply 24VDC 2.4A	
PLUG040410	Panel Mount	
RELAIDEC03	Relay, Mini 24VDC	
LDS180-3913	C229 Stepper Controller	
SD326DU25S2	SD3 Stepper Drive, 2.6A	
L050701115	Belting, Modification, Rewind Assy.	
L050701237	Flange, Rewind	
B462	Bushing, 1/4"ID, 3/8"OD, 1/4"Lg	
FRN375	Handle, Index Plunger	



L500A V2 4" Head Spares (Head #1)

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

L500A V2 4" Head Spares (Head #2 - 4)

Part Number	Description
MH0202826	Peeler Plate, Head 2&3 (Format 1 & 2)
MH0202827	Peeler Plate, Head 2&3 (Format 3 & 4)
MH0202828	Peeler Plate, Head 4 (Format 1 & 2)
MH0202830	Roller Sponge, Head Head 2&3 (Format 1 & 2)
MH0202831	Roller Sponge, Head Head 2&3 (Format 3 & 4)
MH0202832	Roller Sponge, Head 4 (Format 1 & 2)

L500A V2 6" Head Spares (Head #1)

Part Number	Description
MH0202825	Peeler Plate, Head 1 (Format 1 & 2)
MH0202829	Roller Sponge, Head 1 (Format 1 & 2)

L500A V2 6" Head Spares

Part Number	Description
L050601332	1" Idler, Peeler Arm, 6" Head
L050400906	Nip Friction Roller, 6"
L050490012	Drive Roller, 6"
L050601704	Standoff Sleeve, 6"
L050400004	Idler Roller 2"
SM380A22800	Ultra Sonic Sensor, Web Brake, 18MM QD
SHOCK0001	Shock Absorber, Head Cushion
SENS312LQD	Sensor, Retroreflective



L500A V2 Labeler - Callouts

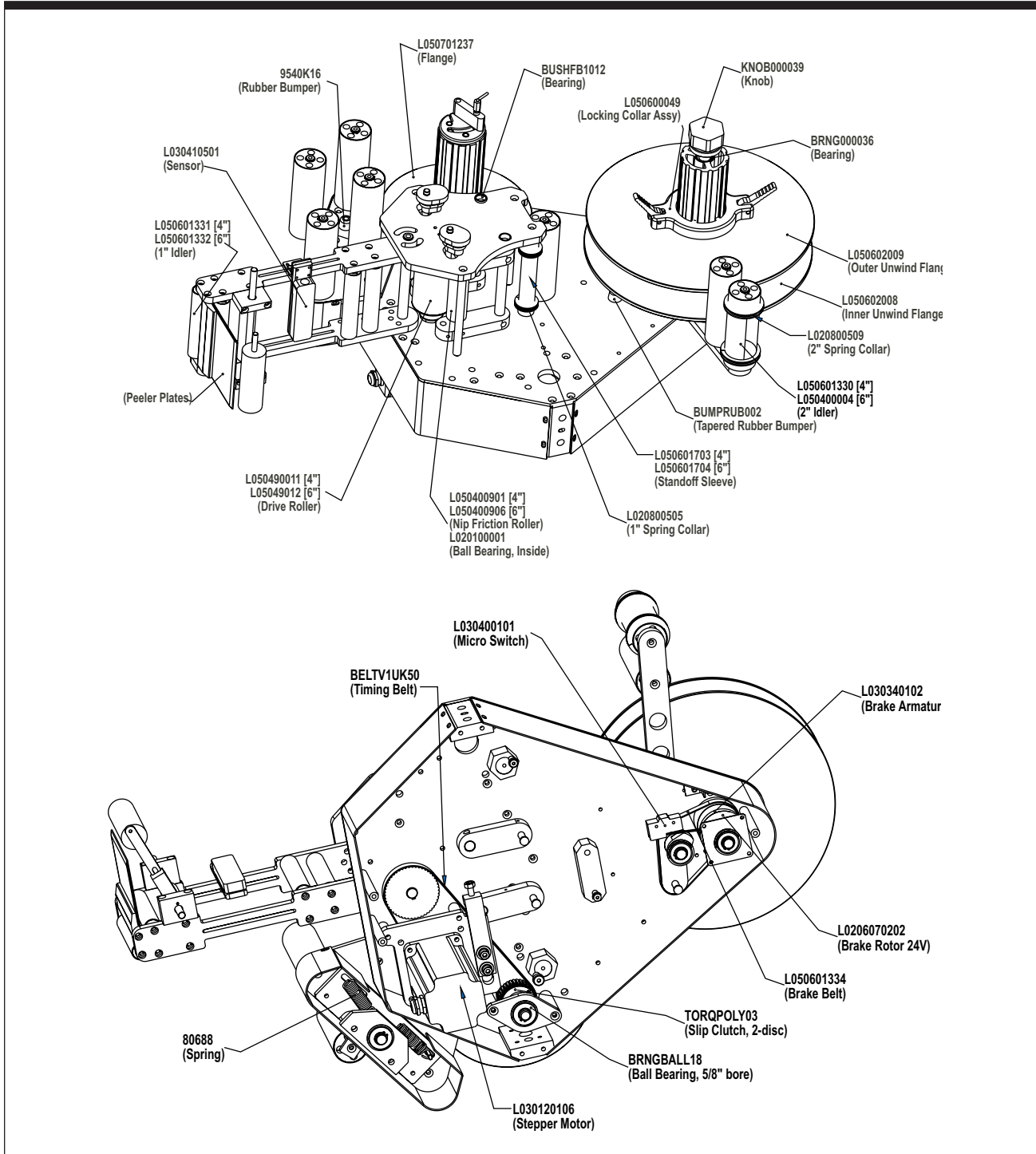


Figure 7-2. L500A V2 Labeler - Front and Side Views - Callouts

Appendix

8

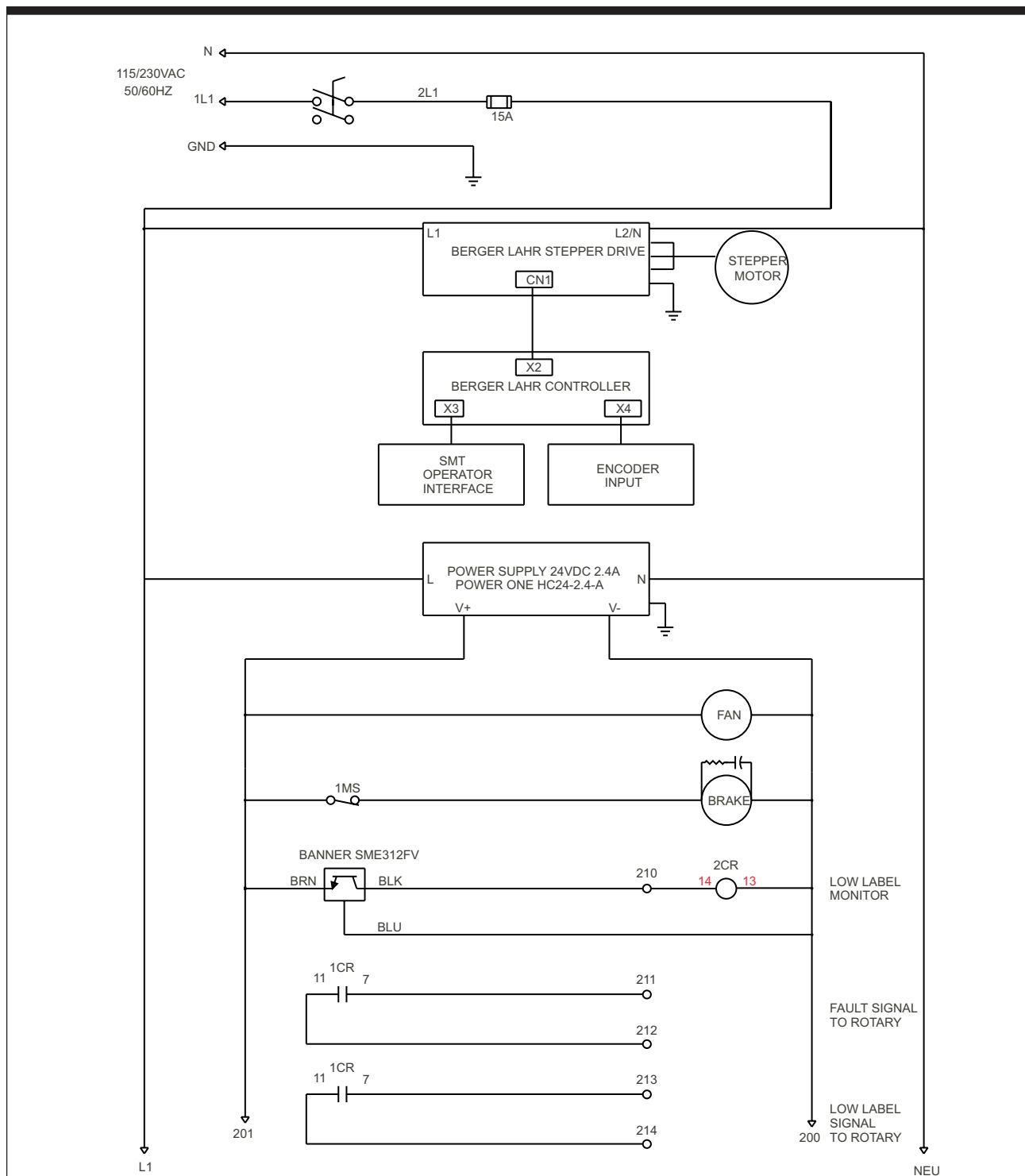


Figure 8-1. Wiring Diagram

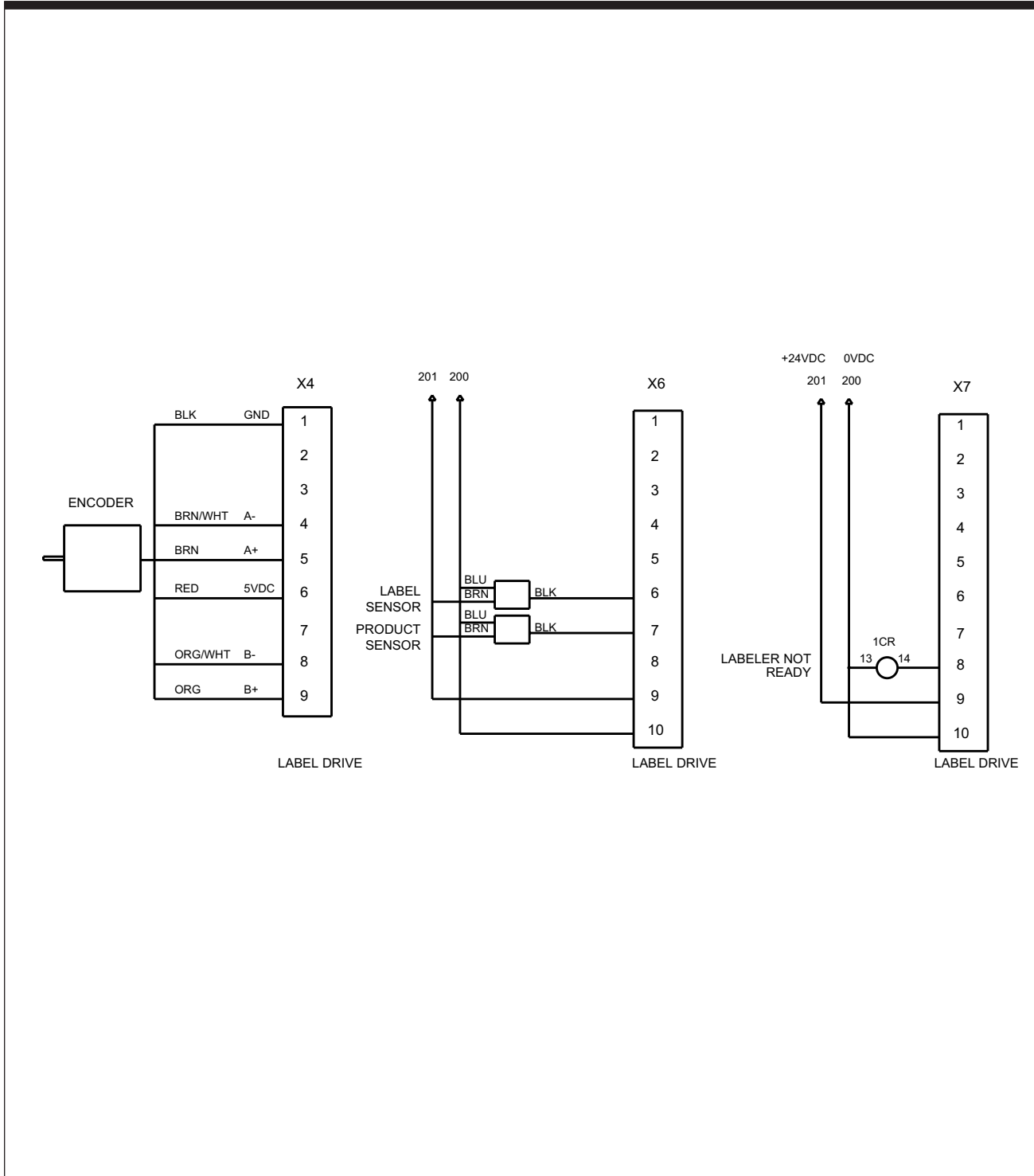


Figure 8-2. Wiring Diagram

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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