



INSTRUCTION MANUALS:

INSTALLATION, OPERATOR'S, MAINTENANCE

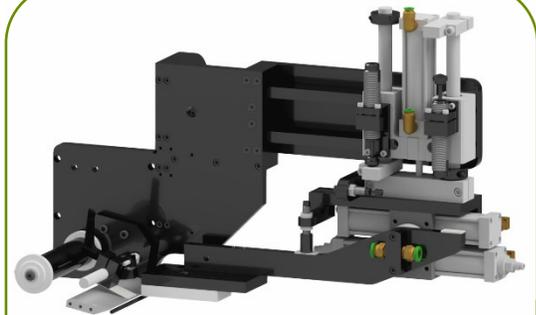
Standard 360a Model Y (360y) Label Applicator



Tamp



Merge



Dual Action Tamp



Swing Tamp



Air Blow



RVB

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PROPRIETARY

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 - Economic and consequential losses.
 - Direct or indirect, incidental, exemplary, and punitive damages whether in contract, tort or otherwise.
 - Any other claims or expenses in any manner resulting, including without limitation or liability:
 - Losses or damages directly or indirectly from, or connected with:
 - Operation of the equipment.
 - Discovery or elimination of all hazards.
 - Failure to so discover or eliminate all hazards.
 - Reason for any action, omission, active negligence, passive negligence, including gross negligence or any error or omission in the equipment or any use of application thereof.
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Some jurisdictions do not allow the limitation of incidental or consequential damages, so these limitations may not apply to you.

RELEASE DATE

04/2023



CONTACT AND SUPPORT

Any questions or concerns can be answered by contacting the following:

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Fax: (330) 332 – 2144

e-mail: techsupport@ctmint.com

Spare Parts

Phone: (330) 332 – 1800 ext. 113

Fax: (330) 332 – 2144

e-mail: spareparts@ctmint.com

Customer Training

CTM recommends that service or maintenance personnel complete a Customer Training Course including the model equipment used. For information on the availability of Customer Training Courses, contact your distributor or Technical Support.

NOTE: Manuals are a supplement (not a replacement) to CTM customer course training.

SYSTEM REQUIREMENTS

Electrical Requirements

- 108 – 132 VAC, 1 Ø
- 10 AMPS, 10K SCCR
- 50/60 Hertz, Single-Phase
- Power cable:
 - 3m long.
 - 3-wire cable.
 - 16 AWG (1.00mm²) conductors rated at 10 amperes (in accordance with CENELEC HD-21) provided for the electrical connection to the IEC 320 receptacle of the applicator.
 - End of the power cord is terminated with a NEMA5-15 plug.

NOTE: *The applicator should not be plugged into GFCI outlets.*

Air Requirements

- 80 PSI clean dry air (for non-merge applicators)
- 4 SCFM

NOTE: *In tamp applications an increase in venturi vacuum pressure may lead to higher SCFM usage*

Operating Environment

- Ambient Operating Temperature: 40° F – 104° F
- Ambient Operating Humidity: 20% – 90% RH, non-condensing
- Ambient Storage Temperature: -4° F – 140° F
- Ambient Storage Humidity: 0% – 90% RH, non-condensing
- Operating Altitude 3280ft above sea level or lower



WARNING:

- **The 360a Model Y Label Applicator is not intended to be operated in a hazardous location—an environment where flammable or explosive gasses or materials are present. Installation in a hazardous location might lead to an explosion causing personal injury or equipment damage.**
- **The applicator is not to be used in direct contact with food products.**
- **The applicator is not wash down or hose down rated.**

SPECIALTY STATEMENTS

Important instructions that users must follow are specially emphasized.

Warning Statements

- Indicate hazards that can cause severe injury or death.
- Have an exclamation mark located in a triangular symbol.
- The Warning symbol precedes the step or information referring to the hazard.

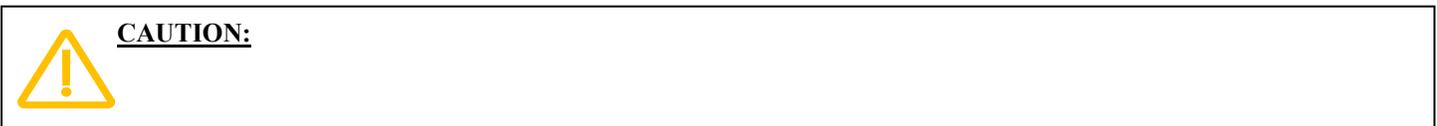
Example:



Caution Statements

- Indicate hazards that can cause equipment damage or personal injury.
- Have an exclamation mark located in a triangular symbol.
- The Caution symbol precedes the step or information referring to the hazard.

Example:



Notes

- Notes add additional information about a specific topic. Notes are bold and colored.

Example:

NOTE: Outputs will remain on while still in any I/O screen but will be turned off when exiting the I/O diagnostic section.

Figures

- Figures appear in the manual where required.
- References to figures are shown in [square brackets] containing the number of the figure.
- Uppercase letters after a figure number, for example [12A], refer to the corresponding item within the figure.
- Figures may be shown as a photo, CAD drawing, or other illustrative representations.

SAFETY GUIDELINES

Installation and Maintenance



WARNING:

- Improper use of the applicator can lead to personal injury or property damage!
- During installation,
 - Check for visible shipment damage and immediately inform your distributor.
 - Provide a supply disconnecting device and an emergency stop device. Install both devices in a way that they are easily reachable.
 - Ensure the machine cannot tip over.
 - Check if all safety functions are working properly.
- Use only original replacement parts.
- Do not operate in a hazardous location—an environment where flammable or explosive gasses or materials are present. Installation in a hazardous location might lead to an explosion causing personal injury or equipment damage.
- Do not use in direct contact with food products.
- Disconnect from power when performing any type of maintenance.

Operation



WARNING:

- Danger of crushing between applicator and conveyor!
- Keep hands and clothing clear of applicator while running.
- Access to the running applicator must be prevented by the protective guarding of the system.
- Do not remove or attempt to disable any protective guarding of the system or operate the applicator if the protective guarding is damaged.
- Observe all safety and warning labels on the equipment for safe operation of the system.



CAUTION: Do not remove or obstruct any warning or caution labels, or instruction labels on the equipment. If the labels become removed, damage, or worn they must be replaced immediately.

Electrical Shock



WARNING:

- The applicator connects to mains voltage. Contact with electrically live components could lead to lethal shock or burns!
- Before attempting any service or repair, disconnect from the main power supply and isolate from any additional external power supply sources.
- Keep the applicator dry. If liquid gets into the applicator remove power immediately and notify a service technician.



CAUTION: Do not unplug any connector on the applicator when the main power is on.

Mechanical Hazards



WARNING:

- **Danger of injury due to moving parts!**
- **Maintain a safe distance from the machine while running.**
- **Do not reach into the applicator area while the applicator is running.**
- **Disable the applicator before making any adjustments.**
- **Keep the applicator area clear around moving parts, even if the applicator is stopped.**
- **Danger of crushing between applicator and conveyor!**
- **Access to the running applicator must be prevented by the protective guarding of the system.**
- **Do not remove or attempt to disable any protective guarding of the system or operate the applicator if the protective guarding is damaged.**
- **Danger of entanglement!**
- **When working in the applicator area, loose clothing items, jewelry, necklaces, ties, wrist watches or similar objects on your body are at risk of getting caught in the machine.**
- **Long hair must be kept in a hair net and must not be worn loose.**

Noise Emissions

- Less than 70dB(A)

Every Time Before Starting Production

- Remove all material and objects that are not required from the working area of the applicator.
- Allow only authorized personnel to remain in the working area.
- Ensure no one is endangered by the applicator starting up.
- Ensure all personnel in the working area of the applicator are using protective equipment properly.
- Check the equipment for visible damage and report any damage that is identified immediately.
- Check all equipment safety functions to ensure they are working properly

MACHINE TERMS

Air Assist: Stream of air from the air assist tube.

Air Assist Tube: Small diameter tube with small hole(s) in it mounted under the peel edge that directs a stream of air to help, or “assist” the label onto the label pad.

Air Blast: Compressed air that moves the label from the label pad or air blow box grid to the product.

Air Blast Jets: Jets with nozzles that press-fit into the inner face of the air blow box grid and can be re-arranged to supply an air stream pattern that transfers labels of different sizes and shapes to the product.

Air Blow Box: Portion of the Air Blow Nose Assembly; a small, enclosed box that houses the air blast jets, axial fans, and the blow box grid. The fans generate vacuum inside the box that allows the label, once peeled off the liner, to be transferred and held in place on the grid until the air blast jets are activated to blast the label onto a product.

Air Blow Box Grid: Grid of holes that air is pushed through via air blast.

Air Filter: Device on the inlet of the air supply that removes debris from the air supply.

Center-line Distance: Distances that can be measured two different ways:

- If labels are of inconsistent sizes or shapes: Distance from the very center of one label to the very center of a second label.
- If labels are consistent sizes or shapes: Distance from the leading edge of the first label to the leading edge of the second label.

Core Unit: Applicator without the nose, rewind, and unwind assemblies.

Critical Alarm: Alarm that stops the applicator from applying labels.

Cycle Power: Turning power to the system and/or applicator on and off.

Cycle Time: Amount of time it takes for the applicator to complete the label sequence from when the product detect sensor detects a product to when the nose assembly goes back to the start position after applying a label to a product.

Dancer Arm: Arm that releases the brake on the unwind shaft, so the roll of labels is free to rotate during label application but applies the brake to stop the unwind shaft rotation when labeling stops.

Detector Lockout: Function used when more than one product is detected. When this occurs, the applicator ignores product detect signals until the lockout time or distance is finished.

Drive Roller: Pulls the label liner around the peel edge to dispense a label onto either the product itself, tamp pad, or blow box grid. It is linked to a stepper motor, and it works in conjunction with the spring-loaded nip roller.

Dual Action Tamp (DAT) Nose: Nose used for applying up to two labels on one product; one label on the product sidewall and one label on either leading or trailing edge of the product.

- A straight line, air cylinder is used to apply the label for the sidewall label.
- A rotary actuator is used to swing the label 90° into the product path and apply the label for the leading or trailing edge label.

NOTE: *Through the HMI the operator can set up one label apply, either sidewall or leading/trailing edge. Labels are applied via air blasts.*

Encoder: Electronic device used to check the speed of a conveyor or wrap station with two possible mounting positions: to the conveyor motor, or to the conveyor side-frame with a wheel that rides along the conveyor belt surface.

Extended Air Assist: Allows the air assist to stay on longer to aid in putting the label on the pad.

Inverted Tamp Blow (ITB): Tamp slide in the extended position, with label on the pad, waiting for the product detect sensor to start the labeling sequence.

Jog: Button on the display screen that allows the applicator to dispense a single label without the applicator running through the labeling process

Label Detect Sensor: Detects the label starting from the leading edge to the trailing edge of a label and tells the applicator when to stop the stepper motor from advancing the labels.

Label Feed: The movement of the labels on the liner through the machine.

Label Liner: Backing material that supports the labels before dispensing.

Label Manifold: Aluminum block mounted under the tamp slide that the label pad is mounted to, and air blasts are channeled through it to the label pad.

Label Pad: Mounted under the manifold and made from white Delrin that holds the label before application and needs to be made to the exact size for every label.

Label Placement: Time or distance from when the product detect sensor detects the product to when the labeling sequence starts.

Label Size: Distance across the label (width) and distance from the leading edge to the feed length of a label.

Label Stop: Distance from the leading edge of a label to where the label detect sensor is detecting a certain spot on the label liner and where the applicator stops advancing. The distance itself is relative to how many labels are in between the label sensor and the peel edge. If the labels are small, there will be many labels between the label sensor and the peel edge. And if the labels are large, there will be only one label between the label sensor and the peel edge.

Label Tension Brush Assembly: Adjustable brush to help create tension on the label liner.

Labeling Sequence: Process in which the product detect sensor detects the product to be labeled; the label detect sensor detects the label; the label is fed from the liner to the product, manifold, or box grid; and then is brushed onto, tamped, or air blown onto the product.

Leading Edge: First edge of the label that gets detected by the label sensor.

LED: Light Emitting Diode.

Merge Nose: Nose used for dispensing labels via the wipe on/merge application. A label is dispensed from the peel edge and the brush wipes the label onto the product as it is traveling past the applicator. For this nose, products must be moving on a production line.

Peel Edge: Found on the nose assembly; the aluminum, or stainless steel, beveled plate that separates the label from the liner as it is pulled around it by the nip drive.

Peel Edge Label Tension Spring: Spring attached to the bottom of the spring block assembly used to keep the label liner flat on the peel edge surface and helps in controlling the dispensing of the label onto the blow box grid, tamp pad, or product. The tension is adjustable to accommodate varying label thickness and how easily the label peels off the liner.

Product Detect Sensor: Sensor that detects the product to be labeled and tells the applicator when to begin the labeling sequence.

Rewind Mandrel: Rotating mandrel that holds the empty liner after the labels have been removed.

Rewind Slip Clutch: Attached to the rewind mandrel and driven by the stepper motor that stops the rewinding of the liner if the applicator is moving too fast.

Reverse Vacuum Blow (RVB) Nose: Nose used for dispensing labels with an air blast using a stationary tamp label pad and manifold. A label is dispensed from the peel edge onto a label pad and then an air blast places the label on the product.

Sinking Output Configuration: The 360y applicator's alarm, I/O, and valve outputs are wired in the sinking configuration. The load current for a sinking output, flows into the output terminal. The load's common connection is the positive power supply terminal (+V). When the output is active, current flows from the positive terminal of the load power supply through the load into the output terminal to ground. $I_o (\text{max}) = 80 \text{ mA}$

Sourcing Input Configuration: The 360y applicator's low label, end of web, and product detect inputs are optically isolated. The sensors connected to these pins must be able to sink the opto-coupler's input current. The sensor's common connection is the negative power supply terminal (ground or -V). When the sensor's output is active, current flows from the positive terminal of the load power supply through the optical coupler circuit and out of the input pin and through the sensor output (open collector/drain or SPST N.O relay) to ground. $I_{in} (\text{max}) = 15 \text{ mA}$.

Spring-loaded Nip Roller (Nip Roller): Pushes against the label liner that passes between the drive roller and nip roller assemblies to ensure that the liner does not slip during the label dispense cycle.

Static Stack: Labels applied to a stationary target on top of each other to check repeatability of the applicator.

Stepper Motor: Supplies the moving force for advancing the label liner.

Swing Tamp Nose: Nose used to apply a label to either the leading or trailing edge of a product using a rotary actuator to swing the label 90° into the product path to apply the label via an air blast.

Tamp Nose: Nose assembly used when a product is a distance away from the applicator position where an air cylinder extends the tamp pad to the product and the label is applied with an air blast.

Trailing Edge: Last edge, or the edge behind the leading edge, which is detected by the label detect sensor.

Unwind Mandrel: Rotating mandrel where the roll of labels to be applied is placed.

Vac-Blow Pad: Label pad and manifold together used for a tamp applicator when a label is blown off. This arrangement uses compressed air to create vacuum and blow-off pressure.

Valve Bank: An assembly consisting of one or more valve stations on a common mounting plate. Optional additions include vacuum generators, external regulators, and pressure gauges.

NOTE: *Valve bank assemblies for the nose assemblies are as follows: a single valve for a merge applicator with an imprinter; two valves for a blow box applicator; three valves for a tamp applicator; or four valves for a dual action tamp applicator.*

Warning Alarm: Alarms that show a problem with the applicator, but the applicator continues dispensing labels.

Web or Web Liner: Same as the label liner. These terms can be used interchangeably.

Web Path: Path the web or label liner follows from the unwind mandrel through the various rollers to the applicator nose and then onto the rewind mandrel.

INTRODUCTION

CTM Labeling Systems' Standard 360a Model Y Label Applicator (also referred to as the applicator and 360y applicator) is a high-speed labeling device used to apply pre-printed adhesive-backed labels to products either stationary on a workstation or moving on a production line. The applicator is a self-contained module that can be mounted in almost any orientation to apply labels to the top, bottom, and/or sides of products. (See [Figure \[4\]](#) on pages 5 and 6.)

The applicator is unique in that it can be adapted to several label application types by changing the nose assembly. The following are the nose assemblies offered.:

- Merge (no air required)
- Air Blow
- Reverse Vacuum Blow (RVB)
- Straight Line Tamp
- Inline or Perpendicular Swing Tamp
- Inline or Perpendicular Dual Action Tamp (DAT)

The symmetrical design of the applicator allows the different nose assemblies to dispense labels to either the right- or left-hand side of the applicator. The nose assembly and configuration depend on the type of product being labeled and the arrangement of the production line if there is one. Not all nose types require a production line.

The hand configuration of the applicator can be changed by swapping the applicator nose with the unwind/rewind assemblies. Most parts are ambidextrous but some parts like tamp pads and label manifolds are hand-specific, and new ones need to be purchased. The configuration depends on the customer's requirements, which can include the following:

- Copy position of the print on the label.
- Direction the product is moving on a production line if there is one.
- Where the label needs to go on the product and what direction it needs to face.
- Where the operator is located when working the applicator.

The applicator can be switched between the different nose assemblies listed above. If the applicator nose needs changed in the future, a different assembly may be purchased but the applicator or "core unit" remains the same. There is no need to buy a new applicator.

The applicator can be easily changed to a different nose assembly by removing the existing nose from the module and replacing it with a different one. Though interchangeable, more parts may have to be purchased and different system requirements may be required if a nose change is needed. For example, if a merge nose needs to be switched to a tamp nose, access to pressurized air is needed since air blasts are used to apply the labels instead of the label being brushed on.

The labels should be supplied on a liner web with a minimum label gap of $\frac{1}{8}$ in. This gap is the distance between two adjacent labels on the liner. The applicator accepts and dispenses labels from rolls up to 20in. outer diameter (O.D.)

Label placement accuracy depends on multiple factors which are explained in this manual. For safe, trouble-free operation of the applicator, carefully follow the instructions in this manual during setup, operation, label roll changes, cleaning, and maintenance.

OPERATING PERSONNEL

Multiple users may be operating the applicator with different levels of understanding of how the applicator works. For this reason, the instruction manual for the Standard 360y Labeling Applicator is split into the following parts:

Manual Type	Correct Personnel		Medium	Availability
<u>Installation Manual</u>	Users placing the applicator in its permanent location.	Basic understanding of applicator use.	Electronic	CTM Labeling Systems website under “Support” and under “Product Manuals”
		May or may not be daily users.		
<u>Operator’s Manual</u>	Daily operators.	Comprehensive understanding of applicator use.		
		Applicator setup for daily usage.		
<u>Maintenance Manual</u>	Advanced operators	Extensive understanding of applicator use.		
		Perform maintenance and troubleshooting.		
		Change password protected key setups.		



WARNING: Know what type of user you are! Mishandling equipment may cause severe injury or property damage. Such use will be considered non-intended use. CTM shall assume no liability for damage resulting from non-intended use of the machine.

INSTALLATION MANUAL

UNBOXING

Loose parts and components are packed separately within the box the applicator is shipped in. A “Resource Guide and Component List” comes with your applicator [1]. This guide has an *Applicator Component Checklist* [1A] marking the parts and components that are not already attached. These are the “loose parts” to the applicator. The applicator comes already put together except for these separate items.

NOTE: Reels 16 in. and larger also come packed separately. Occasionally, the valve bank comes disassembled. Do not discard anything taken from inside the box until you have gone over the checklist and confirmed everything is accounted for.

If anything is missing, contact the manufacturer as soon as possible. See the **Contact and Support** section for contact information and have your applicator serial number ready. The serial number is found under the *Applicator Component Checklist* section on the “Content List and Resource Guide” [1B]. The serial number can also be found on the side of the applicator above the power switch.

When ready to set up the applicator, see the QR code next to the *Applicator Manuals* section on the **Resource Guide and Component List** [1C]. This code links directly to the product manuals on CTM’s website where users can choose the correct manual for the applicator purchased.

Resource Guide and Component List

Applicator Manuals

Product manuals for all standard equipment can be found by scanning the QR code on the right. This takes you to the Product Manual section on the CTM website where you will find a breakdown of CTM products and corresponding manuals. Select the icon that best represents your applicator. A drop-down menu will provide a more detailed breakdown for your specific manual requirements.

C



A Applicator Component Checklist

Some components of the applicator are removed for shipping. Any components that are included in the box but not attached to the applicator will be marked on the checklist below. Verify all components are present prior to discarding the applicator box.

<input checked="" type="checkbox"/> Display Unit	<input checked="" type="checkbox"/> Spare Parts Kit
<input type="checkbox"/> Alarm Light Stack	<input checked="" type="checkbox"/> Accessory Bag #1
<input type="checkbox"/> Encoder Assembly	<input type="checkbox"/> Accessory Bag #2
<input checked="" type="checkbox"/> Documentation	<input type="checkbox"/> Accessory Bag #3
<input type="checkbox"/> Pneumatic Air Filter	<input type="checkbox"/> _____
<input type="checkbox"/> User Supplied Items	<input type="checkbox"/> _____

D Product Line and Accessories

Scan this QR code to see the entire family of products offered from CTM. From label applicators to custom-designed labeling systems, there is a solution for all labeling needs. Most applicator accessories are plug-and-play and can be added after installation to provide ease of use as well as increased production efficiency.

D



Contact Us

Need more information?
The CTM support teams are ready to help:

Spare Parts
PHONE: (330) 332-1800 ext 113
EMAIL: SpareParts@ctmint.com

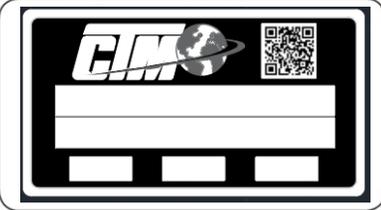
Technical Support
PHONE: (330) 332-1800 ext 129
EMAIL: TechSupport@ctmint.com

Sales
PHONE: (330) 332-1800
EMAIL: CTMSales@ctmint.com



1318 Quaker Circle
P.O. Box 589
Salem, Ohio 44460
(330) 332-1800
www.ctmlabelingsystems.com

B



Setting Global Standards

One Customer at a Time

[1] Resource Guide and Component List

Additional parts and components are available to purchase. The second QR code [1D] on the **Resource Guide and Component List** is under the *Product Line and Accessories* section and directly links to CTM’s website where additional products are listed.

Plug and Play Accessories and Mounting Stands



3-Light Alarm Stack

This light stack communicates with a red light signifying machine stoppage, a yellow light signaling caution, and a green light announcing readiness. There is an audible option for the red light, as this indicates a critical operational situation.



End of Web Detection

An infra-red detector stops the labeler upon label runout, which reduces the waste of time and resources in the event that labels run out while the machine continues to operate.



Low Label Sensor

Let's you know when it's time to replace the label roll without costly down-time spooling a new roll.



Applicator Mounting Stands

Heavy duty one piece base construction with a patented internal assembly designed for ease of vertical height adjustment. Stainless steel and custom mounting options are also available.



[2] Additional Parts for the Applicator

On the back side of the **Resource Guide and Component List** is a list of commonly purchased options that are available for your applicator [2]. See the **Spare Parts** section for lists of these additional components. See the **Contact and Support** section to contact the Spare Parts department to purchase.

Instructions for Unboxing:

1. Open the applicator box and remove all loose items. These items are dispersed around the box and will either be in a bag, wrapped in bubble wrap, or wrapped in foam. The display unit is in its own foam box. These loose parts may include the following:

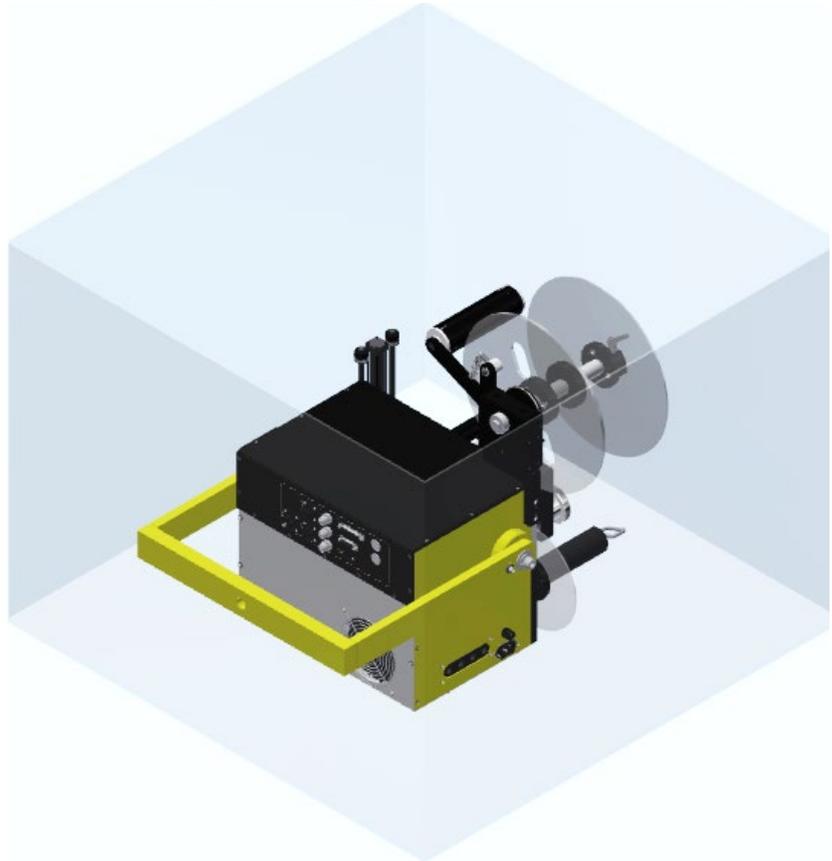
- Power cord
- HMI (Human-Machine Interface) Display screen
- Rewind pin
- Product detect sensor
- Air assist tube
- Light stack
- Crossover cable
- Encoder
- Multiple manifolds (if purchased)
- I/O cable

NOTE: Every applicator may or may not have all the above listed parts. Each applicator should have a variation of the above list.

2. Match all items to the items checked off on the *Applicator Component Checklist* provided [1A]. The parts listed on this checklist are specific to each customer.

3. Remove applicator from the box. Figure [3] highlights in yellow the correct places to lift the applicator out of the box.

- a. Use the help of a second person, a pump lift jack, or a powered system to lift the applicator. The easiest place to lift is from the U-arm which is designed to withstand the weight of the applicator.
- b. If there is no U-arm, lift from where the U-arm would be attached: the brackets/bolts.
- c. If lifting from the brackets/bolts is not possible, lift from underneath. The box may have to be dismantled to do this. Refrain from lifting at the front of the applicator to minimize possible damage.



[3] Boxed Applicator

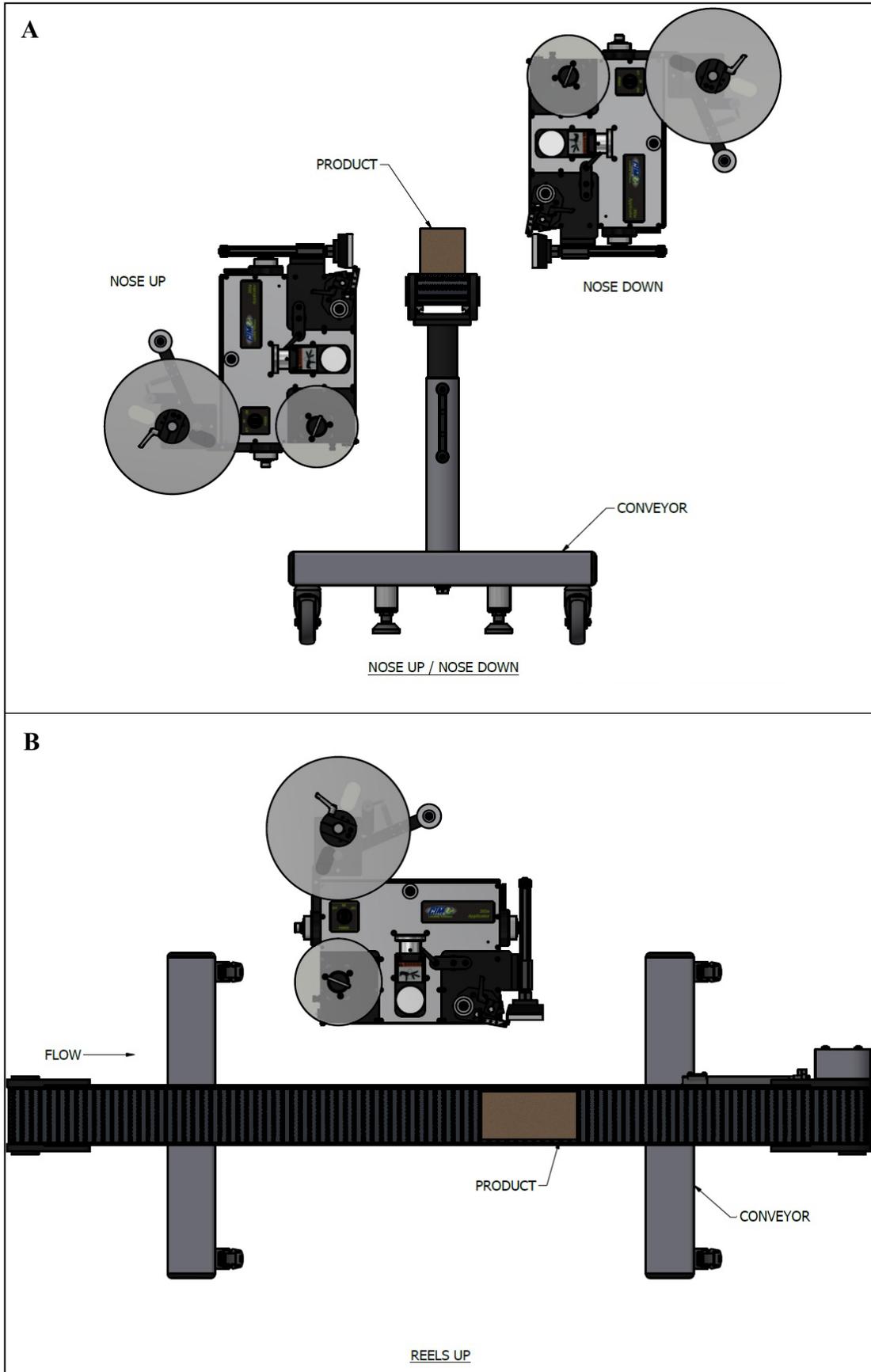


CAUTION: When lifting the applicator out of the box, do NOT lift by the dancer arm because it is held on by a spring. It is delicate and can be bent and/or broken. Refrain from lifting by any other part on the front of the applicator as these can also get damaged in the process.

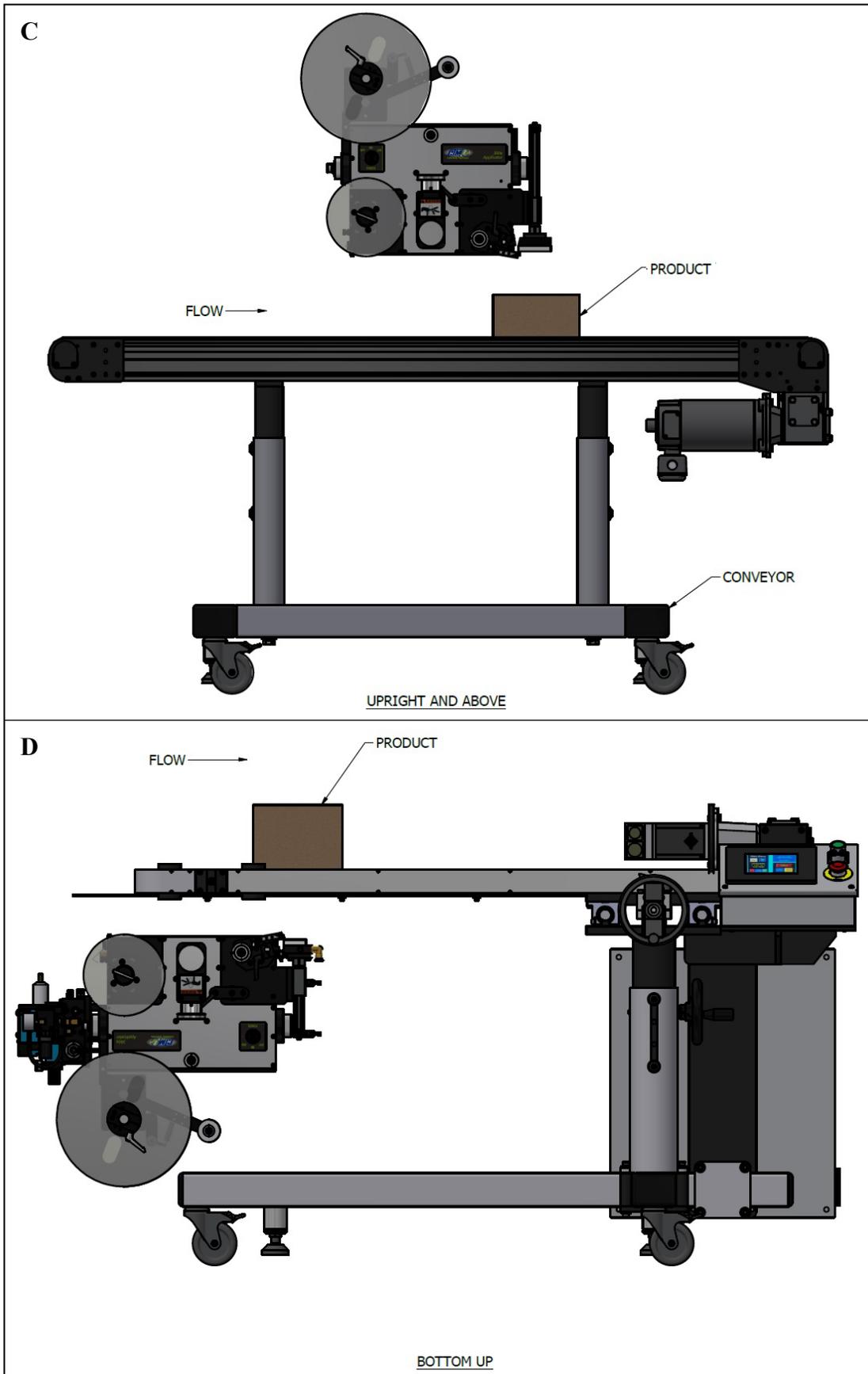


WARNING: Applicators can weigh 120lb or more. If there is no access to a pump lift pallet jack or powered system to lift the applicator out of the box, more than one person will be needed to lift and apply the applicators to the base system. Follow to your company's weightlifting guidelines!

APPLICATOR ORIENTATIONS



[4] Applicator Orientations



[4] Applicator Orientations (cont'd)

INSTALLATION

When assembling your applicator, the following tools are needed:

- Crescent wrenches
- Allen wrenches
- Pump lift jack
- Level

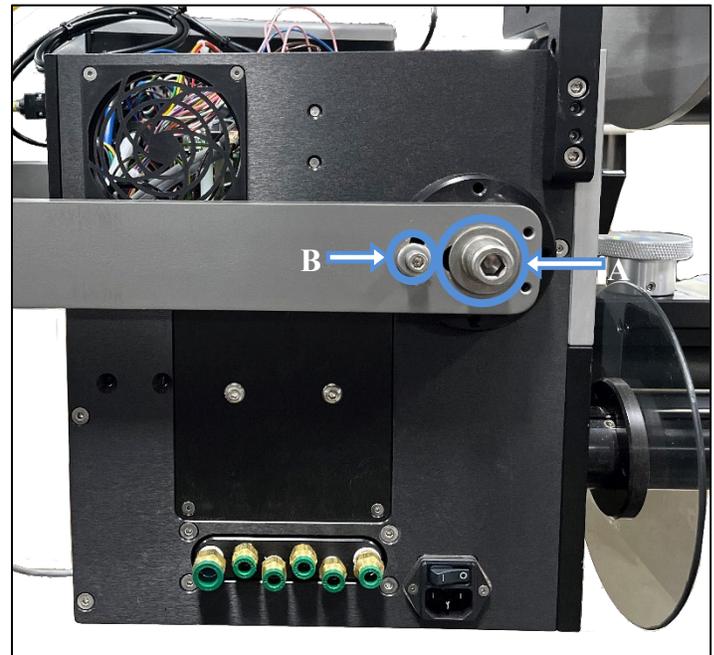
Follow the steps below to correctly install the applicator:

1. Attach the applicator to its mounting base using a $1\frac{1}{16}$ in. wrench. The applicator attaches via the U-arm.
2. Position the applicator in one of the four orientations:
 - Nose Up/Nose Down [4A]
 - Reels Up [4B]
 - Upright and Above [4C]
 - Bottom Up [4D]

3. To change applicator orientations, loosen the larger bolt [5A] but do not remove. This enables the U-arm to pivot and rotate.
4. Remove the smaller bolt in the slot hole [5B] using Allen wrenches.
5. Repeat Steps 3 and 4 for both sides of the applicator. Now the applicator can be adjusted to the correct orientation.
6. Reinstall the smaller bolts [5B] and retighten the larger bolts [5A] once the applicator is in the correct orientation.
7. Use a level to ensure the applicator is square and make any adjustments needed.

NOTE: *An applicator out of alignment can cause discrepancies within the labeling sequence.*

8. Mount HMI Display Unit to its permanent location: either a column mount or U-arm mount.
9. When the applicator is in the correct orientation, cables can be connected to their proper locations.



[5] Bolts to Adjust Orientation

Connecting Cables

Two cables always included with the 360y are the display cable and the power cable. The display cable is attached to the HMI display screen and the power cable is packed separately. Other cables included depend on customer choice. These cables plug into the back of the applicator on the connector faceplate [6]. The following are optional cables:

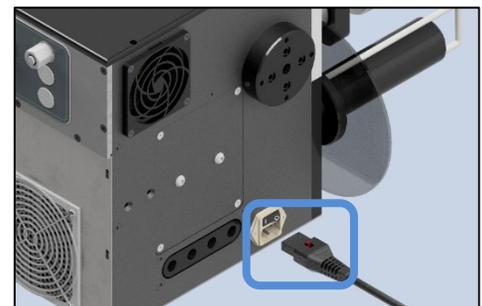
- I/O cable
- Encoder cable
- Crossover (Link) cable
- Low Label cable
- End of Web cable
- Product Detect cable
- Alarm (Light Stack) cable

If the cables do not have identification labels, each cable has a unique end connector so users can determine where they go by matching the cable's connector end to the applicator faceplate. The following are the standard connectors on the connector faceplate:

- **Alarm:** 7-pin CPC-13, socket connection for a three-stack alarm light: red light for Critical Alarms; amber light for Warning Alarms; and green light for when the applicator is ready to label.
- **Display:** 9-pin DB connection for the HMI display screen.
- **Encoder:** 8-pin, CPC-11 socket contact reverse gender receptacle for an external encoder connection.
- **End of Web (EOW):** 5-pin M12, B-code, socket contact reverse key receptacle for the end of web sensor connection.
- **I/O:** 15-pin, DB-15 connection, pre-wired for the operator to tie into to monitor various signals. For more information on the I/O signals and pin numbers.
- **Link:** 9-pin DB connection for the crossover (link) cable when two applicators are used for zero downtime labeling sequences.
- **Low Label:** 5-pin M12, A-code, socket connection for the low label sensor connection.
- **Product:** 4-pin M12, A-code, socket connection for the product detect sensor connection.
- **Valve:** 9-position CPC-13, pin connection for the valve bank connection to the applicator control.
- **Safety:** M12 8-pin, A-code, socket contact keyed receptacle. The safety connector puts the applicator into safe torque off and allows for monitoring of the safety circuit by the end user. Safe torque off is an internal hard disconnect of the servo motor. The pin configuration is as follows:
 - Pin 1: Input 1 (+)
 - Pin 2: 24VDC
 - Pin 3: Input 1 (-)
 - Pin 4: Input 2 (gnd)
 - Pin 5: Input 2 (-)
 - Pin 6: Reset 1
 - Pin 7: 0VDC
 - Pin 8: Reset

Correct Connections Instructions

1. Plug the power cable to the applicator on the side frame on the opposite side of the Nose assembly [6].
2. Plug in the display cable to the display slot on the faceplate [7I].
3. Plug in additional cables to the applicator. If you don't have any more cables to plug in, move on to Step 4.
 - a. Plug in the cable connected to the valve bank to the **VALVE** slot [7A].
 - b. Plug in the cable connected to the light stack to the **ALARM** slot [7B].
 - c. Plug in the encoder cable to the **ENCODER** slot [7C].
 - d. Plug in the end of web cable to the **WEB/TMP** port [7D].
 - e. Plug in the low label cable to the **LOW LBL** port [7E]. The low label sensor and end of web sensors come already mounted to the applicator (if purchased).
 - f. Plug in the product detect sensor cable to the **PRODUCT** port [7F].
 - g. Plug in the crossover cable to the **LINK** port [7G]. If your applicator has this cable
 - h. Plug in the I/O cable to the **I/O** port [7H].
 - i. Plug in the Safety cable to the **SAFETY** port [7J].
4. Plug the power cable to an outlet. See [System Requirements](#) section for power information.
5. Turn on air pressure, if needed. Your applicator is ready to be powered on.



[6] Power Cable

I/O PORT FUNCTIONS

The following is a list of the pre-wired functions of the I/O port. If other functions are needed, they can be added. All outputs are NPN (sinking) with 50 ma load. Inputs are also for sinking devices.

- **Pin #1 (DC Power):** 0 VDC
- **Pin #2 (DC Power):** 24 VDC at 3A
- **Pin #3 (System Ready):** If there is no critical alarms, the applicator is online, and the inhibit input off, then the ready output is on.
- **Pin #4 (Warning Alarm):** Output that turns on when the applicator enters a **Warning Alarm** state. The signal stays low until the alarm is reset. Refer to the Alarms section of the *360y Instruction Manuals* for the complete list of Warning Alarms.
- **Pin #5 (Critical Alarm):** Output that turns on when the applicator enters a **Critical Alarm** state. The signal stays low until the alarm is reset. Refer to the Alarms section of the *360y Instruction Manuals* for the complete list of Critical Alarms.
- **Pin #6 (A-Loop In):** Input used only when the applicator is connected to an external printer in a loose loop fashion. When this input is active, the applicator enters the **Alarm Loop** state.
- **Pin #7 (T-Loop In):** Input used only when the applicator is connected to an external printer in a loose loop fashion. When this input is active, the applicator activates the **Print Start** output.
- **Pin #8 (Loose Loop In):** Input used only when the applicator is connected to an external printer in a loose loop fashion. When this input is active, the applicator turns off the **Print Start** output.
- **Pin #9 (Printer Ready):** Input used to monitor the ready signal from an external printer.
- **Pin #10 (Print Start):** Output used to signal an external printer when to start its printing sequence.
- **Pin #11 (Product Detect):** Taking this input low starts the labeling sequence of the applicator.
- **Pin #12 (Inhibit):** Input that stops the applicator from applying labels and the System Ready output is turned off while this input is on.
- **Pin #13 (Tamp Home Output):** Output that is turned on if the pneumatic actuator is in its home position. (Requires the purchase of the Tamp Home Sensor).
- **Pin #14 (Label On Pad Output):** Output that is turned on if the Label On Pad vacuum sensor is active. (Requires the purchase of the Label On Pad Vacuum Sensor).
- **Pin #15 (Spare):** Not Connected

POWERING-ON THE APPLICATOR

1. Turn on the applicator by flipping the switch located above the power cable seen in **Figure [6]** on page 8. As the applicator wakes up, the **Power-On** screen appears [8].
2. The Power-On sequence is finished when the **Main Menu** screen appears [9].

NOTE: The box in the upper right-hand corner of Figure [9] says something different for each nose type and orientation. The box is blue when the applicator is disabled and green when the applicator is enabled. The right-hand Merge applicator Main Menu is shown here for reference.



[8] Power-On Screen

[9] Main Menu

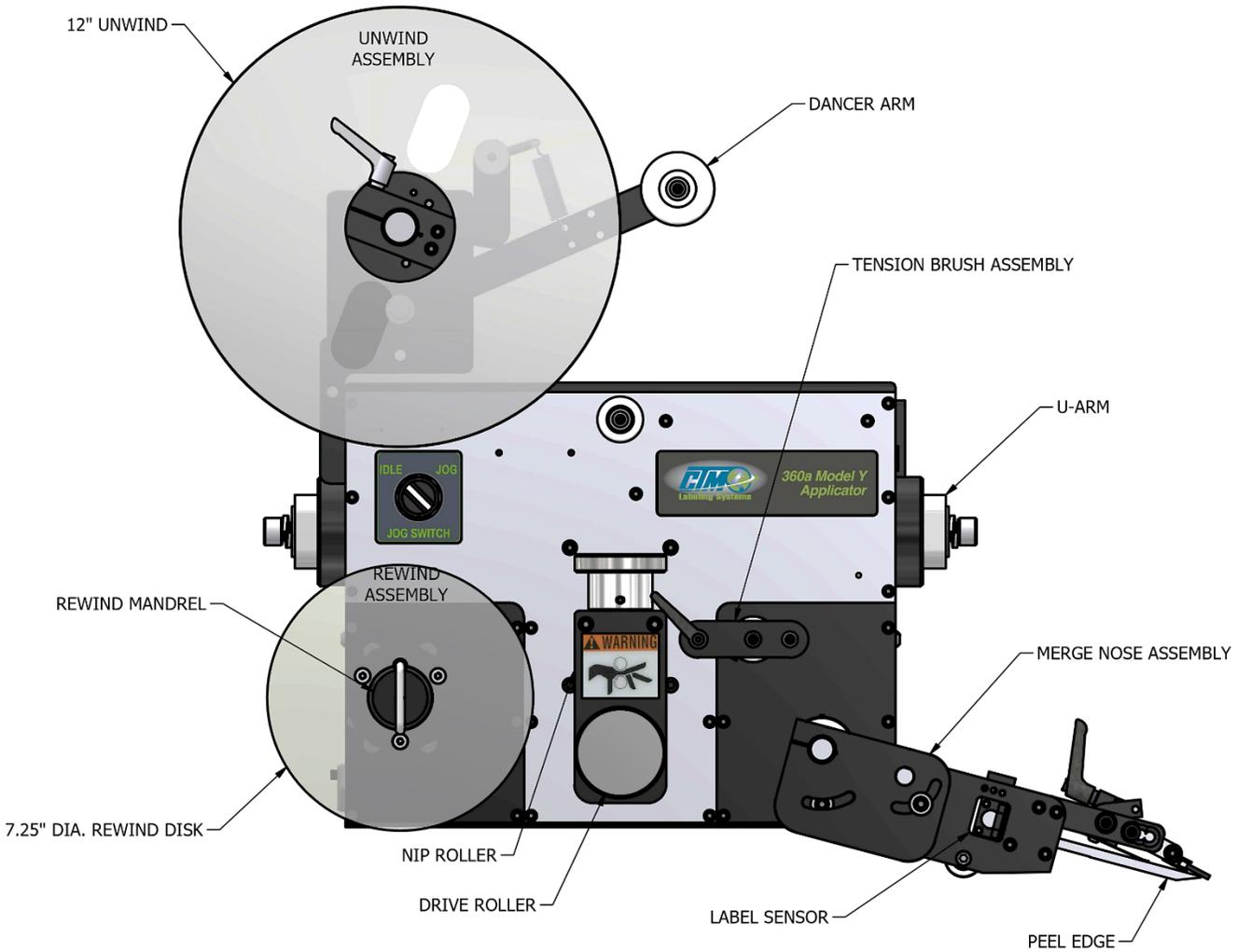
EQUIPMENT OVERVIEW

The following sections show what the basic, standard applicator setups should look like. If your setup is a little different check out the web path diagrams listed on our [website](#). The following is a list of where to find the web path diagrams for each nose assembly:

- *Air Blow setup*: pages 1 – 60.
- *RVB setup*: pages 61 – 115.
- *Merge setup*: pages 116 – 167.
- *Tamp setup(s)*: pages 168 – 199.
- *DAT setup*: pages 200 – 207

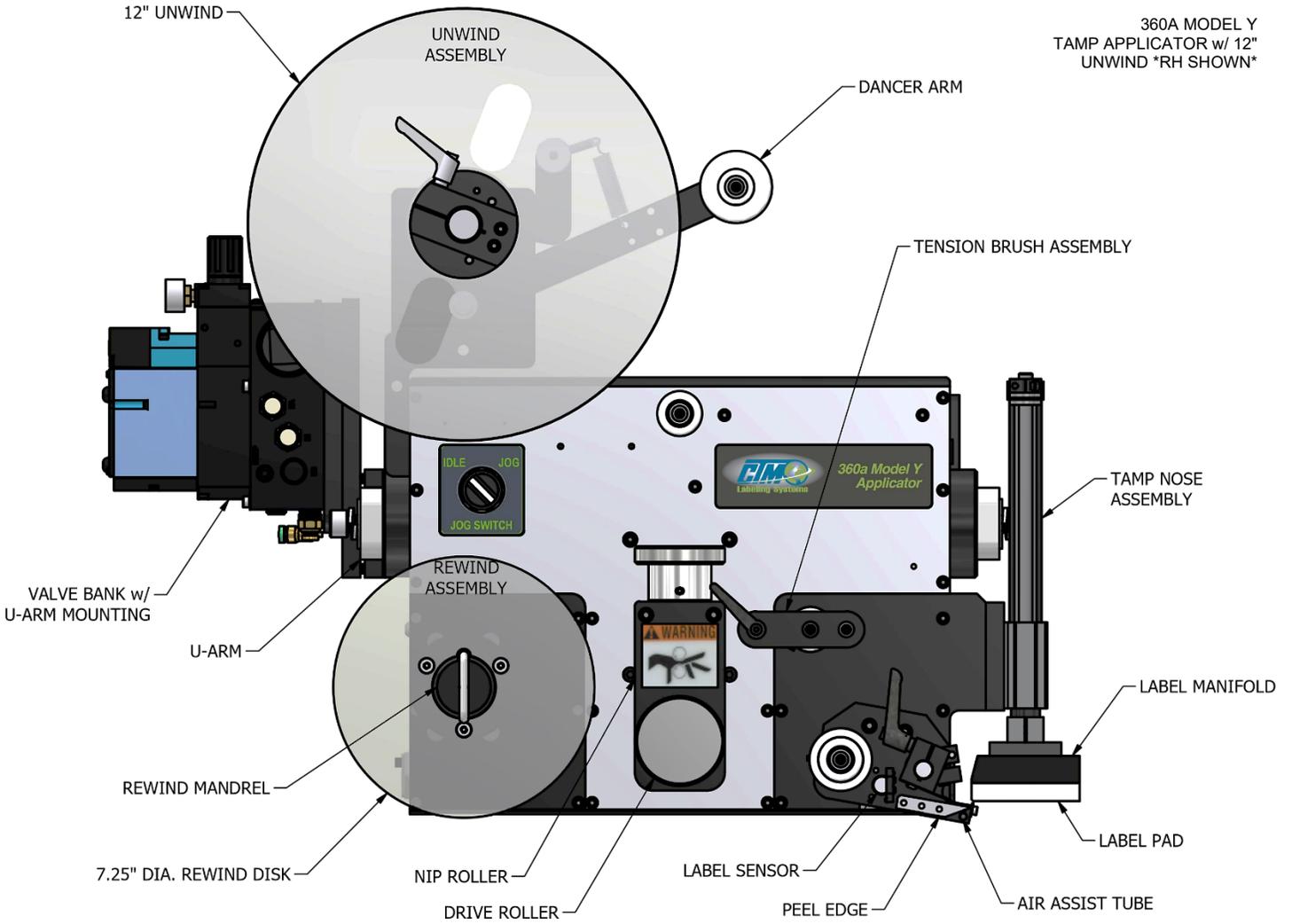
Merge Applicator

360A MODEL Y
MERGE APPLICATOR
RH SHOWN



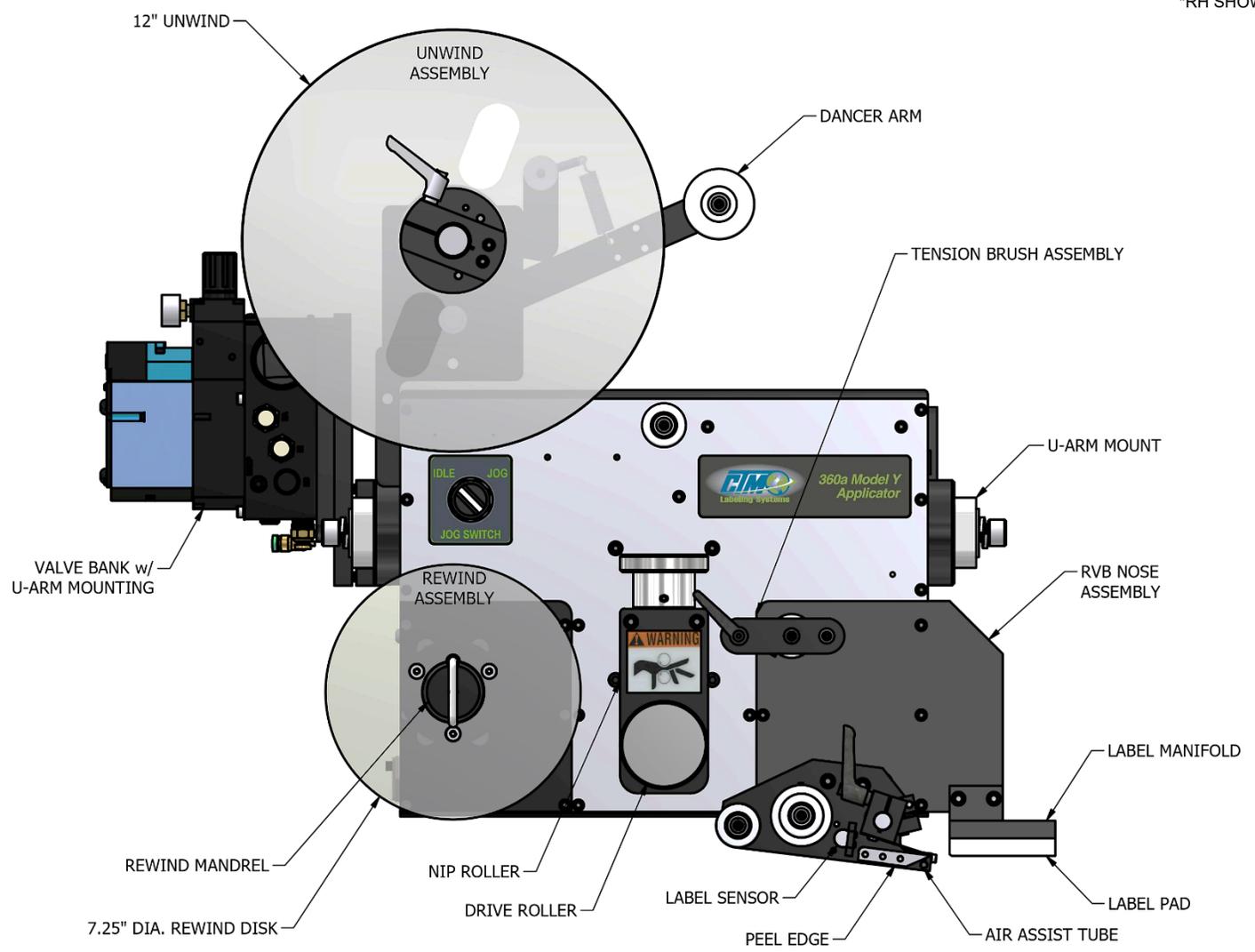
Tamp Applicator

360A MODEL Y
TAMP APPLICATOR w/ 12"
UNWIND *RH SHOWN*



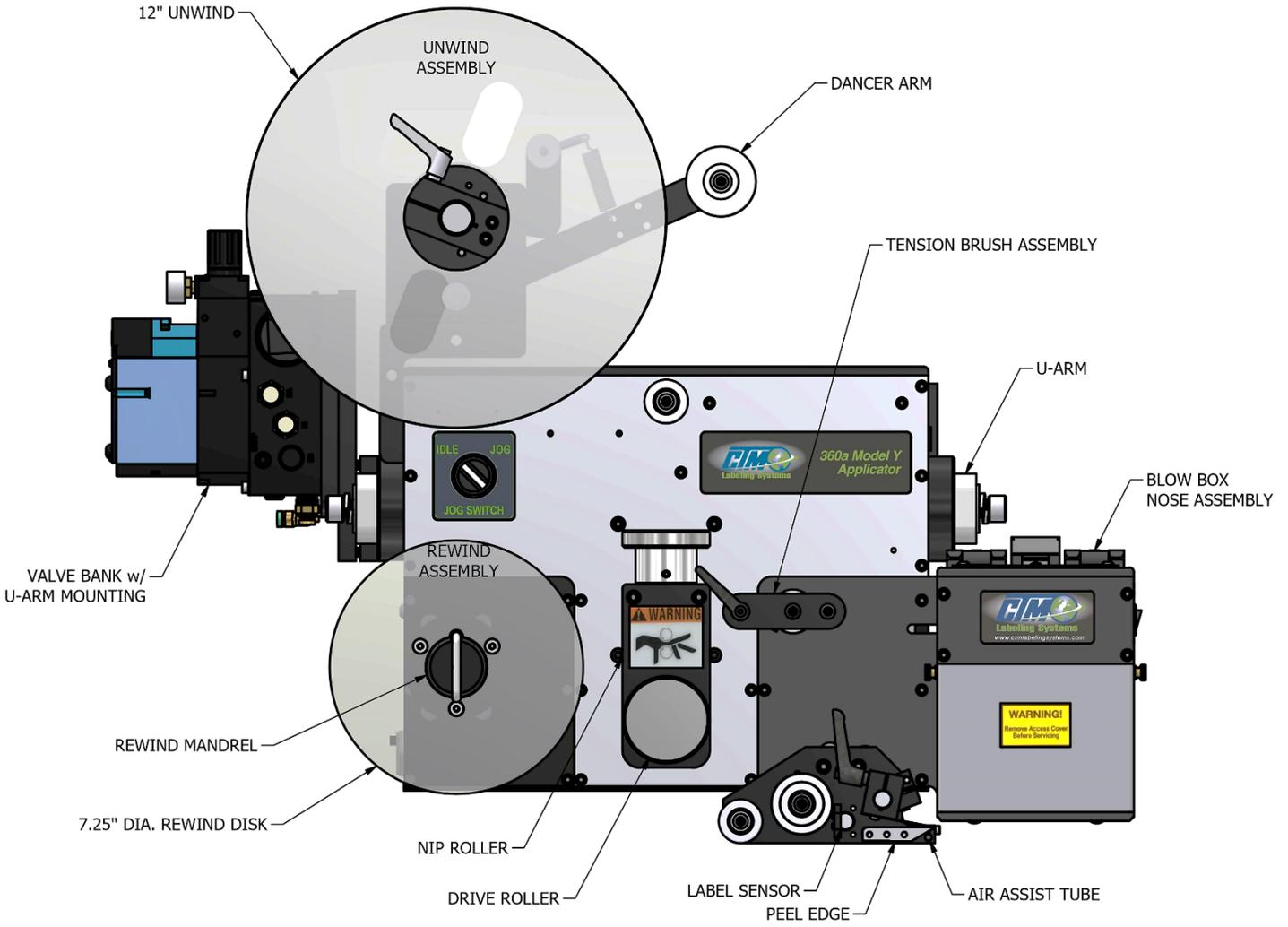
RVB Applicator

360A MODEL Y RVB
 APPLICATOR w/ 12" UNWIND
 RH SHOWN



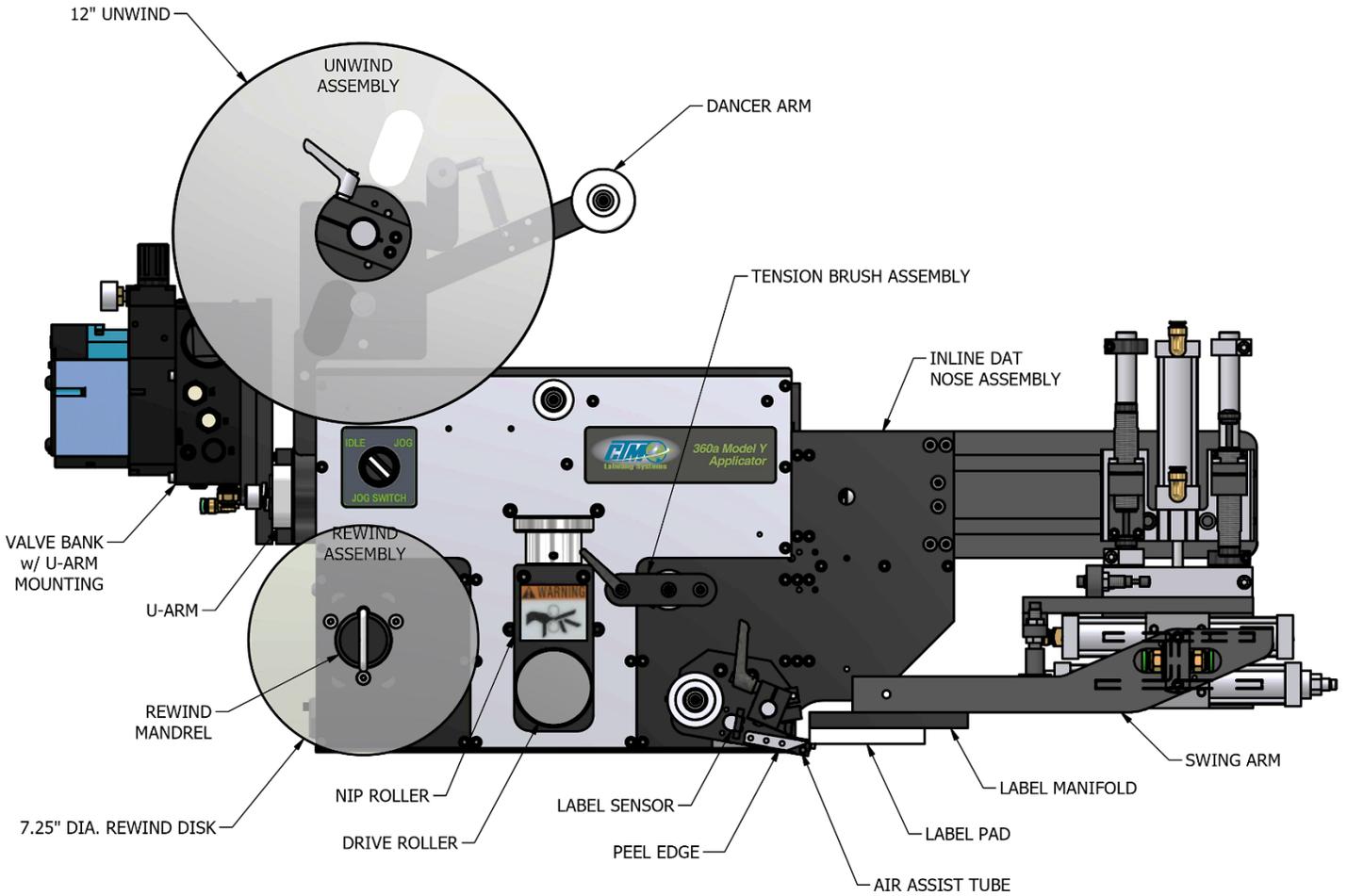
Air Blow Applicator

360A MODEL Y AIR BLOW
APPLICATOR w/ 12" UNWIND
RH SHOWN



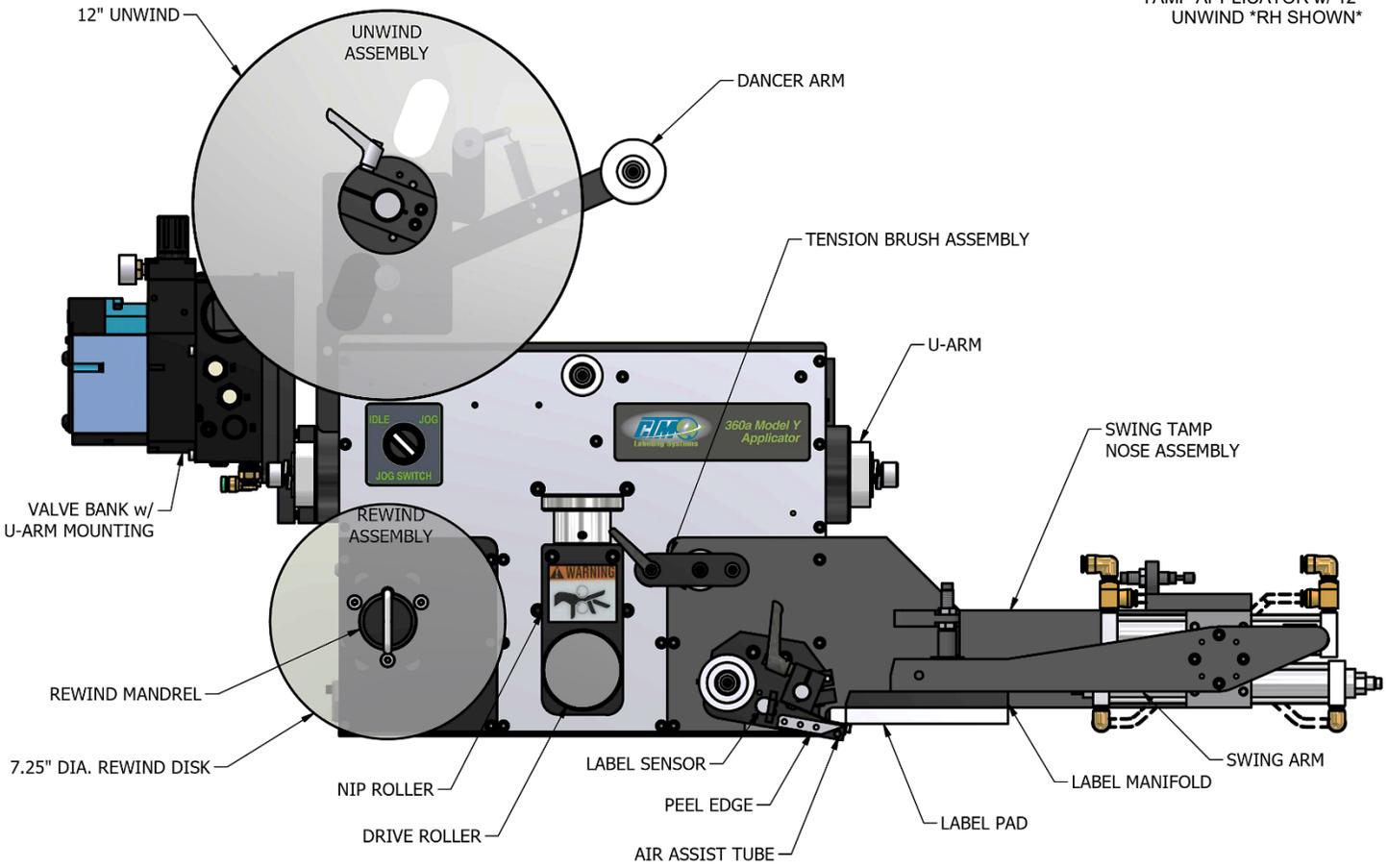
DAT Applicator

360A MODEL Y INLINE DAT
APPLICATOR w/ 12" UNWIND
RH SHOWN



Swing Tamp Applicator

360A MODEL Y INLINE SWING TAMP APPLICATOR w/ 12" UNWIND *RH SHOWN*



DECOMMISSIONING THE APPLICATOR

When the applicator no longer functions correctly, it needs to be decommissioned properly. The applicator needs to be taken down from its permanent mount and then disposed of. There are certain regulations that need to be followed when this happens.



CAUTION: When lowering the applicator from the stand, do NOT lift by the dancer arm because it is held on by a spring. It is delicate and can be bent and/or broken. Refrain from lifting by any other part on the front of the applicator as these can also get damaged in the process.



WARNING: Applicators can weigh around 130lb or more. If there is no access to a pump lift pallet jack or powered system to lower the applicator from the stand, more than one person will be needed to lift and remove the applicators to the base system. Follow to your company's weightlifting guidelines!

Dismantling the Applicator

1. Power off the applicator.
2. Disconnect all air connections.
3. Unplug power cable from the outlet.
4. Unplug all other cables connected to the applicator.
5. Put the applicator in the upright and above position as seen in [Figure \[4C\]](#) on page 6.
6. Remove all sensors, if needed.
7. Dismount the applicator from its previously permanent location.
8. Dispose of the applicator

Disposing of the Applicator

When ready to dispose of your applicator adhere to local state and federal restrictions.

OPERATOR'S MANUAL

LABEL SETUP

After the applicator is mounted and in the correct orientation, labels can be put on and threaded through the applicator. Label sensors also need to be set up and the applicator needs to be tested to ensure it is correctly dispensing labels.

Threading Labels

1. Turn the lock lever handle on the outer unwind disk [1A] and remove it [1B].

NOTE: *If the handle is too close to the unwind disk, pull it out slightly to get leverage and rotate the lever to a better position.*

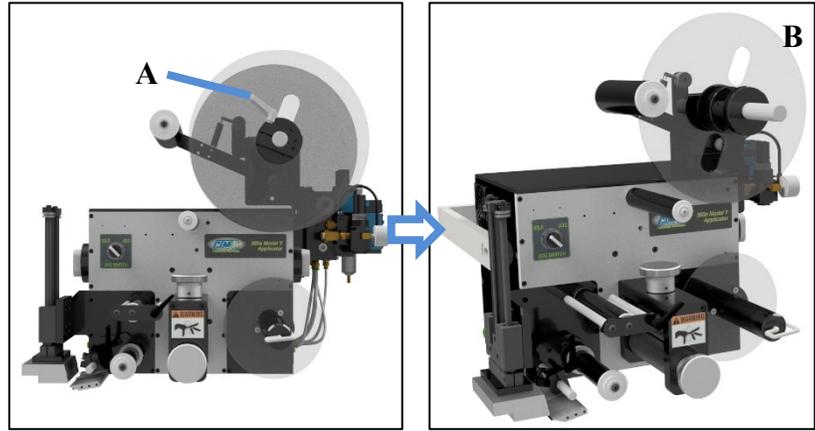
2. Ensure the inner unwind disk is at least 1¼ in. away from the applicator faceplate.

NOTE: *This measurement may change if the labels are threaded center-justified or outside-justified.*

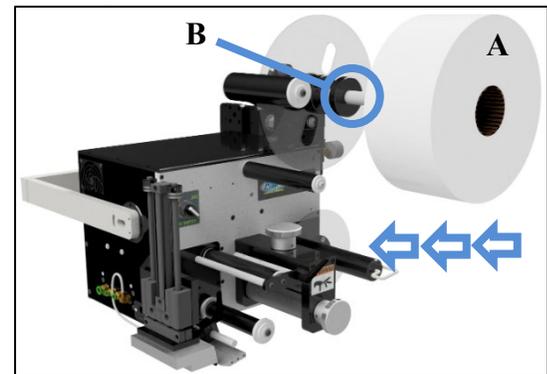
3. Slide a roll of labels over the unwind hubs and push against the inside disk [2A].
4. Ensure the labels are face up as they come off the unwind. Core supports [2B] can be used and adjusted for wider rolls of labels.
 - a. To adjust a core support, set it to 1/8 in. less than the label width, with the tapered edge facing outward.
5. Replace the outer disk, making sure it is pressed against the labels and **NOT** the core support. Lock the disk into place.
6. Remove the rewind pin [3A] and remove approximately 3 feet of labels [3B] from the liner on the leading part of the label roll.
7. Thread labels through the applicator by following the proper web path diagram. Web path diagrams can be found on our [website](#).
 - a. When going through the nip and drive rollers turn the knob on top of the nip assembly **counterclockwise (CCW)** to “open” the two rollers.
 - b. If the applicator is an air blow or tamp ensure the web goes between the peel edge and air assist tube.
8. Lay the label liner over the pin slot and replace the pin so it is holding label liner against rewind mandrel.
9. Align guide collars (if any) with the unwind assembly.

NOTE: *Guide collars are commonly used for smaller width labels to keep the web liner in line with the roll of labels on the unwind.*

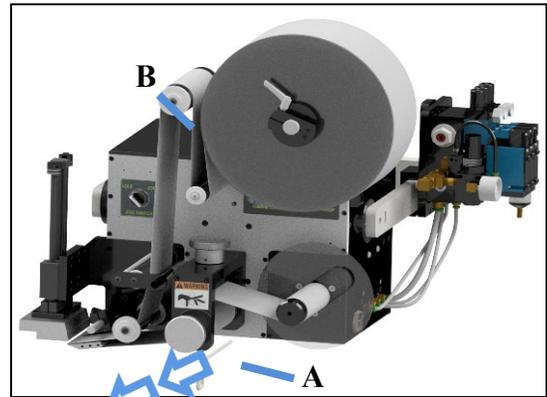
10. Turn the nip roller assembly **clockwise (CW)** to “close” it so it is touching the drive roller.
11. Ensure the label tension brush is holding pressure against the web liner. Turn the lever on the tension brush assembly to adjust if needed [4A].
12. Ensure the spring block assembly is in the center of the label and is applying slight pressure to the top of the labels [4B].
13. Run multiple labels so that any tracking issues are corrected.



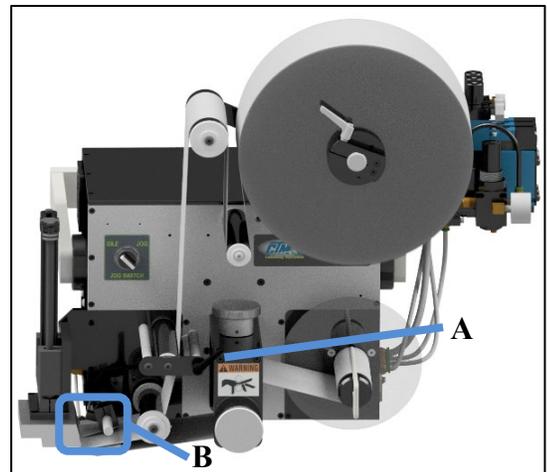
[1] Removing Outer Unwind Disk



[2] Roll of Labels



[3] Rewind Pin and Labels



[4] Tension Brush Lever and Spring Block Assembly

Sensors

The sensors listed in the following sections are used for label detection and product detection.

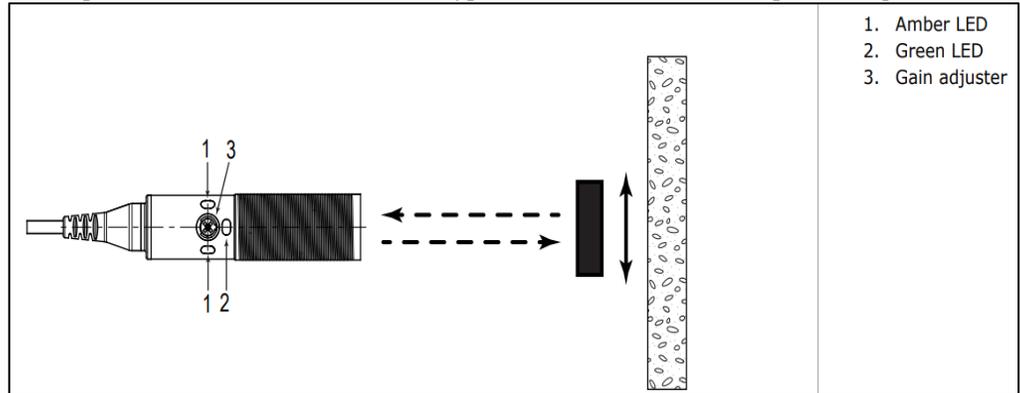
NOTE: *The following are standard sensors that may or may not be installed on your applicator. If there is a sensor on your applicator that is not covered, and you would like more information please see the [Contact and Support](#) section to contact the manufacturer.*

Banner S18-2 Sensor

This sensor can be retroreflective, diffused, or polarized and comes with various types of reflectors as well as a potted or quick disconnect cable.



[5] Banner S18-2 Sensor



[6] Sensor Light Array

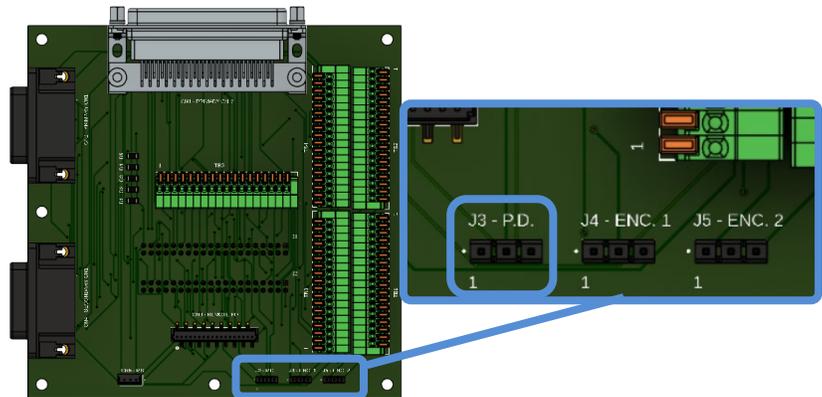
Fixed Field PD Sensor

This sensor is distance-base and does not need a reflector. It has a small detection range from 25mm to 50mm.

1. Mount the sensor and ensure there is power to it. The green LED should be on when looking at the sensor.
2. Move a product in front of the sensor and the amber LED turns on.

Retroreflective Setup

1. Mount the sensor and reflector and ensure there is power to the sensor. The green LED should be on when looking at the sensor.
2. Move a product between the sensor and the reflector and the amber LED turns on.
3. For trailing edge detect, remove the top cover from the applicator and use a pair of pliers to move the **J3-PD** plastic jumper [7] from one side to the other inside the applicator.



[7] Sensor Jumper

Polarized Retroreflective Setup

1. Mount the sensor and reflector and ensure there is power to the sensor. The green LED is on when looking at the sensor.
2. Move a product between the sensor and the reflector. The amber LED turns on.
3. For trailing edge detect, remove the top cover from the applicator and use a pair of pliers to move the **J3-PD** plastic jumper [7] plastic jumper from one side to the other inside the applicator. The polarized sensor needs a depolarizing reflector to sense clear products.

Diffused Setup

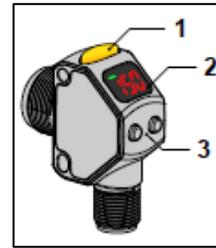
1. Mount the sensor and place a product in front of it.
2. Adjust the sensitivity of the sensor until the lights on the sensor are fully on and not blinking.
3. Remove the product and verify that the sensor turns off. If the product has multiple colors on it, set the gain using the darkest color of the product.

Banner Q3X Laser sensor

This laser sensor [8] senses products on a system. Basic instructions and descriptions are listed in this section. If additional information is required refer to the manufacturer instruction literature.

Table 1

KEYS AND LEDS	
Figure [8]	
1:	Output Indicator
2:	Display
3:	Buttons: MODE, and TEACH
Figure [9]	
1:	Stability Indicator: (STB: Green)
2:	Active TEACH Indicators: <ul style="list-style-type: none"> <i>DYN</i>: Dynamic TEACH <i>WND</i>: Symmetric window active (Amber)



[8] Banner Q3X Laser Sensor



[9] Banner Q3X Laser Sensor Display

Laser Description and Safety Information

Class 2 Lasers



WARNING: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Do NOT attempt to disassemble.

Class 2 lasers emit visible radiation in the wavelength range from 400nm to 700nm, where eyes are protected by aversion responses such as blinking. This reaction provides adequate protection under reasonably foreseeable conditions of operation, including the use of optical instruments for intrabeam viewing.

Safety Notes

Low-power lasers are, by definition, incapable of causing eye injury within the duration of a blink (aversion response) of 0.25 seconds. They also must emit only visible wavelengths (400 to 700 nm). Therefore, an ocular hazard may exist only if individuals overcome their natural aversion to bright light and stare directly into the laser beam.

The safety label [10] must be installed on Q3X sensors that are used in the United States.

1. Remove the protective cover from the adhesive on the label.
2. Wrap the label around the Q3X cable [11].
3. Press the two halves of the label together.



[10] Safety Label

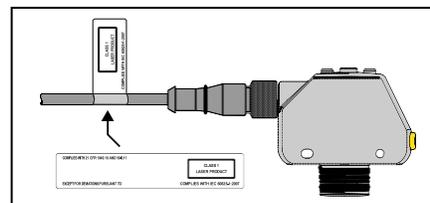
NOTE: Position the label on the cable in a location that has minimal chemical exposure.

Installation

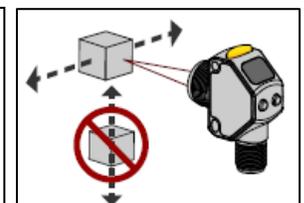
Correct sensor-to-target orientation is important to ensure proper sensing. To ensure reliable detection, orient the sensor in relation to the target to be detected [12].

Table 2

LASER SPECIFICATIONS	
Laser Wavelength:	655nm
Output:	<0.42mW
Pulse Duration:	5µs



[11] Safety Label Installation



[12] Sensor-to-Target Orientation

Basic TEACH Instructions

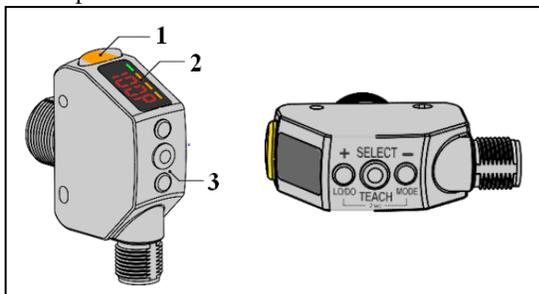
1. Align the sensor to a stable reference surface and firmly mount the sensor in this alignment.
2. Press and hold **TEACH** button for longer than 2 seconds to start the **TEACH** mode.
3. Press again to teach the reference surface. After the reference surface is taught, the currently selected switch point value is displayed, and the sensor returns to **RUN** mode.
4. Present the target and press again to teach the target. After the target is taught and the sensor waits for the second target (but only if required by the selected TEACH mode or returns to RUN mode.)
5. Complete steps (a.) and (b.) only if prompted by the sensor for the selected TEACH mode:
 - a. Present the second target.
 - b. Press to teach the target. After the target is taught, the sensor returns to RUN mode.

Manual Adjustments

1. Manually increase or decrease gain using the and buttons.
2. From RUN mode, press either or one time. The current signal strength value flashes slowly.
3. Press to increase the sensor gain or press to decrease the sensor gain. After one second of inactivity, the new normalized signal strength value flashes rapidly, the new setting is accepted, and the sensor returns to RUN mode.

Banner Q4X Laser Sensor

This laser sensor [13] is used to sense products on a system. Basic instructions and descriptions are listed in this section. If additional information is required refer to the manufacture instruction literature.



[13] Banner Q4X Laser Sensor

Table 3

KEYS AND LEDS	
1:	Output Indicator
2:	Display
3:	Buttons: SELECT: TEACH: LODO, MODE

Laser Description and Safety Information



WARNING: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Do NOT attempt to disassemble this sensor for repair. A defective unit must be returned to the manufacturer.

Class 1 Lasers

Class 1 lasers are safe under reasonably foreseeable conditions of operation, including the use of optical instruments for intrabeam viewing.

The safety label [14] must be installed on Q4X sensors that are used in the United States.

1. Remove the protective cover from the adhesive on the label.
2. Wrap the label around the Q4X cable [15].
3. Press the two halves of the label together.

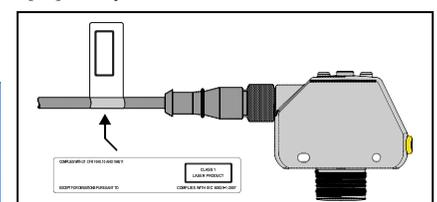
NOTE: Position the label on the cable in a location that has minimal chemical exposure.



[14] Safety Label

Table 4

LASER SPECIFICATIONS	
Laser Wavelength:	655nm
Output:	<0.20mW
Pulse Duration:	7µs to 2ms



[15] Label Installed on Sensor

Installation

Optimize the reliable product detection by applying the following principals when selecting your reference surface, positioning your sensor relative to the reference surface, and presenting your target.

1. Select a reference surface with the following characteristics where possible:
 - Matte or diffuse surface finish
 - Fixed surface with no vibration
 - Dry surface with no build-up of oil, water, or dust
2. Position the reference surface between 50mm and 300mm.
3. Position the target to be detected as close to the sensor as possible, and as far away from the reference surface as possible.
4. Angle the sensing beam relative to the target and relative to the reference surface 10° or more.

Basic TEACH Instructions

1. Align the sensor to a stable reference surface and firmly mount the sensor in this alignment.
2. Press and hold **TEACH** button for longer than 2 seconds to start the TEACH mode.
3. Press **TEACH** to teach the reference surface. After the reference surface is taught, the currently selected switch point value is displayed, and the sensor returns to RUN mode.

The Q4X sensor records the distance to the reference surface and the amount of laser light returned by the reference surface. The output switches when an object passing between the sensor and the reference surface changes the perceived distance or amount of returned light. The Q4X detects small changes caused by transparent and clear objects. Typical reference surfaces are metal machine frame, conveyor side rail, or mounted plastic targets.

Manual Adjustments

Manually adjust the sensor switch point using the **+** and **-** buttons.

1. From RUN mode, press either **+** or **-** one time. The current switch point value flashes slowly.
2. Press **+** to move the switch point up or press **-** to move the switch point down. After 1 second of inactivity, the new switch point value flashes rapidly, the new setting is accepted, and the sensor returns to RUN mode.

After the TEACH process is completed, the taught reference point—which is a combination of the measured distance and returned signal intensity from the reference target—is recorded by the sensor. Use the push buttons to manually adjust the switch point. Manual adjustments change the sensitivity of the thresholds around the taught reference point but does not move the taught reference point. Press **+** to increase the sensitivity and press **-** to decrease the sensitivity. After re-positioning the sensor or changing the reference target, re-teach the sensor.

Table 5 shows the current match percentage relative to the taught reference point. The switch point defines the sensitivity the output switches when the current match percentage crosses the switch point. Your specific application may require some adjustment of the switch point, but these values are recommended starting switch points for common applications.

Table 5

SWITCH POINT (%)	TYPICAL APPLICATIONS
75 (default)	Default, recommended for PET bottles and Trays
88	Recommended for thin films
50	Recommended for tinted brown, tinted green, or water-filled containers

Light Operate/Dark Operate

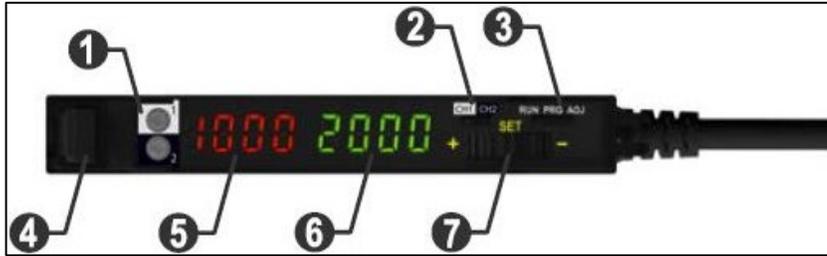
The default output configuration is light operate. To switch between light and dark operate, use the following instructions:

1. Press and hold **LO/DO** for longer than 2 seconds. The current selection displays.
2. Press **LO/DO** again. The new selection flashes slowly.
3. Press **SELECT** to change the output configuration and return to RUN mode.

NOTE: *If neither SELECT nor LO/DO are pressed after Step 2, the new selection flashes slowly for a few seconds, then flashes quickly and the sensor automatically changes the output configuration and returns to RUN mode.*



Banner DF-G3 Fiber Optic Sensor



[16] Banner DF-G3 Fiber Optic Sensor

Table 6

KEYS AND LEDs	
1:	Dual Output LEDs
2:	CH1/CH2 Switch (Dual Output)
3:	RUN/PRG/ADJ Mode Switch
4:	Lever Action Fiber Clamp
5:	Red Signal Level
6:	Green Threshold
7:	+/SET/- Rocker Button

There are two modes of teaching: **Dynamic** and **Static**. Static Teach or Two-point Teach is the most common and involves teaching an **On** state then teaching the **Off** state.

Two-Point Teach Procedure

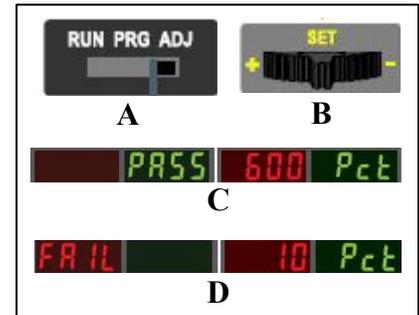
Two-Point Teach programs sensitivity by statically presenting two conditions to the sensor. The sensor locates a single sensing threshold midway between the taught conditions. The adaptive threshold system remains in effect during RUN mode to automatically adjust for changes in the light or the dark conditions.

When Two-Point Teach mode is used to program sensitivity, the output **On** state (light or dark operate) remains as it was last programmed. To change to either light or dark operate, use the **SETUP** mode.

Sensitivity may be adjusted at any time when the sensor is in **ADJ** mode by using the **(+)** and **(-)** rocker switch. When a manual adjustment is made, the midway threshold system is adjusted.

Programming the Sensor

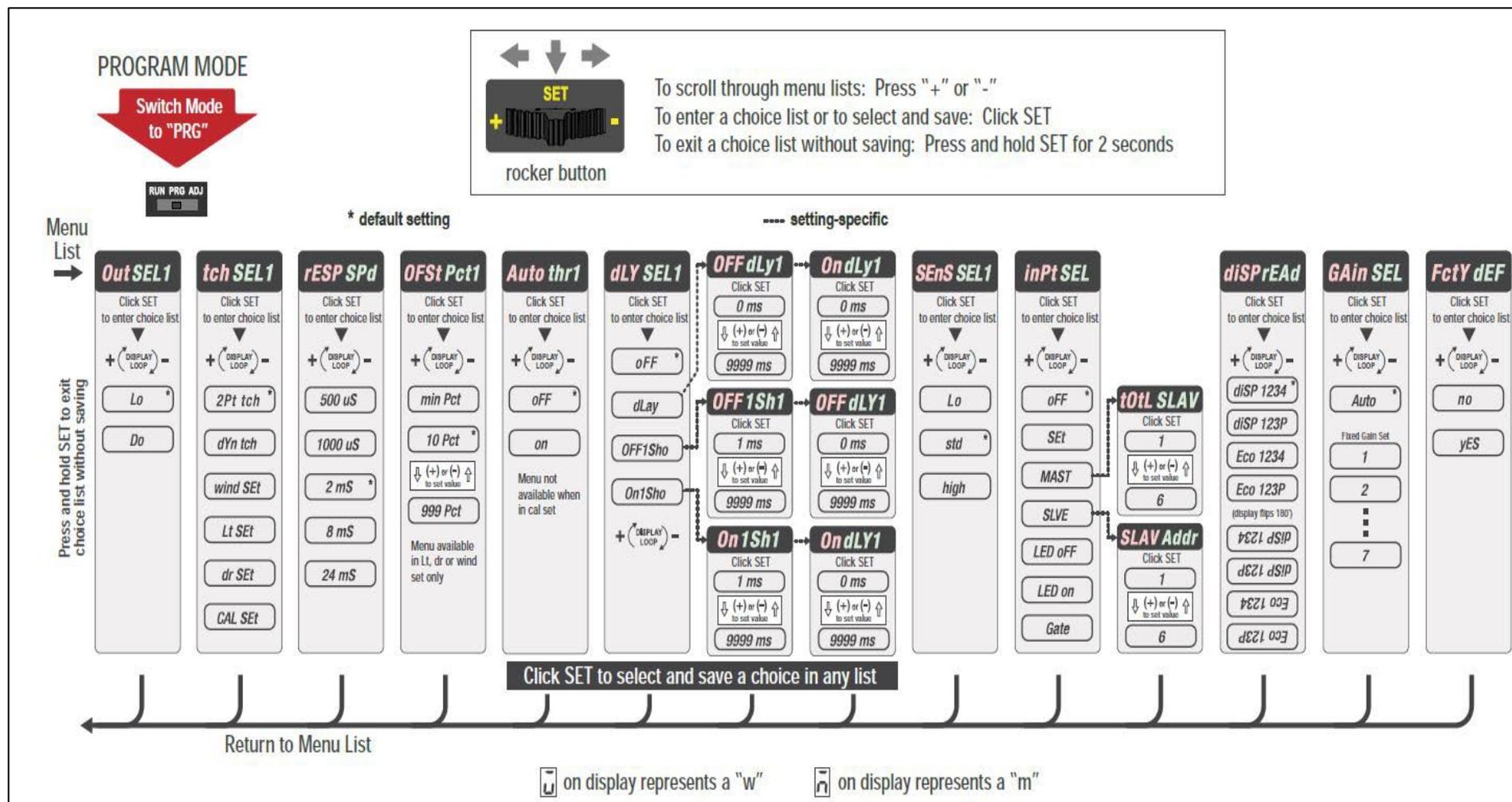
1. Switch the mode switch to **ADJ** [17A].
2. Present the first condition (either liner only or label and liner).
3. Click the **SET** rocker button [17B].
4. Present the second condition.
5. Click the **SET** Rocker button again [17B].
6. The display will show either **PASS** [17C] or **FAIL** [17D].



[17] Programming the Sensor

Configuration

The configuration of the sensor can be navigated by following the below image.



[18] Sensor Configuration



Label Sensor Setup

The label sensor needs to be positioned correctly and “taught” the correct way to detect labels. There are two different ways to “teach” label sensors: **Auto Teach** and **Manual Teach**.

Auto Teach: The applicator automatically sets the label sensitivity, label length, and label stop values. It also calculates the short feed distance if the multi-panel apply option is enabled prior to running auto setup. Refer to the **Sensor Teach** section to select whether you want to sense the leading or trailing edge of the label and follow the instructions.

Manual Teach: Manual teach function is used instances where auto teaching does not work. It adds extra steps to teach the same variables taught in the auto teach. See the **Sensor Teach** section for more information.

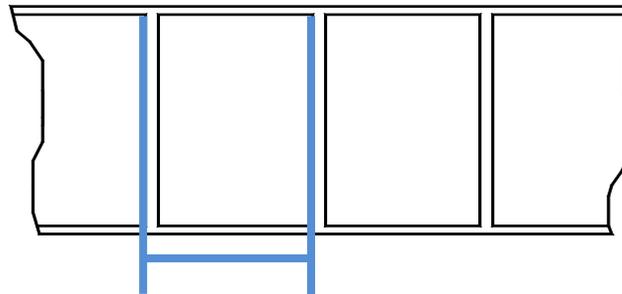
The label sensor is connected to a U-shaped optical receptacle via fiber optic cable. Ensure there are no sharp bends in the fiber optic cable for proper operation of the label sensor. The U-shaped receptacle is also referred to as sensor forks which contain a light emitter and receiver. Keep both surfaces free of contaminants to ensure accuracy. The light emitter should be the lower fork.

1. Position the web liner inside the forks so the sensor sees the label surface. The contrast inside the label should be uniform to avoid false edge detections.
2. If any part of the web liner is visible, move the forks in or out so the sensor does not detect this area on the label.
3. Select the edge option that gives the most reliable performance for your label. The label sensor has two detection modes: leading edge and trailing edge detection.

Label Length Setup

The label length can manually be put into the applicator instead of doing a teach. The length needs to include the gap between labels as shown in Figure [19].

NOTE: Set the label length to exactly what it is. If there is a missing label on the web liner, it travels the label length distance. This is important because of the label sensor's position relative to the peel edge. If a value is entered outside of the allowable values, the display resets the value to its previous number.



[19] Label Length

Label Static Test

It is important to know if the applicator can consistently place labels in the same place over and over on the product. Without discerning this it will be unknown whether label placement problems that occur on the line are due to the applicator, or the product being labeled. When the previous Applicator Setup steps are finished, run through the following steps to verify your setup is complete.

Static Test for Tamps and Air Blow Labels

1. Enable the applicator and tamp arm and present the product to the manifold.
2. Configure the applicator for Normal Tamp or Blow applications. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode**. Tap the **Up** or **Down** arrows until **Normal Tamp** or **Blow** option appears.
3. Tap the **Jog** button a few times. This makes the applicator dispense labels without going through the labeling sequence.
4. Ensure the labels are consistently stopping in the same place on the product. If they are, go to Step 12; if not, go to Step 5.
5. Check the label stop. One label should be completely dispensed off the liner while the next label is $\frac{1}{32}$ in. away from the peel edge.
 - a. If this varies more than $\frac{1}{32}$ in. with each cycle, reset the label sensor. Start at the Main Menu and tap **Setup Menu > Configuration Menu > Reset Label Sensor > Continue**.
 - b. If there are still problems, see the [Troubleshooting Chart](#) and follow the suggestions. When this is corrected retry the static test.
6. Ensure the label pad or grid surface is clean. If clean, go to Step 7. If not, clean and re-try the static test again.
7. Ensure the vacuum is set correctly.
 - a. If the label flutters when feeding across the label pad, the vacuum is too high.
 - b. If the label falls off or moves after the label has left the liner, the vacuum is too low.
 - c. If the label feed looks smooth go to Step 8.
8. Adjust the air pressure by turning the knob on the vacuum valve on the valve bank.
9. Adjust the air assist tube by using an Allen wrench to loosen the screw next to the air assist tube until the label feeds more consistently onto the label pad or grid.
10. Re-try the static test. If the results are still poor, go to Step 11. Otherwise go to Step 12. If having difficulties correctly positioning the air assist tube and pressure, see the [Air Blow Air Assist Setup](#) section of the manual.
11. Ensure that there are no flaws with the label stock. Try another roll of labels and see if the stack changes.
12. Check the distance from the label pad or grid to the product. If the distance is too large, the labels may float too much. Try lowering the applicator so the label pad or grid just clears the product (within $\frac{1}{8}$ in.)
13. If the applicator has a Tamp or RVB nose, ensure the label pad is made for the label you're using. Uncovered holes on the label pad reduces the available vacuum used to hold the label in place and results will be uncertain.
14. If the applicator has an Air Blow nose, ensure the air jets pattern is correct. If the jets are improperly balanced the labels will not stack well.

Static Test for Merge Label

1. Configure the applicator for Merge applications. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode**. Tap the **Up** or **Down** arrows until the **Merge** option appears.
2. Enable the applicator and turn on the conveyor. Run one product multiple times past the applicator at the same speed with no variables changed.
3. If the labels stack, the static test is finished. If they don't stack, check label stop and adjust. See the [Merge Applicator Setup](#) section for more information.
4. Run the product past the applicator again. If the label stack is still not consistent, reset the label sensor and retry the static test.
5. If the stack is consistent the static test is done; if not, ensure the product is being consistently presented to the applicator.

Static Test for Corner Wrap Label

1. Configure the applicator for Corner Wrap applications. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode**. Tap the **Up** or **Down** arrows until the **Corner Wrap** option appears.
2. Enable the applicator and tamp.
3. Increase the air blast pressure to **40 PSI** on the **Air Blast valve** on the valve bank. Turn the knob to adjust.
4. Disable the encoder option by starting at the Main Menu and tapping the **Setup Menu > Setup Passcode > Configuration Menu > Applicator Options > Encoder Option** to turn off.
5. Extend the swing arm assembly and the label pad so it is approximately $\frac{1}{8}$ in. away from the product.
6. Enable the applicator and wave your hand in front of the product detect sensor.
7. Once the swing arm rotates out to the product and the label is blown off the label pad, wave your hand in front of the swing back sensor. Apply several labels to the same product in this manner.
 - a. If the label stack is consistent the static test is done.
 - b. If not, go through the peel edge setup and label stop setup sections of the corner wrap manual.
8. Once the setup has been verified, reduce the air blast PSI back to its original pressure and, if needed, enable the encoder option.

Static Test for DAT Label

1. Configure the applicator for tamp only action. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode**. Tap the **Up** or **Down** arrows until **DAT** option appears.
2. Enable the applicator and tamp.
3. Position the applicator with the tamp assembly extended and the label pad approximately $\frac{1}{8}$ in. away from the product.
4. Tap the **Jog** button several times to apply a label stack onto the product. If the stack is consistent, the static test is finished. If it is inconsistent, follow the remaining steps.
5. Ensure the label pad is made for the label you're using. Uncovered holes on the pad reduces the available vacuum used to hold the label in place and results are inconsistent.
6. Check the label stop. One label should be completely dispensed off the liner while the next label should be $\frac{1}{32}$ in. away from the peel edge.
 - a. If this varies more than $\frac{1}{32}$ in. with each cycle, reset the label sensor.
 - b. If the reset does not work, see the [Troubleshooting Chart](#). When corrected, go back, and try the static test again.
 - c. If there were no label stop issues, go to Step 7.
7. Ensure the label pad surface is clean. If clean, go to Step 8. If not, clean and re-try the static test again.
8. Ensure the vacuum is set correctly.
 - a. If the label flutters when feeding across the pad the vacuum is too high.
 - b. If the label falls off or moves after the label has left the liner the vacuum is too low.
 - c. If the label feed looks smooth go to the Step 9.
9. Work with the air pressure and the position of the air assist tube until the label feeds more consistently onto the pad and re-try the static test.
 - a. If the results are still not good enough, go to Step 10, otherwise go to Step 11.
 - b. If having difficulties correctly positioning the air assist tube, see the [Tamp Air Assist Setup](#) section. If having difficulties adjusting air pressure, see the [Tamp Vacuum Pressure Setup](#) section.
10. Ensure that there are no flaws with the label stock. Try another roll of labels and see if the stack changes.
11. Check the distance from the label pad to the product. If the distance is too large, the labels may float too much. Adjust the applicator so the label pad just clears the product (within $\frac{1}{8}$ in.)

360y HMI APPLICATOR DISPLAY

The applicator is controlled through the HMI (Human-Machine Interface) display. Various buttons bring you to different screens and those screens allow users to adjust the values for the countless variables used to make the applicator run as needed. A status box in the right-hand corner of the Main Menu screen displays alarms, the labeling rate if enabled, or the applicator information if disabled. This screen varies based on the applicator type.

The 360y display is equipped with a backlight saver function which causes the display to automatically turn off the backlight after 60 minutes of inactivity. Any touch or critical alarm wakes the display again.

Main Menu

After the power up sequence the display comes to the Main Menu [20] that gives access to the following:

- **Jog button:** Dispenses a label when pressed if the applicator is online. If pressed and held, labels dispense for as long as the button is held.
 - **Merge applicators:** Dispenses a label at web speed.
 - **Tamp applicators:** Dispenses a label onto the label pad and cycles the tamp if the tamp is enabled.
 - **Air blow applicators:** Blows the label and feeds a new label onto the grid. Jog will not wait for label placement or scan distance.
- **Alarm Reset button:** Clears alarms from the status box in the top right of the screen that do not clear automatically.
- **Label Placement variable:** Adjusts the label placement value of the applicator. If encoder based this value is in inches. For DAT applicators, there is a Swing Placement variable and Tamp Placement variable as well. See the [Dual Action Tamp \(DAT\) Setup](#) section for more information.
- **Enable or Disable Tamp:** Button that keeps the tamp arm from moving.
 - **Enabled:** Applicator dispenses labels and moves the tamp arm.
 - **Disabled:** Applicator dispenses labels and does not move the tamp arm.
- **Label Formats button:** Opens a menu that allows the operator to load and view formats, but not save or delete.
- **Setup Menu button:** Opens a variety of menus to make the applicator run the way you need it to.



[20] Main Menu

Warning Alarms

Warning alarms are not serious and will not cause the applicator to stop dispensing labels. They appear in the upper right-hand corner of the Main Menu in the status box [21]. The following are some of the warning alarms monitored by the applicator:

- **Inhibit Alarm:** Occurs when an external device prevents the applicator from dispensing a label by activating the Inhibit input on **I/O Connector C2-12**.
- **Tight Loop Alarm:** Occurs when the applicator is dispensing labels faster than the printer can print causing the applicator to pause labeling.
 - Labeling resumes when the printer catches up with the applicator.
 - This alarm does not need reset and the status box has a red background instead of yellow to signal the alarm condition.
- **Low Label Alarm:** Occurs when the low label sensor detects that the unwind roll is nearly out of labels.
- **DAT Label Placements Are Too Close Alarm:** Occurs when there is not enough time or space to apply the second label after the first label is dispensed. Increase the second label placement variable to correct.



[21] Warning Alarm



- **Multi-Label Centerline-to-Centerline Distance Is Too Low:** Occurs when the multi-label option is on, and the applicator cannot place labels at the desired center-line distance. If the application permits, increase the label centerline-to-centerline distance to correct the problem.
 - For non-merge applicators, increase the **web speed** value or decrease the **conveyor speed** value.
 - For tamp applicators, reduce the **tamp extend** and **retract** times to the minimum.
 - For air blow applicators, reduce the **air blast** time to the minimum and increase the **pre-dispense** time if possible.
 - For merge applicators **contact the factory** concerning the appropriate accel. and decel. values for your applicator.
- **Label Placement is Too Low:** Occurs in encoder-based applicators when the label placement distance is too small for encoder compensation to work correctly. During label placement a speed dependent distance is subtracted from the label placement value to properly position the label. If this alarm occurs, move the product detect sensor upstream more, decrease the conveyor speed, or increase the label placement value.
- **Imprint Dwell Too High for Label Cycle:** Occurs if the imprinter valve is on when the applicator is ready to dispense a label to the product, air blow grid, or tamp pad.
 - For merge applicators, no labels are dispensed.
 - For air blow and tamp applicators, the imprint dwell times out before dispensing a label to the grid or label pad.

Critical Alarms

Critical Alarms cause the applicator to stop dispensing labels until the problem is fixed and wakes the display if it is in backlight saving mode at the time of the alarm. The Critical Alarm screen covers the current screen explaining the alarm type with an **Alarm Reset** button at the bottom of the screen to clear the alarm [22]. The following are some of the critical alarms:



[22] Critical Alarm

- **End of Web Alarm:** Occurs when the end of web sensor detects a break in the web.
- **No Labels Found Alarm:** Occurs when the number of consecutive missing labels on the liner exceeds the missing label count value. If a **No Labels Found** alarm occurs when labels are present on the liner, re-teach the label sensor sensitivity settings.
- **Printer Not Ready:** Occurs when the printer is paused while the applicator is controlling a printer in a loose loop format with the printer ready input signal active.
- **Operator Interface Cleared:** Occurs when the display is disconnected from the applicator.
- **Read or Write Errors:** Occurs when the applicator has trouble communicating with the display. An intermittent connection determines whether the alarm is displayed.

Changing Numeric Values

Values that can be changed are typically shown as blue colored values on buttons which display the current value. In Figure [23A], **Label Placement** has a value of 0.250. To change a value, complete the following:



[23] Changing Variables Display

1. Tap the button with a value that needs changed, in this case, it is the **Label Placement** value. A numeric keypad appears on one side of the screen [23B].
2. Type a new variable. The old variable is cleared, and the new value is input to the keypad value display.
 - a. Tap **Esc** to leave the screen without changing the value.
 - b. Tap **Clr** to clear the value being changed.
 - c. Tap **Enter** to finish the process

NOTE: *Min and Max values are shown in small, yellow boxes above the keypad value display. Usually an out-of-range value does not produce a warning message, but the variable does return to the original value after pressing "Enter."*

Changing Text Values

Formats are the only options where text can be changed. The process is like changing a numeric value except a keypad is displayed covering most of the screen. Complete the following steps to change a text value:

1. Tap the text value that needs changed and a keypad appears [24]. The text value in the white value display box is the initial value of the selected field.
2. Type a new text value. As the keypad is pressed, the old variable is cleared, and the new variable is keyed into the keypad value display [25]. No cursor is shown.
 - a. Tap **Caps** to toggle between upper and lowercase.
 - b. Tap **BS** to backspace.
 - c. Tap **Esc** to leave the screen without changing the value.
 - d. Tap **Clear** to clear the value being changed.
 - e. Tap **Enter** to finish the process.



[24] Keypad to Change Text Value



[25] Changing Text Values

NOTE: Leaving the field blank and pressing “Enter” or using the “Space” key at the beginning of a text value may cause a warning message and not allow the applicator to save the value. Spaces at the end of a text value are automatically cut. The keypad value display stops filling when the character limit of the value being changed is reached.

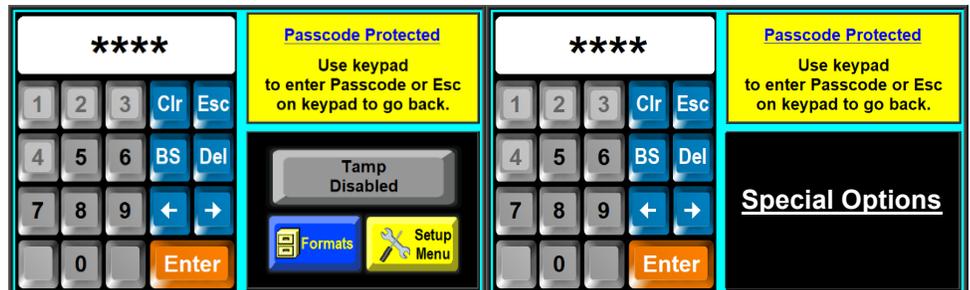
Passcode

The **Setup Menu** and **Special Options Menu** are passcode protected [26]. Passcodes are programmable in the **Change Main Password** section. When entering a passcode-protected area, a passcode screen with a number pad appears. When the keypad is opened from the Main Menu, the keypad will only stay open for four seconds if the operator does not begin to enter a value.



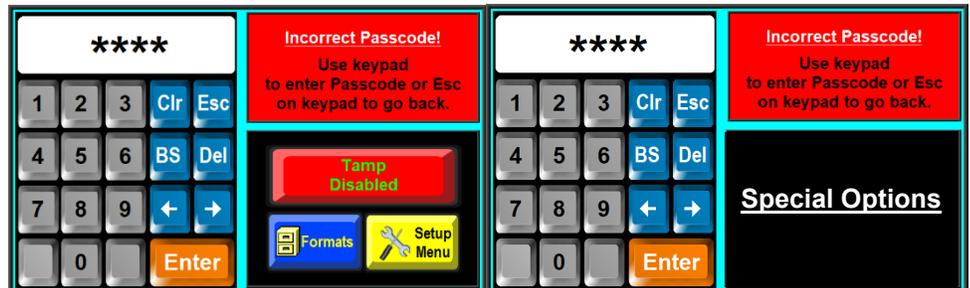
[26] Passcode Screen

1. Tap a number on the keypad. That number is highlighted, and an asterisk displays in the keypad value display. The numeric entry for the passcode is not displayed [27].
 - a. Tap **Esc** to leave the screen without changing the value
 - b. Tap **Clr** to clear the value being changed
 - c. Tap **Enter** to finish the process.



[27] Typing Passcode

2. If the wrong passcode is entered, the status screen in Figure [28] appears. The **Incorrect Passcode** status screen times out after four seconds and returns to the status screen.



[28] Incorrect Passcode



Setup Menu

The Setup Menus are passcode-protected. A correct passcode loads the Setup Menu Screen [29] and the operator has access to the following setup sections:

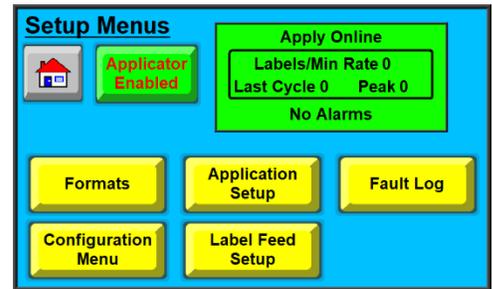
- Formats
- Configuration Menu
- Application Setup
- Label Feed Setup
- Fault Log

While in the Setup Menus the applicator can be enabled or disabled.

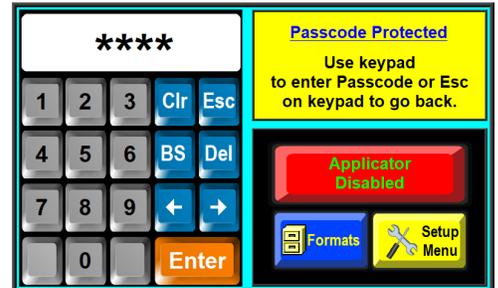
NOTE: Some options are not accessible while the applicator is online.

To access the Setups Menu, complete the following:

1. Start at the Main Menu screen and tap the **Setup Menu** button. The setup area of the display is password protected [30].
2. Type **1800**. This is the standard password. See the [Custom Password](#) section in the **Maintenance Manual** to change the standard password.
3. Tap **ENTER** to confirm and it brings you to the **Setup Menus** screen [29]. If an incorrect password is entered a screen will be shown to notify the operator. Press **Clr** to clear an incorrect entry.
4. Tap the **ESC** button to go back to the Main Menu.



[29] Setup Menus



[30] Passcode Keypad

Formats

Tapping the **Formats** button on the Main Menu brings up a screen [31] that allows the operator to view previously saved formats. The operator **cannot** save or delete formats viewed from the Main Menu, as those options are grayed out [32]. Formats **can** be overwritten by tapping the **Load** button.

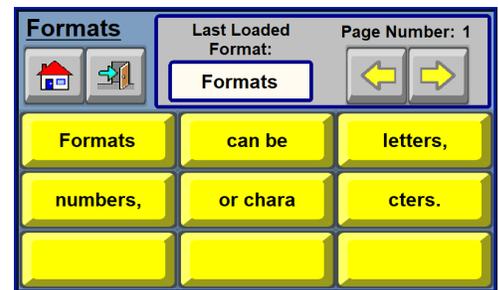
The **Format** button in the **Setup Menu** loads the same **Format Menu** screen as the **Format** button on the Main Menu. But when loaded from the Setup Menu, the preview screens allow the operator to load, save, and delete formats.

Operators can save and load up to 99 formats. This is useful when running various products requires different options to be selected, or different values in the parameters. Eleven pages of formats are available to the operator and can be selected with the arrow buttons to either side of the page number display. Figure [32] shows the last loaded format and the file name/number of the format. If no format has been loaded, or if the last loaded file is deleted, the text value in the box is blank.

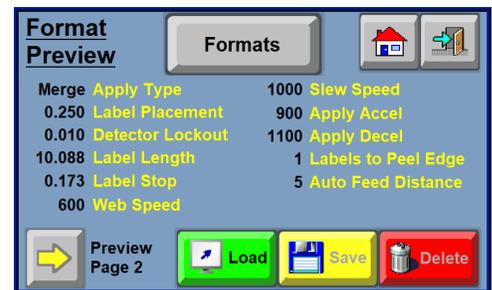
Previewing/Loading Formats

1. Start at the Main Menu and tap the **Formats** button. Tap either a blank button or a previously saved button.
 - a. Tapping a blank format shows the settings currently saved. The **Save** and **Delete** buttons are grayed out, indicating that operators **cannot** make any changes.
 - b. Tapping a saved format like in Figure [32] shows that specific format's saved variables.
2. From a previously saved format, tap the **Load** button. This overwrites the previous format.

NOTE: The variables shown in the preview are not the only variables saved in a format. For a full list of variables saved with formats, see the [Contact and Support](#) section to contact the factory.



[31] Label Formats Screen



[32] Preview Format Screen



[Saving New Formats](#)

1. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Formats** button. Tap a blank yellow button to write the new format.
2. Tap the blank gray button at the top of the screen and type a name for the new format on the keypad and tap **Enter**.
NOTE: The maximum character limit for format names is eight.
3. The **Save** button flashes telling the operator to save. Saving stores the current applicator settings, regardless of the preview values, to the format file.

[Overwriting an Existing Format with a New Name](#)

To retain the settings of the file being overwritten the file must be loaded first, or the current applicator settings must match the format file.

1. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Formats** button. Tap a saved Format you want to overwrite. When the preview screen loads, the gray button at the top of the screen displays the current Format name.
2. Tap the current Format name and use the keypad to type the new name and tap **Enter**.
NOTE: The maximum character limit for format names is eight.
4. The **Save** button flashes telling the operator to save. Saving stores the current applicator settings, regardless of the preview values, to the format file.

[Overwriting an Existing Format with New Settings](#)

To change the settings of an existing format, the current applicator settings must be at the preferred settings.

1. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Formats**. Tap the saved format button to overwrite. When the preview screen loads, the gray button at the top of the screen displays the current Format name.
2. Tap the **Save** button to overwrite the format. A new screen pops up asking for confirmation [33].
3. Confirm overwrite by tapping the **Overwrite** button or tap the **Cancel** button to return to the preview screen. The **Overwrite** button stores the current applicator settings, regardless of the preview values, to the format file.



[33] Format Overwrite

[Erasing Formats](#)

1. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Formats**. Tap the saved format button to be deleted. When the preview screen loads, the gray button at the top of the screen displays the current Format name.
2. Tap the **Delete** button to delete the format. After deleting, the Formats screen reloads [34] and the value for the deleted format is blank.

NOTE: There is no additional step to this operation. Once you press the delete button, the format will be erased.



[34] Deleting a Format

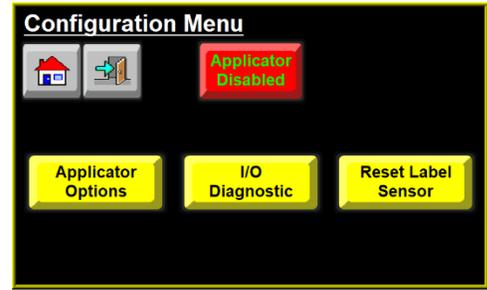


Configuration Menu

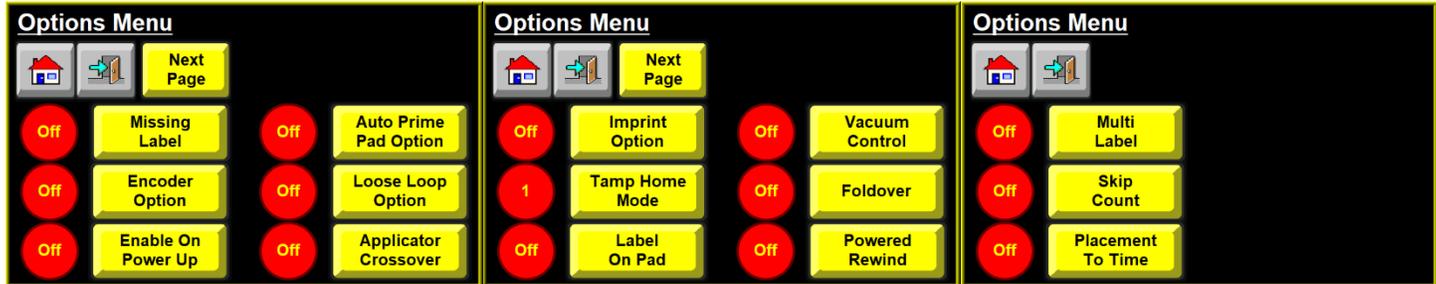
The **Configuration Menu** [35] is accessed from the Setup Menu while the applicator is disabled and provides access to the following:

- Applicator Options
- I/O Diagnostic
- Reset Label Sensor

Applicator Options:



[35] Configuration Setup Menu



[36] Applicator Options Menu

The Options menu [36] allows the operator to turn various options on or off. Options that are shown with a red circle next to them are currently off while options with a green circle are currently on. Some options are not compatible with each other and will turn off other options when enabled. For more information about compatibility see the

[Applicator Options Compatibility Chart](#) in **Appendix A**.

Missing Label Option Menu

This menu [37] allows the applicator to track missing labels between the label sensor and the peel edge. When the label sensor detects a missing label, and the number of labels between sensor and peel edge is set up correctly, the applicator tracks the position of the missing label. When the missing label reaches the peel edge, the applicator advances the web at slow speed to move a label in its place.

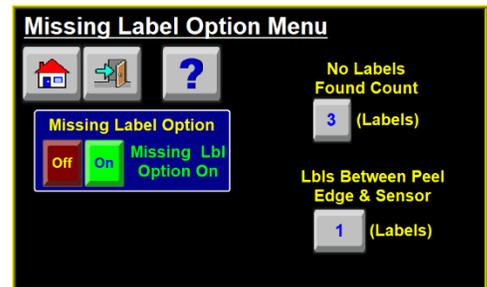
- **Labels Between Sensor and Peel Edge:** Number of labels from the label sensor (counting any label currently under it) to the peel edge (counting any label hanging past the edge).

Encoder Option

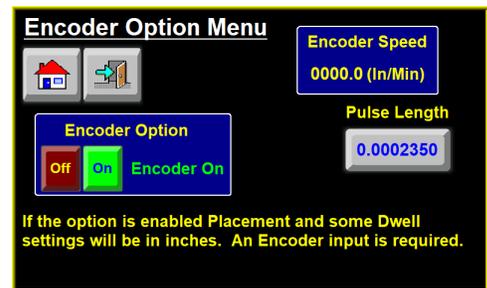
This menu [38] allows the operator to turn the **Encoder Option** on and off. If the option is on, Label Placement and some Dwell settings are in inches. An Encoder Input is required to turn the option on.

Enable On Power Up

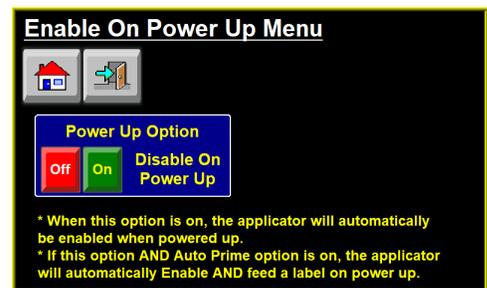
This menu [39] allows the operator to turn on the **Power Up Option** which automatically enables the applicator when it is powered on. If this option and the Auto Prime Option is on, the applicator is automatically enabled and feeds label when it is powered on.



[37] Missing Label Menu



[38] Encoder Option



[39] Enable On Power Up Menu

s



Auto Prime Pad Option

This menu [40] allows the operator to turn the **Auto Prime Option** on or off. When on, the applicator automatically feeds a label to prime the pad when the applicator is enabled. When off, the pad needs to be primed by jogging or flagging the Product Detect Input.

NOTE: This option is **NOT** compatible with the Merge apply type.

Loose Loop

This option [41] allows labels to be printed and applied from one system by integrating a thermal printer into the web path of the applicator.

Three proximity switches monitor the dancer arm position that set off different proxies. The dancer arm assembly should be free to travel its full length.

- **Loose Loop Prox.:** Dancer arm is in the resting position and the printer is not printing.
- **Tight Loop Prox.:** Dancer arm is in the middle position and the printer starts printing.
- **Alarm Prox.:** Dancer arm is in the bottom position and the applicator enters a tight loop alarm condition.
 - A warning message displays in the status box and the applicator will not apply labels until the dancer arm returns to the tight loop prox. position.
 - When the applicator is properly set up under normal operating conditions the arm will not reach the alarm prox. position.

Crossover Option

The Crossover Option [42] allows for “zero downtime” operation by interconnecting two applicators. Both applicators are placed on the conveyor system with one in front of the other. The upstream applicator is the “Primary” labeler while the downstream applicator is the “Secondary” labeler. **Mode 1** is Primary and **Mode 2** is Secondary.

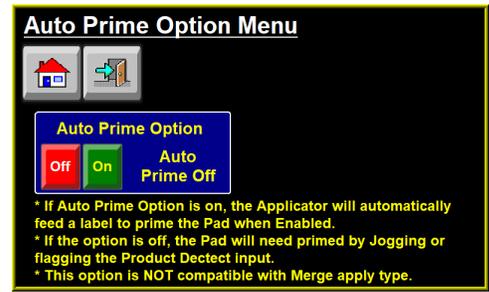
Crossover Option requires an encoder to use. All transferring distances start at the same time based off a product detect signal from the upstream applicator. This ensures that all distances begin at the same point.

Crossover Main Menu Changes

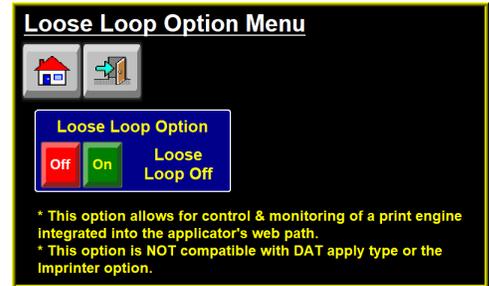
The Main Menu screens for both the primary and secondary applicators are changed when running in crossover [43]. The display shows two buttons indicating which applicator is currently “Active.”

Primary to Secondary Transfer Process

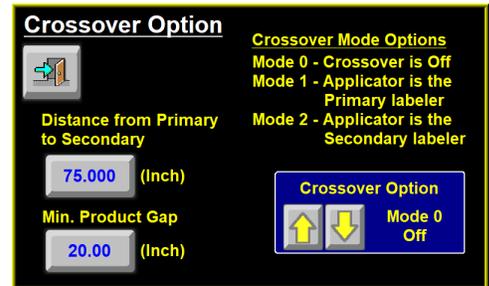
1. Primary applicator is labeling, and the secondary applicator is ready.
2. Primary applicator begins the transfer process at the first product detect input after it is taken offline or enters a critical alarm state.
3. Secondary applicator waits for the **Distance from Primary to Secondary** distance seen in Figure [43] to pass after the process has begun before it starts labeling. This allows products that are currently labeled between the primary and secondary to pass the secondary without being labeled twice.
 - a. If products are labeled twice the Distance from Primary to Secondary value needs increased.
 - b. If products are missed by the secondary applicator and need labeled, the Distance from Primary to Secondary value needs decreased.



[40] Auto Prime Option Menu



[41] Loose Loope Menu



[42] Crossover Option Menu



[43] Crossover Main Menus



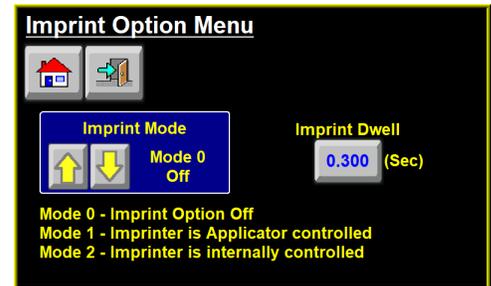
Secondary to Primary Transfer Process

1. Secondary applicator is labeling, and the primary applicator is brought back online but the primary applicator does not start labeling.
2. Secondary applicator continues to label until it is disabled or the primary is enabled.
3. Secondary applicator sends a signal to the primary applicator to start labeling while it continues to label. The signal occurs at the first apply cycle of the secondary applicator after the transfer is initiated.
4. Primary applicator waits for its next product detect signal to start labeling again and once received, the primary applicator sends a signal to the secondary applicator to start the "Off Sequence."
5. Secondary applicator continues to label for the "Off Distance." If the secondary is taken offline or enters a critical while it is the active applicator, products pass by unlabeled.

Imprint Menu

This menu [44] allows a hot stamp printer to be installed into the web path of the applicator. This is used in instances where one-line printing or date coding is required. There are two modes for the imprinter:

- **Mode 1:** The original sequence. This is used if the applicator is controlling the imprint valve. The **Imprint Dwell** value is the time the applicator holds the imprint valve on.
- **Mode 2:** Used when the imprinter has its own controller. The **Imprint Dwell Value** is the amount of time the applicator waits for a sequence complete signal from the imprinter and should be close to the imprinter's dwell time.

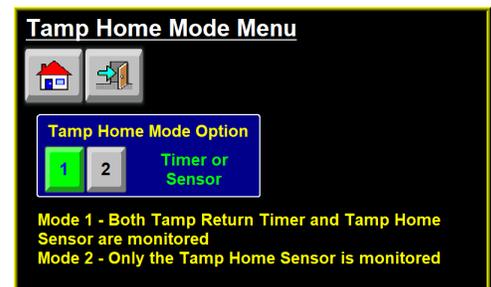


[44] Imprint Menu

Tamp Home Mode

This menu [45] is only accessible if the applicator is set to Tamp or Corner Wrap. There are two modes for the Tamp Home sensor:

- **Mode 1:** Default option where the applicator looks for a tamp home input **OR** the completion of the retract timer before turning on the tamp home output.
- **Mode 2:** Applicator only looks for the tamp home input and ignores the tamp retract timer. No label is fed out until the tamp home input is on.
- **Delay Feed Time:** Used in Mode 2 to delay the label feed after the tamp home input is on.



[45] Tamp Home Mode Menu

Label On Pad

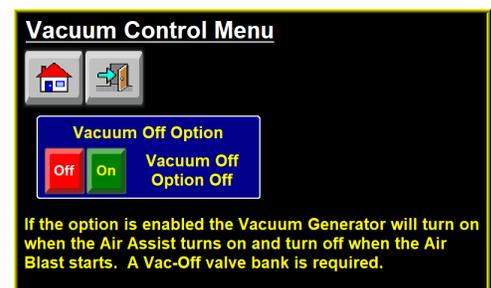
This menu [46] allows anyone interfacing with the applicator to know whether there is currently a label on the label pad. It also allows the applicator to provide a signal that matches the current state of a vacuum switch sensor while the blow is not on. This option cannot be enabled if the applicator is a merge. The applicator must be equipped with a vacuum switch for this option to properly function.

Vacuum Control

This menu [47] allows the operator to turn the **Vacuum Off Option** on or off. The applicator can be fitted with a Vacuum Off valve bank that allows the applicator's electrical control of the vacuum flow. The sequences of Normal Tamp and Corner Wrap applications are changed with the Vacuum Off option enabled. Instead of feeding a label immediately after the tamp returns home, the applicator waits for the next product detect signal (with the vacuum valve off), turns on vacuum, and feeds and applies the label at that point.



[46] Label On Pad Option Menu



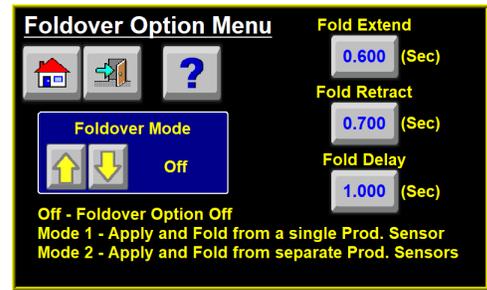
[47] Vacuum Off Option Menu



Foldover Option Menu

This menu [48] allows the applicator to control a fold station as part of the labeling sequence. If the foldover option is enabled, the operator can change the foldover parameters without disabling the applicator.

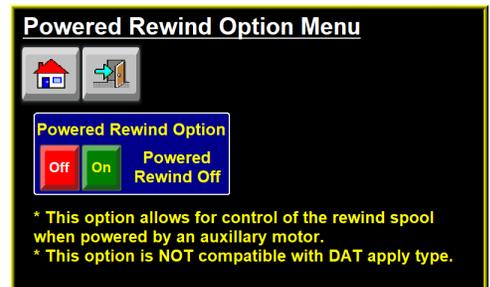
- **Mode Select:** The foldover option has 2 different modes to use:
 - **Mode 1:** Starts the foldover sequence after the applicator product detect sensor is turned off. This allows for the use of one product detect sensor for apply and feed. The product detect signal must be a leading edge signal.
 - **Mode 2:** The applicator applies labels based off the product detect signal and begins the foldover sequence based on a second fold product detect sensor. Both sensors can be set to trailing edge.
- **Fold Delay:** Amount of time, or distance if encoder-based, the applicator waits to begin the fold sequence. This starts when the product detect turns off for Mode 1 or when the fold product detect is active in Mode 2.
- **Fold Extend:** Amount of time the applicator activates the fold valve to extend the foldover. This should be set high enough to ensure the label is fully wiped.
- **Fold Retract:** Amount of time the applicator waits after deactivating the fold valve before it completes its cycle.



[48] Foldover Option Menu

Powered Rewind Option Menu

This menu [49] Allows the applicator to control a motor attached to the rewind mandrel. This motor-driven rewind is used in high-speed applications or applications where a larger amount of waste material is collected on the rewind. Powered rewind is a factory installed option.

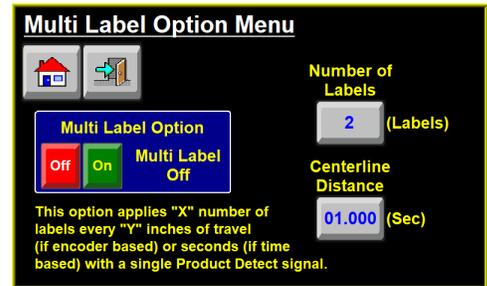


[49] Powered Rewind Menu

Multi-Label Option Menu

This menu [50] Allows the applicator to apply multiple labels per the product detect signal using the multi-label option. Multi-label causes the applicator to detect a product as normal, wait the placement, and apply a label. After the apply is done it waits the centerline distance and applies another label until the number of labels has been met. If the label rate from multi-label is faster than what the applicator dispenses, a warning occurs in the status box at the Main Menu.

- **Number of Labels:** Number of labels, including the original application, that the applicator applies based off a single product detect.
- **Centerline Distance:** Time, or distance if encoder based, the applicator places the label. This is measured off a centerline-to-centerline basis of the labels.



[50] Multi-Label Option Menu

Skip Count

This menu [51] enables the applicator to skip an "x" number of products that will **not** be labeled. The applicator always labels the first product and skips the next "x - 1" products. The status box on the Main Menu changes to reflect what increment the skip counter is currently at.

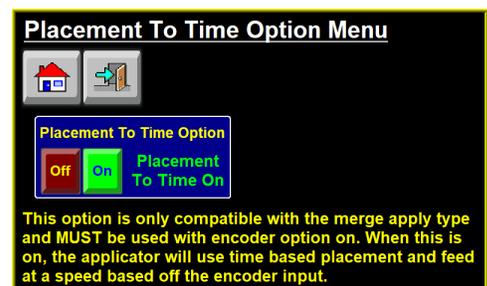
- **Label Every "x" Products:** Enter the number you want to represent as "x" in the variable. For example, if **3** is entered, the applicator will label the first product, skip two product detects and label the fourth product.



[51] Skip Count Option

Label Placement to Time Menu

This menu [52] allows the operator to turn the **Placement to Time Option** on and off. Placement to time allows the applicator to be encoder-based for its web speed while having a time-based label placement. Used commonly on systems that wrap the label around products.

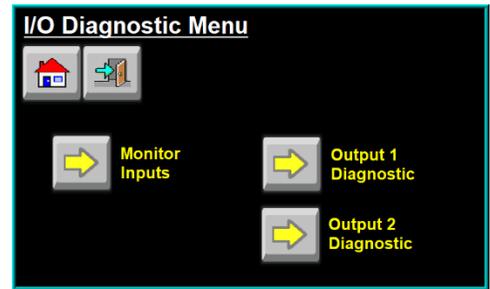


[52] I/O Diagnostics Menu

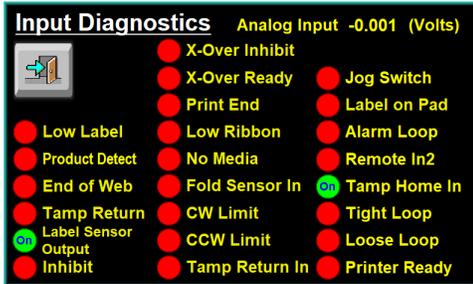
I/O Diagnostics

The menu in Figure [53] is a troubleshooting tool that allows the operator to verify the status of inputs to the controller as well as force outputs on.

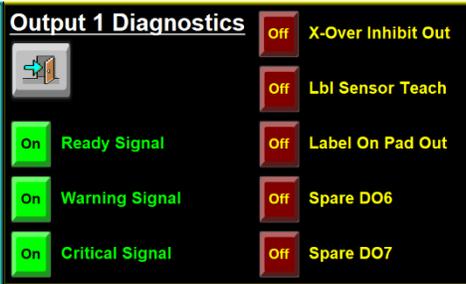
In Figure [54] the **Label Sensor Output** and **Tamp Home In** inputs are active. In Figure [55] the **Ready Signal**, **Warning Signal**, **Critical Signal**, and **Tamp Valve** outputs are on. When exiting the I/O Diagnostics Menu all inputs and outputs return to their proper state.



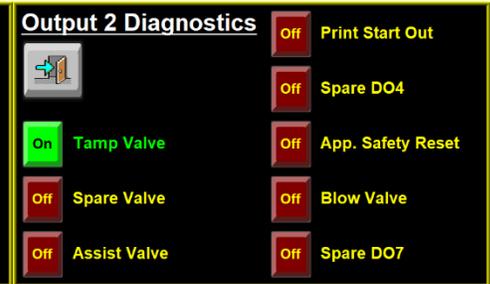
[53] I/O Diagnostics Menu



[54] Inputs

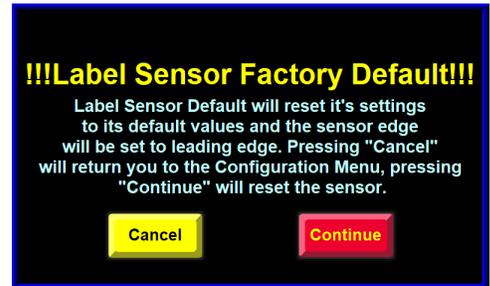


[55] Outputs



Reset Label Sensor

Pressing the **Reset Sensor** button brings up the screen in Figure [56]. Tapping the **Continue** button factory defaults the label detect sensor and changes the applicator and sensor to leading edge detection. After a reset the display goes to the **Label Sensor Setup** screen so the operator can set up the sensor again.



[56] Reset Label Sensor

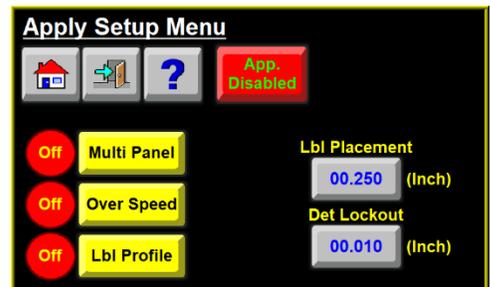
Application Setup—Merge

The settings on the **Apply Setup Menu** are different for Merge assemblies and Tamp, Air Blow, and RVB assemblies. Figure [57] shows the applicator Setup for the Merge applicator.

Multi-Panel Menu

This menu [58] enables a Merge applicator to apply a label onto two or three panels of a product. Enable the **Encoder Option** and **Multi-Panel Option** and complete an auto teach of the label sensor. The following variables affect multi-panel apply:

- **Short Feed:** Distance the label feeds after label placement on product detect which is done at encoder speed. This is taught by doing an auto teach of the label sensor with the multi-panel option enabled.
- **Prod Clear:** Amount of encoder-based distance the applicator waits before flagging out the next label. This allows a product to be removed from the labeling area before a new label is dispensed into it.



[57] Apply Setup Menu—Merge



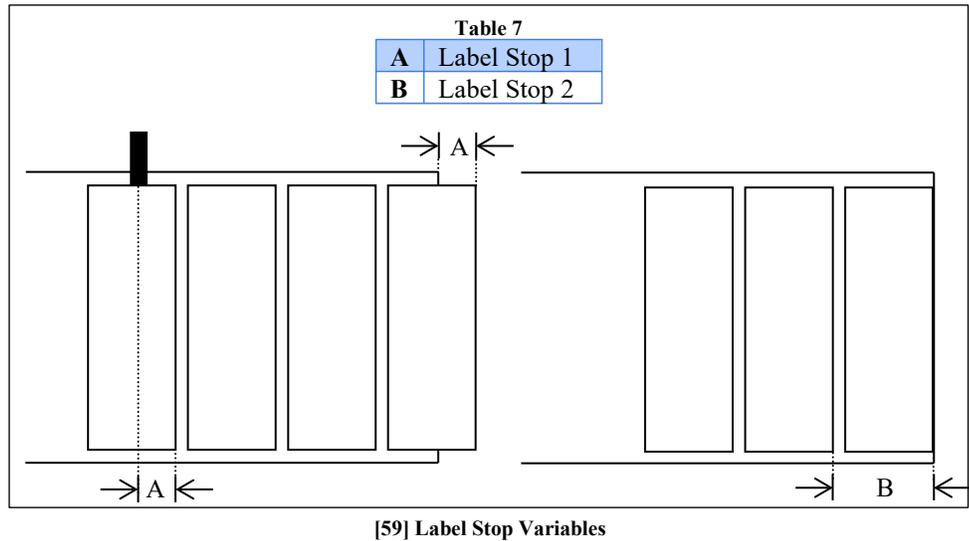
[58] Mult Panel Menu



Multi-Panel Setup

Before setting up multi-panel, ensure that the encoder option is installed and configured properly. Follow the below steps to set up the applicator for a multi-panel apply:

1. Enter a value for product clearance. This value should be approximately the product length or slightly longer.
2. Calculate the value for the first label stop [59A] and input that value for **Label Stop 1**.
3. Calculate the value for the second label stop [59B] and input that value for **Label Stop 2**.



NOTE: The calculated values are a starting point and are not exact. Operators may need to adjust these values for proper label placement.

4. Tap the **Jog** button and note where the label is applied to the product. Adjust the label stop values as needed.

Over Speed Menu

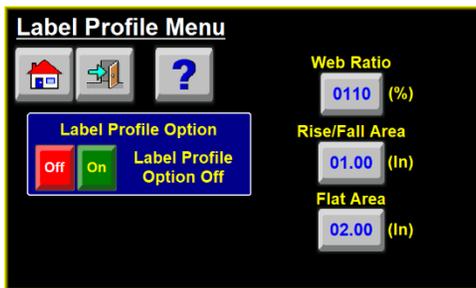
This menu [60] allows a Merge applicator to get up to web speed faster by dispensing a set number of labels at a higher speed. This option is used **only** in merge applicator setups. The following variables affect overspeed:

- **Pre-Apply Feed:** Distance the applicator feeds labels at the higher speed while over speed is turned on.
- **Pre-Apply Speed:** Speed at which the applicator feeds the pre-apply feed.
 - Pre-apply speed = (Web Speed) * (Pre-Apply Ratio)

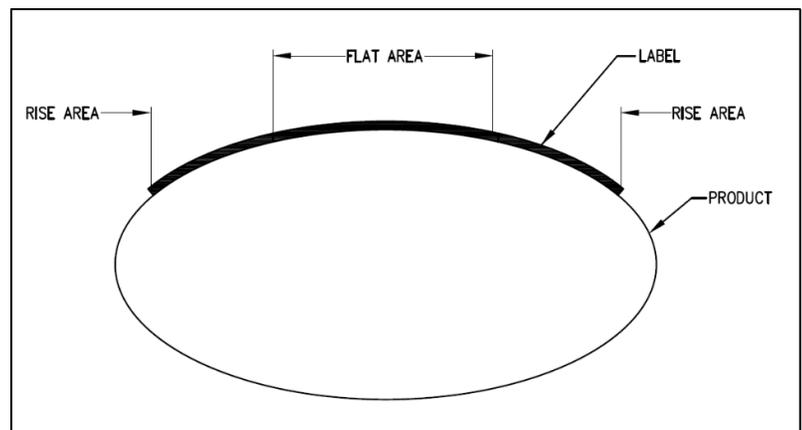


[60] Over Speed Menu

Label Profile Menu



[61] Label Profile Menu



[62] Lable Profile

This menu [61] allows a Merge applicator to apply labels onto a concave or convex surface. This is done when the web ratio is on and does not equal 100% of the profile option. Figure [62] illustrates a label profile for a convex surface. The following variables affect label profile:

- **Web Ratio:** Scaling percentage applied to the web speed to adjust the labelling speed during the flat area move of the profile.
- **Rise/Fall Area:** Distance the label travels before changing to the flat area speed. The applicator runs at web speed during rise area.
- **Flat Area:** Distance the applicator travels at the web ratio speed.

Label Profile Setup

1. Estimate the rise and flat areas of the product and estimate a web ratio. For a convex oval, like in Figure [61], the web ratio needs to be less than 100% because the applicator labels the flat area slower than the rise areas.

Table 8

Condition	Product Shape	Speed of Rise Areas	Speed of Flat Areas
Web Ratio < 100	Convex	Web Speed * Web Ratio	Web Speed
Web Ratio = 100	Flat	Web Speed	Web Speed
Web Ratio > 100	Concave	Web Speed * Web Ratio	Web Speed

2. Label several products under normal labeling conditions and observe the labels. Fine-tune the values of the rise and flat areas by making the following adjustments:
3. If the leading edges of the labels are applied in the same spot on the products, go on to Step 4.
 - a. If the leading edges of the labels are placed at various positions on the products, the rise area is too short. Slightly increase the rise area and run more products.
 - b. Repeat until the leading edge of the label is placed consistently.
4. If the leading edges of the label are applied at the required position on the product, go on to Step 5.
 - a. If the leading edge of the label is applied at the incorrect position, adjust the label placement, or re-position the product detect sensor.
 - b. Repeat until the leading edge of the label is applied at the required position on the product.
5. If there are no wrinkles or bubbles in the first half of the applied labels go on to Step 6.
 - a. If a wrinkle or bubble appears anywhere from the top to the bottom of the first half of the label, the rise area is too long. Slightly decrease the rise area and repeat until the wrinkle in the first half of the label is removed.
6. If there is no wrinkle in the center of the label go on to Step 7.
 - a. If a wrinkle appears anywhere from the top to the bottom at the center of the label, either the web ratio is too high, or the flat area is too short. Note the web ratio setting and adjust that first.
 - b. Slightly decrease the web ratio and repeat until the wrinkle is removed.
7. If the labels are applied with no wrinkles the setup is complete.
 - a. If a horizontal wrinkle appears from the leading to the trailing edge, the flat area is too long.
 - b. Slightly decrease the flat area and repeat until the wrinkle is removed.

Label Placement

Label Placement is the delay in seconds (if time based) or distance in inches (if encoder based) between the product detect signal and the start of the label apply sequence. This label placement value mirrors the label placement located on the Main Menu. It is placed here so the operator can adjust it without backing out to the Main Menu.

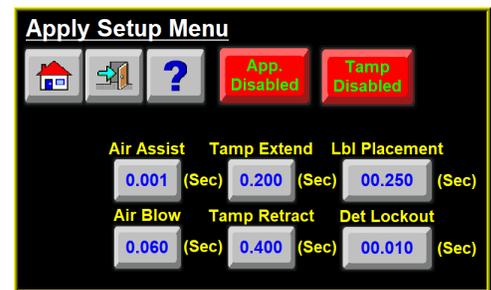
Detector Lockout

Detector Lockout is the time in seconds (if time based), or distance in inches (if encoder based) the applicator ignores multiple product detect signals after one is received. This is used for odd-shaped products that can set off multiple product detect signals with one product, such as an egg carton.

Application Setup—Tamp and Blow Applicators

This menu [63] allows access to the following variables:

- **Extended Air Assist:** Time in seconds the assist valve remains on.
- **Air Blow:** Time in seconds the blow valve remains on.
- **Tamp Extend:** Time allotted for the tamp slide or rotary actuator to extend. After the tamp extend and air blow timers are finished, the air blast starts and the label pad begins to return home.
- **Tamp Retract:** Time allotted for the tamp slide or rotary actuator to retract to the home position. Once the timer is completed the next label begins feeding onto the label pad.
- **Label Placement:** Same as seen in the Application Setup—Merge section.
- **Detector Lockout:** Same as seen in the Application Setup—Merge section.



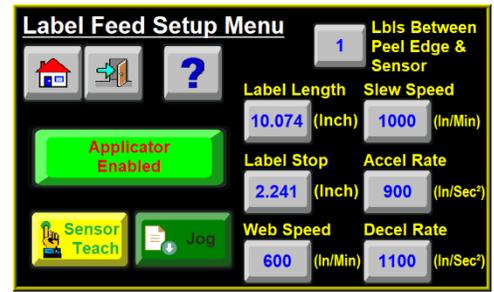
[63] Apply Setup Menu—Tamp and Blow Applicators



Label Feed Setup Menu

This menu [64] allows access to the following variables and buttons:

- **Sensor Teach:** Reteaches the **Label Length** and **Label Stop** values.
- **Labels Between Peel Edge and Sensor:** Number of labels between the sensor and peel edge including the label at the sensor.
- **Label Length:** Length of the label in inches, from the leading edge of one label to the next.
- **Label Stop:** Distance in inches the web liner moves after the label gap is seen by the label sensor.
- **Web Speed:** Speed in inches per minute the web liner moves during a label apply or jog cycle.
- **Slew Speed:** Speed the web liner moves when the applicator is doing a missing label move or multi-panel label flag.
- **Accel. Rate:** Rate in inches per second squared the web speed increases to the commanded speed
- **Decel. Rate:** Rate in inches per second squared the web speed decreases when the move is stopped.



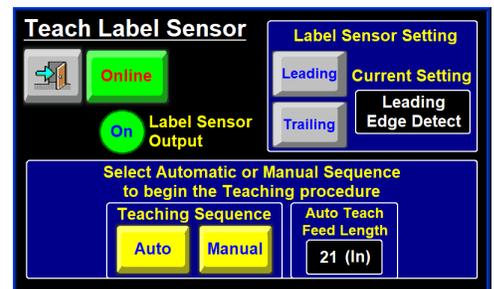
[64] Label Feed Setup Menu

Sensor Teach

The **Teach Label Sensor** menu [65] allows the operator to do a **Manual** or **Auto Teach** of the label sensor. The sensor can be taught to detect the leading edge or the trailing edge of the label. Edge detection should only change when the label stop value is too low or when the label stop value causes the label sensor to be right at the edge or label gap while at the label stop position.

The label sensor has a sensor output, which is an indicator that changes colors based on the output of the label sensor.

- Set to leading edge, the output is green when the sensor is looking at the labels.
- Set to trailing edge, the light is green if looking at the gap.



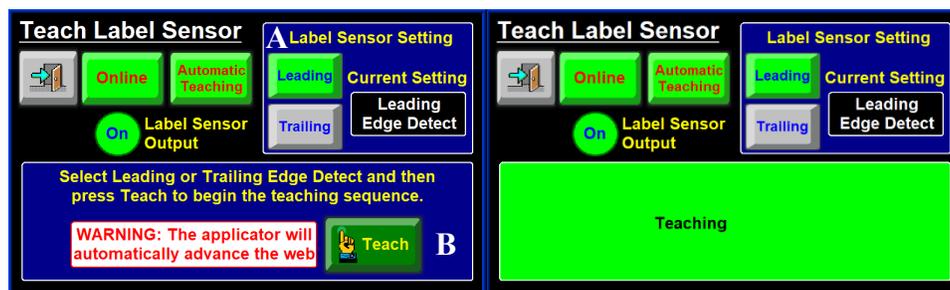
[65] Label Sensor Menu

Auto Teach Feed Length: Distance that allows the applicator to feed about three labels, including at least two label gaps. This may need to be changed for longer labels as the default may not be long enough.

Tap either the **Auto** button or the **Manual** button to begin a Teaching Sequence.

Auto Teach:

Auto Teach automatically sets the label sensor sensitivity and calculates the label length and label stop values. The following steps detail the Auto Teach routine. Ensure the labels are webbed up correctly and the nip roller is closed before continuing.



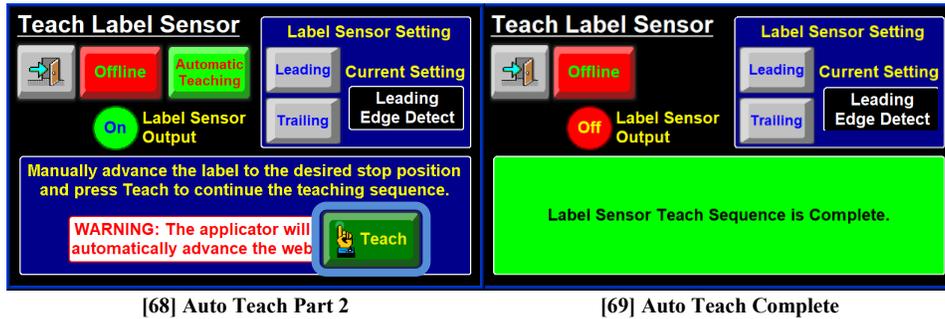
[66] Auto Teach Part 1

[67] Teaching

1. Tap the edge detection best suited for the labeling sequence: **Leading Edge** or **Trailing Edge** [66A].

NOTE: In this example, leading edge detection is used.

2. Tap the **Teach** button [66B]. The applicator automatically advances the web liner, and the bottom part of the screen says **Teaching** [67].



[68] Auto Teach Part 2

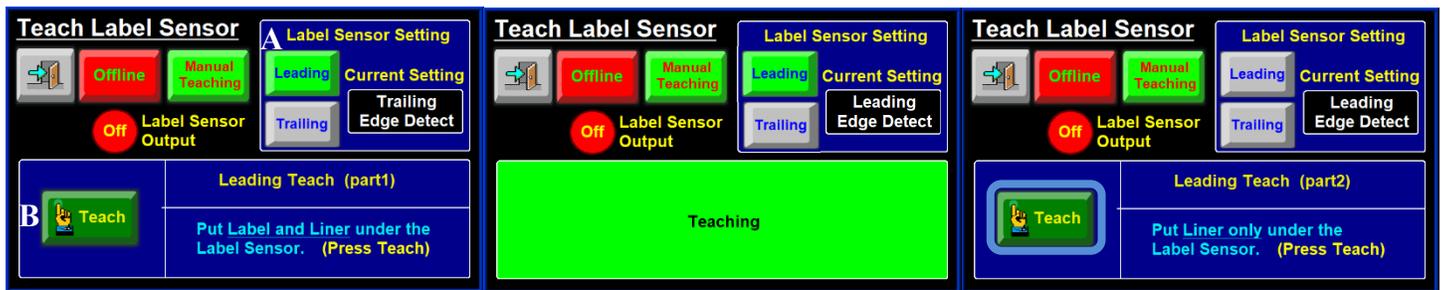
[69] Auto Teach Complete

3. Turn the **Drive Roller** to move the web liner so the labels are at the desired label stop position and press the **Teach** button again [68]. Two labels are dispensed to determine the label stop and label length values.
4. The auto teach is complete and the applicator saw the sensor output [69]. If the applicator did not see the sensor output, complete a manual teach or try an auto teach again with a longer Auto Teach Feed Length value.

Manual Teach

A manual teach is used when the label gap is not seen by the applicator during an auto teach. A manual teach has the same sensor output indicator as auto teach.

Leading Edge Teach



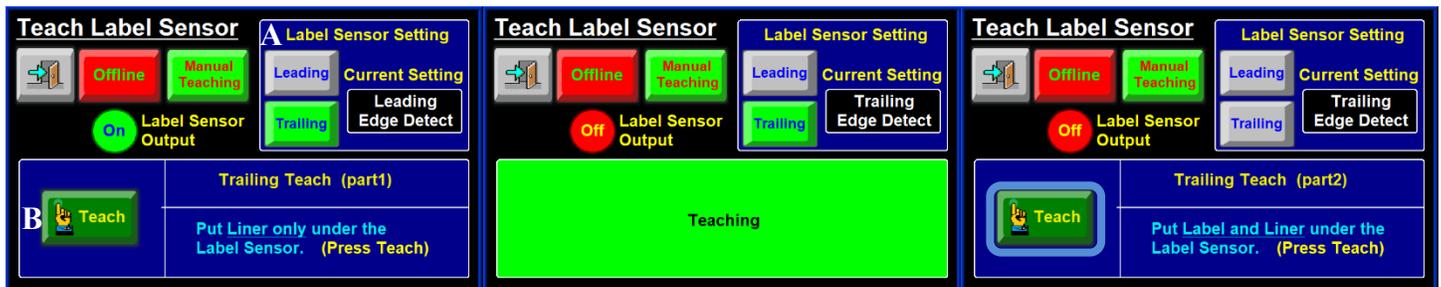
[70] Manual Leading Edge Teach Part 1

[71] Teaching Leading Edge

[72] Manual Leading Edge Teach Part 2

1. Tap **Leading** button for edge detection [70A].
2. Place the web liner underneath the sensor and tap the **Teach** button [70B]. The bottom part of the screen says **Teaching** [71].
3. Move the web liner so that only the liner, or label gap, is under the sensor. Tap the **Teach** button again [72] and the bottom part of the screen says **Teaching** again.

Trailing Edge Teach



[73] Manual Trailing Edge Teach Part 1

[74] Teach Trailing Edge

[75] Manual Trailing Edge Teach Part 2

1. Tap the **Trailing** button for edge detection [73A].
2. Place the web liner so only the liner, or label gap, is under the sensor and tap the **Teach** button [73B] The bottom part of the screen says **Teaching** [74].
3. Move the web liner so the web liner and label are under the sensor. Tap the **Teach** button again [75] and the bottom part of the screen says **Teaching** again.



Fault Log

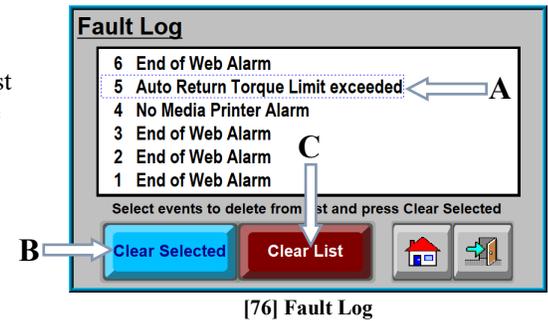
The Fault Log [76] tracks and sequentially numbers the critical faults. The entire list can be cleared and/or specially selected faults can be cleared. The last ten faults are displayed and can be scrolled through on the right side if the list is longer than the viewing window.

NOTE: The displayed faults in the log are not all the faults that can affect the applicator.

Clearing Faults

1. Select an individual fault by tapping the screen. The text is surrounded by a dashed blue line [76A].
2. Tap the **Clear Selected** button [76B] to clear the fault from the list.
3. Tap **Clear List** button [76C] to clear the complete list.

NOTE: Faults displayed depend on the applicator and options. Figure [75] is a representation and may not show faults that apply to every system. Current active faults displayed in red before selecting cannot be cleared individually.

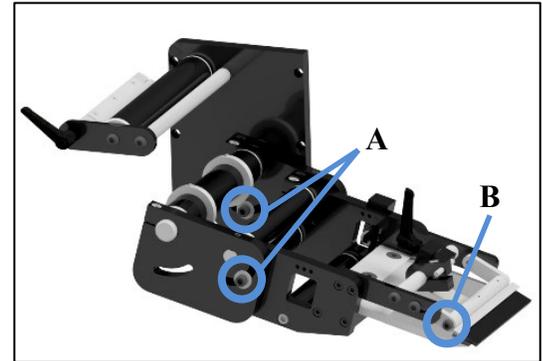


APPLICATOR SETUP

Merge Applicator Setup

The Merge nose assembly [77] is used to apply labels to products moving on a conveyor. A label is fed onto the surface of the product at the same speed that the product is moving. This assembly allows the labels to be wiped onto the product and includes a brush at the end of the assembly.

When setting up a merge applicator for the first time follow the below steps to ensure all settings are correct:



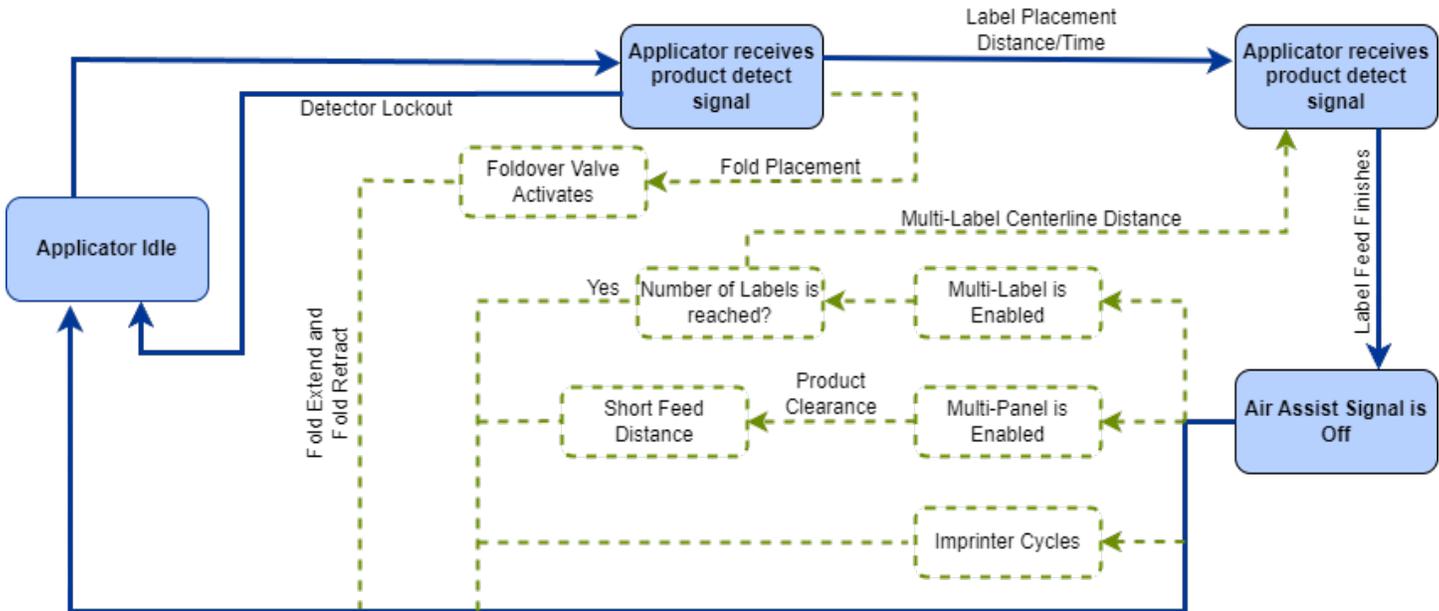
[77] Merge Nose Assembly (Right-Hand)

1. Starting at the Main Menu, tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode** and tap the **Up** or **Down** arrow to choose **Merge**.
2. Go back one screen and tap **Applicator Hand**. Choose either **Right** or **Left** for the configuration, or dispensing direction.
 - a. If there are any options turned on that are not compatible with a merge, they are automatically turned off.
 - b. If the dispense direction changes and the Applicator Hand menu is exited, the applicator forces the operator to cycle the power to the applicator before any other changes can be made.
3. Loosen the socket head cap screws [76A] with a $\frac{3}{16}$ Allen wrench on the Merge nose assembly to position the peel edge so it's between $\frac{1}{8}$ in. and $\frac{1}{2}$ in. away from the product at approximately 20° to the product surface.
4. Loosen the screw above the applicator brush [76B] so that it lightly touches the product. It should be angled so that the label is supported as it is fed out.

NOTE: The applicator brush is used to aid in the tacking of the label to the product. It is not made to be a wipe down.
5. Set the **label stop** so that the label flags past the peel edge but misses the passing product. If the label stop hits a passing product the label could tack without the applicator cycling.
 - a. Complete a label sensor auto teach. See the **Auto Teach** section in the **Sensor Teach** section.
 - b. Change the label stop value manually. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Label Feed Setup > Label Stop**.
6. Set the **web speed** to match the speed of the product.
 - a. Start at the Main Menu and tap **Setup Menu > Setup Passcode > Label Feed Setup > Web Speed**.
 - b. If encoder-based, the encoder options should be set so that the displayed speed in the Product Setup portion of the display is correct.
7. Turn on all applicator options needed for application (multilabel, overspeed, etc.).

Merge Applicator Flow Chart

Figure [78] represents the cycle of a merge applicator. Some cycle-affecting options are depicted by dotted lines. Any step that has multiple arrows leading to it indicates that multiple steps must be complete prior to advancing.



[78] Merge Assembly Flow Chart

Air Blow Applicator Setup

The Air Blow nose assembly [79] applies labels of different sizes without needing a new pad or manifold. Products can also be labeled at a standstill without contact.

The blow box has two axial fans mounted in the top of the assembly that produces the vacuum needed to hold the label. Inside the blow box are eighteen flexible jets that provide air blasts to apply the label. These jets may be arranged in a variety of ways to apply many shapes and sizes of labels.

The steps below detail how to set up the Air Blow nose to dispense labels properly:

- 1 Start at the Main Menu and tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode**. Tap the **Up** or **Down** arrow to choose **Blow**.
- 2 Tap the **back** button to go to the previous screen and tap **Applicator Hand**. Choose either **Right** or **Left** for the configuration, or dispensing direction.
 - a. If there are any options turned on that are not compatible with an air blow, they are automatically turned off.
 - b. If the dispense direction (left or right) is changed and the Applicator Hand menu is exited, the applicator forces the operator to cycle power to the applicator before any other changes can be made.
- 3 Position the applicator as close to the product as you can without hitting it by adjusting the upright stand, traverse, and/or outrigger if used.
- 4 Turn on any additional options needed and ensure the labels are threaded and taught correctly. For more information about setting up labels refer to the [Label Setup](#) section of the manual.



[79] Air Blow Nose Assembly (Right Hand)

Air Blow Peel Edge Alignment

1. Power-on the applicator and tap the green **Applicator Enabled** button to disable the applicator.
2. Advance the web by hand by turning the drive roller and notice how the label feeds onto the grid.
 - a. Paper labels should deflect 5°-10° to the bottom surface of the label grid.
 - b. Stiffer labels should feed straight onto the grid.
3. Loosen the (2) 1/4 in. socket head screws on the peel edge faceplate to adjust it. Move the assembly to a position close to the grid and allow enough room for the label and liner to pass between the peel edge and the grid.

***NOTE:** The top of the peel edge should be slightly higher than the bottom surface of the label grid. If a label on the grid slides back onto the peel edge, the peel edge is too low.*

4. Repeat Step 2 to check the label angle and re-adjust if needed.

Air Blow Label Stop

1. Tap the red **Applicator Disabled** button to enable the applicator
2. Tap the **Jog** button a few times to advance a few labels and monitor the label stop position. The label stop position should be set to stop the leading edge of the label 1/32 in. from the peel edge tip.
3. Tap **Setup Menu > Label Setup** to change the **Label Stop** value if needed and repeat.

Air Blow Grid Setup

1. Power-on the applicator and enable it.
2. Tap the **Jog** button to get a label onto the grid and tape the label to the grid.
3. Power-off the applicator and remove the blow box cover.
4. Arrange the air jets in a symmetrical pattern with most of the tubes in the center of the label and insert any unused tubes into the Storage Block.



CAUTION: Ensure the air jets are NOT in the axial fan.

5. Select either the **HIGH** or **LOW** switch position to run the fans that generate the vacuum to hold the label in place.
 - a. In the LOW position, only one fan runs.
 - b. In the HIGH position, both fans run.

Air Blow Air Assist Setup

The air assist tube blows a stream of air onto the label to force it up against the blow box grid during the label feed. The air assist starts to blow when the web liner starts to move and stops when the label is on the grid. The extended air assist time allows the air assist to blow after the label feed to help stabilize the label. The following steps detail the setup of the air assist tube:

1. Adjust the air assist tube so it's blowing onto the center of the label by loosening the screw right next to it. Ensure the label feeds out against the grid properly.
2. Adjust the **Air Assist valve** on the valve bank to **10-15 PSI** by turning the knob directly above it. This is a typical setting, but it may be changed as needed.
3. If a longer air assist is needed to help position the label, from the Main Menu tap **Setup Menu > Setup Passcode > Application Setup Menu > Web Speed > Air Assist**. Enter a value between **.000sec.-1sec.**

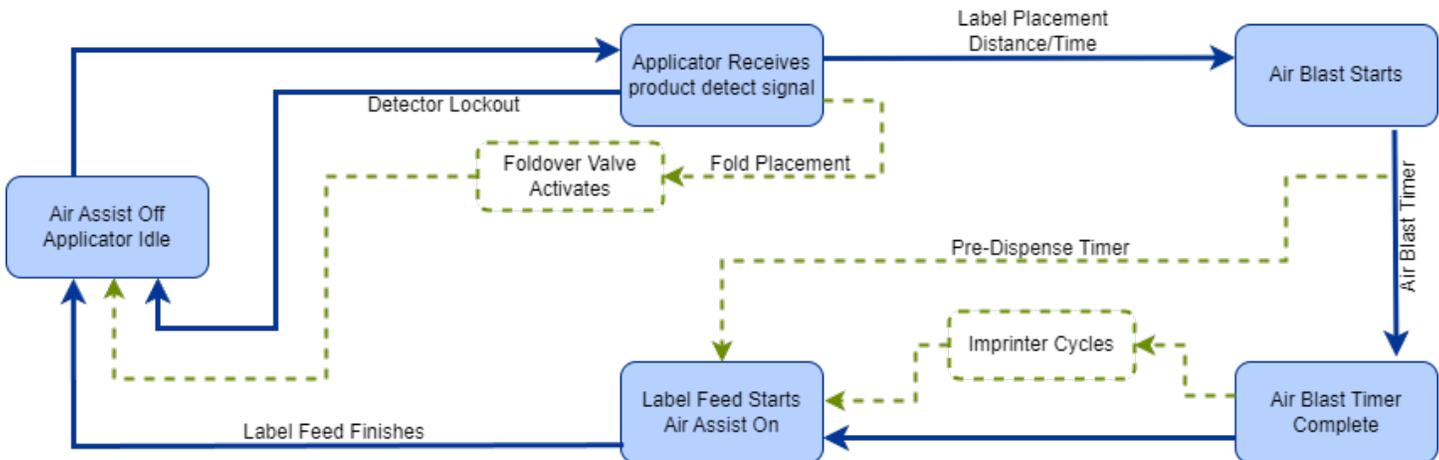
Air Blow Air Blast

The air blast transfers the label from the grid to the product and is a function of time and air pressure. The air blast pressure is regulated by the air blast regulator assembly located on the valve bank and is typically set to **40-50 PSI**.

The adjustable air blast timer can be set between .005sec.-1sec. This adjustment can be found by tapping **Setup Menu > Setup Passcode > Application Setup Menu > Web Speed > Air Assist**.

Air Blow Flow Chart

Figure [80] represents the cycle of an air blow applicator. Some cycle-affecting options are depicted by dotted lines. Any step that has multiple arrows leading to it indicates that multiple steps must be complete prior to advancing. Not all options are shown as not all options affect the cycle.



[80] Air Blow Assembly Flow Chart

Tamp Applicator Setup

The Tamp applicator nose assembly [81] consists of a tamp slide, label manifold, and a label pad. The label is fed out onto the label pad and is tamped within $\frac{1}{8}$ in. of the labeling surface. The label is then blown off by an air blast. The Tamp applicator has higher placement accuracy and is less dependent on product movement than the Merge and Air Blow applicators.

Starting at the Main Menu, tap **Setup Menu > Setup Passcode > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Apply Mode** and tap the **Up** or **Down** arrow to choose one of the following types of tamping action:

- **Normal Tamp:** A label feeds out onto the label pad and the applicator waits for a product detect signal to tamp and apply the label. After applying the label, the tamp pad returns home to receive another label.
- **ITB Tamp:** A label feeds out onto the label pad and the tamp extends. The applicator waits for a product detect signal before applying the label via an air blast and returning home to receive another label.
- **DAT:** The DAT has a swing action to apply a label to the leading or trailing panel of the product and a linear tamp action to apply a label to a side panel of the product. The DAT applicator has three **(3)** modes of operation:
 - Swing first then tamp (Leading)
 - Tamp first then swing (Trailing)
 - Inverted swing then inverted tamp (Inverted).

Within all modes, a swing only and a side only option is available.

- **Corner Wrap:** A label feeds out onto the label pad and the applicator waits for the product detect signal to apply a label to the front panel and then around the corner to the side panel. This applicator type must be used with a Hi/Lo pressure valve bank so that the product can push through the extended swing arm.

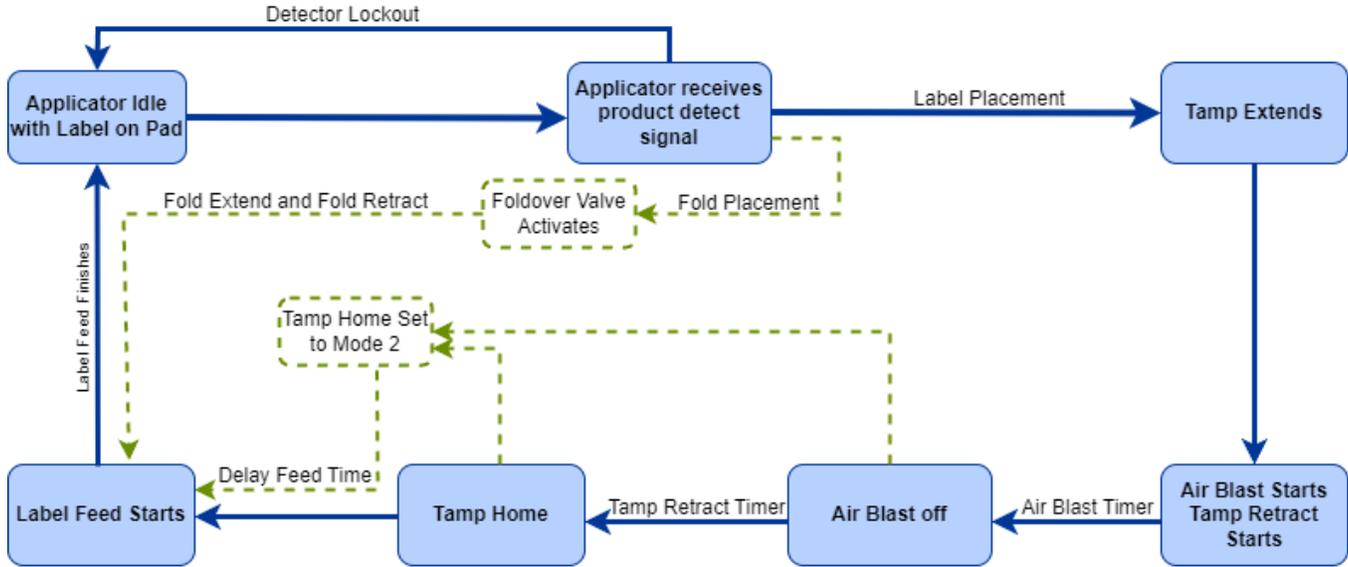
If selecting Normal Tamp or ITB tamp, use the setup guides in the sections listed below to set up tamp application. If selecting DAT or corner wrap continue to the [Dual Action Tamp \(DAT\) Setup](#) or [Corner Wrap Setup](#) sections of the manual.



[81] Tamp Nose Assembly (Right Hand)

Normal Tamp Flow Chart

Figure [82] represents the cycle of a normal tamp applicator. Some cycle-affecting options are depicted by dotted lines. Any step that has multiple arrows leading to it indicates that multiple steps must be complete prior to advancing. Not all options are shown as not all options affect the cycle.

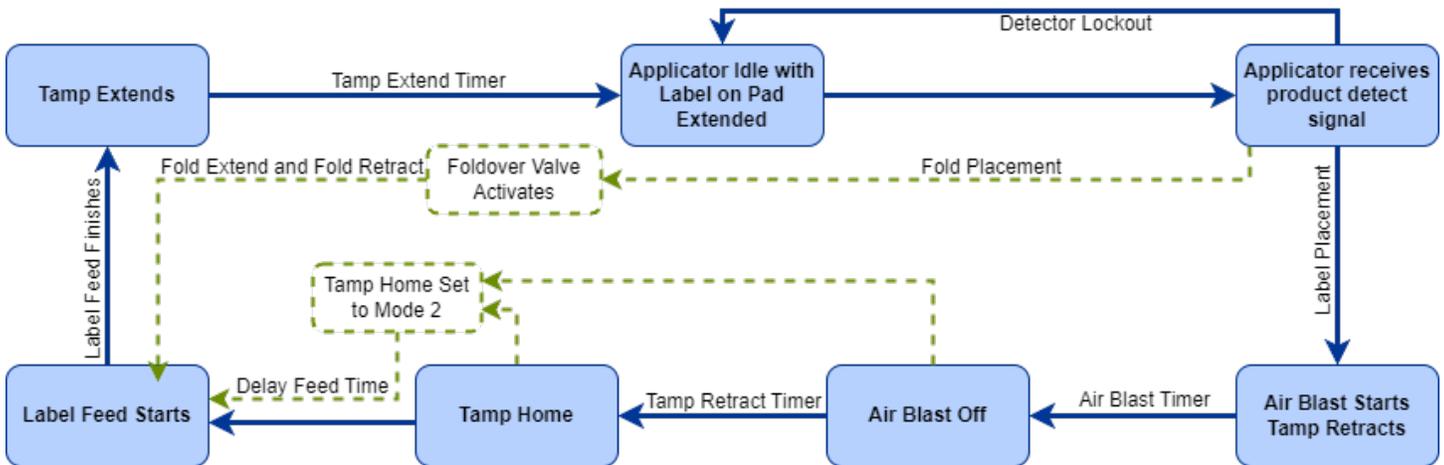


[82] Normal Tamp Assembly Flow Chart

NOTE: Use of Tamp Home and Tamp Return sensors will override the settings of the Tamp Extend and Tamp Retract timers.

Inverted Tamp (ITB) Flow Chart

Figure [83] represents the cycle of an inverted tamp applicator. Some cycle-affecting options are depicted by dotted lines. Any step that has multiple arrows leading to it indicates that multiple steps must be complete prior to advancing. Not all options are shown as not all options affect the cycle.

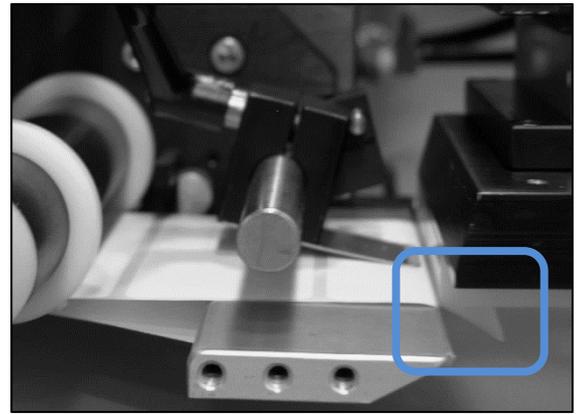


[83] Inverted Tamp Blow Assembly Flow Chart

NOTE: Using Tamp Home and Tamp Return sensors overrides the settings of the Tamp Extend and Tamp Retract timers.

Tamp Peel Edge Alignment

1. Power-on the applicator, connect it to air, and tap the green **Applicator Enabled** button to disable the applicator.
2. Advance the web by hand by turning the drive roller and stop when half of the label is off the peel edge tip. The label should be at an angle 5°-15° from the label pad surface [84]. The stiffer the label, the flatter the angle should be.
3. Adjust the peel edge by loosening the (2) ¼ in. socket head screws on the peel edge faceplate. Move the assembly close to the tamp pad.
4. Allow 1/16 in. clearance distance between the peel edge and tamp assembly.
5. Repeat Step 2 to check label angle and re-adjust if needed.



[84] Tamp Peel Edge

Tamp Vacuum Pressure

The tamp pad vacuum is generated by a vacuum venturi located on the applicator's valve bank. The vacuum is used to hold the label on the label pad until the air blast releases it. Too much or too little vacuum affects label placement on the pad.

The vacuum can be adjusted by changing the air pressure to the vacuum regulator feeding the venture. The vacuum regulator is typically set to 20 PSI, but it can be changed as needed. To adjust, turn the knob above the vacuum valve that says **Vacuum**. If the label is fluttering during label feed, it may be due to too high vacuum pressure.

NOTE: It is important to match label size with the label pad size so that no holes are uncovered when the label is on the pad. This may result in losing vacuum.

Tamp Air Assist Tube Setup

The air assist tube blows a stream of air onto the label to push it against the tamp pad during the label feed. The air assist starts to blow when the web starts to move and stops when the label is on the pad. The air assist time allows the air assist to blow after the label feed to help stabilize the label.

1. Adjust the air assist tube by loosening the screw directly beside it so it's blowing in the center of label. Ensure that the label feeds out against the label pad.
2. Adjust the regulator for the air assist located on the valve bank by turning the knob right above the valve that says **Assist**, to between **30-40PSI**. This is a typical setting, but it may be changed as needed.
3. If a longer air assist is needed to help position the label, from the Main Menu tap **Setup Menu > Applicator Setup Menu > Air Blow** and enter a value between **.000sec.-1sec.**

Tamp Air Blast Setup

The air blast transfers the label from the label pad to the product and is a function of time and air pressure.

1. Set the regulator for the air blast between **40 PSI-50 PSI** by turning the knob above the valve on the valve bank that says **Assist**.
2. If the air blast time needs changed adjust the air blast variable by tapping **Setup Menu > Applicator Setup > Air Blow** and enter a value between **.005sec. – 1sec.**

NOTE: Increased air pressure usually equals less time and decreased air pressure usually equals more time.

Tamp Slide Setup

The tamp slide moves the label pad and manifold toward the product. Its speed is a function of air pressure and airflow. The valve and regulator for the tamp assembly are part of the valve bank mounted to the side of the applicator.

1. Set the regulator between **40 PSI** and **50 PSI**, but it may be changed, as necessary.
2. Two adjustment knobs (flow controls) are provided on the air cylinder to adjust the tamp extend and retract speed.
 - a. Turn the knobs **CW** to slow the movement of the cylinder.
 - b. Turn the knobs **CCW** to speed up the cylinder.

NOTE: The tamp extend and retract times must be setup by the operator since they are dependent on the setting of the adjustment knobs. Both timers are in the Applicator Setup Menu of the display.

Tamp Extend Time

Tamp Extend Time is the time allotted to fully extend the tamp slide assembly. After the tamp extend time passes, an air blast forces the label off the label pad onto the product. To keep cycle time low, set the extend time so that the air blast occurs when the slide reaches the fully extended position.

To change the tamp extend time, ensure that the flow controls are properly set up. From the Main Menu, tap **Setup Menu > Configuration Menu > Application Setup** and enter a value under **Tamp Extend** between **.01sec. – 5sec.**

Tamp Retract Time

The tamp retract time is the time allotted to fully retract the tamp slide assembly. At the end of the tamp retract time, a label is fed out onto the pad. Too small of a value causes a label to feed out before the label pad is in the home position. Too high of a value increases cycle time.

To change the tamp retract time, start at the Main Menu, tap **Setup Menu > Configuration Menu > Application Setup** and enter a value for **Tamp Retract** between **.01-5 seconds.**

NOTE: If tamp switches are used, only set both tamp extend and retract times to a value higher than the time required. The tamp switches overrides any excess time.

Corner Wrap Setup

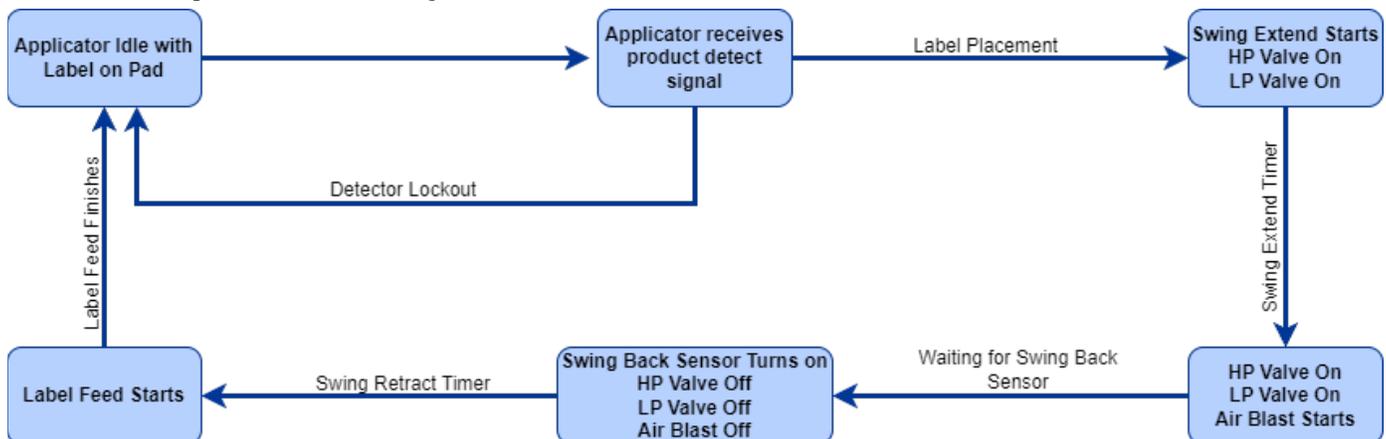
A Corner Wrap setup has a Swing Tamp nose with a valve bank that can control low pressure. This means that the Swing Tamp arm swings out to meet the product and then low pressure allows the product to push the swing arm out of the way as the label is applied. Below is the proper sequence.

Corner Wrap Sequence

1. The applicator is online, and a label is on the pad.
2. The applicator receives a product detect signal and waits the label placement distance or time.
3. The tamp arm swings out in front of the product using the high-power (HP) swing valve.
4. At the end of the swing extend time, the air blast and low-power (LP) swing valves turn on to apply a label to the leading panel of the product.
5. The product contacts the label pad at roughly the same time that the LP swing valve turns on.
6. The swing arm remains extended at low pressure as the product pushes it out of its path.
7. When the product passes in front of the swing back sensor, the HP swing, low-power swing, and blow valves turn off and the swing retract time is started.
8. When the swing retract time is complete, the next label is dispensed.

Corner Wrap Flow Chart

Figure [85] depicts the cycle of a corner wrap. Any step that has multiple arrows into it means the timer/distances run concurrently and must all be complete before continuing.



[85] Corner Wrap Flow Chart

NOTE: If swing home and retract sensors are installed, they will override the swing home and retract timers.

Corner Wrap General Setup Procedures



CAUTION: To avoid injury, ensure the applicator is **OFFLINE** for the following adjustments.

1. Set the **Label Stop** value to position the label at or slightly back from the peel edge to ensure the applicator works properly. Adjust by starting at the Main Menu and tapping **Setup Menu > Label Setup Menu** and tap on the current Label Stop Value to change.
2. Adjust the shock stops and actuator hard stops on the tamp arm, so the label feeds out in contact with the label pad.
 - a. If the pad is too high, the label will not land consistently on the pad.
 - b. If the label pad is too low, the label will dispense into the back of the pad and jam.

Most of this adjustment is done with the peel edge and is discussed in the [Tamp Applicator Setup](#) section of the manual.

3. Adjust the rotary actuator so the label pad is level with the applicator.

NOTE: *The rotary actuator's internal stops control 100% of where the swing arm stops – the shocks act as a “buffer” only! See the [DAT Rotary Actuator Stop Adjustment Guidelines](#) section for more information.*

4. Ensure the label is aligned with the pad so there is no over-hang. To adjust this, move the web liner in or out by adjusting the guide collar's set screws and unwind disks.
5. Loosen the screw right next to the air assist tube to position it with the hole(s) centered on the label and pointing approximately ¼ in. from the label pad edge.
6. Turn the knob above the **Air Assist** valve on the valve bank to set the air pressure at **20-30 PSI** and press the **Jog** button to dispense a label.
 - a. If the label doesn't feed out against the label pad or the vacuum doesn't capture it, increase the air pressure, and continue until the vacuum captures the label.
 - b. Air pressure for the HP swing and LP swing should start at 40 PSI and 10 PSI respectively. The air blast pressure should start around 5 PSI and the vacuum at 20 PSI.
 - c. It is not uncommon to not use any air blast for a cornerwrap application.
7. Adjust the LP swing pressure setting depending on the weight of the product and amount of friction between the product and conveyor.
 - a. Too much pressure and the product cannot push through the swing arm assembly.
 - b. Too little pressure and the label will not adhere to the surface of the product.
8. Avoid setting the air blast PSI so high that the label is blown off the label pad when the blast valve is activated. The air blast is used to break the vacuum hold of the label so that the label can be wiped onto the product.

Positioning Corner Wrap Applicator

The product must be presented to the applicator in a consistent manner. Label accuracy cannot be maintained if the surface being labeled changes speed or distance relative to the label pad.

1. With the air and power turned off to the applicator, rotate the swing arm to the extended position.
2. Push the product down the conveyor within the guides and stop in front of the label pad.
3. Move the applicator in or out and up or down to position the pad where the label should be placed on the front panel of the product by adjusting the upright stand, outrigger, and/or traverse if using these items.
4. While the swing arm is extended, verify that the label pad is square to the conveyor in both directions so the label is applied and wrapped in a straight line around the corner of the product.

Positioning Product Detect and Swing Back Sensors

Before going through this section, make sure the extend and retract times are properly set up. Verify the applicator is in its final position as well.

NOTE: *The setup described assumes no encoder is used. For encoder applications some values may change.*

1. Power-up the applicator, turn on the air, and tap the red **Applicator Disabled** button to enable the applicator
2. Position the product detect sensor about 6in. upstream of the extended swing arm.
3. Set the **Label Placement** value to **0.001** and turn on the conveyor.
4. Place a product on the conveyor and watch/listen for when the LP swing and blow valves activate.
 - a. If the product hits the label pad before the swing arm was in the low-pressure state, move the product detect sensor upstream more.
 - b. If the swing arm entered the low-pressure state too soon, move the sensor downstream. Ideally, the swing arm should go to the low-pressure state as soon as the product touches the label pad.
5. Once the product detect sensor position is set, the swing back sensor position needs set.
6. The swing arm begins to retract once the label is wrapped around the corner and the remaining length of the label is wiped on the side panel of the product.
 - a. If the swing arm retracted too late, move the swing back sensor further upstream.
 - b. If the swing arm retracted too early, move the swing back sensor further downstream.
 - c. There is no programmed delay between the moment that the swing back sensor is activated to the time that the swing arm begins to return to the home position.

Dual Action Tamp (DAT) Setup

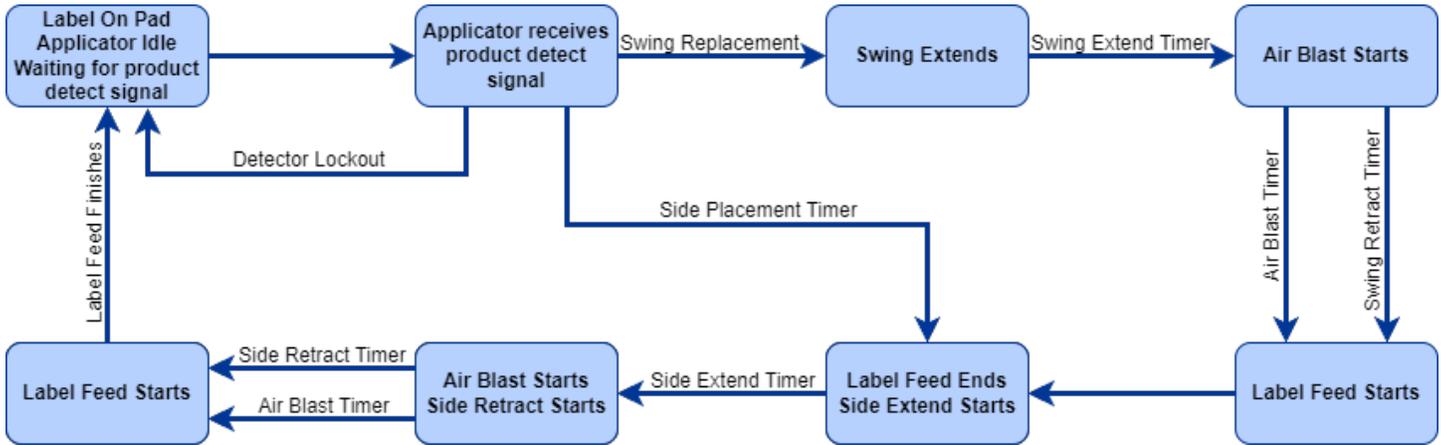
When the applicator type is set to Dual Action Tamp various options become incompatible and the sequence of labeling changes depending on which style of DAT is selected. This section explains those changes and explains how to set up the applicator to function properly as a DAT.

DAT: Leading Edge Sequence

1. The applicator is online, and a label is on the pad.
2. The applicator receives a product detect signal and waits the swing label placement distance or time.
3. The tamp arm swings in front of the product and the air blast valve turns on to apply the label to the leading panel of the product.
4. The tamp arm starts returning home and the swing retract timer starts.
5. When the swing retract timer finishes, a label feeds onto the pad and the applicator waits for the side label placement distance or time.
6. The side label placement distance or time starts at the same time as the swing label placement.
7. When the side label placement distance or time is reached, the tamp assembly extends toward the side of the product.
8. The applicator waits the tamp extend time and blows the label onto the product.
9. The applicator starts retracting the tamp assembly and starts the tamp retract timer.
10. At the end of the retract time, another label is fed onto the label pad.

DAT: Leading Edge Flow Chart

Figure [86] depicts the cycle of a DAT set to leading edge. Any step that has multiple arrows into it means the timer/distances run concurrently and must all be complete before continuing.



[86] DAT Leading Edge Flow Chart

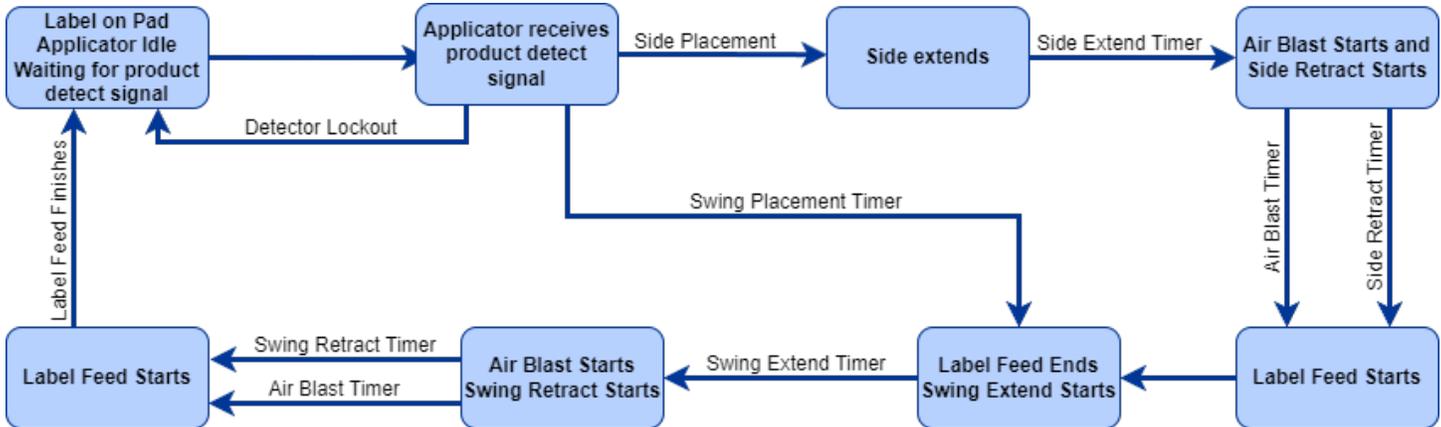
NOTE: If tamp/swing home and retract sensors are installed they will override the tamp/swing home/retract timers.

DAT: Trailing Edge Sequence

1. The applicator is online, and a label is on the pad.
2. The applicator receives a product detect signal and waits the side label placement distance or time.
3. The tamp arm extends to the side of the product at the end of the side extend time and the air blast valve turns on to apply a label to the side panel of the product.
4. The tamp assembly starts returning home and the side retract timer starts.
5. When the timer finishes, a label feeds onto the pad and the applicator waits for the swing label placement distance or time which starts at the same time as the side label placement distance or time.
6. When the swing label placement distance or time is reached, the label pad swings behind the product.
7. The applicator waits the swing extend time and blows the label onto the product, and the swing arm retracts the swing retract timer starts.
8. At the end of the retract time, another label feeds onto the label pad.

DAT: Trailing Edge Flow Chart

Figure [87] depicts the cycle of a DAT set to trailing edge. Any step that has multiple arrows into it means the timer/distances run concurrently and must all be complete before continuing.



[87] DAT Trailing Edge Flow Chart

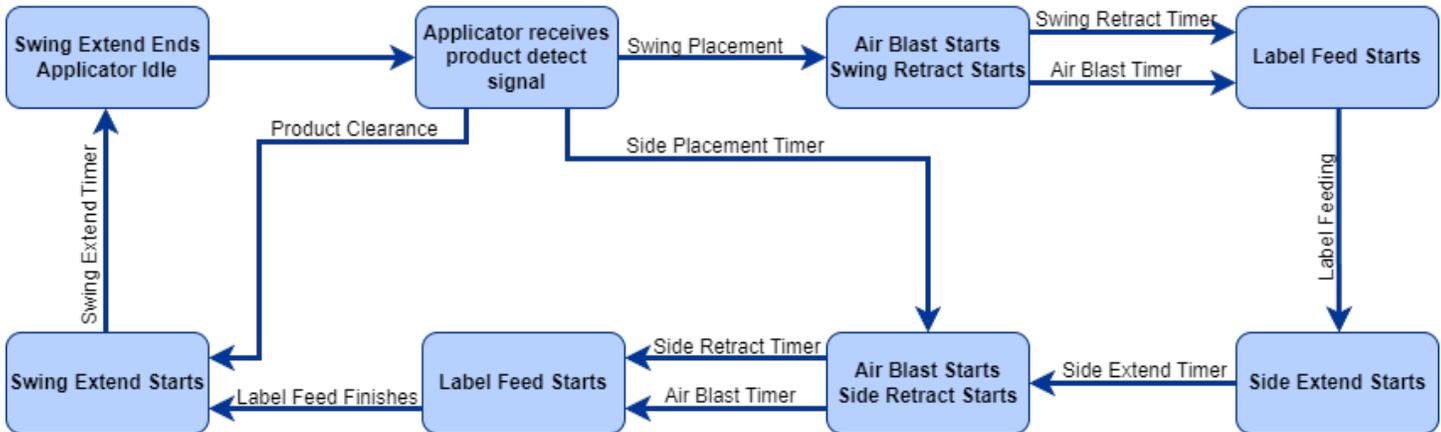
NOTE: If tamp / swing home and retract sensors are installed they will override the tamp / swing home / retract timers.

DAT: Inverted Mode Sequence

1. The applicator is online, and a label is on the pad.
2. The label pad swings into product flow and waits for the product detect signal.
3. Once the product detect signal is received, the applicator starts the product clearance and side label placement times or distances while it waits for the swing label placement time or distance.
4. When the swing label placement is finished, the applicator blows the label off the pad and onto the front of the product. At the same time, the label pad swings home and the retract timer starts.
5. At the end of the swing retract time, another label feeds out onto the pad and the tamp valve turns on, moving the label pad to the side of the product.
6. The tamp extend timer starts and when complete, the applicator waits for the side label placement to finish.
7. When both are done, the label is blown onto the side of the product and the tamp valve turns off causing the label pad to retract.
8. The tamp retract time starts and at the end, another label feeds out onto the pad.
9. The applicator waits for the product clearance time or distance to finish, and the label pad swings back out into product flow, ready to start the sequence again.

DAT: Inverted Flow Chart

Figure [88] depicts the cycle of a DAT set to inverted. Any step that has multiple arrows into it means the timer/distances run concurrently and must all be complete before continuing.



[88] DAT Inverted Flow Chart

NOTE: If tamp/swing home and retract sensors are installed they will override the tamp / swing home / retract timers.

Incompatible DAT Options

When DAT applicator type is selected various options become incompatible. The following options cannot be enabled while the application type is DAT:

- Loose Loop
- Imprinter
- Product Detect Queueing
- Foldover
- Multi-Label
- Powered Rewind
- Vacuum Off

DAT Label Placement Setup

When the applicator is set to DAT, a second label placement value appears in the Main Menu [89]. The first placement value corresponds to the first tamp action while the second placement value corresponds to the second tamp action.

The allowed values are between 0 and 20 seconds or inches for the first and between 0 and 99 seconds for the second label placement. A suggested lower range limit appears below the second label placement value. Its value varies depending on the first label placement and extend and retract values for the applicator.



[89] DAT Label Placement

NOTE: If the first part of the cycle is not completed by the time/distance of the second label placement has passed, the second label is applied late, and a warning alarm is generated. To correct, shorten the cycle time of the first cycle or decrease product speed.

Once the tamp or swing times are selected, both extend and retract timers are accessible for changing. The extend timers determine how long the tamp or swing valves are on before the air blast occurs and should be set long enough to ensure the label pad is fully extended before the air blast occurs.

The retract timers determine how long the valve will be off before a label is fed onto the label pad. The retract timer values should be set long enough to ensure that the label pad is home before feeding a label.

DAT General Setup Procedures

1. Set the label stop to ensure the applicator works properly. Adjust the label stop value to the position the label at the peel edge or slightly back from the peel edge.
2. Adjust the tamp height so the label feeds out in contact with the label pad.
 - a. If the pad is too high, the label will not land consistently on the pad.
 - b. If the pad is too low, the label will dispense into the back of the pad and jam.

Most of this adjustment is done with the peel edge and is discussed in the [Tamp Applicator Setup](#) section of the manual.

3. Adjust the rotary actuator so the label pad is level with the applicator. **The rotary actuator's internal stops control 100% of where the swing arm stops – the shocks act as a “buffer” only!** See the [DAT Rotary Actuator Stop Adjustment Guidelines](#) section below.
4. Ensure the label is aligned with the pad so there is no over-hang. To adjust, move the liner web in or out by adjusting the guide collars and unwind disks.
5. Loosen the screw right next to the air assist tube to position it with the hole(s) centered on the label and pointing approximately ¼ in. from the label pad edge.
6. Turn the knob above the **Air Assist** valve on the valve bank to set the air pressure at **20-30 PSI** and press the **Jog** button to dispense a label. If the label does not feed against the label pad or the vacuum does not capture it, increase the air pressure, and continue until the vacuum captures the label.

NOTE: There are other factors that can keep the label from staying on label pad. You may need more vacuum, increased, or decreased label dive, or the air assist tube may need to be rotated.

Air pressure for the tamp slide and rotary actuator should start at 40 psi, the air blast at 40-60 psi, and the vacuum pump at 20 psi.

7. Set the **Air Blow** time to be long enough to apply a label firmly to the product. Starting at the Main Menu tap **Setup Menus > Setup Passcode > Application Setup Menu > Air Blow** variable to change. Setting the time too high results in fewer labels/min. Start at 0.06 seconds. The air blow time applies to both the swing and tamp sequences.

DAT Rotary Actuator Stop Adjustment Guidelines

1. Ensure the air pressure reads **40 PSI**.

NOTE: Different variables can affect air pressure, such as gravity, weight of the label pad and manifold, and the applicator's orientation (Nose Up/Nose Down, Reels Down, Upright and Above, Bottom Up).

2. Adjust airflow needle valves, located on the side of the longest "tube" of the rotary actuator, with a flat blade screwdriver.
 - a. Turn the screw **CW** to decrease airflow.
 - b. Turn the screw **CCW** to increase airflow. Typical flow control setting is ½ turn CCW from full CW.

NOTE: Proper flow control settings provides a smooth and controlled cycle.

3. Loosen the retract jam nut located on the end of the long rotary actuator tube.
4. Use a $\frac{3}{16}$ in. Allen wrench and turn the stop set screw CW. This moves the swing tamp arm away from the tamp home shock. The tamp home shock should protrude from the stop coupling by $\frac{1}{8}$ in. – $\frac{3}{16}$ in. Adjust if it does not.
5. Turn the retract setscrew CCW until the swing arm comes to rest against the home stop shock coupling. Tighten the jam nut.
6. Set the extend rotary stop as per above instructions. Note that the extend shock does not have a stop coupling. This shock should be adjusted to allow for one half of its travel to be compressed when the swing arm is extended.

DAT Shock Absorbers and Flow Controls

Adjusting linear and rotary actuator shock absorbers

1. Adjust the swing home shock stop collar to provide $\frac{1}{8}$ in. of shock travel.
2. To adjust the shock so the swing arm stops in the right position, press the manual override on the rotary actuator valve and watch the movement of the swing arm.
3. The arm should hit the shock and stop without bouncing. If it bounces too much, slow the actuator down by adjusting the flow controls.

Adjusting the flow controls

The flow controls are integrated into the actuator and are located on each end of the longer cylinders.

1. Turn the screw inward with a small screwdriver to slow the arm's rotational speed and turn it outward to speed up the arm's rotational speed.
2. The slide shock absorbers are larger and have longer strokes to ensure a smooth stop when moving larger loads.
3. The shocks should be adjusted to ensure that there is at least $\frac{1}{8}$ in. or more travel available when the slide stop hits the body of the slide. Do not allow the shocks to bottom-out.

Adjusting the shocks

1. Loosen the clamping screws on the shock mounts and screw the shock inward or outward.
2. When in position, re-tighten the clamp to ensure the shock stays in place.
3. The flow controls for the slide are mounted on the valve bank. Screwing the knob inward slows the speed of the slide's action while turning the knob outward speeds it up.

Positioning the DAT Applicator

The product must be presented to the applicator in a consistent manner. Label accuracy cannot be maintained if the surface being labeled changes speed or distance relative to the label pad.

1. Power-off the applicator and rotate the swing arm to the extended position.
2. Ensure the slide is fully retracted and push the product down the conveyor within the guides and stop the product in front of the label pad.
3. Move the applicator in or out, or up or down, to position the pad where the label should be placed on the product.
4. Retract the swing arm and move the product in front of the applicator.
5. Extend the slide forward and retract the swing arm. Stop when there is about $\frac{1}{8}$ in. between the product and the label pad. You may need to move the slide extend stop by loosening the clamping screw and sliding the stop against the slide body.
6. Once the applicator is properly positioned the product detect sensor can be mounted.

Mounting DAT Product Detect Sensor

Before going through this section, ensure the extend and retract times are properly set up. The following steps assume no encoder is used. For encoder applications some values may change.

1. Power-on the applicator, turn on the air, and tap the green **Applicator Enabled** button to disable the applicator.
2. Position the product detect sensor about **6in.** upstream of the extended swing arm.
3. Set the first label placement to **0.001** and turn the conveyor on.
4. Place a product on the conveyor and watch when the label is blown from the label pad.
 - a. If the product hits the label pad before it retracted, move the product detect sensor upstream more.
 - b. If it retracted too soon, move the sensor downstream. Ideally, the label will be blown onto the front of the product and retract without ever touching the product.
5. Look at the position of the label on the side of the product.
 - a. If it was applied too late, decrease the second label placement.
 - b. If it was applied too early, increase the label placement.
 - c. If the second label placement is too low compared to the cycle time for the first half of the labeling sequence, a warning will be displayed saying “label placement is too low.”

MAINTENANCE MANUAL

360y GENERAL MAINTENANCE PROCEDURES

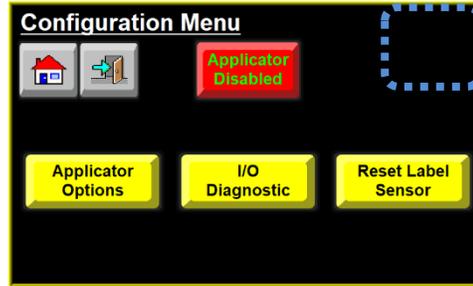
The procedures listed in this manual detail the maintenance of various components that can be included with a standard 360y.



WARNING: Disconnect the air and power to the applicator BEFORE performing the following procedures. Injury from moving parts and/or electrical shock may occur.

SPECIAL OPTIONS MENU

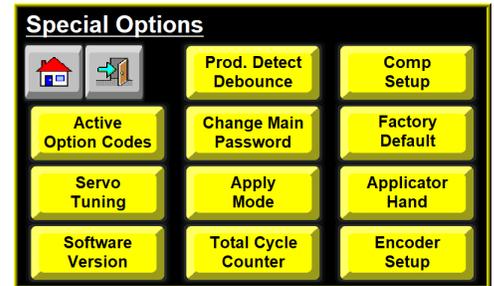
The Special Options menu is a hidden menu that is accessed from the Main Menu by tapping the **Setup Menu > Configuration Setup Menu** and tapping the top right corner of the screen in Figure [1]. The operator is prompted to enter the special options password: **5115**.



[1] Accessing the Special Options Menu

After typing the password, the Special Options menu opens with the following parameters [2]:

- Active Option Codes
- Servo Tuning
- Software Version
- Product Detect Debounce
- Change Main Password
- Apply Mode
- Total Cycle Counter
- Comp Setup
- Factory Default
- Applicator Hand
- Encoder Setup

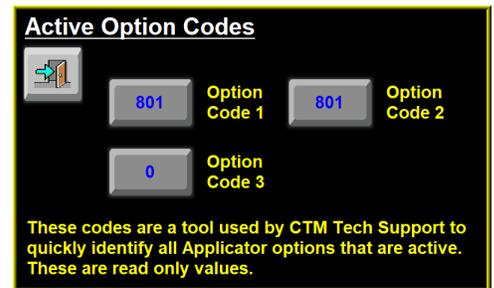


[2] Special Options Menu

NOTE: These parameters should only be changed after contacting the factory.

Active Option Codes

This screen [3] shows codes used by CTM Tech Support to identify active options. These are **read only** and cannot be changed.



[3] Active Option Codes

Servo Tuning

This menu [4] allows the operator to adjust parameters related to the applicator's stepper motor.

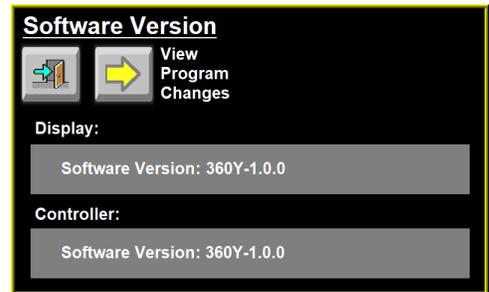
- **Pos. Width (Pulse):** Value in amplifier pulses the position deviation between the position reference value and the actual position is used as the value for acceptable "in position."
- **Neg. Torque Limit (%):** Value in percentage of rated motor torque the amplifier limits maximum output torque during normal reverse direction movement.
- **Pos. Torque Limit (%):** Value in percentage of rated motor torque the amplifier limits maximum output torque during normal forward direction movement.
- **Accel/Decel:** Rate the motor starts and stops its movements. Increasing these values can lead to quicker starting and stopping and potentially cause erratic web handling.



[4] Servo Tuning

Software Version

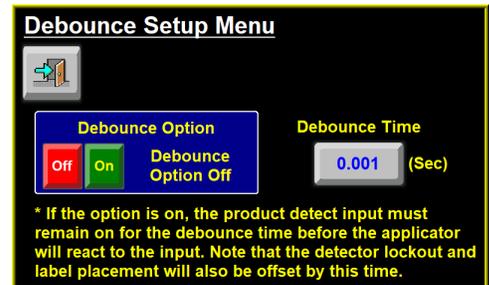
This screen [5] displays the software versions for the display interface and the controller. Operators can also see the different software versions that were previously used.



[5] Software Version

Debounce Setup Menu

This menu [6] allows the applicator to ignore product detect signals that are not held on for the duration of the timer when enabled. Increasing debounce time increases the minimum value for label placement.

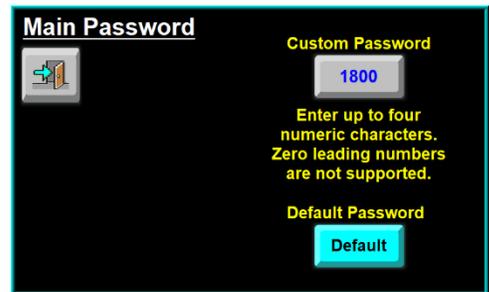


[6] Product Detect Debounce Time

Change Main Password

This screen [7] shows the default password **1800**. This can be changed to any number 1-9999. All applicators from the factory have this default password.

NOTE: When changing the password, the applicator will not recognize leading zeroes as numbers (I.E., 0001 is the same password as 1).



[7] Main Password

Apply Mode Menu

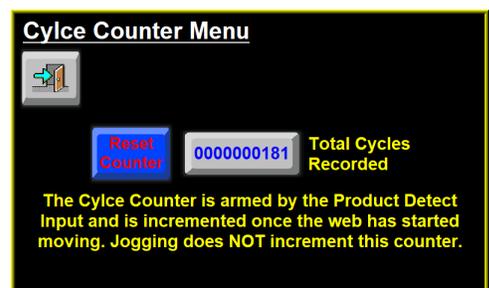
This menu [8] allows the operator to choose the type of application by tapping the **Up** or **Down** arrows. Tap the **Back** button and the new Apply Mode is saved.



[8] Apply Mode Menu

Total Cycle Counter

This menu [9] shows the Total Cycles Recorded and gives the operator the option to reset the counter. The counter starts when the web liner starts moving and increases by the Product Detect Input.

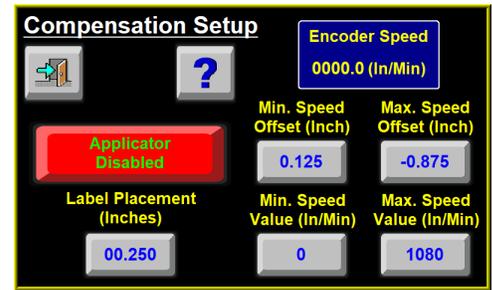


[9] Cycle Counter Menu

Compensation Setup

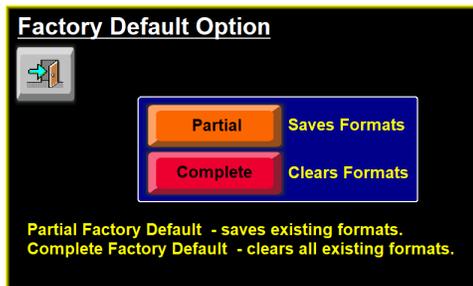
The Compensation Setup menu [10] allows the label placement to be reduced based off the encoder velocity. When products are moving fast, the label dispense must begin sooner to compensate for the acceleration time of the label to the product. The following variables allows the operator to adjust the compensation:

- **Min Speed Offset:** Offset value in inches, for the Label Placement at the Min Speed Value.
- **Max Speed Offset:** Offset value in inches, for the Label Placement at the Max Speed Value.
- **Min Speed Value:** Min Speed used for the Compensation calculation.
- **Max Speed Value:** Max Speed used for the Compensation calculation.

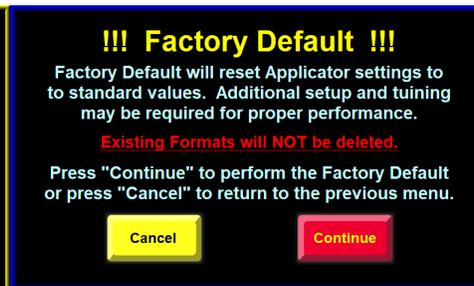


[10] Compensation Setup Menu

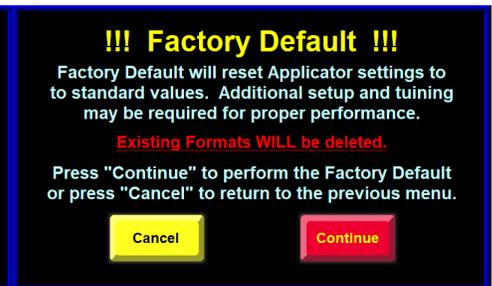
Factory Default Menu



[11] Factory Default Option



[12] Partial Factory Default



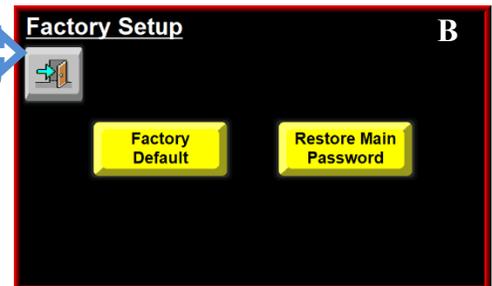
[13] Complete Factory Default

The Factory Default menu [11] gives the operator the option to do a partial reset or a complete reset. A partial reset [12] saves the existing formats, and a complete reset [13] clears all existing formats.

The Factory Default menu can be accessed two different ways: tapping the top right corner of the Power-Up screen [14A] and going through the display.



[14] Power-On Factory Default

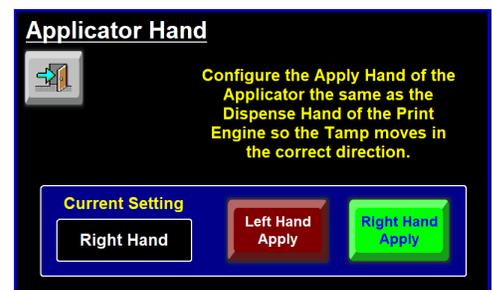


After power-up, a countdown starts which is the amount of time the operator must tap the upper right-hand corner of the screen. This prompts the operator to type in a passcode to bring up the Factory Setup screen [14B]. The Factory Setup screen gives the option to Factory Default, Restore Main Password, and Factory Checkout.

To go through the display, start at the Main Menu and tap **Setup Menu > Configuration Menu > Top Right-Hand Corner > Special Options Passcode > Factory Default Menu.**

Applicator Hand

This screen [15] gives the operator the option to change between Left-Hand and Right-Hand configurations. If changing hand configurations, the operator is forced to cycle power to the applicator.

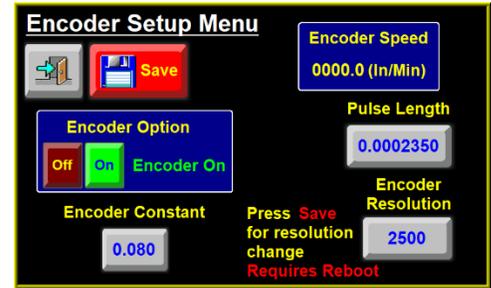


[15] Applicator Hand

Encoder Setup Menu

This Menu [16] gives the operator access to the **Encoder Resolution** and **Pulse Length** variables along with the ability to turn the **Encoder Option** on and off. Any changes made to these variables requires a save and reboot for the changes to take effect.

The applicator has a differential quadrature incremental encoder interface with times four interpolation built into the controller board. This means the encoder has four pins, two positive and two negative. The encoder connector, located on the rear panel, has 5 VDC supply to power the encoder. Factory encoders generate 2500 pulses per revolution. The following values and buttons affect encoder setup:



[16] Encoder Setup Menu

- **Encoder Option:** Keys turn this option on and off. The buttons turn green when selected. While the encoder is on, label placement is in inches and not seconds.
- **Encoder Constant:** Variable that affects encoder-based moves.
*NOTE: **AVOID ADJUSTING THIS VARIABLE!** Changing this variable could cause errors and equipment malfunctions.*
- **Encoder Speed:** Visual display of the velocity obtained from the encoder port.

$$\text{Encoder Speed} = (\text{Pulses/min from encoder}) \times (\text{Pulse Length})$$

- **Pulse Length:** Distance the product travels per pulse of the encoder. Pulse length is calculated using the following formula:

$$\text{Pulse Length} = \frac{\text{Distance Product Moves Each Rev}}{(\text{Encoder Pulses Each Rev}) \times 4}$$

- **Pulse Length Example:** An encoder is mounted to a conveyor drive pulley and the circumference of that pulley is 18.75in. Therefore, the product on the conveyor travels 18.75in. per revolution of the encoder. The encoder is a factory-installed encoder generating 2500 pulses per revolution.

$$\text{Pulse Length} = \frac{18.75''}{(2500) \times 4} = .001875\text{in./pulse}$$

- **Encoder Resolution:** Number of encoder pulses for one revolution.
NOTE: In some applicator systems, the encoder speed varies significantly around an average value. This can be problematic with merge applicators, low-resolution encoders, and low conveyor speeds where fewer encoder pulses are captured during the velocity calculation interval.



WARNING: Disconnect air and power to the applicator BEFORE performing the following procedures. Injury from moving parts and/or electrical shock may occur.

PREVENTATIVE MAINTENANCE

NOTE: Since all applicator types are being covered in this section some maintenance steps may not apply to your applicator. When doing less common maintenance (i.e., semi-annual) still include the steps from the more frequent maintenance.

Daily Maintenance

1. Examine the peel edge, blow box grid, label pad and rollers for excessive adhesive build-up. If necessary, clean these surfaces with alcohol or similar solvent.
2. Examine air filter for water or oil collection. Drain if necessary.
3. Examine for loose screws, rollers, etc.
4. Clean the printhead and platen roller each time the ribbon is changed. Refer to the printer manual for the correct procedure and additional daily checks.

NOTE: This only applies to loose loops.

Weekly Maintenance

1. Clean rollers, blow box grid, label pad, and peel edge of adhesive build-up and dust.
2. Examine air lines and connections to ensure there are no leaks.
3. Examine for loose screws, rollers, etc.

Monthly Maintenance

1. Examine dancer arm tension and unwind brake O-ring.
2. Examine drive and rewind belts for wear and to ensure they are properly adjusted.
3. Examine rollers for free rotation and play.
4. Examine rewind slip clutch disk for wear.
5. Replace the air inlet filter.

Semi-Annual Maintenance

1. Replace the air inlet filter and clean collection bowl.
2. Clean inside and outside of applicator using an industrial vacuum cleaner.



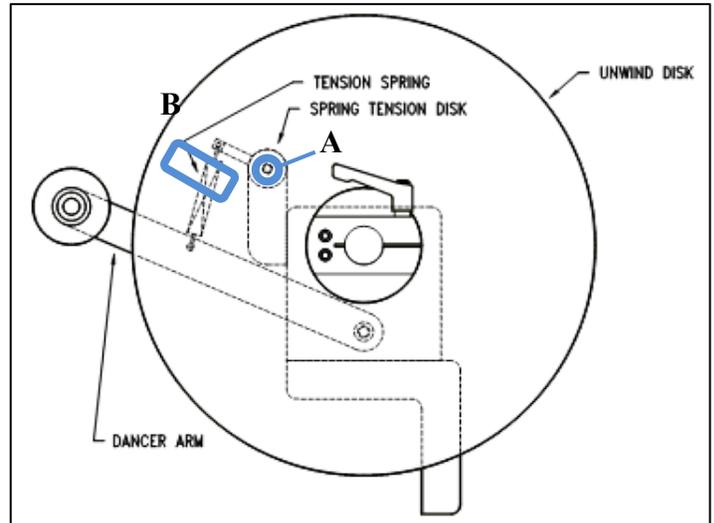
CAUTION: Do not use compressed air to blow dust off the electrical section of the applicator.

3. Replace slip clutch disk and clean both friction surfaces.
4. Check roller clutch on the rewind shaft for correct operation.
5. Examine pulleys for wear.

Dancer Arm Adjustment

The dancer arm maintains tension on the label liner and operates the brake on the unwind mandrel when labels are dispensed. The spring holding the dancer arm should be adjusted so that there is enough braking force to keep the unwind mandrel from continuing to roll after a label feed, but still releases the unwind mandrel when the applicator is cycled.

1. Loosen the screw going to the spring tension disk [17A].
2. Rotate the disk to set the proper spring tension [17B].
3. Re-tighten screw.



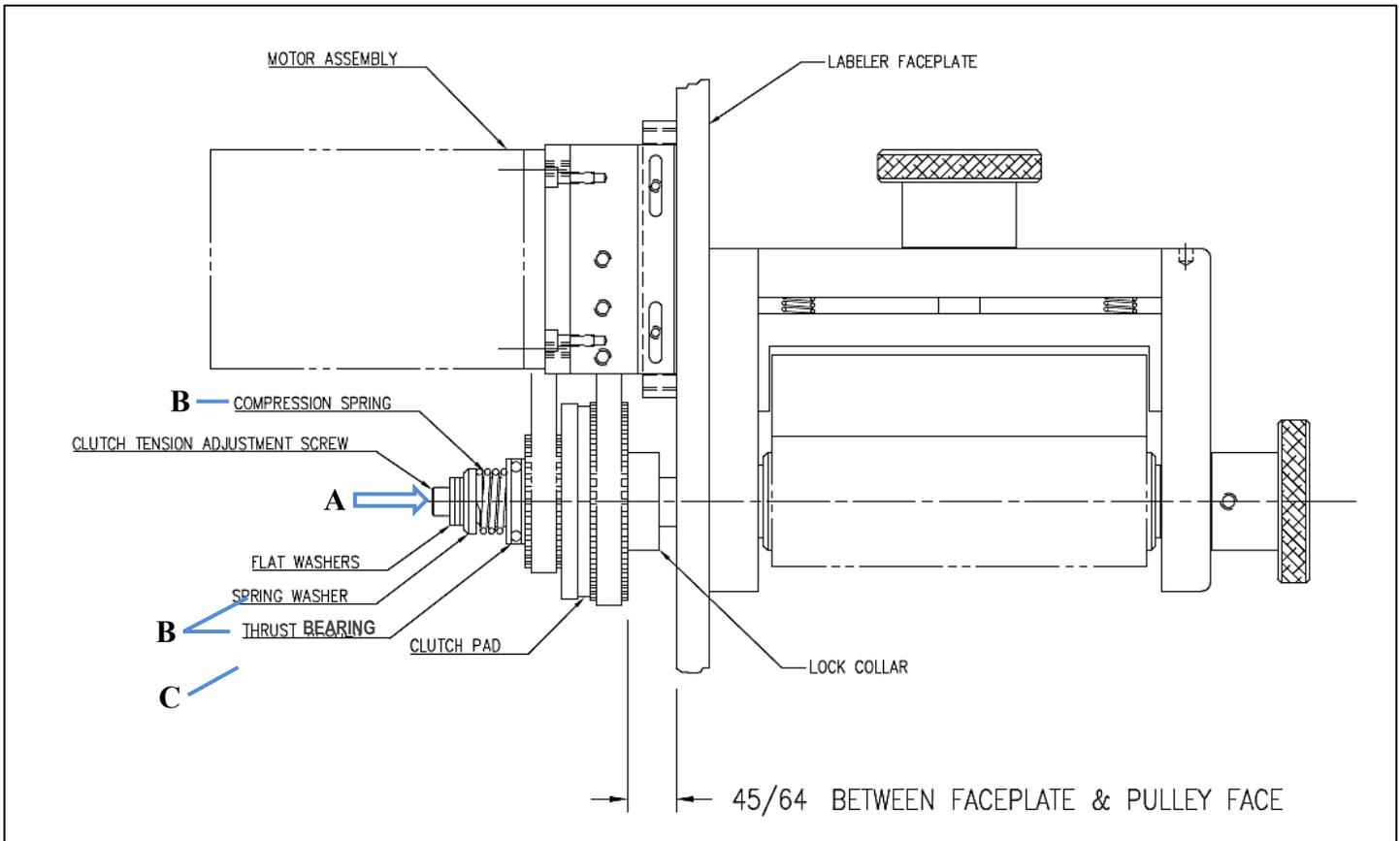
[17] Dancer Arm Adjustment.

Rewind Slip Clutch

Tension adjustments may be needed on the rewind if the liner is being wound too loose or tight. The following conditions warrant this adjustment:

- Change in label width or length.
- Applicator attitude.
- Web speed changes.
- Motor acceleration or deceleration value changes.

Adjusting Slip Clutch



[18] Slip Clutch

Use the following procedure to adjust the rewind tension or replace the slip clutch disk:

1. Remove all AC power and air to the applicator.
2. Remove the lower stainless cover by removing the (4) $\frac{6}{32}$ socket head screws and washers using a $\frac{7}{64}$ in. wrench.
3. Use $\frac{3}{16}$ in. Allen wrench to remove the screw [18A] at the end of the drive roller shaft.
4. Remove the **Flat Washer, Spring Washer, and Compression Spring** [18B] from the drive roller shaft.
5. If replacing the slip clutch disk, remove the **Thrust Bearing** [18C] and walk the rewind belt off the slip clutch pulley and slide the pulley for the rewind off the drive roller shaft.
6. Clean the friction surfaces, replace clutch disk, and replace assembly.
7. If **more** rewind tension is needed, remove one washer from the inboard side of the spring keeper and re-install on the outboard side of the spring keeper.
8. If **less** tension is needed, remove a washer from the outboard side of the spring keeper and re-install on the inboard side of the spring keeper.
9. Replace and tighten the screw on the end of the drive roller.
10. Replace the lower stainless cover and tighten the mounting screws.
11. Re-connect AC power and air to applicator.
12. Test the applicator and observe the rewind from beginning to end of a roll of labels.
13. Re-adjust if necessary.

Drive Belt Adjustment

1. Remove all AC power and air to the applicator.
2. Remove the lower stainless cover and rotate the applicator so the nip drive roll assembly is facing the floor. This orientation helps when setting angular alignment.
3. Remove the airlines interconnecting the two sides of the applicator to gain access to the drive belt.
4. Remove both splice plates mounted on either side of the motor. Use a $\frac{5}{32}$ in. Allen wrench to remove the (12) screws holding the splice plates. There are enough remaining screws to keep rewind and applicator plates in place.
5. Discard broken/worn belt and check pulley integrity and alignment.
 - a. The motor pulley hub should extend beyond the motor shaft approx. $\frac{1}{16}$ in.
 - b. The 3in. main drive pulley dimensioning should be $\frac{45}{64}$ in. from the backside of the 360y faceplate to the inside edge of the pulley.
6. Place replacement belt onto flanged motor pulley. Cautiously/slowly walk the belt over the main drive pulley to keep from crimping or nicking the belt's edge.
7. Loosen the (4) screws on the side of the motor mounting plate using a $\frac{5}{32}$ in. Allen wrench.
8. Push the motor mount assembly upward and re-tighten the mounting screws. Ensure the motor assembly is 90° from the faceplate to ensure proper angular alignment.

Verifying Angular Alignment

- a. Place 2 pcs. of $\frac{1}{2}$ in. wide x 0.025 in. thick banding material/strapping cut approximately 8in. long between the Faceplate and the Motor Mount Side Frames.
 - b. Place your hand on the end of the Motor and firmly push the Motor toward the Faceplate, making sure the Motor Mount Side Frames are running parallel to the Faceplate.
 - c. Verify that the belt tension is correct, see Step 11 below. Snug the (4) screws, remove banding strips, and finish tightening the (4) screws.
9. Disengage nip roller and turn the drive roller. Ensure there is no severe catching as you turn the roller.
10. Check the belt tension. With light finger pressure on one side of the belt, adjust the tension so the belt deflects approximately $\frac{1}{16}$ in. to $\frac{1}{8}$ in.

NOTE: Do not over tighten the belts. This may result in shortened motor life. If the belts are too loose, label stop may become erratic.

11. Replace the two splice plates and replace the air lines interconnecting the two sides of the applicator.
12. Replace the stainless cover, tighten the mounting screws, and re-connect the AC power and air.

CHANGING DISPENSE HAND

When performing an applicator changeover, the nose assembly, unwind assembly, rewind, and wiring are first changed to the opposite hand dispense. Then each component assembly is remounted on the opposite side of the applicator. The symmetry of the applicator main module and the individual parts facilitate the changeover process, but it can be confusing if care is not exercised. See the explanations and diagrams in the sections below to perform the interchanging processes.

Applicator Changeover Sequence

Reference the below sections to accurately complete the Applicator Changeover Sequence.

1. Remove the nose assembly.
2. Change the applicator nose assembly to the opposite hand dispense.
3. Remove the rewind assembly from the applicator.
4. Change the rewind assembly to the opposite hand dispense.
5. Change the wiring to the opposite side of the applicator.
6. Change the unwind assembly to the opposite hand dispense.
7. If the applicator is a Tamp or Air Blow, move the valve assembly to the opposite side of the machine.
8. Install the rewind assembly on the opposite side of the machine.
9. Install the nose assembly on the opposite side of the machine.



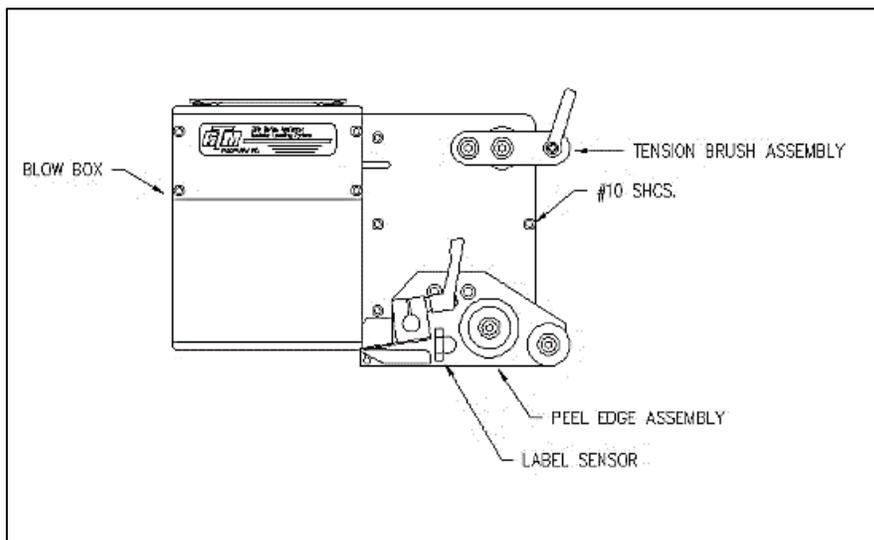
WARNING: Disconnect air and power to the applicator **BEFORE** performing the following procedures. Injury from moving parts and/or electrical shock may occur.

Nose Assembly Removal

The following steps detail the removal of the various nose assemblies available for the 360y. Locate the assembly pertaining to the nose on your applicator and follow the steps.

Blow Box Nose Assembly Removal

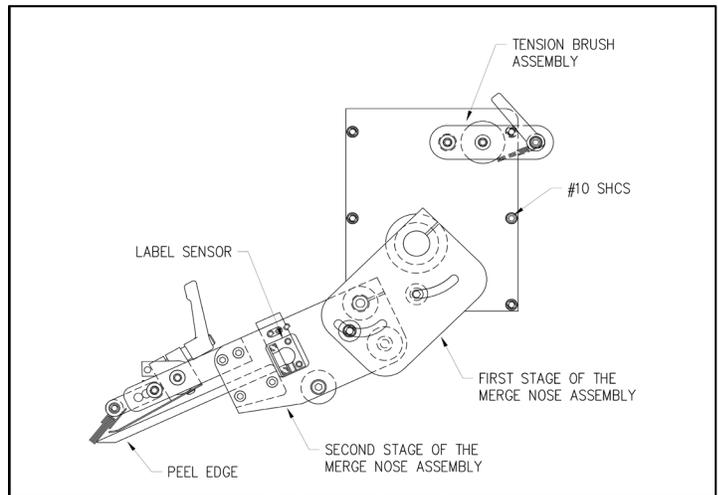
1. Remove the stainless-steel cover from the bottom of the Blow Box.
2. Remove the air tubes interconnecting the two sides of the applicator.
3. Disconnect the fiber optic cables from the label sensor mounted on top of the power supply.
4. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
5. Cut the zip ties securing the bolt-on zip tie mounts and gently pull the fiber optic cable out of the wiring clamps and through the holes in the fiber optic mounting plate.
6. Unplug the blow box fan connector located on the underside of the electronic shelf and disconnect the hoses for the air assist tube and the air blast manifold at the applicator housing.
7. Remove the peel edge assembly to gain access to the #10 mounting screws and remove the screws holding the nose assembly to the housing.



[19] Blow Box Nose Assembly

Merge Nose Assembly Removal

1. Take off the back stainless cover of the applicator.
2. Disconnect the fiber optic cables from the label sensor mounted on top of the power supply.
3. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
4. Cut the zip ties securing the bolt-on zip tie mounts and gently pull the fiber optic cable out of the wiring clamps and through the holes in the fiber optic mounting plate.
5. Loosen the screws to move the nose out of the way to get to all the #10 screws to remove the whole nose assembly.



[20] Merge Nose

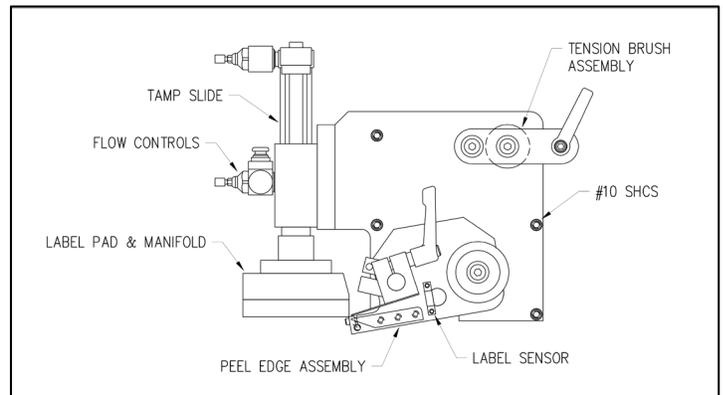
Tamp Nose Assembly and RVB Nose Assembly Removal

1. Take off the back stainless cover of the applicator.
2. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
3. Cut the zip ties securing the bolt-on zip tie mounts and gently pull the fiber optic cable out of the wiring clamps and through the holes in the fiber optic mounting plate.
4. Loosen the screws on the peel edge assembly to get to the #10 screws securing the Tamp Nose assembly.
5. Remove the #10 screws to remove the Tamp assembly.

Nose Assembly Changeover

When changing the nose assembly to the opposite hand dispense, all parts are first transferred to the opposite side of the mounting plate. Then the entire nose assembly is rotated 180° and remounted to the opposite side of the applicator.

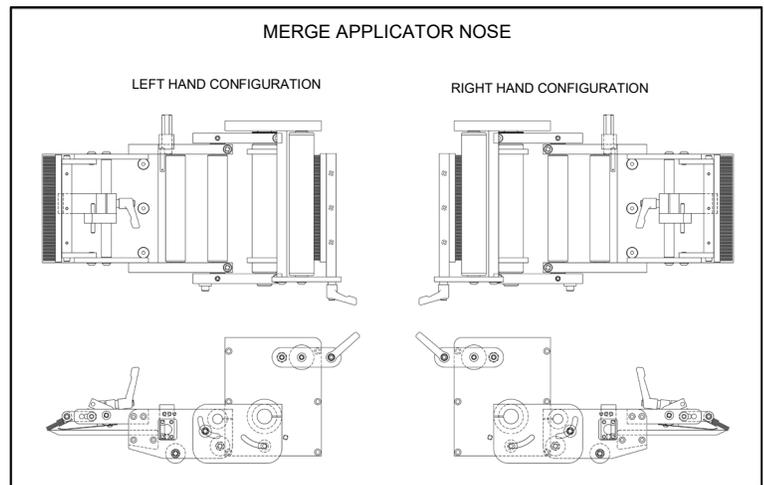
1. Remove the peel edge assembly from the nose assembly mounting plate.
 - a. On a merge applicator, note the position of the bronze washers between the mounting plate and the peel edge assembly.
2. Change the applicator peel edge assembly to the opposite hand dispense (**See Blow/Tamp Peel Edge Changeover below.**)
3. Re-mount the peel edge assembly to the opposite side of the nose assembly mounting plate.
 - a. On a merge applicator, re-install the bronze washers between the peel edge assembly and the mounting plate.
4. If the applicator is an air blow, change the blow box grid/fan to the opposite hand dispense (**See Blow Box Assembly Changeover below.**)
5. If the applicator is a tamp, change the tamp assembly to the opposite hand dispense (**See Tamp Assembly Changeover below.**)
6. Remove the tension brush assembly and reassemble on the opposite side of the nose mounting plate.



[21] Tamp Nose

Merge Peel Edge Changeover

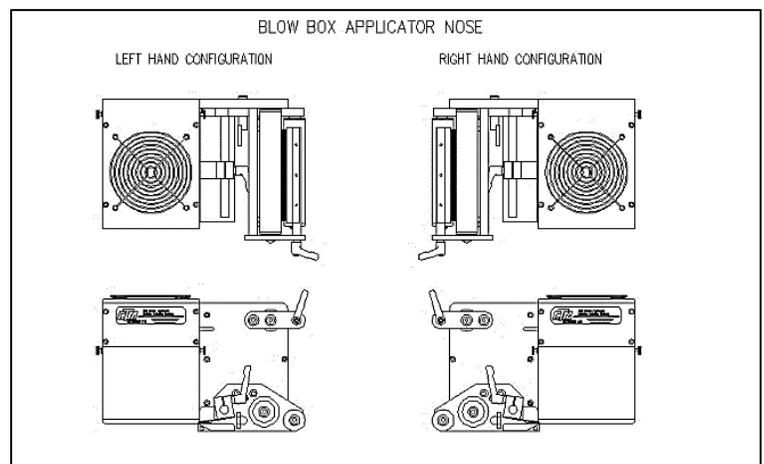
1. Remove the label sensor from the peel edge and remount on the opposite side rail. The open end of the U-shaped sensor should face towards the inside.
2. Remove the guide rollers and remount to the opposite side of the peel edge mounting plate.
3. Remove the peel edge and remount to the opposite side of the mounting plate using the taped holes on the other end of the peel edge. Ensure the beveled edge is down and facing the same direction as it was originally.
4. Remove the label tension spring mounting bar and remount on the opposite side. The tension spring and the adjustment stop must be reversed on the mounting bar as well.



[22] Merge Nose and Peel Edge

Blow Box Peel Edge Changeover

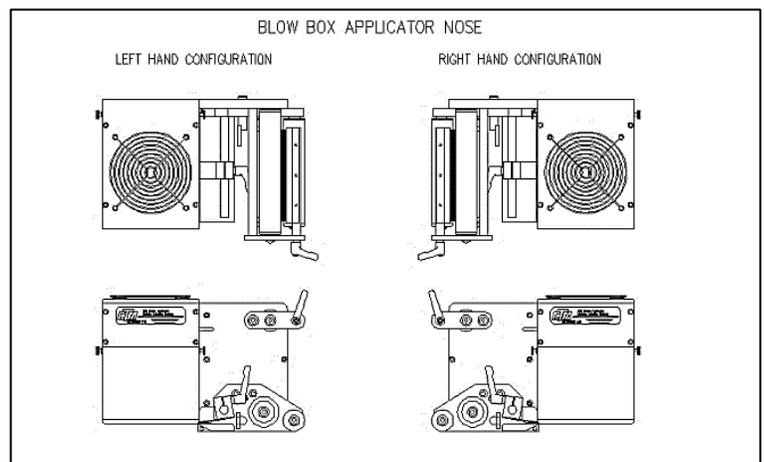
1. Remove the label sensor from the peel edge assembly and remount on the opposite side making sure that the fiber cables are threaded through from the opposite side. The open end of the U-shaped sensor should face towards the inside.
2. Remove the guide rollers and remount to the opposite side of the peel edge mounting plate.
3. Remove the peel edge and remount to the opposite side of the mounting plate using the taped holes on the other end of the peel edge. Ensure the beveled edge is down and facing the same direction as it was originally.
4. Remove the label tension spring mounting bar and remount on the opposite side. The tension spring and the adjustment stop must be reversed on the mounting bar as well.
5. Remove the air assist tube and insert through the opposite side of the mounting plate and re-attach.



[23] Blow Box Nose and Peel Edge

Blow Box Assembly Changeover

1. Remove the air blast fitting from the back of the nose assembly mounting plate and set aside.
2. Loosen the two knurled knobs on the back of the fan box and lock it in the upright position.
3. Remove the air blast manifold, label grid, and the air jet storage block. Remount on the opposite side of the nose assembly mounting plate.
4. Pull the fan wiring harness through the slotted opening in the nose mounting plate.
5. Remove the four screws holding the fan box hinge to the mounting plate and remount the fan box on the opposite side of the nose mounting plate.
6. Push the fan wiring harness through the slotted opening from the opposite side.
7. Re-install the air blast fitting in the nose assembly mounting plate.



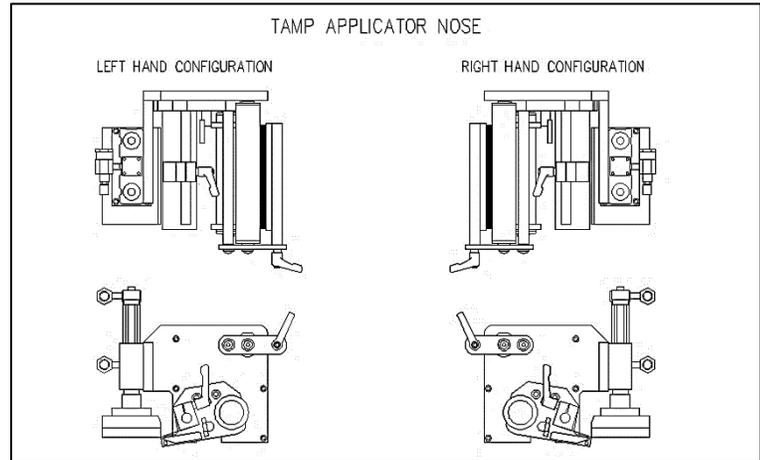
[24] Blow Box Nose and Peel Edge



WARNING: Disconnect air and power to the applicator BEFORE performing the following procedures. Injury from moving parts and/or electrical shock may occur.

Tamp Peel Edge Changeover

1. Remove the label sensor from the peel edge assembly and remount on the opposite side.
2. Make sure that the fiber cables are threaded through the holes from the opposite side. The open end of the U-shaped sensor should face towards the inside.
3. Remove the guide rollers and remount to the opposite side of the peel edge mounting plate.
4. Remove the peel edge and remount to the opposite side of the mounting plate using the taped holes on the other end of the peel edge. Ensure the beveled edge is down and facing the same direction as it was originally.
5. Remove the label tension spring mounting bar and remount on the opposite side. The tension spring and the adjustment stop must be reversed on the mounting bar as well.
6. Remove the air assist tube and insert through the opposite side of the mounting plate and re-attach.



[25] Tamp Nose and Peel Edge

Tamp Assembly Changeover

1. Disconnect the air hoses for the tamp assembly at the applicator housing.
2. Remove the tamp assembly mounting plate from the nose assembly mounting plate.
3. Remove the two screws holding the tamp air cylinder to its mounting plate.
4. Mount the tamp air cylinder to the opposite side of the tamp assembly mounting plate.
5. Re-attach the tamp assembly mounting plate to the opposite side of the nose assembly mounting plate.

Rewind Removal

1. Remove the belt connecting the rewind clutch to the motor.
2. Remove the rewind mandrel from its drive shaft.
3. Remove the six #10 screws that hold the rewind mounting plate to the housing.

Rewind Changeover

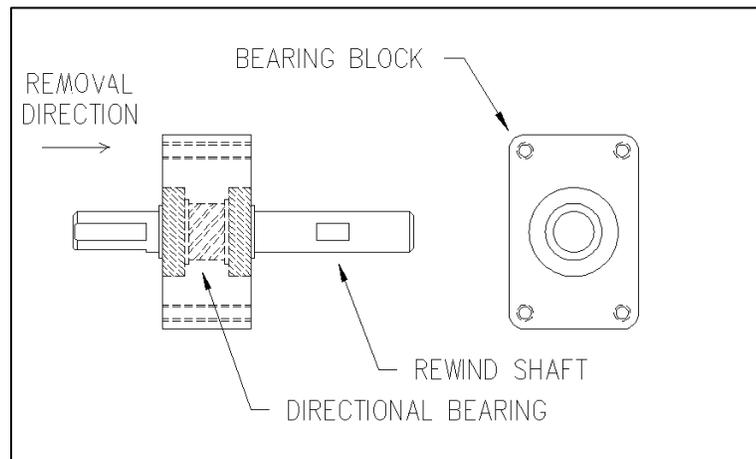
1. Remove the bearing block that is mounted to the rewind transition plate.
2. Remove the pulley from the shaft and note its position relative to the end of the shaft.
3. Remove the snap ring from the pulley side of the assembly and push the rewind shaft out through the mandrel side.

NOTE: The shaft diameter on the mandrel side is larger than it is on the pulley side. Do not attempt to force the shaft out through the pulley side!

4. Re-install the shaft on the opposite side of the bearing block and replace the snap ring.

NOTE: The shaft can only rotate in one direction due to a directional bearing in the bearing block.

5. Install the pulley on the shaft in the same position as it was previously.
6. Re-mount bearing block to the opposite side of the transition plate.



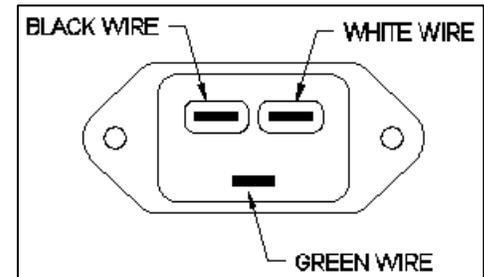
[26] Rewind Shaft and Bering Block



WARNING: Disconnect air and power to the applicator BEFORE performing the following procedures. Injury from moving parts and/or electrical shock may occur.

Wiring Changeover

1. Remove the zip ties holding the AC power wiring and the label sensor fiber optic cable to the adhesive pads near the wiring entry points.
2. Remove the fast-on terminal connections at the fuse holder and the AC power entry module.
3. Cut the tie-wraps securing the blow box fan connector to the bolt-on zip tie mounts and move the connector to the opposite side of the machine. Secure the connector in place with the open end towards the side frame.
4. Move wiring to the opposite side of the applicator and neatly zip tie in place.
5. Swap the AC power entry module and the fuse holder with the fiber optic plate and the fuse holder plug.
6. Re-connect the terminals for the fuse holder and the AC power entry module.



[27] Power Entry Module Wiring
(Looking into the Backside)

NOTE: All wiring comes from the factory long enough to be wired either left or right hand.

Rewind Installation

1. Attach the rewind mounting plate to the housing using the six #10 screws.
2. Install the rewind mandrel on the mandrel drive shaft.
3. Install the belt connecting the rewind clutch to the motor.

Blow Box Nose Assembly Installation

1. Ensure that the peel edge assembly is removed from the blow box nose assembly.
2. Install the blow box nose assembly using the six #10 mounting screws making sure that the fan harness is tucked inside the applicator housing.
3. Plug the blow box fan harness into its connector on the underside of the electronic shelf.
4. Install the peel edge assembly using the two ¼ in. screws and the peel edge nut.
5. Ensure the label sensor is installed in the peel edge with the optical fibers running through the two holes in the peel edge side frame. Run the optical fibers through the two holes in the mounting plate.
6. Re-connect the fiber optic cable to the label sensor located on top of the power supply.
 - a. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward.
 - b. Plug the emitter fiber (from the lower fork in the label sensor) into the outgoing arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection.
 - c. Slide the cinching mechanism downward and close the top cover on the sensor.
7. Neatly zip tie any excess fiber optic cable to the adhesive pads located near the fiber mounting plate.

NOTE: The excess fiber should be formed into a loop greater than 3in. in diameter to avoid kinking the fiber.

8. Install the air tubes interconnecting the two sides of the applicator.
9. Replace the stainless-steel housing cover.



WARNING: Disconnect air and power to the applicator BEFORE performing the following procedures. Injury from moving parts and/or electrical shock may occur.

Merge Nose Assembly Installation

1. Rotate the first stage of the merge nose downward to gain access to the #10 mounting screws.
2. Install the merge nose assembly using the six #10 mounting screws.
3. Re-position the first stage of the merge nose.
4. Ensure the label sensor is installed on the peel edge. Run the optical fibers through the two holes in the mounting plate on the applicator housing.
5. Re-connect the fiber optic cable to the label sensor located on top of the power supply.
 - a. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward.
 - b. Plug the emitter fiber (from the lower fork in the label sensor) into the outgoing arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection.
 - c. Slide the cinching mechanism downward and close the top cover on the sensor housing.
6. Neatly zip tie any excess fiber optic cable to the adhesive pads located near the fiber mounting plate.

NOTE: The excess fiber should be formed into a loop greater than 3" in diameter to avoid kinking the fiber.
7. Install the air tubes interconnecting the two sides of the applicator.
8. Replace the stainless-steel housing cover.

Tamp Nose Assembly Installation

1. Ensure that the peel edge assembly is removed from the tamp nose assembly.
2. Install the tamp nose assembly using the (6) #10 mounting screws.
3. Install the peel edge assembly using the (2) ¼ in. screws and the peel edge nut.
4. Ensure the label sensor is installed in the peel edge. Run the optical fibers through the two holes in the mounting plate.
5. Re-connect the fiber optic cable to the label sensor located on top of the power supply.
 - a. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward.
 - b. Plug the emitter fiber (from the lower fork in the label sensor) into the outgoing arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection.
 - c. Slide the cinching mechanism downward and close the top cover on the sensor housing.
6. Neatly zip tie any excess fiber optic cable to the adhesive pads located near the fiber mounting plate.

NOTE: The excess fiber should be formed into a loop greater than 3" in diameter to avoid kinking the fiber.
7. Install the air tubes interconnecting the two sides of the applicator.
8. Replace the stainless-steel housing cover.

TROUBLESHOOTING CHART

PROBLEM	POSSIBLE CAUSE	SOLUTION
The power switch is on, but no cooling fan or display	Power cord defective or unplugged	Inspect and correct
	AC Fuse Blown	Determine cause and replace fuse
The power switch is on, cooling fan is on but no display	Display cable is not plugged into back of applicator	Reconnect cable
	Loss of 24 VDC	Contact the factory
	Defective cable	Replace cable
	Defective display	Replace display
The power switch is on, cooling fan is on, but display is stuck at restoring variables	Check for LEDs indicator lights on drive board	Contact the factory
Label liner breaking	Labels are threaded incorrectly	Check threading diagram, rethread as needed
	Bad roll of labels	Replace label roll, contact label manufacturer
	Heavy die cuts in labels	
	Labels came with nicks in the side of the roll	
	Guide collars are causing nicks / damage to label stock	Adjust guide collars to line up with unwind disk. Ensure 1/64" gap between collar and liner
	Adhesive build up on peel edge	Clean peel edge surface
	Peel bar tension spring too tight	Release spring tension and apply only light tension
Label does not advance when the applicator is online, and jog is pressed	Nip roller not engaged against drive roller	Inspect and correct
	Drive belt is broken	Replace belt
	Lost key in drive pulley	Walk through slip clutch removal guide and replace key in proper step. Reassemble drive pulley.
Label advances but does not stop in the same place every time or does not stop in the right place	Label sensor needs setup	Refer to label sensor setup in the Label Setup section of the manual
	Label sensor not looking at a label	Move label sensor to ensure label path is in front of sensor
	Label sensor or fiber cable is damaged	Replace label sensor
	Nip roller is not engaged against drive roller	Inspect and correct
	Label length set wrong	Refer to label length setup in Label Setup section of manual
	Label stop set wrong	Refer to label stop setup in the Label Setup section of the manual
Label liner is not winding up	Rewind slip clutch needs tensioning or replaced	See Rewind Slip Clutch in the maintenance section of manual
	One-way clutch bearing not working	Replace rewind shaft assembly
	Broken rewind belt	Replace rewind belt

Labels are not held on label grid (Air Blow)	Vacuum fan not working	Check for blown fuse
		Obstruction in fan
		Replace fans
	Peel edge out of adjustment	Refer to the Air Blow Peel Edge Alignment section of the manual
Labels are not held on label pad (Tamp)	Peel edge out of adjustment	Refer to the Tamp Peel Edge Alignment section of the manual
	Not enough vacuum on pad	Inspect for clogged or defective venturi. Replace if needed
		Venturi exhaust is blocked
		Needs more air pressure
Label fails to leave the label grid or label pad (Air blow or Tamp)	Air Blow: Too much vacuum	Switch to Low on vacuum fans
		Remove masking
	Air Blow: Incorrect air jet pattern	Inspect and correct
	Air Blow and Tamp: No air blast occurs	Air blast time too low, adjust
Check wiring or relay. If these are not causing the issue, replace valve		

360Y DISPLAY FAULTS

The operator interface displays warnings and alarms that pertain to the application. These alarms are more serious in nature than the standard alarms, but they usually do not happen as often. The following are screens that will help diagnose a drive or display problem.

Drive Faults

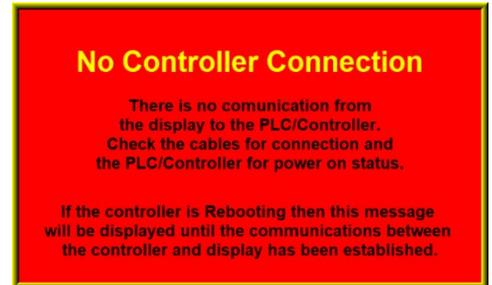
The Drive Fault Alarm Screen [28] lists the Drive Controller and Amplifier faults.



[28] Drive Faults

No Controller Connection

The No Controller Connection Alarm screen [29] displays if communication between the Controller and Display is interrupted. Check cables for connection and check the Controller for power-on status. If the Controller is rebooting, then this message displays until communications between the Controller and Display are established.



[29] No Controller Connection Fault

Software Mismatch Error

The Software Mismatch screen [30] Occurs when the display and controller programs do not match and warns the operator that both devices do not support some screens or functions. This can happen if the drive program is updated and the display program is not, or vice versa.



[30] Software Mismatch Error

Reboot Required

If a Controller Reboot is required, the alarm screen in Figure [31] displays.



[31] Reboot Required Fault

Stop Input

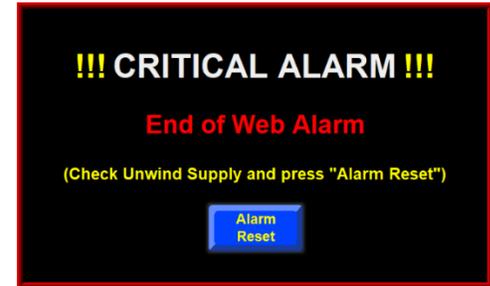
The Stop Input Alarm Screen [32] displays if the stop input is active while the applicator is enabled.



[32] Stop Input Fault

End of Web Alarm

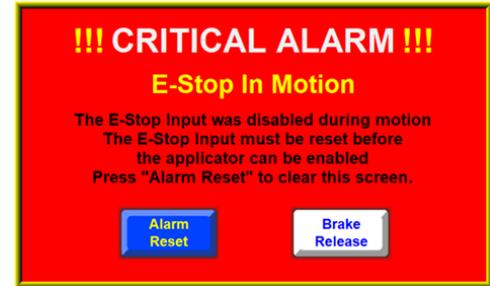
The End of Web alarm screen [33] displays when the end of web sensor detects no media at the end of a cycle.



[33] End of Web Fault

E-Stop Input

The E-Stop Input Alarm screen [34] displays if the E-Stop is set while the applicator is enabled and in motion.



[34] E-Stop Fault

Fault Correction

Unauthorized personnel should not carry out diagnoses and/or fault correction work. If the instructions displayed on the HMI do not clear the fault, further troubleshooting may be required. See the [Contact and Support](#) section for the number to call your technician or authorized service person.

360Y ACCESSORIES

The following is a partial list of accessories available for the 360y applicator.

Electronic Crossover: A “zero downtime” accessory and electronic interface between two applicators positioned in series on a conveyor system. The crossover system monitors the primary applicator’s fault conditions and switches to a secondary applicator to prevent interruption of production flow. When purchasing this option, ensure you receive (2) link port harnesses, (1) crossover cable, and an encoder assembly with a splitter cable.

Imprinter: A hot stamp imprinter device mounted on special bracketry attached to the applicator and is usually a factory-installed unit. See the [Contact and Support](#) section to contact CTM concerning the types of imprinters supported.

Loose Loop: Integrates an applicator with a direct thermal/thermal transfer printer in a “loose loop” fashion. This includes electrical modifications to the printer, sensor array to monitor loop position, and mounting hardware to support the applicator and printer from a vertical upright (includes yard arm). Since there are many printers and configurations, see the [Contact and Support](#) section to contact CTM with specific needs.

Low Label Detection: Sensor that generates a warning signal when the unwind is low on labels. The applicator displays an alarm status box at the Main Menu and activates the amber light on the alarm light stack (if purchased) to inform the operator that the unwind is about to run out of labels. This option may be field installed.

Tamp Switch: Applied to tamp applicators that uses one or two sensors to control the tamp slide assembly. When the tamp home switch is activated, the applicator dispenses a label onto the tamp pad. When the tamp return switch senses a product, the label is applied to the product and the tamp pad returns to the peel edge.

Web Break Detection: Sensor that generates a critical signal when there is a break in the web. The applicator displays an alarm screen and activates the red light on the alarm light stack (if purchased) to inform the operator that the label web is broken.

16in. and 20in. Unwinds: Unwind assemblies used for longer run applications. Before purchasing an unwind assembly, consult the factory to determine if the speed of application and the amount of waste requires a powered rewind assembly. See the [Contact and Support](#) section for contact information.

Powered Rewind: Used in high-speed applications and in cases where it is necessary to wind up additional waste from an oversized unwind assembly. This is a factory-installed option.

Clear Film Rewind Mandrels: Rewind mandrels used to take up waste from labels on a clear web liner. There are several types of rewind mandrels designed to aid in the removal of liner waste when a film label liner is used. Please contact the factory with details of your application.

Core Adapter: Standard core adapters for the 360y come in 3in. and 6in. diameters. See the [Contact and Support](#) section to contact CTM for nonstandard diameters.

Alarm Light Stack: The 360y can handle up to three alarm lights:

- Red: Critical alarm
- Amber: Warning alarm
- Green: Ready signal

Light stacks may be purchased in one or three light configurations. A description of the different alarms can be found in the [Warning Alarms](#) and [Critical Alarms](#) sections of the manual.

Line Rate Compensation: Kit that includes an encoder and interface cable. Splitter cables may be purchased to allow one encoder to drive multiple applicators.

Clear Label Sensor: Sensor that detects clear labels on a clear liner.

Hardened Peel Edge Tips: Used when the peel edge tape is difficult, or the liner material is causing premature wear. CTM offers a hardened peel edge for air blow, tamp, and merge applicator types. See the [Contact and Support](#) section to contact CTM for details and availability.

Snorkels: Used to place the applicator nose close to the labeling operation while the applicator remains farther away. CTM offers a large variety of snorkel options. See the [Contact and Support](#) section to contact CTM to find a solution to your requirements. 

SPARE PARTS

360y Core Unit Spare Parts

360y SERIES CORE UNIT SPARE PARTS LIST		
WEAR ITEMS		
Part Number	Recommended Qty	Description
MP-200-0235	1	NIP ROLLER LIFT CAM
PM-BELT1018	1	140XLO37 NIP TO MOTOR BELT
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
ASS-200Y-0410	1	24V/5V DC POWER SUPPLY
PE-FU4002	1	2 amp CURRENT LIMITING FUSE
PE-FU4005	1	5 amp CURRENT LIMITING FUSE
PE-FU4010	2	10 amp CURRENT LIMITING FUSE
PE-FU7002	1	2 amp FAST ACTING FUSE
PE-FU7003	1	3 amp FAST ACTING FUSE
MP-200-0242 or	1	NIP DRIVE - 5" DRIVE ROLL w/ COATING
MP-200-2242 or	1	NIP DRIVE - 7.5" DRIVE ROLL w/ COATING
MP-200-5242	1	NIP DRIVE - 10" DRIVE ROLL w/ COATING
PE-SE3080	1	FIBER OPTIC LABEL SENSOR
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PE-SE0994-PD	1	RETRO-REFLECTIVE PRODUCT DETECT SENSOR w/ TAPE
add PE-SE3051	1	SIGNAL SWITCHING CABLE (FOR TRAILING EDGE DETECTION)
PE-CO1018	1	SELF LOCKING POWER CORD - 12 FT. LG.
MP-DR1080 or	1	YASKAWA MP 400W MOTOR DRIVE
MP-DR1082	1	YASKAWA MP 200W MOTOR DRIVE
MP-IN1013	1	APPLICATOR TOUCH SCREEN
PE-MO1099	1	NIP DRIVE YASKAWA MOTOR
PM-BE1230	1	NIP DRIVE - EW-5/8 LIFT THRUST WASHER
SAS-200-0129O	1	NIP DRIVE - OUTSIDE DRIVE ROLL SUPPORT ASSEMBLY
SAS-200-0129I	1	NIP DRIVE - INSIDE DRIVE ROLL SUPPORT ASSEMBLY
ASS-200-0130 or	1	NIP DRIVE - 5" NIP ROLLER ASSEMBLY WITH SHAFT
ASS-200-2130 or	1	NIP DRIVE - 7.5" NIP ROLLER ASSEMBLY WITH SHAFT
ASS-200-5130	1	NIP DRIVE - 10" NIP ROLLER ASSEMBLY WITH SHAFT
SAS-200-0135 or	1	5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-2135 or	1	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-5135	1	10" TENSION ROLLER ASSEMBLY w/o SHAFT
PE-FAN1120	2	FAN GUARD

Non-Powered Unwind Assembly Spare Parts

NON-POWERED UNWIND ASSEMBLY SPARE PARTS LIST		
WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-OR1007	1	O-RING
RECOMMENDED SPARE PARTS (12" NON-POWERED UNWIND)		
Part Number	Recommended Qty	Description
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30437	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY
SAS-200-0131 or	1	5" DANCER ROLLER ASSEMBLY w/o SHAFT
SAS-200-2131 or	1	7.5" DANCER ROLLER ASSEMBLY w/o SHAFT
SAS-200-5131	1	10" DANCER ROLLER ASSEMBLY w/o SHAFT
RECOMMENDED SPARE PARTS (16" & 20" NON-POWERED UNWIND)		
Part Number	Recommended Qty	Description
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30480	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY
SAS-200-0135 or	2	5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-2135 or	2	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-5135	2	10" TENSION ROLLER ASSEMBLY w/o SHAFT

STANDARD REWIND ASSEMBLY SPARE PARTS LIST		
WEAR ITEMS (STANDARD REWIND)		
Part Number	Recommended Qty	Description
ASS-200-0143	1	REWIND - SLIP CLUTCH ASSEMBLY
PM-BELT1023	1	REWIND - TIMING BELT
PM-CL1010	1	REWIND - 3" LEATHER CLUTCH PAD
EXTENDED SPARE PARTS (STANDARD REWIND)		
Part Number	Recommended Qty	Description
ASS-200-0128R or	1	REWIND BEARING BLOCK ASSEMBLY W/ SHAFT
ASS-200-0128L	1	REWIND BEARING BLOCK ASSEMBLY W/ SHAFT
PM-BE1232	1	REWIND - CLUTCH THRUST WASHER

NON-POWERED UNWIND with POWERED REWIND SPARE PARTS LIST		
WEAR ITEMS (16" & 20" NON-POWERED with POWERED REWIND)		
Part Number	Recommended Qty	Description
PM-OR1040	1	CLEAR O-RING
RECOMMENDED SPARE PARTS (16" & 20" NON-POWERED with POWERED REWIND)		
Part Number	Recommended Qty	Description
ASS-200-0460	1	PROXIMITY SWITCH
PE-FU2065	1	3 AMP FUSE
PE-MC1109	1	MOTOR DRIVER CONTROLLER
PE-MO1008	1	LEESON GEAR MOTOR
PE-PO1030	1	5K SPEED POTENTIOMETER
PE-RE1063	3	RELAY
PE-RE1013	1	SOLID STATE RELAY
PE-SI1050	1	ISOLATER BOARD
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30480	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY

Merge Spare Parts

MERGE SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1000 or	1	UHMW TAPE FOR 5" PEEL EDGE (5 7/16" Wide x 7" Lg.)
PM-T1015	1	UHMW TAPE FOR 7.5" & 10" PEEL EDGE (8" Wide x 7" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)

Air Blow Spare Parts

AIR BLOW SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1000 or	1	UHMW TAPE FOR 5" PEEL EDGE (5 7/16" Wide x 7" Lg.)
PM-T1015	1	UHMW TAPE FOR 7.5" & 10" PEEL EDGE (8" Wide x 7" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
PM-T1000 or	1	UHMW TAPE FOR 5" PEEL EDGE (5 7/16" Wide x 7" Lg.)
PM-T1015	1	UHMW TAPE FOR 7.5" & 10" PEEL EDGE (8" Wide x 7" Lg.)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-7	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**
ASS-211-0103 or	1	AIR TUBE MANIFOLD ASSEMBLY
ASS-211-0103E	1	AIR TUBE MANIFOLD ASSEMBLY FOR EXT. BLOW BOX
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	80 PSI TAMP/BLOW REGULATOR
ASS-211-0106M	1	AIR BLOW 2-STATION VALVE BANK ASSEMBLY
ASS-211-0109	1	AIR FILTER REGULATOR ASSEMBLY

RVB Spare Parts

RVB SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010 or	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-7	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	80 PSI TAMP/BLOW REGULATOR
ASS-211-0112M	1	RVB 2-STATION VALVE BANK ASSEMBLY

FFS Spare Parts

FFS SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-5	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	80 PSI TAMP/BLOW REGULATOR
ASS-211-0117M	1	FFS STYLE 2-STATION VALVE BANK ASSEMBLY

Tamp Spare Parts

TAMP SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010 or	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015 or	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
PM-T1010	1	UHMW TAPE FOR 10" PEEL EDGE (6" Wide x 11" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-7	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	80 PSI TAMP/BLOW REGULATOR
ASS-214-0105M	1	TAMP 3-STATION VALVE BANK ASSEMBLY
SLIDE ASSEMBLIES		
Part Number	Recommended Qty	Description
ASS-214-0108-1 or	1	1" SLIDE ASSEMBLY
ASS-214-0108-2 or	1	2" SLIDE ASSEMBLY
ASS-214-0108-3 or	1	3" SLIDE ASSEMBLY
ASS-214-0108-4 or	1	4" SLIDE ASSEMBLY
ASS-214-0108-6 or	1	6" SLIDE ASSEMBLY
ASS-214-0108-8 or	1	8" SLIDE ASSEMBLY
ASS-214-0108-10 or	1	10" SLIDE ASSEMBLY
ASS-214-0108-12	1	12" SLIDE ASSEMBLY

Swing Tamp

SWING TAMP SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010 or	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015 or	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-7	1	AIR ASSIST TUBE **JOB SPECIFIC**
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	800 PSI TAMP/BLOW REGULATOR
ASS-214-0105M	1	TAMP 3-STATION VALVE BANK ASSEMBLY
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
ROTARY ACTUATOR		
Part Number	Recommended Qty	Description
PM-AC1250	1	STANDARD DUTY ROTARY ACTUATOR <i>NOTE: Contact Sales Department for heavy duty rotary actuator.</i>

DAT

DUAL ACTION TAMP SPARE PARTS LIST		
WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010 or	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015 or	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
PM-T1010	1	UHMW TAPE FOR 10" PEEL EDGE (6" Wide x 11" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-SA0950	2	SHOCK ABSORBER
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
PM-BELT1039	1	TIMING BELT (NOT REQ'D FOR INLINE DAT)
SLIDE ASSEMBLIES		
Part Number	Recommended Qty	Description
PM-AC1237 or	1	3" SLIDE ASSEMBLY
PM-AC1239 or	1	6" SLIDE ASSEMBLY
PM-AC1241	1	8" SLIDE ASSEMBLY
ROTARY ACTUATOR		
Part Number	Recommended Qty	Description
PM-AC1248	1	STANDARD DUTY ROTARY ACTUATOR <i>NOTE: Contact Sales Department for heavy duty rotary actuator.</i>

Options

360y OPTIONS SPARE PARTS LIST		
OPTIONS: RECOMMENDED SPARE PARTS (LOW LABEL, WEB BREAK ALARMS)		
Part Number	Recommended Qty	Description
PE-LI1088 or	1	RED, YELLOW, GREEN LED ALARM LIGHT (BANNER)
PE-LI1089	1	RED, YELLOW, GREEN LED AUDIBLE ALARM LIGHT (BANNER)
PE-SE1095-LL	1	LOW LABEL SENSOR (w/o BRACKET)
PE-SE1095-EOW	1	END OF WEB SENSOR (w/o BRACKET)
OPTIONS: RECOMMENDED SPARE PARTS (TAMP HOME SENSOR)		
Part Number	Recommended Qty	Description
ASS-200a-0479	1	TAMP HOME SENSOR (w/o BRACKET)
** CYLINDER MUST BE DESIGNATED WITH AN "E" **		
OPTIONS: RECOMMENDED SPARE PARTS (QUICK DISCONNECT PAD & MANIFOLD)		
Part Number	Recommended Qty	Description
PM-FASSBP11000	4	BALL PLUNGERS
MP-238-0270	1	QUICK CHANGE SLIDE TRANSITION PLATE
OPTIONS: RECOMMENDED SPARE PARTS (SMART TAMP - PHOTOEYE)		
Part Number	Recommended Qty	Description
PE-SE0985	1	SM312W-QD SENSOR **JOB SPECIFIC**
OPTIONS: RECOMMENDED SPARE PARTS (SMART TAMP - MECHANICAL)		
Part Number	Recommended Qty	Description
PE-SW1110 or	1	OMRON LIMIT SWITCH (ARM STYLE)
PE-SW1105 or	1	OMRON LIMIT SWITCH (BUTTON ROLLER STYLE)
PE-SW1100	1	OMRON LIMIT SWITCH (BUTTON STYLE)
OPTIONS: RECOMMENDED SPARE PARTS (VACUUM OFF OPTION)		
Part Number	Recommended Qty	Description
ASS-200-0459	1	VACUUM SWITCH CABLE ASSEMBLY
OPTIONS: RECOMMENDED SPARE PARTS (LINE RATE COMP)		
Part Number	Recommended Qty	Description
PE-MW1000	1	ENCODER WHEEL
PE-GE2105	1	90 Deg. PULSE ENCODER
OPTIONS: RECOMMENDED SPARE PARTS (LINE RATE COMP (CONVEYOR MOUNTED))		
Part Number	Recommended Qty	Description
PE-GE2105	1	90 Deg. PULSE ENCODER



APPENDIX A: APPLICATOR OPTIONS COMPATIBILITY CHART

✓= Options are Compatible

✗= Options are not compatible.

Options	Multi-Panel	Over-speed	Label Profile	Encoder Option	Loose Loop	Inprint	Crossover	Multi-label	Missing Label	Powered Rewind	Skip Count	Foldover	Label On Pad	Vac-off	PD Queue
Multi-Panel		✗	✗	✓	✓	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗
Over-speed	✗		✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
Label Profile	✗	✗		✓	✓	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓
Encoder Option	✓	✓	✓		✓	✓	Encoder Required	✓	✓	✓	✓	✓	✓	✓	✓
Loose Loop	✓	✓	✓	✓		✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inprint	✓	✓	✓	✓	✗		✓	✓	✓	✓	✓	mode 2 only	✓	mode 2 only	✗
Crossover	✗	✓	✓	Encoder Required	✓	✓		✓	✓	✓	✗	✗	✓	✓	✗
Multi-label	✗	✓	✗	✓	✓	✓	✓		✓	✓	✗	✗	✓	✗	✗
Missing Label	✗	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Powered Rewind	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Skip Count	✗	✓	✓	✓	✓	✓	✗	✗	✓	✓		✗	✓	✓	✗
Foldover	✗	✓	✓	✓	✓	mode 2 only	✗	✗	✓	✓	✗		✓	✗	✗
Label On Pad	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Vac-off	✗	✗	✗	✓	✓	mode 2 only	✓	✗	✓	✓	✓	✗	✓		✓

