



INSTRUCTION MANUAL:

Model: 3600YT

Type: Servo Tamp Label Applicator

Program Revision: YT-6amz.1.xx

Manual Revision 1.0.1

(Original Instructions)

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PROPRIETARY

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CTM or any other party involved in the creation, production, or delivery of the accompanying product shall not be liable to the customer nor to any other party for any damages, including without limitation:

- Damages due directly or indirectly to occurrences or consequences which arise from the operation or failure of the equipment to operate.
- Any losses or damages, including without limitation:
 - 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, the operation of the equipment.
 - Discovery or elimination of any and all hazards.
 - Failure to discover or eliminate, or by reason of any action, omission, active negligence, passive negligence, including:
 - ❖ Gross negligence.
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 - ❖ Any use of application thereof, misrepresentation, misstatement, imprudence, lack of skill.
 - ❖ Error of judgement of or by CTM or its officers, directors, agents, and servants.

Some jurisdictions do not allow the limitation of incidental or consequential damages, so these limitations may not apply to you.

RELEASE DATE

01/2024

CONTACT AND SUPPORT

If you have any question or need assistance, contact can be made at the following:

Contact Us

CTM Labeling Systems

1318 Quaker Circle

P.O. Box 589

Salem, OH. 44460 U.S.A.

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Fax: (330) 332-2144

Web: www.ctmlabelingsystems.com

e-mail: info@ctmint.com

Technical Support

Support Hours: 8:00am – 4:30pm EST Monday through Friday

Phone: 330-332-1800 ext. 129

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 personnel that service or maintain the equipment complete a Customer Training Course including the model equipment used. For information on Customer Training Courses availability 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
- 50/60 Hz
- 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.

Air Requirements

- Clean, dry air at 80 – 100 PSI
- Clean, dry air at 4 SCFM per applicator.

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 3600YT Servo Tamp 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 3600YT Servo Tamp Label Applicator is not to be used in direct contact with food products.**

SPECIALTY STATEMENTS

Specialty statements have important instructions and guidelines that must be followed and are specially highlighted.

Warning Statements

Warning statements indicate hazards that can cause severe injury or death and have the following identifiers:

- An exclamation mark located in a triangular symbol.
- Warning symbol in red preceding the step or information referring to the hazard.
- *Example:*



Caution

- Caution statements indicate hazards that can cause equipment damage or personal injury.
- Caution statements have an exclamation mark located in a triangular symbol.
- The Caution symbol will precede the step or information referring to the hazard.
- *Example:*



Notes

Notes add additional information about a specific topic. Notes may be bold or 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 visual references are needed. They may be shown as a photo, CAD drawing, or other illustrative representations and have the following identifiers:

- [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. This is usually done within text references.



WARNING: Without operational safety functions and protective equipment, the applicator may cause personal injury and property damage! Do not operate the machine when the safety functions are deactivated. Do not operate the machine without protective equipment.

SAFETY INFORMATION

Protective Equipment

A separating protective device (guarding) **must** be installed by the system integrator in compliance with the requirements of EN953. For example, it could be a protective enclosure with a secured door, or light curtain. The separating protective equipment is not included in the scope of delivery of the applicator.

Goggles must be worn at all times when operating the applicator. Ear protection is recommended but not required. Adhere to your company’s guidelines and regulations regarding ear protection and other protective equipment.

Emergency Stop

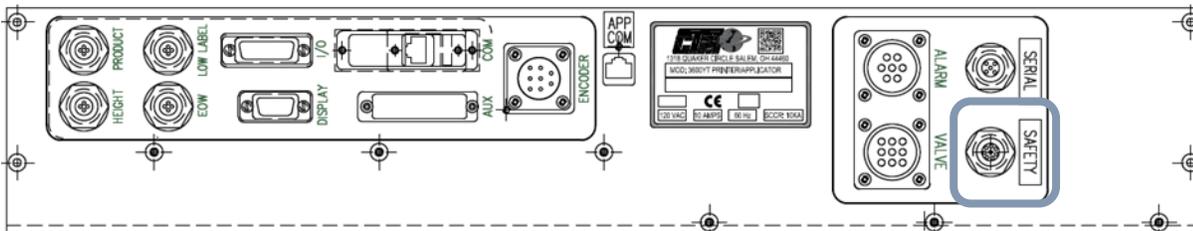
An external Emergency Stop device **must** be installed by the system integrator. For example, it could be an Emergency Stop button located outside of the safety guarding device. The emergency stop button must be pressed if a hazardous situation occurs or in the event of an emergency.

The external Emergency Stop device is not available in the applicator HMI and is not included in the scope of delivery of the applicator.

Connecting to Guarding and Emergency Stop Equipment

According to the EC machinery directive, the applicator is a partly completed machine. The applicator must be safeguarded against access by an appropriate safeguard device(s) for the completed machine to match the health and safety requirements of the machinery directive.

The applicator has a two-channel input safety relay with monitored contacts. Figure [1] shows the location of the safety connector on the applicator connector plate. Interrupting either, or both stop inputs immediately removes power to the applicator servo-driven tamp nose and set the servo tamp nose brake.



[1] Safety Connector

Other 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.
- Before attempting any service or repair, disconnect the printer from the main power supply and isolate from any additional external power supply sources.
- Use only original replacement parts.
- Do not operate in a hazardous location. Installation in a hazardous location might lead to an explosion causing personal injury or equipment damage. A hazardous location is identified as an environment where flammable or explosive gasses or materials are present.
- 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 dispensing edge as well as 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 the printer 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. Notify a service technician.



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

Mechanical Hazards



WARNING:

- **Danger of crushing between applicator and dispensing edge as well as 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 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 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.**

Noise Emissions

- Less than 70dB(A)

With Ambient of 51.6 dB(A) measured values are:

- Front 67.6 dB
- Rear 69.7 dB
- Left 69.0 dB
- Right 69.2 dB

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 that no one will be endangered by the applicator starting up.
- Ensure all personnel in the working area of the applicator use protective equipment properly.
- Check the equipment for visible damage. Report any damage that is identified immediately.
- Check all equipment safety functions to ensure they are working properly.

DEFINITION OF 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 whose purpose is to direct 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 blow box to the product.

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

Belt Drive: This is the linear module that drives the tamp slide up and down. It is usually powered by a servo motor.

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

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 tamp slide goes back to the home 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.

Encoder: Electronic device used to check the speed of a conveyor or wrap station with two versions:

- Mounted to the conveyor motor.
- Mounted to 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.

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 and tells the applicator when to stop the stepper motor from advancing the labels.

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

Label Length: Distance from leading-edge of one label on the liner to the next. This includes both the label and the gap between labels.

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

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

Label Pad: Mounted under the manifold, made from white Delrin or aluminum, and supports the label before application. The style of label pad and manifold used for this applicator is vac-blow style which uses compressed air to hold and release the label from the pad.

Label Placement: Distance from when the product sensor is made to when the labeling sequence starts.

Label 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 tamped onto the product.

Label Placement: Distance from when the product sensor is made to when the labeling sequence starts.



Label 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 tamped onto the product.

Label Size: The width and length (or feed) of a label. Length equals the distance from the leading-edge to trailing-edge of the label. Width is the distance across the 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.

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

LED: Light Emitting Diode

Long Tamp Length: Maximum distance the tamp assembly travels to apply the label to the product. In this application, this is the tamp stroke for the shortest product and should be set so that the label pad is slightly lower than the shortest product when the tamp assembly is fully extended.

Peel Edge: Beveled aluminum plate located just before the label pad. The label liner is pulled around it and the label separates from the liner and then is transferred to the pad. This is in front of the label pad.

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

Rewind Mandrel: The rotating mandrel that holds the liner after the labels have been removed.

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

Short Tamp Length: In Normal and Inverted Tamp modes, this variable is ignored. For this application, this is the tamp stroke for the tallest product.

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

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

Tamp Speed: How fast the slide will travel during the labeling sequence.

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

Vac-Blow Pad: The label pad and manifold used when a label is blown off. This arrangement uses compressed air to create vacuum and the 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.*

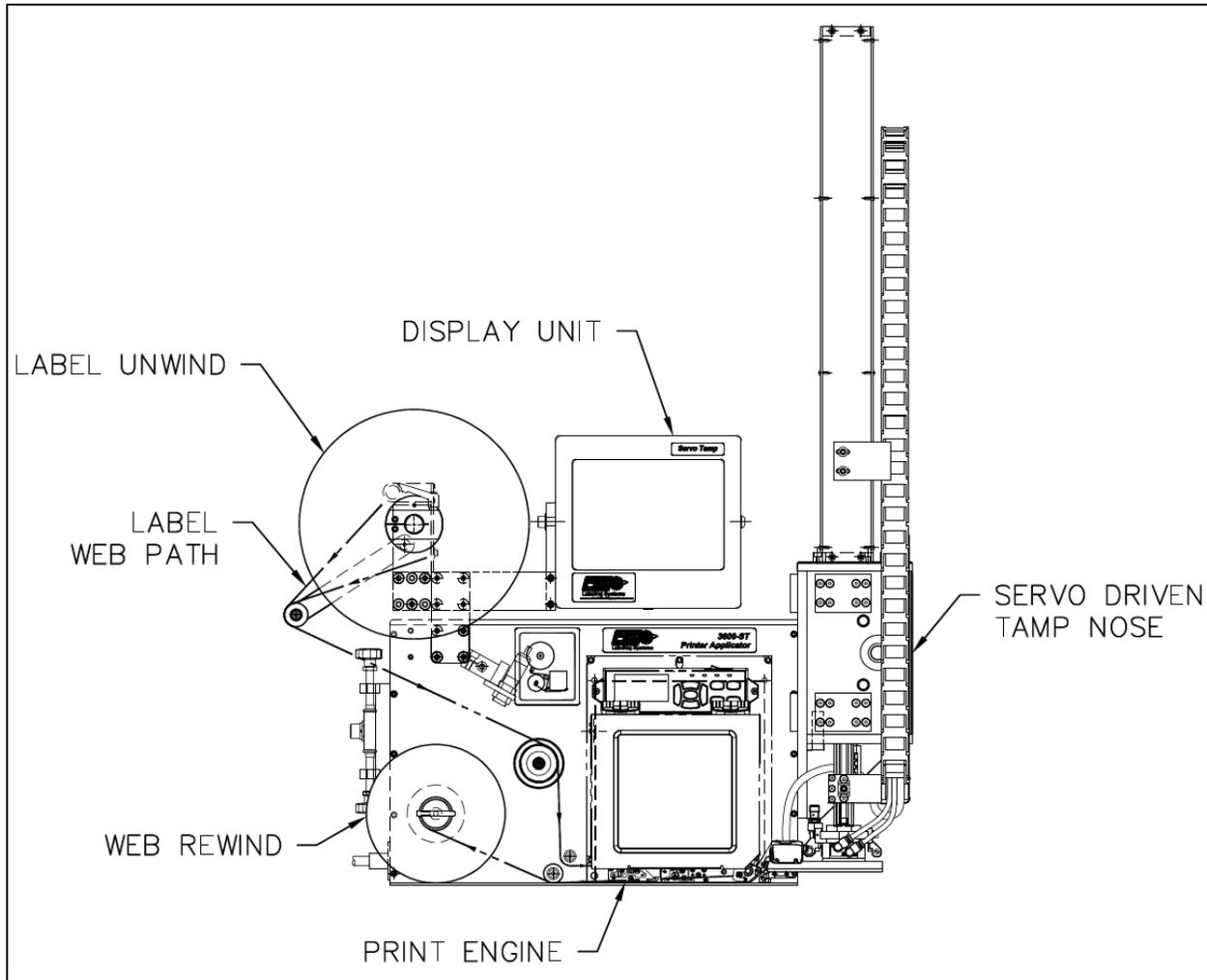
Warning Alarm: Alarms that show a problem with the Applicator, but the Applicator will continue dispensing labels. See the “Alarms” section of this manual for a list of warning conditions and their descriptions.

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

Web Path: Path the label liner follows leading from the unwind, through the peel edge and drive roller and ends at the rewind.

EQUIPMENT DESCRIPTION

3600YT stands for “servo tamp” applicator. 3600 designates the applicator is a print and apply model. The 3600YT is available in multiple designs and designations. Consult your distributor for specific model information. The main parts of the 3600YT are shown in Figure [2]:



[2] 3600YT Main Parts

INTRODUCTION

This manual describes the installation, operation and maintenance of the 3600YT Servo Tamp Label Applicator. For operation of the printer installed in this applicator consult the manual specific to the printer installed. For questions not covered in this manual consult technical support through your distributor or CTM technical support.

Intended Use

The device described here is “partly completed machinery” as defined by machinery directive 2006/42/EC. Although the applicator is “partly completed machinery” under the terms of the Machinery Directive, for reasons of clarity it may be called “applicator” or “equipment” or “machine” in this manual.

Do not put the applicator in operation until it has been determined that the system in which the applicator will be installed meets the requirements of directive 2006/42 EC, appendix IIA.

The 3600YT Servo Tamp Label Applicator is a high-speed labeler used to apply pressure-sensitive labels to moving products that have varying heights and maintain label placement. Standard configuration is for labeling the top of products, but the applicator is capable of alternate orientations for labeling also.

The labels are supplied on rolls that consist of a liner on which the labels are held with adhesive. The diameter of the roll is dependent on the model and option specifications. The applicator can be configured to print and apply labels or feed a pre-printed to the label pad and apply it to the product.

The applicator supports a “Vac-Blow” label pad where compressed air is used to create vacuum to hold the label on the pad. When the product is in position, an air blast blows the label off without contacting the product. Compared to the other servo tamp models, this unit supports only one labeling sequence listed in the Sequence of Operation.

Normal Tamp Blow Sequence

The following is the sequence that a tamp will follow when in operation:

1. Label pad starts in the home position with the print-start signal on.
2. Printing begins and the print-start signal turns off.
3. Vacuum valve and air assist turns on.
4. Label is finished printing and air assist valve turns off.
5. Product detect input is turned on and the servo-driven tamp assembly extends towards the product.
6. Tamp return sensor activates/Tamp assembly reaches long tamp distance and label is blown off the pad onto the product.
7. Tamp assembly returns to home assembly as label is blown off, starting the sequence over again.



WARNING: Any other use of the equipment not described in the Intended Use section, and not in the order of the Sequence of Operation section, may cause serious 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.

SERVICE AND OPERATION QUALIFICATION



WARNING: The applicator can only be operated safely by following all the Service and Operation Qualification requirements!

Installation, Maintenance, and Operation

Before beginning installation or maintenance, qualified personnel must fully read this manual and the manual of the integrated printer and follow all instructions. Maintenance and Installation work shall be performed by qualified and fully trained personnel (service technicians) or the customer service department. Qualified and fully trained personnel should do the following:

- Observe all safety instructions on the equipment.
- Have experience with application equipment and understand the potential hazards to which they are exposed.
- Be regularly instructed in on-the-job safety and environmental protection.
- Observe all safety instructions on the equipment.
- Be sufficiently trained to use the machine independently and without risk of damage to equipment or personal danger.
- Be sufficiently trained so that the operating personnel can rectify minor operating faults independently.
- Be regularly instructed in on-the-job safety and environmental protection.

NOTE: *Keep this product information at hand! This manual must remain readily available for operating, installation, and maintenance personnel at a location near to the applicator. The manual must be kept in legible condition and stay with the applicator if it is moved or sold.*

APPLICATOR INSTALLATION

The applicator ships in a wooden crate with loose parts and components packed separately within. The applicator is packed securely with foam allowing for little to no movement during the shipping process.

Unboxing

Loose parts and components are packed separately in a cardboard box within the crate the applicator ships in. A “Resource Guide and Component List” comes with the applicator [3]. This guide has an *Applicator Component Checklist* [3A] 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” [3B]. The serial number can also be found on the back of the applicator on the connector faceplate.

When you are ready to setup the applicator, see the QR code next to the *Applicator Manuals* section on the “Resource Guide and Component List [3C].” This code takes you directly to the product manuals on our website where you 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


Product Line and Accessories

D


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.

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"/> _____

B

Place Applicator Serial Number Label Here

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

Setting Global Standards

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[3] Resource Guide and Component List

Additional parts and components are available to purchase. The second QR code [3D] on the “Resource Guide and Component List” under the *Product Line and Accessories* section directly links to CTM’s website where additional products are listed.

On the back side of the “Resource Guide and Component List” is a list of some commonly purchased options that are available for your applicator [4]. See the [Contact and Support](#) section to contact the Spare Parts department if interested in purchasing.

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.



www.ctmlabelingsystems.com

[4] Additional Parts for the Applicator

Instructions for Unboxing

1. Open the applicator crate and remove the cardboard box that contains the loose parts and components. The items in the box are either 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
- Air assist tube
- Light stack
- Crossover cable
- Encoder
- Multiple manifolds (if purchased)
- I/O cable
- Shut-off valve
- Safety bypass connector

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 [3A]. The parts listed on this checklist are specific to each customer.
3. Remove the applicator from the crate. Figure [5] highlights in yellow the correct place to lift the applicator.
 - a. Use the help of a second person, a pump lift jack, or a powered system to lift the applicator.
 - b. If lifting the applicator cannot be lifted as indicated in Figure [5], or by the U-arm, lift the applicator from underneath. The crate may have to be destroyed to do so.

NOTE: The weight for the applicator starts at 157lb for the core unit. (This does not include any extras, such as the valve bank or the display.) These extras can add significant weight to the applicator.

APPLICATOR WEIGHTS	
Core Unit	157lb
U-arm	42lb
Valve Bank with Mounting Plate	15lb
Light Stack	2.6lb
Display	6lb

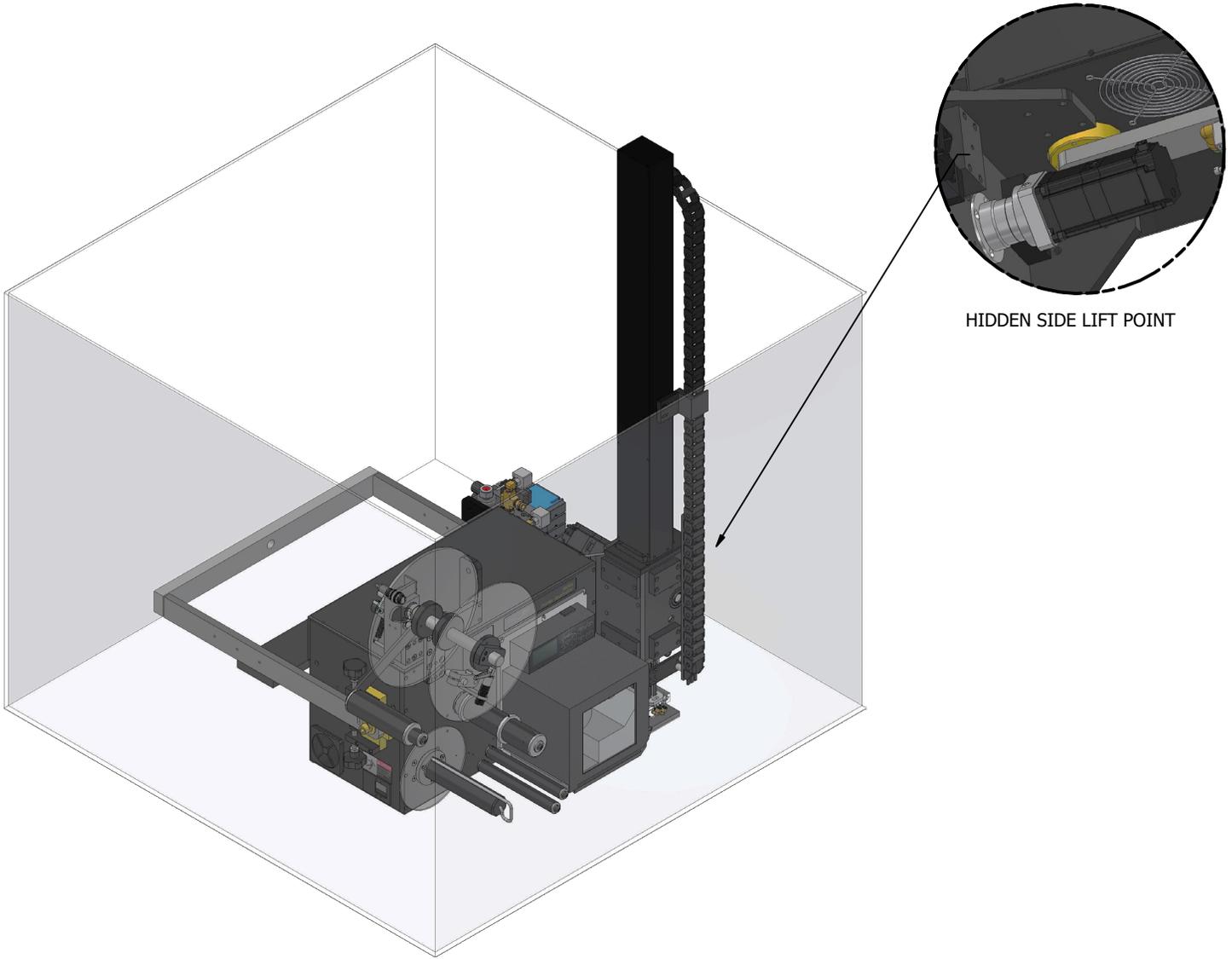


CAUTION: When lifting the applicator,

- **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.
- **Do not lift** from any other part on the front of the applicator as these can also bent and/or broken in the process.



WARNING: 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. Applicator may be unbalanced due to the front and Servo Slide sides. Follow to your company’s weightlifting guidelines!



[5] Crated Applicator

Applicator Assembly

When assembling your applicator, you will need the following tools:

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

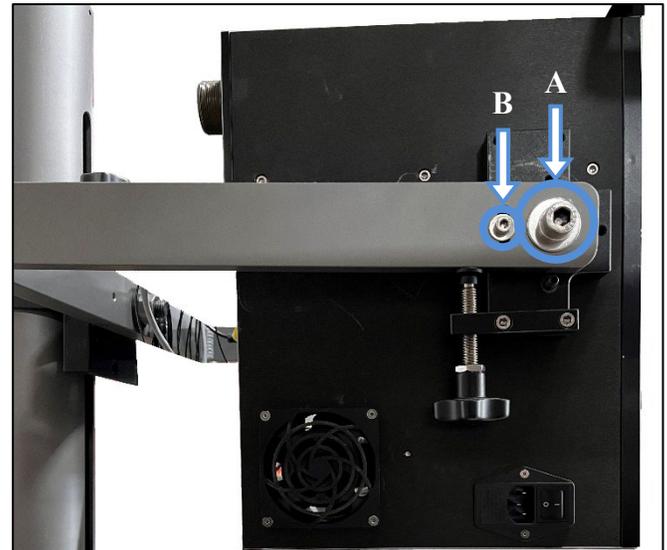
Follow the steps below to correctly install the applicator:

1. Lift and attach the applicator to its mounting base using a crescent wrench. The applicator attaches via the U-arm which is made to withstand the weight of the applicator and keeps the applicator stable during the labeling process.
2. Use a level to ensure the applicator is square and make any adjustments needed.
3. To adjust the applicator, loosen the larger bolt [6A] but do not remove, and remove the smaller bolt in the slot hole [6B]. This enables the U-arm to pivot and rotate.

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

4. Mount HMI Display Unit to permanent location: either a column mount or U-arm mount.
5. When the applicator is in the correct position, attach cables to their proper locations at the rear of the applicator on the connector faceplate.

NOTE: *In the event the applicator needs to be relocated, it needs to be dismantled and packed securely. It is up to the current customer to do so.*

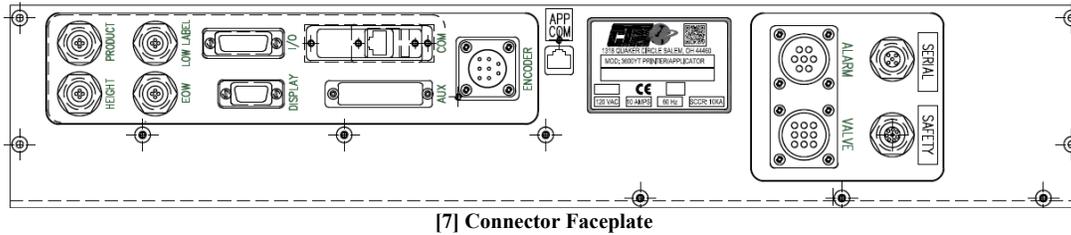


[6] Bolts to Attach U-arm to Applicator

Connecting Cables

Three cables always included with the 360YT are the display cable, power cable, and valve cable. The display cable is attached to the HMI display screen, the valve cable is connected to the valve bank, 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] and the power cable plugs into the unwind side of the applicator. The following are optional cables:

- I/O cable
- Encoder cable
- Crossover cable
- Low Label cable
- End of Web cable
- Product detect cable
- App Com cable
- Alarm (Light Stack) cable



Some cables may or may not be labeled indicating what they are, but each cable has a unique end that matches to the connector faceplate. The following are the standard connectors on the connector faceplate:

- **App Com:** RJ45 Ethernet socket connection port for applicator communication, I/O diagnostics, and updates, the second is a socket connection to the printer Ethernet port.
- **Com:** Pair of RJ45 socket connections. One goes to the applicator Ethernet port for applicator communication, I/O diagnostics, and updates, the second is a socket connection to the printer Ethernet port.
- **I/O:** Digital I/O typically wired as signals to the customers applicator. The connection at the applicator is a 97-Series, 19 pin, circular socket contact receptacle connection. The following is a list of I/O and pin numbers:
 - Pin 1: 0 VDC
 - Pin 2: 24 VDC
 - Pin 3: Ready Signal
 - Pin 4: Warning Signal
 - Pin 5: Critical Alarm
 - Pin 6: Tamp Active
 - Pin 7: Tamp Home
 - Pin 8: Label On Pad
 - Pin 9: Air Blast Valve
 - Pin 10: Air Assist Valve
 - Pin 11: Product Detect
 - Pin 12: Inhibit Input
 - Pin 13: Roto Input
 - Pin 14: Invert Ready
 - Pin 15: E-Stop Input
- **Alarm:** CPC-13 7-positon socket contact receptacle for an alarm light. The alarm light can be up to a three-stack light. Typically, a red light is for Critical Alarms, amber light for Warning Alarms and a green light for when the applicator is ready to label.
- **Valve:** CPC-13 9-positon pin contact receptacle for the valve bank connection to the applicator control
- **Product:** M12 4-pin, A-code, socket contact receptacle for the Product Detect Sensor connection.
- **Low Label:** M12 5-pin, A-code, socket contact receptacle for the Low Label Sensor connection.
- **EOW:** M12 5-pin, B-code, socket contact reverse key receptacle for the End of Web Sensor connection.
- **Height:** M12 5-pin, B-code, socket contact receptacle for the Height Sensor. The input accepts a 0-10 VDC analog signal to the applicator. The pin configuration is as follows:
 - Pin 1: 24 VDC
 - Pin 3: 0 VDC
 - Pin 4: Ground for shield
 - Pin 5: 0 to 10 VDC Analog Input
- **Encoder:** CPC-11 8-positon socket contact reverse gender receptacle for an external Encoder connection.
- **Display:** 9-pin D-Sub socket contact receptacle for the Display connection.
- **Safety:** M12 8-pin, A-code, socket contact keyed receptacle. The pin configuration is as follows:
 - Pin 1: STO CH1 (+)
 - Pin 2: 24VDC (out)
 - Pin 3: STO CH1
 - Pin 4: STO CH2 (gnd)
 - Pin 5: STO CH2
 - Pin 6: STO1 STATUS out (+24)
 - Pin 7: 0VDC (out)
 - Pin 8: STO2 STATUS out (+24)

DECOMMISSIONING THE APPLICATOR

When your applicator no longer functions correctly, it needs to be decommissioned properly. The applicator will need 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 157lb 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. Applicator may be unbalanced to the front and Servo Slide sides. Follow to your company's weightlifting guidelines!

Dismantling the Applicator

1. Power off the applicator.
2. Turn off all connections to air.
3. Unplug power cable from the outlet.
4. Unplug all other cables connected to the applicator.
5. Remove all sensors, if needed.
6. Dismount the applicator from its previously permanent location.
7. Dispose of the applicator

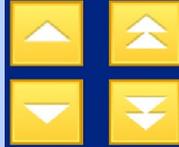
Disposing of the Applicator

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

HMI OPERATION

The following sections provide general information about the display and tells the operator how to change values, explain the meaning of different screens, and describe the different options and how to set them up. Your applicator may not have all buttons listed below as examples.

Types of Buttons

Buttons that move the operator to another screen. May be in other colors but are always labelled with a destination.	 
Button that reset Warning and Critical Alarms	
Button that enables the tamp slide. The colors change when the tamp is enabled or disabled.	
Button that jogs the applicator.	
Buttons that turn something on or off. The colors change depending if the options are on or off.	 
Button that will take you to the main menu even if you are in a setup screen.	
Button that takes you to the previous screen	
Button that opens a help menu	
Buttons in the motion pop-up window used to manually move the tamp slide up and down. Single arrows mean slow motion and double arrows mean fast motion	
Delete buttons. The colors change depending on if delete is enabled or disabled.	
Parameter value button. See the "Changing Numeric Values" section for more information.	
<i>NOTE: Some buttons may be "grayed-out" and unavailable during certain applicator operations:</i>	

Changing Numeric Values

Values that can be changed are typically shown as blue colored values on buttons which display the current value. In Figure [8], Home Offset has a value of 0.400. To change this value, complete the following steps:

1. Tap the button with a value that needs changed, in this case, it is the Home Offset value. A numeric keypad will appear on one side of the screen [9].
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 the box above the keypad value display. In most cases, an out-of-range value will not produce a warning message, but the variable will return to the original value after pressing “Enter.”*

Changing Text Values

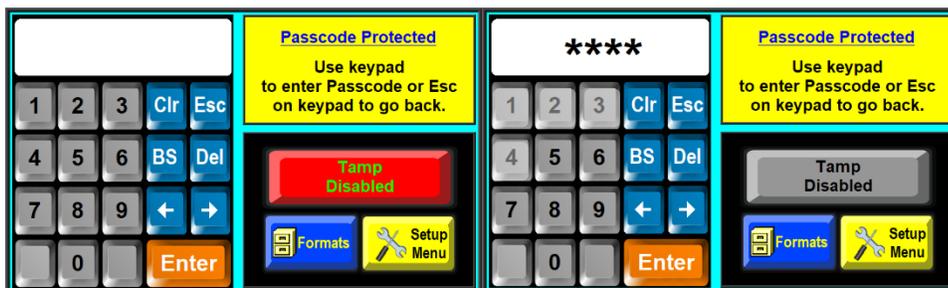
Text values that allow input are typically shown as blue colored text, on buttons displaying the current value. The process is like changing a numeric value except a keypad is displayed covering most of the screen. Complete the following steps to change a text value:

1. Tap the text value that needs changed. A keypad will appear [10]. The text value in the white value display is the initial value of the selected field.
2. Type in a new text value. As the keypad is pressed, the variable is cleared, and the new value is input to the keypad value display [11]. There is no cursor displayed.
 - a. Tap “Caps” to toggle between upper and lowercase screens.
 - 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.

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. “Space” key at the end of a text value is automatically cut. The keypad value display will stop filling when the character limit of the value being changed is reached.*

Passcode

The Setup and Special Options areas of the display are passcode protected. The passcodes are settable in the “Main Password” section. When entering a passcode-protected area, a passcode screen with a number pad will appear [12]. 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.

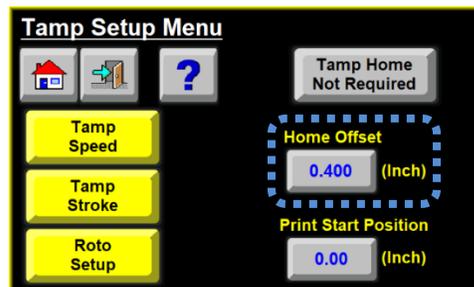


[13] Passcode Screen

[12] Typing in Passcode

NOTE: *The Main Password section is in the Special Options menu. To access this menu, permission from the manufacturer is needed.*

When pressing a number on the keypad, the key will highlight, and an asterisk will display in the keypad value display. The numeric entry for the passcode is not displayed [13].



[8] Tamp Setup Menu



[9] Changing Variables Display



[10] Changing Text Values



[11] Keypad to Change Text Value

Tap “Esc” to leave the screen without changing the value; Tap “Clear” to clear the value being changed; Tap “Clear” to clear the value being changed; and tap “Enter” to finish the process.

If the wrong passcode is entered, the status screen in Figure [14] appears. The “Incorrect Passcode” display will time out after four seconds and return to the status screen.

Alarms

Two types of alarms are generated by the applicator: Warning Alarms and Critical Alarms. Warning Alarms will appear in the status box typically in the upper right-hand corner of certain screens [15]. Normally this type of alarm does not stop the applicator. The Warning output will be turned on during a Warning Alarm, but the Ready output may remain on during a Warning Alarm.

Critical Alarms stop the applicator (disable the tamp), and some alarms will turn the Critical output on. Some Critical Alarms may display in the status screen, but most will replace the current screen on the HMI explaining the alarm type [16]. Critical Alarms can be cleared by tapping the Alarm Reset button which appears at the bottom of the page to clear the alarm. Some alarms may only be cleared by resetting the applicator and the operator will be forced to power cycle the applicator.

Warning Alarms

The following are types of Warning Alarms operators may face:

- **Inhibit Alarm:** Applicator is in Inhibit condition.
- **Low Label:** Low label sensor detects the unwind roll is getting too small.
- **Printer Not Ready:** The printer is not ready.

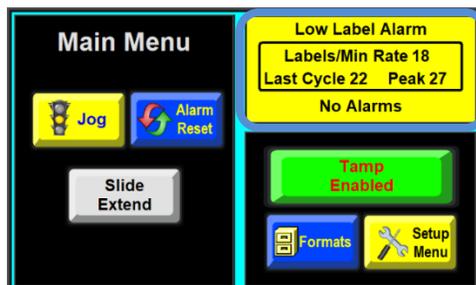
Critical Alarms

The following are types of Critical Alarms operators may face:

- **End Of Web:** Web sensor detects a break in the web. (no critical output)
- **No Media:** Print engine is out of labels or ribbon. (no critical output)
- **Software Limits:** Tamp goes outside the programmed or soft limits. (critical output)
- **Operator Interface Cleared:** Display is disconnected from the applicator. (no critical output)
- **Read or Write Errors:** Applicator has trouble communicating with the display. Depending on whether the connection is intermittent will determine whether the alarm is displayed or not. (no critical output)
- **Stop Input Alarm:** Stop input on the applicator is active. (critical output)
- **Torque Limit on Retract:** Slide was using too much current during the retract sequence. This means a product got caught on the label pad. (critical output)
- **Drive Fault:** Drive/controller for the applicator failed. (critical output)
- **Roto Failed To Reach Home Position Or Air Pressure Too Low:** Tamp slide reaches a set distance below the home offset position and the roto home input has not turned on within the delay roto alarm time or the air pressure sensor is not active. (critical output)



[14] Incorrect Passcode



[15] Warning Alarm



[16] Critical Alarm

Main Menu

After power-up and home sequence, the Main Menu displays [17]. The operator can run the whole applicator from the Main Menu after the applicator has been setup. At the Main Menu, screen there are several windows with information or functions for the operator to use. The following is an explanation of each section.

Status Window

The status window is in the upper right-hand corner of the Main Menu [17] indicated by the red dotted box and informs the operator the status of the applicator. If the tamp is disabled, you will see a status window has a green background showing the following [18]:

- Label rate
- Current rate
- Rate between the last two cycles
- Peak rate since the applicator was online

If a Warning Alarm occurs, the background will change colors and will inform the operator what the alarm is [19].

NOTE: Additional Status Windows may be displayed depending on options enabled and additional applicator settings.

Online Window

The lower right window at the Main Menu has the following buttons and menus:

- **Tamp Enabled/Disabled button:** Enables the tamp arms to the applicator for labeling. When enabled, the button is bright green and says, “Tamp Enabled.” When disabled, the button is red and says, “Tamp Disabled.” The button may be grey if an alarm or warning condition is preventing the applicator from being enabled.
- **Setup Menu button:** Opens the applicator setup screens. See the “Setup Menus” section of the manual.
- **Formats Menu button:** Opens the applicator format screens. See the “Formats” section of the manual.

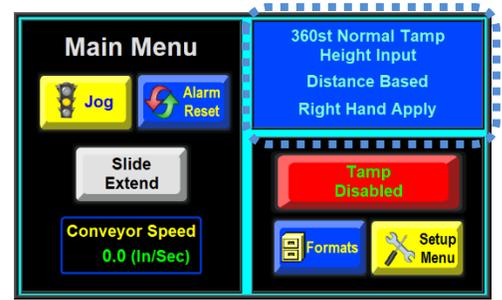
Main Menu Window

The left side Main Menu window has the following buttons [20]:

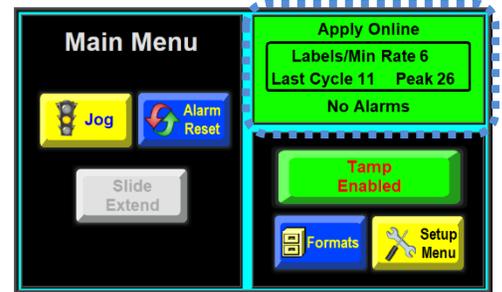
- **Jog:** Cycles the tamp when pressed if a label has been fed onto the pad.
NOTE: Jog key is not accessible while the applicator is running.
- **Alarm Reset:** Clears warning and Critical Alarms displayed in the Status window.
- **Slide Extend:** Moves the tamp the slide extend distance for maintenance and cleaning. This button is selectable only when the Tamp is disabled and been homed. A full screen Alarm will be displayed requiring the operator to home the slide before continuing operation.

Backlight

The display has a backlight saver function that automatically turns off the backlight after 60 minutes of inactivity. Pressing any part of the display will bring the display backlight on. Also, the applicator will initiate a backlight wake-up in response to any Critical Alarm condition. The later feature ensures that the operator has a visual indication of a Critical Alarm condition in applicators without a light-stack assembly.



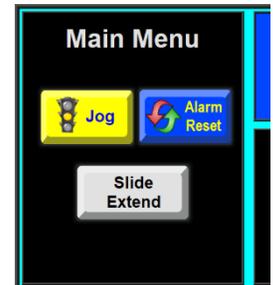
[17] Main Menu



[18] Online Window



[19] Online Window With Alarm

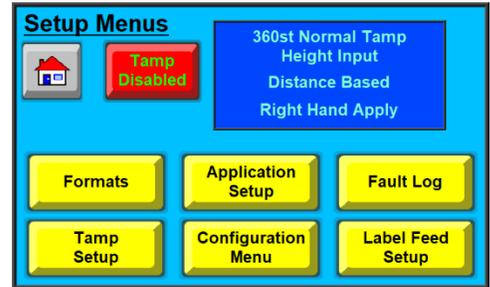


[20] Main Menu Window

Setup Menus

The Setup Menus are passcode-protected; pressing the Setup Menu button at the Main Menu will force a passcode screen to appear in the Main Menu window. A correct passcode loads the Setup Menu screen [21]. The operator has access to the following setup sections:

- Formats
- Application Setup
- Tamp Setup
- Configuration Menu
- Fault Log



[21] Setup Menu

Tamp Setup Menus

The Tamp Setup Menus [22] allows selection of the Tamp speed, Tamp Stroke, Roto Setup, home offset, and print start positioning.

Home Offset

Value in inches of the tamp home position from the home prox. During a home routine, the tamp slide moves up until the home prox. activates. Once the prox. switch turns on, the slide reverses direction until the prox. turns off and continues moving the home offset distance, this is the new home position for the label pad.

Print Start Position

Distance in inches from the home position during the retract portion of the labeling sequence the print signal is sent to the print engine to start printing. The Print Start output will turn on when the Tamp is at the set value multiplied by the scale factor calculated using the Height to Speed Compensation. The Roto assembly must also be in the home position during the retract motion. This allows the printer to begin printing while the Tamp is still in motion.

Tamp Speed

[23] Velocity in inches per second of the tamp slide movement when the cycle is active in normal operation.

Height to Speed Compensation

[23] Value to slow the slide for retract movement of short stroke movements. If the value is 55% then when the tallest product is labeled, the slide will retract at 55% of the Tamp Speed. If the shortest product is labeled, the slide will retract at 100% of speed. Any products between those two heights will be scaled between 55% and 100%.

Tamp Stroke

Tamp Return Adder

[24] Distance in inches the tamp continues to move after the Tamp Return Sensor activates during a normal tamp cycle.

Long Tamp Length

[24] Length of tamp travel in inches if the Tamp Return Sensor never becomes active. Set the as the distance from the Home Offset position to 1/2 inch above the conveyor.

Minimum Tamp Length

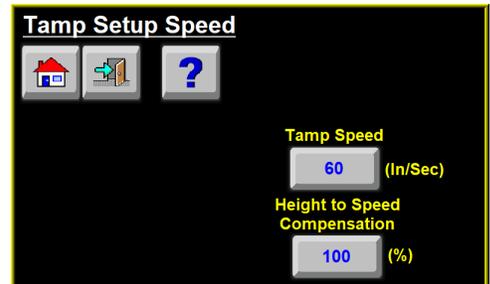
[24] Length of tamp travel in inches if the Tamp Return Sensor is active before the tamp cycle starts. Set the as the distance from the Home Offset position to 1/2 inch above the tallest product. If the value is zero, the tamp will not move if the Tamp Return Sensor is active before the Tamp cycle starts and will only blow the label from the Home position.

Motion Popup

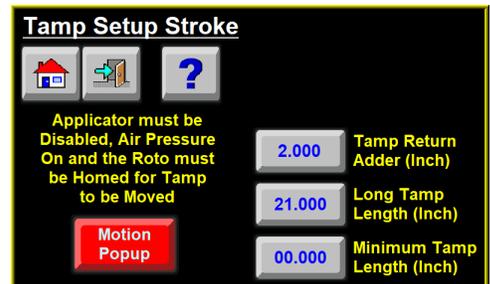
[25] Brings you to the Tamp Position window. This manually moves the tamp slide up or down using both fast and slow movement keys to set the applicator up. The slide only moves while the movement keys are held. The Tamp Position window shows the current slide position. If manually moving the slide beyond the software limits, the alarm window will appear and the Alarm Reset button will replace the Tamp Home button. The Tamp Home button is used to return the tamp slide.



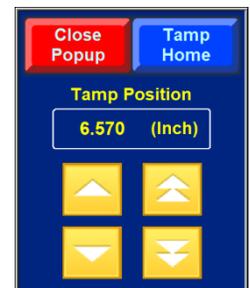
[22] Tamp Setup Menu



[23] Tamp Speed Setup Menu



[24] Tamp Stroke Setup Menu



[25] Tamp Position Window

Roto Setup

Minimum Roto Time

Time in seconds as the required time for the Roto to fully turn before blowing the label. If the slide is in position before the Minimum Roto Time, the blow will be delayed until the time is reached. The time starts when the Roto valve is activated at the Extend Roto Clearance Distance.

Roto Delay Alarm Time

Time in seconds the applicator will dwell when at, or above, the Delay Retract Clearance Distance during retract and while the Roto Home Sensor is not active before an alarm is generated. During a short tamp stroke, or with a slow-moving roto head, the delay allows time for the roto to fully turn to the home position without nuisance alarms at or above the Delay Retract Clearance Distance.

The same value is used as the value for a roto failed dwell time. If the Rotate Valve is energized and the Roto Home Sensor input has not turned off during tamp extend or in position portion of the tamp stroke, the stroke is only held in position waiting for the rotate to complete for Roto Delay Alarm Time value.

Extend Roto Clearance Distance

Distance in inches from the home position the tamp stroke must move during extend before the Rotate Valve is activated. Set to a value that allows the roto head and components to clear the printer, air assist tube, and other fixed components if the head rotates. The value should be set as small as necessary to allow the roto sequence to start as quickly as possible in the tamp extend cycle.

Delay Retract Clearance Distance

Distance in inches from the home position during the retract tamp stroke that the roto head must be at the roto home position to allow the tamp to continue to move. Set to a value that allows the roto head and components to clear the printer, air assist tube, and other fixed components as the head rotates back to the roto home position. The value should be set as small as necessary to allow the roto sequence to complete as late as possible in the tamp return cycle.

Application Setup Menus

The Application Setup Menu [27] allows selection of the air blast, air assist, pre-blast dwell time, position dwell time, label placement and detector lockout settings.

Air Blast

Value in seconds the blow value is active to blow the label off the pad. The valve activates at the end of the tamp stroke and after the Pre-Blast Dwell time.

Pre-Blast Dwell

Value in seconds of the dwell before the Air Blast. This setting is used to pause the Air Blast valve from becoming active immediately once the Tamp stroke is complete.

Position Dwell

Value in seconds of the dwell before the Tamp begins to return. Starts concurrently with the Air Blast. This setting is used to pause the tamp from returning immediately once the air blast starts.

Air Assist

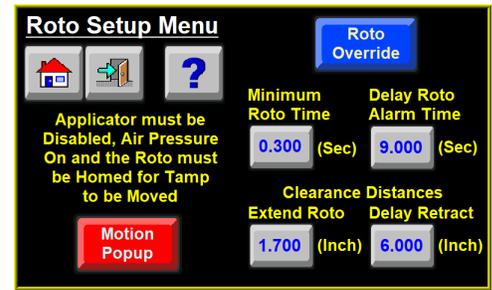
Value in seconds of the time the Air Assist valve will remain on after the web stops moving. Starts and runs concurrently with the web moving as the labels are being dispensed.

Label Placement

Time in seconds (if time based) or distance in inches (if encoder based) from the Product Detect Sensor rising-edge input to the start of the labeling sequence. This setting is used to adjust where the label is dispensed onto the product.

Detector Lockout

Time in seconds (if time based) or distance in inches (if encoder based) the applicator ignores product detect signals after the product detect sensor rising-edge input, starts a labeling sequence. This setting is used when more than one product detect signal is generated per product.



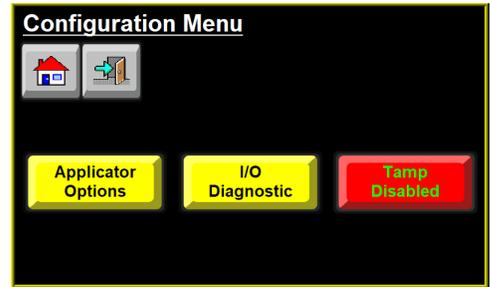
[26] Roto Setup Menu



[27] Application Setup Menu

Configuration Menu

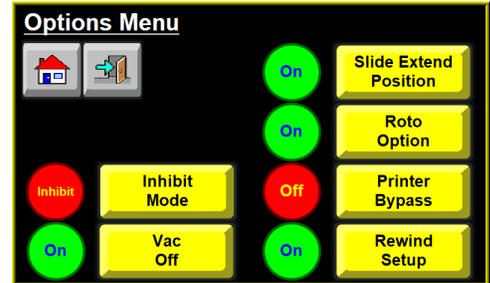
This menu [28] gives the operator access to Applicator Options and the I/O Diagnostic screen. These menu buttons are not available while the applicator is enabled.



[28] Configuration Menu

Applicator Options Menu

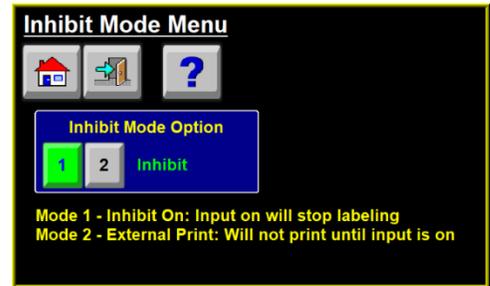
This menu [29] allows general visual indication of the applicator option selections and the menu buttons for each option. If the option is “On” the button is green and the letters are blue. If the option is “Off” the button is red, and the letters are yellow. Some options cannot be turned “Off.”



[29] Applicator Options Menu

Inhibit Mode Menu

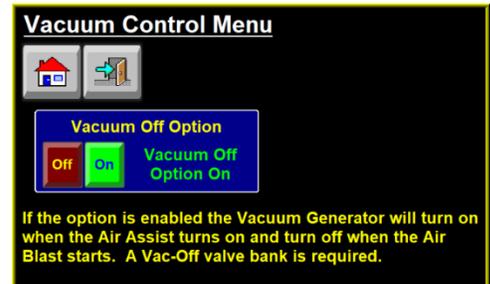
[30] Selects the applicators response to an active Inhibit Input. Set to Mode 1 (Inhibit) and the Inhibit input is active, the applicator will not cycle based on product detect input signals. Set to Mode 2 (External Print), the printer will not print the next label in the buffer until the Inhibit input is active.



[30] Input Mode Menu

Vacuum Control Menu

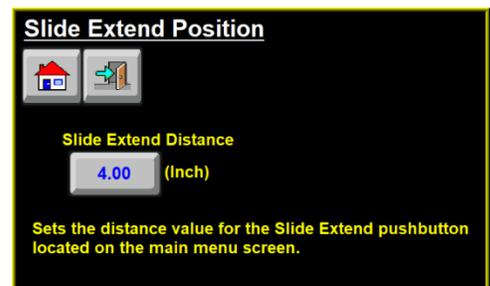
[31] Selects the operation of the Vacuum valve. When the Vacuum Off control option is on, air flows to the vacuum generator only when a label is feeding out or when a label is on the label pad. Starts and runs concurrently with the web moving as the labels are being dispensed and stops as the label is blown off the pad. Requires a vac-off valve bank.



[31] Vacuum Control Menu

Slide Extend Position

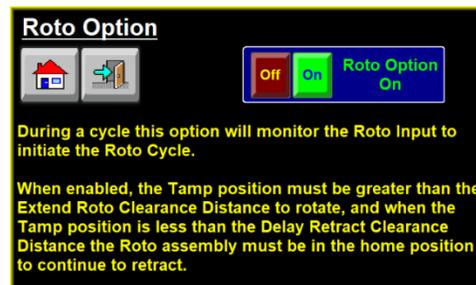
[32] Distance in inches the slide extends when pressing the Slide Extend button on the Main Menu screen. Set the value to a position convenient for cleaning and maintenance.



[32] Slide Extend Position

Roto Option

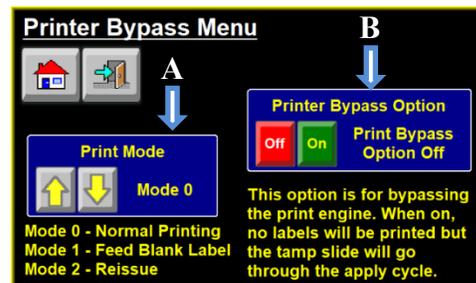
[33] Selects the applicator’s response to a Rotate Input. When the Roto Option is on, the applicator will monitor the Rotate Input to initiate the rotate cycle. When enabled, the tamp position must be greater than the Extend Roto Clearance Distance to rotate. When the tamp position is less than the Delay Retract Clearance Distance, the Roto assembly must be in the home position to continue to retract.



[33] Roto Option

Print Mode

[34A] Selects the applicator’s interaction with the printer. Mode 0 (Normal Printing) sends a signal to the printer to print the next label in the printer buffer during a normal cycle or jog. Mode 1 (Feed Blank Label) sends a signal to the printer to feed only, not print, the next label during a normal cycle or jog. Mode 2 (Reissue) sends a signal to the printer to reissue the last print during a normal cycle or jog. Enabling printer bypass allows the applicator to cycle without printing or feeding and applying labels.



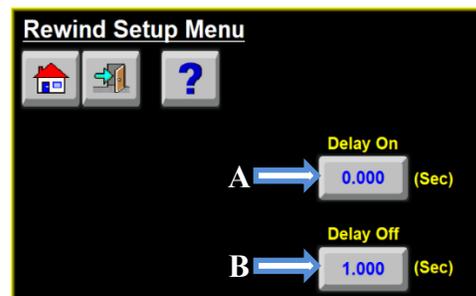
[34] Printer Bypass Menu

Printer Bypass Option

[34B] Selects the applicator’s interaction with the printer. Enabling printer bypass allows the applicator to cycle without printing or feeding and applying labels.

Rewind Setup Delay On

[35A] Time in seconds the rewind motor delays turning on. The rewind Delay On time starts when the printer begins to print. The rewind of the applicator turns on when this time is complete.



[35] Rewind Setup Menu

Rewind Setup Delay Off

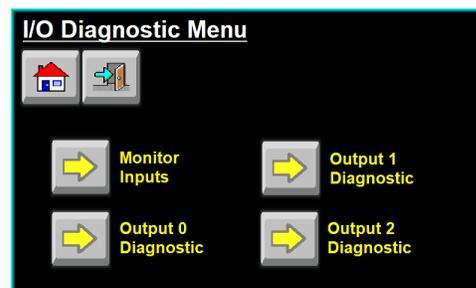
[35B] Time in seconds, the rewind motor will delay turning off. The rewind Delay Off time starts when the printer finishes printing the label. The rewind of the applicator will stop turning when this time is complete.

I/O Diagnostics

This menu [36] allows the operator to monitor inputs and to manually turn outputs on and off. This serves as a diagnostic tool for a technician.

The arrow button next to the description will change to the selected input or output screen.

NOTE: I/O Diagnostic screens are not accessible if the applicator is Enabled.

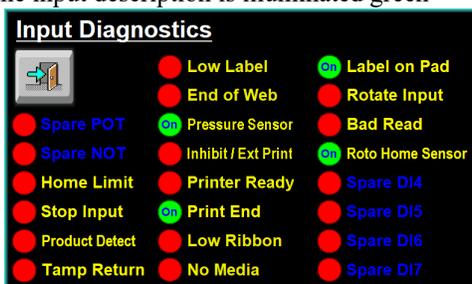


[36] I/O Diagnostic Menu

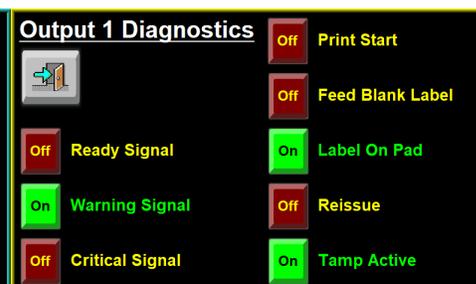
Inputs are active when the indicator next to the input description is illuminated green [37].

Outputs can be toggled by pressing the button next to the output description. Red button and yellow text indicate the output is “off;” green button and green text indicates the output is “enabled” [38].

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



[38] Input Diagnostics



[37] Output 1 Diagnostics

Fault Log

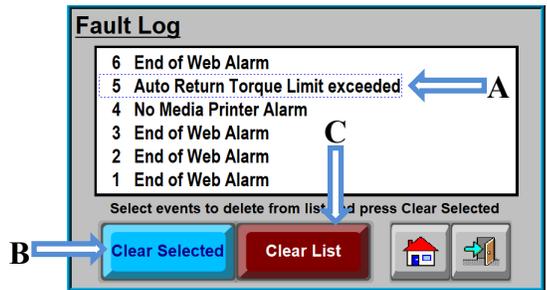
This screen is entered from the Fault Log key from the Setup Menu. The applicator tracks and sequentially numbers the critical faults. The last ten faults are displayed and can be scrolled through on the right side if the list is longer than the viewing window.

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 touching the screen. The text is surrounded by a dashed blue line [39A].
2. Touching the “Clear Selected” button [38B] to clear the fault from the list.
3. Press “Clear List” button [39C] to clear the entire list.

NOTE: Faults displayed depend in applicator settings and options. Figure [39] is a representation and may not show faults that apply to every applicator. Currently active faults, displayed in red before selecting, cannot be cleared individually.



[39] Fault Log

Formats

The Formats button on the Main Menu brings up a screen [40] that allows the operator to load previously saved formats. The operator cannot save, edit, or delete the formats viewed from the Main Menu.

The Format button in the Setup Menu loads the same Format Menu screen as the Main Menu. When the Formats screen is loaded from the Setup Menu the preview screens will allow the operator to load, save, and delete formats.

Operators can save and load up to 99 configurations. This allows running different products requiring different options to be selected, or different values in the parameters.

Eleven pages of formats are available to the operator. These pages can be selected with the arrow buttons to either side of the page number display. This screen also shows the last loaded format and the file number of the format. If no format has been loaded, or if the last loaded file is deleted, the text value in the box will be blank.

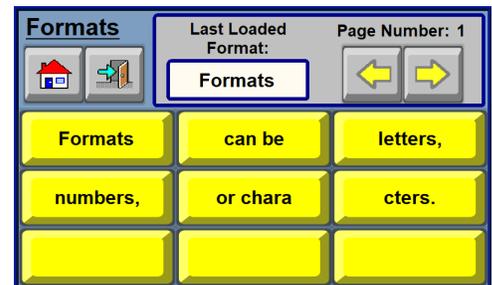
Previewing/Loading a Format

1. At the Formats screen, press the button with the desired format name to view/load a format file. A preview screen of the format will load for review. If the format name button is blank, the preview will show the current applicator settings. A blank format cannot be loaded.
2. Press the “Load” button to load the format being viewed.
3. Press the “Back” or “Main Menu” button to exit without loading the viewed format.

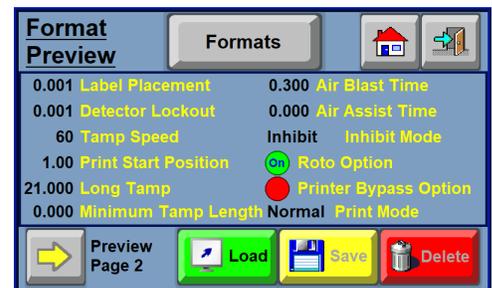
NOTE: The displayed items are not all the variables that will be loaded. Formats can be viewed and loaded while the applicator is online but must be offline to save or delete formats.

Saving a New Format

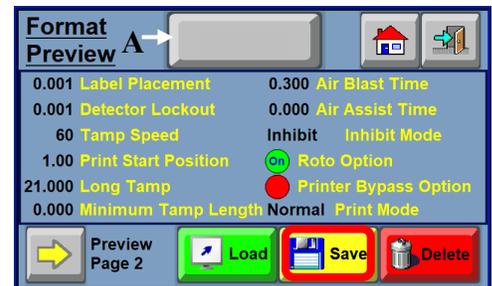
1. From the Formats screen, tap a blank button to write the new format. When the preview screen loads, the button to the right of the “Format Preview” text will be blank [42A].
2. Press the blank button [42A] a keypad for text entry will appear.
3. Type a name for the new format. The maximum character limit for format names is eight.
4. Tap the “Save” button to save the format. The “Save” button stores the current applicator settings, regardless of the preview values, to the format file.



[40] Formats Menu



[41] Previewing/Loading a Format



[42] Saving a Format

NOTE: The displayed items are not all the variables that will be saved. Format names can be shorter than eight characters but must not be blank or end with a space. Exiting the Format Preview screen without saving will lose all current format changes.

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. From the Formats screen, tap the format button to overwrite. When the preview screen loads, the button to the right of the “Format Preview” text will display the selected name.
2. Press the button and a keypad for text entry will appear. The maximum character limit for format names is eight.
3. Press the “Save” button to save the format after naming the file. The “Save” button stores the current applicator settings, regardless of the preview values, to the format file.



[43] Overwriting an Existing Format

Overwriting an Existing Format with New Settings

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

1. From the Formats screen, tap the format button to overwrite. When the preview screen loads, the button to the right of the “Format Preview” will display the selected name.
2. Press the “Save” button to overwrite the format. A new screen pops up asking for confirmation [43].
3. Confirm overwrite by pressing the “Overwrite” button or “Cancel” to return to the preview screen. The “Overwrite” button stores the current applicator settings, regardless of the preview values, to the format file.

Deleting a Format

1. From the Formats screen, tap the format button to be deleted. When the preview screen loads, the button to the right of the “Format Preview” text will display the selected name.
2. Press the “Delete” button to delete the format. After deleting, the Formats screen will reload and the value for the deleted format will be blank.



[44] Deleting a Format

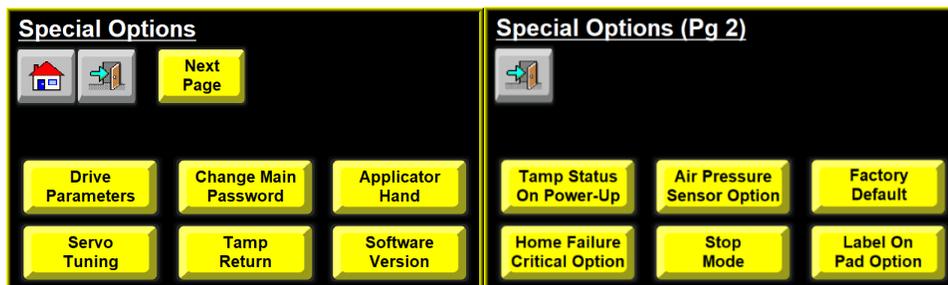
NOTE: There is no second step to this operation. Once you press the delete button, the format will be erased.

Special Options

These screens [45] allow access to applicator configuration options and factory and password default selections.



CAUTION: The settings in the Special Option menu are factory set and should only be changed by a qualified technician. Unauthorized changes by unqualified personnel can cause damage to equipment! Contact the factory before making any changes. See “Contact and Support” section for contact information.

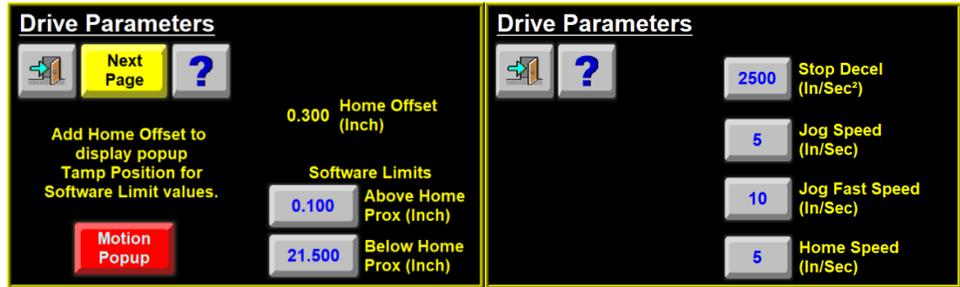


[45] Special Options

Drive Parameters

The Drive Parameters Menu [46] allows selection of the following:

- **Software Limit Above Home Prox.:** Distance in inches above the off to on transition of the Home Proximity Switch that the applicator uses as upper limit for motion.



[46] Drive Parameters

- **Software Limit Below Home Prox.:** Distance in inches below the off to on transition of the Home Proximity Switch that the applicator will use as lower limit for motion.

NOTE: Software Limits are factory set according to the stroke length. After the applicator is setup, the Below Home can be reduced to avoid hitting obstacles. If the Below Home is less than the Long Tamp value, a warning will appear and the Long Tamp value will change to the Below Home Limit.

- **Stop Decel:** Rate in inches per second squared the tamp ramps to stop during alarms while in a cycle.
- **Jog Speed:** Velocity in inches per second the tamp slide movement uses during normal slow jog movement with the motion popup.
- **Jog Fast Speed:** Velocity in inches per second the tamp slide movement uses during normal fast jog movement with the motion popup.
- **Home Speed:** Velocity in inches per second the tamp slide movement uses during homing and zeroing movement.

Servo Tuning

This menu [47] allows selection of the following sections listed below. The amplifier load, speed and torque limits can be monitored during cycles.

- **Position Error Alarm Level:** Value in amplifier pulses as the position deviation between the position reference value and the actual position used to alarm and stop the servo motor.
- **Position Width:** Value in amplifier pulses as the position deviation between the position reference value and the actual position. Used as the value for acceptable “in position.”
- **Tamp Accel:** Rate in inches per second squared the tamp accelerates during normal operation while in a cycle.
- **Tamp Decel:** Rate in inches per second squared the tamp decelerates during normal operation while in a cycle.
- **Negative Torque Limit:** Value in percentage of rated motor torque the amplifier will limit maximum output torque during normal reverse direction movement.
- **Positive Torque Limit:** Value in percentage of rated motor torque the amplifier will limit maximum output torque during normal forward direction movement.



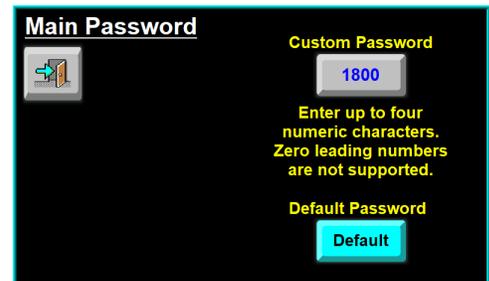
[47] Servo Tuning

NOTE: Forward direction is movement towards the product and away from the home position.

Main Password

This menu [48] allows the Setup Menu password to be customized or reset:

- **Custom Password:** The passcode used to access the Setup Menus section of the applicator. See the “Passcode” section of this manual for more information.
- **Default Password:** One-touch button to reset the Setup Menu passcode to the default value.



[48] Main Password

Tamp Return Menu

The Tamp Return Menus [49, 50] allow setting the Torque Limits for acceleration, deceleration, steady state movements, and the reaction to alarms during forward (extend) and reverse (return) motion.

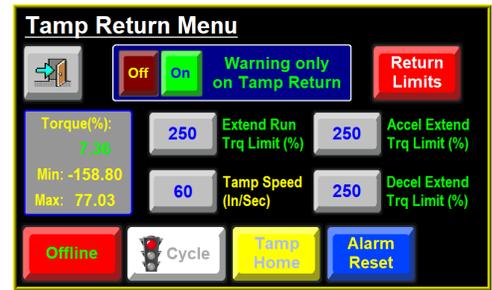
Extend Limits

- **Extend Run Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement, not accelerating and not decelerating.
- **Accel Extend Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement while accelerating.
- **Decel Extend Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement while decelerating.

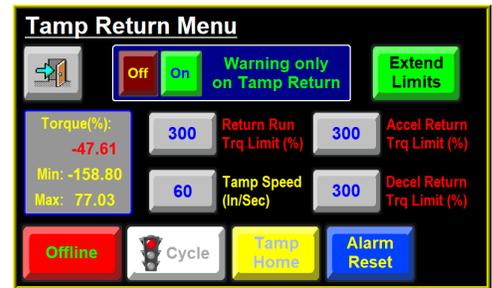
Return Limits

- **Return Run Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement, not accelerating and not decelerating.
- **Accel Return Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement while accelerating.
- **Decel Return Torque Limit:** Value in percentage of rated motor torque the amplifier will alarm during normal movement while decelerating
- **Warning Only on Tamp Return On/Off:** Selects the applicator’s response to a Torque Limit Alarm.
 - **Warning Only on Tamp Return option On:** Applicator monitors the Torque Limit Alarm to initiate an immediate blow of the label and retract of the tamp during a cycle. Alarms will be logged into the Fault log and Alarm counters.
 - **Warning Only on Tamp Return option Off:** Applicator monitors the Torque Limit Alarm to immediately stop motion. The applicator displays an alarm message, and the alarm must be reset before continuing motion.

NOTE: *Extend direction is movement towards the product and away from the home position.*



[49] Tamp Return Menu—Extend Limits



[50] Tamp Return Menu—Return Limits

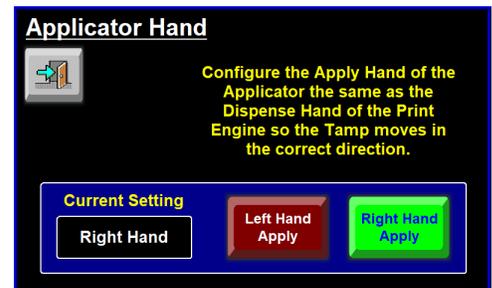
WARNING: Tamp Return Torque Limits are not to be used as a safety procedure since the force of the tamp assembly will be substantial before the assembly reverses or stops. Because of the speed of application, it is necessary to keep personnel away from this applicator while labeling products through machine guarding.

Applicator Hand

[51] The Applicator Hand must be set so the Tamp moves in the correct direction during the labeling sequence. It must match the dispense direction of the print engine.

- **Right/Left Hand Apply:** Sets the applicator hand orientation. The current setting will be displayed in the Current Setting window and the button will be displayed bright green and be labeled with blue text. The non-selected hand button will be displayed red and be labeled in white.

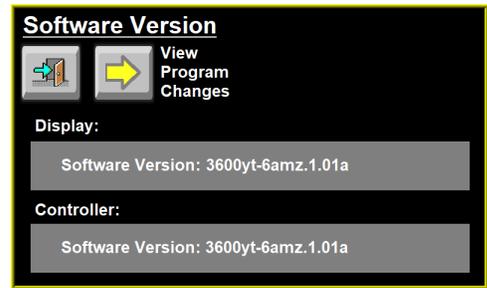
NOTE: *The Factory Default for this setting is Right Hand.*



[51] Applicator Hand

Software Version

[52] This menu displays the software version for the Display and Controller, program changes, and additional information if the program is custom.



[52] Software Version

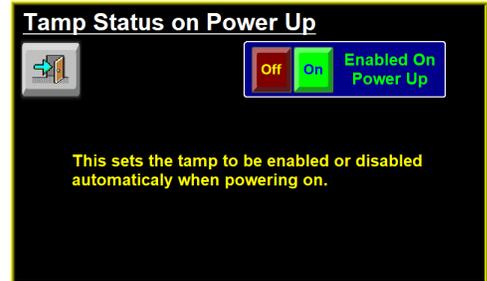
Tamp Status on Power Up

This menu [53] allows the operator to select the applicator option to automatically enable the tamp, go online, after performing the tamp home routine during a power-up sequence.

Enabled on Power Up On/Off

Selects the applicators option to automatically enable the tamp after performing the tamp home routine during a power-up sequence.

- **Enabled On Power Up, On:** Applicator automatically Enables after performing the tamp home routine during a power-up sequence.
- **Enabled On Power Up, Off:** Applicator remains disabled after the power-up sequence.



[53] Tamp Status on Power Up

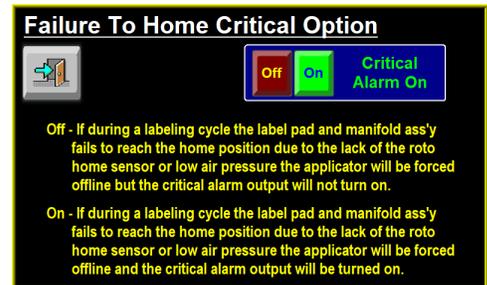
Failure to Home Critical Option Menu

This menu [54] allows setting the applicator's response during a Failure To Home caused by the Roto Home sensor or low air pressure.

Critical Alarm On/Off

Selects the Critical Alarm response during a Failure To Home caused by the Roto Home sensor or low air pressure.

- **Off:** If during a labeling cycle the label pad and manifold assembly fails to reach the Roto Home position due to the lack of the Roto Home sensor or low air pressure, the applicator is forced offline, but the Critical Alarm output will not turn on.
- **On:** If during a labeling cycle the label pad and manifold assembly fails to reach the home position due to the lack of the Roto Home sensor or low air pressure, the applicator is forced offline, and the Critical Alarm output will be turned on.



[54] Failure To Home Critical Option Menu

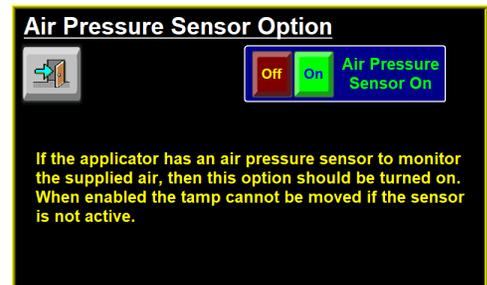
Air Pressure Sensor Option

This menu [55] allows the operator to select the applicator option to monitor the input and react to the Air Pressure Sensor.

Air Pressure Sensor On/Off

If the applicator has an air pressure sensor to monitor the supplied air, then this option should be turned on. When enabled, the tamp cannot be moved if the sensor is not active.

- **On:** Monitors the input.
- **Off:** Does not monitor the input.



[55] Air Pressure Sensor Option

Label On Pad Option Menu

This menu [56] allows setting the applicator's response to the input from the Label On Pad Sensor.

Label On Pad Option On/Off

- **On:** Turns on the Label on Pad output when the Label Presence Sensor is active after the Extended Air Assist. The output will turn off if the label is removed or the air blast occurs.
- **Off:** The Label On Pad output is always off.



[56] Label On Pad Menu

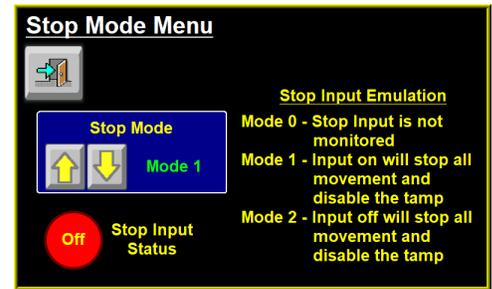
Stop Mode Menu

This menu [57] allows the operator to select the applicator response to the Stop input and monitor the Stop input state.

Stop Mode Up/Down

Selects the Stop Mode. The Up arrow increases the Mode, the Down arrow decreases the Mode.

- **Mode 0:** Stop Input is not monitored.
- **Mode 1:** Input on stops all movement and disables the tamp.
- **Mode 2:** Input off stops all movement and disables the tamp.



[57] Stop Mode Menu

The response to the Stop input changes if the tamp is in the home position or not. In the home position, the tamp is disabled; the critical light on the alarm stack turns on; the ready light turns off; and the display shows a Stop Alarm screen. The applicator will stay in this state until the Stop input is corrected.

If the tamp slide is not at home and the Stop input becomes active, the slide will stop; the red light on the alarm stack turns on, the green light turns off; and the display shows a Stop Alarm screen. When the Stop input has been cleared, the display will prompt the operator to home the tamp slide. Any time the Stop alarm is activated the air dump valve (if equipped) will turn off and the air supply to the rest of the valves will remain off until the alarm is cleared. The marker light reflects the status of the Stop input.

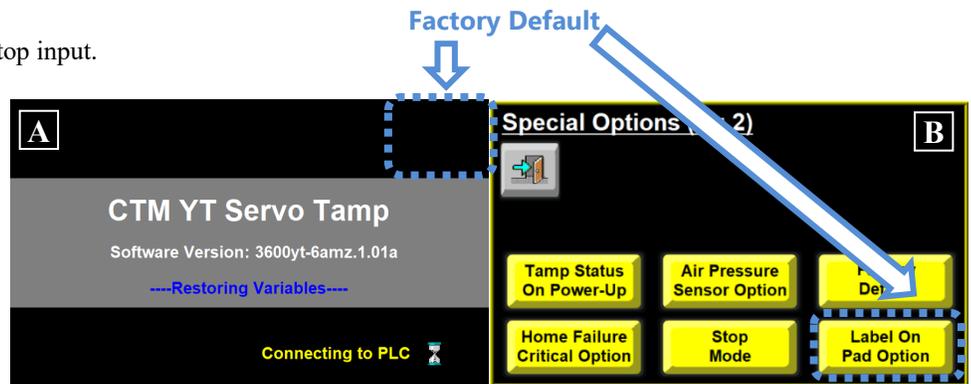
Stop Input Status

The marker light reflects the status of the Stop input.

Factory Default

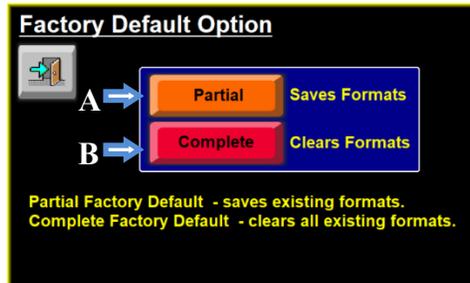
The ability to reset to factory defaults is useful when the applicator is not acting correctly due to a configuration problem. Resetting to factory defaults will bring all the settings to initial values.

The Factory Default Screen can be accessed from both the Startup screen [58A] and the Special Options Menu [58B].

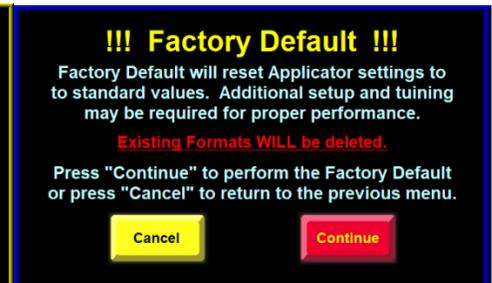


[58] Factory Default

1. Press the upper right-hand corner of the Startup screen or the Factory Default button in the Special Options Menu.
2. Press the Partial button [59A] to default the applicator settings but retain the values saved in formats.
3. Press the Complete button [59B] to default the applicator settings **and** erase the values saved in formats.



[60] Factory Default Option



[59] Complete Factory Default

NOTE: Contact the factory before doing a factory default.



[61] Partial Factory Default

APPLICATOR SETUP PROCEDURES

Sick WL-27 Array Product Sensor

An opto-electronic photoelectric sensor for the optical, non-contact detection of objects. The sensor must be connected in a voltage-free state ($V_s = 0\text{ V}$). Only apply voltage/switch on the power supply ($V_s > 0\text{ V}$) once all electrical connections have been completed. The green LED indicator lights up on the sensor. The sensing range is a maximum of 1.5m with a minimum object size of 5mm through a 24mm beam.

Standard Setting for Non-Transparent Objects:

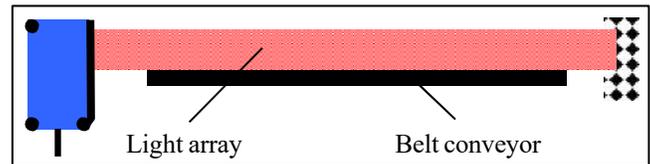
1. Align the 24mm light array to the reflector.
2. Precision alignment of the light array:
 - a. Fold a white piece of paper into quarters.
 - b. Check to ensure that the entire 24 mm light array is visible on both near and far edge of a conveyor belt. The light array must also be adjusted parallel to the top of a conveyor belt without gap.

NOTE: Tightening of sensor and bracket fixturing screws could affect alignment.

3. Press the yellow Teach button [64] until the yellow LED indicator switches off and illuminates again (approximately 2 seconds).
4. Confirm alignment:
 - a. Turn the conveyor belt ON and check that the sensor does not change state when no product is present.
 - b. Turn the conveyor belt ON and place product on the near and far edges and in the middle of the conveyor belt and check for reliable detection.
5. Alignment is complete if reliable detection occurs after Steps 4a and 4b otherwise repeat from Step 2.



[62] Setting the Sensor



[63] Sensor Light Array



[65] Sensor Teach Button



[64] PNP to NPN Converter

Because this sensor has a PNP output, it is necessary to use a PNP to NPN converter inline [65]. The converter plugs between the sensor and the control. The signal from the converter needs to be inverted and if it was purchased from the factory, it should already be done. If the converter was not purchased from the factory, complete the following:

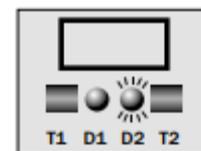
1. With power to the sensor and the sensor and looking at only the reflector (no product between), jump output pins 1 (brown wire) and 4 (white wire) for one second.
2. Go to the I/O diagnostic screen and verify that there is a product between the reflector and sensor. The Sensor Array input is on.

Sick UM30-213113 Ultrasonic Sensor Setup

The UM30-2 is an ultrasonic sensor from Sick [67]. It has a sensing range of 200mm – 1300 mm and outputs an analog signal from 0vdc – 10 vdc.

Standard sensor setup

Before starting, ensure the sensor is positioned far enough away from the tallest product to be in range. This means the sensor needs to be at least 8” from the top of the tallest product. With the sensor looking down at an empty conveyor surface, note the reading on the sensor display. That value will be used when setting the max distance in the sensor. In this example we will use “910”.



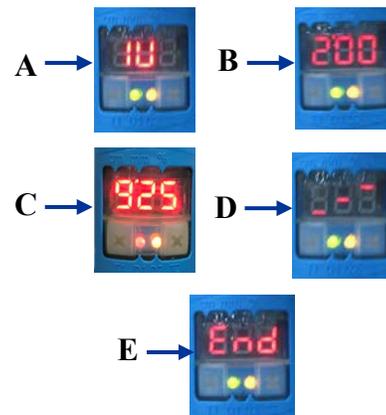
[67] Sensor Display



[66] Sick UM30-213113 Ultrasonic Sensor



1. Press the **T1** and **T2** buttons at the same time and hold until “Pro” appears in the display. Let go of the keys and wait for “IU” to appear [68A].
2. Press both **T1** and **T2** at the same time and release. The screen that will now appear is the minimum scan distance. Set the value to 200 which is the minimum for this sensor [68B]. The **T1** button will decrease the value while **T2** increases.
3. Press both **T1** and **T2** at the same time again and release. The new value in the display is the maximum scan distance and should be set a bit higher than what the value was when looking at the conveyor. We started with a value of 910 and now will use the **T1** and **T2** keys to set it to 925 [68C].
4. Press both **T1** and **T2** at the same time again and release. In this part we set the rise/fall characteristic of the analog signal. Toggle **T2** to change the rise/fall so it looks like [68D].
5. Press both **T1** and **T2** at the same time and release. The word “End” should appear [68E] and when it does, press both **T1** and **T2** again to finish the process.



[68] Digital Display

Sensor Filters

There are additional parameters in the sensor that need changed if the sensor was not purchased from the factory. Hold **T1 + T2** for approx. 13 seconds until “ADD” appears. Use **T2** to navigate to the A6 parameter and set it to F01. Repeat those steps until you get to the A7 parameter and set it to P01.

Configuration

Factory Default Settings: Press and hold **T1** during the power “on” sequence for approx. 15 seconds until the verbiage “rESet” scrolls through. Release the **T1** button and the sensor will be defaulted.

Keyence LR-ZB250CN Setup (Tamp Return Sensor)

The LR-ZB250CN is a CMOS laser sensor. It is used to detect objects up to 200 mm away. This sensor can be configured as a tamp return sensor. To setup the sensor you must set a zero point and then define your “on” point.

Safety Precautions on Laser Product

- This product uses a semiconductor laser for the light source.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Follow the instructions mentioned in this manual. Otherwise, injury to the human body (eyes and skin) may result.
- Laser emission from this product is not automatically stopped when it is disassembled. Do not disassemble this product.
- Do not stare into the beam.

Wavelength/Output	660 nm/145 μW
FDA(CDRH) Part1040.10 *	Class 1 laser product
IEC 60825-1	Class 1 laser product

* The laser classification for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50.

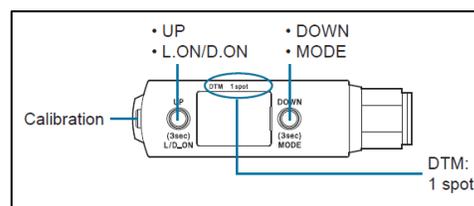
■ Certification and Identification Label

When using this product in the U.S. affix the Certification and Identification Label included in the package of this product as shown on the right.
(Affix this label in a location that is not splashed with oils or chemicals.)

[69] Sensor Safety Precautions



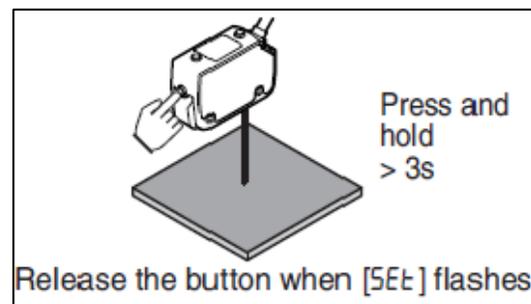
[70] Keyence LR-ZB250CN Sensor



[71] Sensor Indicators

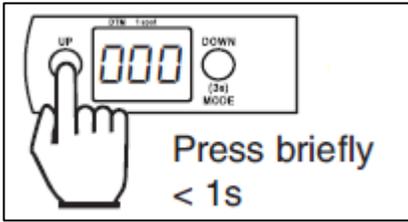
Setting “Zero” Point of Sensor:

1. Ensure the sensor is aiming at target 8 inches away.
2. Hold the Set / Calibration button for three seconds [72]. The word “Set” will flash on the sensor display.
3. Release the button. If sensor does not show “---” then the teach is successful.



[72] Setting “Zero” Point

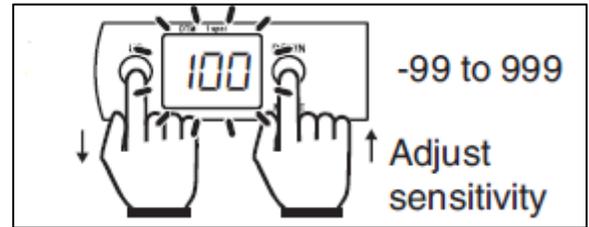
Setting "On" Point of Sensor:



[75] Setting "On" Point



[74] Sensor is 95mm From Target

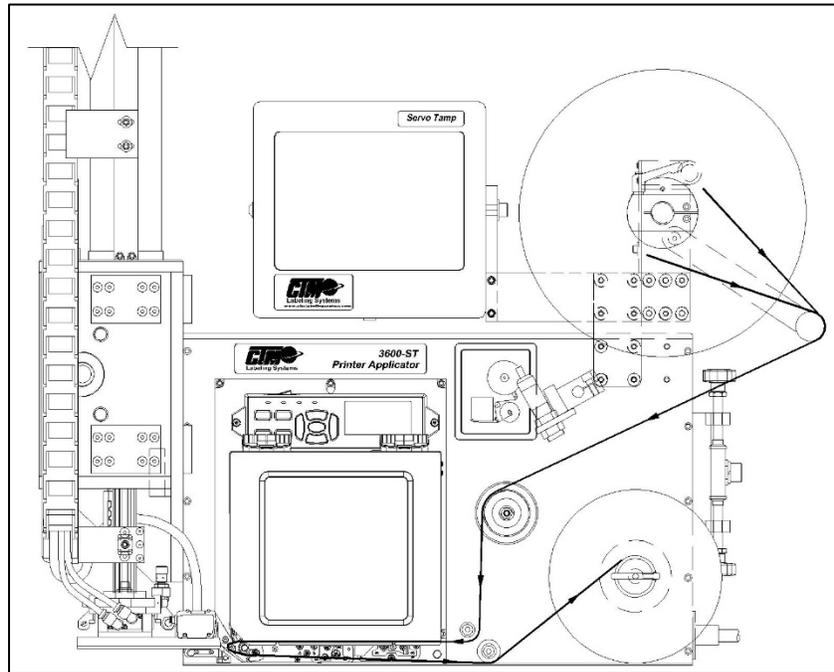


[73] Sensitivity Adjustment

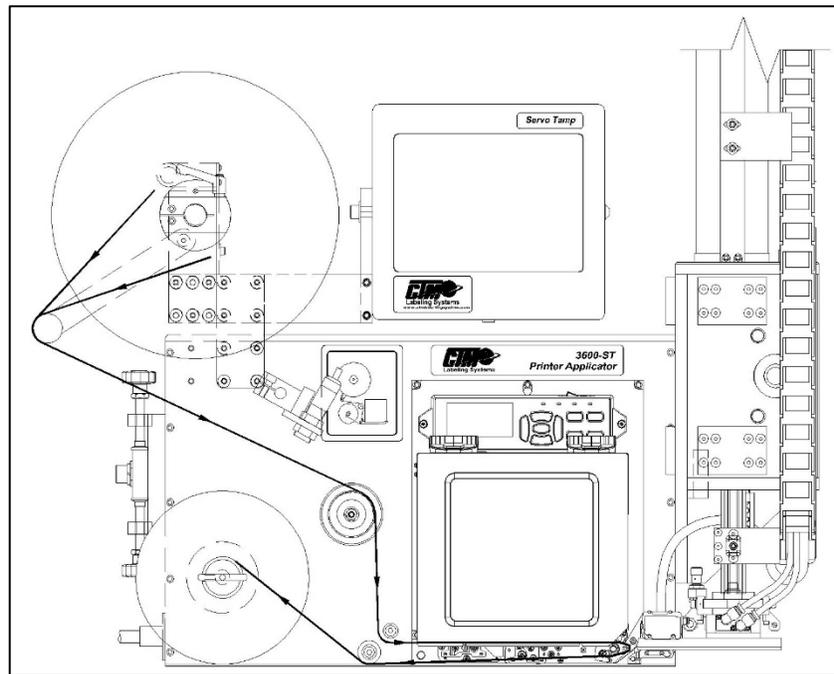
1. Press the up button briefly for less than 1 second [73].
2. Use Up and Down buttons [74] to adjust sensor to 95.
3. Verify sensor is functioning by using moving the sensor close to the product until it turns on. This should when the tamp is 95mm from the target [75].

NOTE: When using a tamp return sensor at high tamp speeds, the servo tamp may have a higher current draw potentially leading to increased overcurrent alarms. If you experience excessive overcurrent alarms, try reducing the tamp speed

Web Path Diagrams



[76] Left-Hand Web Path



[77] Right-Hand Web Path

NOTE: Web path diagrams for the print engine can be found inside the print engine or in the print engine manual.



WARNING: Danger of injury due to moving parts! Disconnect air and power supply from the applicator before performing the following procedures.

Servo Tamp Label Applicator Slide Setup

The servo tamp slide consists of a belt drive system, aluminum extrusion, and servo motor. This is modularly mounted to the side of the applicator. The speeds and position of the slide must be adjusted on an applicator-to-applicator basis. The adjustments of the pad height and tamp slide speeds are covered in the “HMI Operation” portion of the manual, under the “Tamp Setup Menus” section. This section will cover the mechanical adjustment of the label pad and tamp slide.

Setting Home Offset

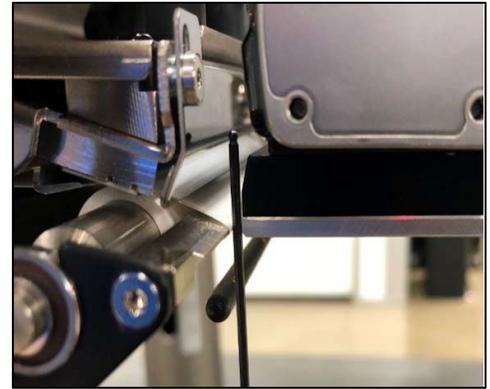
1. Power the applicator on and Home the applicator.
2. Verify that the peel edge of the printer and the label pad will not hit each other. If they are too close or will hit, skip to the next section “[Setting Label Pad Gap](#)” before continuing.
3. Adjust the home offset so that the bottom of the pad is even with the point of the printer peel edge [78]. Once the pad is even, feed a label and ensure that it is feeding smoothly.
4. Ensure that there is not too much of a dip from the label as it feeds out. The label may not stay on the pad if the air assist has not been setup. The home offset height will vary depending on printer and pad type.



[78] Home Offset Adjustment

Setting Label Pad Gap

1. Position the label pad so there is a $\frac{1}{16}$ in. gap between the label pad and peel edge.
2. Set this gap with a feeler gauge by loosening the socket head bolts holding the pad in place.
3. Adjust the pad and snug the bolts.
4. Ensure the pad is parallel to the peel edge.
5. Re-home the tamp.
6. Continue to adjust until the pad position is correct.



[79] Setting Label Pad Gap

Label Feed Setup

Once the pad is in the correct position the label feed can be setup. This will involve adjusting the vacuum, assist tube, and blow.

Air Assist Tube Setup

The air assist tube is used on vac-blow applicators to force the label onto the pad so the vacuum can hold it. The following steps detail adjusting the air assist:

1. Ensure the air assist is centered on the label. This will vary based on label width. If the air assist tube is off-center it can cause one side of the label to not pull up onto pad.
2. Adjust the angle of the assist tube based on the label. Typically, the air assist tube is aimed at the first row of bolt holes in the pad. This provides a starting point.
 - a. If the label flutters while being fed out, angle the air assist tube toward the end of the pad.
 - b. If the label curls downward without pushing against the pad, rotate the air assist tube toward the printer peel edge.
3. Ensure the air assist gauge on the valve reads approx. 30 – 40 PSI.

NOTE: This is a standard setting, but some cases may require different settings.

4. Increase the “air assist” value in “Applicator Setup” section of the display if a longer air assist timer is needed.



[80] Air Assist Tube Setup

Vacuum Setup

On vac-blow applicators the vacuum is generated by a venturi generator located on the valve bank. The vacuum should hold the label onto the pad as it feeds out. The vacuum remains on until the label is blown onto the product. If too much vacuum is present, the label may flutter as it feeds out. The typical vacuum pressure is 15 – 20 PSI.

NOTE: It is important to ensure that the label size matches the pad size. If the label is smaller than the pad not all the vacuum holes will be covered, and the label may fall off the pad.

Air Blast Setup

The label is transferred from the pad to the product by blasting air through the manifold. The blast is set to 40-50 PSI by default. The time that the air blast blows for can be found as “Air Blast” under the “Application Setup” menu in the display. This adjusts the time the air blast blows after the tamp begins to retract.

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 knowing this, it is unknown if label placement problems are due to the machine, or product being labeled. When the Servo Tamp Slide Setup and “Label Feed Setup” are finished, perform the following steps to ensure the applicator is properly setup:

1. Ensure the labels are consistently stopping in the same place on the label pad or grid. If this is accurate go to step 6; if not, go to step 2.
2. Ensure the label pad surface is clean and the pad matches the label. If accurate, go to step 3. If not, clean and re-try the static test again.

3. Ensure the vacuum is set right. If the label flutters when feeding across the pad, the vacuum is too high. If the label falls off or moves after the label has left the liner, the vacuum is too low. If the label feed looks smooth, go to the next step.
4. Work with the air pressure and the position of the air assist tube until the label feeds more consistently onto the pad. Re-try the static test. If the results are still not good enough, go to step 6. Otherwise go to 5.
5. Ensure you are working with good label stock. Try another roll of labels and see if you get the same results.
6. Cycle the applicator to see if the label will stack on the product.
 - a. Set the tamp mode to normal tamp.
 - b. Set the long tamp length so the label pad is about $\frac{1}{4}$ inch above the product.
 - c. With the product under the tamp, use the jog key to cycle the tamp slide.
 - d. Apply three or four labels on top of each other and check how well the labels stack.
 - e. If the labels are stacked well the setup is complete. If not, change either the blow distance or air blast pressure and retest until you get a good stack of labels.

Printer Settings

There are several settings and functions in the print engines that can be turned on or off. The lists in the table below are items for a Zebra printer that must be set for the applicator controller to interface with the printer. Options like back feed, direct or thermal transfer, etc. will be up to the operator to decide how to set.

An applicator coming from the factory will have these options already turned on. If a print engine is installed from another source, use the printer manual to navigate the printer menu.

Zebra ZE500 Printer Settings

PARAMETER	SETTING
Print Mode	Applicator
Media Type	Non-continuous
Sensor Type	Web
Applicator Port	Mode 2
Start Print Signal	Pulse Mode
Ribbon Low Output	Active High

Zebra ZE511 Printer Settings

PARAMETER	SETTING
Print Mode	Applicator
Media Type	Non-continuous
Sensor Type	Web
Applicator Port	Mode 2
Start Print Signal	Pulse Mode
Ribbon Low Output	Active High
ENERGYSTAR	Off

NOTE: For information about other printer settings and navigating printer menus consult, proper print engine manual.

Setting Software Limits

The software limits are set so the tamp will not be jogged into the product handling system during extension and prevent the belt mounts from touching the housing and the aluminum extrusion slide from touching the top cap on the slide tube during retraction.

1. With the tamp slide at the home position, measure the distance from the bottom of the label pad to the farthest object you do not want to contact. In most cases this would be the conveyor.
2. Use this measurement as the Software Limit Below Home Prox. value.
3. Consider the length of the tamp slide. If the distance to the conveyor is 28.25 inches and the tamp slide is 32 inches, then set the below home limit to 28.13 inches or less.

GENERAL MAINTENANCE PROCEDURES



WARNING: Disconnect the Air and Electric supply from the applicator before performing any maintenance procedures. Failure to follow this precaution may cause personal injury or equipment damage.

Daily Maintenance

1. Clean the printhead and platen roller each time you change ribbon. Refer to the printer manual for the correct procedure and additional daily checks.
2. Examine the air filter for water or oil collection; drain if necessary.
3. Examine the tamp pad and the rollers used to guide the web for adhesive build up. Clean if needed with alcohol or similar solvent.
4. Check for loose screws, rollers, etc.

Weekly Maintenance

1. Clean peeler bar, rollers, and tamp pad.
2. Examine machine for air leaks.
3. Wipe down the outside of the applicator and product detect lens.
4. Clean belt drive:
 - a. Manually extend the slide using the motion buttons in the tamp setup section of the display.
 - b. Once the slide has been extended, remove power to the applicator.
 - c. Open the stainless guard covering the roller assembly and blow out the dust and wipe down the aluminum extrusion to remove any residue.
 - d. When completed, turn power back on to the applicator and perform a home routine when prompted to bring the label pad back to the peel edge.

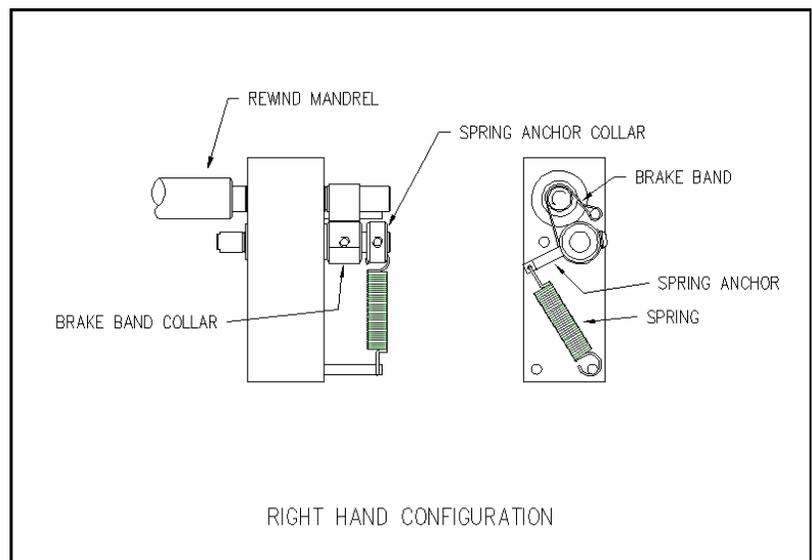
Semi-Annual Maintenance

1. Replace filters.
2. Check vacuum pump for debris accumulation. Replace if necessary.
3. Examine pulleys, belts, and rewind clutch for wear.

Unwind Dancer Arm Adjustment

Figure [81] shows the layout of the unwind brake band. It is important the brake stops the unwind from turning, but if it is too tight the printer will have a hard time pulling the web off when the label roll nears the end.

NOTE: Even if the unwind brake is adjusted properly, it will be of little value if the core of the label roll slips on the unwind hubs. Ensure the unwind disks are tight against the roll of labels.



[81] Components of Unwind



Adjusting the Unwind Brake Band

1. Hold the dancer arm in the position it should be when the brake is on.
2. Loosen the collar the brake band is anchored to and rotate the collar, so the band is tight.
3. Tighten the collar back down.
4. Ensure the brake band is wound in the right direction.
5. Loosen the collar with the spring anchor and tighten so the dancer arm is held up with enough tension to stop the unwind from turning. It should not be so tight as to create too much pull off force when the printer is running. This may cause the printer motor to stall or cause print registration problems.
6. Check the performance of the unwind with a full roll of labels and a small diameter roll. Adjust, as necessary.

Rewind Slip Clutch Adjustment

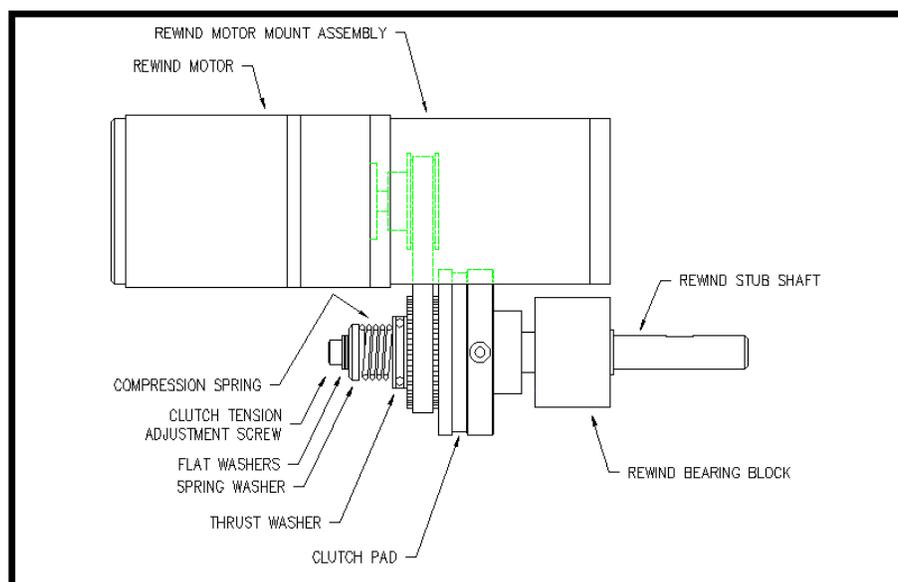


WARNING: Disconnect the Air and Electric supply from the applicator before performing any maintenance procedures. Failure to follow this precaution may cause personal injury or equipment damage.

The rewind is used to take-up the liner leaving the printer (after the labels have been dispensed). It is important to set the rewind tension, so the liner is taken up even at the end of a roll when the rewind is full. Also, the tension should not be too high, so the labels are being pulled through the print head. This will cause poor print quality and label stop will not be consistent

Rewind Slip Clutch Adjustment

1. Remove power and air to the machine.
2. Remove the lower stainless cover.
3. Remove the tension adjustment screw and all washers. Keep track of how many flat washers are on the outboard and inboard sides of the “spring washer.”
4. If the rewind tension was too tight, move one or two of the flat washers from the outboard side of the “spring washer” to the inboard side. This will relieve the pressure on the clutch pad.
5. If the tension was too loose, move one or two flat washers from inside the compression spring to the outboard side of the “spring washer.” This will increase pressure on the clutch pad.
6. Carefully re-apply the power and air to the machine and test. Re-adjust if necessary.
7. Remove power and air and replace the cover on the machine if everything tests correctly.



[82] Rewind Slip Clutch Adjustment



Changing Clutch Pads

1. Remove power and air to the machine.
2. Remove the stainless cover on the back of the machine.
3. Carefully remove the tension adjustment screw, flat washers, spring washer, spring, and thrush washer. Note how many flat washers are on the outboard and inboard sides of the “spring washer” to maintain the same pressure on the clutch pad when re-assembled.
4. Work the belt off the pulley/pressure plate and slip off the pressure plate.
5. Replace the clutch pad.
6. Re-assemble and adjust the tension for the new clutch pad.

Belt Tension

1. Remove power and air to the machine.
2. Remove the stainless cover on the back of the applicator.
3. Loosen the (2) $\frac{1}{4}$ inch socket head cap screws that bolt through the side of the rewind motor mount assembly to the faceplate of the applicator.
4. Push the rewind motor assembly up and re-tighten the two $\frac{1}{4}$ inch socket head cap screws.
5. Replace stainless cover.

Servo Tamp Label Applicator Slide Belt Maintenance



WARNING: Disconnect the Air and Electric supply from the applicator before performing any maintenance procedures. Failure to follow this precaution may cause personal or equipment damage.

The Servo Tamp Label Applicator slide belt should be checked and adjusted as needed. It is recommended to check the belt after every crash of the applicator.

Adjusting Belt Tension

Having the proper tension is important because it affects the tuning of the motor. If the belt is too tight the motor works harder and has a hard time finding its position. If the belt is too loose the timing lugs on the back of the belt will jump out of the pinion pulley and the applicator will lose the position of the label pad. After a product crash the belt should be checked because they tend to tighten up.

Checking Tension

To check the belt tension, lower the slide using the Motion Popup screen found in the “Tamp Setup Menus” section to a position of 12 inches. Grab the midpoint of the exposed belt and pull. The belt should have about $\frac{1}{4}$ in. to $\frac{1}{2}$ in. deflection [83].

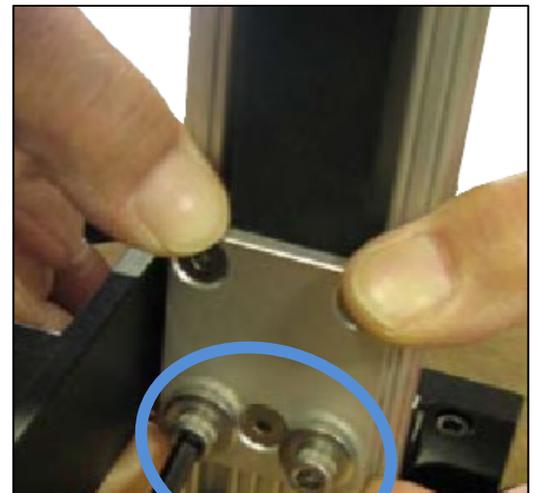
Changing Tension

Loosen the (2) $\frac{1}{4}$ in. 20 SHCS fastening the lower belt clamp to the slide extrusion [84]. Do not remove the screws but loosen them enough so the clamp will slide up and down without resistance. Pull down on the clamp by hand while someone else tightens the bolts.

NOTE: Do not use a clamping tool to create tension. Over-tightening drive belts can lead to drive faults



[84] Belt Deflection.
Pulled away $\frac{1}{2}$ in.



[83] Changing Tension

Changing Belts

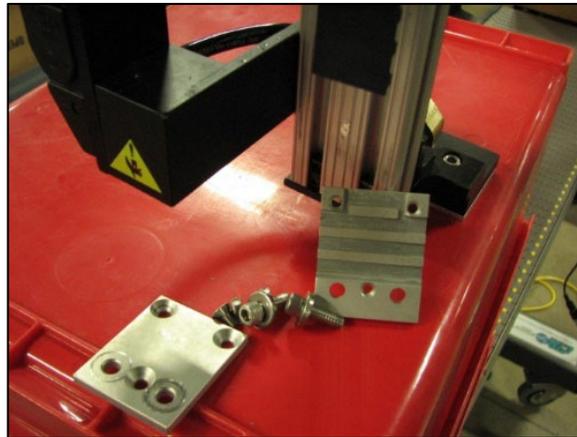
To change the belt, pull the slide down so it is mostly extended and put a support block under the pad so when the belt is disconnected from the extrusion it does not drop.

Belt Removal

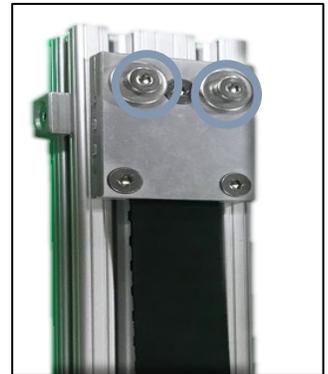
1. Remove the four 10-32 BHCS (two on front and two on back) from the base flange of the guard [85]. When done, slide the guard up and over the extrusion and set aside.
2. Remove the stainless guard covering the pinion pulley.
3. Remove the lower belt clamp and take it apart so the belt is free [86].
4. Pull the belt up and through the drive assembly.
5. Loosen the upper belt clamp [87]. The two 1/4 in. LHCS hold the clamp to the extrusion and are long enough to go through two locating holes in the extrusion.
6. Back the screws out until they are out of the clearance holes but still attached to the drop-in nuts.
7. Remove the assembly with the belt by sliding it up and out of the extrusion. Once out, disassemble the clamp and remove the belt.



[87] Buttonhead Bolts to Remove Guard



[86] Disassembled Lower Belt Clamp

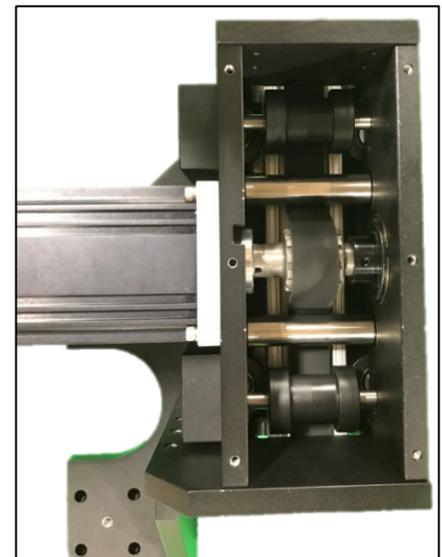


[85] Upper Belt Clamp,
Removal bolts Circled

Belt Installation

To install the new belt, we will reverse the previous steps:

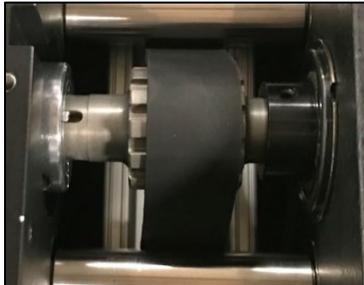
1. Install new belt into upper belt clamp.
2. Tighten bolts locking upper clamp into position while ensuring the upper clamp stays square to the extrusion.
3. Work the belt back through the drive assembly and down to the lower clamp position [88].
4. Install the lower clamp assembly to the end of the belt
5. Install clamp back on to the lower part of the extrusion.
6. Follow the belt tensioning instructions from above to re-tension new belt.
7. Reinstall the slide guard and home prox. cable.
8. When finished, power the applicator back on and do a home routine when prompted.
9. Watch the belt on the pinion pulley and ensure it runs mostly in one position.



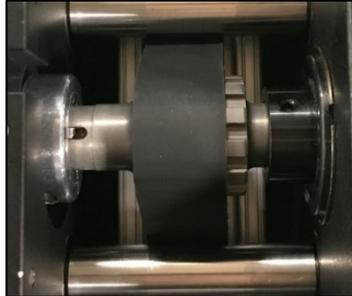
[88] Drive Belt Running Under Delrin and Stainless Rollers and Over the Pinion Pulley

Belt Installation (cont'd)

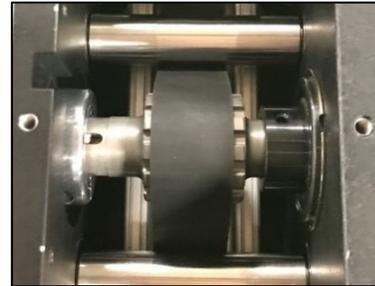
10. Once home, go to the tamp setup and use the motion popup to manually move the slide up and down a couple of times. Again, watch the belt on the pinion to ensure it is not wandering across the pulley more than $\frac{1}{8}$ in.
11. If the belt is moving too much, try re-tensioning the lower belt clamp making sure it is square [89].
12. Once belt is running straight put the stainless guard back in place and home the assembly.



Drive belt running to right side of pulley



Drive belt running to left side of pulley



Drive belt running along center of pulley

[89] Drive Belt

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Nothing works.	Power cord is loose, defective, or not plugged in.	Inspect the cord to find the problem.
	A.C. line fuse blown.	Find the cause of the electrical short and correct.
Power switch on, printer is on; no display.	Bad Power Supply.	Check power supply.
	Cables are not plugged into the display.	Ensure cable is plugged in.
Power switch on, display is lit and working; printer not on.	Printer turned off.	Turn the printer on.
	Power cord going to the printer is disconnected.	Inside the applicator, plug the printer power cord in.
Label liner breaking.	Labels are not threaded correctly.	Re-thread labels.
	Unwind/rewind disks or guide collar not aligned with printer.	Adjust disks and collars so the labels flow through the printer.
	Adhesive build-up.	Clean, as necessary.
	Label jammed in printer.	Clear jam.
	Bad roll of labels.	Replace label roll.
Labels are not consistently stopping on label pad.	Vacuum pump not working.	Clean or replace pump.
	Too little or too much vacuum.	Adjust vacuum pressure.
	Air assist too high or too low.	Adjust air pressure.
	Tamp pad not positioned correctly to the peel edge.	Check with the “Servo Tamp Label Applicator Slide Setup” section on how to position the label pad.
	Air assist tube not positioned correctly.	Adjust the position of the air assist tube.
	Adhesive build-up on the pad.	Clean label pad.
Labels are consistent on the label pad but not on the product.	Product is not consistently presented to the applicator.	Ensure product speed is consistent. Ensure the product is the same distance from the label pad every time.
	Air blast is too high or too low.	Adjust the air pressure.
	Product detect sensitivity or position.	Move and adjust the product detect sensor so it is repeatable.
	Labels are blown off before tamp is fully extended.	Enter a higher value for the tamp extend time.
	Label pad does not match the label.	Install the right label pad.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Labels are consistent on the label pad, but not on product.	Product is not consistently presented to the applicator.	Ensure product speed is consistent. Ensure the product is the same distance from the label pad every time.
	Air blast is too high or too low.	Adjust the air pressure.
	Product detect sensitivity or position.	Move and adjust the product detect sensor so it is repeatable.
	Labels are blown off before tamp is fully extended.	Enter a higher value for the tamp extend time.
	Label pad does not match the label.	Install the right label pad.
Valves do not turn on.	Air pressure is too low.	Turn air pressure above 20 psi and try again. The air assist valve is different and can operate at a lower pressure.
	Valve bank plug is not connected to the applicator.	Connect the valve bank plug.
	Valve spool is stuck.	Consult factory for the procedure to remove spool.
	Bad solenoid.	Replace solenoid.
	Dwell times too short.	Increase dwell times through the applicator display.
Machine will not cycle.	No label formats in print buffer.	Send label format. Check printer manual for parameters.
	No product detect signal.	Verify that the product detect sensor works. Replace if necessary.
	Printer I/O cable not plugged in.	Reconnect cable.
	Printer fault.	Correct the printer problem.
	The tamp is disabled	Enable tamp
Label application rate is too fast for the applicator to keep up.	Printer is taking too long to process data or to print label.	Check software and compiling time; increase print speed.
	Excessive dwell times for air assist, tamp speed too slow.	Go through the setup procedure for proper setting.
	The label print and apply cycle may be too long for the product rate.	Slow product rate.
Applicator cycles at random.	Loose or vibrating product detect sensor.	Check and correct.
	Product detector alignment is marginal.	Refer to product setup on how to set sensor.
	Loose wiring connections.	Check cables and wiring harnesses inside applicator.
	R.F. interference.	Isolate and correct.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Applicator cycles at random.	Loose or vibrating product detect sensor.	Check and correct.
	Product detector alignment is marginal.	Refer to product setup on how to set sensor.
	Loose wiring connections.	Check cables and wiring harnesses inside applicator.
	R.F. interference.	Isolate and correct.
No label feed.	Printer is not configured correctly.	Refer to printer manual.
	No label data in print buffer.	Send label data to printer.
	No external print signal sent.	Investigate and correct.
Compressed print on labels.	Applicator unwind brake is too tight creating too much pull through the printer.	Loosen unwind tension.
	Worm or damaged platen roller.	Replace the printer platen roller.
Printing registration is early.	Applicator unwind is not properly tensioned.	Adjust unwind tension.
Elongated print on labels.	Rewind has too much tension on it.	Re-adjust slip clutch.
Printing registration is late.	Rewind tension is too tight, not allowing a complete back feed.	Re-adjust slip clutch.
Poor print quality	-	Refer to printer manual.
Labels print continuously without being applied.	Printer configuration is wrong.	Check printer settings.
	Print end signal was not received from printer.	Call factory for help.
	Lost 24 vdc power supply.	
Alarm messages will not clear.	Printer turned off.	Turn printer on.
	The problem was not fixed before telling the applicator to reset.	Correct the problem at the source of the alarm signal.

DISPLAY FAULTS

Status

The operator interface will display warnings and alarms that pertain to the application. The following are screens that will help diagnose a drive or display problem that is more serious than the standard alarm.

Drive Fault

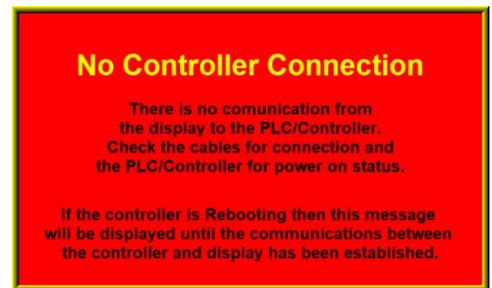
The Drive Fault Alarm Screen [90] will list Drive Controller and Amplifier faults.



[90] Critical Alarm Drive Fault

No Controller Connection

This screen [91] is displayed if the communication between the Controller and Display is interrupted. Check the cables for connection and the controller for power on status. If the controller is rebooting, then this message is displayed until the communications between the controller and display are established.



[91] No Controller Connection Fault

Software Mismatch

If the program on the display does not match the program in the drive, this screen appears warning the operator that some screens or functions may not be supported by both devices [92]. This can happen if the either the Controller or Display program have updated separately.



[92] Software Mismatch Fault

Reboot Required

If a Controller Reboot is required, the Alarm screen will be displayed [93].



[93] Reboot Required Fault

Stop Input

This screen displays if the stop input is active while the applicator was Enabled [94].



[94] Stop Input Fault

Roto Not Home / Air Pressure Low (Homing)

This screen [95] displays if during the Homing routine the Roto Home Sensor was not active or the Air Pressure was too low when at, or above, the Delay Retract Clearance Distance. The Roto Delay Alarm Time dwell is not used during the Homing cycle.



[95] Roto Not Home/Air Pressure Low Fault (Homing)

Roto not Home / Air Pressure Low

This screen [96] displays if during a Tamp cycle the Roto Home Sensor was not active or the Air Pressure was too low when at, or above, the Delay Retract Clearance Distance during the return. The Roto Delay Alarm Time dwell will expire before the alarm is displayed.



[96] Roto Not Home/Air Pressure Low Fault

End of Web Alarm

The End of Web sensor detects no media at the end of a cycle [97].



[97] End of Web Fault

No Printer Media

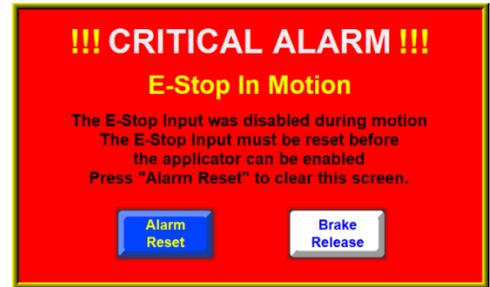
The printer No Media input is active [98].



[98] No Printer Media Fault

E-Stop Input

This screen [99] displays if the E-Stop is set while the applicator was Enabled and in motion.



[99] No Printer Media Fault

Fault Correction

Unauthorized personell should not carry out diagnoses and fault correction work. If the instructions displayed on the HMI do not clear the fault, then further troubleshooting may be required. Call your technician or authorised service person.

ACCESSORIES

NOTE: *The following is only a partial list of accessories available for the 3600YT Servo Tamp Label Applicator.*

Low Label Detection: Sensor that generates a signal when the unwind is low on labels. The applicator will display an alarm screen and activate 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 can be field installed.

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

Alarm Light Stack: The 3600YT Servo Tamp Label Applicator can handle up to 3 alarm lights:

- **Red:** Critical Alarm (steady)
- **Amber:** Warning Alarm (steady)
- **Green:** Ready Signal (steady)

Line Rate Compensation: This kit includes encoder and cable. Splitter cables can be purchased so one encoder can drive multiple applicators.

Vacuum Off: The option is selectable in the applicator options, but a special valve bank is needed to control the air going to the vacuum pump.

APPENDIX: DECLARATION OF INCORPORATION

(Original instructions)

Name of manufacturer: CTM Labeling Systems

Address: 1318 Quaker Circle
Salem, OH 44460

Declares that the partly completed machine:

Type: Servo Tamp Label Applicator
Model(s): 3600YT

Has(have) been designed and built in such a way as to be in conformity with the directive 2006/42/EC Machinery Directive, within the limits of the basic applicable requirements described below which are marked "Fulfilled" in the following table.

The following other technical standards and specifications were used:

- Safety Standards EN 60204-1 and EN 415-2
- EMC Standard IEC 61000-6-4 and IEC 61000-6-2

The technical documents in accordance with Appendix VII Part B of Directive 2006/42/EC have been created. The Manufacturer agrees to forward the technical documentation in respect of the partly completed machine to National Authorities at their request. The Manufacturer agrees to submit them within a reasonable period of time, by fax, email or hand-written note or other means of electronic data carrier.

The partly completed equipment must not be commissioned until the final machine in which the equipment is to be incorporated has been declared compliant (if necessary) with the provisions of directive 2006/42/EC.

01/11/2023

Date of Declaration



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Location of Declaration: Pneumatic Scale Angelus
Manufacturing
Via Mercalli, 16A,
43122 Ugozzolo PR, Italy

Number Annex I	Designation	Not Applicable	Fulfilled	Notes
1.1	General remarks			
1.1.2.	Principles of safety integration		X	
1.1.3.	Materials and products		X	
1.1.4.	Lighting	X		
1.1.5.	Design of machinery to facilitate its handling		X	
1.1.6.	Ergonomics	X		
1.1.7.	Operating positions	X		
1.1.8.	Seating	X		
1.2.	Control systems			
1.2.1.	Safety and reliability of control systems	X		
1.2.2.	Control devices	X	X	No safety input device included. Requires protective device.
1.2.3.	Starting	X	X	
1.2.4.	Stopping		X	
1.2.4.1.	Normal stop	X	X	
1.2.4.2.	Operational stop	X		
1.2.4.3.	Emergency stop	X		No safety input device included. Requires protective device.
1.2.4.4.	Assembly of machinery	X		No safety input device included. Requires protective device.
1.2.5.	Selection of control or operating modes	X	X	
1.2.6.	Failure of the power supply		X	
1.3.	Protection against mechanical hazards			
1.3.1.	Risk of loss of stability	X		
1.3.2.	Risk of break-up during operation		X	
1.3.3.	Risks due to falling or ejected objects	X		
1.3.4.	Risks due to surfaces, edges or angles		X	
1.3.5.	Risks related to combined machinery	X		
1.3.6.	Risks related to variations in operating conditions	X		
1.3.7.	Risks related to moving parts			Requires protective device. Installation by the system integrator.
1.3.8.	Choice of protection against risks arising from moving parts			
1.3.8.1.	Moving transmission parts	X		
1.3.8.2.	Moving parts involved in the process			Requires protective device. Installation by the system integrator
1.3.9.	Risks of uncontrolled movements	X		
1.4.	Required characteristics of guards and protective devices			
1.4.1.	General requirements			Installation by the system integrator.

1.4.2.	Special requirements for guards			
1.4.2.1.	Fixed guards	X		
1.4.2.2.	Interlocking movable guards			Installation by the system integrator.
1.4.2.3.	Adjustable guards restricting access	X		
1.4.3.	Special requirements for protective devices	X		
1.5.	Risks due to other hazards			
1.5.1.	Electricity supply		X	
1.5.2.	Static electricity		X	
1.5.3.	Energy supply other than electricity		X	
1.5.4.	Errors of fitting		X	
1.5.5.	Extreme temperatures		X	
1.5.6.	Fire		X	
1.5.7.	Explosion	X		
1.5.8.	Noise		X	
1.5.9.	Vibrations	X		
1.5.10.	Radiation		X	
1.5.11.	External radiation		X	
1.5.12.	Laser radiation	X		
1.5.13.	Emissions of hazardous materials and substances	X		
1.5.14.	Risk of being trapped in a machine	X		
1.5.15.	Risk of slipping, tripping or falling	X		
1.5.16.	Lightning	X		
1.6.	Maintenance			
1.6.1.	Machinery maintenance		X	
1.6.2.	Access to operating positions and servicing points		X	
1.6.3.	Isolation of energy sources		X	
1.6.4.	Operator intervention		X	
1.6.5.	Cleaning of internal parts	X		
1.7.	Information			
1.7.1.	Information and warnings on the machinery		X	
1.7.1.1.	Information and information devices	X		
1.7.1.2.	Warning devices	X		
1.7.2.	Warning or residual risks		X	
1.7.3.	Marking of machinery		X	
1.7.4.	Instructions		X	
1.7.4.1.	General principles for the drafting of instructions		X	
1.7.4.2.	Contents of the instructions		X	
1.7.4.3.	Sales literature		X	