Diagraph LA/1000
OPERATIONS MANUAL

7532-844
Revision A

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Printed in the United States of America
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<th>Physical Dimensions</th>
<th>U.S.</th>
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<tr>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Storage</td>
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<td>0°C to 46°C</td>
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<tr>
<td>Storage</td>
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<td>Rated Input Current</td>
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<tr>
<td>Rated Input Voltage</td>
<td>90 – 240 VAC</td>
<td></td>
</tr>
<tr>
<td>Rated Frequency</td>
<td>50-60 Hz</td>
<td></td>
</tr>
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<td>Label Material Capabilities</td>
<td>U.S.</td>
<td>International</td>
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<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td>-----------------------</td>
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<td>Web Width</td>
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<td></td>
</tr>
<tr>
<td>Standard Web</td>
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<td></td>
</tr>
<tr>
<td>Min</td>
<td>5/8 inch</td>
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<tr>
<td>Max</td>
<td>5-1/8 inch</td>
<td>130.2 mm</td>
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<tr>
<td>Standard Web</td>
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<td></td>
</tr>
<tr>
<td>Min</td>
<td>½ inch</td>
<td>12.7 mm</td>
</tr>
<tr>
<td>Max</td>
<td>5 inch</td>
<td>127 mm</td>
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<tr>
<td>Label Length</td>
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<td>Standard Web</td>
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<tr>
<td>Min.</td>
<td>½ inch</td>
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<tr>
<td>Max.</td>
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<td>508 mm</td>
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<td>Label Packaging</td>
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<td>Inner diameter of label core</td>
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<td>Label Dispense Speed</td>
<td>Adjustable in 2 ft increments</td>
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<tr>
<td>Min</td>
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<td>Max</td>
<td>150 ft/min</td>
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<tr>
<td>Product Delay</td>
<td>0 to 0.5 seconds</td>
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Declaration of Conformity


Standard(s) to which conformity is declared: EN55011, Class A, Group 1:1991,
EN 50082-2: 1995, EN 60204-1:
1997, EN 292-2: 1991, EN 418:
1992, and EN 294:1992

Manufacturer’s Name: Diagraph Corporation

Manufacturer’s Address: 3401 Rider Trail South
St. Louis, MO 63045

Type of Equipment: Label Applicator

Model Numbers: LA 1000, 7532-002, and component parts intended only for use with it:
controller, 7532-805, left label head assembly, 7532-813, and right label head assembly, 7532-814.

Year of Manufacture: 1999

I, the undersigned, hereby declare that the equipment specified above conforms to the
above Directive(s) and Standard(s).

Place: St. Louis, Missouri
Date: 19 August 1999

(Signature)

Anthony Bruce Castro
(Full Name)

Director of Quality, Earth City
(Position)
Precautions and Warnings

Precautions

• **USE PROPER POWER CORD.** To avoid a product damage and fire hazard, use only the power cord specified for the power source.

• **AVOID ELECTICAL OVERLOAD.** To avoid injury or fire hazard, do not apply potential to any input, including the common inputs, that varies from ground by more than the maximum rating for that input.

• **AVOID ELECTRICAL SHOCK.** Do not connect or disconnect cables while the LA/1000 is connected to a power source.

• **DO NOT OPERATE WITH COVER OPEN.** To avoid risk of electrical shock or product damage, do not operate the LA/1000 with the cover open.

• **DO NOT OPERATE IN AN EXPLOSIVE ENVIROMENT.** To avoid risk of injury or product damage, do not operate the LA/1000 in an explosive environment.

• **DO NOT OPERATE THE LA/1000 WITH SUSPECTED FAILURES.** To avoid injury or product damage, do not operate the LA/1000 with suspected failures, and have the LA/1000 inspected by a qualified service technician.

Symbols and Terms

Manual Symbols and Terms

The following describe the symbols that appear in this manual:

- Indicates an Application Note. Carefully read and follow the directive of each application note contained in this manual.

- Indicates warning or caution conditions. To avoid injury or product damage, carefully read each statement accompanying this symbol.

- Indicates pinch points. To avoid injury keep hands clear of rollers during operation and remove power during maintenance.
Product Symbols and Terms

The following table describes the symbols that appear on the LA/1000:

- Indicates pinch points. To avoid injury keep hands clear of rollers during operation and remove power during maintenance.

- Indicates Chassis Ground terminal.

- Indicates Protective Earth Ground terminal.

Intended Use Statements

The LA/1000 applies continuous roll-fed, pressure sensitive labels to a rigid surface of a product, and only operates as described in this manual.

Follow all operating and safety guidelines listed in this manual.

Transportation and Handling

Retain original shipping container for transporting the LA/1000. Contact Diagraph Customer Service for replacement containers.

If it is necessary to transport the LA/1000, then disassemble the LA/1000 and repackage it into the proper shipping container.

General Safety Summary

Review the following precautions to avoid injury and prevent damage to the LA/1000 or any component or assembly connected to the LA/1000.
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SYSTEM OVERVIEW

1.1 General System Description
The Diagraph LA/1000 label applicator applies continuous roll-fed, pressure-sensitive labels with a consistent degree of accuracy.

The LA/1000 consists of the following standard components:
- LA/1000 Stand
- LA/1000 Controller Box
- Labeling Head
- Wipe-on Applicator Assembly (Roll-on or Brush-on)
- Product Detect Sensor

The LA/1000 optional assemblies:
- Warning Tower (7532-088)
- Label Low Sensor Assembly (7532-089)
- Stand-Alone Secondary Wipe Down Assembly (6105-184)
- Encoder (5700-287)

1.2 LA/1000 Labeling Head Application Overview
The LA/1000 applies pressure-sensitive adhesive labels to the side, top or bottom surface of a product. When a product passes in front of the LA/1000, a surface of the product brushes against the adhesive side of a dispensed label, and the label adheres to the surface. As the product moves forward, a roll-on or brush-on applicator presses the label to the surface for maximum adhesion.

The application surface of the product should be large enough to accept the entire label. It should also be rigid enough to resist the pressure of a Brush-on or Roll-on Applicator as it applies pressure to the surface of the label.

1.3 Determining Right-hand and Left-hand Applications
There are some simple guidelines to follow when determining which Applicator, Right-hand or Left-hand, is appropriate for a specific application. Use the following guidelines and drawings to guide your selection.

- Facing the direction of product flow with products moving towards you, determine which surface or panel requires a label.
- If the label is required on the product’s right side, then a Right-hand applicator is required.
- If the label is required on the product's left side, then a Left-hand applicator is required.

Note: For successful brush-on or roll-on application, label-dispensing direction must match the direction of product movement.
1.4 Configuration Diagrams

The following diagrams depict multiple configuration views. Compare these diagrams to your production line and select the appropriate applicator configuration.

Drawings 1 and 2 show the LA/1000 configured for a side-panel application. Drawings 3 and 4 show the LA/1000 configured for a top panel application.

A = Right Hand Applicator  
B = Left Hand Applicator
1.5 LA/1000 Stand Dimensions

The LA/1000 stand consists of the following:
- Diagraph Standard T-base
- Upright Post

The LA/1000 uses a Diagraph standard 36 inch x 28 inch T-base stand with upright post (7500-127). The T-base features locking casters and adjustable upright post with a graduated scale.
1.6 LA/1000 Controller Box

The LA/1000 Controller Box consists of three component groups:

- Front Panel
- Internal Electrical Assemblies
- Inputs and Outputs

**A.** Beacon  
**B.** E-stop  
**C.** +24V Power Supply  
**D.** Stepper Motor Controller  
**E.** LA/1000 CPU Board  
**F.** Display Board  
**G.** Keypad and Display  
**H.** Key Switch  
**I.** J12-B Air Controller  
**J.** J12-A Encoder  
**K.** J6 Warning Tower  
**L.** Stepper Motor  
**M.** J2 Cylinder  
**N.** J3 Product Detect Sensor  
**O.** J5 Label Edge Sensor  
**P.** AC Input Module  
**Q.** J7 Label Low Sensor

**Front Panel**

The Front Panel includes the following components:

- Keypad (G)
- Key Switch (H)
- Beacon (A)
- E-Stop (B)

**Keypad and Display**

The Keypad and Display provides access to user adjustable parameters and LED indicators.
Key Switch

Key Switch allows or restricts access to adjustable parameters.

Beacon

The Beacon provides a visible alarm when the label supply is low or depleted. The label low indication requires the optional label low sensor (7532-089).

E-stop

The emergency stop switch (E-stop) instantly shuts down the LA/1000. The circuit remains open until the switch is manually reactivated.

Internal Electrical Assemblies

The Internal Electrical Assemblies includes the following components:

- Display Board (F) Processes inputs from the font panel’s keypad to the LA/1000 CPU board and displays operating parameters.
- +24V Power Supply (C) Provides power to the LA/1000 CPU, warning beacon, display board and sensors.
- Stepper Motor Controller (D) Controls the movement and position of the stepper motor. The stepper motor controller is powered by 110 VAC.
- LA/1000 CPU Board (E) Main control board. Monitors the inputs and controls the outputs of the LA/1000.

Inputs and Outputs

The Inputs and Outputs consist of the following items

- AC Input Module (P) Control Box connection for input-power with fuse (3 A SLO-BLO).
- Stepper Motor (L) Control Box connection for the Stepper Motor located on the Labeling Head.
- J12-B Air Controller (I) Future option
- J12-A Encoder (J) Control Box connection for the optional external encoder assembly (5700-287)
- J6 Warning Tower (K) Control Box connection for the optional external warning tower (7532-088).
- J2 Cylinder (M) Future option
- J5 Label Edge Sensor (O) Control Box connection for the label edge sensor located on the main plate of the labeling head.
- J7 Label Low Sensor (Q) Control Box connection for the optional label low sensor located near the supply hub on the labeling head (7532-089)
## 1.7 Electrical Block Diagram

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<th>Electrical Components and Assemblies</th>
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<td>A. Red</td>
</tr>
<tr>
<td>2. Beacon</td>
<td>B. Black</td>
</tr>
<tr>
<td>3. Keypad</td>
<td>C. Blue</td>
</tr>
<tr>
<td>4. Ferrite Bead with wire twice looped.</td>
<td>D. Brown</td>
</tr>
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<td>7. Power Supply wiring harness</td>
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</tr>
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<td>9. Fan</td>
<td></td>
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<td>10. Chassis Ground [PE]</td>
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<td>18. Key Switch Assembly</td>
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<td>20. CPU Board to Display Board Cable</td>
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<tr>
<td>21. Ferrite Beads</td>
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</tbody>
</table>
1.8 Labeling Head

The Labeling Head consists of five component groups:

- Label Supply
- Label Drive
- Liner Rewind
- Media Guiding and Label Dispensing
- Label Applicator

A. Roll-on or Brush-on Applicator
B. Wipe-on Assembly Bracket
C. Hold Down Blade
D. Web Guide
E. Label Edge Sensor Amplifier
F. Drive Roller
G. Idler Roller
H. Pressure Roller
I. Dancer Arm

J. Unwind Brake
K. Label Supply Hub
L. Rewind Clasp
M. Liner Rewind Hub
N. Cam Lever
O. Pressure Roller Spring Adjustment
P. Peel Blade
Q. Label Edge Sensor
R. Idler Roller

Label Supply

The Label Supply consist of the following items:

- Label Supply Hub (K)
- Dancer Arm (I)
- Dancer Arm Brake (J)

The Label Supply components provide a convenient and easily accessible mechanism for holding the label supply roll during operation.
Label Drive

The Label Drive consist of the following items:
- Stepper Motor (Locate on back of main plate)
- Drive Roller (F)
- Idler Roller (G)
- Pressure Roller (H)
- Cam Lever (N)
- Pressure Roller Spring Adjustment (O)

The Label Drive assembly is a friction-feed mechanism. Pinching the label media between the drive and pressure rollers provides friction. As the stepper motor advances the drive roller, friction pulls the label media along the label media path.

The cam lever (N) engages the pressure roller against the drive roller. The pressure roller spring adjustment determines the amount of pressure applied between the pressure and drive roller.

Label Rewind

Label Rewind consist of the following items:
- Liner Rewind Hub (M)
- Rewind Clasp (L)

The label rewind hub rewinds the label liner that remains after dispensing and applying the label. The rewind clasp holds the liner material securely in place during this operation.

Media Guiding and Label Dispensing

The Media Guiding and Label Dispensing consist of the following items:
- Hold Down Blade (C)
- Web Guide (D)
- Label Edge Sensor Amplifier (E)
- Peel Blade (P)
- Label Edge Sensor (Q)

The media guiding and label dispensing components maintain a consistent media path, separate the adhesive labels from the label liner and provide inputs to the LA/1000 Controller Box for label and label edge detection.

Label dispensing results from tension generated from pulling the label liner over the edge of the peel blade. During this operation, the pressure roller pulls the liner over the peel blade toward the rewind hub. The tension between the liner and the peel blade separates the label from the liner. After separating the label and the liner, the applicator assembly applies the label to the surface of the product and the waste liner winds onto the rewind hub.
Label Applicator Assembly

The applicator components consist of the following items:

- Wipe-on Assembly Bracket (B)
- Roll-on or Brush-on Applicator (A)

The applicator components apply the label to the surface of the carton after the drive and media sensor components dispense the label.

1.9 Label Application Cycle and Placement Accuracy

The LA/1000 application cycle flows as follows:

1. The labeling head is ready with a label waiting for application.
2. The product sensor detects the approaching product, initiating the countdown to label application.
3. The labeling head feeds and applies a label to the product.

1.10 Placement Accuracy

The LA/1000 is capable of maintaining a placement accuracy of $\pm \frac{1}{16}''$ at speeds up to 150 ft./min. Consistent placement accuracy is dependent on the following:

- Consistent product presentation
- Consistent line speed
- Proper equipment maintenance
SECTION 2.0 INSTALLATION

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2. **INSTALLATION**

2.1. **LA/1000 T-Base Stand**

**Parts:**
T-base Stand -5700-127 (Two parts)
1 - Up-right post
1 - T-base
1 - Nut and washer for upright to base connection.

**Tools:**
1 ½" open-end or adjustable wrench
5/32 hex key

**Assembly:**
1. Remove the T-base from its packaging and lock the casters.
2. Remove the up-right post from its packaging and attach to T-base as shown in the drawing below; tighten nut and lock washer.
3. Using a 5/32 hex key, remove the handle and reverse its position; tighten with hex key.

*After assembling, secure the LA/1000 to the floor. Use the following diagram and bolt the LA/1000 stand to the floor. This prevents accidental tipping of the machine.*
2.2. LA/1000 Controller Box

Parts:
1 – Controller Box
2 – ¼-20 X ½ “ hex bolts
2 – Internal Tooth Lock washers

Tools:
3/16” Hex Key

Installation:
1. Attach the LA/1000 Control Box to the upright post of the T-base stand with the provided hex bolts and washers.
2. Tighten both bolts with a 3/16” hex key.
2.3. Labeling Head

Parts:
1 – Yoke
1 – Crossbar
1 – Labeling Head Assembly
1 – 1½” nut
1 – Split lock washer
4 – Crossbar bolts – 5/16”-18 x 1½” shoulder screws
2 – Plate Bolts

Tools:
1½” wrench or adjustable wrench
9/16” open-end wrench
3/16” hex key

Installation:
1. Attach the yoke to the T-base stand using the 1½” nut and washers; tighten the nut with a 1½” or adjustable wrench.

   Note: Position the crossbar so the plate holes are properly aligned for the Labeling Head configuration (left-handed or right-handed). Proceed to step 4 if the crossbar holes are aligned properly. Continue to step 2 if repositioning the crossbar.

2. Remove the four 5/16”-18 x 1½” shoulder screws securing the crossbar to the yoke and reverse the crossbar’s position. Refer to the drawings below and determine the proper crossbar position.

3. Place one shoulder screw in the upper most tapped receptacle on each side of the yoke; hand-tighten the bolts.

   Left-handed Applicator

   Right-handed Applicator
3. Insert the remaining cap screws in the lower tapped holes; tighten all shoulder screws with a \( \frac{3}{16} \)" hex key.

4. Align the pivot and slotted holes on the main plate with the plate holes on the cross bar.

5. Insert a bolt in the pivot slot, and hand-tighten the bolt.

6. Insert the remaining bolt into the slotted hole and tighten both bolts with a \( \frac{9}{16} \)" open-end wrench.

Note: Loosening the alignment bolts and adjusting the position of the main plate may be required to properly align the LA/1000 with the product.

7. If necessary, adjust the crossbar for either side or top application. Refer to the drawings below and determine the proper crossbar position.
2.4. Cabling Connections

Motor Cable


Product Sensor

1. Attach the photosensor to the photosensor bracket.
2. Mount the photosensor bracket and photosensor to the conveyor as shown in the drawing below.

Label Edge Sensor

1. Connect the DB9 connector [C] on the label-edge sensor cable to J5 Label Edge connector [D] on the controller box.

Power Cable

1. Connect the three prong female receptacle of the power cable to the power-input module on the controller box.
2.5. Wipe-on Applicator

The Wipe-on Applicator is available in either a Brush-on or Roll-on option. The Roll-on applicator is best suited for products with rigid and uniform substrates, such as boxes, trays and cartons. The Brush-on Applicator is best suited for products with flexible and non-uniform substrates, such as bags and blister packs.

**Brush-on**

**Roll-on**

**Parts:**
1-Brush-on or Roll-on Applicator

**Tools:**
Hex Wrench Set

**Installation:**

1. Remove the hex head screw [A] from applicator assembly with hex wrench.
2. Attach applicator assembly to LA/1000 as shown in the above illustration.

**Note:** Install the brush-on and roll-on applicators using the following procedure.
2.6. Webbing the LA/1000

Power OFF the LA/1000 before continuing with the label webbing procedure.

1. Disengage the pressure roller [E] by lifting the cam lever [K] to the unlock position. Turning the lever counterclockwise for a left-hand model and clockwise for a right-hand model disengages the pressure roller.

2. Remove labels from the label roll so that approximately 28 to 30 inches of label liner is exposed.

3. Remove the top of the label supply hub by releasing the grip collar.

4. Place label roll on label supply spindle so that the labels unwind counterclockwise for a left-hand model and clockwise for a right-hand model.

5. Feed the label liner behind the dancer arm [F] (label material faces the dancer arm), then between the idler roller and the drive roller.

6. Continue feeding the label liner between the two web guides. If necessary, adjust the top web guide to the label width.
7. Slide the label liner between the peel blade and the hold-down blade. Pull the liner until a label is even with the peel blade.
8. Take the label liner around the back of the peel blade and over the top of the guidepost and then down between the guidepost and drive roller.
9. Feed the label liner between the pressure roller and drive roller.
10. Remove the unwind clasp from the rewind spool.
11. Wind the label liner around the rewind shaft. For left-hand models, wind counterclockwise and for right-hand models, wind clockwise. Pull liner tight and replace the unwind clasp.
12. Release the cam lever.
13. Replace the top of the label supply hub.
14. Check web guides for label width and adjust accordingly.

15. Press the FEED button twice. Pressing the feed button twice dispenses any partially dispensed label and allows the label edge sensor to measure the full length of the label.
16. If necessary, adjust the presentation position for the new label stock (See Section 3.2).

2.7. Aligning the LA/1000 with the Product

1. Unlock the casters and move the stand so that the peel blade is ¼” away from the product and at a 45º angle to the application surface.
2. Lock the casters and verify that the width of the application surface is parallel with the width of the peel blade.

Note: If moving the LA/1000 stand is unsuccessful, it is necessary to change the label head angle relative to the stand. Follow the procedure below and complete the alignment.

3. Locate the two hex-head bolts [C] and [D] between the label supply hub and the rewind hub. Loosen the bolt in the slotted area first [C]. Then slightly loosen the other bolt [D].
4. Slide the head to the desired angle.
5. Tighten the bolts [C] and [D].

A - 45º angle
B – ¼” distance from
2.8. Applicator (Roll-on and Brush-on) Position Adjustment

1. Loosen the socket-head cap screw [A] and adjust the position of the wipe-on assembly bracket. Adjust the bracket so that the foam roller or brush contacts the product slightly before or even with the contact point between that the leading edge of the label [C] and the product. Position the applicator so it gently sweeps the entire surface of the label. Refer to the drawings below and adjust the position of the applicator head.

2. After positioning the wipe-on bracket hold the assembly in place and tighten the cap screw.

3. The brush head [B] of the brush-on applicator is also adjustable. If necessary adjust the brush to the proper position.

2.9. Hold Down Blade Tension Adjustment

The hold down blade [A] provides tension between the label media and the peel blade [B]. Incorrect hold down blade tension causes label feed problems and motor stalling. Performing the follow procedure will correctly set the hold down blade tension.

1. Loosen the hold down blade knob [D].

2. Position the peel blade lever [C] so that approximately two inches of the leading edge of hold down blade is flush against the peel blade.

3. Hold the hold down blade lever [C] in place and tighten the hold down blade knob [D].
SECTION 3.0  APPLICATOR OPERATIONS

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3. APPLICATOR OPERATIONS

The LA/1000 keypad provides access to adjustable parameters. These parameters allow the LA/1000 to operate effectively in a variety of applications. The keypad also contains a seven-segment display and a series of LEDs for displaying numerical values and system status.

3.1 Front Panel Indicators and Controls

<table>
<thead>
<tr>
<th>LEDs</th>
<th>COLOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready</td>
<td>Green</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td>Label Low*</td>
<td>Yellow</td>
<td>ON</td>
</tr>
<tr>
<td>Label Out</td>
<td>Red</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>Green</td>
<td>A visual Indicator that the product-detect sensor has detected a product and the LA/1000 controller has received the product detection signal.</td>
</tr>
<tr>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-Segment</td>
<td>Green</td>
<td>Two-digit LED display of the following system settings: label dispense speed, label presentation, product delay, and cylinder dwell time.</td>
</tr>
<tr>
<td>Display</td>
<td></td>
<td>Blinks five times when a parameter's upper or lower limit is reached. Displays the current parameter value until a new parameter is selected or until a five-minute timeout occurs.</td>
</tr>
</tbody>
</table>

*Must have Label Low option installed.
## Button Functions

<table>
<thead>
<tr>
<th>BUTTON</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>![RESET]</td>
<td>Interrupts the LA/1000 and performs a Power On initialization procedure. Clears label low or label out conditions, while preserving all operating parameters.</td>
</tr>
<tr>
<td>![FEED]</td>
<td>Interrupts or activates the LA/1000. The LA/1000 is active when the READY LED is On and inactive when the READY LED is Off.</td>
</tr>
<tr>
<td>![SPEED]</td>
<td>Dispenses one label. Upon dispensing, the label length is measured, saved, and speed is displayed. <strong>Report Function:</strong> Displays the current dispense speed value (9 to 75). A reference number is displayed and not the actual dispense speed. To determine the approximate dispense speed, multiply the displayed number by 2 ft/min. <strong>Change Function:</strong> Pressing the ![SPEED] or ![SPEED] again (within 5 minutes) will result in an increase or decrease in the SPEED value.</td>
</tr>
<tr>
<td>![DELAY]</td>
<td>This function is NOT available with a brush/roll-on model. <strong>Report Function:</strong> Displays the current delay reference value. The delay represents the amount of time the applicator waits before starting the label application process. The delay allows the applicator to vary the location of the label placement on the product. <strong>Change Function:</strong> Pressing the ![DELAY] or ![DELAY] buttons again (within 5 minutes) will result in an increase or decrease in the DELAY value.</td>
</tr>
</tbody>
</table>

### SPEED

- **Min. = 18 ft**
- **Max. = 150 ft**

### DELAY

- **Min. = 0.005 sec**
- **Max. = 0.5 sec**

- **Report Function:** Pressing this button once displays the reference value for that particular function in the LCD display. Pressing the button again within five minutes increases the reference value for that particular command.

- **Change Function:** Pressing this button once displays the reference value for that particular function in the LCD display. Pressing the button again within five minutes decreases the reference value for that particular command.
Auto Repeat Function

The and buttons have an auto repeat function. Continuing to depress these buttons will automatically advance to the next value.

Power On Initialization or System Reset.

When powering ON the applicator or pressing the button, the LA/1000 will complete the following initialization procedures:
1. All LEDs and lights are off and the LED is blank.
2. The right-hand decimal point on the 2-digit display lights.
3. The left-hand decimal point on the 2 digit display lights.
4. All segments of the LED light and an appears and at the same time the READY, LOW, OUT and PRESENT LEDs light.
5. All LEDs will remain on for one second and then go out for one second.
6. The display reads ON and the LA/1000 is ready for operation.

3.2 Two Button Functions

Label Presentation Adjustments

The distance a label travels after its leading edge is detected is adjustable from 0 to 0.66 inches in 0.01 inch increments. The display values range from 0 to 66.

Press and hold (Feed). Then press or to display the current setting.

To increase the distance:
1. Press and hold
2. Then press

To decrease the distance:
1. Press and hold
2. Then press

Note: The label presentation position may need adjustment when changing to a label stock of a different size. The presentation position refers to the distance that the applicator must advance the label media past the label edge sensor to align the leading edge of the label with the peel blade.
Restoring Default Settings

To reset the LA/1000's operating parameters to their default settings:

1. Press and hold until all the LEDs blink ON then OFF.
2. Press and release
3. Continue to hold until all the LEDs blink ON then OFF.
4. Release

Following is a table of the default values for the LA/1000:

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label Dispense Speed</td>
<td>42 (84 ft./min.)</td>
</tr>
<tr>
<td>Edge Detect Delay</td>
<td>33 (0.33 inches)</td>
</tr>
<tr>
<td>Product Delay</td>
<td>0</td>
</tr>
</tbody>
</table>

3.3 Warning Beacon

The following table describes the warning beacon indications for the LA/1000

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinks once every 2 seconds</td>
<td>Label Low condition*</td>
</tr>
<tr>
<td>Blinks once every second</td>
<td>Label Out condition</td>
</tr>
<tr>
<td>Off</td>
<td>No error condition</td>
</tr>
</tbody>
</table>

*Label Low option must be installed.

3.4 Optional Warning Tower

The following table describes the warning beacon indications for the LA/1000

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Label Out condition; disables product labeling</td>
</tr>
<tr>
<td>Yellow</td>
<td>Label Low condition*</td>
</tr>
<tr>
<td>Green</td>
<td>ON Applicator on-line ready to apply labels</td>
</tr>
<tr>
<td></td>
<td>OFF Applicator in standby mode</td>
</tr>
</tbody>
</table>

*Label Low option must be installed.
3.5 Key Switch

To disable the keypad and prevent someone from changing parameters on the LA/1000, turn the key switch on the controller door counterclockwise to the Locked position. (Remove the key if desired.) In the Locked state, no parameter adjustments can be made. The FEED and TEST buttons are not functional. The LA/1000 can still be reset, switched on-line and off-line, and will display all operating settings.

**NOTE:** In the Unlocked position, the key cannot be removed.

3.6 E-stop Operation

Strike the E-stop firmly to affect an emergency stop and shut down the LA/1000. E-stop activation interrupts line power to the LA/1000 - all displays and LEDs are blank, and all keypad functions and sensors are disabled.

Turn the pushbutton a quarter turn counter clockwise to reactive the E-stop and restore power to the LA/1000.
SECTION 4.0 MAINTENANCE

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</table>
4. MAINTENANCE

4.1 LA/1000 Preventive Maintenance

<table>
<thead>
<tr>
<th>Weekly</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Using clean dry compressed air, blow paper dust and other debris away from label edge sensor.</td>
<td>• Clean the optic surface of the label edge sensor with alcohol.</td>
</tr>
<tr>
<td>• Using clean dry compressed air, blow paper dust and other debris away from product detect sensor.</td>
<td>• Clean the product detect sensor with alcohol.</td>
</tr>
<tr>
<td></td>
<td>• Clean the spindles of all label residue.</td>
</tr>
<tr>
<td></td>
<td>• Check the rewind belt periodically for looseness.</td>
</tr>
</tbody>
</table>

---

Power OFF the LA/1000 and disconnect the power cord. Remove label material from the LA/1000 before continuing with any maintenance procedure.

4.2 Rewind Clutch Spring Adjustment

The label rewind spindle uses a spring clutch to control its torque. Tighten the clutch tension if the liner sags, or loosen the tension if the liner breaks.

1. Hold the top of the shaft [A] steady by placing a 5/16” or adjustable wrench across the flat part of the shaft.

2. Using a 3/4” wrench, tighten or loosen the nut [B] at the base of the spindle.

3. Repeat step 2 until proper tension is reached.
4.3 Rewind Belt Adjustment and Replacement

Check the rewind belt tubing periodically for looseness and wear. Shorten or replace belt as necessary.

1. Detach one side of the rewind belt [A] tube from the metal coupling [B].

2. Shorten the belt by cutting and removing $\frac{1}{4}$" segments from the tube.

3. Repeat step 2 until desired length is reached.

4. Replace belt and reattach tube with metal coupling.
4.4 Label Edge Sensor Adjustments

The labeling head is equipped with a label edge sensor that detects the difference between liner and the more opaque combination of liner and label. Adjust the label edge sensor if the labels are partially dispensed.

1. Remove several labels from the label roll.
2. Web the applicator making sure to place only liner material between the sensor and the peel blade.
3. Remove the sensor amplifier cover.
4. Set the mode selection switch to SET

![Diagram of sensor components]

5. Press the ON button. The green LED will blink twice. Setting the ON level turns on the red LED.
6. Place a label and liner between the sensor and the peel blade.
7. Press the OFF button. The green LED will blink twice. Setting the OFF level turns off the red LED.
8. Set the mode selection switch to RUN. The green LED will blink 0 to 5 times indicating the contrast level. The higher the number the greater the contrast. For best results, the contrast level should be at least level 3.
9. Replace the amplifier cover.
4.5 Replacing the Power Entry Module Fuse

⚠️ Turn OFF the LA/1000 and disconnect the power cord.

1. Open the power entry module cover [A] using a small slotted screwdriver.
2. Slide out the fuse module housing [B].
3. Replace fuse with new fuse [C].
4. Insert the fuse module housing.
5. Close the fuse module cover.
6. Plug in the power cord and power ON the LA/1000.
7. Verify that the LA/1000 is now operational.

Power Fuse Rating:

4.6 Replacing the Beacon Bulb

AVOID DAMAGING LENS COVER. DO NOT REMOVE COVER WITH SCREWDRIVER.

Replace beacon bulb if filament is broken, or if an ohmmeter measurement indicates infinite resistance.

2. Set lens cover aside.
4. Insert new bulb. Press down and twist until bulb locks into place.
5. Replace the beacon cover. Using considerable force, press down with two hands and snap lens cover into place.
4.7 Replacing the CPU Fuses

⚠️ **Turn OFF the LA/1000 and disconnect the power cord**

Follow the procedure below to replace both the 500 mA [H] and 250 mA fuses [I].

1. Open the front door of the LA/1000 controller and locate the CPU board [G].
2. Pry up an end of the fuse with a small screwdriver until it pops free of the fuse holder.
3. Grasp the metal fuse end with hawk nose pliers and remove it from the CPU board.
4. Insert new fuse, and close the controller door.
5. Plug in power cord and power ON the LA/1000. Verify that the LA/1000 is operational.

**CPU Fuse Ratings**

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>500 mA</td>
</tr>
<tr>
<td>F2</td>
<td>250 mA</td>
</tr>
</tbody>
</table>

4.8 Product Detect Sensor Adjustments

The LA/1000 uses a proximity sensor. After detecting the product, the sensor sends a signal to the controller, beginning the label application process. The product sensor is usually mounted to the conveyor.

To increase or decrease the product sensor’s sensing distance, adjust the potentiometer located on the back of the sensor by using a screwdriver. Turn clockwise to increase the sensing distance or turn counterclockwise to decrease the sensing distance.
## SECTION 5.0 TROUBLESHOOTING

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</table>
5. TROUBLESHOOTING

5.1 LABEL FEED PROBLEMS

This section covers causes and corrective actions to take when the LA/1000 label applicator is having label feed problems. The underlined statements are possible causes of problems. Review the overall system drawing below for part identification.

A. Roll-on or Brush-on Applicator  J. Unwind Brake
B. Wipe-on Assembly Bracket  K. Label Supply Hub
C. Hold Down Blade  L. Rewind Clasp
D. Web Guide  M. Liner Rewind Hub
E. Label Edge Sensor Amplifier  N. Cam Lever
F. Drive Roller  O. Pressure Roller Spring Adjustment
G. Idler Roller  P. Peel Blade
H. Pressure Roller  Q. Label Edge Sensor
I. Dancer Arm  R. R. Idler Roller
Labels Will Not Feed

**A. Applicator not webbed properly.**

1. Re-web the applicator. See section 2.6 of this manual.

**B. Pressure roller not engaged.**

1. Lock the cam lever into position by turning clockwise for a left-hand model and counterclockwise for a right-hand model.

**C. Applicator not connected to power source.**

1. Plug into AC power supply.

**D. Setscrews in drive roller loose.**

1. Remove setscrews and apply removable thread-locker on setscrew; tighten drive roller setscrews. (Item F on Labeling Head drawings, page 38)

**E. Product detect sensor out of alignment.**

1. Review Section 4.8 (Product Detect Sensor Adjustment) and re-adjust the sensor.

**F. Defective product detect sensor.**

1. Verify operation as defined in Section 4.8 (Product Detect Sensor Adjustment). Replace if sensor fails to function as defined in the procedure.

**G. System is in Standby**

1. Verify that the Ready LED is ON. If the Ready LED is OFF press \( \bigcirc \) to activate the LA/1000.
Labels Feed Slowly

A. **Adhesive build-up on peel blade.**
   1. Remove label stock.
   2. Remove hold down blade.
   3. Clean hold down blade and peel blade with denatured alcohol and a lint free cloth.
   4. Replace hold down blade.

B. **Pressure roller not engaged.**
   1. Check to make sure the cam lever is engaged.
   2. To increase the Pressure roller pressure use a \( \frac{3}{16} \) -inch hex wrench and turn the Pressure roller setscrew clockwise. (Item O on Labeling Head drawings, page and 38)
   3. After adjusting, be sure the cam lever can open fully. If it will not open, turn the setscrew counterclockwise.

C. **Defective drive or pressure rollers.**
   1. Check rollers for wear.
   2. Clean, or replace if necessary.

Labels Feed Intermittently

*Follow Labels Feed Slowly corrective action procedures first. If unsuccessful then continue:*

A. **Improper product sensor setting.**
   1. Adjust gain on product sensor. To increase the sensing distance, turn the potentiometer clockwise slightly.
   2. Review Section 4.8.

B. **Malfunctioning product sensor.**
   1. Replace product sensor.
Labels Do Not Peel

A. **Worn peel blade.**
   1. Visually inspect peel blade.
   2. Replace peel blade if necessary.

B. **Label hold-down blade loose on tip.**
   1. Readjust for light pressure.

C. **Labels not releasing properly.**
   1. Contact Diagraph Label Sales Representative.

Labels Feed Continuously

A. **Translucent label material in use.**
   1. Label edge sensor cannot see label material.
   2. Check label opacity. Review Section 4.4 (Label Edge Sensor Adjustment).
   3. Contact Diagraph Label Sales Representative.

B. **Label edge sensor not adjusted correctly.**
   1. Adjust the label edge sensor’s sensitivity (see Section 4.4).

Labels Double Feed

A. **Label edge sensor not adjusted correctly.**
   1. Adjust label edge sensor’s sensitivity (see Section 4.4).

Labels Rewinding Incorrectly

A. **Labels rewinding loosely.**
   1. Increase the rewind slip clutch friction by tightening the ¾” nut on the back of the rewind hub.

B. **Labels rewinding too tight.**
   1. Decrease friction by loosening the ¾” nut on the back of the rewind hub.
5.2 MISC. PROBLEMS

This section covers causes and corrective actions to take for problems other than label feed problems. The underlined statements are possible causes of the problems.

Label Backing Tape Breaks

A. Label roll wound unevenly.
   1. Rewind label roll making sure the same copy position is maintained.

B. Perforated label stock
   1. Replace the perforated stock with continuous label stock.

C. Lacquer-spotted backing paper.
   1. Contact your Diagraph Label Sales Representative.

D. Adhesive build-up.
   1. Clean adhesive from rollers, top of dispensing blade and sensor.
   2. Clean the hold-down blade. Refer to previous section Labels Feed Slowly for instructions on cleaning the hold-down blade and peel blade.

E. Backing paper or web misaligned as it passes between the drive roller and pressure roller.
   1. Adjust the label guides and label material.

F. Rewind webbed improperly.
   1. Reload the label material into the LA/1000. See Section 2.6 (Webbing the Applicator).
Rewind Tape Slips between Drive Roller and Pressure Roller

A. Accumulation of adhesive or lacquer on drive and/or pressure roller.
   1. Clean rollers.

B. Incorrect pressure between drive roller and pressure roller.
   1. Check to make sure that the pressure roller’s lifting lever is released.
   2. Adjust Pressure roller spring tension. (Item O on Labeling Head drawings, page 38)

Motor Sounds Rough or Vibrates

A. Overload caused by restriction.
   1. Check for labels stuck on drive roller or pressure roller.
   2. Check for labels caught in guides.
   3. Check label material for thickness.

B. Defective motor.
   1. Replace motor.
## SECTION 6.0  PARTS KITS

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Assembling the Light Tower

1. Insert the shaft [A] into the opening at the base of the lamp assembly [B].
2. Tighten the two setscrews [C] at the base of the lamp assembly [B] with a \( \frac{5}{64} \)" hex key.
3. Pull the cable through the shaft until the cable is taut.
4. Slide the shaft through the opening of the top bracket [H].
5. Thread the top nut [D] and washer onto the shaft.
6. Note: Thread the top nut and washer before placing the shaft through the lower bracket.
7. Slide the shaft through the opening of the bottom bracket [I].
8. Thread the bottom nut [E] onto the strain relief [F].
10. Thread the bottom nut [E] and strain relief [F] onto the shaft until the nut and strain-relief come to a stopped position.
11. Tighten the top nut [D] securing the warning tower bracket to the tower light assembly.

Connecting the Tower to the LA/1000 Control Box

1. Connect the DB-9 connector [J] on the warning tower cable to J6 on the controller Box.
2. Tighten the jack screws to secure the DB-9 connector to the controller Box.

Verifying Operation

- The light tower’s green lamp will light when the LA/1000 control box’s “READY” LED is ON.
- The light tower’s red lamp will light when the LA/1000 control box’s “OUT” LED is ON.
- The light tower’s yellow lamp will light when the LA/1000 control box’s “LOW” LED is ON. The label low sensor (7532-089) must be installed before verifying operation.
Installing the Low Label Sensor

1. Attach the sensor-mounting block [A] to the LA/1000 main plate using the 6-32 x 3/4" pan head screw and the #6 flat and lock washers.
1. Position the low label sensor [B] and attach to the sensor mounting block using the 4-40 x 3/8" pan head screw and the #4 flat and lock washers.
1. Connect the low label sensor cable [C] to the low label sensor as shown in the corresponding drawing.
1. Attach the ground wire [D] at [E] with the #10-32 x 1 inch Phillips pan head screw.
1. Connect the DB-9 connector [F] on the low label cable assembly to J7 on the controller box. Tighten the jack screws to secure the DB-9 connector to the controller box.

Low Label Activation Points

1. The Low Label Assembly has three activation points. The location of the sensor on the sensor mounting block determines the activation point. These activation points allow the alarm to turn-on at different label supply levels. Use the chart below and determine the location of the low label sensor.

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<th>Sensor Position</th>
<th>Approximate Label Supply Diameter</th>
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<tr>
<td>A</td>
<td>3 1/2&quot;</td>
</tr>
<tr>
<td>B</td>
<td>4 1/2&quot;</td>
</tr>
<tr>
<td>C</td>
<td>5 1/2&quot;</td>
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Verifying Operation

The "LOW" LED is ON when the label supply falls below the low label sensor activation point.
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<tbody>
<tr>
<td>1</td>
<td>LA/1000 Standard Web Roll-on Applicator Assembly</td>
<td></td>
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</tbody>
</table>

Tools

Installation Instructions

- **Removing the Old Applicator Assembly**
  1. Remove the socket head cap screw and washer [B] with a hex key. Access the cap screw from the back of the main plate.
  2. Discard the old applicator assembly.

- **Installing the Replacement Applicator Assembly**
  1. Remove the socket head cap screw and washer from the mount arm [A] of the new applicator assembly.
  2. Align the mount arm with the main plate mounting hole [D].
  3. Insert the socket head cap screw and washer and tighten with a hex key.

- **Roll-on Applicator Position Adjustment**
  1. Position the wipe-on assembly bracket so the foam roller [C] contacts the application surface slightly ahead or even with the contact point of the leading edge of the label and the product surface [F].
  2. Loosen the socket-head cap screw [E] and adjust the position of the wipe-on assembly bracket. Refer to the adjacent drawings and adjust the position of the foam roller. Position the applicator so the roller gently sweeps the entire surface of the label.
  3. After positioning the bracket, hold in place and tighten the cap screw.
# Contents

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<tbody>
<tr>
<td>1</td>
<td>Standard Web Brush-on Applicator Assembly</td>
<td>7532-072</td>
</tr>
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</table>

## Tools

- Removing the Old Applicator Assembly
  1. Remove the socket head cap screw and washer [B] with a hex key. Access the cap screw from the back of the main plate.
  2. Discard the old applicator assembly.

- Installing the Replacement Applicator Assembly
  1. Remove the socket head cap screw and washer from the mount arm [A] of the new applicator assembly.
  2. Align the mount arm with the main plate mounting hole [D].
  3. Insert the socket head cap screw and washer and tighten with a hex key.

- Brush-on Applicator Position Adjustment
  1. Position the wipe-on assembly bracket so the brush head [C] contacts the application surface slightly ahead or even with the contact point of the leading edge of the label and the product surface [F].
  2. Loosen the socket-head cap screw [E] and adjust the position of the wipe-on assembly bracket. Refer to the adjacent drawings and adjust the position of the Brush head. Position the applicator so the brush gently sweeps the entire surface of the label.
  3. After positioning the bracket, hold in place and tighten the cap screw.
  4. The brush head [G] is also adjustable. If necessary, adjust the brush to the proper position.
Installation Instructions

WARNING: ESD SENSITIVE DEVICE. OBSERVE PRECAUTIONS.

Unplug the system and use anti-static protection throughout these procedures. Follow the directions included with disposable wrist strap.

Before proceeding, turn OFF the LA/1000 and disconnect the power cable.

Removing the Old CPU Board and Side Plate Assembly (Refer to drawings on reverse side)

1. Disconnected all the D-sub connectors [A] attached to the side plate.
2. Open the controller-housing door.
3. Disconnect the keypad ribbon cable J1 from the CPU board.
4. Disconnect the stepper motor cable J4 from the CPU board.
5. Disconnect the beacon controller cable J8 from CPU board.
6. Disconnect the power supply cable J11 from CPU board.
7. Remove the two Philips head screws [B] securing the side plate to the controller box.
8. Pry the top of the CPU board free from the standoffs.
9. Pry the middle of the CPU board free from the standoffs.
10. Pry the bottom of the CPU board free from the standoffs, and remove the CPU board from the controller housing.

Installing the New CPU Board and Side Plate Assembly

1. Press the top, middle and the bottom of the CPU board until the standoff snap into position and secure the CPU board.
2. Reconnect J1, J4, J8 and J11 cables to their respective connectors.
3. Close the controller-housing door.
4. Reconnect the power cable and power ON the LA/1000.

Verify Operation

1. Verify that the Ready light is green and ON is displayed in the two-digit LED display.
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Tools

Slotted screw driver

Installation Instruction

WARNING: ESD SENSITIVE DEVICE.

OBSERVE PRECAUTIONS.

Unplug the system and use anti-static protection throughout these procedures. Follow the directions included with disposable wrist strap.

Before proceeding, turn OFF the LA/1000 and disconnect the power cable.

Record all cable connections before disconnecting.

■ Removing the Old Display Board (Refer to drawings on reverse side)

1. Open the controller-housing door.
2. Disconnect the keypad ribbon cable J1 from the display board.
3. Disconnect the CPU ribbon cable J2 from the display board.
4. Disconnect the key switch cable J3 from display board.

Four spring action PEM® standoffs [A] secure the circuit board in place. The circuit board is removed by gently prying the board free from the standoffs.

5. Pry the top of the display broad free from the standoffs.
6. Pry the bottom of the display board free from the standoffs, and remove the display board from the controller housing.

■ Installing the New Display Board

1. Press the top and the bottom of the display board until the standoff snap into position and secure the display board.
2. Reconnect J1, J2, and J3 cables to their respective connectors.
3. Close the controller-housing door.
4. Reconnect the power cable and power ON the LA/1000.

■ Verify Operation
1. Verify that the Ready light is green and ON is displayed in the two-digit LED display.
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<tr>
<td>1</td>
<td>Instruction Sheet</td>
<td>7532-317N</td>
</tr>
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</table>

Tools

- Slotted screw driver
- Wire Stripper

Installation Instruction

⚠️ **Turn OFF the LA/1000 and disconnect the power cable before installation.**

- **Removing the Old Sensor Amplifier**

  1. Disconnect the amplifier cable from controller connector J5 [A].
  2. Release cable lock lever [B] and remove the gray and black sensor wires.
  3. Push the amplifier forward [C] and lift the front of the amplifier off the mounting bracket [D].
     Discard the old sensor.
Installing the New Sensor Amplifier.

1. Hook the rear of the sensor amplifier to the mounting bracket [A]. Press the front of the amplifier onto the bracket [B].

2. Insert the gray and black sensor wires.
   a. Release the cable lock lever [C].
   b. Remove .3 inch of wire insulation [G] from the sensor-wires with the provided stripping tool [D] to expose the grounding shield [E] and inner conductor [F]. Do Not remove the insulation from the inner conductor.
   c. Align the wire so the grounding shield [H] is placed into the narrow opening of the inlet [J].
      Note the location of the gray [K] and black [I] wires. Insert wires into the proper inlet.
   d. Close the cable lock lever.

3. Connect the amplifier cable to controller connector J5 [L].

Adjusting the Label Edge Sensor.

Follow the procedures listed in Section 4.4 (Label Edge Sensor Adjustment) of the LA/1000 Operations Manual.
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</tr>
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<td>INSTRUCTION SHEET 7532-321N</td>
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</tbody>
</table>

Tools

- Small Phillip screwdriver
- Hex Key Set
- Diagonal Cutter
- Wire Stripper

Installation Instruction

⚠ Turn OFF LA/1000 and disconnect the power cable before installation.

- Removing the Old Peel Blade Sensor

1. Remove the socket-head screw [G] and the applicator assembly [B] from the labeling head.
2. Remove the hold-down knob [F] and the hold-down blade [C] from the labeling head.
3. Disconnect the sensor wires from the sensor amplifier. Release the wire lock-lever [H] and pull the wires [A] from the amplifier.
4. Cut the cable tie-wraps [M] and slide wires through tube [N]. (See drawing on next page.)
5. Remove the socket-head screw [E] and the peel-blade assembly [D] from labeling head.
6. Remove the upper sensor head bracket [I] from the peel-blade assembly [L].
7. Remove the sensor head [J] from the sensor bracket.
8. Remove the sensor lower sensor head [K] from the peel blade assembly.

⚠ Retain all mounting hardware throughout these procedures.
**Installing the New Peel Blade Sensor**

1. Attach the lower sensor head to the peel blade assembly.
2. Attach the upper sensor head to the upper sensor bracket.
3. Attach the upper sensor head bracket to the peel blade assembly.
4. Carefully route the wires through the wire guide hole on the peel blade assembly and allow the excess to hang from the wire guide exit [O] at the rear of the peel blade.
5. Reattach the peel blade, the hold-down blade and applicator to the labeling head.
6. Measure and trim the sensor wires excess to a length of 7 to 8 inches.
7. Guide sensor wires through tube [M] and secure to the labeling head with the cable tie-wraps [N].

**Preparing the Sensor Wires**

1. Remove .3 inch of wire insulation [Q] from the ends of each sensor wire. Do Not remove the insulation from the inner conductor.
2. Release the cable lock lever.
3. Insert wire so the grounding shield [P] aligns with the narrow opening of the wire inlet [R].

**NOTE** Observe the location of the gray and black wires. Insert wires into the proper inlet.
4. Close the cable lock lever.

**Sensor Setup and Operation**

1. Connect the power cord and turn ON the LA/1000 power switch.
2. Press FEED on the keypad and verify that the LA/1000 advances one label and stops.

The sensor is not properly detecting the label edge if the LA/1000 partially dispenses labels during operation. Adjust the label edge sensor using the procedure listed in Section 4.4 (Label Edge Sensor Adjustment) of the LA/1000 Operations Manual.

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Printed in USA
1000.927.M02

Service Part Kit 7532-321N
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Tools

#1 Phillips screw driver

Installation Instruction

Turn OFF LA/1000 and disconnect the power cable before installation.

Removing the Electronic Chassis

1. Disconnect all cables connected to the controller box.
2. Open the controller box.
3. Disconnect the following cables:
   - [A] Fan Power cable
   - [B] CPU to Display Board cable
   - [C] CPU to Warning Beacon cable
4. Using a flathead screwdriver disconnect the E-stop contact block.
5. Disconnect the chassis ground wires
6. Remove the screws securing the electronic chassis to the controller box.
   - [E] six external screws
   - [F] four internal screws
7. Remove the Electronic chassis from the controller box.

Replacing the power supply

1. Place the electronic chassis on a flat surface.
2. Disconnect the power harness from the bottom of the power supply.
3. Disconnect the power output wires from the top of the power supply.
4. Remove the wire tie from the side of the power supply.
5. Remove the four screws holding the power supply to the chassis.
6. Replace the power supply by reversing steps 1-5.

Reference the wiring diagram on the next page while reconnecting the cables and wires.
- Replacing the Electronic Chassis

1. Replace the electronic chassis by reversing the steps listed under "Removing the Electronic Chassis".

- Verifying Operations

1. Connect the power cable and turn ON the LA/1000.

1. Watch to see that the LA/1000 completes the following Power On initialization:

   a. The right-hand decimal point on the 2-digit display lights.
   b. The left-hand decimal point on the 2-digit display lights.
   c. All segments of the LED light and the LCD display reads 88 at the same time the READY, LOW, OUT and PRESENT LEDs light.
   d. All LEDs will remain on for one second and then go out for one second.
   e. The display reads ON (ON) and the LA/1000 is ready for operation.
Contents

**Qty**  | **Description**  | **Code**
--- | --- | ---
1 | Stepper Motor Controller | 7532-809
1 | Instruction Sheet | 7532-370N

**Tools**

# 2 Phillips Screwdriver

**Installation Instruction**

⚠️ **Turn OFF the LA/1000 and disconnect the power cable before installation.**

Record all cable connections before disconnecting.

- **Replacing the Stepper Motor Controller**
  1. Open the LA/1000 controller box and locate the stepper motor controller.
  1. Disconnect the following cables from the stepper controller: stepper motor cable [A], the stepper controller power cable [B], and the stepper controller CPU cable [C].
  1. Using a Phillips screwdriver, remove the two screws holding the mounting bracket to the controller housing.
  1. Remove the two screws holding the stepper controller to the bracket.
  1. Discard the old stepper controller.
  1. Replace the stepper controller by reversing steps 1 – 4.
  1. Using the chart below set the position of the stepper motor controller DIP switches.

- Set switch 7 to OPEN for applications speeds less than 30 fpm.
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<td>Instruction Sheet</td>
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</table>

Tools

9/16 and 1/8 Hex Wrenches

System Preparation

Power OFF the LA/1000 and disconnect the power cord.

Remove label material from the LA/1000 before continuing with the replacement procedure.

Removing the Old Stepper Motor Controller

1. Disconnect the stepper motor cable [A] from the stepper motor at [A].
2. Remove the nut and disconnect the ground wire and [B].
3. Release the cam lever [C].
4. Remove the drive roller belt [J]. Slide the belt off the drive roller [E].
5. Rotate the drive roller and locate the two setscrews [J] securing the roller to the motor shaft.
6. Loosen the setscrews and slide the roller off the motor shaft.
7. Using your hand to support the bottom of the motor, remove the four bolts [H] that secure the motor to the labeling-head [I].
8. Remove the stepper motor and retain all the mounting hardware for replacing the stepper motor.

WARNING
Support motor while replacing

WARNING
Pinch point. Protect hands.
## Installing the New Stepper Motor

1. Align the mounting holes on the stepper motor [M] with the mounting holes on the labeling head [L].

2. Secure the stepper motor to the mounting plate using the four bolts [K] and nuts [N].

3. To eliminate the possibility of screws loosening during operation, apply Lotite 242 Removable Strength threadlocker to the threads of each nut [N]. Follow the directions included with the threadlocker.

4. Tighten each nut to 40 in/lbs. of torque.

5. Align the setscrews [P] on the drive roller [O] with the flat sections of the drive motor shaft [Q] and slide the drive roller onto the motor shaft. Tighten the setscrews.

6. Attach the stepper motor cable to the stepper motor and grounding wire (Refer to [A] and [B] on the previous page).

## Verifying Operations.

1. Reload the label material.

2. Connect the power cord and turn ON the LA/1000 power switch.

3. Press FEED on the keypad and verify that the LA/1000 advances one label and stops.
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<th>Description</th>
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<td>3.15 AMP 5 mm x 20 mm SLO-BLO</td>
<td>7532-833</td>
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<td>500 mA 5 mm x 20 mm SLO-BLO</td>
<td>7532-127</td>
</tr>
<tr>
<td>3</td>
<td>250 mA – 5 mm x 20 mm SLO-BLO</td>
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<tr>
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<td>Instruction Sheet</td>
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</table>

Tools

System Preparation

⚠️ Power OFF the LA/1000 and disconnect the power cord.
Remove label material from the LA/1000 before continuing with the replacement procedure.

- Replacing the Power Entry Module Fuse

1. Open the power entry module cover [A] using a small slotted screwdriver.
2. Slide out the red fuse housing [B].
3. Replace the blown fuse with new fuse (7532-833) [C].
4. Insert the fuse module housing.
5. Close the fuse module cover.
6. Plug in the power cord and power ON the LA/1000.
7. Verify that the LA/1000 is now operational.
Replacing the Beacon Bulb

AVOID DAMAGING LENS COVER. DO NOT REMOVE COVER WITH SCREWDRIVER.

Replace beacon bulb if filament is broken, or if an ohmmeter measurement indicates infinite resistance.

2. Set lens cover aside.
4. Insert new bulb. Press down and twist until bulb locks into place.
5. Replace the beacon cover. Using considerable force, press down with two hands and snap lens cover into place.

Replacing the CPU Fuses

Follow the procedure below to replace both the 500 ma [H] and 250 ma fuses [I].

1. Open the front door of the LA/1000 controller and locate the CPU board [G].
2. Pry up an end of the fuse with a small screwdriver until it pops free of the fuse holder.
3. Grasp the metal fuse end with hawk nose pliers and remove it from the CPU board.
4. Insert new fuse, and close the controller door.

Plug in power cord and power ON the LA/1000. Verify that the LA/1000 is operational.
1. **Contents**

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<td>1</td>
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<tr>
<td>1</td>
<td>Instruction Sheet</td>
<td>7532-368N</td>
</tr>
</tbody>
</table>

**Tools**
- Hex key set
- Diagonal cutter

---

**System Preparation**

⚠️ Power OFF the LA/1000 and disconnect the power cord.
Remove label material from the LA/1000 before continuing with the replacement procedure.

**Replacing the Rewind Brake**

1. Position the dancer arm [A] so the shoulder screw [C] securing the bumper [B] to the dancer arm is accessible.
2. Using a 5/32 hex key remove the shoulder screw
3. Discard old bumper.
4. Installing the New Bumper
5. Align new bumper with the hole on the dancer arm.
6. Insert the shoulder screw and tighten with 5/32 hex key.
Replacing the Rewind Belt

1. Locate the metal couple [E] of the rewind belt [B]. The rewind belt wraps around the drive roller [A] and rewind spindle [C].
2. Detach one end of the rewind belt [D] from metal connector [E].
3. Remove and discard the old rewind belt.
4. Remove the new belt from its packaging and detach one side of the rewind belt from the metal connector.
5. Replace the rewind belt by guiding it around the drive roller [F] and rewind spindle [H]. Connect the ends of the rewind belt with the metal connector.
6. Align the belt with the tracking groove [G] on the drive roller and rewind spindle.
7. Replace the label material and turn ON the LA/1000.
8. Press the FEED button on the front panel keypad and watch to see that the label material advances and that a label separates from the label liner.

Adjusting the Belt Length

1. The rewind spindle should turn without slipping and wrap the label liner around the rewind spindle with each press of the FEED button.
2. If the new rewind belts slips during operation, then trim the rewind belt with a diagonal cutter.
3. Shorten the belt by cutting and removing ¼ inch segments from the tubing.
4. Repeat until you observe a smooth advance, label separation and liner wrap.
APPENDIX A

DIP Switch Settings

Different functions and configurations are enabled or disabled using the 10-position DIP switch located inside the controller. Use the following procedures to change the settings:

1. Power OFF the LA/1000 and disconnect the power cord.
2. Change switch settings. Using the chart below change the appropriate setting.
3. Close the enclosure door and connect the power cord.
4. Powering ON the LA/1000 enables the new switch settings.

Following is a table with the switch settings.

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<th>FUNCTION</th>
<th>SETTINGS</th>
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<td>N/A</td>
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</table>
| 2-3    | Select applicator type (Wipe-on) | #2 = OFF  
#3 = OFF                                                           |
| 4      | Loop System                   | ON = Loop System  
OFF = Normal Operation                                               |
| 5      | Not used.                     | N/A                                                                      |
| 6      | Ready memory                  | ON = System restores previous READY state following a RESET or power ON situation.  
OFF = System initializes in OFF-LINE state after a RESET or power ON situation. |
| 7      | Key switch by-pass            | ON = Keypad always enabled  
OFF = Keypad controlled by key switch                                 |
| 8      | Shaft encoder                 | ON = Shaft encoder installed  
OFF = No shaft encoder                                                  |
| 9      | Trailing edge                 | ON = Label applied using trailing edge product detection  
OFF = Label applied using leading edge product detection                |
| 10     | Dispense direction            | ON = Left  
OFF = Right                                                             |