



# LM1005

## TABLE-TOP APPLICATOR SYSTEM OPERATIONS MANUAL



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## SECTION 1

# SYSTEM OVERVIEW

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## INTRODUCTION

The **LabelMill LM1005TTS** is a microprocessor controlled, variable speed, heavy-duty industrial table top label application system. Label dispensing to 900 linear inches of label web per minute is combined with exceptional label position repeatability. Automatic feed on label removal. Outboard-supported drive roller to minimize vibration induced label misplacement. Heavy-duty 1/18HP variable speed DC motor drive. Hardened steel peeler plate for reduced wear. Adjustable label sensor for expediting changeover without sacrificing accuracy. The **LM1005TTS** will accept a wide variety of label sizes without the need for part changes. This system can be quickly and easily configured to meet your labeling needs. There is no need for multiple machines with this design. The unique rail mounted application modules makes changeover from one module to another in 5 minutes or less.

### STANDARD FEATURES

- Modular Design
- Easy Set-Up
- Photo Electric Label Sensor

### OPERATIONAL APPLICATOR MODULES

- Tamp Applicator
- Flag Applicator
- Round Product Applicator
- Auto-Round Module

## LM1005TTS SPECIFICATIONS

<b>LABEL SPEED</b>	0 - 900 linear inches of web per minute standard
<b>LABEL ROLL CAPACITY</b>	9" Max. outside diameter wound on a 3" diameter core. Die cut waste removed with a minimum of 1/8" separation between labels in running direction.
<b>LABEL SIZE</b>	Minimum: 1" wide x 1/4" long - Maximum: 4-1/4" wide x 6" long
<b>LABEL PLACEMENT ACCURACY</b>	Up to 1/32" (1mm) when labels are produced to specifications and product handling is controlled.
<b>INTERFACE SENSORS</b>	Product Sensor-Photo Eye-Limit Switch, Label Sensor Switch, Head Up Limit Switch, and Round Product Tamp Switch.
<b>ELECTRICAL</b>	115 V AC/60 Hz - 5A
<b>AIR REQUIREMENT</b>	80p.s.i./3 cfm
<b>SIZE</b>	16"H x 16"W x 16"D
<b>WEIGHT</b>	33 lb.
<b>ENVIRONMENT</b>	Operating Temp. 50-95 F. (10-15 C.) - 15-85% RH. non-condensing

\*Options Available

# INVENTORY LIST

Standard Equipment - LM1005

**QTY. Description**

- 1 Dispenser Assembly
- 2 9" Diameter Blue Plastic Spools w/ Quick Release Collar
- 1 6' Power Cord
- 1 Photoelectric Label Switch
- 1 Take-up Spool Clip
- 1 Label Sensor
- 2 Module Mounting Knobs
- 1 Model LM1005 Operators Manual

Tamp Module - LM1005TM

**QTY. Description**

- 1 Tamp Module Assembly

Flag Module - LM1005FM

**QTY. Description**

- 1 Flag Module Assembly

Round Product Module - LM1005RM

**QTY. Description**

- 1 Round Product Module Assembly

Auto Round System Module - LM1005ARS

**QTY. Description**

- 1 Auto-Round Product Module Assembly

## 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 that 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.

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 **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.

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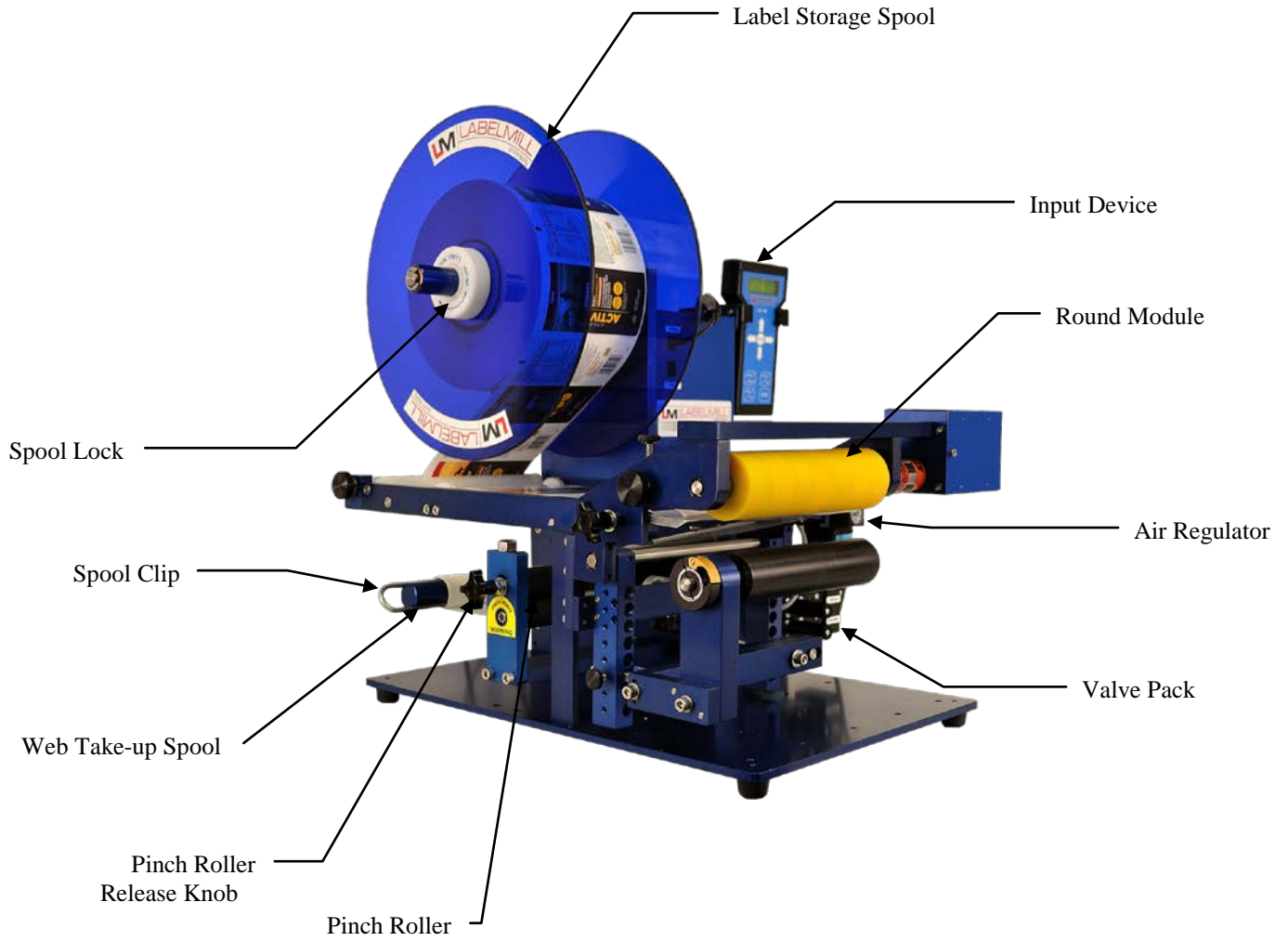
## SECTION 2

# SETUP & OPERATION

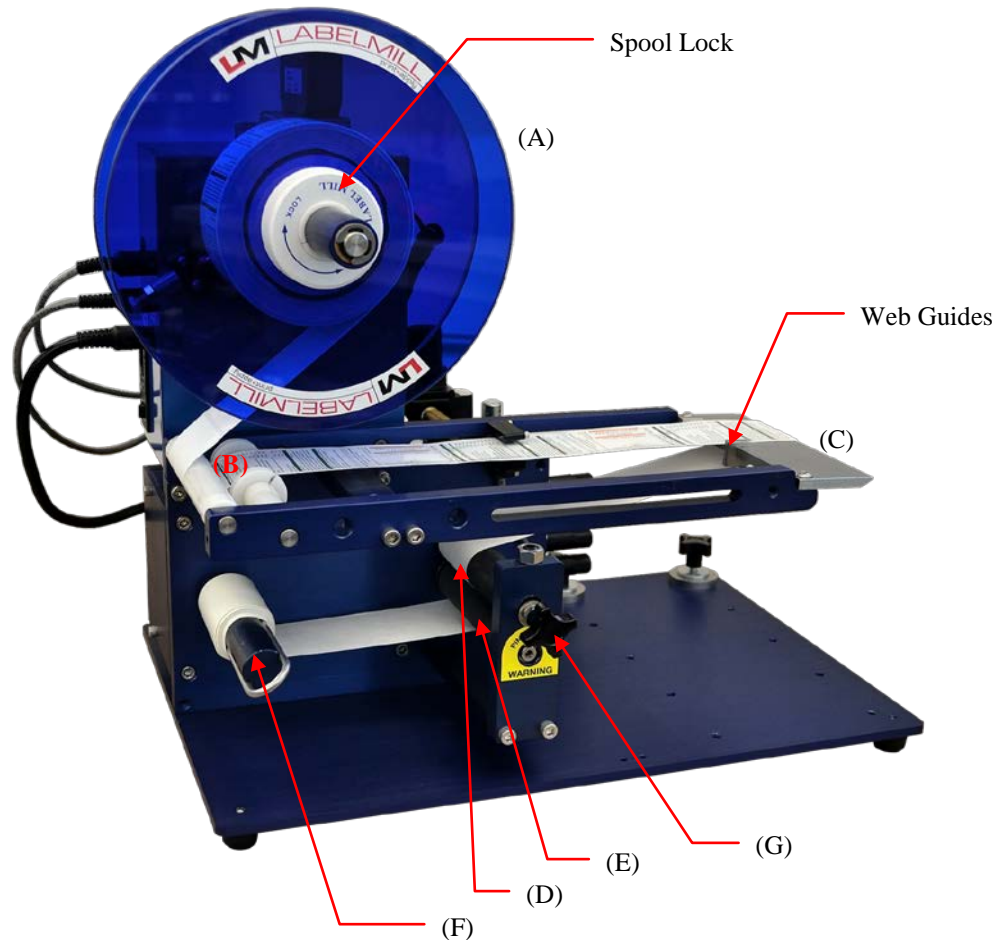
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## COMPONENT DESCRIPTION



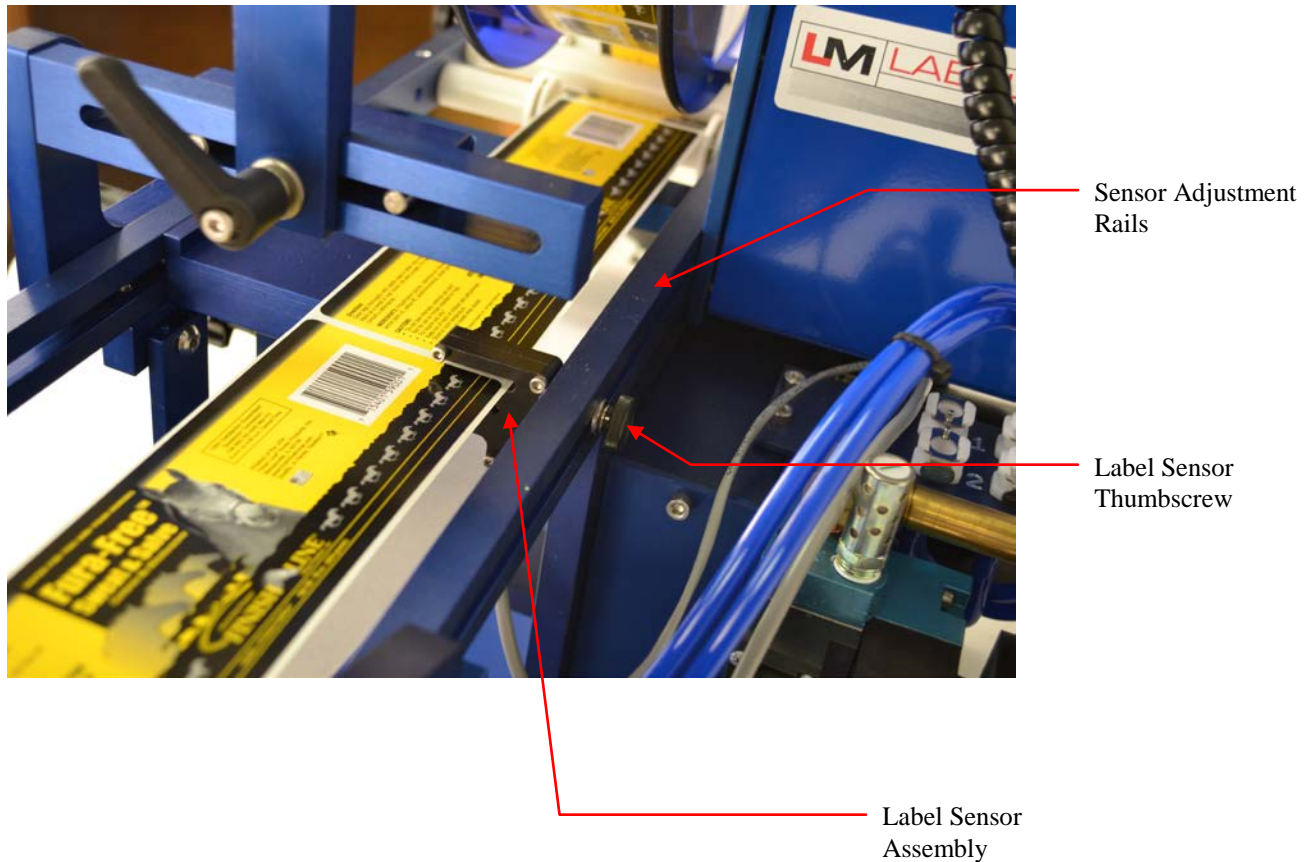
## WEB ROUTING



Step	Operation
1	Load web onto label storage spool (A) so it unloads in a clockwise direction.
2	Insert the web under the first guide roller and over the second guide roller (B).
3	Wrap the web around the peeler plate (C), continuing on to the pinch roller (D).
4	Turn the Pinch Roller Knob (G) 180deg. to open the pinch roller from the drive roller.
5	Feed the web over the top pinch roller (D). Next, slip the web between the pinch roller and the drive roller (E). Continue on by wrapping the web under the drive roller.
6	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.
7	Turn the Pinch Roller Knob (G) 180deg. so that the pinch roller and drive roller contact each other. When the roller is closed, roll the knob back and forth between your fingers so that you can feel a "flat" on the shaft. <b>NOTE: This must be done to ensure proper label feeding.</b>
8	Adjust the plastic web guide clips so the web is guided straight and even. Make sure the clips do not bind the web.

\*\* To remove the label storage spool (A), turn the spool lock counter-clockwise (approx. 15 deg.) 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 the spool lock!

## LABEL SENSOR ADJUSTMENT



- **MANUAL SET GAP**

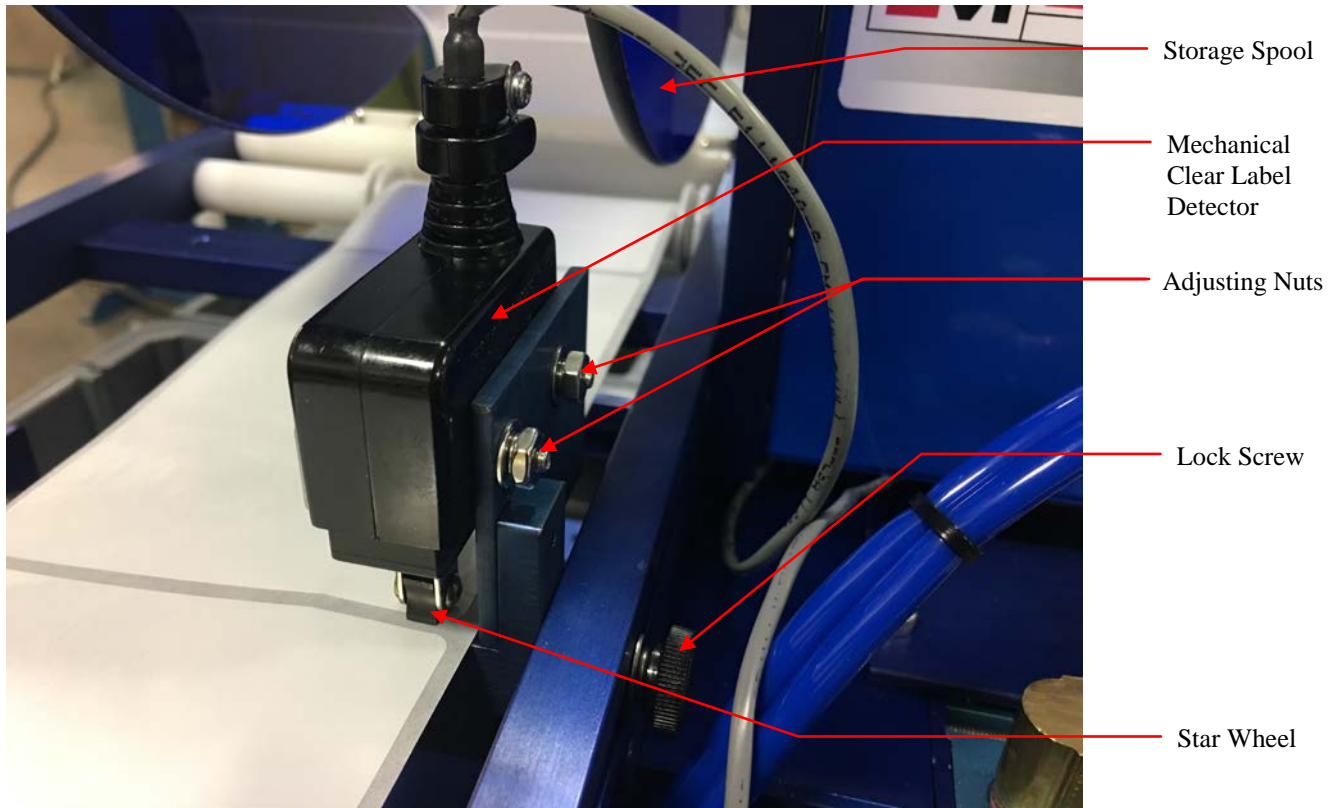
MANUAL SET GAP is used to manually set the label sensor to the label stock that is webbed in the applicator. This step is automatically taken care of in the AUTO SETUP mode covered in QUICK SETUP chapter. If the values the applicator calculated are in question, the following will allow manual calibration of the label.

1. Go to MANUAL SET GAP press “enter”
2. Move label in label sensor gap until the LOWEST value is displayed – press “enter” (center of label)
3. Move label in label sensor gap until the HIGHEST value is displayed – press “enter” (gap between labels)
4. GAP THRESHOLD is now displayed. This is the difference between the highest value and the lowest value.
5. GAP THRESHOLD can be manually over ridden for difficult labels.

- **LABEL PLACEMENT IN RELATION TO THE PEELER PLATE**

Loosen the lock screw on the photo eye assembly and slide it forward or backward in the adjustment slot to achieve placement of the label with the peeler plate nose (+/- 1/32). After adjustment, cycle the labeler to verify new label placement.

## MECHANICAL CLEAR LABEL DETECTOR



The Mechanical Clear Label Detector comes preset from the factory and should require no adjustment. If there is a need to readjust the sensor, the following is a guide: Move the label stock until the gap between the labels is centered under the Star Wheel and the star wheel is laying flat on the label stock as shown above. This can be accomplished by unwinding the label storage spool enough to make the web "loose". To test adjustment, move the label stock gap back and forth under the photo eye slowly. The STAR WHEEL catches the edge of the label stock and flips from one flat to the next. The STAR WHEEL detects the gap between the labels by catching the edge of the label as it is fed. When the star wheel catches the edge of the label, the wheel will quit sliding and rotate. The diameter across the flats of the star wheel is smaller than the diameter across the points. When the star wheel rotates, the micro switch is activated indicating the gap in the label stock.

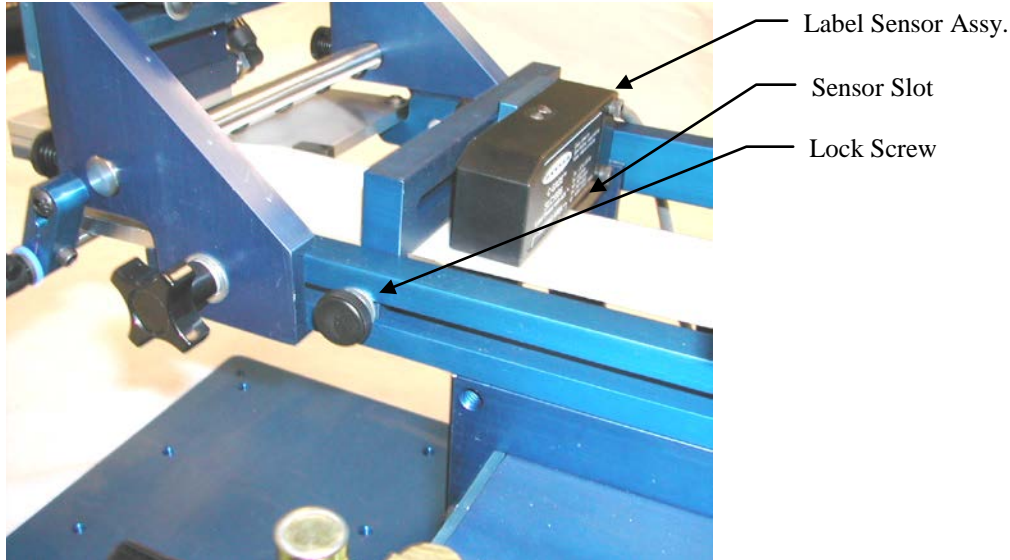
If double or multiple label feeding occurs, and the micro switch is always activated, loosen the adjustment nuts and slide the micro switch up away from the label.

If double or multiple label feeding occurs and the micro switch never activates, loosen the adjustment nuts and slide the micro switch down towards the label.

### LABEL PLACEMENT IN RELATION TO THE PEELER PLATE:

- Loosen the lock screw on the **Mechanical Clear Label Detector Assembly** and slide it forward or backward in the adjustment slot to achieve placement of the label with the peeler plate nose (+/- 1/32). After adjustment, cycle the labeler to verify new label placement.

## ELECTRONIC CLEAR LABEL DETECTOR (ECLD)



The Electronic Clear Label Detector is self-teaching and comes preset from the factory. It should require no adjustment.

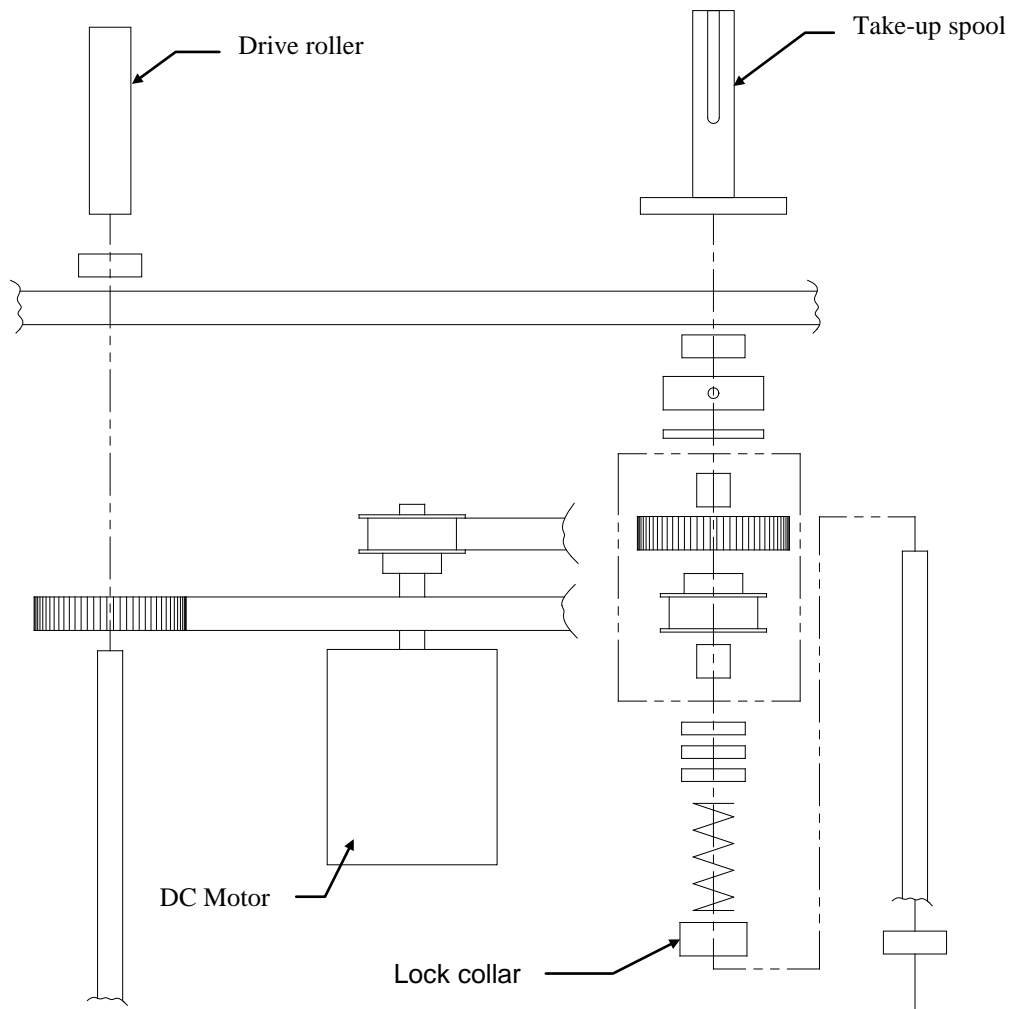
### INSTALLATION:

- Turn the power off and unplug the LM1005TTS. The Electronic Clear Label Detector (“ECLD”) comes wired with a connector. Unplug and remove the current label sensor and install the “ECLD” on the peeler arm as shown above. Plug the connector into the socket labeled “Label Sensor”. The “ECLD” should now be functional and the machine is ready to be calibrated.

### LABEL PLACEMENT IN RELATION TO THE PEELER PLATE:

- Loosen the lock screw on the **Electronic Clear Label Detector Assembly** and slide it forward or backward in the adjustment slot to achieve placement of the label with the peeler plate nose (+/- 1/32). After adjustment, cycle the labeler to verify new label placement.

## DRIVE MOTOR PACK



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.

## SECTION 3

# PROGRAMMING AND CONTROL OPERATION

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# HAND HELD LABELER INTERFACE HLI-100





## ACCESSORY CONNECTIONS

LOCATED ON BACK OF LABELER BACK PLATE





# SETUP

## PROGRAMMING

All programming is performed via the **HLI-100** keypad and display as shown on page 3-1. 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-100 and then the *MODEL NUMBER & REVISION* of the labeler control. After this, the screen will now display the counter, *TOTAL XXXXXXXX*.

- **KEY FUNCTIONS:**

**“PROG”** PROGRAM KEY IS USED TO:

1. **Enter and exit** the program menu.

**“ENTER”** KEY IS USED TO:

1. Access or “Enter” the selected “PROGRAM BLOCK”. (example PRODUCT SENSOR or TAMP SETUP)
2. Access or “Enter” the **data selection/options** line (bottom line of display) of the “PROGRAM BLOCK” **Sub Menus**.
3. Store the selected data.

**UP / DOWN ARROW** KEYS ARE USED TO:

1. Scroll up & down through the primary menu “PROGRAM BLOCKS” . (Header name)
2. Scroll **sub menus** inside of “PROGRAM BLOCKS”. (top line of display while **IN** a “PROGRAM BLOCKS”)
3. Increment and decrement programmable values.
4. Select different display views while in the “RUN” mode.

**Left / Right ARROW** KEYS ARE USED TO:

1. Move the “up carrot” left or right when programming a value.

**START / ENABLE** KEY:

1. Start key will initialize the application cycle.
2. Enable key will “Enable” the drive after it has been disabled.

**CLEAR / STOP** KEY:

1. Stop key will abort the cycle only when not in the program menu.
2. Clear key will delete stored values while in the edit mode.
3. Clear key will disable the drive.

**ESC (escape)** KEY:

1. Will back out of the sub programming menu without saving changes.

### • PASSWORD

The 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 to 7074 and NO MENUS are locked. The password cannot be changed.

### • AUTO SET GAP

The AUTO SET GAP function is used to set label sensor values. (Note that when using a Clear label detector the sensor values are not relevant) The label speed (IPM) can be set to fine tune this option. It is recommended to leave the IPM set to 300 or set it at the current application speed.

### • PRODUCT SENSOR

This is an external device that when "activated" starts the application cycle.

#### PROGRAMMABLE BLOCKS:

Product Delay – Delays the application of the label (x) seconds after the sensor has been activated.

Sensor Trigger – Designates whether the product sensor is activated at the leading or trailing edge of the product.

Multiple Feed – How many labels are applied to one product with one signal.

Interval Delay – Amount of time in seconds between multiple fed labels Note: only active if quantity 2 or higher

### • TAMP SET UP

This is used to adjust the different variables related to the tamp cycle.

#### PROGRAMMABLE BLOCKS:

Tamp duration – Used to adjust the time that the tamp cylinder valve is actuated. (0.000 to 9.999)

Flag duration – Used to adjust the time the flag jaws are held open after label application. (00.00 to 99.99)

Head up limit switch – Type: **normally open**-standard, normally closed, none

Head up Debounce – Debounce is used to allow time for the tamp cylinder to settle on return. (00.00 to 01.00)

Vacuum Release – Used to release label when tamping on light products.

Vacuum Delay On – Used to reduce label flutter when feeding large labels while tamping.

Roller Stop Delay – Delays the wrap roller from stopping after the label feed (round module) (0.250 to 2.500)

Label Feed Delay – Delays the start of the label feed after the carriage pivots up (round module .025-3.00)

### • LABEL SPEED

This is used to set the speed that the label is fed.

#### PROGRAMMABLE BLOCKS:

Inches per minute – Feeds the label at (x) inches per minute. Note that the speed that is entered is only for reference. The LM1005 has an open loop DC motor drive that will cause the speed to vary based on the label size.

### • COUNTER

Used to reset the internal counter of the control.

## • LABEL SENSOR

Provides the ability to select different label sensor types and also set the parameters within these sensor types.

### PROGRAMMABLE BLOCKS:

I-Mark/Gap/CLR – Used to select type of label sensor; “I-MARK” labels, normal “GAP” & “Clear” labels

Manual Set Gap – Automatically sets the emitter voltage when sensor is held on gap between label stock.

Gap Threshold – Voltage differential needed to trigger control. (sensitivity)

Label Stop Position – Electronically adjusts label stop position in reference to the peeler plate point.

## • CYCLE TYPE

Cycle Type determines the application type and sequence in relation to the label feed.

### PROGRAMMABLE BLOCKS:

*Cycle Select (Select Appropriate Application Type)*

- *No Tamp*
- *Tamp Before Feed*
- *Tamp After Feed*
- *Blow Before Feed*
- *Blow After Feed*
- *Round Module*
- *Auto Round Module*
- *Clam Shell Module*

*Printer - On/Off*

*Reprint - On/Off*

*Flag - Enabled / Disabled*

*Inkjet/Imprinter - Press Enter*

*Pulse Duration - Pulse Time*

## • JOB STORAGE

Used to store frequently used settings pertaining to different labeling jobs.

### PROGRAMMABLE BLOCKS:

SAVE JOB – Stores settings for active job.

RESTORE JOB – Restores saved job.

## • DEFAULT SETTINGS

This setting will return the controller to the default settings. (Wipe on mode)

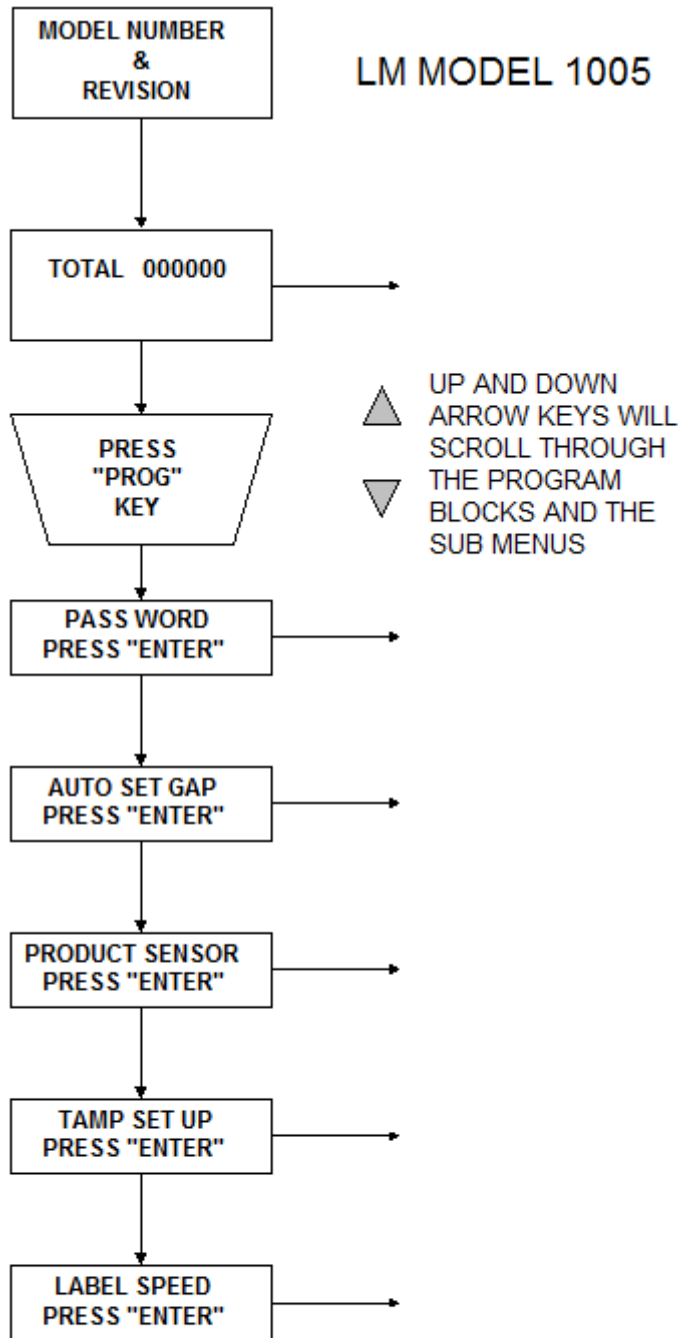
## • I/O STATUS

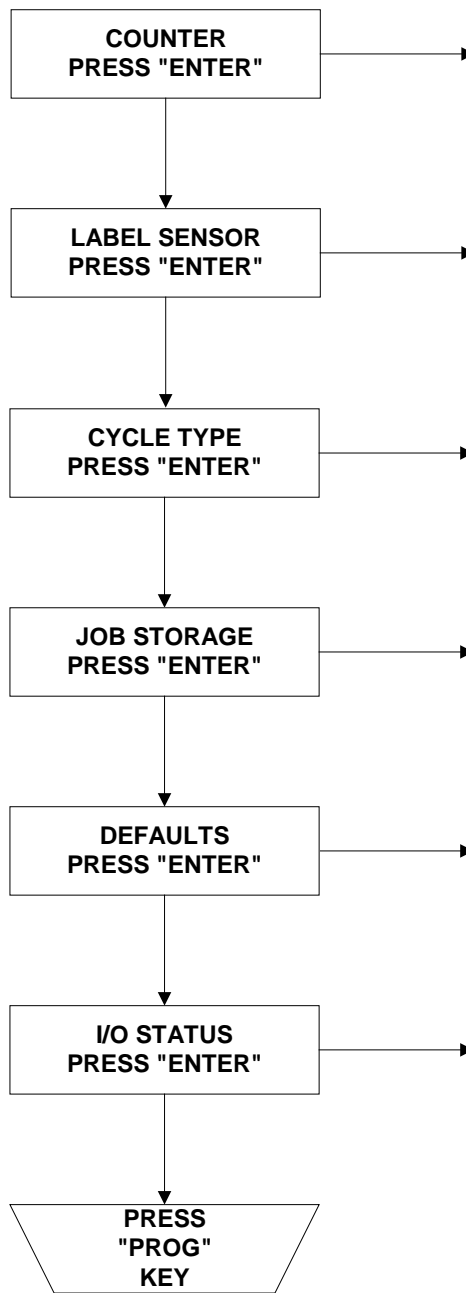
Displays the status of the inputs and outputs.

## • MOTOR TEST

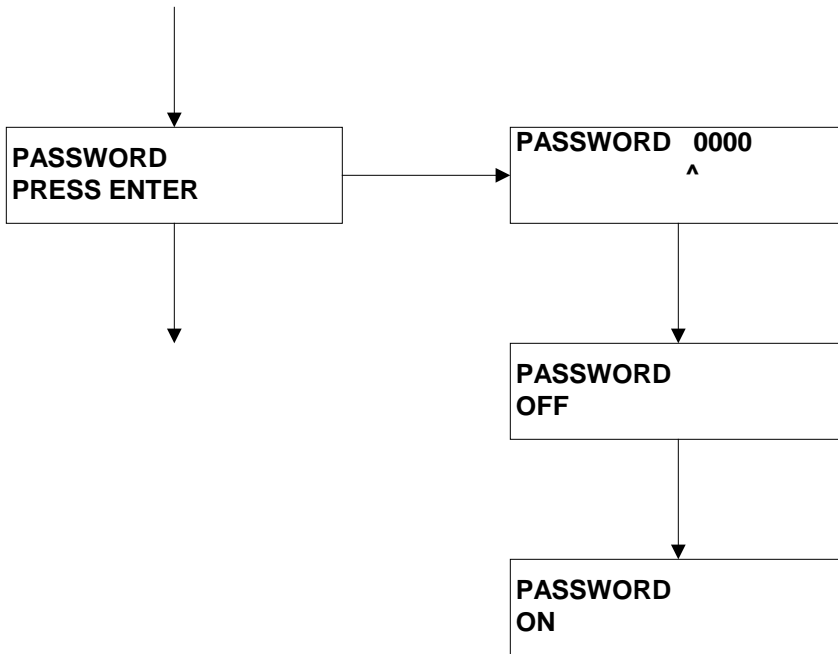
For factory use only.

# QUICK PROGRAMMING CHART

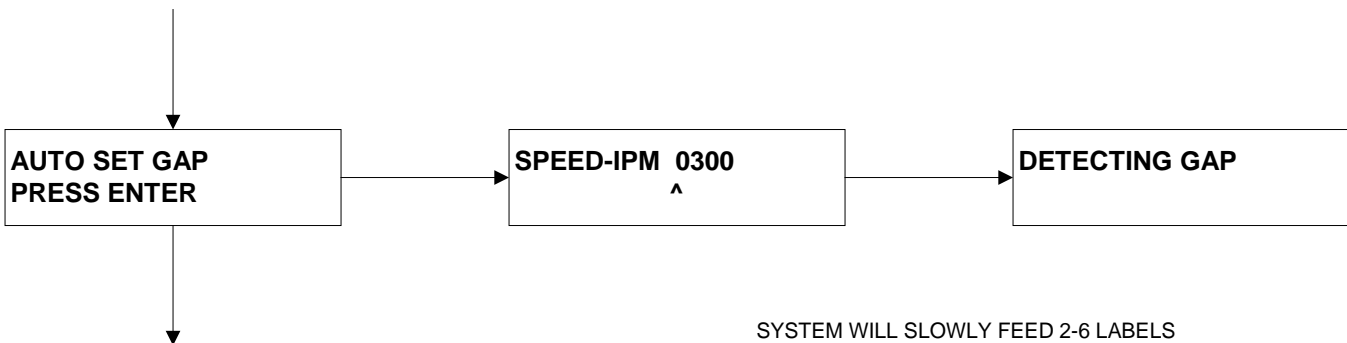




## MAIN DISPLAYS

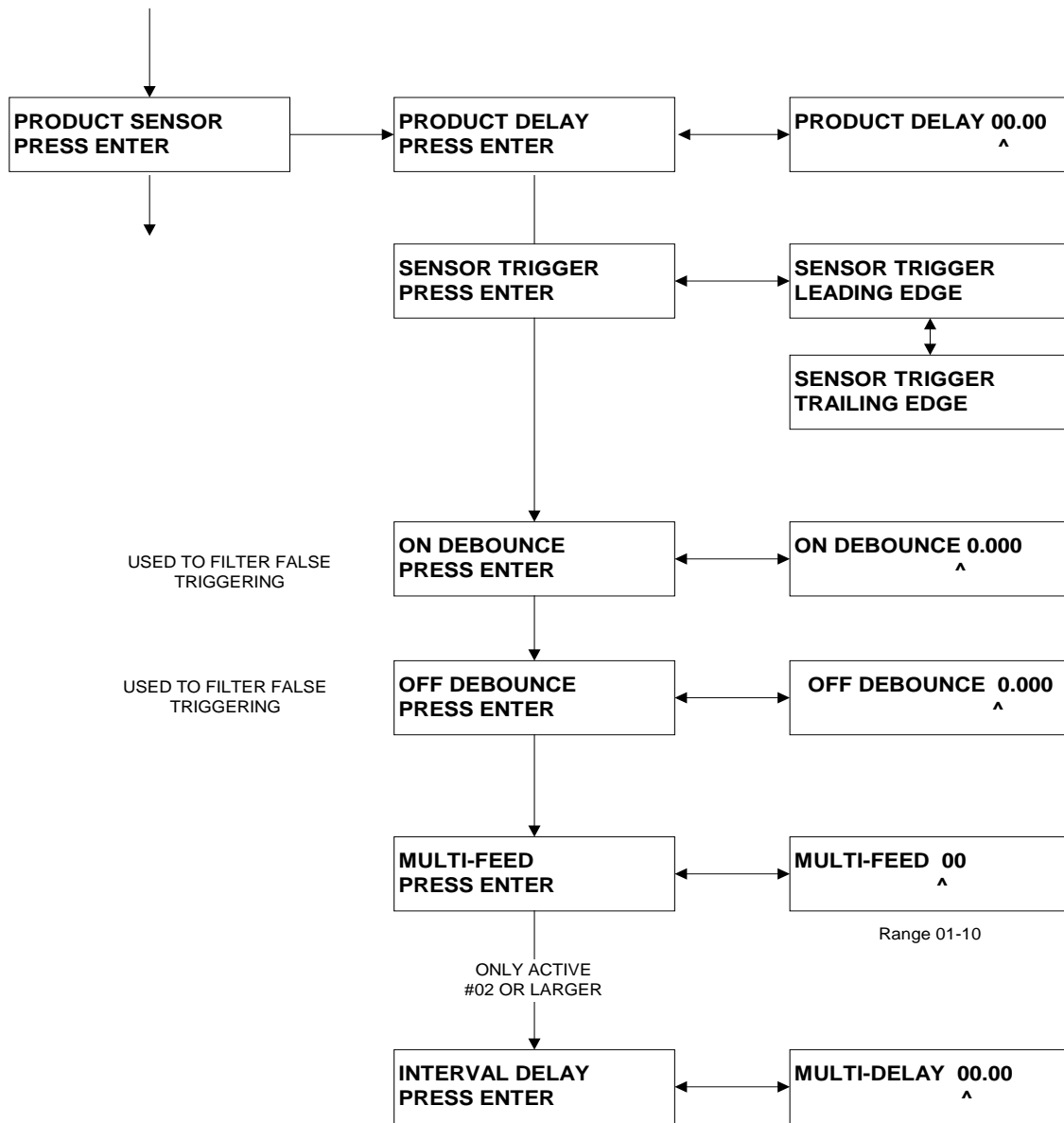


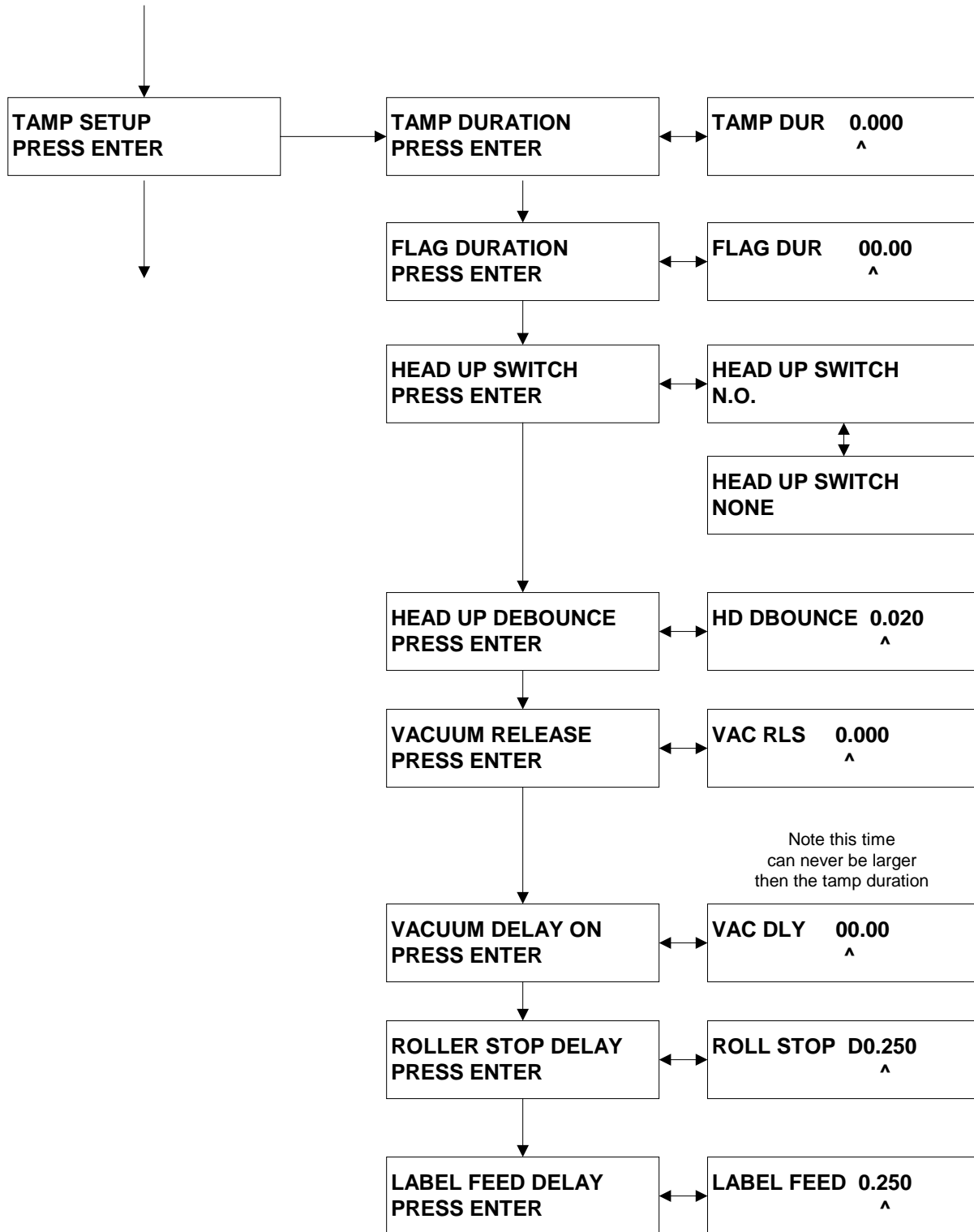
Note: use UP and DOWN arrows to toggle between "ON" and "OFF". The enter key will save selection.

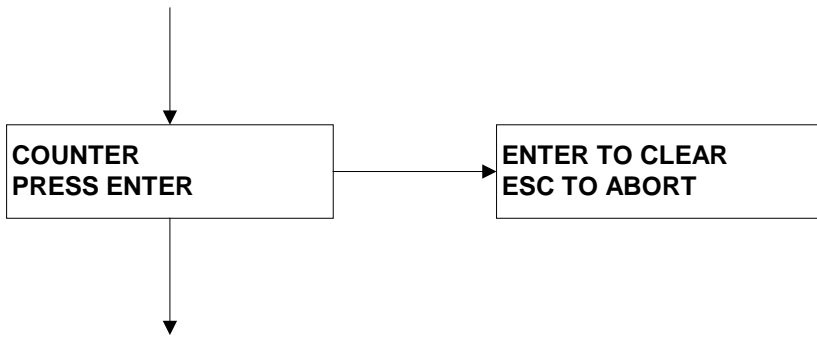
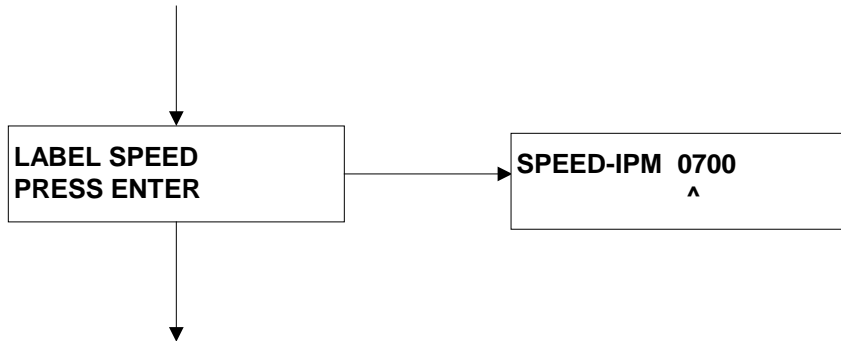


SYSTEM WILL SLOWLY FEED 2-6 LABELS AND AUTO SET PE THRESH HOLD. IF THE GAP CAN NOT BE DETECTED THE DISPLAY WILL READ "GAP NOT DETECTED".

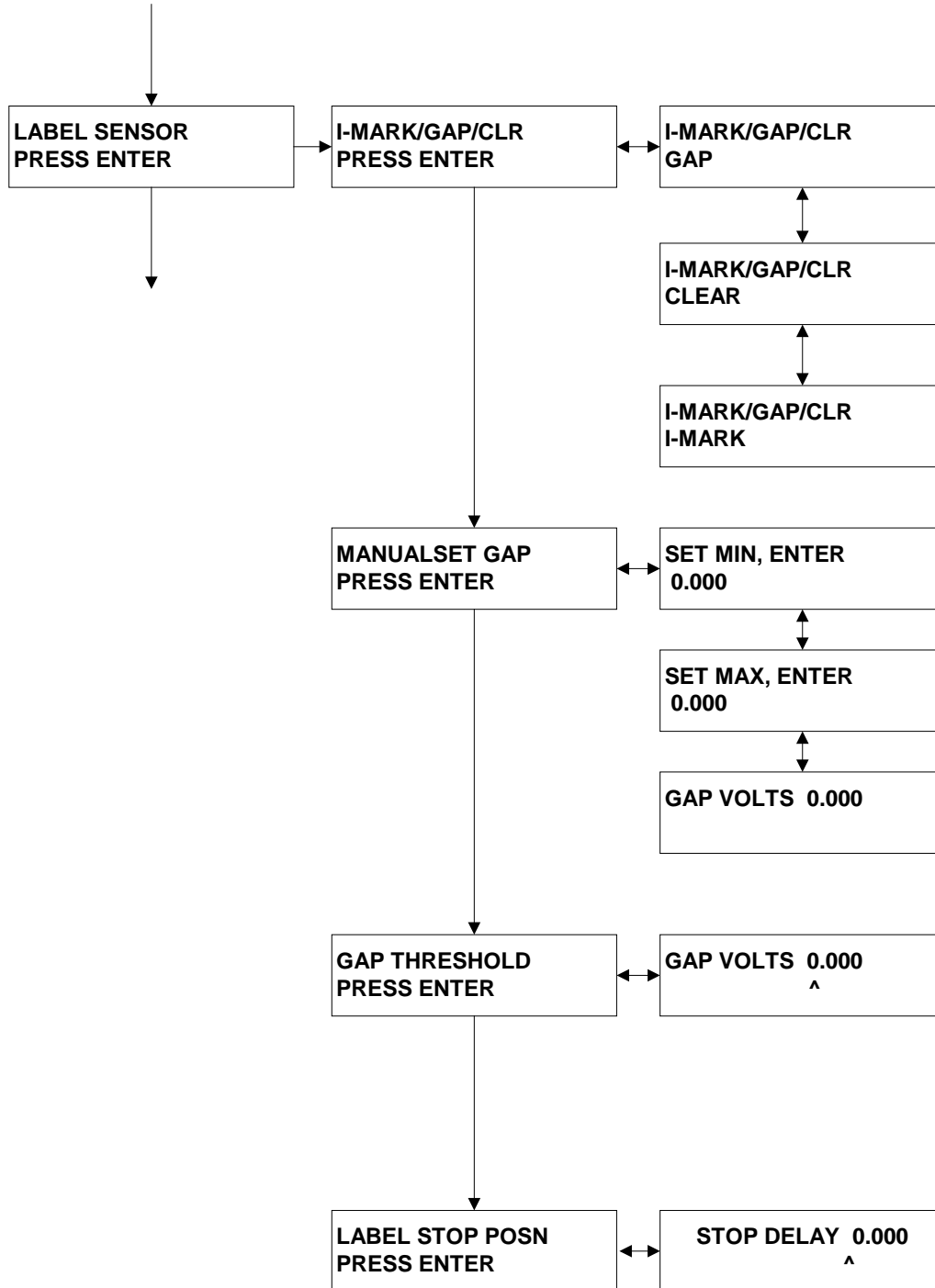


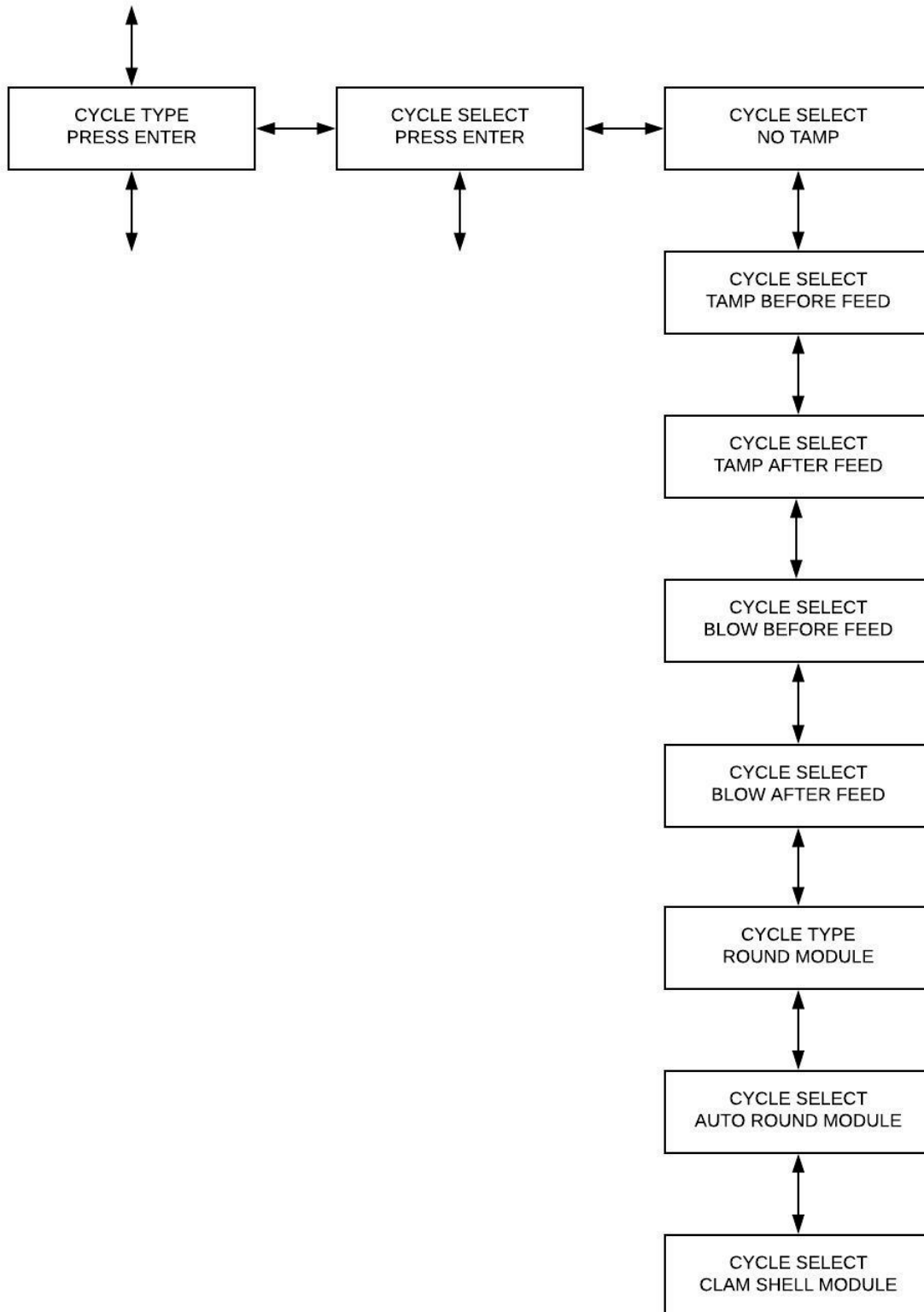


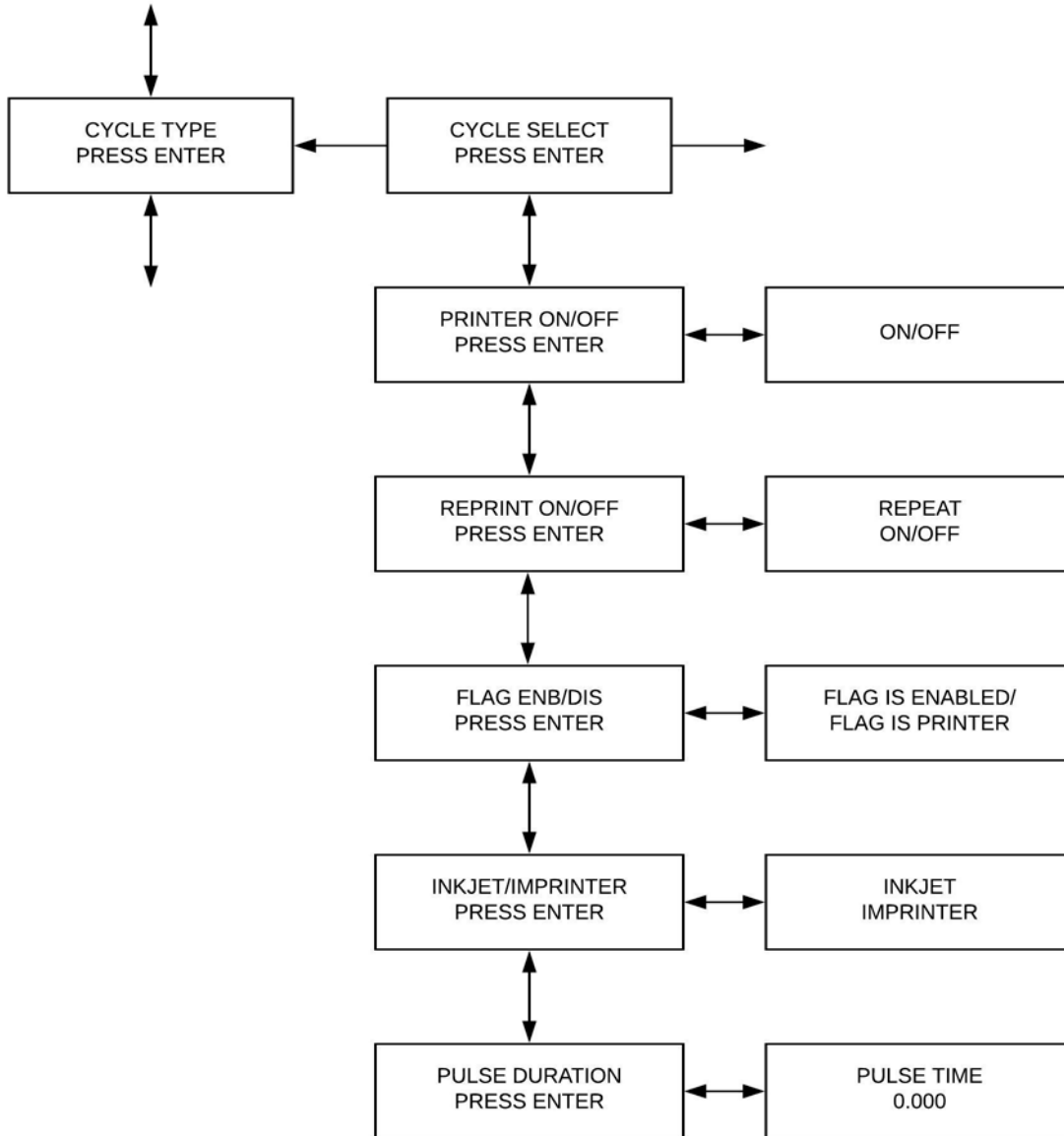


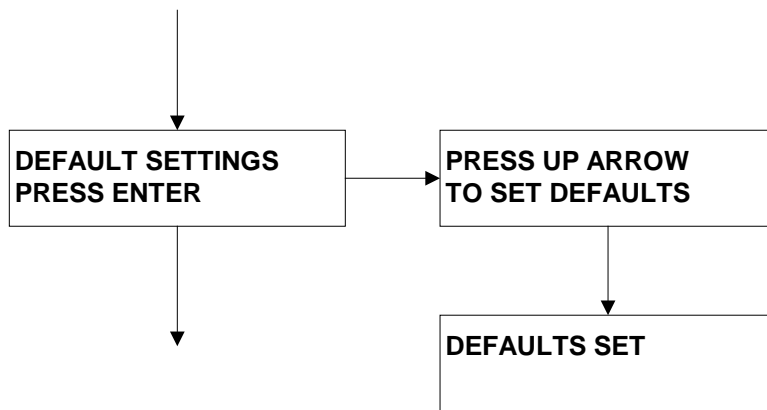
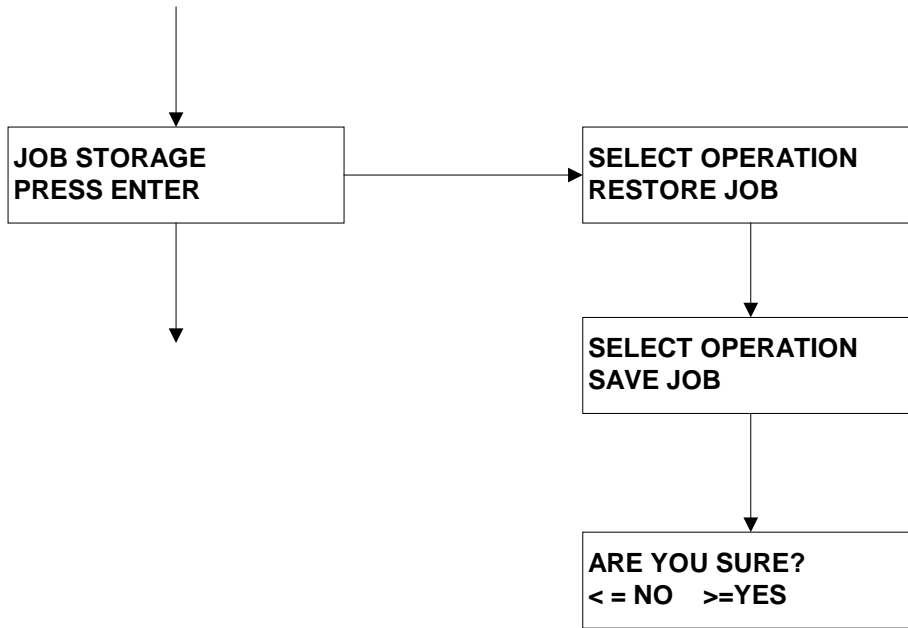


USER'S MANUAL

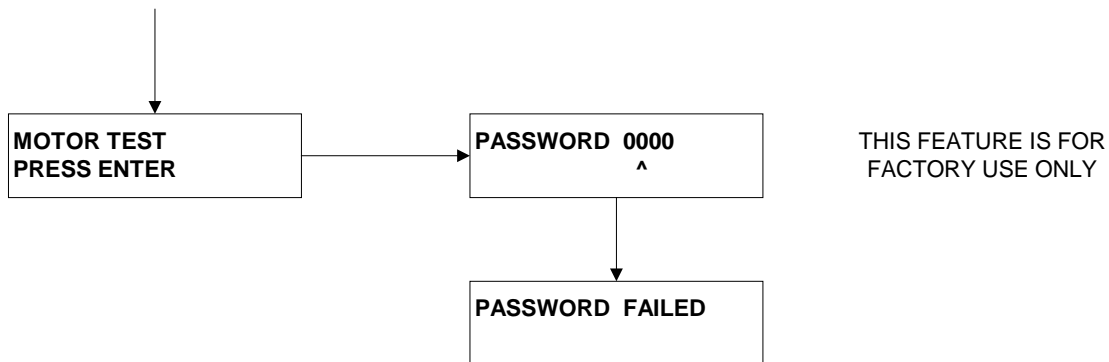
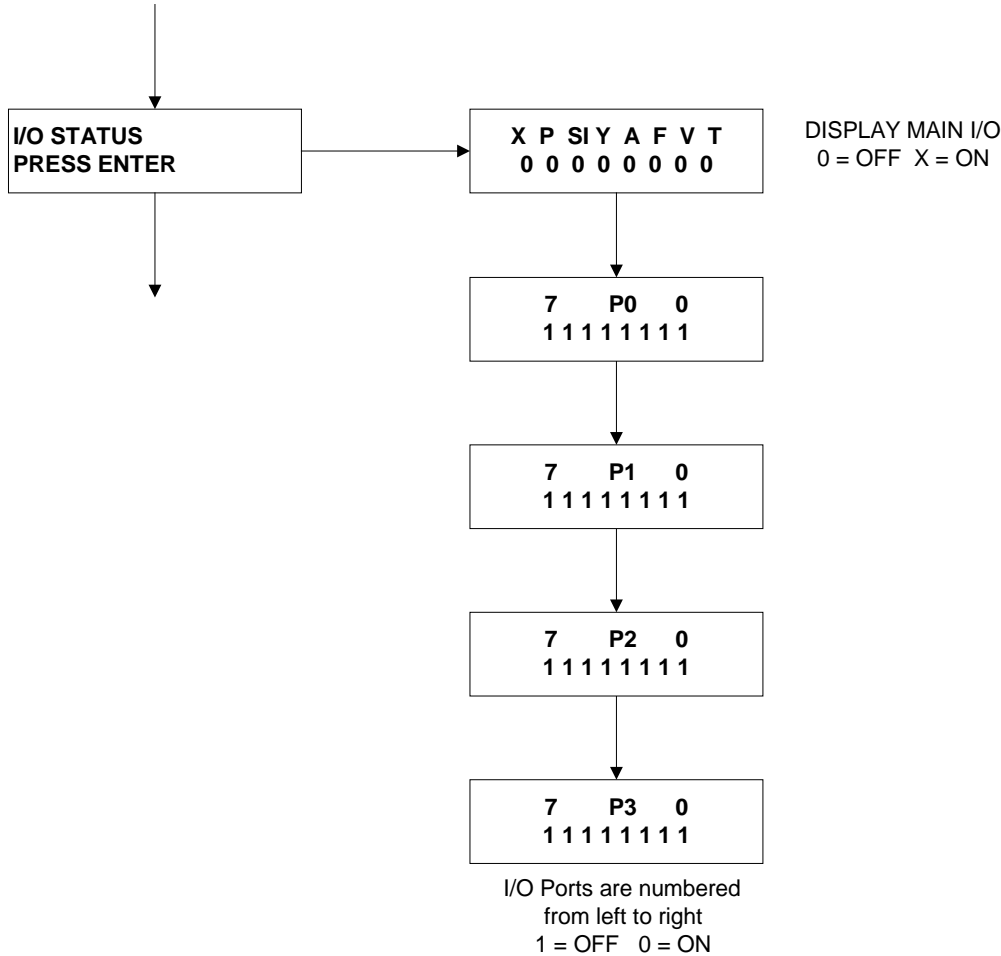








USER'S MANUAL





## KEY DEFINITIONS

- **ASYNCHRONOUS OPERATION** – The term “ASYNCHRONOUS OPERATION” is used because the speed of the applicator motor (label speed) does not necessarily match the speed of the product conveyor. In other words their speeds are set independently of one another and have NO interrelation. An example of this is when the applicator is configured in the tamp mode.
- **SYNCHRONOUS OPERATION** – The term “SYNCHRONOUS OPERATION” is used because the speed of the applicator motor (label speed) is matched to the speed of the product conveyor.
- **PRODUCT DELAY** 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.

## SETUP OF KEY FEATURES

### • LABEL STOP POSITION

LABEL STOP POSITION is used to electronically move the stop position of the label on the applicator ONLY. The setup below describes how to use the LABEL STOP POSITION. The STOP DELAY is used to delay the “stop” position of the label relative to the peeler plate. If a “time” is entered into the STOP DELAY, the label will advance further out on the peeler plate.

1. Set basic applicator up first, refer to quick setup.
2. Operate applicator at desired label speed.
3. Manually move the label sensor to adjust the label stop position or the label stop position can also be electronically adjusted using the LABEL STOP POSITION. The proper stop position will be with the leading edge of the label stopping flush with the tip of the peeler plate. If this option is used the distance must be kept to a minimum.
4. Operate the applicator again at the same speed.
5. Does the label stop at the tip of the peeler plate? Yes = task complete NO = continue
6. Enter a small “time” in the STOP DELAY.
7. Operate system at the same speed again and check label offset.
8. Make the necessary adjustments to the STOP DELAY.
9. Test again; repeat if necessary until label is in proper registration to the peeler plate tip.

Note: The STOP DELAY distance CAN NOT be greater than half the length of the label. If the STOP DELAY time is too large, inconsistent and double label feeding will occur.

### • PRODUCT DELAY

PRODUCT DELAY is used to electronically move the placement of the label on the 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 CAN NOT 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.

- **MANUAL SET GAP**

MANUAL SET GAP is used to manually set the label sensor to the label stock that is webbed in the applicator. This step is automatically taken care of in the AUTO SETUP mode covered in QUICK SETUP chapter. If the values the applicator calculated are in question, the following will allow manual calibration of the label.

1. Go to MANUAL SET GAP press “enter”
2. Move label in label sensor gap until the LOWEST value is displayed – press “enter” (center of label)
3. Move label in label sensor gap until the HIGHEST value is displayed – press “enter” (gap between labels)
4. GAP THRESHOLD is now displayed. This is the difference between the highest value and the lowest value.
5. GAP THRESHOLD can be manually over ridden for difficult labels.

## QUICK START GENERAL SETUP

1. Inspect applicator system and verify all cables are installed properly.
2. Web system with labels.
3. Turn power switch on.
4. Press "PROG"
5. Press up arrow
6. "ENTER" AUTO SETUP
7. System will feed out 2 to 10 labels to calibrate system.
8. If calibration fails, check label stock, web routing, cable connections and applicator condition.
9. Attempt "AUTO SETUP" again
10. If AUTO SETUP fails again, manual set up will be required.
11. Once auto set up is complete press PRG key to exit the programming menu.
12. Cycle system twice by pressing the "START" key.
13. Observe label speed and change if required.
14. Manually move the label sensor so the label stops flush with the peeler plate tip.
15. System is now ready for set up of advanced features and options.

## MANUAL SET UP

1. Inspect applicator system and verify all cables are installed properly.
2. Web system with labels.
3. Turn power switch on.
4. Press "PROG"
5. Press down arrow until reaching "DEFAULTS" press ENTER
6. Press up arrow to load default settings.
7. Press up arrow
8. Perform "AUTO-SET GAP"
9. Once auto set up is complete press PRG key to exit the programming menu.
10. Cycle system twice by pressing the "START" key.
11. Observe label speed and change if required.
12. Manually move the label sensor so the label stops flush with the peeler plate tip.
13. System is now ready for set up of advanced features and options.

## HOW TO SET UP AN ASYNCHRONOUS APPLICATION

- **“TAMP”**

Determine the following and select it in the software

1. Type of application mode. MENU “CYCLE TYPE”
2. Tamp before or after feed (before feed is standard)
3. Enter a value in the tamp duration (start with 00.20) MENU TAMP SETUP
4. Set head up limit switch, normally open is standard MENU TAMP SET UP
5. Use the product delay to “MOVE” the label on the product

The asynchronous application mode is used to apply labels to products that are either stationary or moving at a constant speed when the label application is to take place.

- **“BLOW”**

Determine the following and select it in the software

1. Type of application mode. MENU “CYCLE TYPE”
2. BLOW before or after feed (before feed is standard)
3. Enter a value in the tamp duration (start with 00.10) MENU TAMP SETUP
4. Set head up limit switch, NONE is standard MENU TAMP SET UP
5. Use the product delay to “MOVE” the label on the product

The asynchronous application mode is used to apply labels to products that are either stationary or moving at a constant speed when the label application is to take place.

## HOW TO APPLY MULTIPLE LABELS TO A SINGLE PRODUCT

Product delay is used to electronically move the placement of the **FIRST** label on the 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. This section will explain how to apply more than one label to a single product with a single start signal. **MULTIPLE FEED** will allow you to select how many labels to be applied.

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 **CAN NOT** 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.
11. Go to **MULTIPLE FEED** in **PRODUCT SENSOR** menu and set the number of labels to be applied to the product.
12. Set the Distance between each label entering a time (0.000) into "**INTERVAL DELAY**"
13. Test the placement of the labels and adjust as necessary. Note: The spacing between each label will be equal. With this feature the space between labels **can not** be set individually.
14. Note: **TRAILING EDGE TRIGGER** will **NOT** work with this feature!
15. Note: Product speed fluctuations can effect label placement.
16. Turn back on any options that may have been disabled for setup of this particular feature.

## DESCRIPTION OF I/O

### LEGEND

24V OPT: 24V OPTO INPUT WITH INTERNAL 24V COMMON  
 OH: HIGH CURRENT 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 #2 & #4 on the “**Light Bar/Aux.**” Connector.

Status display legend.

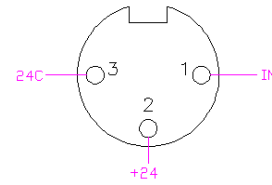
INPUTS				OUTPUTS			
S	P	H	Y	A	F	V	T
SMART TAMP	PRODUCT SENSOR	HEAD UP TAMP SENSOR	AUX OUT #1	AIR ASSIST SOL	FLAG SOL	VACUUM SOL	TAMP SOL

P0.0	PAPER END INPUT	0=ON
P0.1	RIBBON END INPUT	0=ON
P0.2	PRINER ERROR INPUT	0=ON
P0.3	RIBBON NEAR END INPUT	0=ON
P0.4	PRINT END INPUT	0=ON
P0.5	ON-LINE INPUT	0=ON
P0.6	REPRINT OUTPUT	0=ON
P0.7	PRINT OUTPUT	0=ON
P1.3	RED LIGHT ON (GREEN OFF)	1=ON
P1.4	IMPRINTER START	1=ON
P1.5	AUX IN	0=ON
P1.6	TAKEUP MOTOR OUT	0=ON
P1.7	AUX INPUT (DISABLE)	0=ON
P2.0	LABEL MOTOR START OUT	0=ON
P2.1	LABEL MOTOR BRAKE OUT	0=ON
P2.4	VACCUM SOL OUT	0=ON
P2.5	AIR ASSIST OUT	0=ON
P2.6	ROUND MODULE OUT	0=ON
P2.7	FLAG SOL OUT	0=ON
P3.4	TRIGGER INPUT	0=ON
P3.5	HEAD UP SWITCH INPUT	0=ON
P3.6	SMART TAMP INPUT	0=ON
P3.7	CLEAR LABEL INPUT	0=ON

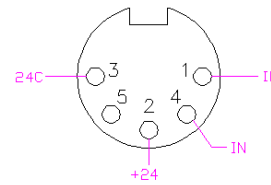
The bit not listed above are used for serial clock data, RS232, and internal functions

# LOGIC BOARD

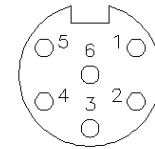
REMOTE TRIGGER CONNECTOR (PRODUCT SWITCH)	P1 PIN #	I/O	ADDRESS
TRIGGER INPUT	1	INPUT	P3.4
+24 VOLT	2		
24V COMMON	3		
SHIELD			



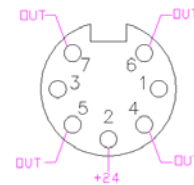
HEAD-UP / AUX IN	P2 PIN #	I/O	ADDRESS
HEAD-UP	1	INPUT	P3.5
+24 VOLT	2		
24V COMMON	3		
SMART TAMP / AUX IN 1	4	INPUT	P3.6
	5		
SHIELD			



LABEL SENSOR	P3 PIN #	I/O	ADDRESS
(+5dvc) SENSOR COLLECTOR (220 ohm resistor to) DIODE ANODE	1		
(GND) DIODE CATHODE	2		
SENSOR EMITTER	3		
CLEAR LABEL DETECTOR	4	INPUT	P3.7
24V COMMON	5		
+24 VOLT	6		
SHIELD			

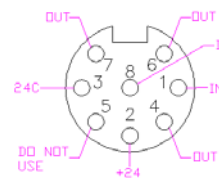


TAMP SOLENOIDS	P4 PIN #	I/O	ADDRESS
	1		
+24 VOLT	2		
	3		
AIR ASSIST SOL 24VDC	4	OUTPUT	P2.5
VACUUM SOL 24VDC	5	OUTPUT	P2.4
TAMP SOL 24VDC (also MTR2 120vac)	6	OUTPUT	P2.6
FLAG SOL 24VDC	7	OUTPUT	P2.7
SHIELD			

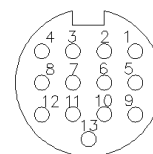




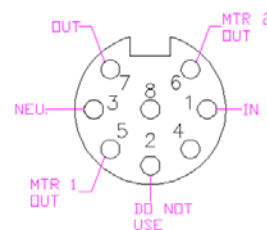
WARNING BEACON / AUX	P5 PIN #	I/O	ADDRESS
AUX IN	1	INPUT	P1.5
+24 VOLT	2		
24V COMMON	3		
RUN STATUS (OK) 24VDC (green light)	4	OUTPUT	P1.3
No connection	5		
IMPRINTER START (0.100 sec. Pulse @ start of drive motor)	6	OUTPUT	P1.4
ERROR LITE 24VDC (red light)	7	OUTPUT	P1.3
INHIBIT LABELER	8	INPUT	P1.7
SHIELD			



PRINT INTERFACE	P6 PIN #	I/O	ADDRESS
PAPER END	1	INPUT	P0.0
PRINTER GROUND	2		
RIBBON END	3	INPUT	P0.1
PRINTER ERROR	4	INPUT	P0.2
PRINT START	5	OUTPUT	P0.7
PRINT END	6	INPUT	P0.4
REPRINT	7	OUTPUT	P0.6
	8		
ONLINE	9	INPUT	P0.5
	10		
RIBBON NEAR END	11	INPUT	P0.3
	12		
+5vdc from printer	13		
SHIELD			

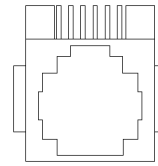


TAKE-UP MOTOR / ROUND MODULE	P7 PIN #	I/O	ADDRESS
	1		
	2		
MOTOR 2 NEUTRAL	3		
	4		
MOTOR 1 120VAC (take-up / round module)	5	OUTPUT	P1.6
MOTOR 2 120VAC (auto-round)	6	OUTPUT	P2.6 / Tamp
	7		
	8		
GND / SHIELD			

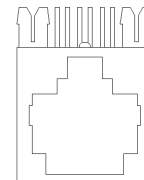


Optional connections; consult factory for custom programming and connection.

KEYPAD / DISPLAY RS232	P8 PIN #	I/O	ADDRESS
232 XMIT	1		
232 RCV	2		
GND	3		
+24VDC	4		
GND	5		
	6		
	7		
	8		

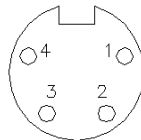


SERIAL AUX RS232	P9 PIN #	I/O	ADDRESS
232 XMIT	1		
232 RCV	2		
GND	3		
	4		
	5		
	6		
	7		
	8		



## MOTOR POWER BOARD

MOTOR CONNECTOR	P3 PIN #	
ARMATURE (+)	1	
ARMATURE (+)	2	
ARMATURE (-)	3	
ARMATURE (-)	4	
SHIELD		



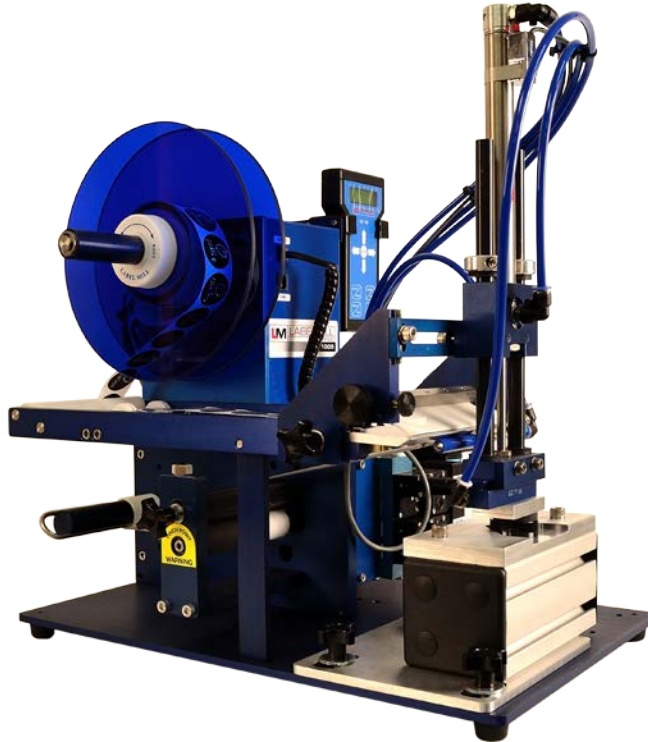
## SECTION 4

# OPTIONAL APPLICATION MODULES

Tamp Applicator Module Installation	4-1
Flag Applicator Module Installation	4-2
Round Product Applicator Module Installation	4-3
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Module Air Connections	4-12
Printer Interface PIK-1005	4-13
Cold Stamp Imprinter	4-14

## Tamp Applicator Module Installation

The LM1005™ Tamp Applicator Module shown below can be installed in a few minutes to the existing LM1005 dispenser unit.

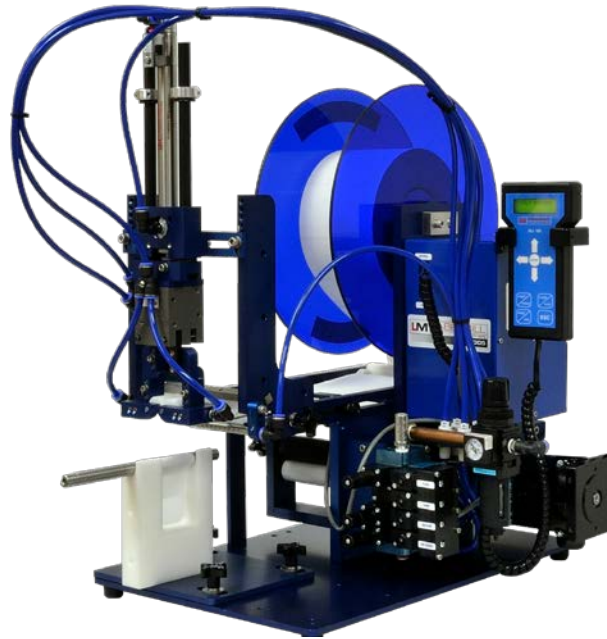


### ACTIONS TO INSTALL TAMP MODULE

1. Set the main power switch to the OFF position.
2. Disconnect the AC power cable from the rear of the console.
3. Remove any installed module or photoeye mounted to the guide rails.
4. Carefully slide the tamp module onto the rails until the unit is on all the way.
5. Install and tighten the mounting knobs through the slotted holes on either side of the mounting rails.
6. Install the 7 pin DIN plug from the valve assembly into the connector on the bottom of the main control box tagged "SOLENOIDS" as shown on page 3-2. (Vacuum, Tamp, & Air Assist Solenoids)
7. Install the 5 pin DIN plug from the tamp module head up switch into the connector on the bottom of the main control box tagged "HEAD UP/AUX" as shown on page 3-2.
8. Install the four (4) air lines fitted with quick disconnect style fittings on the plate above the solenoids. They are marked 1, 2, 3, and 4.
9. Program the LM1005 for tamp as described on page 3-4.
10. Install the 3 pin DIN plug into the connector on the bottom of the accessory connector tagged "REMOTE TRIGGER" as shown on page 3-2. (Foot Switch, Palm Button, or Trigger Switch)
11. Connect the power cable and turn the unit on.
12. Adjust the label sensor as shown on page 2-3, and motor speed until both are functioning properly.

## Flag Applicator Module Installation

The LM1005FM Flag Applicator Module shown below can be installed in a few minutes to the existing LM1005 dispenser unit.



### ACTIONS TO INSTALL FLAG MODULE

1. Set the main power switch to the OFF position.
2. Disconnect the AC power cable from the rear of the console.
3. Remove any installed module or dispenser photo-eye mounted to the guide rails.
4. Carefully slide the flag module on to the rails until the unit is on all the way.
5. Install and tighten the mounting knobs through the slotted holes on either side of the mounting rails.
6. Install the 7-pin DIN plug from the valve assembly into the connector on the bottom of the main control box tagged "SOLENOIDS" as shown on page 3-2, if it is not already connected.
7. Install the 5 pin DIN plug from the tamp module head up switch into the connector on the bottom of the main control box tagged "HEAD UP/AUX" as shown on page 3-2.
8. Install the six (6) airlines fitted with quick disconnect style fittings on the plate above the solenoids. They are marked 1, 2, 3, 4, 5, and 6.
9. Program the LM1005 for tamp as described on page 3-4.
10. Install the 3 pin DIN plug (from the Foot Switch, Palm Button, or the Trigger Switch) into the connector located on the main control panel tagged "REMOTE TRIGGER" as shown on page 3-2.
11. Connect the power cable and turn the unit on.
12. Adjust the label sensor as shown on page 2-3, and motor speed until both are functioning properly.
13. Adjust the flag jaw pressure as shown on page 4-6. To adjust the jaws, start with the pressure low and increase pressure as needed to achieve proper wrap of the label on the product. NOTE: Low pressure will not close the jaws, and high pressure will not label consistently or cause product breakage.

## Round Product Applicator Module Installation

The LM1005RM Round Product Applicator Module shown below can be installed in a few minutes to the existing LM1005 dispenser unit.

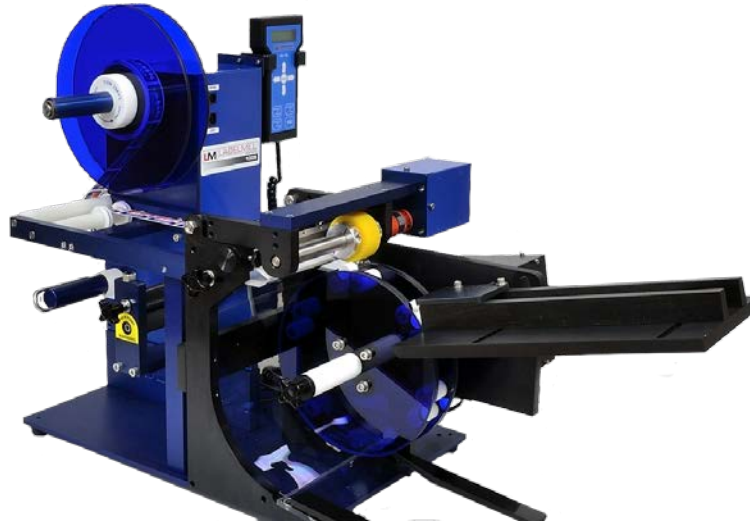


### ACTIONS TO INSTALL ROUND PRODUCT MODULE

1. Set the main power switch to the OFF position.
2. Disconnect the AC power cable from the rear of the console.
3. Remove any installed module or photoeye mounted to the guide rails.
4. Carefully slide the round product module on to the rails until the unit is on all the way.
5. Install and tighten the mounting knobs through the slotted holes on either side of the mounting rails.
6. Install the 8 pin DIN plug from the round product module into the connector on the bottom of the main control box tagged "AUX 2" as shown on page 3-2. ( Roller Motor)
7. Install the 7-pin DIN plug from the valve assembly into the connector on the bottom of the main control box tagged "SOLENOIDS" as shown on page 3-2, if it is not already connected.
8. Install the 5 pin DIN plug from the round product module limit switch into the connector on the accessory connector tagged "HEAD UP/AUX" as shown on page 3-2. (UP Limit Switch)
9. Install the two (2) airlines fitted with quick disconnect style fittings on the plate above the solenoids. They are marked 3 and 4.
10. Program the LM1005 for "Round Module" as described on page 3-4
11. Install the 3 pin DIN plug into the connector on the bottom of the accessory connector tagged "REMOTE TRIGGER" as shown on page 3-2. (Foot Switch, Palm Button, or Trigger Switch)
12. Adjust the roller cradle up or down for the product. There should be enough room to get the product in and out, but not more than 1" of gap between the product and rubber roller.
13. Adjust the rollers on the cradle so the centerline of the product and the rubber roller are lined up.
14. Connect the power cable and turn it on.
15. Adjust the label sensor as shown on page 2-3, and motor speed until both are functioning properly. The label web motor speed should match to the roller motor speed. If the label motor speed is too fast, the label will bunch up. If it is too slow the product will pull the web.

## Auto Round System Module Installation

The LM1005ARS Auto Round System Module shown below can be installed in a few minutes to the existing LM1005 dispenser unit.



### ACTIONS TO INSTALL AUTO ROUND SYSTEM

1. Set the main power switch to the OFF position.
1. Disconnect the AC power cable from the rear of the console.
2. Remove any installed module or photo-eye mounted to the guide rails.
3. Carefully slide the auto round system module onto the rails until the unit is on all the way.
4. Install and tighten the mounting knobs through the slotted holes on either side of the mounting rails.
5. Install the 8 pin DIN plug from the auto round system module into the connector on the back of the main control box tagged "AUX 2" as shown on page 3-2. (Roller Motor)
6. Install the 5 pin DIN plug from the auto round system module limit switch into the connector on the accessory connector tagged "HEAD UP/AUX" as shown on page 3-2. (UP Limit Switch)
7. Program the LM1005 for "Auto Round" as described on page 3-4.
8. Install the 3 pin DIN plug into the connector on the back of the accessory connector tagged "REMOTE TRIGGER" as shown on page 3-2. (Foot Switch, Palm Button, or Trigger Switch)
9. Adjust the product in feed chute so that the product rolls freely into the take-up wheel.
10. Adjust the take-up wheel with the product under the rubber roller. When the product is indexed to the position under the roller, the roller should be lifted enough to open the limit switch and trigger the LM1005TTS to label the product.
11. Connect the power cable and turn it on.
12. Adjust the label sensor as shown on page 2-3, and motor speed until both are functioning properly. The label web motor speed should match to the roller motor speed. If the label motor speed is too fast, the label will bunch up. If it is too slow the product will pull the web.

## Remote Start Module

The LM1005 Remote Start Module shown below can be connected to the LM1005.



**PB-35**  
**Push Button**  
**(Remote start trigger)**



**FS-45**  
**Foot Switch**  
**(Remote start trigger)**

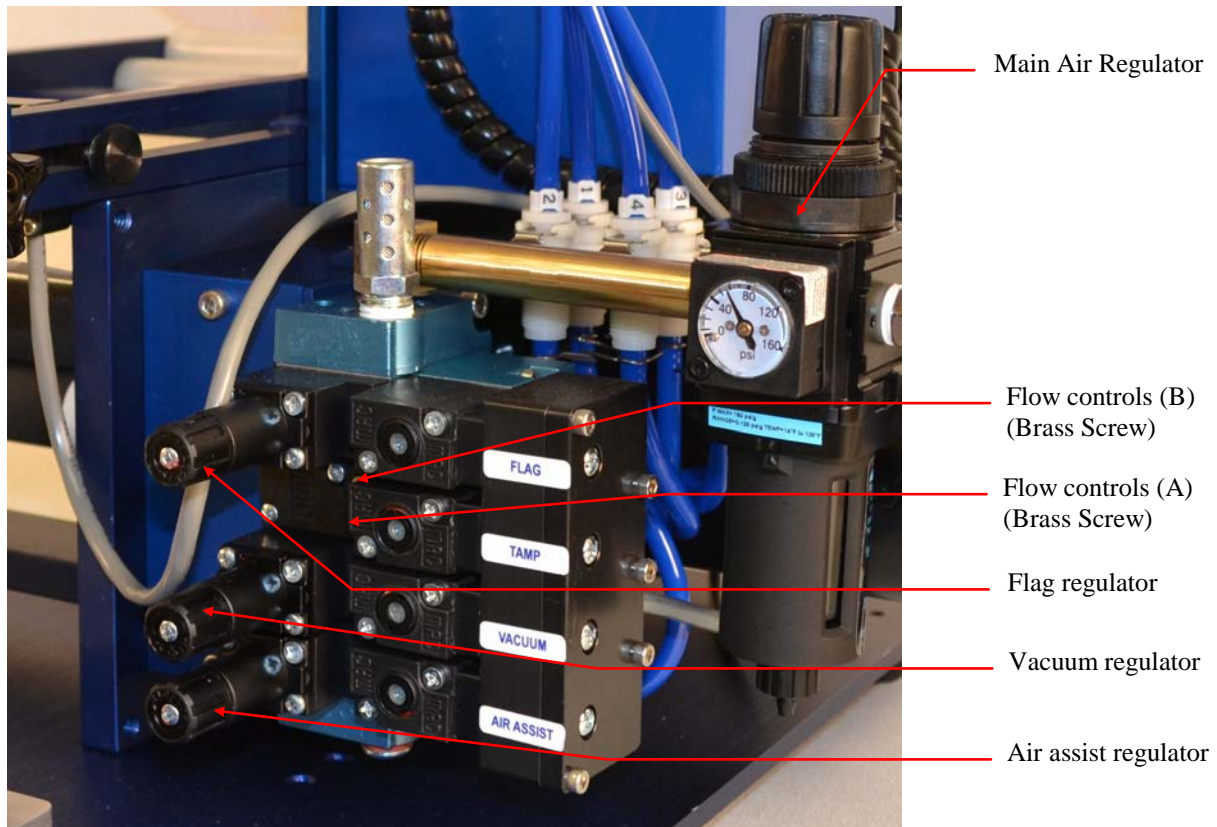
### ACTIONS TO INSTALL REMOTE START MODULE

1. Set the main power switch to the OFF position.
2. Disconnect the AC power cable from the rear of the accessory connector panel.
3. Install the 3-pin DIN plug from the remote start module into the connector on the accessory connector panel tagged "Remote Trigger" as shown on page 3-2.
4. Connect the power cable and turn the unit on.



## Valve Pack

The LM1005 valve pack is used to control the air pressure & flow on the tabletop system.



Regulator Adjustment: **Clockwise** - Increase pressure **Counterclockwise** - Decrease pressure

### MAIN AIR REGULATOR

Controls maximum air pressure available to entire applicator. Should be set between 40 & 80 PSI.

### FLAG REGULATOR

The flag regulator is used to adjust the pressure that the flag jaws apply to the label as it is applied. For complete jaw adjustment, refer to flag applicator module installation on page 4-8.

### VACUUM REGULATOR (only used on the flag and tamp applicator system)

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

### AIR ASSIST REGULATOR

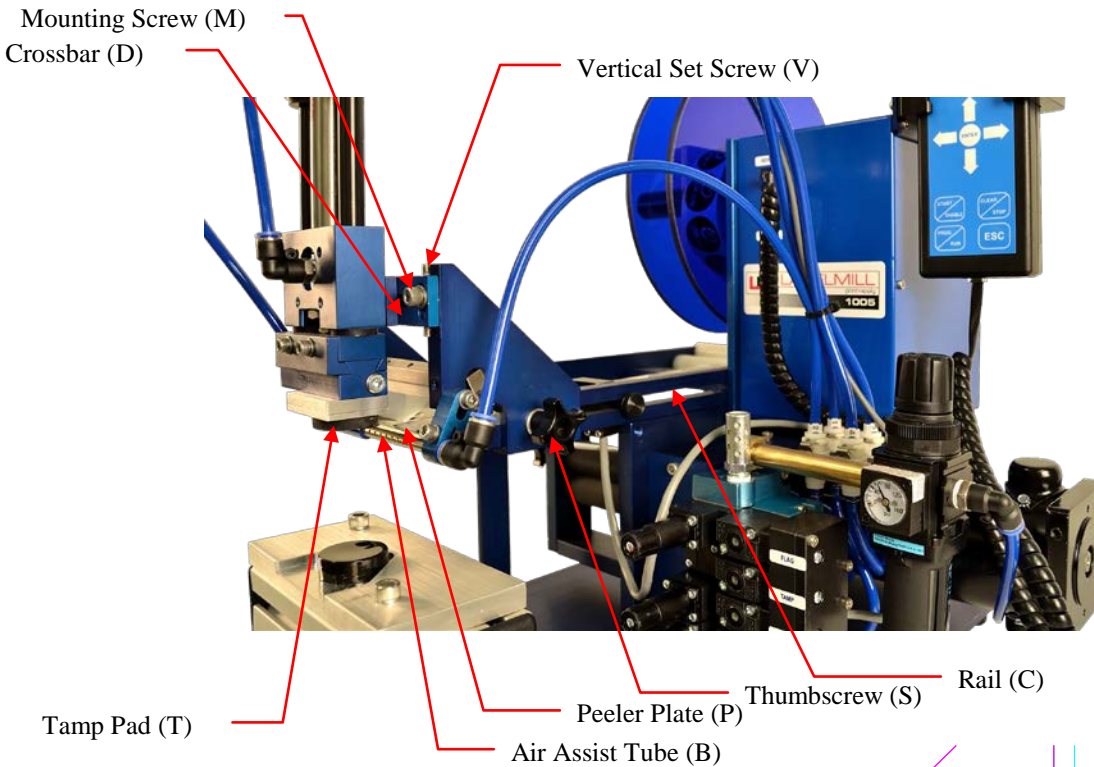
The air assist regulator is used to change the pressure that is applied to the blow tube. The blow tube is below the front edge of the peeler plate and is used to help "push" the label onto the bottom of the tamp pad or the flag jaws.

### FLOW CONTROLS (tamp, bottle roller, and flag applications)

Control A: This is used to adjust the speed that the tamp cylinder moves in the upward direction.

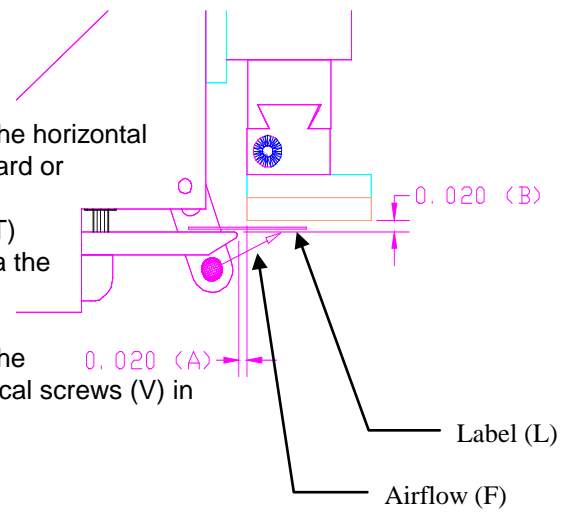
Control B: This is used to adjust the speed that the tamp cylinder moves in the downward direction.

# Tamp Module Setup



### Tamp pad adjustment

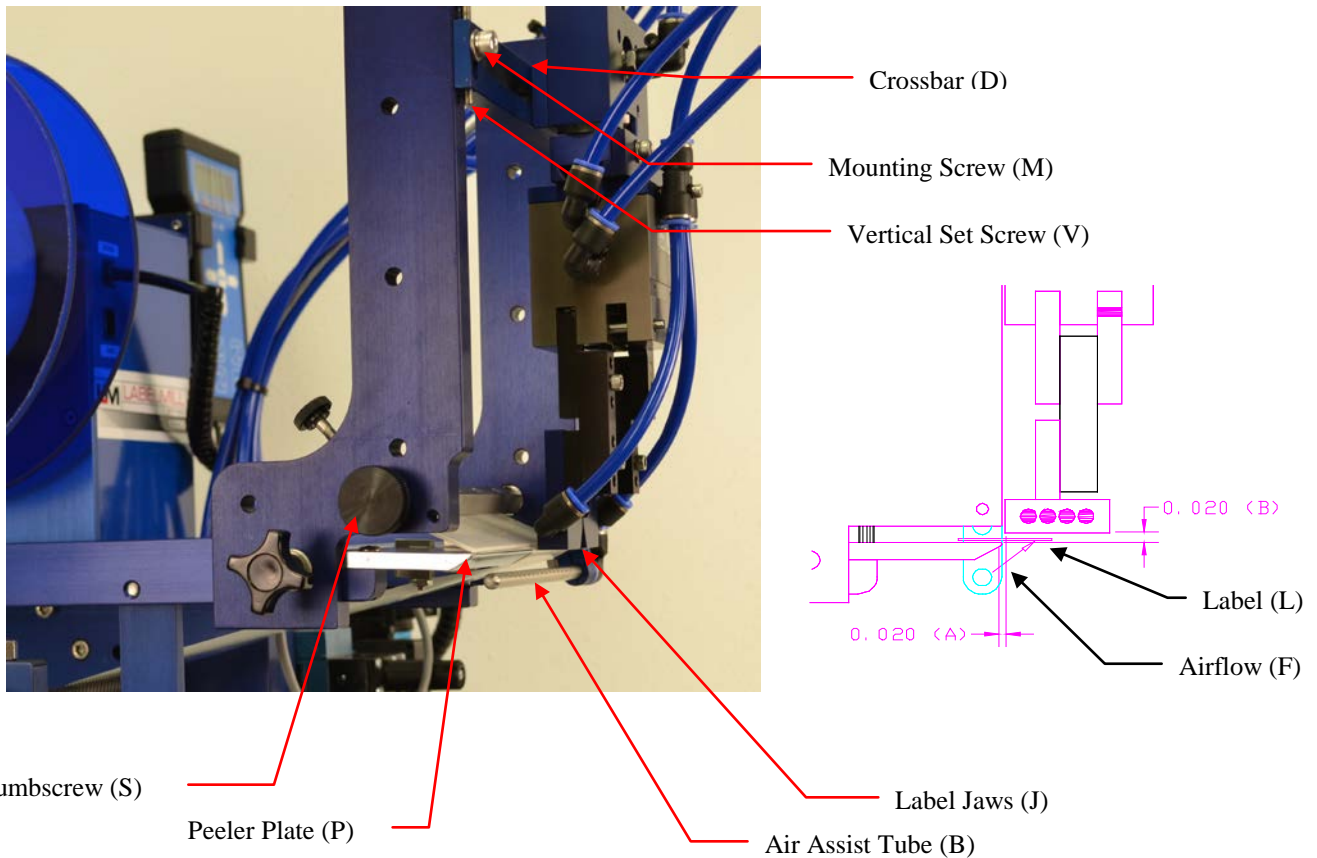
1. To adjust the tamp pad (T) in relationship to the peeler plate (P) in the horizontal plain, loosen the thumbscrews (S) and move the tamp module forward or backward in the slots. There should be approximately .020" (A) gap between the tamp pad (T) and the peeler plate (P). The tamp pad (T) can also be adjusted left to right in relation to the peeler plate (P) via the slot in the top of the crossbar (D). **NOTE:** The center of the tamp pad should be at the center of the label.
2. To adjust the tamp pad (T) in relationship to the peeler plate (P) in the vertical position, loosen the mounting screw (M) and adjust the vertical screws (V) in or out to achieve the .020" (B). **NOTE:** The tamp pad (T) must maintain parallelism with the peeler plate (P).



### 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 (F) shown above. The air assist tube (B) aids the label (L) to adhere to the bottom of the tamp pad (T). Once the label (L) is "blown" onto the tamp pad (T), 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 as described on page 4-6.
- Note: Too much pressure on the air assist will cause the label to flutter and/or blow off of the vacuum platen.

## Flag Module Setup



### Label jaw adjustment

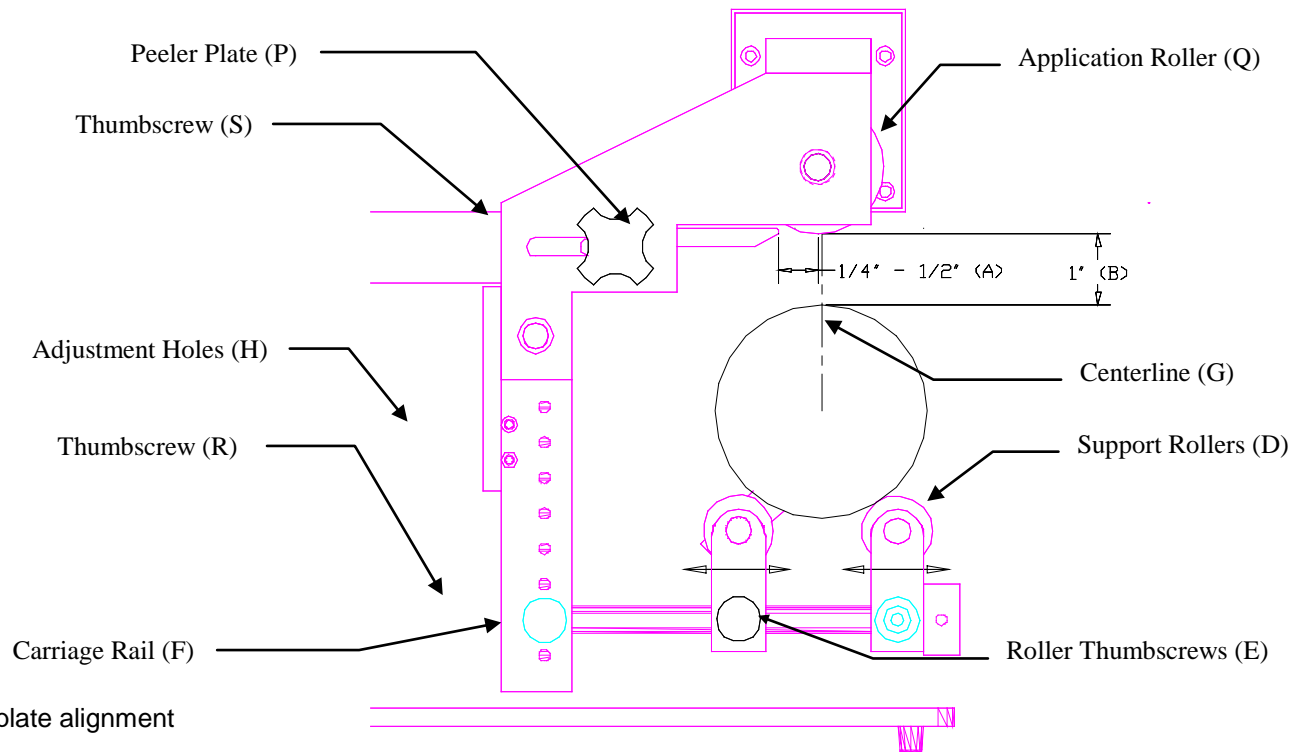
1. To adjust the label jaws (J) in relationship to the peeler plate (P) in the horizontal plain, loosen the thumbscrews (S) and move the flag module forward or backward in the slots. There should be approximately .020" (A) gap between the label jaws (J) and the peeler plate (P). The jaws (J) can also be adjusted left to right in relation to the peeler plate (P) via the slot in the top of the crossbar (D). **NOTE:** The center of the jaws should be at the center of the label.
2. To adjust the label jaws (J) in relationship to the peeler plate (P) in the vertical position, loosen the mounting screw (M) and adjust the vertical screws (V) in or out to achieve the .020" (B). **NOTE:** The label jaws (J) must maintain parallelism with the peeler plate (P).

### 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 (F) shown above. The air assist tube (B) aids the label (L) to adhere to the bottom of the label jaws (J). Once the label (L) 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 as described on page 4-6.

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

## Round Product Applicator Module Setup

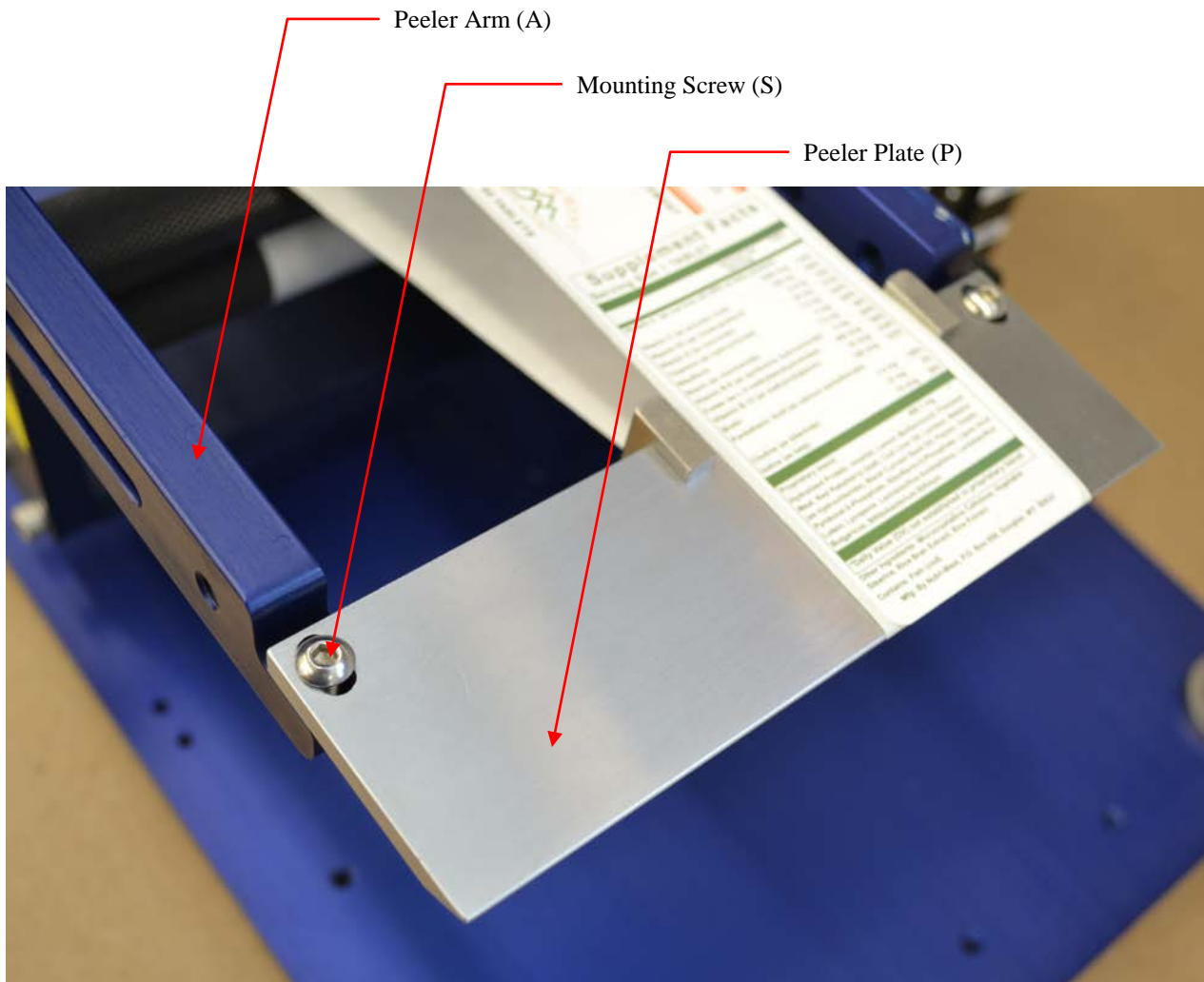


1. To adjust the round product applicator in relationship to the peeler plate (P) in the horizontal plain, loosen the thumbscrews (S) and move the round product module forward or backward in the slots. There should be approximately  $\frac{1}{4}$ " -  $\frac{1}{2}$ " (A) gap between the application roller (Q) and the peeler plate (P).

### Bottle roller adjustment

1. Loosen the thumbscrews (E) and adjust the support rollers (D) until the product is supported securely. These supports (D) are moved to adjust for the size, location and height of the product in relation to the label application roller (Q).
2. Thumbscrew (R) is loosened and removed to allow the cradle assembly to be moved from hole to hole on the carriage rail (F). This is a product rough adjustment.
3. Move the cradle assembly up or down and the support rollers horizontally until the desired 1" (B) of clearance between the product and the label application roller (Q) is achieved.
4. Adjust the flow controls as described on page 4-6. Flow controls in this configuration will control the speed at which the carriage moves the product up and down.

## Peeler Plate Adjustment

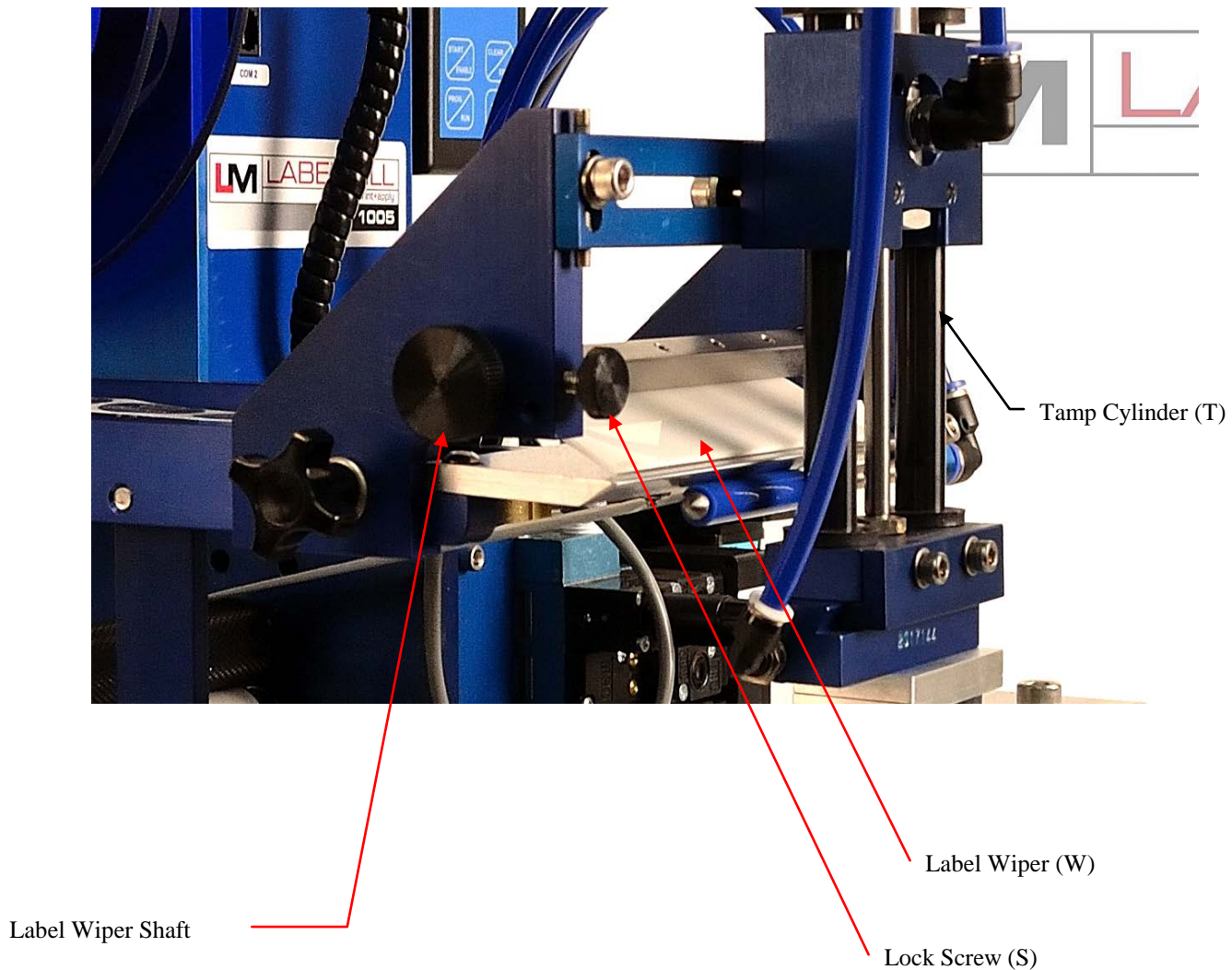


### Peeler Plate Adjustment (used to adjust tracking)

1. Loosen the mounting screws (S) and slide the peeler plate (P) in the direction needed to make the label web track in the desired direction.
2. Retighten the mounting screws (S) to secure the peeler plate (P) after adjustments are made.
3. Now that the plate is adjusted, test run the machine to see if the web tracks correctly.

**NOTE:** If the web tracks towards the main control console, adjust the end of the peeler plate (P) away from the console or the opposite end toward the console. Adjust the peeler plate (P) in the opposite direction if the web tracks away from the control console.

## Label Wiper Adjustment

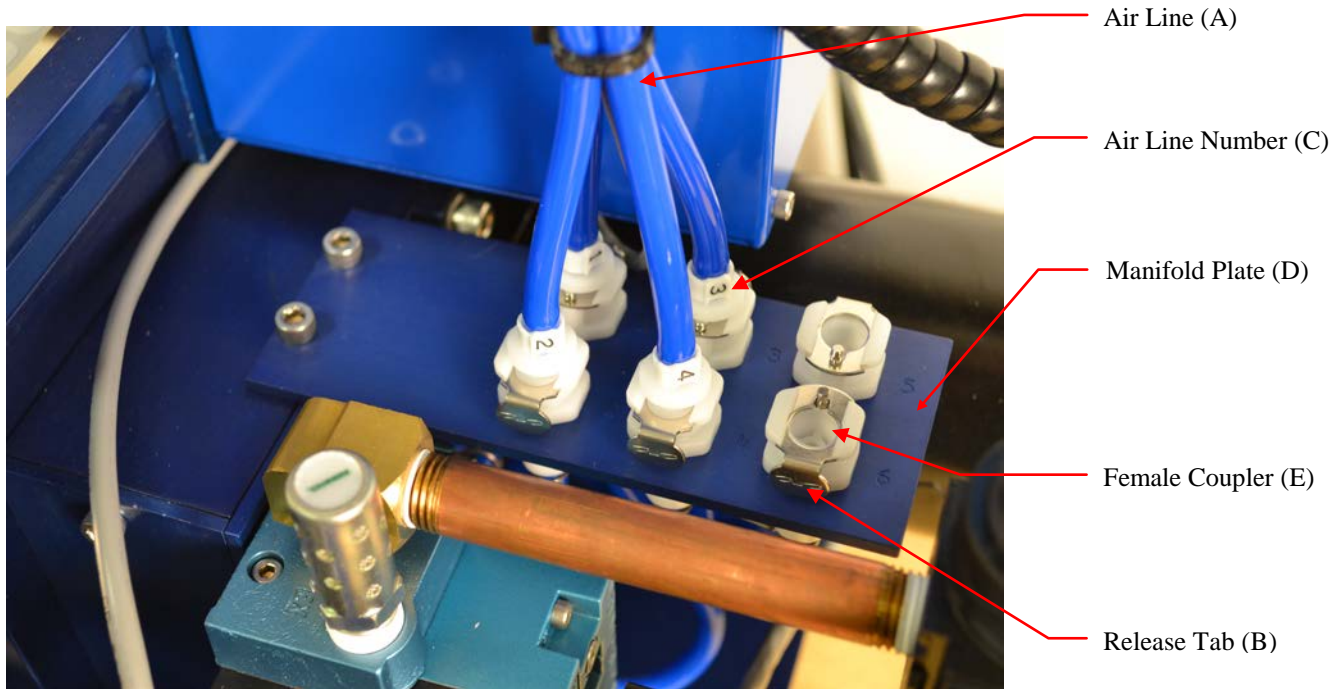


Label Wiper Adjustment (used to keep the web tight)

1. Loosen the lock screw (S) and rotate the label wiper shaft (T) to contact the web.
2. Rotate the shaft (T) slightly more to apply additional pressure on the label wiper (W).
3. Now that you have applied slight pressure on the label web, tighten the lock screw (S).

NOTE: The main reason for the label wiper is to ensure the label will feed out flat or parallel to the peeler plate. This will aid in proper placement of the label on the tamp pad or flag jaws.

## Module Air Connections



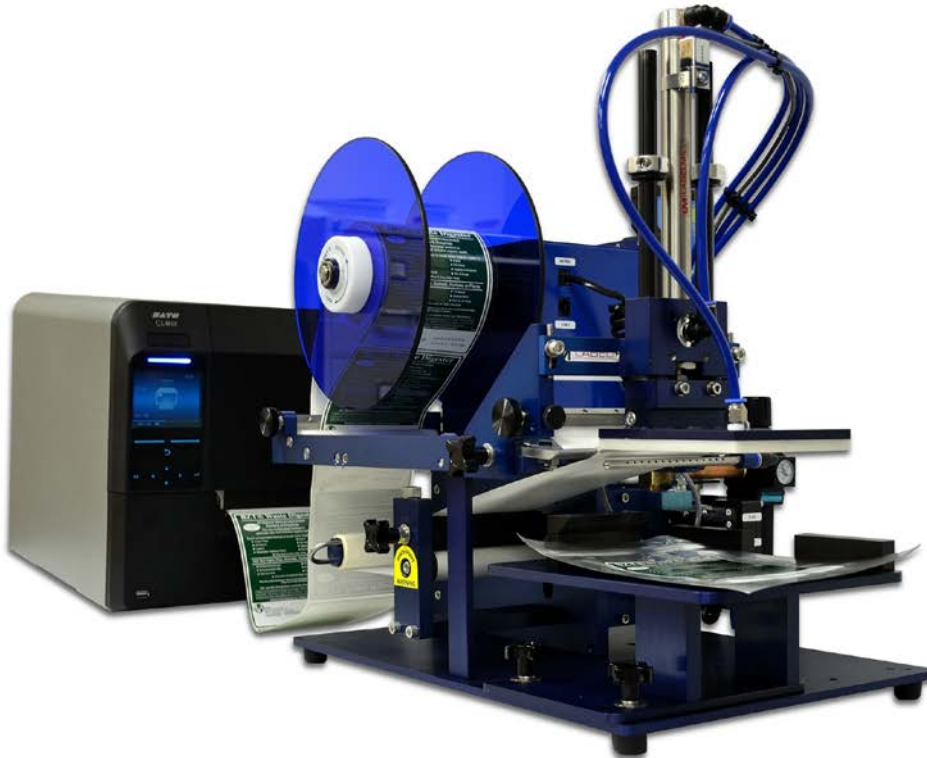
### Module Air Hose Connections

1. After installing one of the 3 modules, connect the airlines (A) to the Manifold Plate (D) shown above.
2. The Air Line Numbers (C) should be matched with the numbers on the Manifold Plate (D).
3. To connect the Air Line (A) to the Manifold Plate (D), simply push the male connector of the Air Line (A) into the Female Coupler (E). It will “snap”, automatically “locking” it into place. NOTE: If the male connector of the Air Line (A) won't slide easily into the Female Coupler (E), it may be necessary to push the Release Tab (B) towards the center of the plate, locking the tab in the “open” position.
4. To release the Air Line (A) from the Manifold Plate (D), simply push the Release Tab (B) towards the center of the plate and remove the Air Line (A).

### Manifold Plate (D) Number Reference

- 1) Vacuum
- 2) Air Assist
- 3) Tamp cylinder down/Bottle Roller carriage up
- 4) Tamp cylinder up/Bottle Roller carriage down
- 5) Flag Jaws open
- 6) Flag Jaws closed

## Printer Interface PIK-1005 Cable



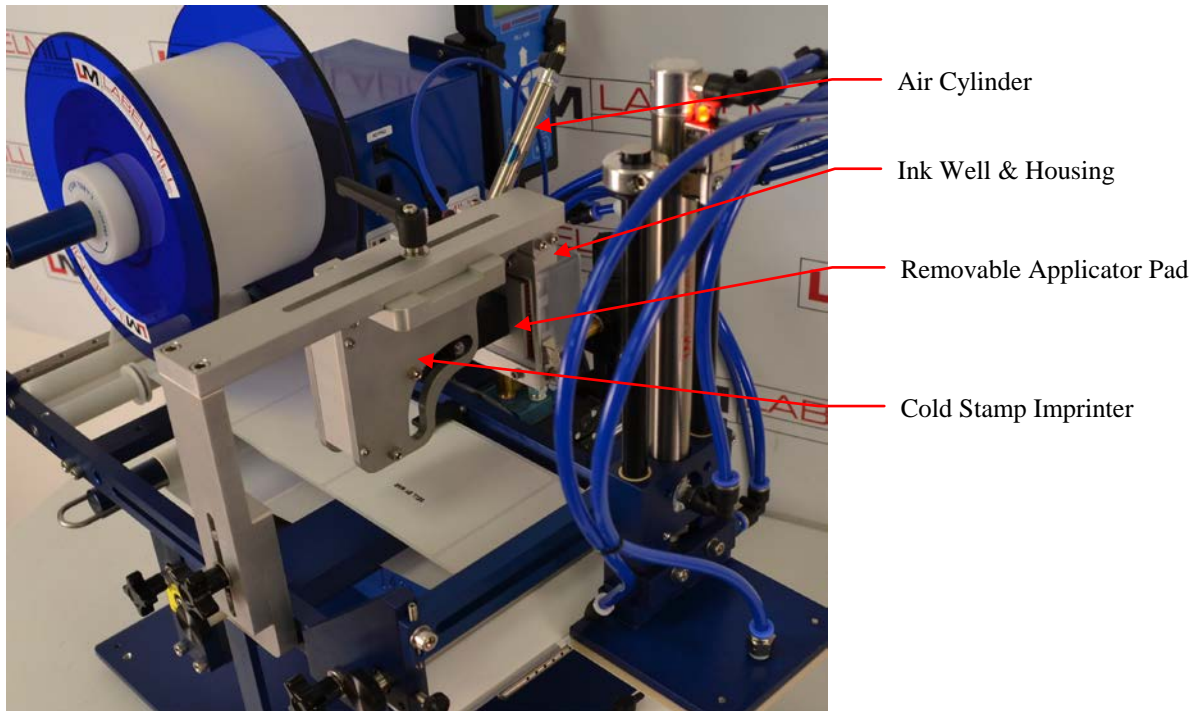
The Label Mill PIK-1005 Cable is used to interface a thermal printer, like the SATO CL4NX, to the LABELMILL 1005TTS. When this is done, the thermal printer will print a label every time the LM1005TTS is cycled. This interface will work when the LM1005TTS is configured with the round, tamp or the flag module. The thermal printer must be configured with an applicator interface port. Also the printer operating software must be properly set for this option to operate. To configure the thermal printer please refer to the printer operation manual.

### SET-UP

- | Step | Operation  |
|------|--|
| 1    | Turn power OFF   |
| 2    | Plug PIK-1005 Cable into Printer Interface port on Accessory Connector Panel               |
| 3    | Plug the other end of the PIK-1005 Cable into thermal printer interface port               |
| 4    | Turn Power back on   |
| 5    | Turn printer interface option on in the LM1005 control using the HLI-100 hand held pendant |



## Cold Stamp Imprinter Setup



1. With the main air supply & power off, attach air hoses to corresponding, quick disconnect ports.
2. Insert cartridge into ink well housing with foil seal removed. Lock in place with thumb lever.
3. Turn on power & air supply to system.
4. Make imprinter height and web travel adjustments as needed.
5. On the hand-held, navigate to the Cycle Type menu, and press enter.
6. Set Cycle Select for the appropriate applicator module (tamp, round, etc).
7. Set the Printer option to "On".
8. Set the Flag Enb/Dis to "Flag is Printer".
9. Set the Inkjet/Imprint option to "Imprinter".
10. Set the pulse duration as needed to control the stamping motion duration.

## SECTION 5

# TROUBLE SHOOTING & MAINTENANCE

Troubleshooting	5-1
Fault Codes	5-2
Spool brake Adjustment	5-3
Replacing the Main Power Fuse	5-4

## TROUBLE SHOOTING 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.

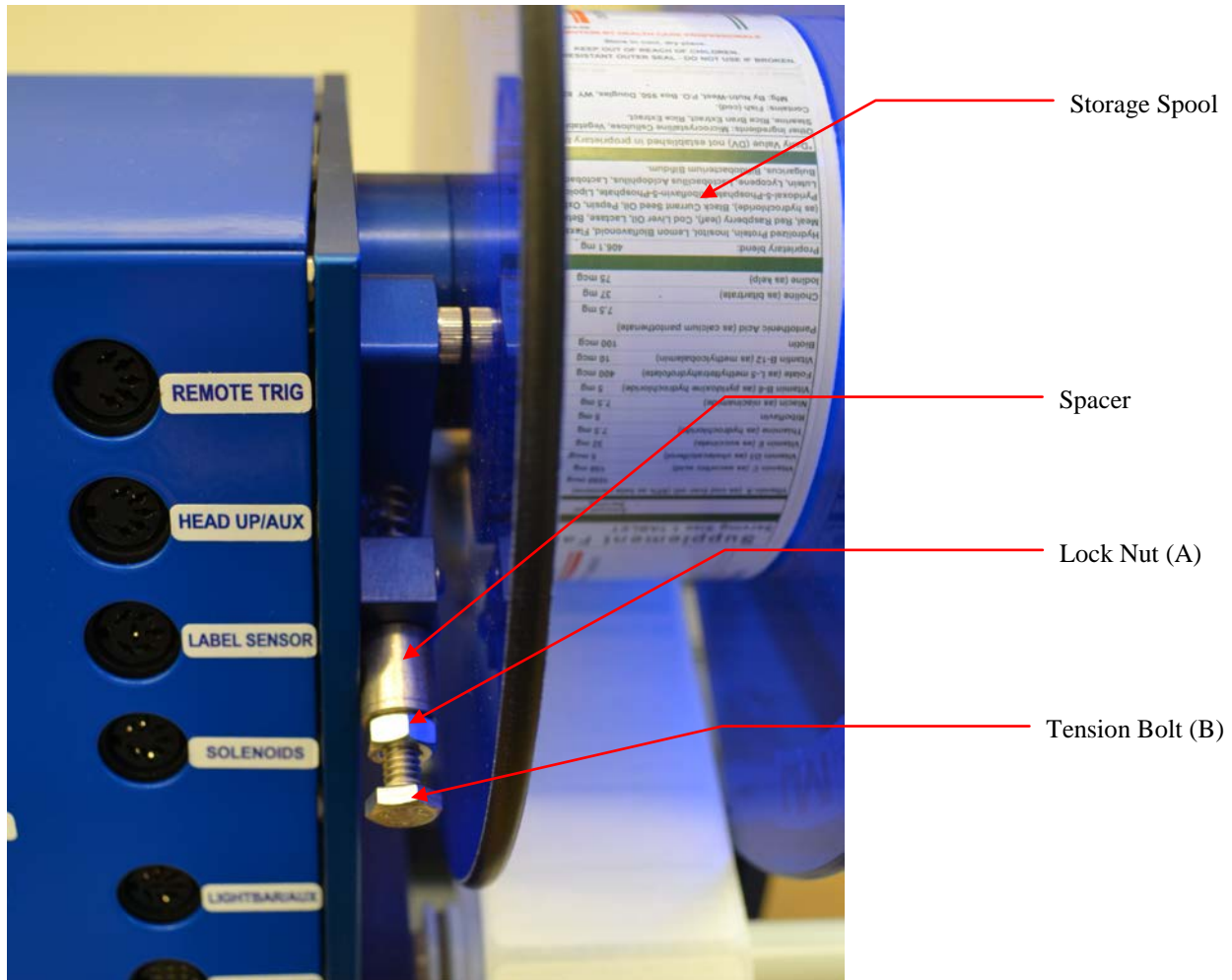
<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
1. Unit will not turn on.	A. Blown Main Fuse	Check main power fuse and replace if necessary as shown on page 5-4.
2. Take-up unit does not turn.	A. Friction plate failure in clutch. B. Mechanical failure in clutch.	Consult Factory
3. Waste web tension too loose.	A. Clutch tension too low.	Adjust clutch as shown on page 2-6.
4. Waste web breaks.	A. Clutch adjusted too tight. B. Machine Webbed wrong. C. Low quality webbing. D. Friction plate failure in clutch. E. Mechanical failure in clutch.	Adjust clutch as shown on page 2-6. Re-web system as shown on page 2-2. Consult label mfg. Consult factory. Consult factory.
5. Label double feeds.	A. Label sensor out of adjustment.	Adjust setting as shown on page 2-3.
6. Tamp cylinder not up	A. No air B. Mode Switch out of adjustment C. Hoses not connected correctly	Connect air and/or adjust regulator Refer to page 4-6 Adjust mode switch refer to page 3-5 Refer to page 4-12
7. Tamp module won't work	A. Incorrect MODE set in HLI-100 B. Hoses not connected correctly	Adjust mode switch refer to page 3-5 Refer to page 4-12
8. Flag module won't work	A. Incorrect MODE set in HLI-100 B. Hoses not connected correctly	Adjust mode switch refer to page 3-5 Refer to page 4-12
9. Round module won't work	A. Incorrect MODE set in HLI-100 B. Hoses not connected correctly	Adjust mode switch refer to page 3-5 Refer to page 4-12
10. Power ON tamp/flag system unit will not cycle	A. Cylinder not up. B. Reed Switch out of adjustment C. Incorrect MODE set in HLI-100	Refer to #6 Adjust up or down Refer to #7 or #8

## FAULT CODES

DISPLAYED FAULT	DESCRIPTION	CORRECTIVE ACTION
Memory Checksum	Data lost in serial EEPROM	Consult factory or service provider
Gap Not Detected (10 second time out)	Too many labels missing on web Labeler not webbed properly Label sensor not adjusted properly	Check label stock Check for proper webbing Run Auto Gap Set
Label Not Found	Label not sensed in auto set up	Check label stock Check label sensor Retry auto set up
Head Up Fault	Head up limit switch on tamp did not trigger	Check for proper adjustment of head up limit switch Check air to system Check programming of Tamp switch
Head Down Fault	Head up limit switch failed to switch during the tamp cycle	Tamp duration too small Faulty limit switch Check air to system Check programming of Tamp switch

## ADJUSTING THE SPOOL BRAKE

The LM1005TTS is equipped with an adjustable storage spool brake. NOTE: This is preset at the factory and usually does not require additional adjustment. If web tension problems occur, it may be necessary to adjust the storage spool brake. Some common problems are: web too loose, web breaks, and web slips in drive rollers. The storage spool brake and actions to adjust this are shown below.



### ACTIONS TO ADJUST SPOOL BRAKE

1. TURN OFF POWER TO THE MACHINE.
2. Remove the spool and remove the label stock from the machine.
3. Grab the spool with your hand and rotate it checking for any resistance.
  - A. If the spool has little or no resistance, loosen the lock nut (A), and tighten the tension bolt (B) until you can feel a moderate resistance.
  - B. If the spool has too much resistance, loosen the lock nut (A), and back the tension bolt out. Now check the spool to see if it spins freely on the shaft. If it spins freely, adjust as shown in "A" above. If it does not spin freely, consult the factory.
4. After adjusting the tension bolt (B), retighten the lock nut (A), re-web the machine and test the unit.

## REPLACING THE MAIN POWER FUSE

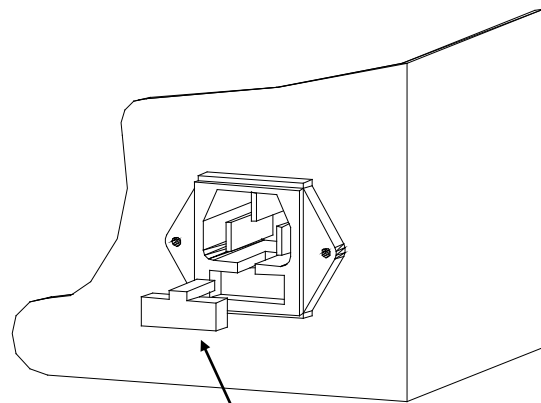
The circuitry is protected from a current overload by GMA 5A a slow blow fuse. Should the applicator fail to operate, the condition of this fuse should be checked. If the fuse is open, the cause of the overload condition must be determined and corrected prior to replacing the fuse. NEVER replace the 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.



Spare Fuse Drawer



Spare Fuse Drawer

# LM1005

## TABLE-TOP APPLICATOR SYSTEM

## OPERATIONS MANUAL



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