



LM3612

PRINT & APPLY

OPERATIONS MANUAL



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SECTION 1

APPLICATOR OVERVIEW

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LABELMILL LM3612

THERMAL PRINTER/LABEL APPLICATOR SYSTEM INTRODUCTION

Introduction

The **LabelMill LM3612** is a state-of-the-art thermal printer & label applicator system created with maximum flexibility for your automatic labeling needs. The unit will print and apply high quality labels and bar codes to your product at print speeds up to 16"/second and apply at speeds up to 100 labels/min, depending on label and product size. Products may be labeled in any attitude (top, side, leading, trailing or bottom) when used in conjunction with available product handling systems.

OPERATION

The standard configuration is External Computer Mode. This configuration allows label formats to be sent to one of the standard interface ports on the Print Engine. Once the format is downloaded to the Printer Buffer, the LM3612 can print and apply as normal. Standard industry label software packages can be used in conjunction with a PC to design and load label designs.

SPECIFICATIONS

PRINTING METHOD	Thermal Transfer or Direct Thermal Right-Hand or Left-Hand
PRINT SPEED	Up to 16"/second and 100 labels/min (Varies depending on label and product size)
BAR CODES	Linear and Two-Dimensional Barcodes
PRINT RESOLUTION	203dpi standard, 300dpi & 600dpi print resolution available
HUMAN READABLE FONTS	OEM Standard Fonts, Firmware Support for Downloadable TrueType Fonts, and Additional Fonts Available
LABEL ROLL CAPACITY	12" Maximum outside diameter wound on a 3" diameter core. Die cut waste removed with a minimum of 1/8" separation between labels in running direction.
LABEL SIZE	Minimum: 1.0" wide x 0.50" long Maximum: 6.6" wide x 24+" long
MAXIMUM PRINT AREA	6.6" wide x 24+" long (Varies dependent upon system configuration)
LABEL PLACEMENT ACCURACY	Up to + or - 1/32" (1mm) when labels are produced to specifications and product handling is controlled.
INTERFACE	Applicator Interface, USB 2.0, 10/100 Ethernet, RS-232 Serial, Bluetooth (Optional), Parallel (Optional), Wireless (Optional)
INTERFACE SENSORS	Adjustable Transmissive & Reflective Media Sensor, Ribbon Sensor, Optional Low Label/Label Out, Product Sensor/Photo Eye/Limit Switch, Discrete I/O
ELECTRICAL	100-240VAC/50-60Hz 250 W idle, 600 W running.
AIR REQUIREMENT	80 psi/3 cfm
SIZE	26" T x 28" W x 26" D (Base System Assembly)
ENVIRONMENT	Operating Temp. 5-95 F (10-35 C) 15-85% RH. non-condensing
WEIGHT	70 lb. Nominal (with U-Arms)

*Options available

STANDARD INVENTORY LIST

QTY.	Description
1	Print & Apply Assembly w/ Applicator Module
1	U-Arm System Mount
1	Power Cord
1	Model LM3612 Operators Manual (USB)
1	Thermal Print Engine w/ Cardboard Ribbon Core
1	Product Switch (optional, specified) <ul style="list-style-type: none">a. Manual Limit Switch (optional)b. Photoeye Switch (optional)

TOOLS REQUIRED FOR ASSEMBLY

:
3/32" ALLEN WRENCH
3/4" WRENCH
1-1/8" WRENCH

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and / or inserts when installed, operated, maintained, and repaired in accordance with the instructions provided. This equipment must be checked periodically. Defective equipment should not be used. Parts that are broken, missing, plainly worn, distorted, or contaminated should be replaced immediately. Should such repair or replacement become necessary, we recommend that a request for service advice be made.

This equipment or any of its parts should not be altered without the prior written approval of LabelMill. The user of this equipment shall have the sole responsibility for any malfunctions which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than LabelMill, or a service facility designated by LabelMill.

SAFETY

Only qualified personnel should use this equipment.

Before installing, inspecting or servicing equipment, turn OFF all power and air controls at the source and lock out in accordance with OSHA Standards.

Be sure all external electrically conductive parts are connected to a good electrical ground.

Never handle live electrical equipment with bare hands while standing in water, or while hands and feet are wet.

Dangerous electrical shock can result.

Whenever the equipment is unattended, turn off all control and power supply switches.

Keep equipment clean and in good operating condition. Promptly repair or replace all worn or damaged hoses, cables or parts.

Do not make any repairs to equipment unless you are fully qualified.

This equipment contains fast moving parts, which may move without warning. Keep hands, loose hair and clothes clear of machines at all times.

Never place hands or any other body parts under the label platen at any time.

This equipment uses compressed air. Proper care and maintenance must be taken when handling compressed air and its components.

These precautions are further detailed and explained where specifically required in this manual.



WARNING

READ AND UNDERSTAND THESE INSTRUCTIONS

Protect yourself and others. Be sure this information is read and understood by all operators.

ELECTRICAL SHOCK CAN KILL!

Do not touch live electrical parts with bare skin or work with gloves or wet clothing.

NOISE CAN DAMAGE HEARING!

Wear proper ear protection.

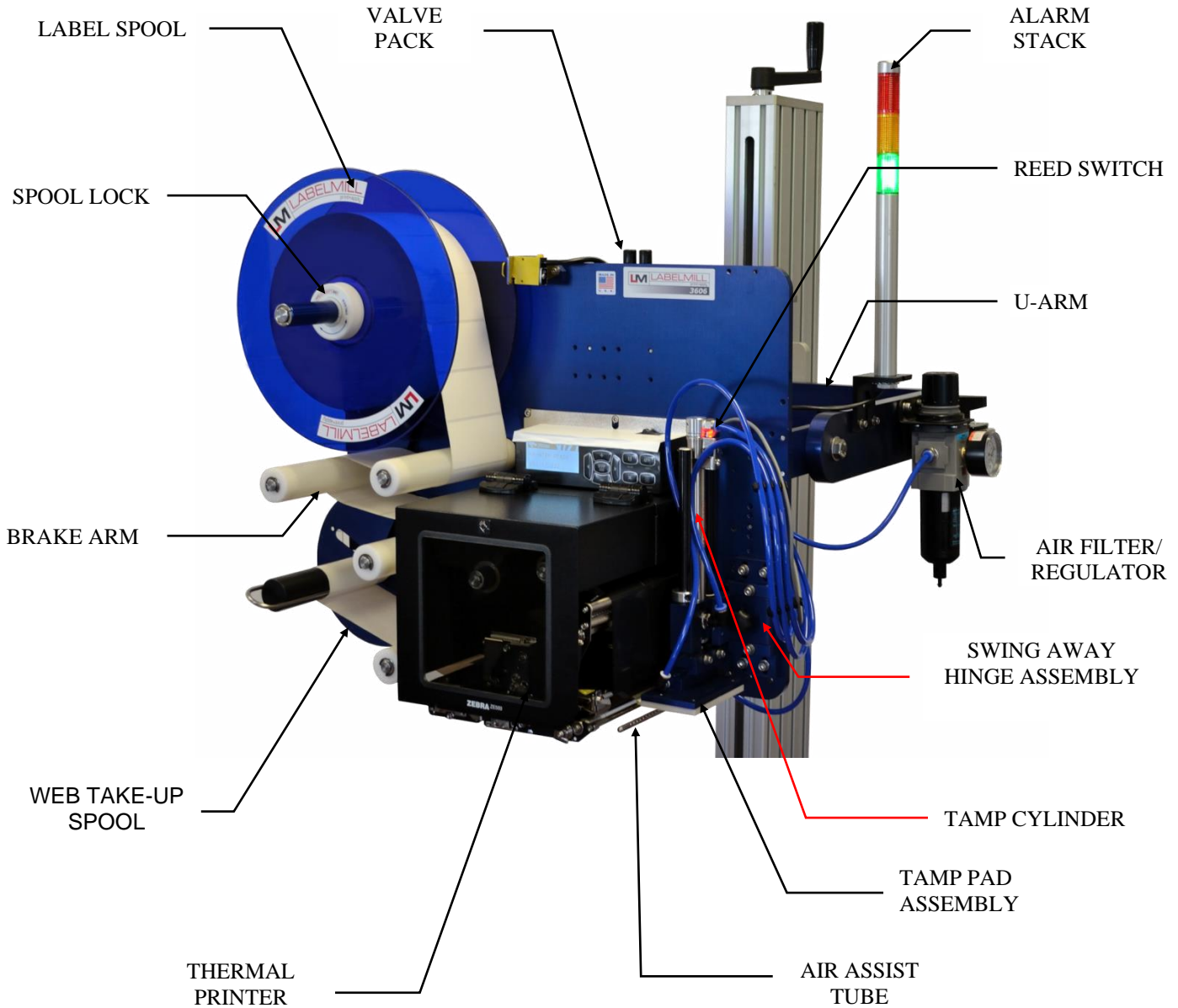
SECTION 2

WEBBING, SETUP & GENERAL OPERATION

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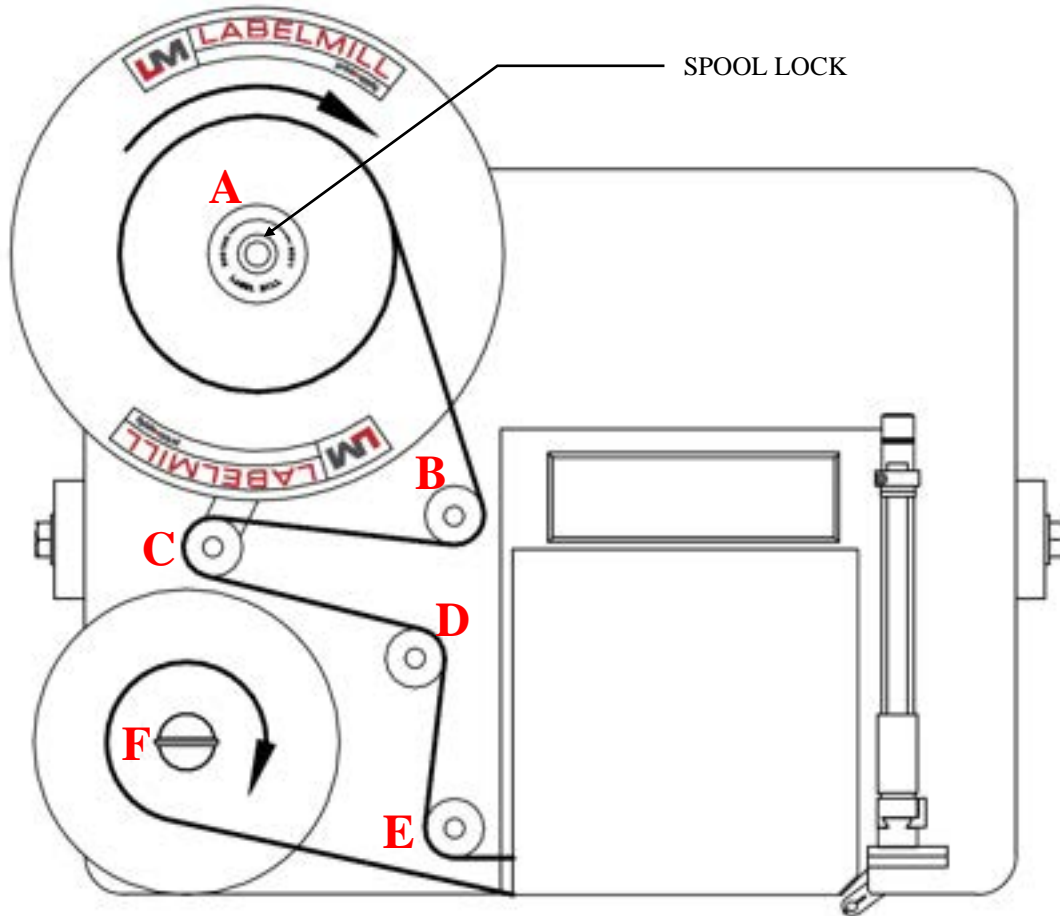
COMPONENT DESCRIPTION / LOCATION

NOTE: LM3612 PNEUMATIC TAMP CONFIGURATION (RIGHT HAND) SHOWN FOR REFERENCE ONLY



WEB ROUTING

(Right Hand Pneumatic Tamp Configuration Shown Below)



Step	Operation
1	Load web onto label storage spool (A) so it unloads in a clockwise direction.
2	Feed the web to the right around idle roller (B), to the left and around brake arm (C), to the right over idle roller (D) and to the left and below idle roller (E).
3	Feed the web into the thermal printer & follow printer instructions to web through printer.
4	Finish the process by loading the waste backing paper onto the web take up spool (F). The take up spool rotates in a clockwise direction.
5	Adjust the (2) plastic web guide clips so the web is guided straight and even. Make sure clips do not bind the web.

*** To remove the label storage spool (A), turn the spool lock counterclockwise until you reach a stop. The spool will now slide off. To secure the spool, simply turn the spool lock clockwise until snug. DO NOT over tighten!

LOADING THERMAL PRINT HEAD

REFER TO PRINTER MANUAL

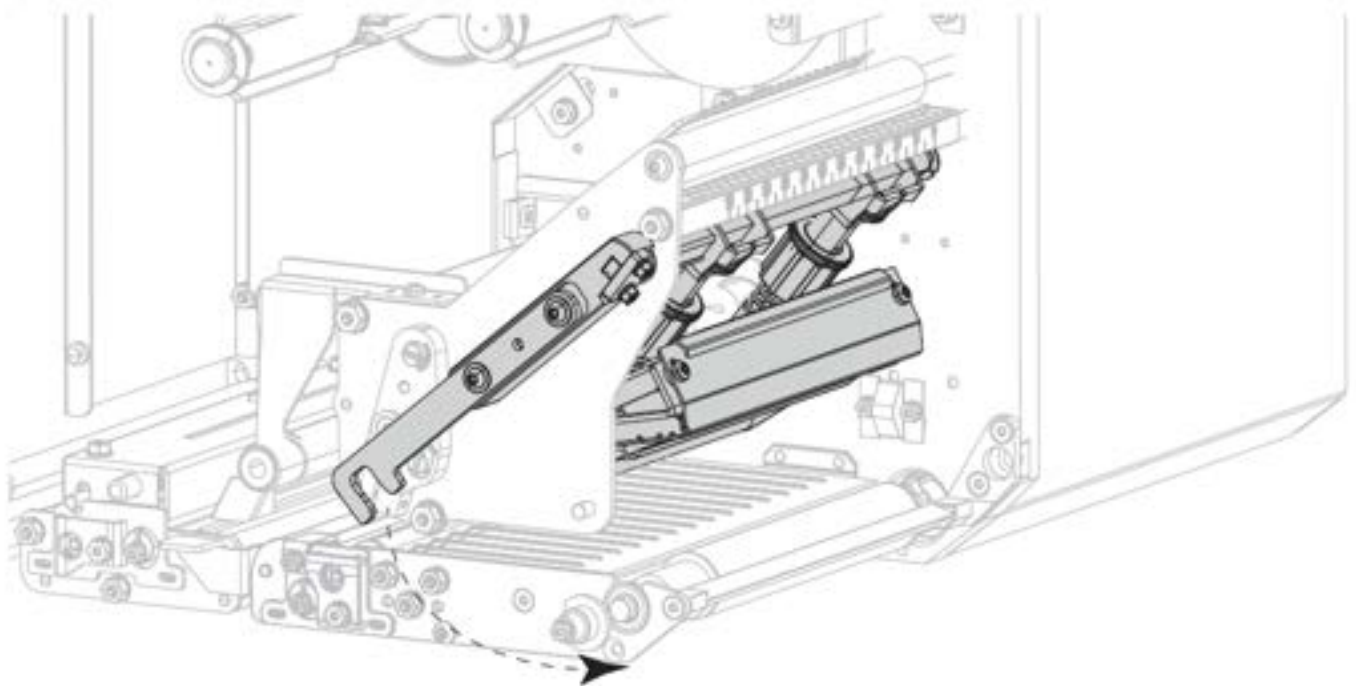
LABEL & RIBBON ROUTING

REFER TO PRINTER MANUAL

THERMAL RIBBON LOADING

REFER TO PRINTER MANUAL

(FOR REFERENCE ONLY BELOW)



NOTE: *The printer will not operate unless the front cover is in the fully closed position. For your continued safety, do not override the front cover interlock switch.*

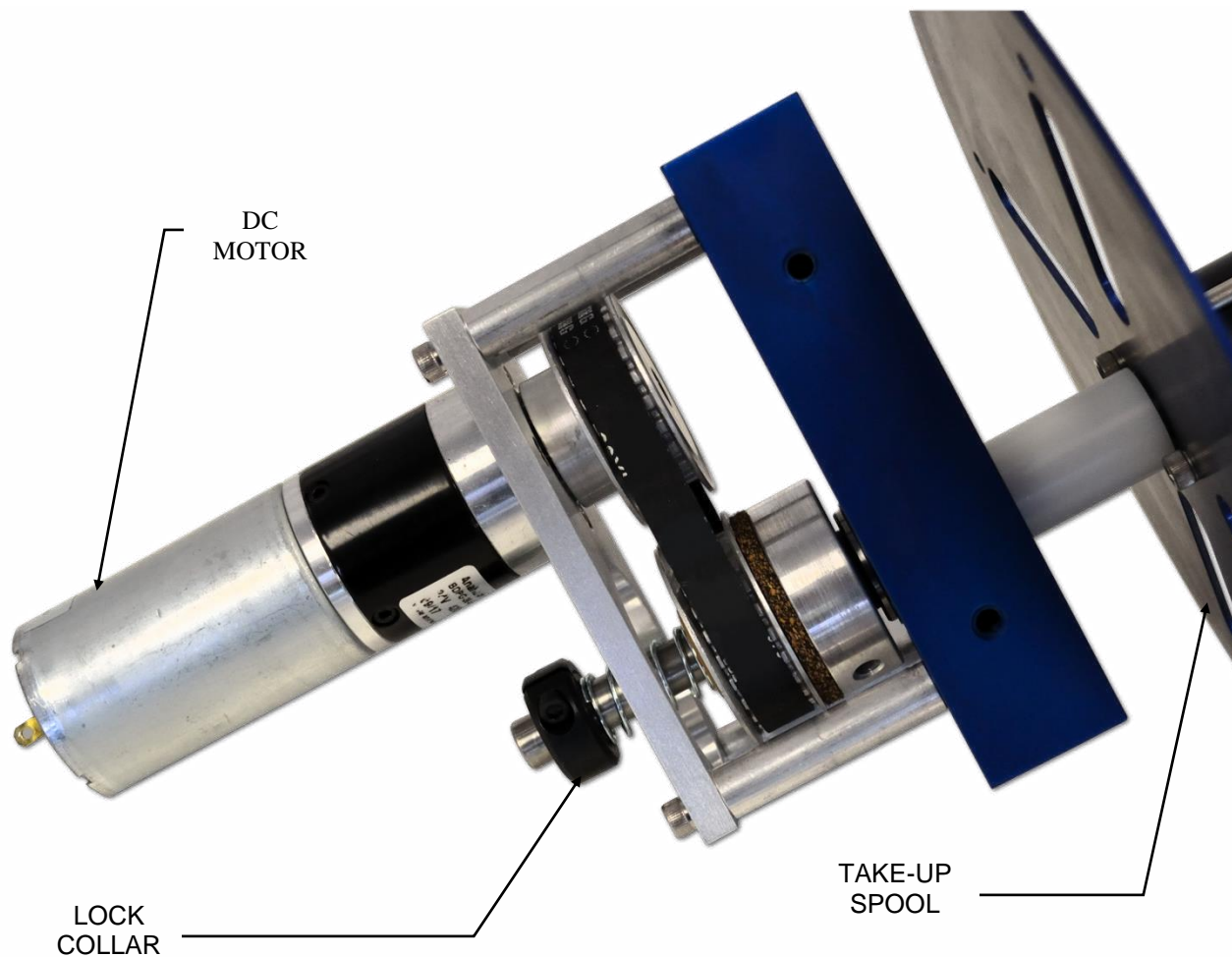
TAKE-UP UNIT ASSEMBLY



The Take-Up Assembly is located on the backside of the main panel. To adjust the clutch, the cover panel must be removed to gain access. The mounting bolts for the Take-Up Assembly can be found directly behind the take-up spool.

WARNING!!! Be sure power is off before performing any service.

CLUTCH ADJUSTMENT



To reduce waste web tension, move the lock collar $1/32$ " away from the take-up spool. To increase web tension, move the lock collar $1/32$ " toward the take-up spool.

CAUTION! Too much web tension may cause web breakage, label drifting, or premature failure of the take-up spool assembly.

T-52 PHOTO EYE
(Remote Product Trigger)

(FOR REFERENCE ONLY BELOW)

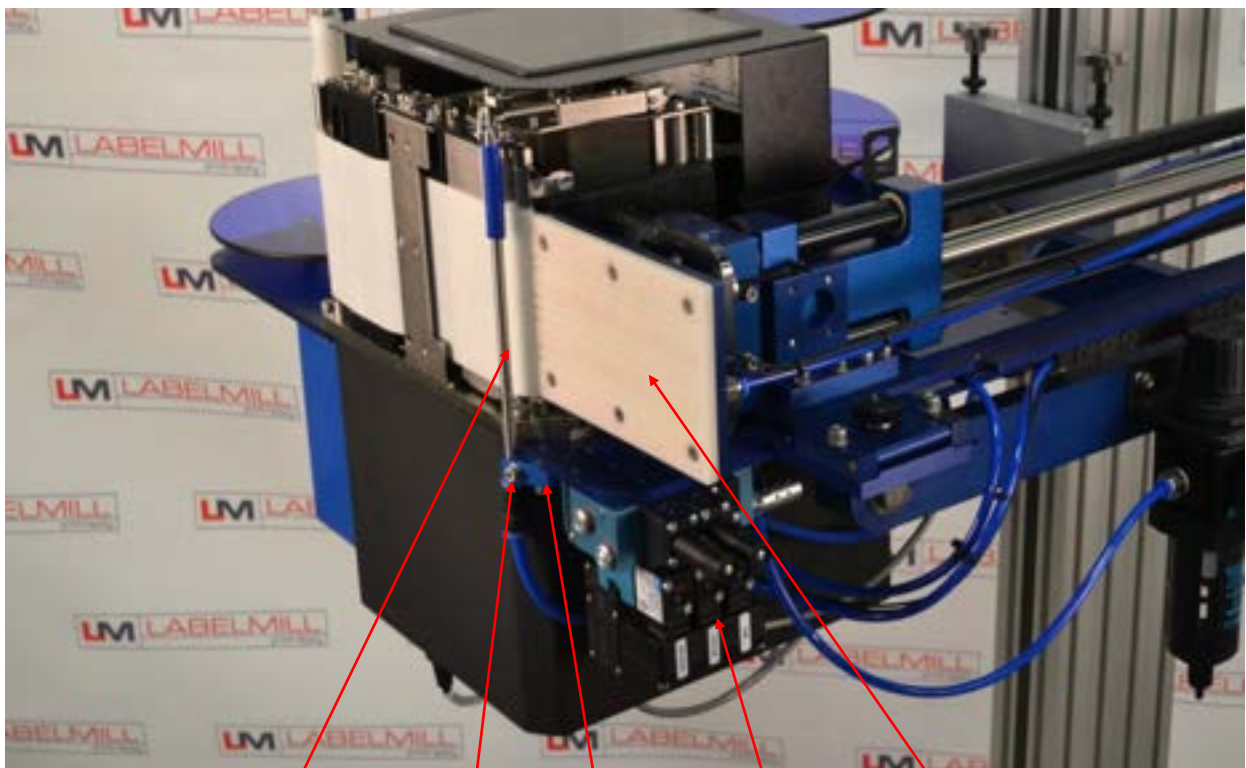
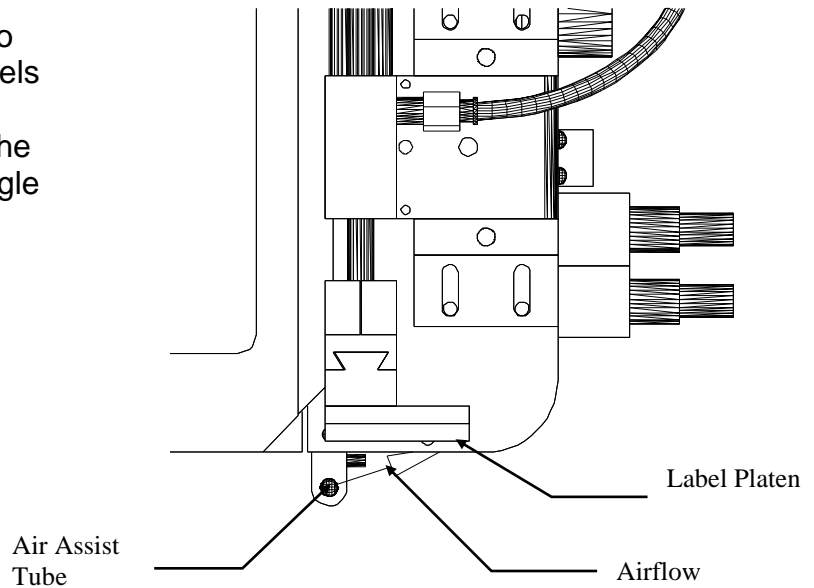


Refer to Section 4 for I/O details

AIR ASSIST TUBE

The Air Assist Tube must be adjusted to clear the trailing edge of the printed labels and the Label Platen. An adjustment screw is used to adjust the position of the air holes in relation to the labels. An angle of 45 degrees is required.

One slot is provided to make the appropriate adjustments desired.



Air Assist Tube

Clamp screw

Mount Bracket

Valve Pack

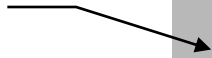
Label Platen

OPTIONAL T-150 MOBILE MOUNTING STAND WITH CRANK HEIGHT ADJUSTMENT

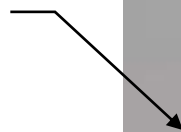


T-STAND ADJUSTMENT

Column Crank

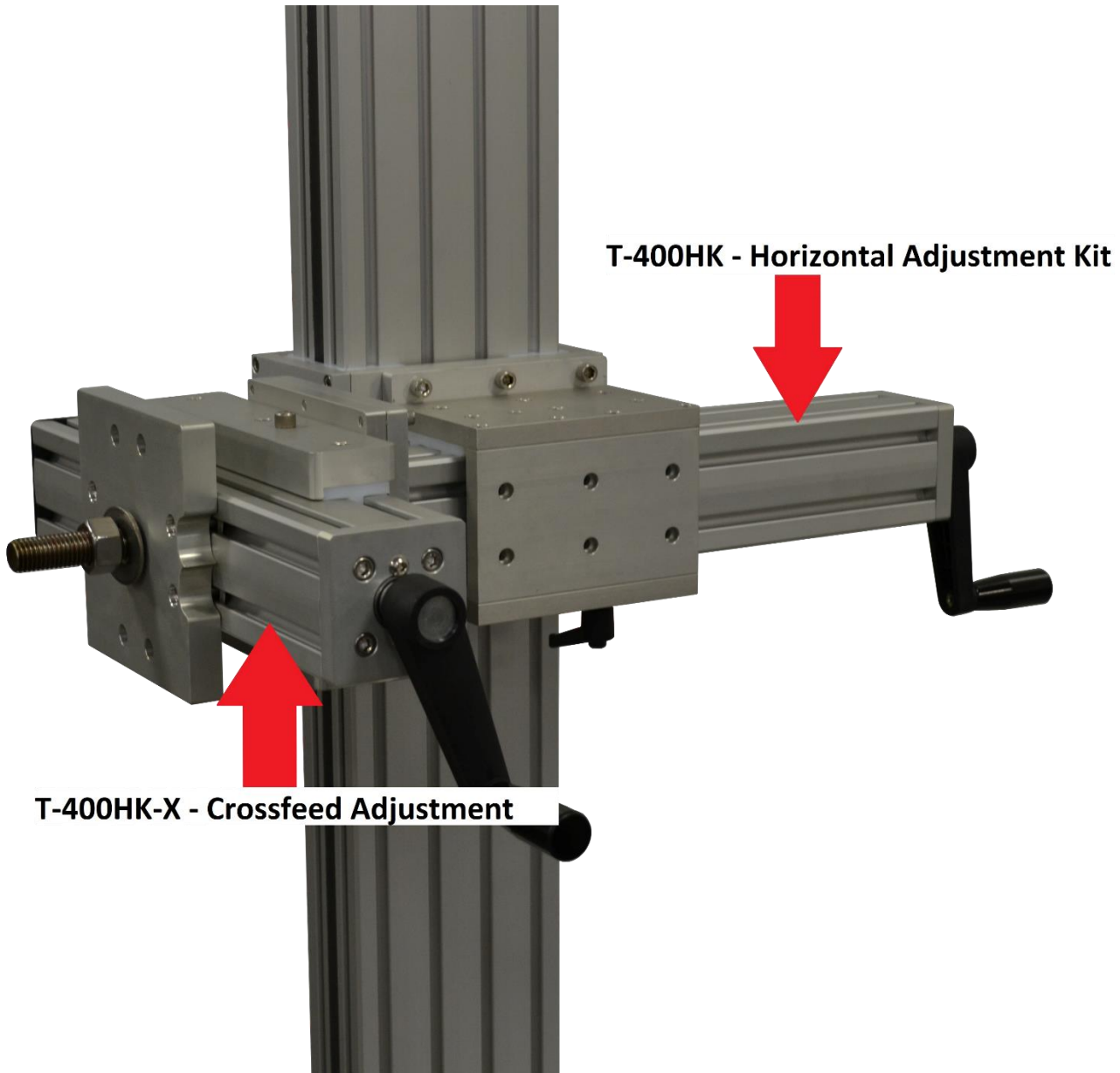


Column Lock



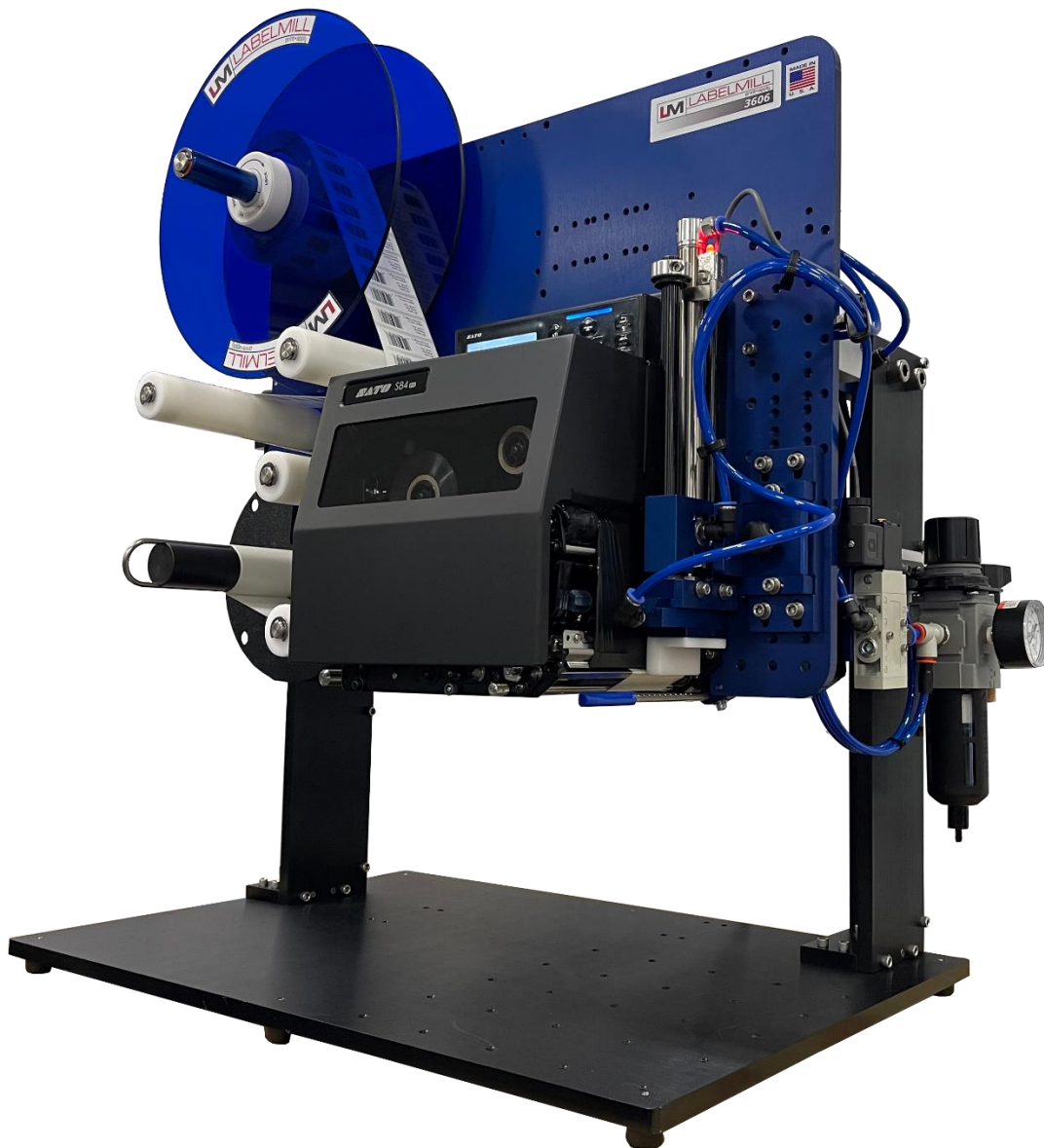
Optional Adjustment Kits for T-Stand

The T-400HK (Horizontal Adjustment Kit) and T-400HK-X (Cross-feed Adjustment Kit) are optional add-ons for making fine adjustments to the position of the label application, when mounted to the T-150 stand.



Optional Table-Top Applicator Mount

Most print & apply systems can be configured with a table-top mount, as shown below. This is typically used in a semi-automatic operation.



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QUICK START GENERAL SETUP

INITIAL MANUAL SETUP

1. Inspect applicator system and verify all cables are installed properly.
2. Web system with labels.
3. Turn power switch on and connect air supply.
4. Select “PROGRAM” key on HLI-200 input device.
5. Select the “JOB STORAGE” option.
6. Select the “LOAD DEFAULTS” option (consult factory for setup parameters prior to loading defaults).
7. Select the “YES” option to load the system defaults.
8. Select the “BACK” option to return to the main menu.
9. Select the “EDIT CONFIG” option to enter parameters menu.
10. Select the “PRINTER SETUP” option, and select the thermal printer installed with the system.
11. Select the “CYCLE TYPE” option, and select the appropriate cycle type for the installed module.
12. If a “Tamp” cycle type is selected, select the “TAMP SETUP” option and program the settings as needed.
13. Select the “PRODUCT SENSOR” option, and program the settings as needed.
14. Once setup is complete press “SAVE” key to save the settings to memory exit the programming menu.
15. Send label files to the printer, and verify that the printer buffer is filled.
16. Cycle the system by pressing the “START” key or by using an external product sensor.
17. Observe the label feed and application, adjusting parameters if necessary.
18. System is now ready for set up of advanced features and options.

SETUP OF KEY FEATURES

TAMP SETUP

The TAMP SETUP (in the Edit Configuration Menu) is used to electronically adjust a variety of standard applicator modules, including a linear tamp module, flag module, swing arm module, blow module, and other custom modules. The setup below describes how to perform the initial setup from a factory default state (all values set to zero).

1. Set basic applicator up first, (refer to quick setup on the previous page).
2. Select the Tamp Duration Menu, and enter a value of 0.250. Press Enter.
3. Select the Head Up SW Type, and select N.O.
4. Operate the applicator using the external remote trigger at observe the results.
5. Does the label print and feed correctly onto the vacuum platen?
6. Does the applicator module apply the label correctly?
7. Yes = task complete / NO = continue
8. Adjust the Tamp Duration & Product Delay (see below) to apply the label correctly to the product.
9. If necessary, adjust the Vacuum On Delay to feed the label onto the vacuum platen smoothly and consistently.
10. Test again; repeat, if necessary, until label is printing, feeding & applying properly.

*Refer to Tamp Assembly & Factory Setup for additional instruction and setup explanation.

PRODUCT DELAY

PRODUCT DELAY (in the Edit Configuration Menu, Product Sensor Menu) is used to electronically move the placement of the label on a moving product. Product delay will move the label placement in time (00.000). Because the product delay feature utilizes time, the speed of the product MUST be constant and consistent.

1. Set basic applicator up first, refer to quick setup
2. Ensure that applicator is operating properly before starting this procedure.
3. Set Product delay to 00.000
4. Start system and apply label at the desired speed.
5. Check the placement of the label on the product.
6. Measure the OFFSET of the label placement. Note: A label CANNOT be advanced on the product ONLY moved "back" since the applicator can only delay the product signal.
7. Apply a small delay to the product delay or if too great, it may be necessary to physically move the product switch. Keep product delays to a minimum for best results.
8. Operate system again and measure offset.
9. Apply a small delay to the product delay or reduce if too much.
10. Test again; repeat, if necessary, until label is in proper registration.

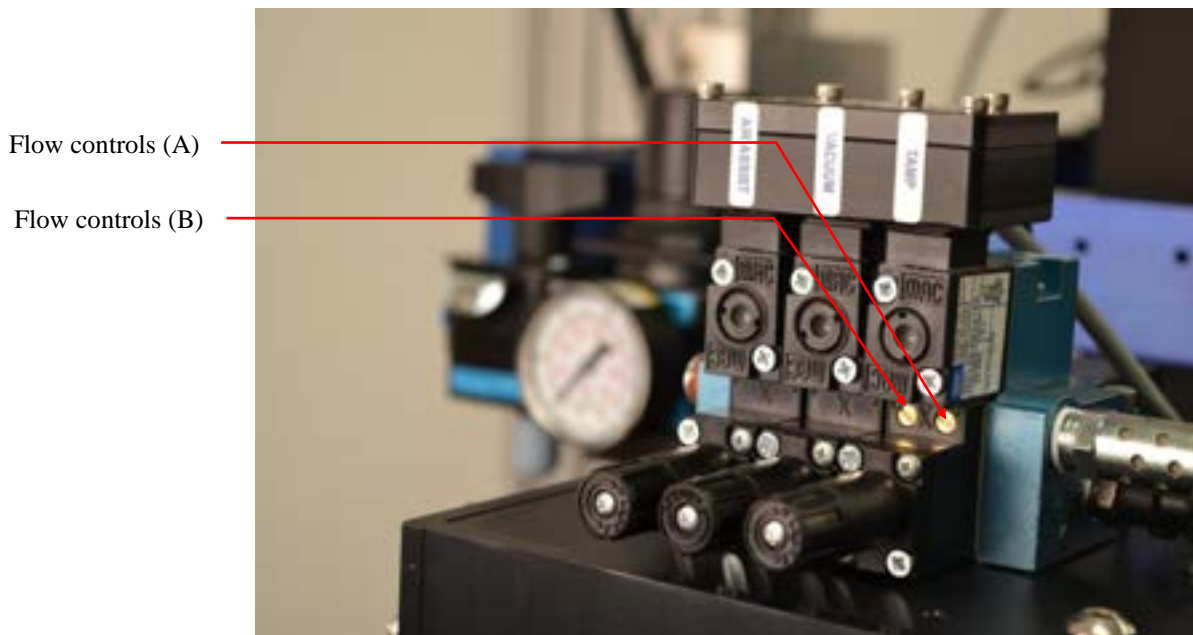
VALVE PACK

(Not Included in All Configurations)

There are solenoid valves associated with applicators using pneumatics. They are supplied with pre-wired cables that connect to the necessary components.

There is an adjustment for airflow for each valve. This will change the rate at which air will flow through each valve. It may be necessary to adjust each valve for optimum performance after installation. The adjustments are performed as shown below.

(Pictures may not show actual model)



Regulator Adjustment:

Clockwise - Increase pressure **Counterclockwise** - Decrease pressure

FLOW CONTROLS (Tamp & Corner-Wrap Applications)

Control A: This is used to adjust the speed that the tamp cylinder/swing arm moves in the “home” direction.

Control B: This is used to adjust the speed that the tamp cylinder/swing arm in the “apply” direction.

VACUUM REGULATOR

The vacuum regulator is used to control the vacuum that is used to hold the label to the flag jaws or the vacuum platen.

AIR ASSIST REGULATOR

The air assist regulator is used to change the pressure that is applied to the blow tube. The blow tube is below the front edge of the peeler bar of the printer and is used to help “push” the label onto the bottom of the tamp pad or the flag jaws.

FLAG REGULATOR (Only present if configured with flag applicator head)

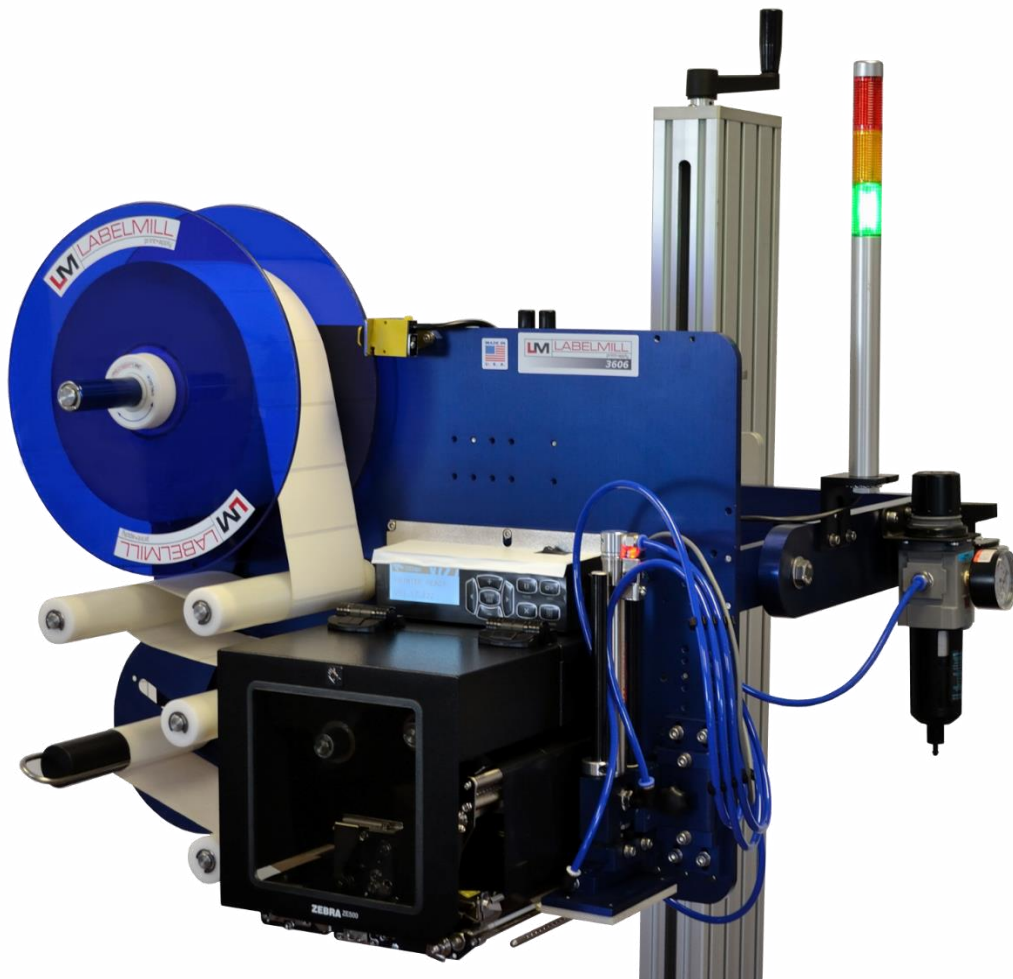
The flag regulator is used to adjust the pressure that the flag jaws apply to the label as it is applied.

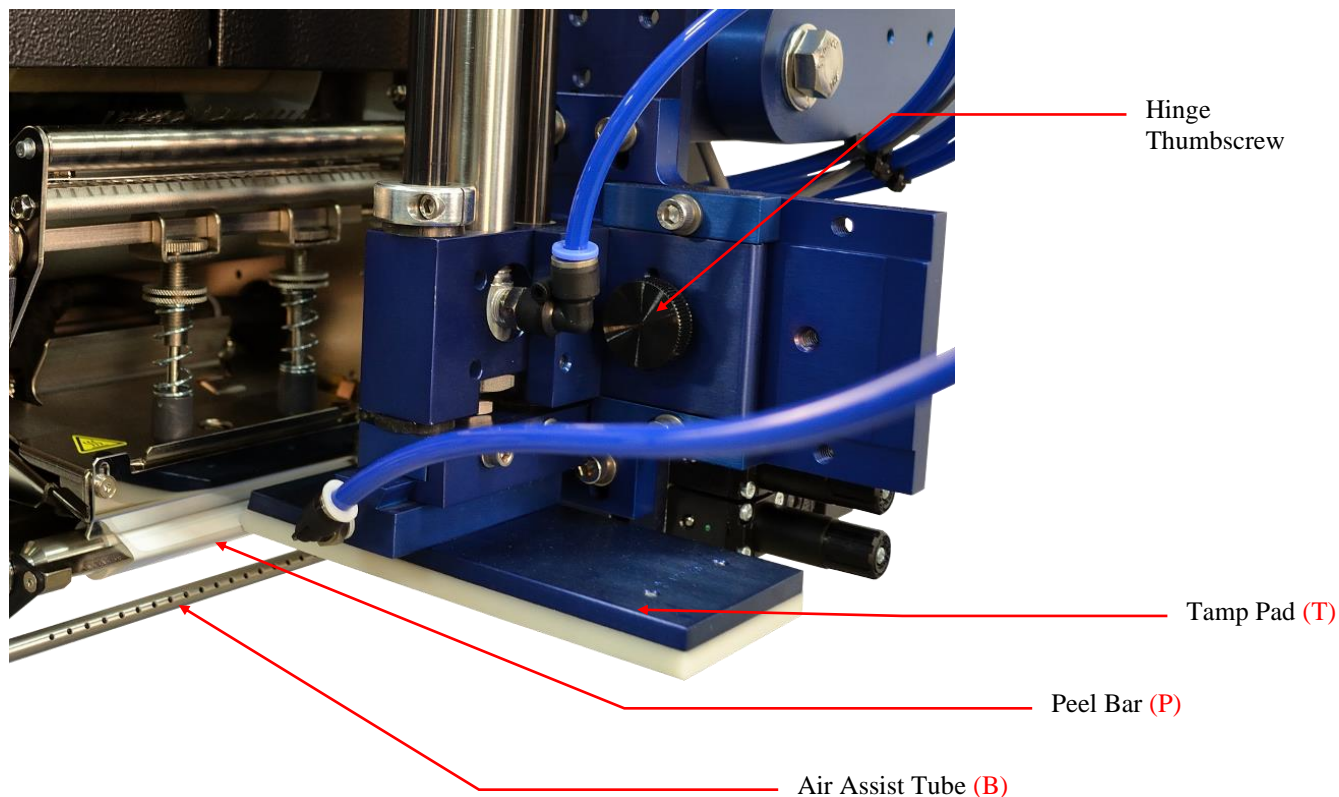
Tamp Assembly & Factory Setup

A pneumatic tamp module is typically used to apply a label to a flat surface. A standard system can be configured and/or adjusted to apply from any attitude (top-down, side-over, bottom-up, etc.).

A tamp module configuration uses a Cycle Type of either Tamp Before Feed, Tamp After Feed, or Pre-Print & Tamp. In the Tamp Setup menu, the Tamp Duration controls the linear slide. Refer to Tamp Setup in section 4 for additional details.

NOTE: PICTURES SHOWN MAY NOT RESEMBLE YOUR MODEL





Tamp Pad Adjustment

1. To adjust the tamp pad (T) in relationship to the peel bar (P) in the horizontal plain, loosen the (2) cap-head bolts above and the Hinge Thumbscrew and slide the assembly forward or backward in the slots. There should be approximately 0.020" gap between the tamp pad (T) and the peel bar (P).
2. To adjust the tamp pad (T) in relationship to the peel bar (P) in the vertical position, loosen the hinge thumbscrew, swing the tamp assembly out, and loosen the (4) cap head bolts that secure the tamp mount assembly in place. Adjust the entire slide assembly up or down so that the bottom of the tamp pad is flush, or just below, the peel bar. Tighten the (4) bolts, and secure the tamp slide assembly in place by closing the hinge and tightening the thumbscrew. **This adjustment is very important!** If the slide assembly is adjusted too low, the label will run into the back of the tamp pad (T) and fold or bunch up. If the slide assembly is adjusted too high, the label will pull "up" to the vacuum platen before fully feeding off the of waste liner, typically resulting in the label catching on the peel bar or air assist tube as the tamp slide extends for the label application.

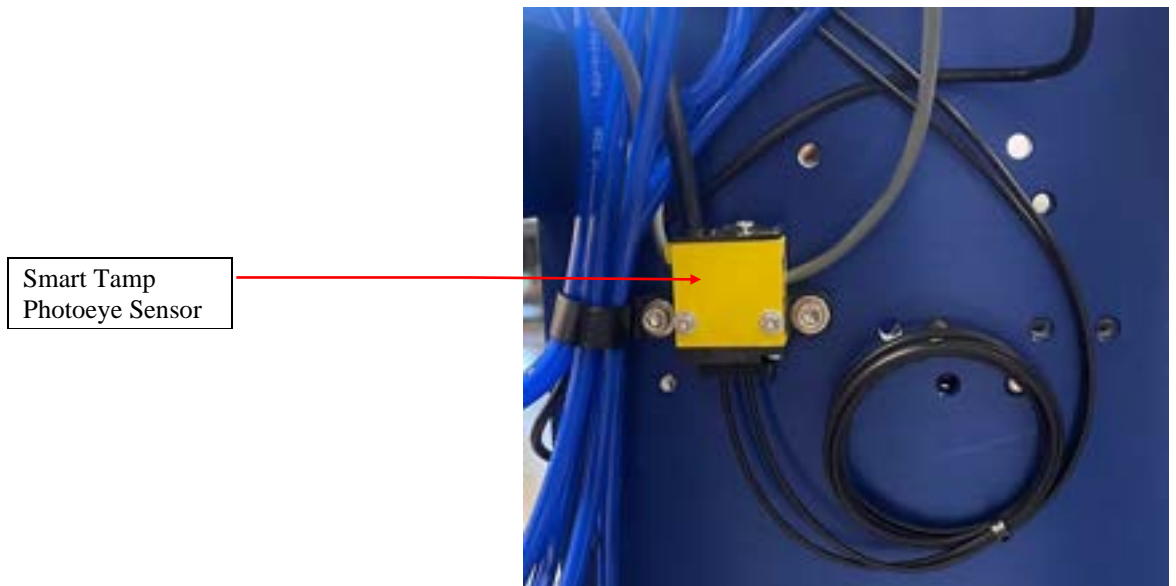
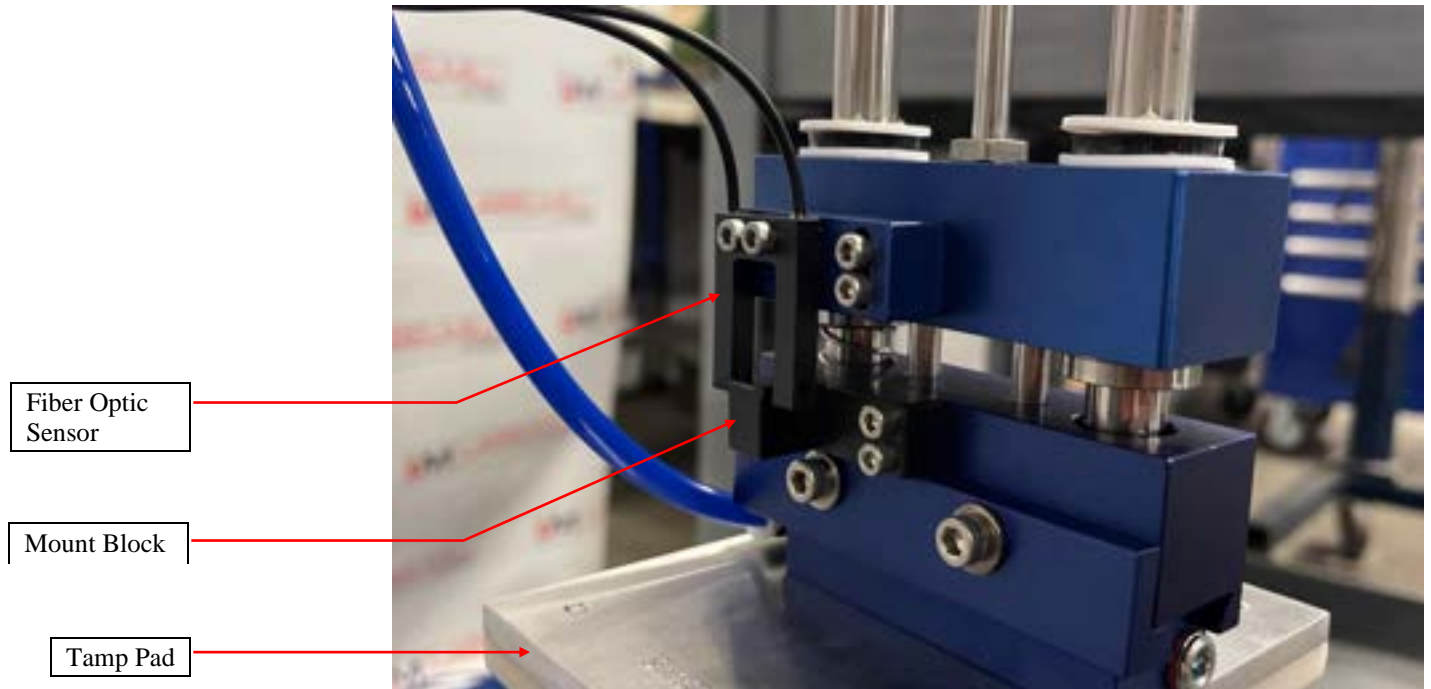
Air Assist Tube Adjustment

1. Adjust the air assist tube (B) so that the small holes aim towards the center of the tamp pad. The air assist tube (B) aids the label to adhere to the bottom of the tamp pad (T). Once the label is "blown" onto the tamp pad (T), it is held there by vacuum. All vacuum holes must be covered by the label!
2. Once the above adjustments are made, adjust the vacuum regulator, the air assist regulator, and the flow controls on the tamp valve as necessary.

Note: Too much pressure on the air assist will cause the label to flutter and/or blow off of the vacuum platen.

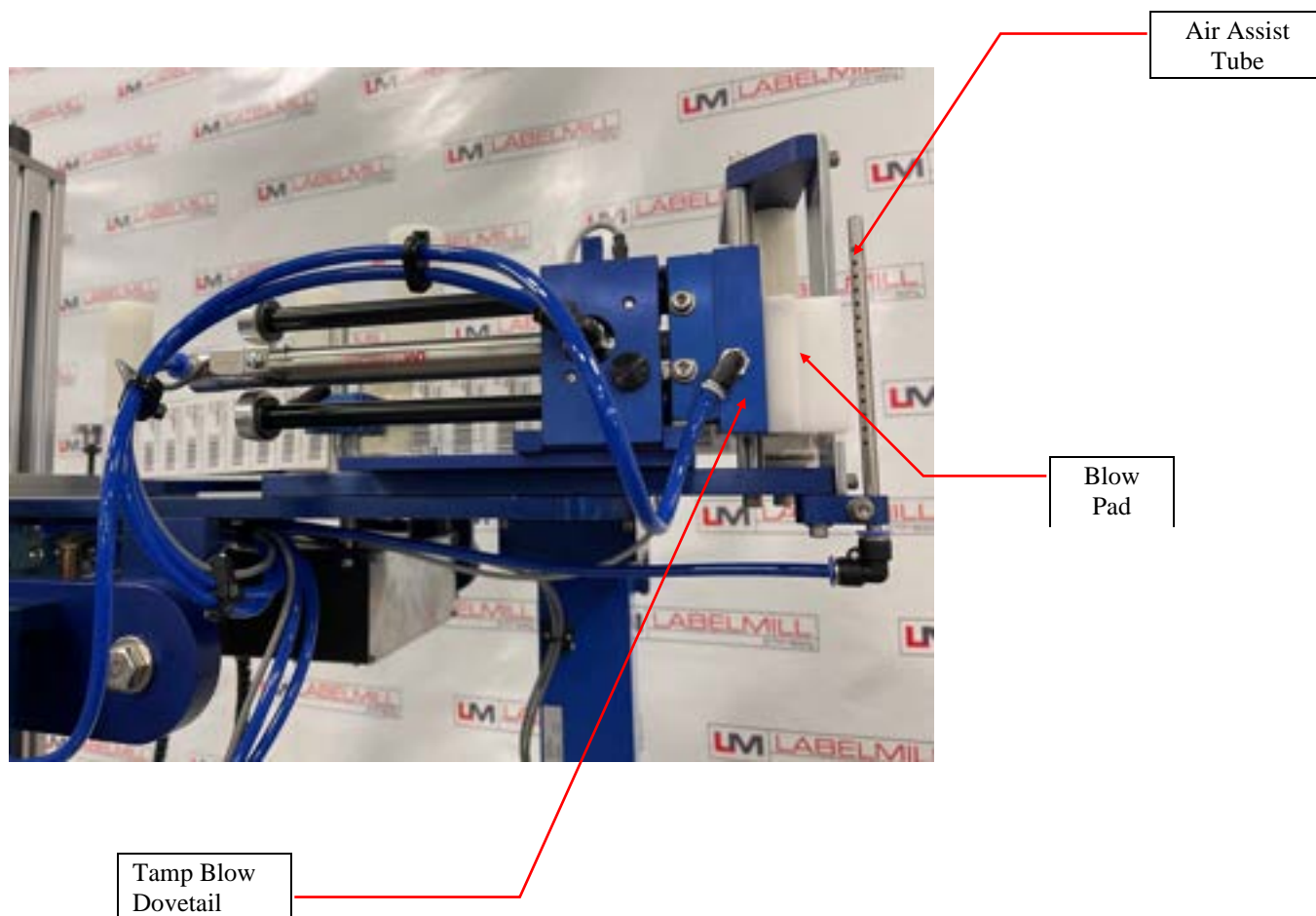
Smart Tamp Assembly & Factory Setup

An optional Smart Tamp upgrade may be added to the pneumatic linear tamp slide assembly to assist in applying labels at varying distances. The Smart Tamp upgrade features a compression assembly near that tamp pad that will sense when the product has been contacted, and will automatically retract the tamp slide (overriding the programmed tamp duration setting). To achieve this, a fiber-optic sensor is mounted to the end of the tamp slide, along with a small block that will break the beam of the fiber optic sensor when the slide compresses. The fiber optic cables plug into a photoeye sensor mounted onto the system backplate, which then plugs into the “Smart Tamp” port on the control box.



Tamp-Blow Assembly & Factory Setup

An optional Tamp-Blow upgrade may be added to a pneumatic tamp system, to assist in applying labels to curved surfaces, or to apply a label to a product without contacting it with the tamp pad. When a system is equipped with the tamp-blow option, a burst of air will blow from the tamp pad once the programmed tamp duration has expired. The timed length of the burst of air is controlled by programming a value in the “Flag Duration” setting in the Tamp Setup menu. Once the programmed time has expired, the tamp slide will return to the home position.

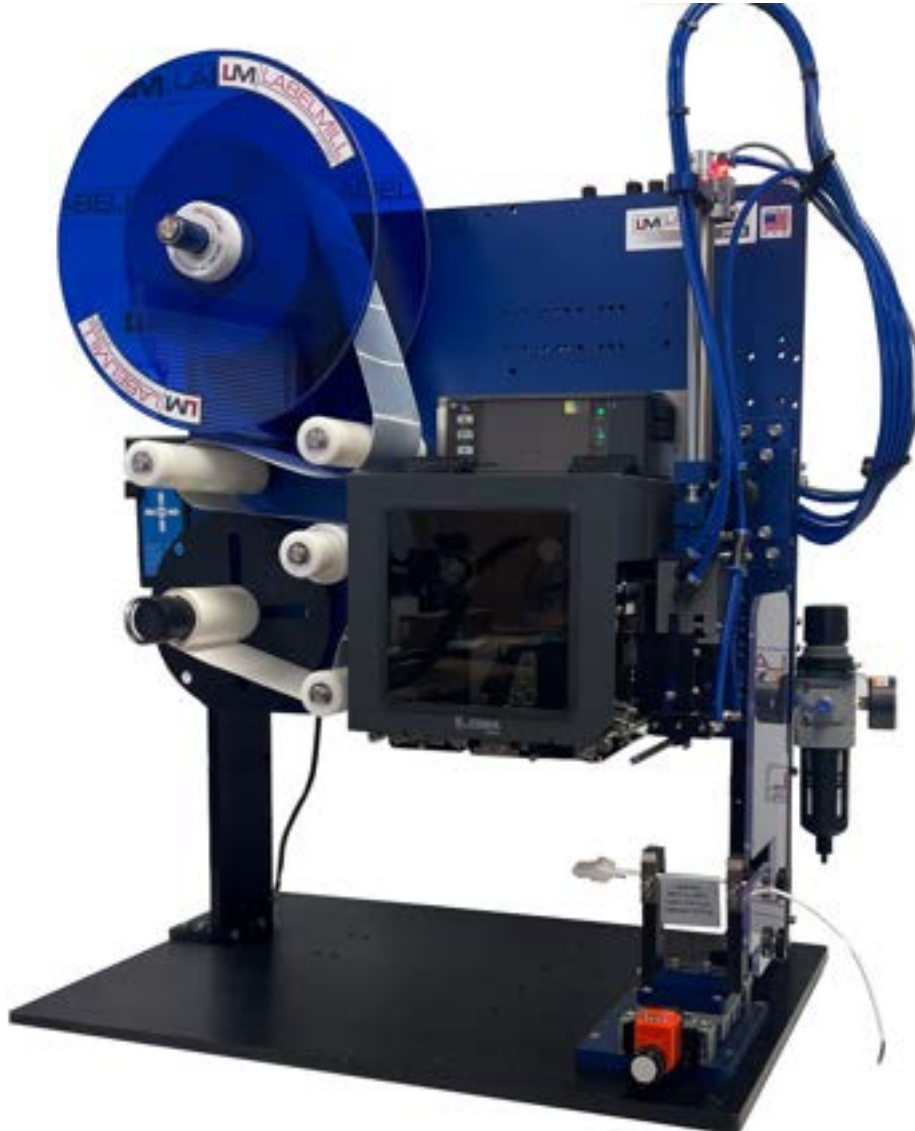


Flag Module Assembly & Factory Setup

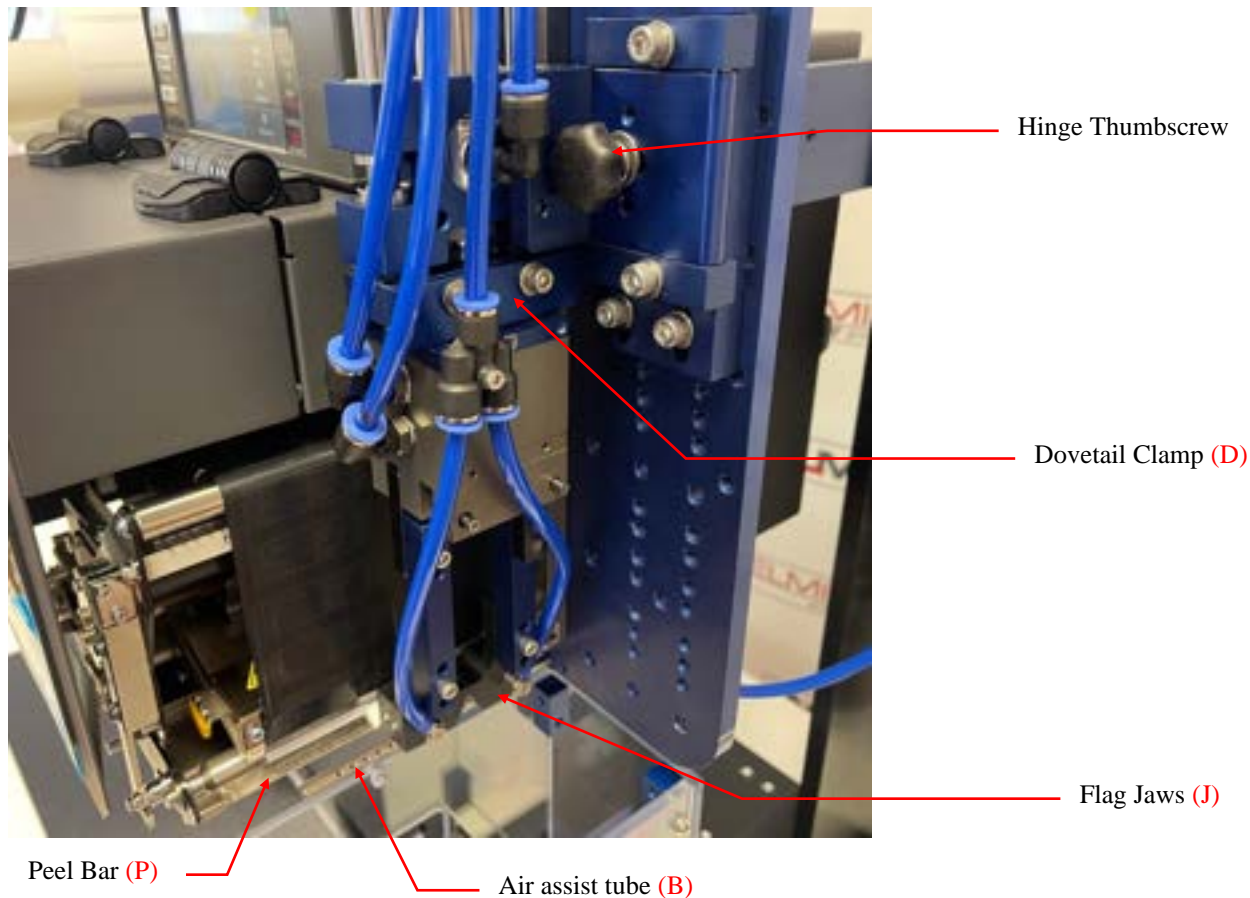
A pneumatic flag module is typically used to flag apply a label to a cylindrical product, commonly a wire or a cable. Flag applying requires the product to be held securely and precisely. Because of this, most flag labeling applications are semi-automatic (resulting in a table-top configuration as shown below), but they can also be integrated into automatic work cells. As the label is held onto the vacuum platen with the adhesive exposed, the pneumatic slide will extend. The center of the label will contact the product, and the flag jaws will push through, wiping the label down both sides and connecting the tails of the label. The flag jaws will then open and allow the product to pass back through the jaws as the cylinder returns home.

A flag module configuration uses a Cycle Type of either Tamp Before Feed or Tamp After Feed. In the Tamp Setup menu, the Tamp Duration controls the linear slide, while the Flag Duration controls how long the flag jaws are held open after the tamp duration expires (as the cylinder returns to the home position).

NOTE: PICTURES SHOWN MAY NOT RESEMBLE YOUR MODEL



Flag Module Assembly & Factory Setup, Continued



Flag Jaw Adjustment

To function properly, the label must be centered on the flag jaws when held by the vacuum. If the label is not applying properly to the product (tails of the label are mismatched in length or skew), first ensure the label is positioned properly on the flag jaws by adjusting the position of the assembly at the dovetail clamp (D). Then, adjust the positioning of the product to ensure that the center of the label is contacting the apex of the product. If the tails of the label are even in length but misaligned (skewed), the product position must be adjusted so that the product is perpendicular to the label. The shaft collars, along with the air valves, are used to adjust the slide assembly maximum travel.

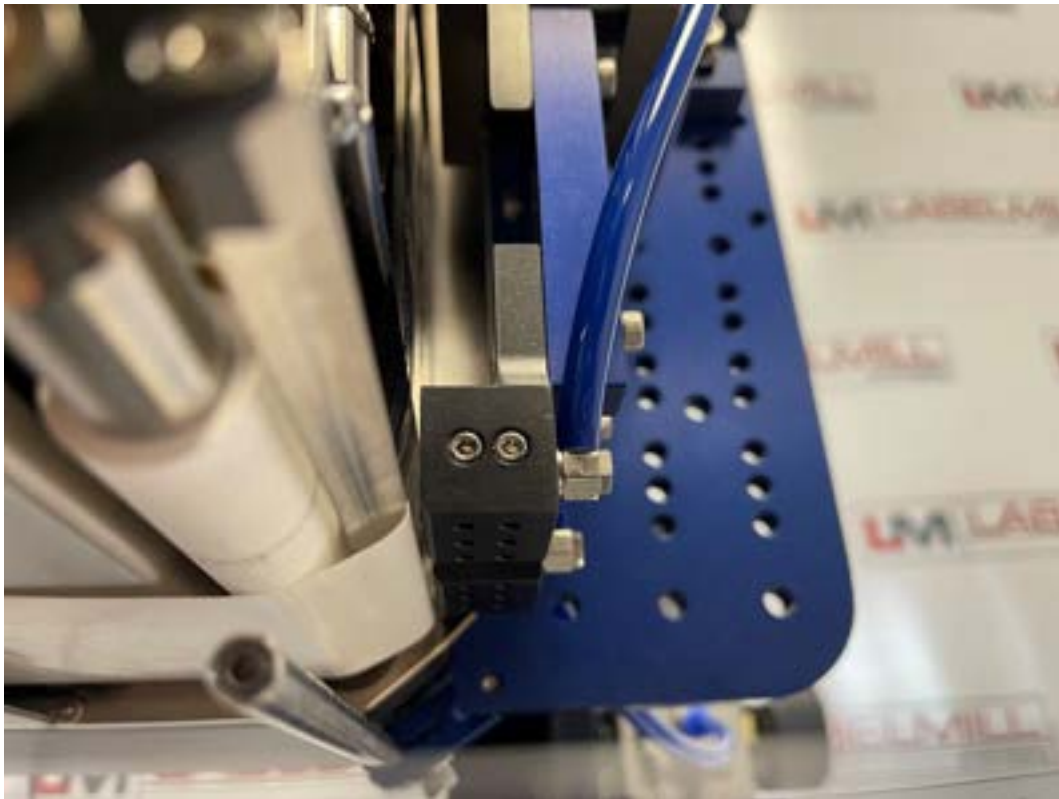
1. To adjust the flag jaws (J) in relation to the peel bar (P), loosen the (2) cap-head bolts above and the Hinge Thumbscrew and slide the assembly forward or backward in the slots. There should be approximately 0.020" gap between the flag jaws (J) and the peel bar (P).
2. To adjust the flag jaws (J) in relationship to the peel bar (P) in the vertical position, loosen the hinge thumbscrew, swing the tamp assembly out, and loosen the (4) cap head bolts that secure the tamp slide mount assembly in place. Adjust the entire slide assembly up or down so that the bottom of the flag jaws are flush, or just below, the peel bar. Tighten the (4) bolts, and secure the tamp slide assembly in place by closing the hinge and tightening the thumbscrew. **This adjustment is very important!** If the slide assembly is adjusted too low, the label will run into the back of the flag jaws (J) and fold or bunch up. If the slide assembly is adjusted too high, the label will pull "up" to the flag jaws before fully feeding off the of waste liner, typically resulting in the label catching on the peel bar or air assist tube as the tamp slide extends for the label application.

Flag Module Assembly & Factory Setup, Continued

Air Assist Tube Adjustment

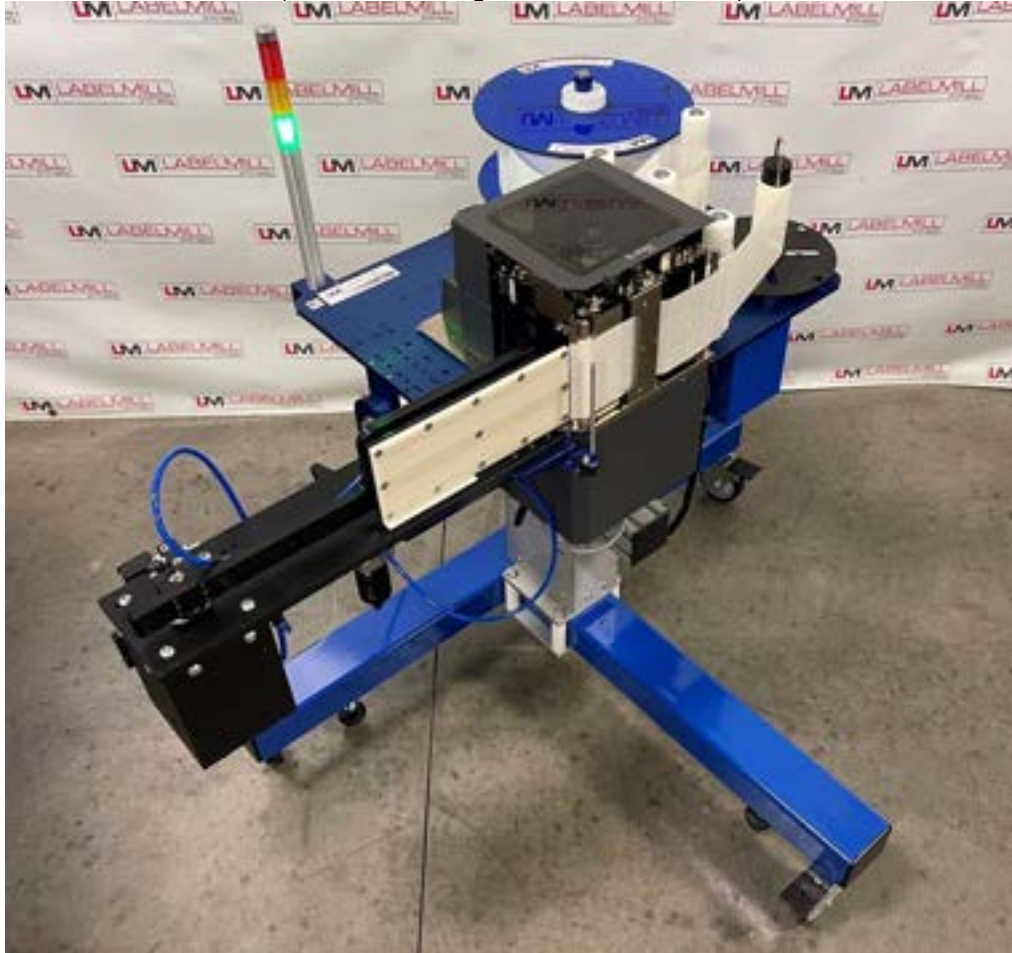
1. Adjust the air assist tube (B) so that the small holes aim towards the center of the label as shown by the arrowhead above. The air assist tube (B) aids the label to adhere to the bottom of the label jaws (J). Once the label is “blown” onto the label jaws (J), it is held there by vacuum.
2. Once the above adjustments are made, adjust the vacuum regulator, the air assist regulator, and the flow controls.

Note: Too much pressure on the air assist will cause the label to flutter and/or blow off of the vacuum platen.



Corner Wrap Module Assembly & Factory Setup

(Left Hand Configuration Shown Below)



A pneumatic corner-wrap module is typically used to apply a single label to the leading and side panel of a conveyed carton. The system is typically configured and/or adjusted to apply from side-over, putting the applicator in a “reels up” configuration.

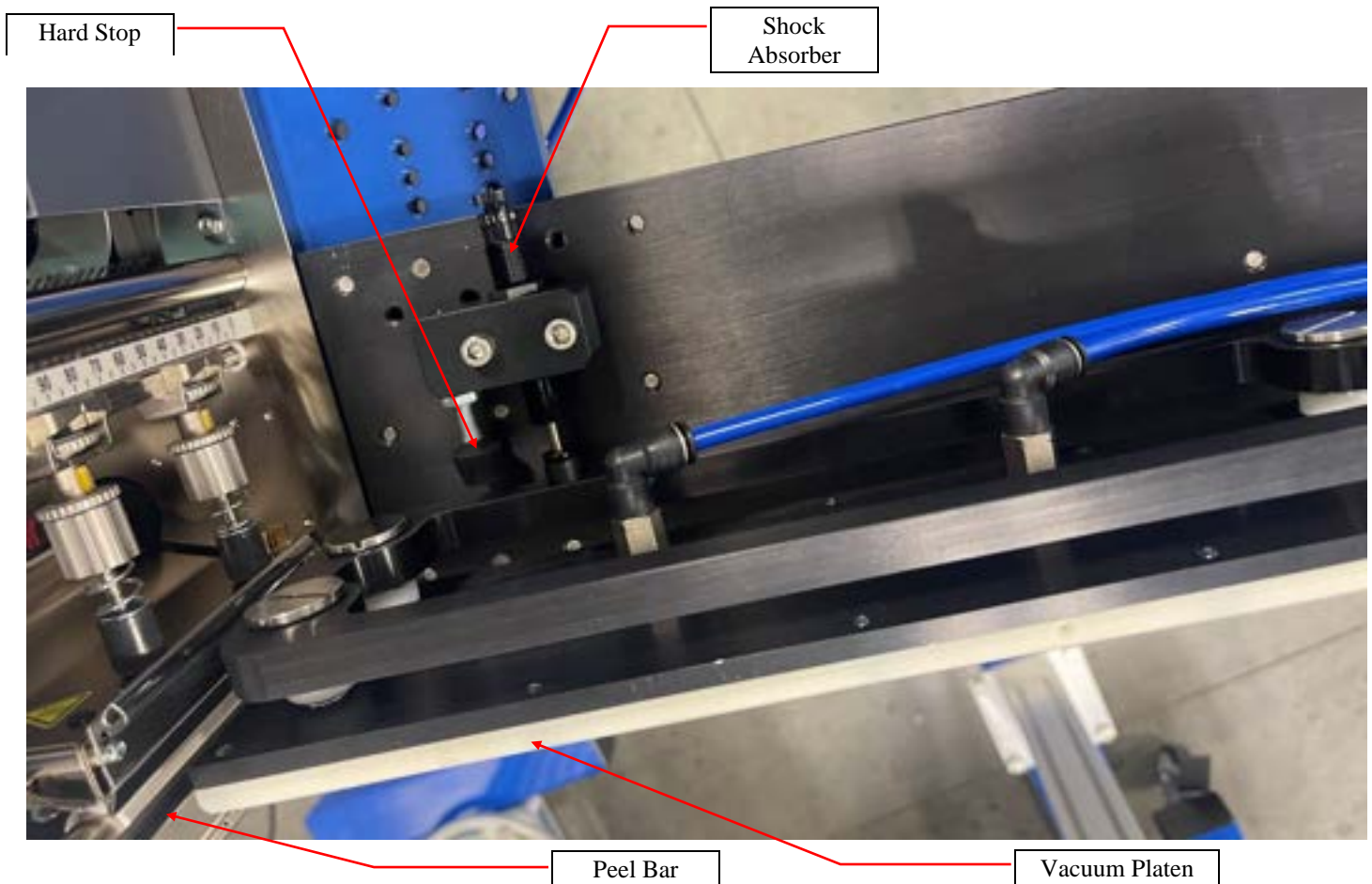
A corner-wrap module configuration uses a Cycle Type of either Tamp Before Feed, Tamp After Feed, or Pre-Print & Tamp. In the Tamp Setup menu, the Tamp Duration controls the pneumatic rotary actuator/swing arm. Refer to Tamp Setup in section 4 for additional details.

Corner Wrap Module Assembly & Factory Setup, Continued

Corner-Wrap Module Adjustment

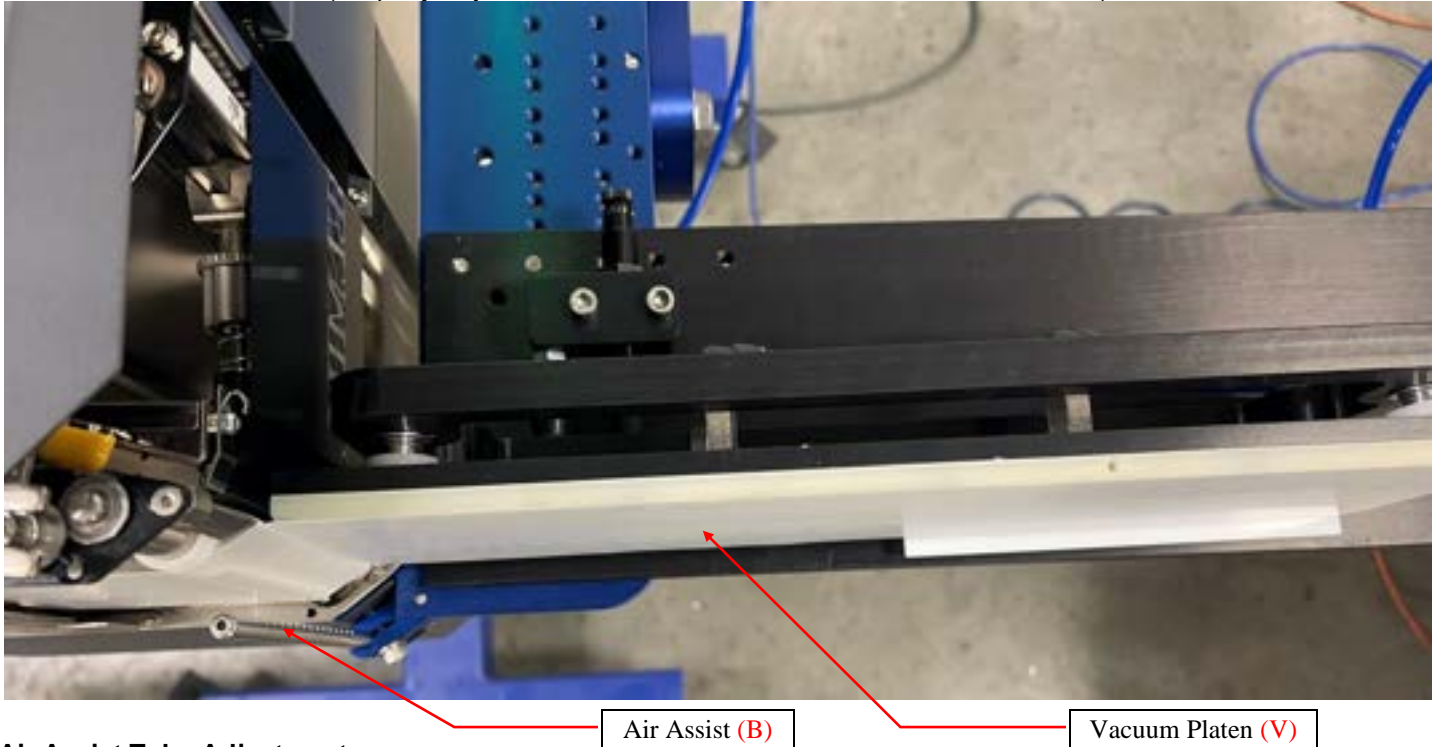
To control the feed of larger labels onto the vacuum platen, the swing arm position, air assist setup and vacuum adjustments are critical.

The swing arm “home” position needs to be adjusted so that the label feeds smoothly and consistently onto the vacuum platen. The swing arm mount plate includes both a threaded shock absorber and hard stop as shown below. By loosening the locknut and adjusting the positions in the mount block, the stop position can be precisely controlled. When in the home position, the vacuum platen should be flush with the peel bar. **This adjustment is very important!** If the stops are adjusted too far “out”, the label will run into the back of the swing arm platen and fold or bunch up. If the stops are adjusted too far “back”, the label will pull “up” to the vacuum platen before fully feeding off the of waste liner, typically resulting in the label catching on the peel bar or air assist tube as the swing arm leaves the home position for the label application.



Corner Wrap Module Assembly & Factory Setup, Continued

(Properly Adjust Arm Shown Below with Label On Vacuum Platen)



Air Assist Tube Adjustment

1. Adjust the air assist tube (B) so that the small holes aim towards the first third of the vacuum platen as shown by the arrowhead above. The air assist tube (B) aids in feeding the label onto the vacuum platen (V). Once the label is “blown” onto the vacuum platen (V), it is held there by vacuum.
2. The volume of air expelled from the air assist tube is controlled by the Air Assist regulator on the valve pack assembly.

Note: Too much airflow from the air assist will cause the label to flutter and/or blow off of the vacuum platen.

Corner Wrap Module Assembly & Factory Setup, Continued

Vacuum Control & Adjustment

The vacuum adjustment is critical to consistent feeding and label application. The amount of vacuum on the label platen is controlled by the Vacuum regulator on the valve pack assembly. While increased vacuum may be necessary to hold a larger label onto the vacuum platen, it can also hinder the feed of the label onto the vacuum platen. If the label skips or flutters as it feeds onto the platen, first check that the platen is clean and free of adhesive. Clean the platen with isopropyl alcohol, if necessary. If the flutter still exists, the electronic Vacuum On Delay setting can be used to compensate.

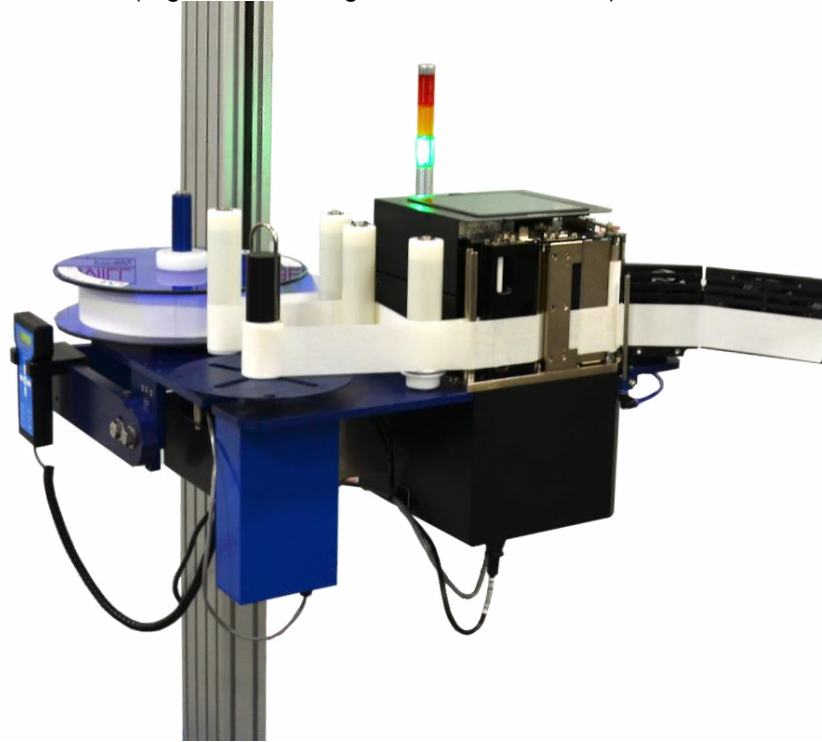
Navigate to the Tamp Setup menu on the HLI-200, and select the Vacuum On Delay setting. Enter a value that exceeds the time needed to fully print and dispense the label from the print engine. This will delay the opening of the vacuum valve at the valve pack assembly, and allow the label to feed onto the platen (with the help of the air assist), before the vacuum is generated, preventing the label feed flutter. Once the feed is complete, the vacuum will automatically turn on to hold the label onto the vacuum platen.

(Applied Corner-Wrap Label Example Shown Below)



Passive Corner Wrap Module Assembly & Factory Setup

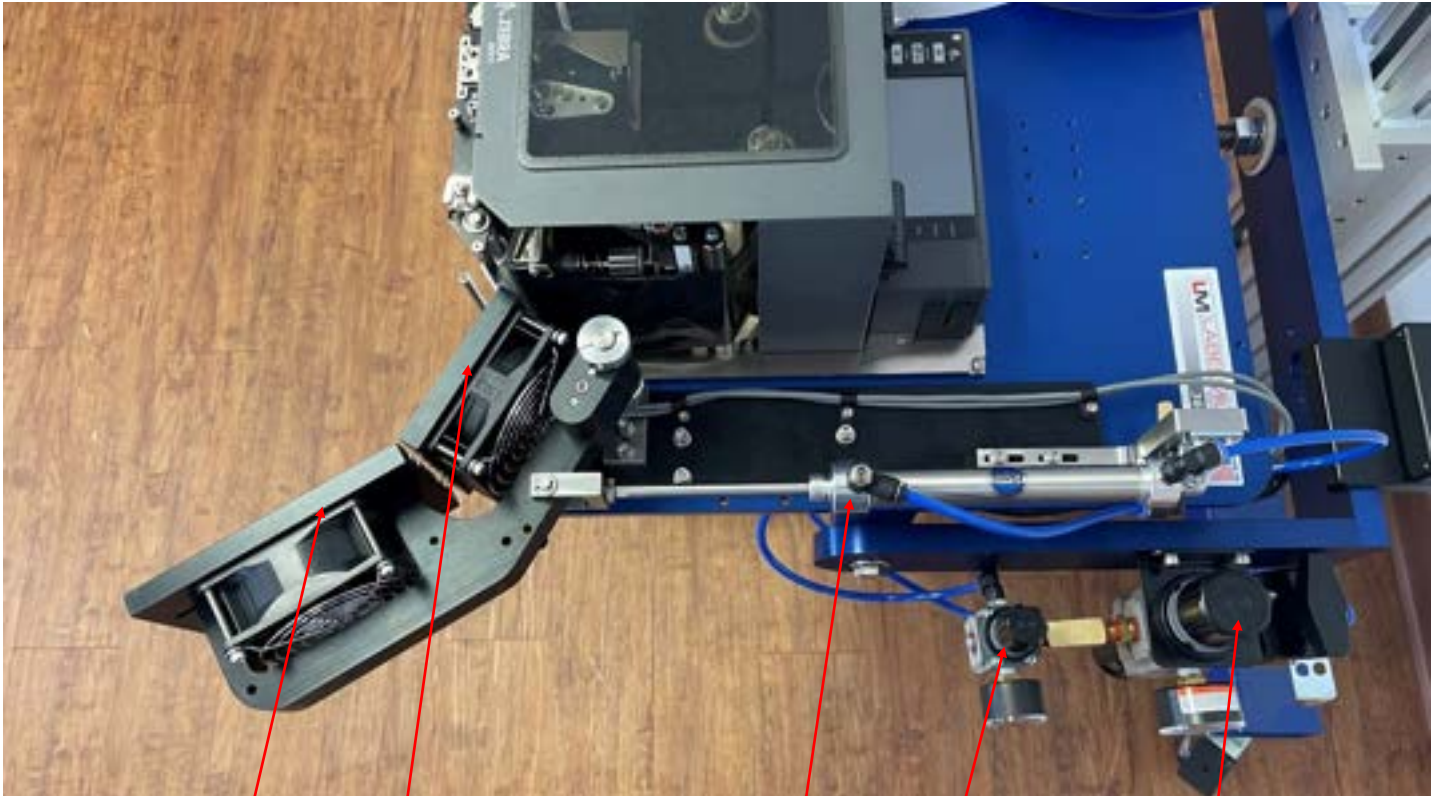
(Right Hand Configuration Shown Below)



A Passive Corner-Wrap Module is typically used for high-speed corner-wrap applications. In this configuration, a label is printed and fed from the print engine directly onto a split, fan platen assembly. The first portion of the fan platen is static, while the second is hinged and held in place by a low-pressure pneumatic cylinder. The applicator must be positioned very close to the conveyor with the hinged platen perpendicular to the conveyor flow. The cartons must be justified to an inside rail, allowing the carton to contact the hinged platen and push through it. As the hinged platen pushes back, the pneumatic cylinder assists in applying forward pressure, wiping the label down the side panel as the carton passes by. The external product sensor is typically positioned and set to trigger off of the trailing panel of the carton, which can result in feeding the next label onto the platen before the hinged platen has returned back to the “home” position, significantly increasing the maximum potential throughput.

Passive Corner Wrap Module Assembly & Factory Setup, Continued

A Passive Corner-Wrap configuration uses a Cycle Type of Feed Only. A secondary regulator, connected to the main filter/regulator, is used to adjust the pressure of the cylinder connected to the hinged fan platen. The pressure of the secondary cylinder is typically kept to a minimum to reduce the force required to push the hinged platen back by the conveyed carton. The air assist tube position is adjustable to assist in feeding the label onto the fan platens, and the volume of airflow is controllable at the valve pack assembly.



Hinged Platen

Hinged Platen
Cylinder

Static Platen

Secondary
Regulator

Main
Filter/Regulator

Adjacent Panel/Swing Tamp Module Assembly & Factory Setup

(Right Hand Configuration Shown Below)



A pneumatic Adjacent Panel Module or Swing Tamp Module is typically used to apply separate labels to the leading and side panels of a conveyed carton. The system is typically configured and/or adjusted to apply from side-over, putting the applicator in a “reels up” configuration.

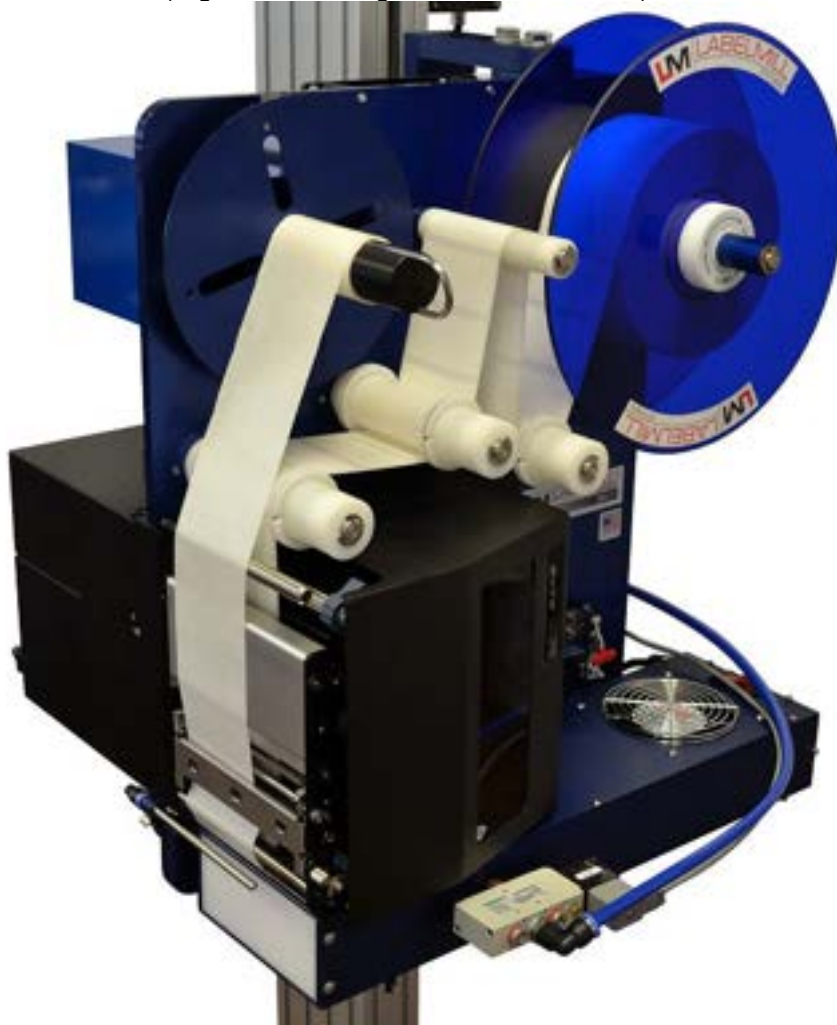
To adjust the hardware positioning, air assist settings, and vacuum settings, refer to the Corner-Wrap setup listed in the previous pages of this manual.

To apply labels to multiple panels of a conveyed carton with a single trigger input, the Multifeed option in the Product Sensor menu must be configured. Access the Multifeed Count menu and change the value to (2) to apply labels to the adjacent leading and side panels of the carton. When the system is triggered, the swing arm will swing out to apply the first label, return home when the Tamp Duration expires, print a second label, and swing out to apply the label to the side panel. To control the timing of the swing arm for the first label, the Product Delay in the Product Sensor menu is used. To control the timing of the secondary swing for the side label, the Multifeed Delay in the Product Sensor menu is used.

To apply a single label only, set the Multifeed Count to zero.

Blow-On Module Assembly & Factory Setup

(Right Hand Configuration Shown Below)

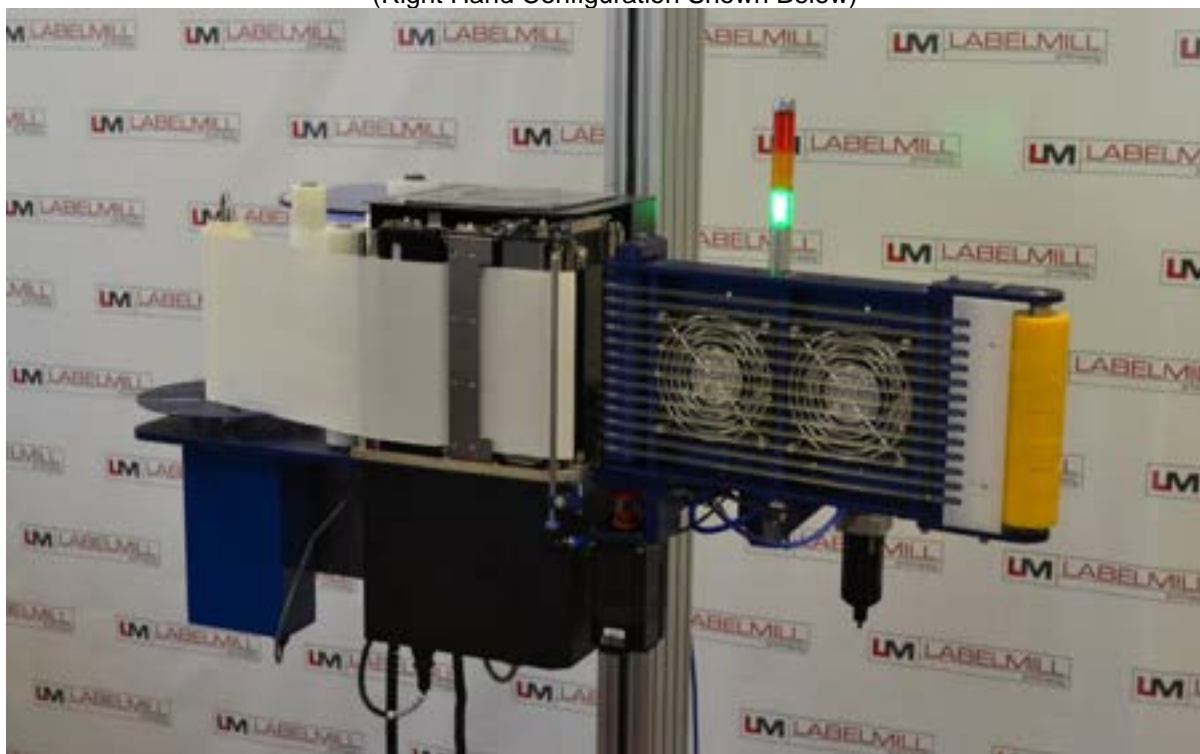


A pneumatic Blow-On Module is typically used to apply labels to a conveyed product without having to make physical contact with an application module. A standard system can be configured and/or adjusted to apply from any attitude (top-down, side-over, bottom-up, etc.).

A blow-on configuration uses a Cycle Type of either Blow Before Feed, Blow After Feed, or Pre-Print & Blow. In the Tamp Setup menu, the Tamp Duration controls how long the blow valve is actuated. Refer to Tamp Setup in section 4 for additional details.

Powered Platen Module & Factory Setup

(Right Hand Configuration Shown Below)



***Note that the Powered Platen Module requires an optional factory software configuration to be loaded!**

A Powered Platen Module is typically used for applying large labels to large conveyed products that are cylindrical, tapered, or controlled in a “trap & wrap” assembly. The system is often configured and/or adjusted to apply from side-over, putting the applicator in a “reels up” configuration. In this configuration, a label is printed and fed from the print engine directly onto a belt powered fan platen assembly. The entire powered platen assembly can pivot and is held in place by a low-pressure pneumatic cylinder.

The applicator must be positioned close to the conveyor to allow the pivoting powered platen module to reach the product. When triggered, the cylinder will extend to put the powered platen into the “apply” position, and the label will begin to feed towards the end of the platen. The roller on the end of the platen will contact the product, and the label feed between the roller and product, adhering the label the product. Once complete, the powered platen module will pivot back to the home position, and signal the printer to print and feed the next label onto the platen. The sequence of events above will differ, depending on the Cycle Type selected.

Powered Platen Module & Factory Setup, Continued

A Power Platen Module configuration uses a Cycle Type of either Tamp Before Feed, Tamp After Feed, or Pre-Print & Tamp. In the Tamp Setup menu, the Tamp Duration controls the time that they cylinder is activated and in the extended, “apply” position. The Flag Duration controls the delay in starting the powered bands to feed the label onto the product. Refer to Tamp Setup in section 4 for additional details.



Idle Roller

Powered Platen

Pivot Cylinder

SECTION 4

PROGRAMMING AND CONTROL OPERATION

DESCRIPTION	PAGE
HLI-200 Touch Screen Handheld Labeler Interface	43
Control Accessory Connections	44
Programming	45
System Editor & Programming Menus	46-79
Logic Board / Input & Output Description	80-83
Optional E-Stop Connection	84

HLI-200 TOUCH SCREEN HAND HELD LABELER INTERFACE

The HLI-200 is a touch screen interface used to display the current system status, clear system faults, and edit the system parameters. The interface cable connects the HLI-200 directly to the system control box and allows for the interface to be removed from the holster mount for easy, remote access to control the applicator system.

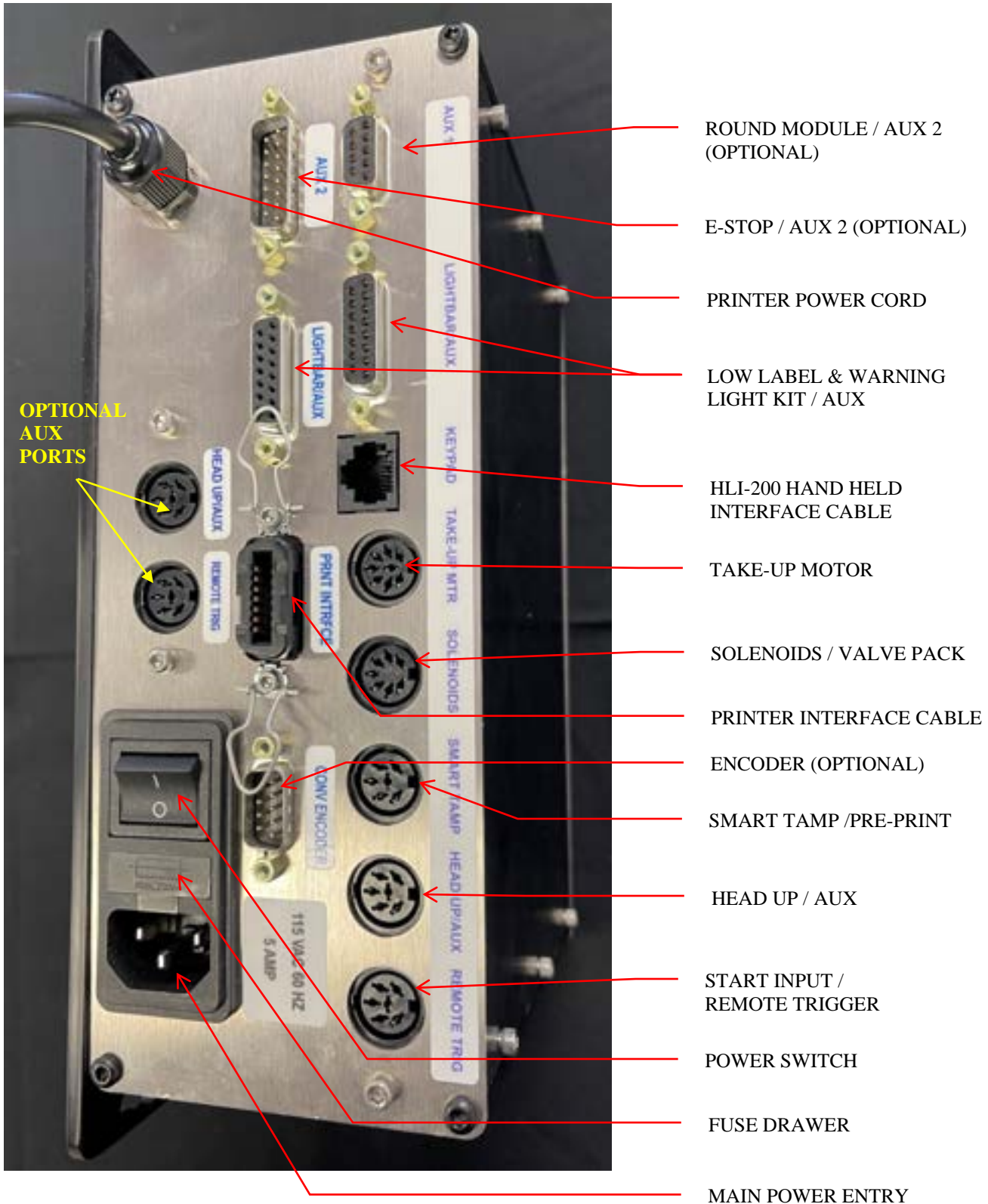


TOUCH-SCREEN
DISPLAY

INTERFACE CABLE

ACCESSORY CONNECTIONS

LOCATED ON BACK OF LABELER CONTROL ENCLOSURE



ROUND MODULE / AUX 2 (OPTIONAL)

E-STOP / AUX 2 (OPTIONAL)

PRINTER POWER CORD

LOW LABEL & WARNING LIGHT KIT / AUX

HLI-200 HAND HELD INTERFACE CABLE

TAKE-UP MOTOR

SOLENOIDS / VALVE PACK

PRINTER INTERFACE CABLE

ENCODER (OPTIONAL)

SMART TAMP /PRE-PRINT

HEAD UP / AUX

START INPUT / REMOTE TRIGGER

POWER SWITCH

FUSE DRAWER

MAIN POWER ENTRY

OPTIONAL AUX PORTS

PROGRAMMING

All programming is performed via the **HLI-200** keypad and display. All programmed settings are backed in nonvolatile memory and are not lost when the unit is powered off.

Upon power up of the control, the screen will display *MODEL NUMBER & REVISION* of the HLI-200 and then the *MODEL NUMBER & REVISION* of the labeler control. After this, the screen will now display the "Total" counter, "Batch" counter, and Cycle time in the center of the screen. Error messages or warning will be displayed in the box at the bottom of the screen. The top of the screen allows you to Start, Stop, Enable, or Disable the system, and also shows the current state of the system.

KEY FUNCTIONS:

START:

Start key will initialize a full application cycle.

STOP:

Stop key will abort the current system cycle.

ENABLE/DISABLE:

Will enable or disable the system. Current system status will be shown in upper right corner.

PRINT LABEL:

Will signal the connected print engine to dispense (1) printed label (Files must be loaded into Print Buffer).

CYCLE WITHOUT PRINT:

Will cycle the attached applicator module without signaling the printer to print a label or faulting.

CLEAR BUFFER:

Will clear any trigger signals remaining in buffer.

CLEAR BUFFER:

Clear key will clear an error status

PROGRAM:

Program key will enter the system editor.



THE STATUS WINDOW WILL DISPLAY SYSTEM MESSAGES (LOW LABEL, FAULT MESSAGE, ETC)

SYSTEM EDITOR

Press the "Program" button from the main run mode screen to enter the system editor.
Here you will find the following options:

I/O Panel - Press to enter I/O Screen

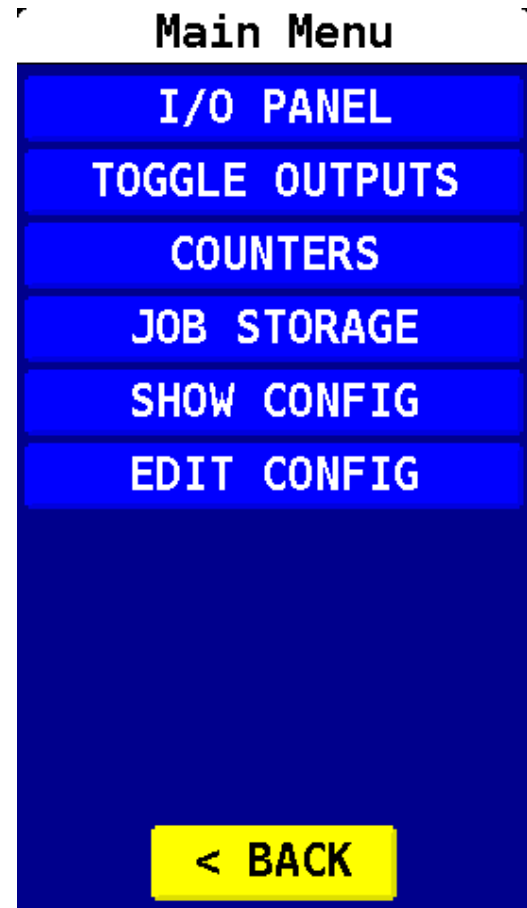
Toggle Outputs - Press to manually test the individual system outputs

Counters - Press to enter Counter configuration menu.

Job Storage - Press to enter Job Storage menu options.

Show Config - Lists all of the current programmed system parameters.

Edit Config - Press to enter System Editor Configuration menus.



BACK

Use the "BACK" key to save any changes and return to Run Mode main screen.

SYSTEM PROGRAMMING

I/O PANEL

Displays the status of the inputs and outputs.

X = On 0 = Off

A "green" character represents a signal that is currently in an "On" state, while a "grey" character represents a signal that is currently in an "Off" state.

I/O Panel

	0	1	2	3	4	5	6	7	
X0	0	X	0	X	0	X	0	X	
X1	X	0	X	0	X	0	X	0	
	INPUTS				X=on 0=off		OUTPUTS		
	0	X	0	X	0	X	0	X	Y0
	X	0	X	0	X	0	X	0	Y1

<p style="text-align: center;"><u>INPUT</u></p> <p>TRIGGER #1</p> <p>TRIGGER #2</p> <p>HEAD UP SW</p> <p>SMART TAMP</p> <p>SENSE GAP</p> <p>HW INHIBIT</p> <p>PRT ONLINE</p> <p>PRINTING</p> <p>PRINTER ERR</p> <p>LABEL LOW</p> <p>PAPER END</p> <p>RIBBON LOW</p> <p>RIBBON END</p>	<p style="text-align: center;"><u>OUTPUT</u></p> <p>AIR ASST</p> <p>VACUUM</p> <p>TAMP SOL</p> <p>FLAG SOL</p> <p>AUX SLIDE</p> <p>IN CYCLE</p> <p>TAMP SYNC</p> <p>PRT START</p> <p>REPRINT</p> <p>RED LT</p> <p>YELLOW LT</p>
---	---

< BACK

MORE

BACK

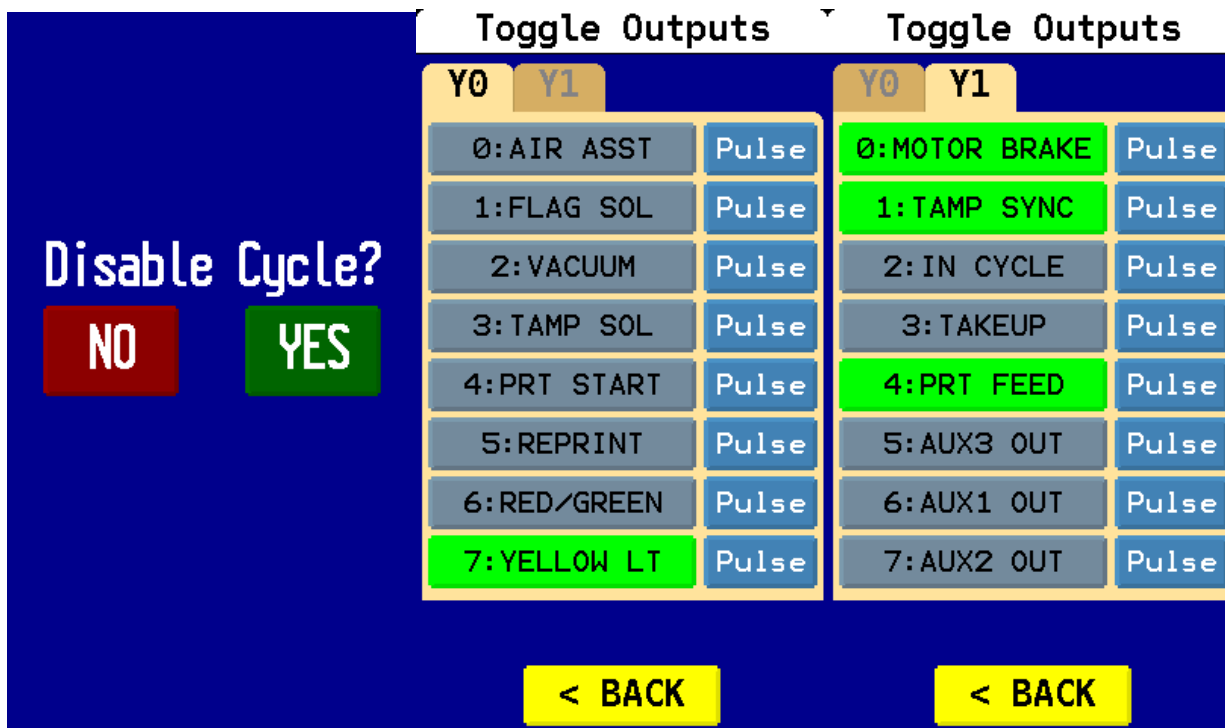
Use the "BACK" key to return to the main menu options.

TOGGLE OUTPUTS

The TOGGLE OUTPUTS menu can be used to manually test the individual system outputs from the HLI-200 input device. Before you can advance to the outputs, the system cycle must be disabled by selecting "YES" on the touch screen.

To test the individual outputs, you can select the numbered output in the left column to turn it on or off (highlighted in green = on). Alternatively, you can select the "PULSE" button in the right-hand column to activate the output for 100ms.

There are two pages of outputs available, which can be selected by pressing the "Y0" or "Y1" tab at the top of the chart.



BACK

Use the "BACK" key to return to the main menu options.

COUNTERS

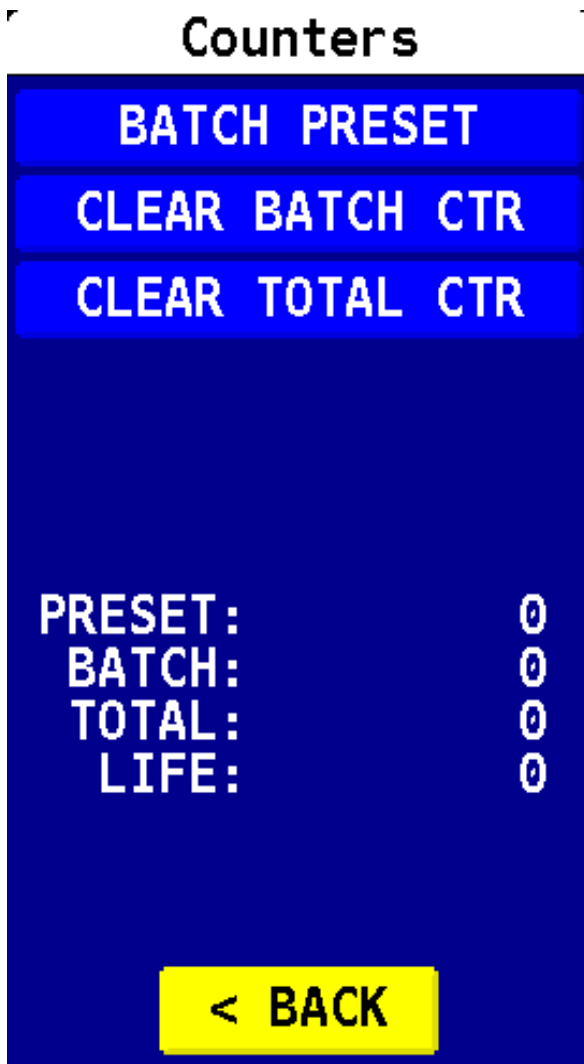
Used to reset the internal counters of the control or set the batch counter parameters.

PROGRAMMABLE BLOCKS:

Batch Preset - Used to set Batch Counter. Once reached, the applicator will Inhibit.

Clear Batch CTR - Used to clear the programmed batch counter.

Clear Total CTR - Clears the system Total Counter



BACK

Use the "BACK" key to return to the main menu options.

JOB STORAGE

Use to store frequently used settings pertaining to different labeling jobs (recipes). Up to (6) jobs can be stored & recalled.

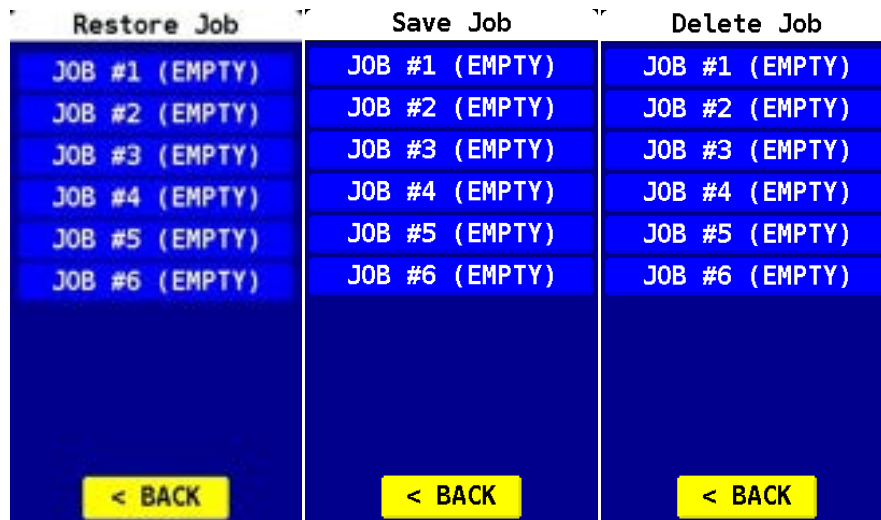
PROGRAMMABLE BLOCKS:

Load Defaults – Reverts system parameters back to factory defaults

Restore A Job – Recalls settings of a saved job.

Save A Job – Stores settings for the active job.

Delete A Job – Deletes a saved job.



BACK

Use the "BACK" key to return to the main menu options.

SHOW CONFIG

Lists all of the current selected programmed system parameters.

HLI-200 v3.34;LM4012 v9.99 GEN2-RM

```

0: ADDRESS=1
1: TRIGGER EDGE=leading
2: BATCH PRESET=0
3: MULTIFEED COUNT=1
4: MULTIFEED DELAY=0.1s
5: TAMP DURATION=0.0s
6: FLAG DURATION=0.0s
7: VACUUM RELEASE=0.0s
8: TAMP SYNC LOGIC=normal
10: CYCLE TYPE=feed only
12: ENCODER OVERRIDE=100.0%
13: ENC TRIG DIST=2.0"
14: CONVEYOR ENCODER=off
15: VACUUM ON DELAY=0.0s
20: ON DEBOUNCE=0.0s
21: OFF DEBOUNCE=0.0s
22: LIFE COUNTER=0
23: HEAD UP DEBOUNCE=0.0s
24: ENCODER LPI=100.0 LPI
25: BATCH COUNT=0
26: TOTAL COUNT=0
27: PRT RDY TIMEOUT=5.0s
28: PRODUCT DELAY=0.0s
29: HEAD UP SW TYPE=none
30: LABEL FEED DLY=0.1s
31: ROLLER STOP DLY=0.5s
32: ROLLER SPEED=100 IPM
33: ROLLER ACC/DEC=50000
34: DISTANCE 0-2nd=0.0"
35: DISTANCE 0-3rd=0.0"
36: DISTANCE 0-4th=0.0"
37: DISTANCE 0-5th=0.0"
38: DISTANCE 0-6th=0.0"
39: DISTANCE 0-7th=0.0"
40: DISTANCE 0-8th=0.0"
41: DISTANCE 0-9th=0.0"

```

Page 1, tap for next page.

HLI-200 v3.34;LM4012 v9.99 GEN2-RM

```

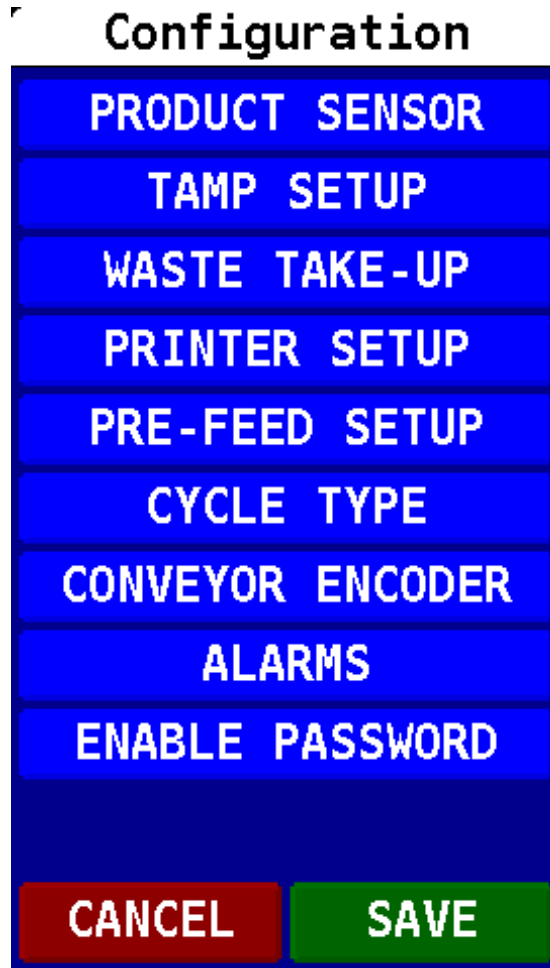
42: DISTANCE 0-10th=0.0"
45: LABEL LENGTH=1.0"
46: LABEL GAP LENGTH=0.125"
47: LABEL STOP POSN=0.0"
49: MISSED LABEL DET=off
50: LABELS TO PEELER=0
51: MISSING LBL COMP=off
54: MAX CONV SPEED=1600 IPM
55: LABEL SPEED=100 IPM
57: REQUIRE PASSWORD=disabled
58: LABEL ACCEL=100%
59: CONVEYOR SPEED=1500 IPM
60: CONVEYOR DIST=0.0"
63: ALARMS={none set}
64: MOTOR DIRECTION=right-hand
66: PRINTER OPTIONS={none set}
69: TRIGGER MODE=product delay

```

Page 2, tap to exit.

CONFIGURATION MENU

Used to enter the programmable system parameters. Any changes made the system parameters will take effect immediately, allowing an operator to “dial in” the system for the current application. Once all parameters have been adjusted, the operator must either press the “Save” button to save the settings memory, or the “Cancel” button to revert to the previously saved settings. Pressing either button will return you to the main menu

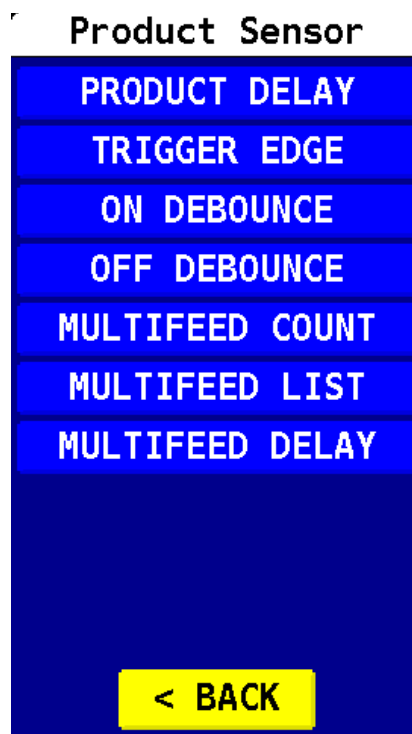


PRODUCT SENSOR MENU

A Product Sensor is an external device that when “activated” starts the application cycle. Most label applicator systems are provided with an external device (i.e., photo eye) or a trigger cable.

PROGRAMMABLE BLOCKS:

- **PRODUCT DELAY**- Delays the cycle start (x) seconds after the sensor has been activated.
- **TRIGGER EDGE**- Designates whether product sensor is activated at the leading or trailing edge of trigger input signal.
- **TRIGGER ON DEBOUNCE**- Programmable timer that a trigger signal must be actively “on” for a start cycle to activate.
- **TRIGGER OFF DEBOUNCE**- Programmable time that input triggers will be ignored for after a completed cycle.
- **MULTI-FEED COUNT**- Programs how many labels are applied to one product with one signal.
- **MULT-FEED LIST** - Current programmed parameters for multi-feed delay settings.
- **MULTI-FEED DELAY**- Programmable delay between each programmed multiple feed.



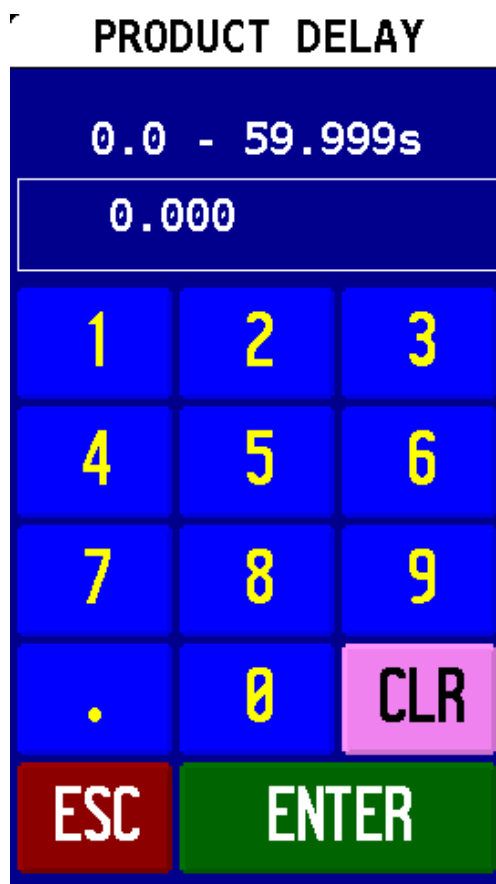
BACK

Use the "BACK" key to return to the main menu options.

PRODUCT DELAY

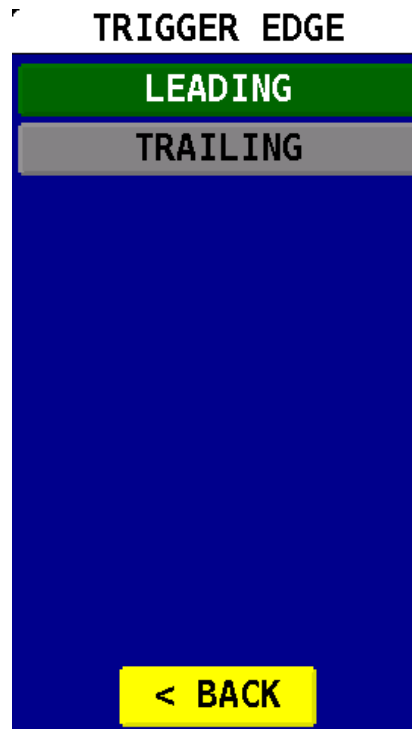
Delays the cycle start (x) seconds after the sensor has been activated. When programmed, the system will delay the start of the application cycle until the programmed Product Delay timer has expired. This feature is used to adjust the placement of the label on a moving product.

To program a value, use the numeric keypad to enter the desired value, and then press the enter key. The escape key will revert to the previous menu without changing the currently programmed parameter.



TRIGGER EDGE

Designates whether the product sensor is activated at the leading or trailing edge of trigger input signal. When set to "Leading", the application cycle (beginning with the programmed product delay) will start when a trigger input is received. When set to "Trailing", the application cycle will start only after a trigger is received ("ON"), and has then been removed ("OFF"). While most applications will trigger from the leading edge of a product, the trailing edge can be very useful for applying labels consistently to larger products without programming a large product delay. For example, when using an external photoeye trigger to place a label on the trailing edge of a carton traveling down a conveyor, using the trailing edge parameter will use the photoeye to signal the system that the carton is present, but will not send the trigger input to the system until the carton is no longer seen by the photoeye. The lowest possible value should be programmed into the Product Delay for label placement accuracy and consistency.

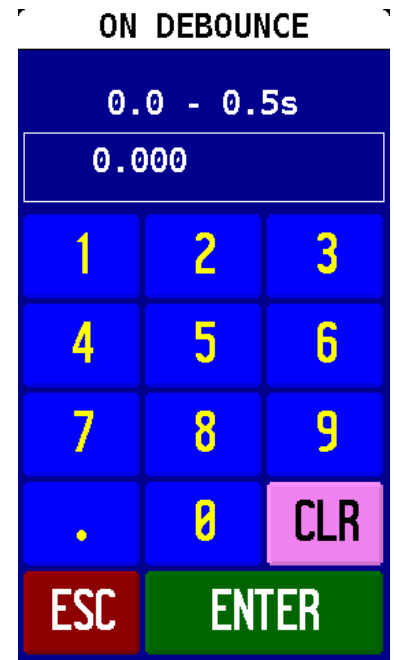


BACK

Use the "BACK" key to return to the main menu options.

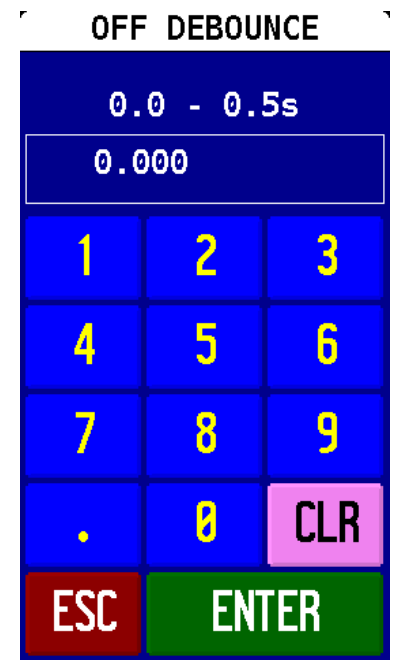
ON DEBOUNCE

Programmable timer that a trigger signal must be held “On” for a start cycle to activate. This feature is used to filter out erratic trigger signals that may occur from other factors (electronic noise, reflective vests, etc.)



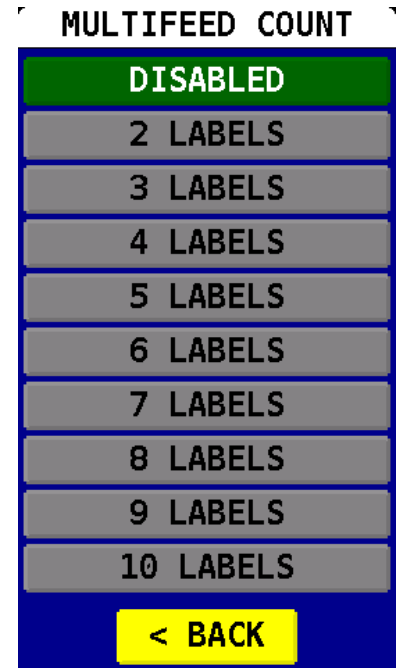
OFF DEBOUNCE

Programmable timer that input triggers will be ignored for after a completed cycle. This feature is used to filter out erratic trigger signals that may occur immediately after an application cycle has finished. The Off Debounce timer will become active after an application cycle has finished, and can be used to ensure that another application cycle cannot be started until the programmed Off Debounce timer has expired.



MULTI-FEED COUNT

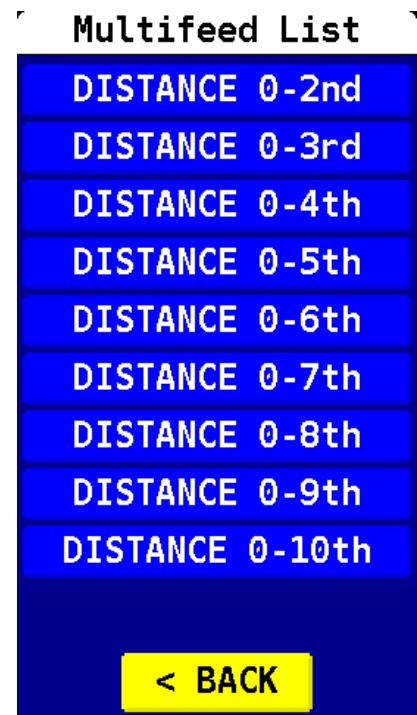
Programs how many labels are applied to one product with one trigger signal. When disabled, a single label will be applied with each trigger signal.



MULTI-FEED LIST (External Encoder)

Programmable parameters for multi-feed delay settings only when used in conjunction with an external encoder. The Conveyor Encoder feature must be turned on and Programmed to be used with the Multifeed List feature.

This feature is used to apply labels at specific distances from the initial trigger signal. An external encoder must be properly configured to apply the labels accurately.

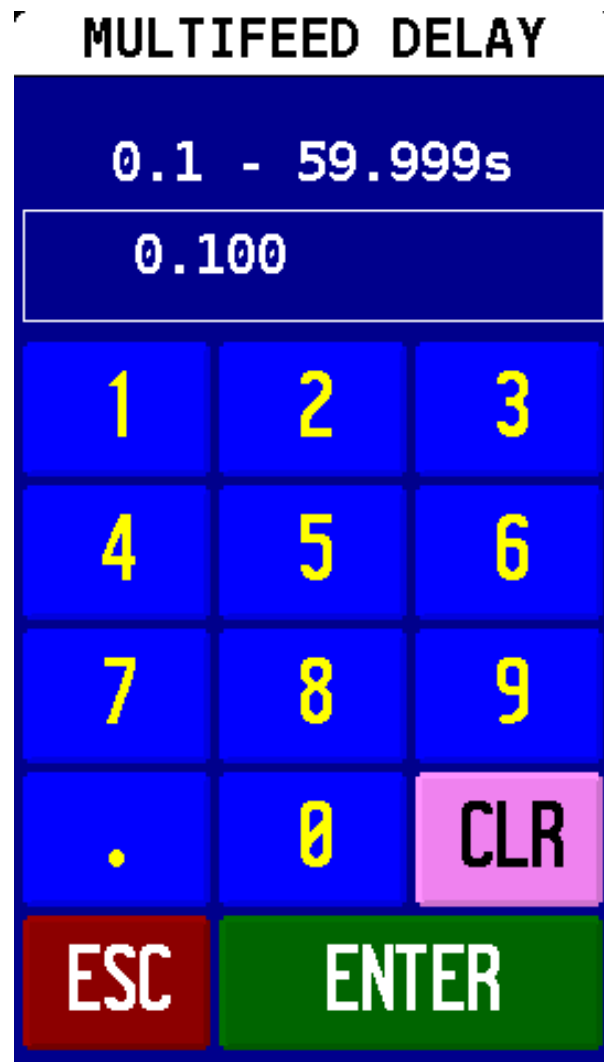


BACK

Use the "BACK" key to return to the main menu options.

MULTI-FEED DELAY

Programmable timed delay between each programmed multiple feed. This feature is used to control the delay between the first label application and subsequent label applications. The delay of the application of the first label is still programmed through the Product Delay in the Product Sensor menu, but the additional cycles selected in the Multifeed Count will be delayed with by the Multifeed Delay timer. The Multifeed delay will be active when an external encoder is not used and the Conveyor Encoder feature is turned off.

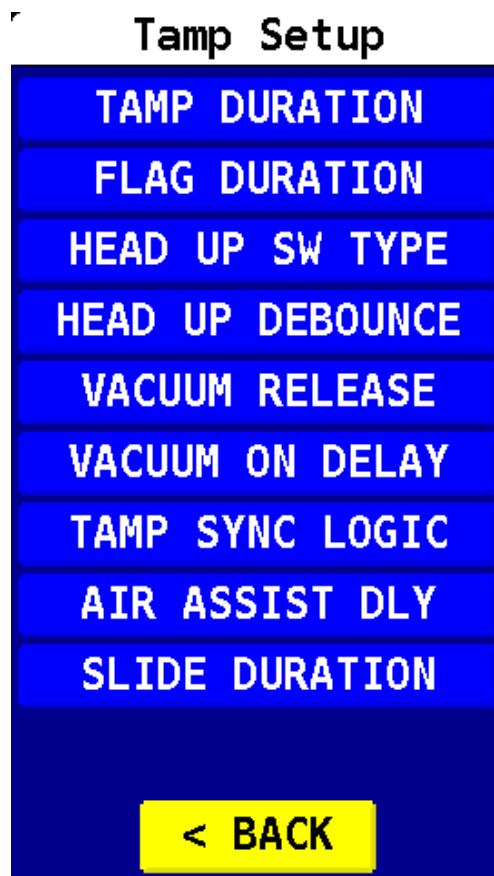


TAMP SETUP

This is used to adjust the different variables related to the pneumatic “tamp” cycle type.

PROGRAMMABLE BLOCKS:

- **Tamp Duration** - Used to adjust the time the tamp cylinder valve is actuated.
- **Flag Duration** - Used to adjust the time the flag jaws are held open after label application.
- **Head Up SW Type** - type: *normally open* (Default), none
- **Head Up Debounce** - Used to allow time for the tamp cylinder to settle on return.
- **Vacuum Release** - Used to release label when tamping on light products.
- **Vacuum On Delay** - Used to reduce label flutter when feeding large labels while tamping.
- **Tamp Sync Logic** - Used to reverse tamp sync outputs.
- **Air Assist Delay** - Used to adjust the off delay of the Air Assist (0.000 to 1.000 seconds)
- **Slide Duration** – Used to adjust the duration of a secondary, optional slide assembly.

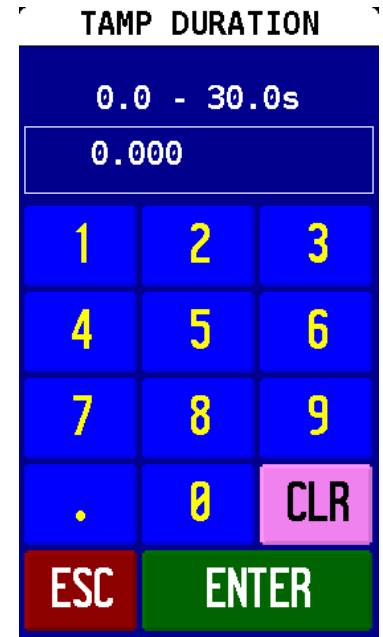


BACK

Use the "BACK" key to return to the main menu options.

TAMP DURATION

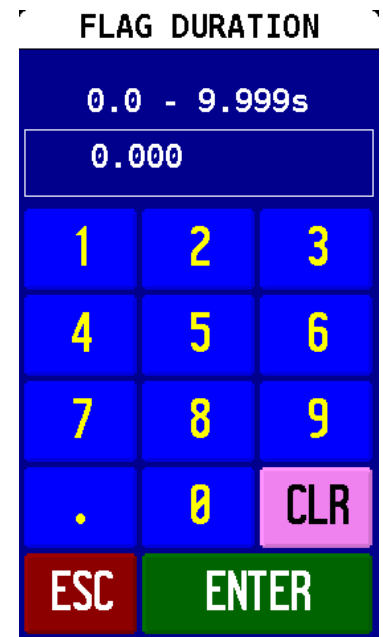
Programmable value in seconds used to adjust the time that the tamp cylinder valve is actuated. The tamp duration will become active after the programmed Product Delay has expired. Once the Tamp Duration value has expired, the applicator module will return to the “home” position.



FLAG DURATION

Programmable value in seconds used to adjust the time the flag jaws are held open after label application (when equipped with a flag label applicator module). This allows the flag jaws to be held open to return the applicator module to the home position without contacting the product that has just been labeled. The flag duration timer will activate after the programmed tamp duration timer has expired.

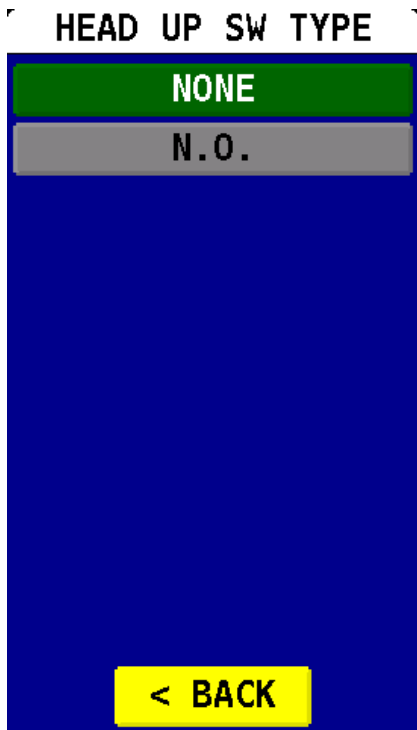
The Flag Duration timer is also used in conjunction with the optional tamp-blow module or blow-on module. In these cases, the flag duration time is used to activate and adjust the time the blow valve is activated.



HEAD UP SWITCH TYPE

The Head Up Switch Type menu is used in conjunction with various applicator modules to tell the applicator system whether or not the applicator module is in the “home” position. For example, a tamp module is equipped with a reed switch at the top of the tamp cylinder that is “on” when the tamp head is “up” (home).

N.O. (normally open) is the default value, and should only be changed to “NONE” when an applicator module without a head up switch is used. This setting is critical for the correct operation of a tamp or swing tamp application to ensure the label feed timing is correct.



BACK

Use the "BACK" key to return to the main menu options.

HEAD UP DEBOUNCE

Used to allow time for the tamp cylinder to settle on return. This setting will delay the feed of the label onto the vacuum platen upon the return of the applicator module to the home position. Larger label application modules or high-speed applications may require adding a head-up debounce for label feed consistency.

For example, when running a pneumatic tamp applicator system in a Tamp Before Feed cycle type, a label will be fed out and onto to the vacuum platen once the head-up switch is activated after the return of the tamp cylinder to the home position. If the physical switch is incorrectly adjusted or the cylinder returns home very quickly, the tamp pad may not be home and stable when the label feed begins to occur.

VACUUM RELEASE

When tamping on light products or using media that is susceptible to static cling, this feature can be used to release the label from the vacuum platen by turning off the vacuum duration the label application mid-cycle.

The vacuum release is a timer that counts backwards from the end of the programmed tamp duration and turns the vacuum off when the programmed Vacuum Release expires. For example, if setting a Tamp Duration to 2.0 seconds and a vacuum release to 0.5 seconds, the vacuum on the tamp pad will be turned off 1.5 seconds after the tamp motion begins. The vacuum release is typically set to zero, and only used when experiencing problems getting the label to release from the vacuum platen.

HEAD UP DEBOUNCE

0.0 - 0.5s		
0.000		
1	2	3
4	5	6
7	8	9
.	0	CLR
ESC	ENTER	

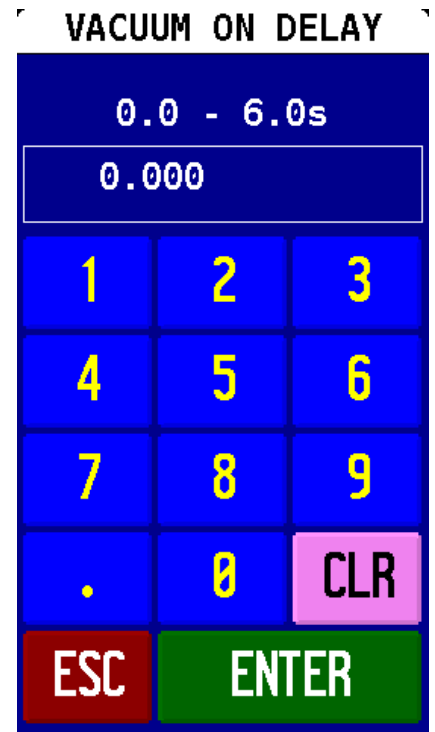
VACUUM RELEASE

0.0 - 9.999s		
0.000		
1	2	3
4	5	6
7	8	9
.	0	CLR
ESC	ENTER	

VACUUM ON DELAY

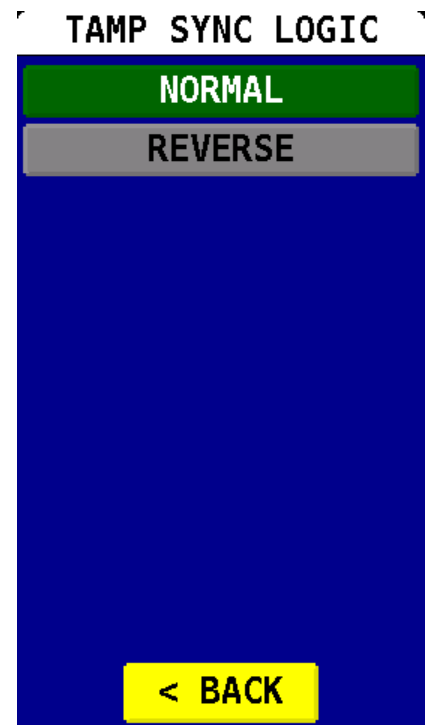
The Vacuum On Delay is a programmable timer that prevents the vacuum from turning on when a label feed is activated. Once the timer expires the vacuum will activate.

This feature is commonly used when feeding a larger label onto a vacuum platen. Programming a vacuum delay will assist in reducing flutter, which can result in reduced feed consistency and label placement accuracy.



TAMP SYNC LOGIC

Used for "Normal" or "Reverse" Tamp signal operation and signal transmission. "Normal" operation is the default, and is used in most applications. "Reverse" is typically only used with customized applicator modules.



BACK

Use the "BACK" key to return to the main menu options

AIR ASSIST DLY

The Air Assist Delay is a programmable timer that allows you to control how long the air assist valve remains open after the print engine has finished feeding the label. This is typically only used when integrating the system with additional hardware and is not recommended for use in most applications.

AIR ASSIST DLY

0.0 - 1.0s

0.000

1	2	3
4	5	6
7	8	9
.	0	CLR
ESC	ENTER	

SLIDE DURATION

The Slide Duration is a programmable timer for controlling an optional, secondary piece of hardware (typically a secondary pneumatic linear slide).

SLIDE DURATION

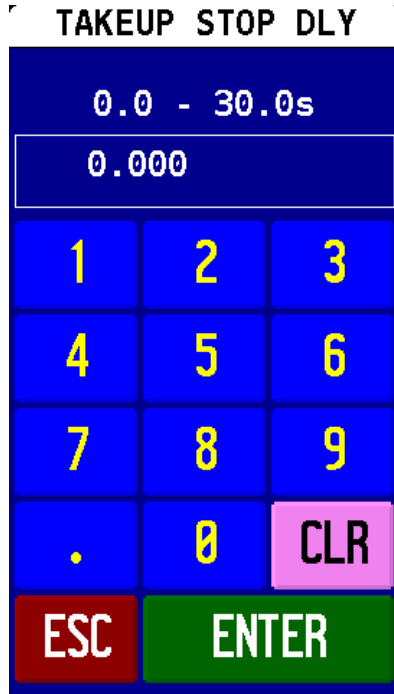
0.0 - 9.999s

0.000

1	2	3
4	5	6
7	8	9
.	0	CLR
ESC	ENTER	

WASTE-TAKEUP

- **START DELAY**- Used to delay the start of the take-up motor once the label has started printing and feeding. The delay is programmable from 0-30 seconds.
- **STOP TAKEUP** – Used to delay the stop of the take-up motor after the label has finished printing and feeding. The delay is programmable from 0-30 seconds.
- **JOG TAKEUP** – Used to manually jog the waste take-up. When pressed, the take-up will run until the button is released.



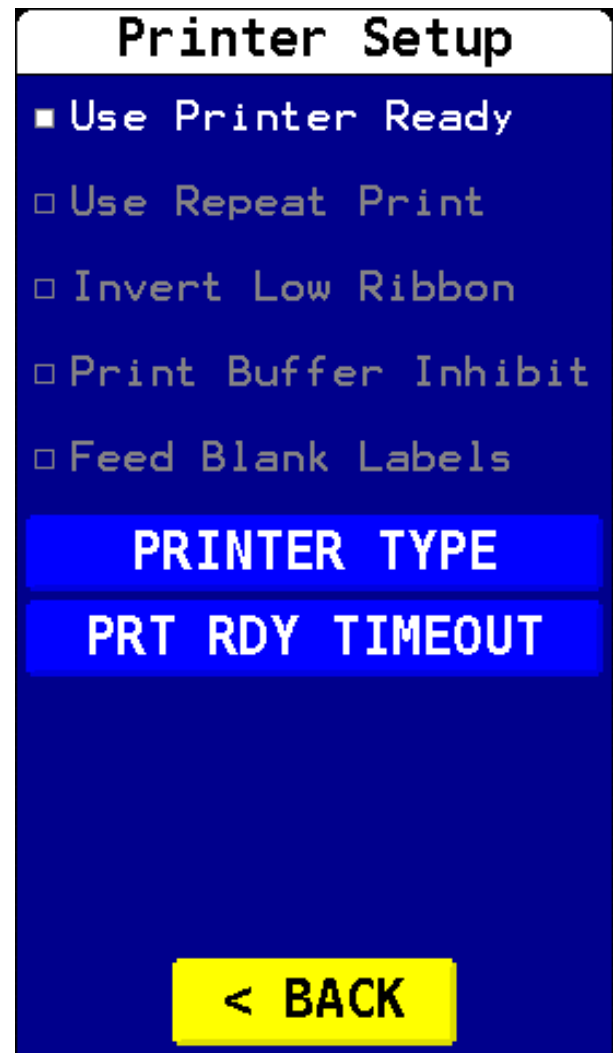
BACK

Use the "BACK" key to return to the main menu options

Printer Setup

The Printer Setup menu is used to control the system operation when connected to an optional, loose-looped printer.

- **Use Printer Ready**– When active, the system may inhibit or fault when a connected printer is not in a ready state.
- **Use Repeat Print**– When active, the main control will signal a connected printer to re-print the last remaining label in the print buffer. Additional printer setup may be required.
- **Invert Low Ribbon**– Inverts the signal received from a connected printer for when the ribbon roll is low. This may change depending on the printer that is connected.
- **Print Buffer Inhibit**–When active, the system may inhibit when a connected printer does not have data in the buffer.
- **Feed Blank Labels**–When active, the system will send a Feed signal to a connected printer instead of a Print signal, results in the feed of a blank label. This option is useful when testing or setting up an application, but there is not an option to load data into the print buffer. This option must be deactivated to return to normal operation.



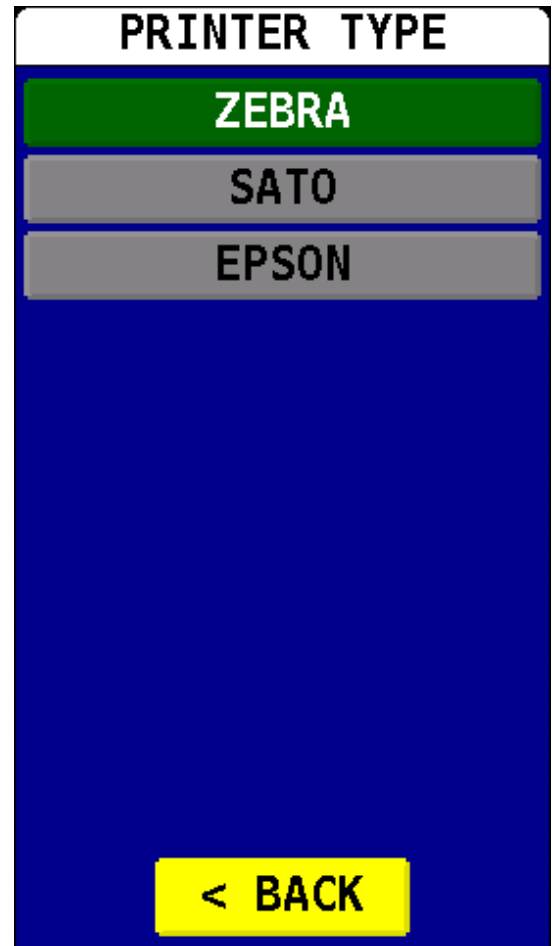
BACK

Use the "BACK" key to return to the main menu options.

PRINTER TYPE

The Printer Type menu is used to select the printer installed into the system. Simply select one of the listed options. This will tell the main control how to interpret signals passed between the print engine and main control.

- ZEBRA
- SATO
- EPSON



BACK

Use the "BACK" key to return to the main menu options

PRE-FEED SETUP

The Pre-Feed Setup Menu can be used to control the timing on when the label is printed, separately from when it is applied. For the Pre-Feed settings to be active, a Pre-Print cycle type must be selected.

- **PRE-FEED TRIGGER** – Used to select when the data is printed and the label is fed from the print engine.
- **PRE-FEED TIMEOUT** – Used to put the system into a Fault state if a signal to apply the label is not received within the programmed time.
- **EARLY TRIGGER** – Used to select how the system should react if a signal is received to apply a label before a label has been printed.

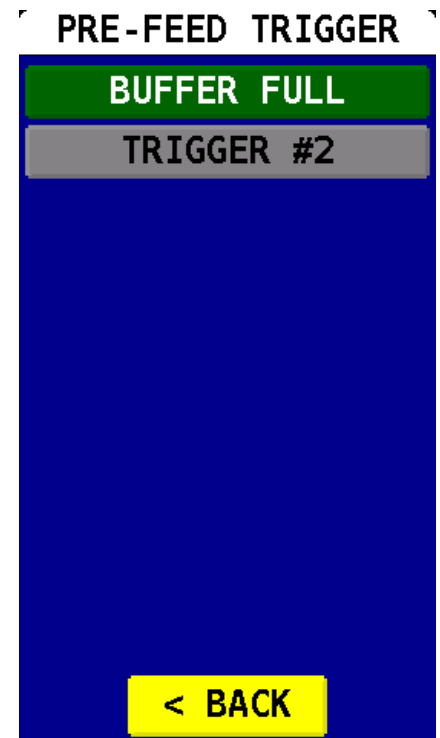


PRE-FEED TRIGGER

The Pre-Feed Trigger Setup controls when a print engine prints and feeds a label that has been received into the printer buffer. A Cycle Type of Pre-Print & Tamp or Pre-Print & Blow must be selected for these settings to take effect.

Selecting **Buffer Full** will result in the print engine printing and feeding a label as soon as it is fully received into the print buffer. Before another label is printed, an apply signal (Trigger Input #1 / Pin 3 on Remote Trigger Port) must be received by the control, or the system must be reset. Multiple print files can be held in the printer buffer when this option is selected, but the labels will only be printed and applied as the sequence is carried out correctly.

Selecting **Trigger #2** will require an external Pre-Print signal (Pre-Print Input / Pin 4 on Remote Trigger Port or Pin 3 on Smart Tamp Port) to be received by the control to print and feed the label. Before another label is printed, an apply signal (Trigger Input #1 / Pin 3 on Remote Trigger Port) must be received by the control, or the system must be reset.



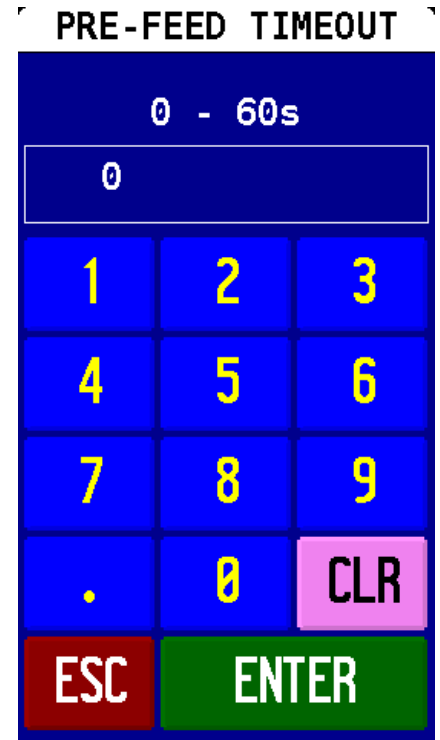
BACK

Use the "BACK" key to return to the main menu options.

PRE-FEED TIMEOUT

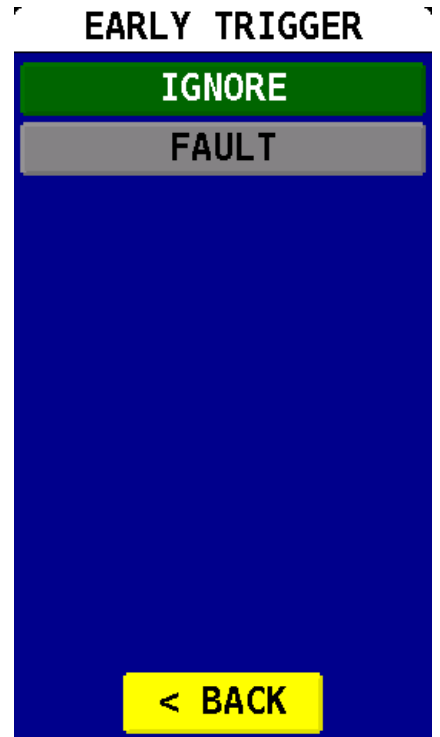
The Pre-Feed Timeout is a programmable timer that can be used to fault the applicator system if a label that has been printed has not been applied within the programmed time. The timeout will be active if the Pre-Feed Trigger is set to Buffer or Trigger #2. If the timer expires before a apply signal is received, the system will go into a Fault state and the fault will need to be cleared through the HLI-200 before the system can operate again. If the Pre-Feed Trigger is set to Buffer, another label will print immediately once the fault is cleared if there are labels remaining in the printer buffer.

Setting the Pre-Feed Timeout to a value of zero will disable the timeout function and allow the system to remain "in-cycle" (label has been printed and fed, but not yet applied) for an indefinite amount of time, disabling the Pre-Feed timeout error.



EARLY TRIGGER

The Early Trigger menu is used to control what occurs when an apply signal (Trigger Input #1 / Pin 3 on Remote Trigger Port) has been received before a label has been printed and fed from the print engine. This option will be active if the Pre-Feed Trigger is set to Buffer or Trigger #2. Selecting Ignore will result in nothing happening when the trigger input is received. Selecting Fault will put the system into a Fault state if a trigger input is received and the fault will need to be cleared through the HLI-200 before the system can operate again.



BACK

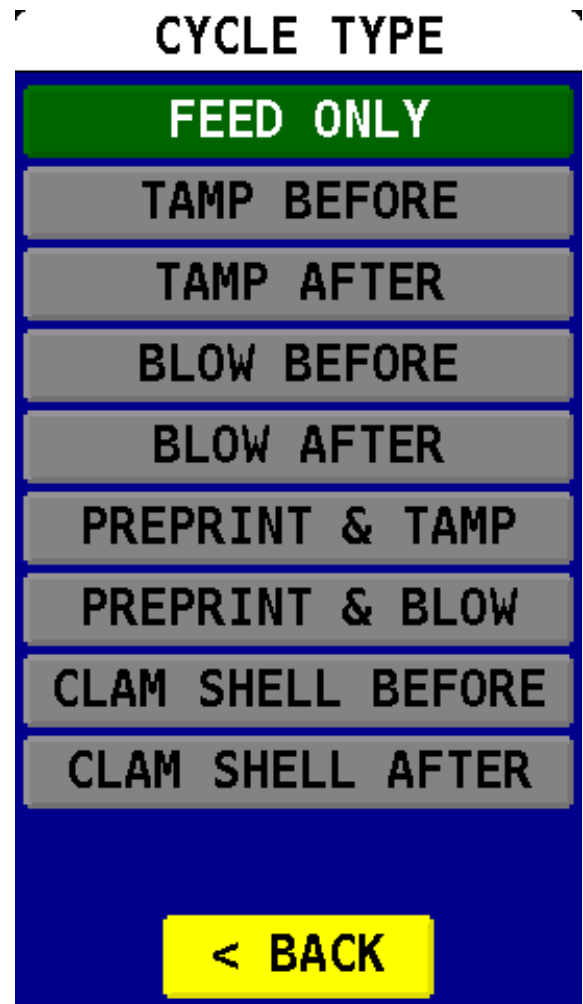
Use the "BACK" key to return to the main menu options

CYCLE TYPE

The Cycle Type menu needs to be programmed for the applicator module in use.

Available Cycle Types

- **Feed Only**
 - Synchronous Feed / Wipe-On
- **Tamp Before Label Feed**
 - Activates a pneumatic tamp module to apply a label, return home, and then feed another label onto the platen.
- **Tamp After Label Feed**
 - Activates a feed onto the label platen, and then the pneumatic tamp module.
- **Blow On Before Label Feed**
 - Activates the blow valve, and then another label feed.
- **Blow On After Label Feed**
 - Activates the label feed before the blow valve.
- **Preprint & Tamp**
 - Similar to Tamp After Feed, but allows you to control when the label is printed separately from when it is applied. Additional setup required in the Pre-Feed Menu.
- **Preprint & Blow**
 - Similar to Blow On After Feed, but allows you to control when the label is printed separately from when it is applied. Additional setup required in the Pre-Feed Menu.
- **Clam Shell Module Before Feed**
 - Activates the pneumatic tamp and clamshell valves before returning home and feeding another label.
- **Clam Shell Module After Feed**
 - Activates the label feed before the pneumatic tamp and clamshell valves.



BACK

Use the "BACK" key to return to the main menu options

CONVEYOR ENCODER

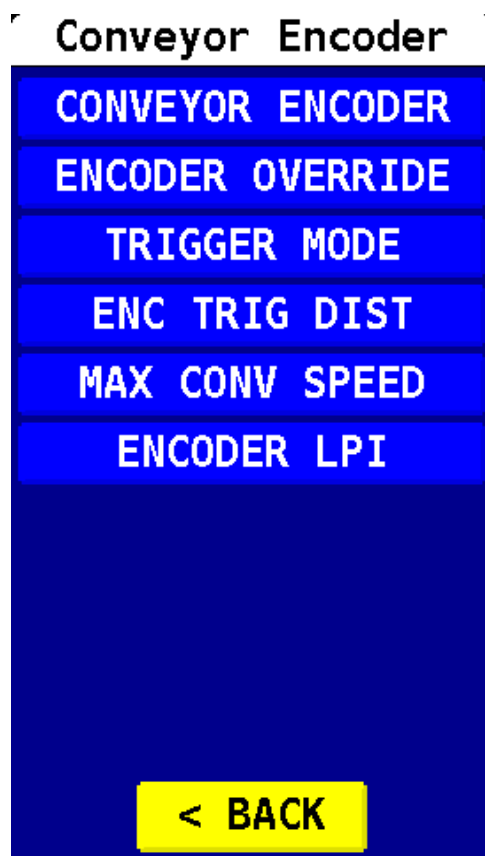
Provides a more consistent way to apply labels to a product. With this option, a distance from the trigger point can be set at which the label is to be applied. Note: optional encoder must be used with this feature.

KEY DEFINITIONS

- **ASYNCHRONOUS OPERATION** – The term “ASYNCHRONOUS OPERATION” is used because the speed of the printer applicator motor (label speed) does not necessarily match the speed of the product conveyor. In other words their speed is set independently of one another and has NO interrelation. The 3612 can only be configured in asynchronous operation.
- **START COMPENSATION** – Start compensation compensates for the reaction time of the LabelMill control and start signal from the product switch. The purpose of start compensation is to maintain label placement on a product that is traveling at different speeds. An example of this is a conveyor that accelerates on start up and decelerates to a stop. At high speeds, an uncompensated system would apply a label too late and the label would be placed too far back on the product. Linear interpolation is used to correct this problem. The start compensation corrects this error by adding an offset distance at LOW speeds, since it is not possible to apply any correction at high speed. **Note: Start compensation ONLY effects label placement on product.**
- **ELECTRONIC GEARING** – Electronic gearing is a function of the product encoder and the LabelMill control. This is used to match the speed of the applicator to the product conveyor. Electronic gearing is similar to mechanical gearing in that there is a gear ratio and the change of speed of one affects the speed of the other. This feature is part of the Synchronous feed mode. In order for this to operate properly, the correct number of lines per inch of product travel must be entered into the ENC LINES/INCH in encoder setup menu.
- **ENCODER** – AN ENCODER is a device that is used to monitor the speed of an external device like a product conveyor. The reason this speed is monitored is to match the speed of the label applicator to the product speed. An encoder uses “LINES or COUNTS” per revolution in order to track speed and distance. Note that lines per revolution are also referred to as counts per revolution. These counts are feed into the LABEL MILL control to be processed for the different features that require this feedback.
- **ENCODER OVERRIDE** – This feature is used in conjunction with ELECTRONIC GEARING. This feature is used to fine-tune the ratio of the applicator to the product conveyor.
- **TRIGGER DIST** – TRIGGER DISTANCE is used in conjunction with the encoder feature. Trigger distance is similar to product delay in that it is used to electronically move the placement of the label on the product. When the encoder feature is used, the product delay feature is rendered inactive. Trigger distance will move the label placement in inches (00.00).
- **PRODUCT DELAY** is NOT used in conjunction with the encoder feature. Product delay is similar to trigger distance in that it is used to electronically move the placement of the label on the product. Product delay will move the label placement in time (00.000) seconds. Because the product delay feature utilizes time, the speed of the product MUST remain constant. A product traveling at a higher velocity will travel further in a given time, thus effecting the placement of the label.

PROGRAMMABLE BLOCKS:

- **Conveyor Encoder** - Used to turn a connected external encoder option on or off.
- **Encoder Override** - Allows fine-tuning of the ratio of applicator speed to the moving conveyor speed.
- **Trigger Mode** - Used to select a timed product delay or measurable distance before sending a trigger signal.
- **Enc Trig Distance** - Used to apply the label a certain distance away from the trigger point.
- **Max Conv Speed** - Used to adjust what the max speed of the conveyor is.
- **Encoder LPI** - Programs how many pulses the encoder will count with 1.0" of travel.

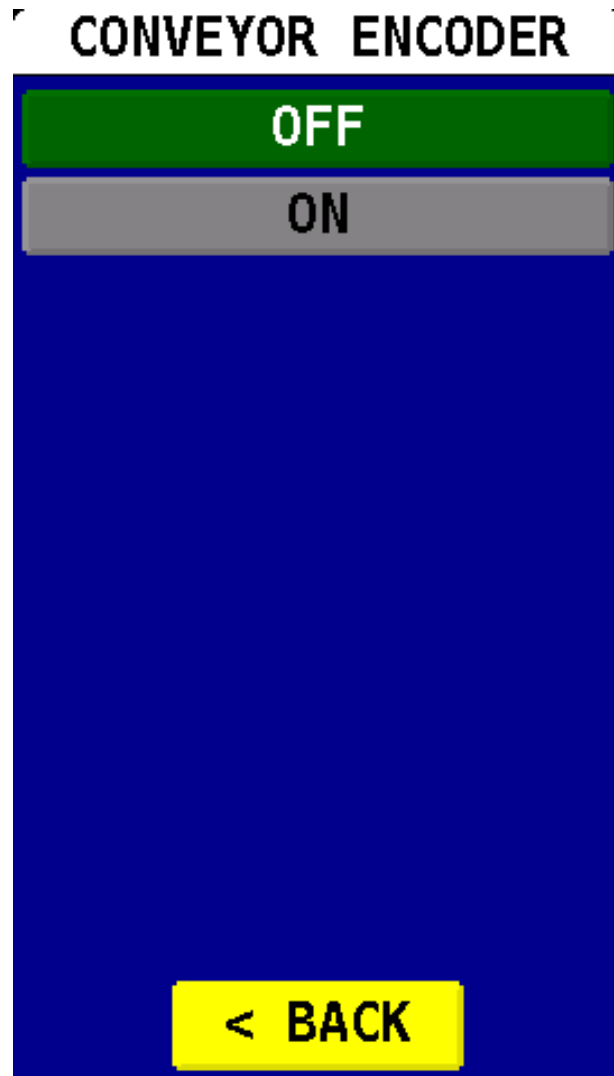


BACK

Use the "BACK" key to return to the main menu options.

CONVEYOR ENCODER

The Conveyor Encoder menu is used to turn the external encoder option on or off. Encoder signals will be ignored unless this is set to "On". Additional setup in the following menus is required for the system to operate properly. This option must be set to "Off" if an external encoder is not used.

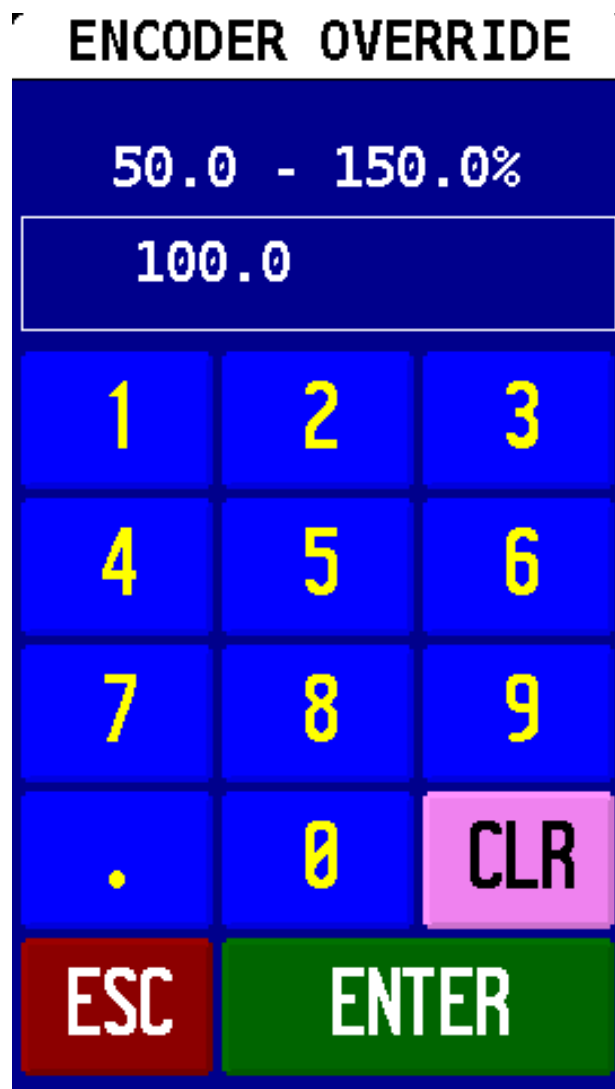


BACK

Use the "BACK" key to return to the main menu options.

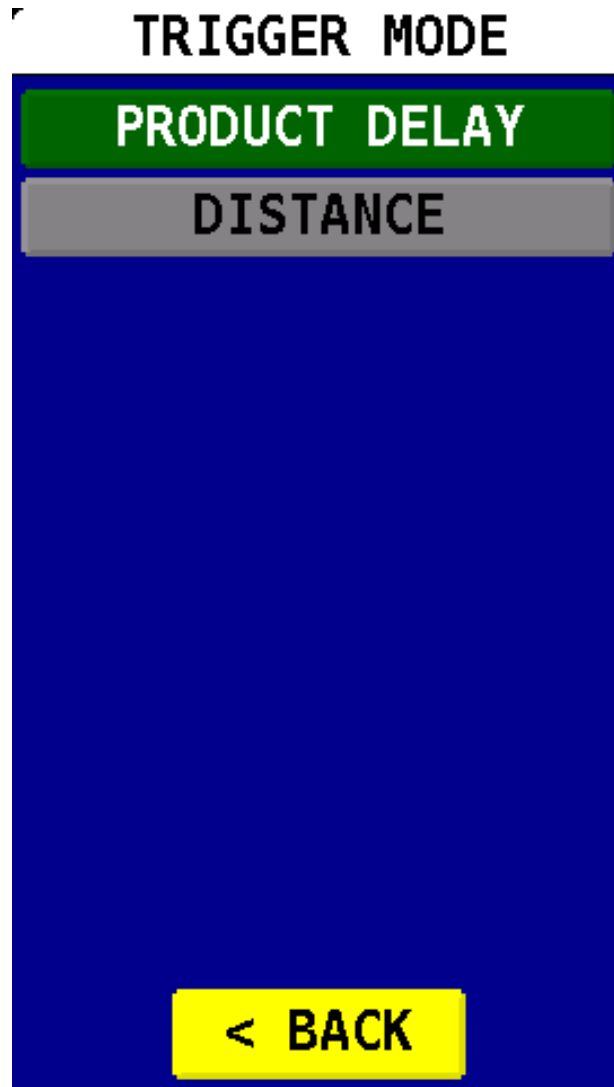
ENCODER OVERRIDE

Allows fine-tuning of the ratio of applicator speed to conveyor speed.



TRIGGER MODE

The Trigger Mode is used to select either Product Delay or Distance before a trigger signal is sent. If Product Delay is selected, the trigger signal will be sent once the programmed Product Delay timer expires. If Distance is selected, the trigger signal will be sent once the programmed travel distance has been met by monitoring the travel length by the external encoder.

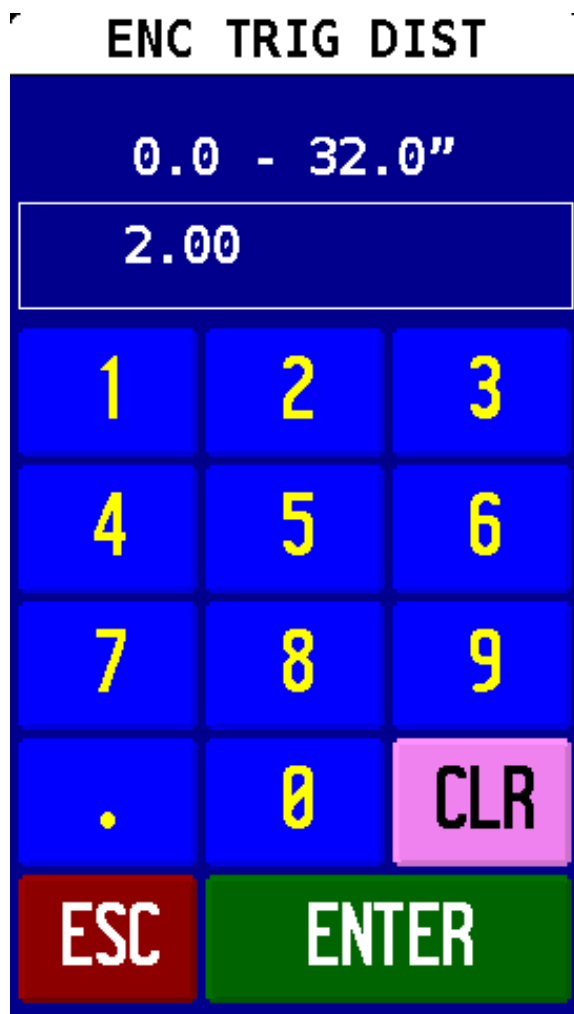


BACK

Use the "BACK" key to return to the main menu options.

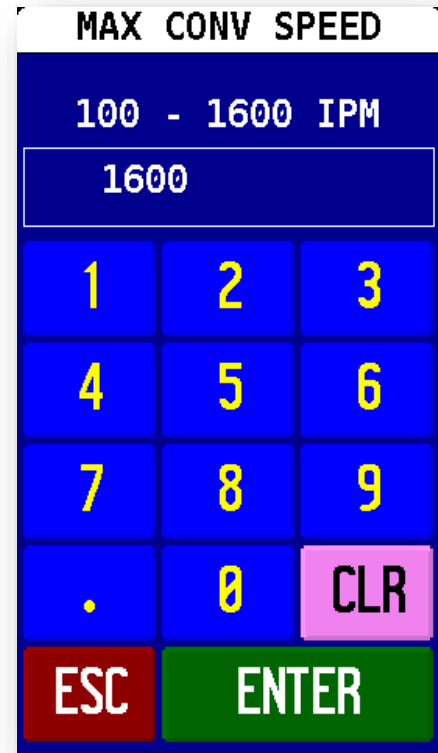
ENC TRIG DISTANCE

The Encoder Trigger Distance option is used to apply the label a certain distance away from the trigger point. Once a trigger input is received, an external encoder will begin count the programmed lines per inch and send a signal to apply the label once the programmed value has been met.



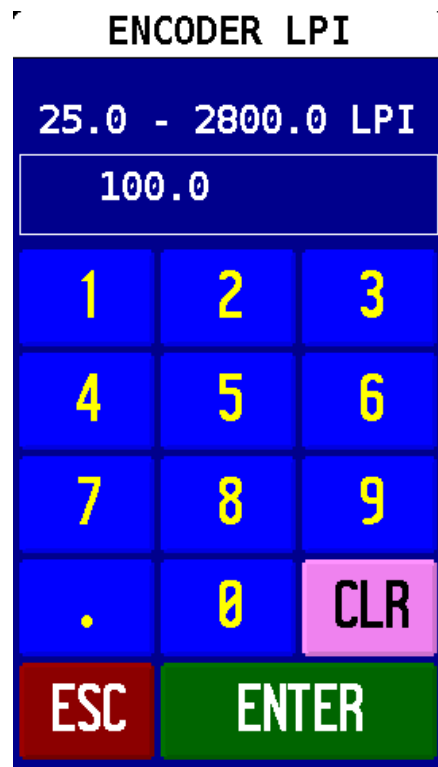
MAX CONVEYOR SPEED

The Max Conveyor Speed menu is used to adjust the maximum allowed speed of the conveyor. If the conveyor is operating outside of the maximum value, erratic label application may occur.



ENCODER LPI

Programs how many pulses the encoder will count with 1" of travel. This setting is dependent upon the external encoder hardware as well as the wheel size being used.



ALARMS

A “Label Feed Error” may be required in some custom applications, and this output can be enabled or disabled in the Alarms menu. For example, a tamp pad may be outfitted with a fiber-optic assembly to sense when a label is present on the pad. If the system is triggered and fiber-optic assembly does not sense the label, a “Label Feed Error” will occur. The use of this option may require custom software and/or hardware.

PROGRAMMABLE BLOCKS:

- **Label Feed Error** – Used to toggle the Label Feed Error option on or off.

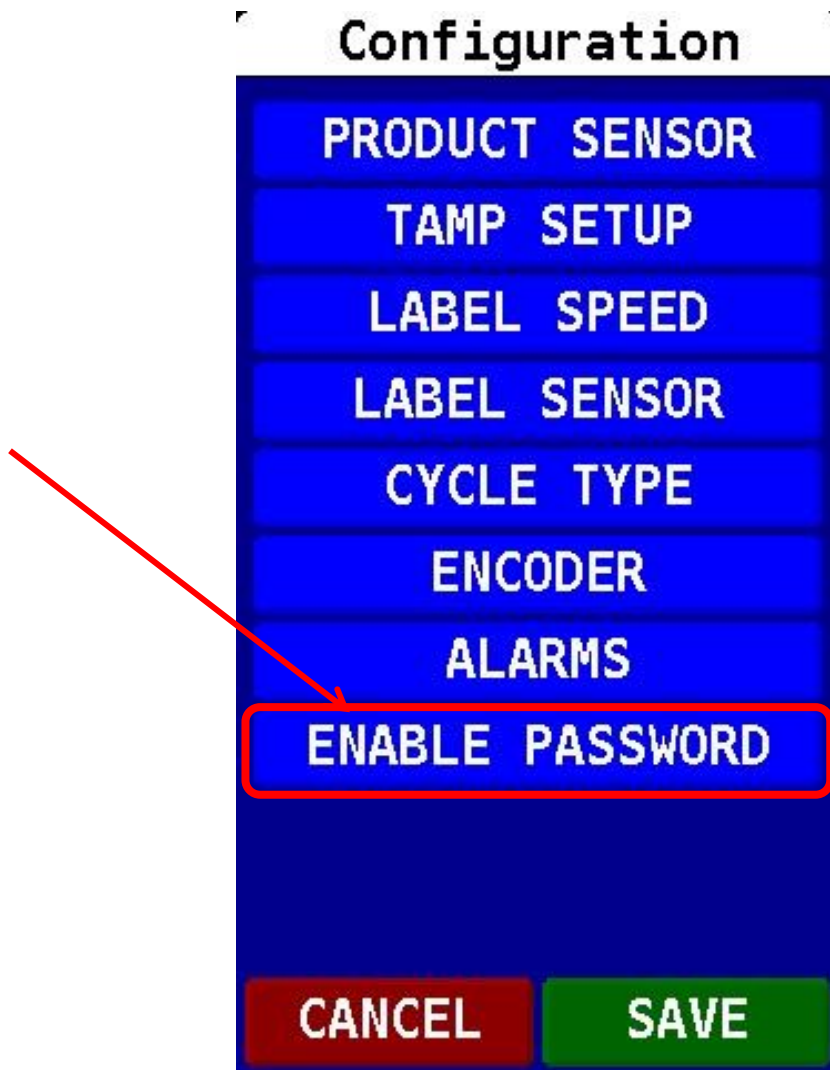


BACK

Use the "BACK" key to return to the main menu options.

ENABLE PASSWORD

The Enable Password is used to lock the menus of the control. This option is used to prevent unauthorized access to variable data. When shipped from the factory, the password is 7074 and NO MENUS are locked. The password cannot be changed.



LOGIC BOARD

DESCRIPTION OF I/O

LEGEND

24V OPT: 24V OPTO INPUT WITH INTERNAL 24V COMMON
 OH: OUTPUT Rated @ 500ma

All user inputs and outputs are “**SINKING**” type.

Example: In order for a status light to illuminate for “Run Status Ok” the light should be wired between pins #1 & #8 on the “**Light Bar/Aux**” Connector.

REMOTE TRIGGER CONNECTOR (PRODUCT SWITCH)	P7 PIN #	I/O	I/O Monitor ADDRESS
+24vdc	1		
+24vdc	2		
Trigger Input #1	3	Input	X0.0
Pre-Print Input / AUX1	4	Input	X0.1
24v Common	5		
24v Common	6		
Shield			



HEAD-UP / AUX IN	P8 PIN #	I/O	I/O Monitor ADDRESS
+24vdc	1		
+24vdc	2		
Head – Up	3	Input	X0.2
Smart Tamp	4	Input	X0.3
24v Common	5		
24v Common	6		
Shield			



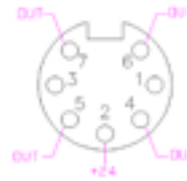
SMART TAMP	P2 PIN #	I/O	ADDRESS
+24vdc	1		
+24vdc	2		
Pre-Print Input / AUX1	3	Input	X0.1
Smart Tamp	4	Input	X0.3
24v Common	5		
24v Common	6		
SHIELD			



Take-Up	P4 PIN #	I/O	I/O Monitor ADDRESS
Input	1	Input	X0.4
24v Common	2		
N.C.	3		
Take up output	4	Output	Y1.3
N.C.	5		
N.C.	6		
N.C.	7		
+24vdc MCR	8		
Shield			



TAMP SOLENOIDS	P6 PIN #	I/O	I/O Monitor ADDRESS
Aux Output #2 / Tamp Slide	1	Output	Y1.7
+24 Volt	2		
No connection	3		
Air Assist Sol 24vdc	4	Output	Y0.0
Vacuum Sol 24vdc	5	Output	Y0.2
Tamp Sol 24vdc	6	Output	Y0.3
Flag Sol 24vdc	7	Output	Y0.1
Shield			



HMI RJ Conn	P3 PIN #	Jumpers
422RX+ (TXB)	1	
422RX- (RXB)	2	
	3	
	4	
24V Common	5	
+24vdc	6	
422TX+	7	
422TX-	8	

LIGHT BAR/AUXILIARY CONNECTOR DB-15 FEMALE	P10 PIN #	INPUT/ OUTPUT	ADDRESS	
+24VDC	1			
+24VDC	2			
24 COM	3			
24 COM	4			
LOW LABEL IN	5	I	X0.5	
ERROR LITE (Red light)	6	O	Y0.6	On=GREEN Off=RED
LOW LABEL (Yellow light)	7	O	Y0.7	
RUN STATUS OK (Green Light)	8	O		Green = /Red
TAMP SYNC OUT	9	O	Y1.1	
INHIBIT IN	10	I	X0.6	
REPRINT / Aux Input #2	11	I	X0.7	
Aux Input #3 / Slide Home Input	12	I	X1.1	
Aux Input #4 / Feed Error Input	13	I	X1.2	
Applicator in cycle output (Applicator Busy)	14	O	Y1.2	
Batch Done Aux Output #1	15	O	Y1.6	

LM3612 PRINT & APPLY SYSTEM

USERS MANUAL



LIGHT BAR/AUXILIARY CONNECTOR DB-15 FEMALE	P10 PIN #	INPUT/ OUTPUT	ADDRESS	
+24VDC	1			
+24VDC	2			
24 COM	3			
24 COM	4			
LOW LABEL IN	5	I	X0.5	
ERROR LITE (Red light)	6	O	Y0.6	On=GREEN Off=RED
LOW LABEL (Yellow light)	7	O	Y0.7	
RUN STATUS OK (Green Light)	8	O		Green = /Red
TAMP SYNC OUT	9	O	Y1.1	
INHIBIT IN	10	I	X0.6	
REPRINT / Aux Input #2	11	I	X0.7	
Aux Input #3 / Slide Home Input	12	I	X1.1	
Aux Input #4 / Feed Error Input	13	I	X1.2	
Applicator in cycle output (Applicator Busy)	14	O	Y1.2	
Batch Done Aux Output #1	15	O	Y1.6	

AUXILIARY CONNECTOR (OPTIONAL) 3rd DB-15 MALE	DB15 PIN #	INPUT/ OUTPUT	ADDRESS	
AUX 232 TXC Port C	1	O		RS232 Output
GND	2			
GND	3			
Batch Done Aux Output #1	4	O	Y1.6	
REPRINT / Aux Input #2	5	I	X0.7	
Aux Input #4 / Feed Error Input	6	I	X1.2	
+24V	7			
+24V	8			
AUX 232 RXC Port C	9	I		RS232 Input
24MCR	10			24 Volts when not in E-Stop
24MCR	11			24 Volts when not in E-Stop
Estop relay	12	relay		Used to seal E-Stop
Aux Input #3	13	I	X1.1	
Aux #3 Output	14	O	Y1.5	
+24V	15			

COMM. 2 RS- 232 DB9 Female Serial Plus Port (OPTIONAL)	P11 PIN #	INPUT/ OUTPUT	ADDRESS	
SHIELD	1			
+485 RS232 XMIT (port D) to motor	2			
-485 RS232 RECV (port D) to motor	3			
24C	4			
24C	5			
Aux Output #2 High current	6	O	Y1.7	
Aux Input #2	7	I	X0.7	
+24	8			
+24	9			

PRINT AND APPLY INTERFACE 14 pin Centronix	P9 PIN #	I/O	I/O Monitor ADDRESS
Paper End	1	Input	X1.3
Printer Ground	2		
Ribbon End	3	Input	X1.4
Printer Error	4	Input	X1.5
Print Start	5	Output	Y0.4
Print End	6	Input	X1.6
Reprint	7	Output	Y0.5
PFeed (Feed Label Only)	8	Output	Y1.4
ONLINE (Sato Only) (Zebra Data Ready)	9	Input	X1.7
Ribbon Near End	10	Input	X1.0
NC	11		
NC	12		
+5vdc From Printer	13		
GND	14		
Shield			

DB9 Male Encoder (OPTIONAL)	P14 PIN #	I/O	I/O Monitor ADDRESS
A+	1	I	
A-	2	I	
B+	3	I	
B-	4	I	
+5V	5		
GND	6		
GND	7		
No Connection	8		
No Connection	9		

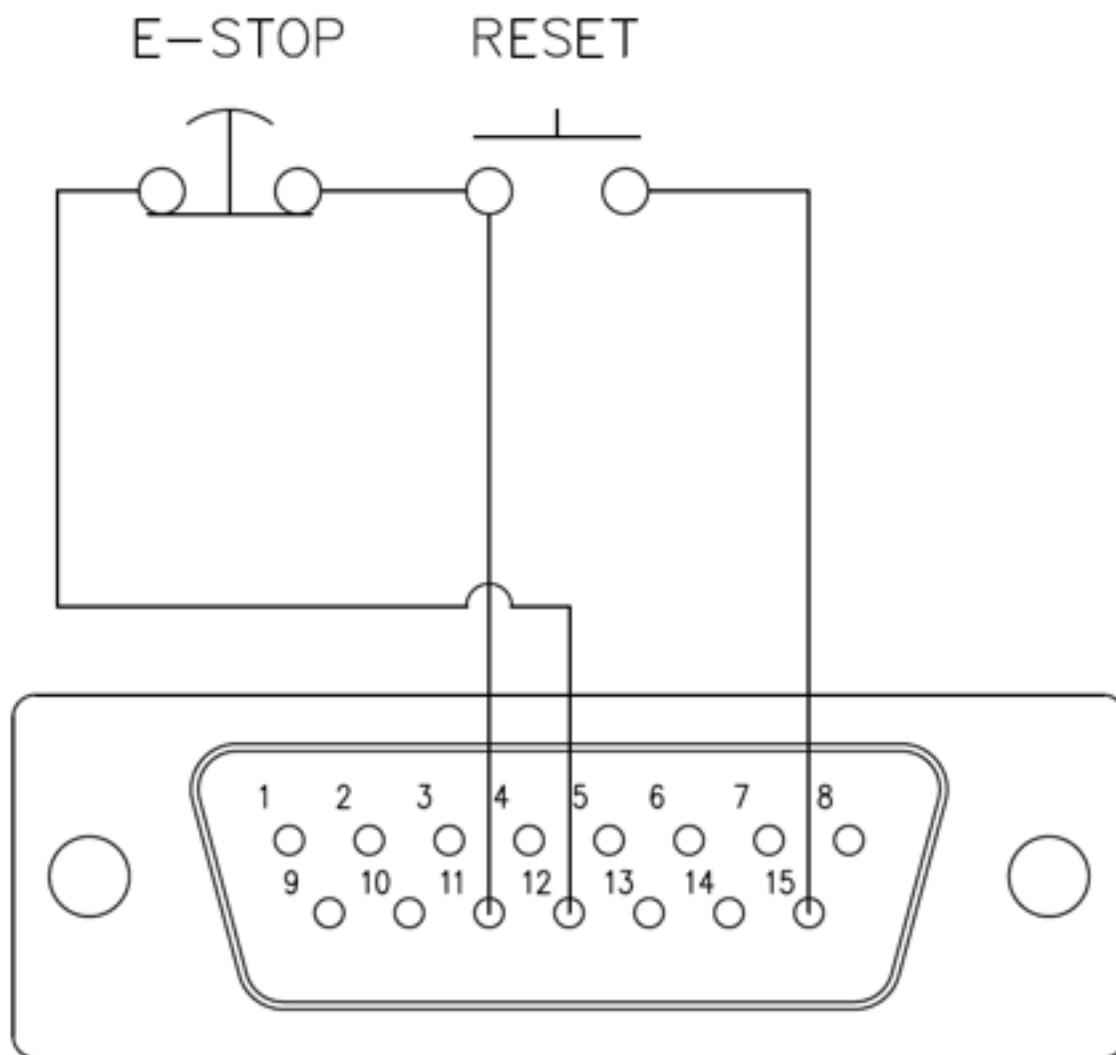
Optional E-Stop Connection

Sample E-Stop Wiring:

Note: Internal E-Stop Jumper must be removed for this option to be utilized.

When interfacing to an automated system, the reset button is not required.

Connect the automated systems safety relay contacts to pins 12 and 15.



SECTION 5

CLEANING & MAINTENANCE

Description	Page
General Cleaning & Maintenance	86
Troubleshooting	87
Fault Messages	88
Replacing Main Power Fuse	89
General Spare Parts Diagrams	90-98

GENERAL CLEANING & MAINTENANCE

The system should be inspected and cared for properly before operation begins. Typical inspection includes confirming correct supply spool loading, web path, checking air pressure, ensuring rollers are clean and free of adhesives, and label feed position. Do not attempt to operate system if not in good working order.

Preventative maintenance procedures should be performed at least once per week. This includes removing adhesive and residual build-up from system components, cleaning the idle rollers, cleaning the tamp pad, and cleaning the rollers in the printer.

To clean adhesive or residual build-up off of guide rollers, brake arms, or the roller assemblies, use only isopropyl alcohol. Other chemicals or abrasive products can cause damage to the system, resulting in poor operation. **Do not use sharp objects or aggressive solvents on the roller assemblies to remove labels or adhesive!**

Use clean, dry, compressed air to remove dust, dirt, or label debris from the label sensor, if applicable. **Do not use any abrasive objects to clean any sensors or electronics, as it will cause un-repairable damage.**

The tamp pad should be cleaned with isopropyl alcohol to remove adhesive or debris build-up. The pad must be clean and smooth for the labels to feed properly. If adhesive is blocking any vacuum holes, use isopropyl alcohol to break down the adhesives and clean the holes. **Do not use sharp objects or aggressive solvents on the tamp pad assembly to remove labels or adhesive!**

TROUBLESHOOTING GUIDE

If the system malfunctions, it is necessary to determine where the problem exists in a normal sequence of operation. The procedure of the unit is outlined in the left-hand column of the table below to provide a systematic approach to troubleshooting.

Problem	Possible Cause	Corrective Action
Unit will not turn on	A. Blown Main Fuse	Check power connection to main control. Check main power fuse and replace, if necessary.
Tamp will not operate	A. Incorrect Cycle Type B. Bad cable C. No tamp duration D. Stuck cylinder	Check Cycle Type setting Check solenoid cable Check tamp setup parameters. Consult factory
Unit will not print or tamp	A. System disabled B. Printer offline C. Incorrect label configuration D. No label format downloaded E. Wrong interface selected F. Interface cable G. Error on printer	Check HLI-200 / Press Enable button Clear printer fault / Un-pause printer Check software Check print buffer / data present Check printer mode <ul style="list-style-type: none"> • Zebra must be set to Mode 1 • Sato must be set to Mode 3 Check printer interface cable Check printer manual
Take-up unit does not turn.	A. Motor not running B. Friction plate failure in clutch C. Mechanical failure in clutch	Check cable / Consult factory Consult Factory Consult Factory
Waste web tension to loosen.	A. Clutch tension too low.	Adjust clutch as shown in Section 2.
Waste web breaks or printing drifts on labels	A. Clutch adjusted to tight. B. Machine Webbed wrong. C. Low quality webbing. D. Friction plate failure in clutch. E. Mechanical failure in clutch.	Adjust clutch as shown in Section 2. Re-web system as shown in Section 2. Consult label converter. Consult factory. Consult factory.

FAULT MESSAGES

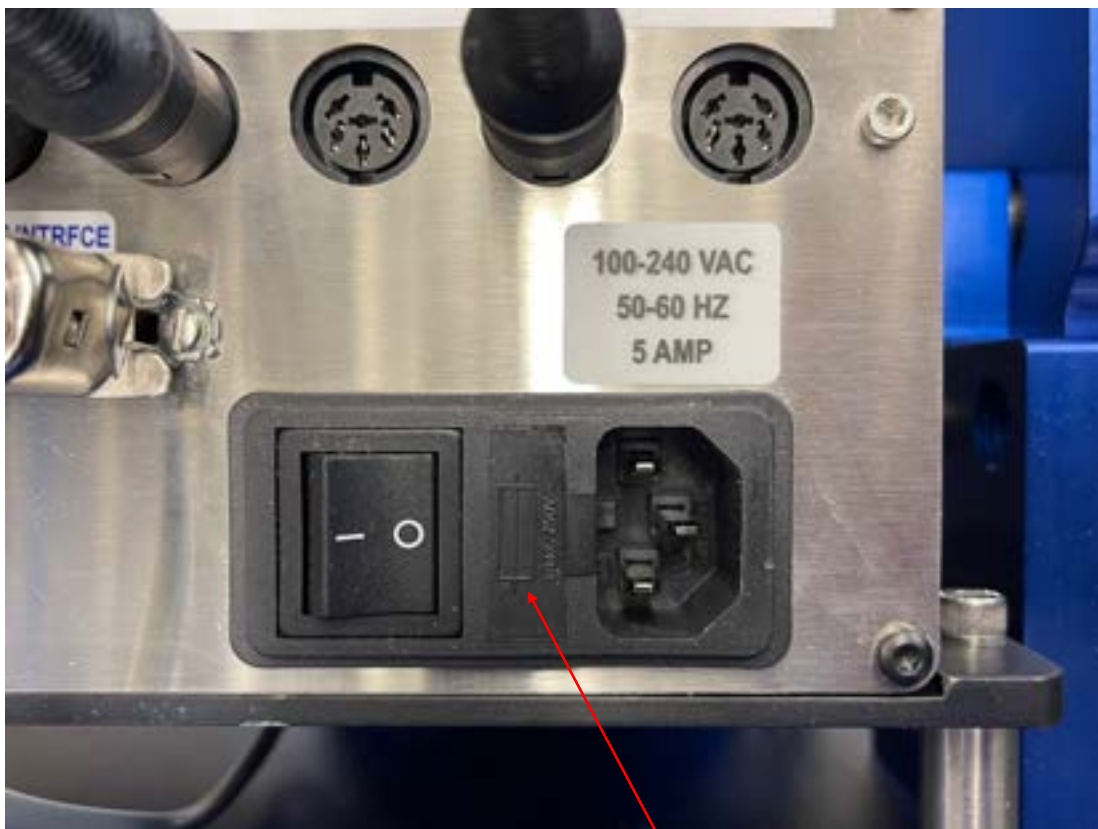
DISPLAYED FAULT	FAULT	CORRECTIVE ACTION
Memory Checksum	Data lost in serial EEPROM	Consult factory or service provider
Print Time Out	Printer failed to print Control failed to receive an "End Print Signal"	A. Printer is offline/paused B. Printer buffer is empty C. Check printer interface cable D. Printer mode incorrect <ul style="list-style-type: none"> • Zebra must be set to Mode 1 • Sato must be set to Mode 3
Head Up Fault	Head up limit switch failed to switch during the tamp cycle. Cylinder did not move off of reed switch.	A. Tamp cylinder is not "up/home" B. Incorrectly adjusted reed switch C. Faulty reed switch D. Tamp duration too small NOTE: Light on reed switch should be on when cylinder is up
Head Down Fault	Head up limit switch failed to switch during the tamp cycle. Cylinder did not return up/home.	A. Tamp cylinder is down B. Incorrectly adjusted reed switch C. Faulty reed switch NOTE: Light on reed switch should be on when cylinder is up
E-Stopped	System is in E-Stop	A. Check cable (DB-15 Male / Aux) B. Check external E-stop hardware C. Consult factory NOTE: E-Stop is optional / not in all configurations
Printer Error	Printer is transmitting an error	A. Printer is offline/paused B. Printer is in error (check printer interface/consult printer manual) C. Check printer interface cable
Pre-Feed Trigger	Pre-Feed trigger input received, but there nothing in printer buffer	A. Check cycle type / correct the setting B. Press clear on HLI-200
Printer Not Ready	Nothing in printer buffer	A. Send print data to printer B. Disable "printer ready" setting C. Check printer interface cable
Ribbon Out	Printer is out of ribbon	Check printer for ribbon
Low Ribbon	Printer is low on ribbon	Check printer for ribbon
Label Out	Printer is out of ribbon	Check printer for label stock

REPLACING THE MAIN POWER FUSE

The circuitry is protected from a current overload by GMA 5A slow blow fuse. Should the applicator fail to operate, the condition of this fuse should be checked. If the fuse is open, the cause of the overload condition must be determined and corrected prior to replacing the fuse. NEVER replace the fuse with one of a greater amp rating. The specified rating has been selected to prevent damage and/or injury.

ACTIONS TO REPLACE THE MAIN FUSE

1. Set the main power switch to the OFF position.
2. Disconnect the AC power cable from the rear of the console.
3. Locate the fuse holder/power cord assembly.
4. Gently press down the fuse holder cover while pulling away from the console.
5. Replace with the spare fuse provided in the holder.



Fuse / Spare Fuse Drawer

General Parts Diagrams

Base Assembly (Right Hand Configuration Shown)

(Standard Base Configuration Shown Below for Reference Only)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PB-E-A0010	TAKE UP ASSY	1
2	PBAA0010	12" STORAGE SPOOL ASSEMBLY	1
3	R-B-A0010	HLI-200	1
4	AD-E-A0010	WEB ROLLER ASSEMBLY	3
5	AXA0010	VALVE PACK ASSEMBLY	1
6	LAXA0013	AIR FILTER REGULATOR ASSEMBLY	1
7	PB-B-A0010	LM3612 CONTROL BOX ASSEMBLY	1
8	CCGA0011	BRAKE ARM ASSY	1
9	Z-Z-EATC26-B	HLI-200 COMMUNICATION CABLE	1
10	GA-B-M0035	HOLSTER	1
11	Z-Z-MM20AS-BN	VACUUM PUMP	1
12	A-D-M0022	AIR ASSIST CLAMP	1
13	A-D-M0023	AIR ASSIST TUBE	1
14	PAXA0011	TAMP WIRING HARNESS	1

3415 WOODEN ST., SHREVEPORT, LA 70504

PECA002 SCALE 1:10

TITLE LABELMILL - SPARE PARTS

DESCRIPTION LM3612 BASE ASSEMBLY QTY. REQ'D: 1

General Parts Diagrams, Continued

Brake Arm Assembly

(Standard Brake Arm Assembly Shown Below for Reference Only)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	CB-G-M0010	BRAKE ARM	1
2	LB-G-M0010	BRAKE ARM SHAFT	1
3	AC-G-M0014	BRAKE PAD	1
4	A-H-M0026	SPRING TENSION ARM	1
5	AD-E-A0010	WEB ROLLER ASSEMBLY	1
6	Z-Z-M9654K241	BRAKE SPRING	1
9	Z-Z-F145C00625SS	1/4-20 X 0.625 SHCS	1
10	Z-Z-F10BH00750SS	10-32 X 0.75 BHCS	2
11	Z-Z-F06BH00500SS	6-32 X 0.50 BHCS	2

★ ITEMS ASSEMBLED WITH BACK PLATE

LM LABELMILL print+apply		000482
3415 WOOD ST. JENNIFER, IL 61759		SCALE 1:3
TITLE: LABELMILL - SPARE PARTS		
DESCRIPTION: BRAKE ARM ASSEMBLY	QTY. REQ'D: 1	

General Parts Diagrams, Continued

Tamp Slide Assembly

(Standard Tamp Slide Shown Below for Reference Only)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	LDA0020P-XXXX	TAMP PAD	1
2	Z-Z-EMRS-_087-PXBL	REED SWITCH	1
3	AC-D-M0028-XX	CYLINDER	1
4	LDM0018	PIVOT SCREW	1

LDA0014
HEAVY DUTY
HINGE ASSEMBLY

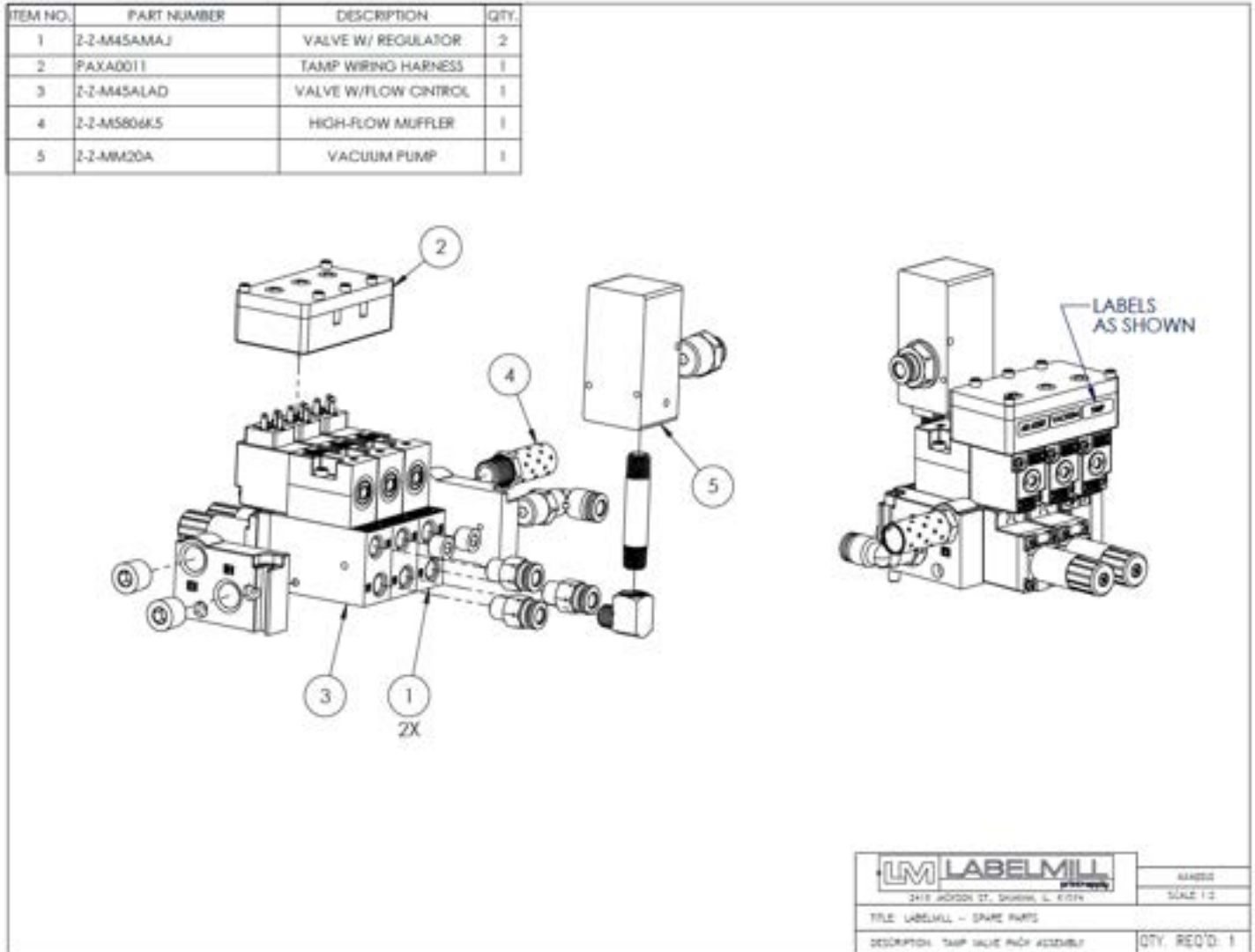
LDA0011
REGULAR HINGE
ASSEMBLY

LM LABELMILL	443-0013-F
DATE: 06/01/2024	SCALE: 1:3
TITLE: LABELMILL - STANDARD SHING OUT SLIDE - SPARE PARTS	
DESCRIPTION: STANDARD SHING OUT SLIDE ASSEMBLY	QTY. REQ'D: 1

General Parts Diagrams, Continued

Valve Pack Assembly

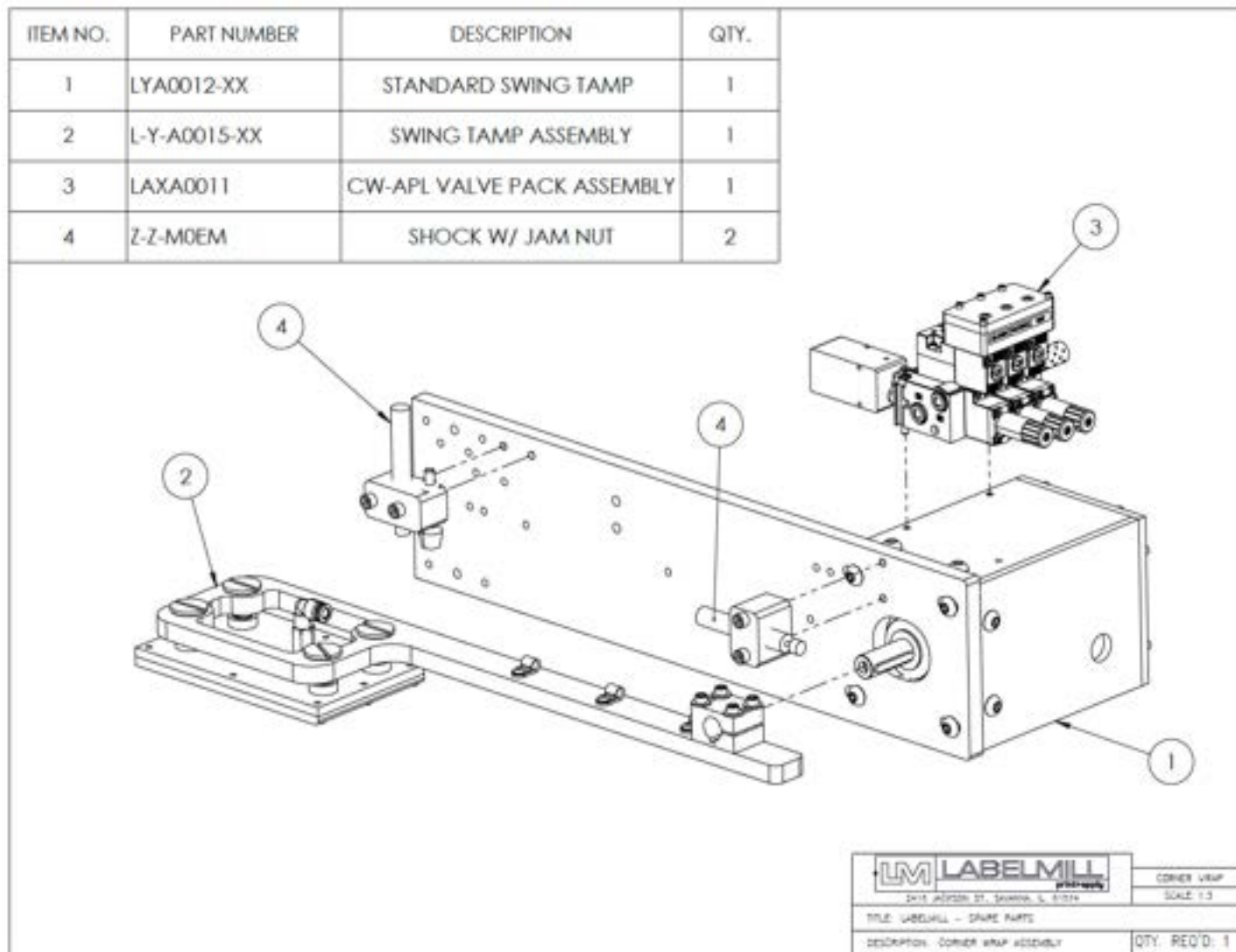
(Standard Tamp Valve Pack Shown Below for Reference Only)



General Parts Diagrams, Continued

Corner-Wrap/Adjacent Panel Arm Assembly (Page 1 of 2)

(Standard Swing Arm Shown Below for Reference Only)



General Parts Diagrams, Continued

Corner-Wrap/Adjacent Panel Arm Assembly (Page 2 of 2)

(Standard Swing Arm Shown Below for Reference Only)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	L-Y-M0011	SWING TAMP CLAMP	1
2	L-Y-M0027	SWING TAMP ARM	1
3	Z-Z-M3877	SPRING	4
4	N-D-M0021	SPRING STOP	4
5	N-D-M0023	SHOULDER BOLT	4
6	L-Y-M0024-1	ALUMINUM BACKING PLATE PAD	1
7	L-Y-M0024-2	ANTI-STATIC PLASTIC PAD	1
8	Z-Z-F38FW0001	3/8 WASHER	4

LM LABELMILL
DATE: 06/01/2024 BY: SHARON L. GIBBY

TITLE: LABELMILL - Swing TAMP - SPARE PARTS

DESCRIPTION: Swing TAMP arm assembly QTY. REQ'D: 1

General Parts Diagrams, Continued

Take-Up Assembly (Page 1 of 3)

(Standard Take-Up Assembly Shown Below for Reference Only)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PB-F-M22XL315	MOTOR PULLEY	1
2	PB-F-M22XL5	CLUTCH PULLEY	1
3	PB-K-M0010	TAKE-UP SPOOL SPACER	1
4	C-F-M0032	CLUTCH FRICTION WHEEL	1
5	C-F-M0019	CLUTCH DISK	1
6	Z-Z-M15010	CLAMPING SHAFT COLLAR	1
7	Z-Z-MTP612	TEFLON WASHER	1
8	Z-Z-MB0XL037	TIMING BELT	1
9	Z-Z-MB68-4	BUSHING	1
10	Z-Z-MLC-046GH-6M	CLUTCH SPRING	1
11	Z-Z-MBDPG-R27	DRIVE MOTOR	1
12	Z-Z-M1604-2RS-NR	BEARING AND E-CLIP	2
13	PAKM0012	SPOOL CLIP	1
14	PAKM0011	TAKE-UP DISK	1

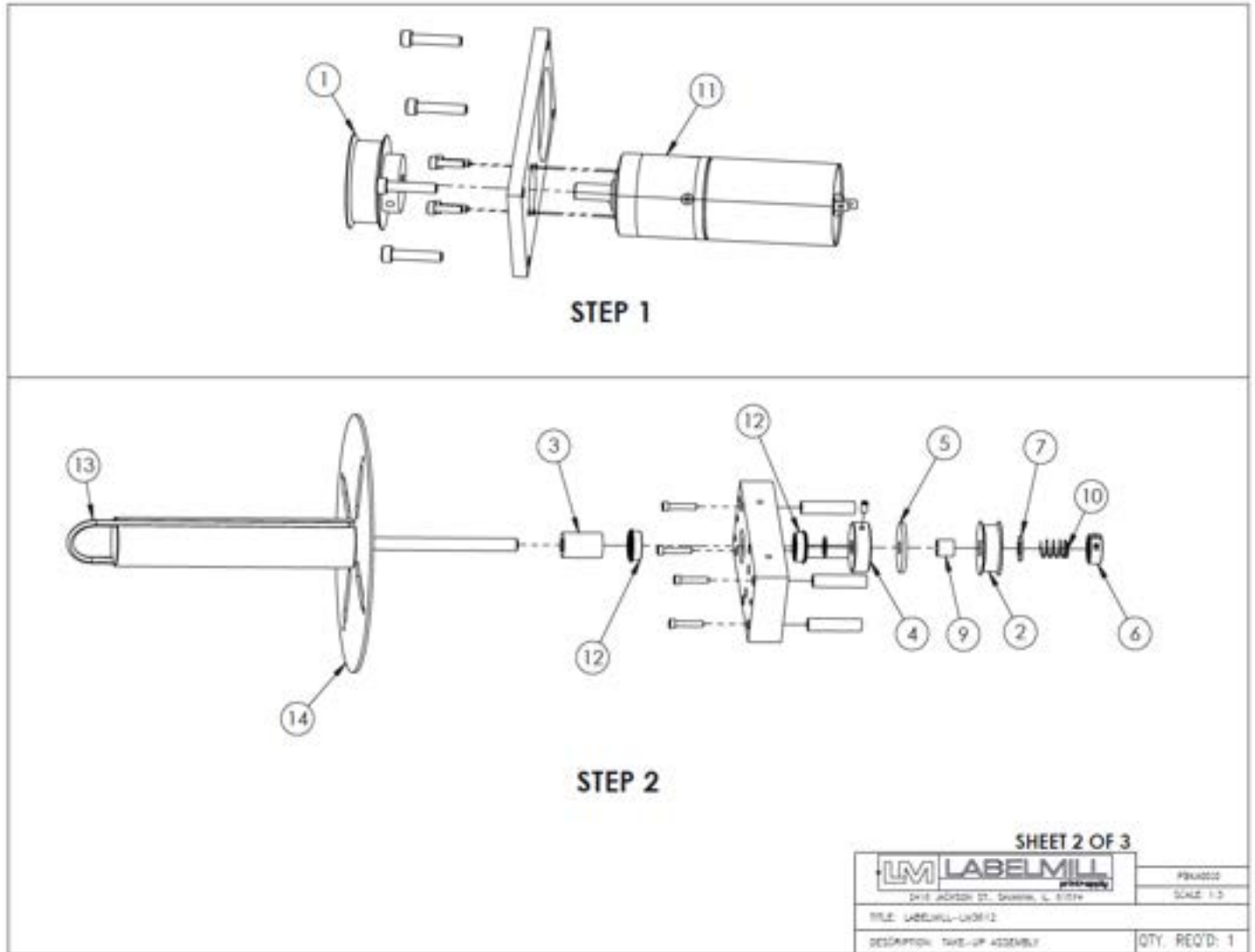
SHEET 1 OF 3

	PKM002
3418 WOODSON ST. SHREVEPORT, LA 70004	SCALE 1:1
TITLE: LABELMILL-LM3612 - SPARE PARTS	
DESCRIPTION: TAKE-UP ASSEMBLY	QTY. REQ'D: 1

General Parts Diagrams, Continued

Take-Up Assembly (Page 2 of 3)

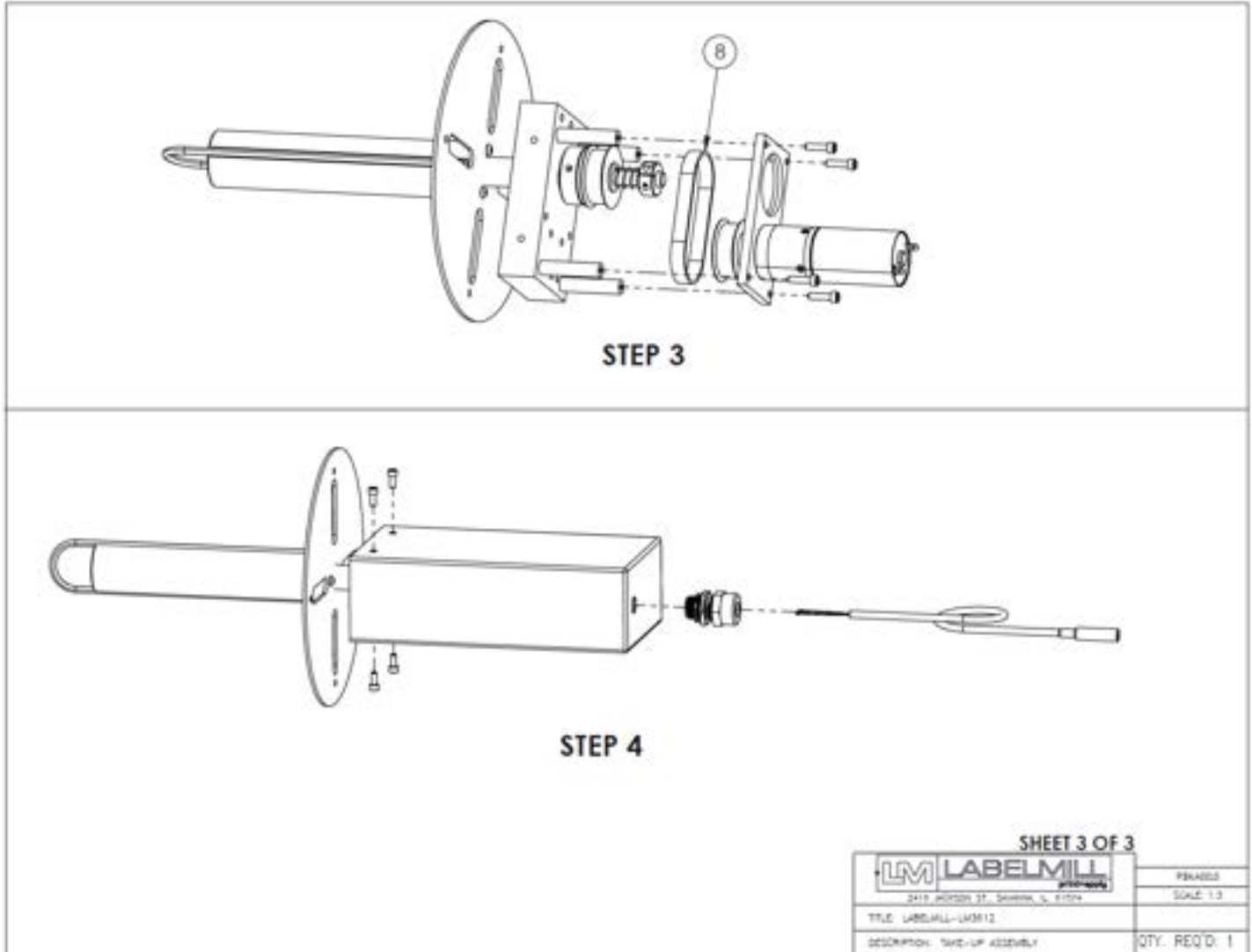
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General Parts Diagrams, Continued

Take-Up Assembly (Page 3 of 3)

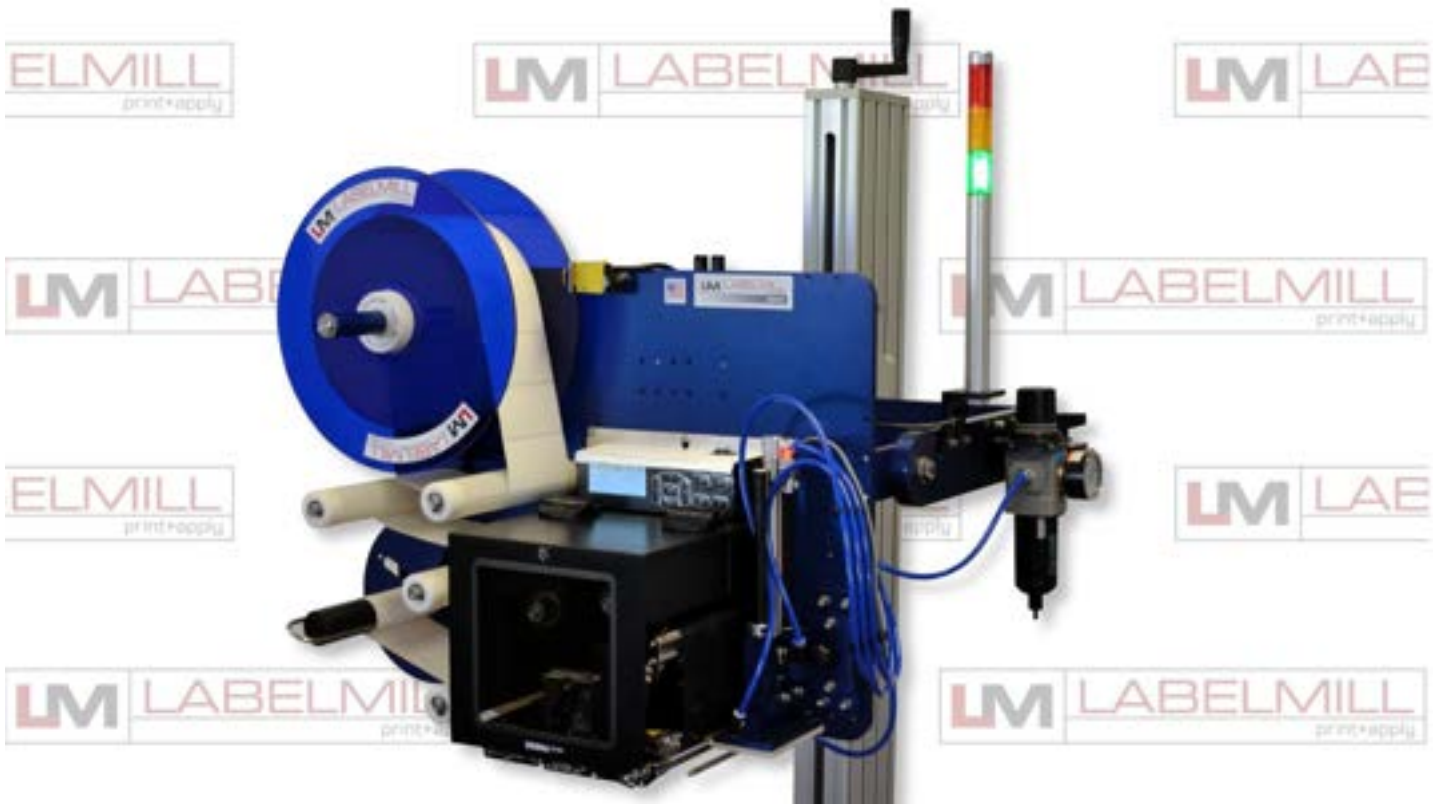
(Standard Take-Up Assembly Shown Below for Reference Only)



LM3612

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OPERATIONS MANUAL



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