**Table of Contents**

**SYSTEM SPECIFICATIONS** .............................................................................. 5  
Declaration of Conformity .................................................................................. 8  
Precautions and Warnings .................................................................................. 9  
  Intended Use Statements ............................................................................... 9  
  Transportation and Handling ......................................................................... 9  
  General Safety Summary ............................................................................... 9  
Symbols and Terms ............................................................................................ 10  

1.0 SYSTEM OVERVIEW ................................................................................ 11  
1.1 General System Description ...................................................................... 12  
1.2 Labeling Head Application Overview ......................................................... 12  
1.3 Configuration Diagrams ............................................................................. 13  
1.4 Stand Dimensions ..................................................................................... 14  
1.5 Controller Box ........................................................................................... 15  
1.6 Electrical Block Diagram .......................................................................... 17  
1.7 Labeling Head Assembly .......................................................................... 18  
1.8 Label Application Cycle ............................................................................ 20  
1.9 Placement Accuracy .................................................................................. 20  

2.0 INSTALLATION ......................................................................................... 21  
2.1 T-Base Stand and Upright Post-5700-127 .................................................... 22  
2.2 Attaching the Controller Box ..................................................................... 23  
2.3 Installing the Labeling Head Assembly ....................................................... 24  
2.4 Attaching the Air Filter ............................................................................. 25  
2.5 Attaching the Pneumatic Control Box ......................................................... 26  
2.6 Attaching the Tamp Applicator Assembly ................................................ 27  
2.7 Cabling Connections ................................................................................ 28  
2.8 Connecting the Air Lines .......................................................................... 29  
2.9 Label Webbing for the LA/1000-STS ......................................................... 30  
2.10 Securing the T-Base Stand to the Floor ..................................................... 32  

3.0 APPLICATOR OPERATIONS .................................................................... 33  
3.1 Front Panel Indicators and Controls ........................................................... 34  
3.2 Two Button Functions .............................................................................. 36  
3.3 Warning Beacon ....................................................................................... 37  
3.4 Optional Warning Tower ........................................................................ 37  
3.5 Key Switch ............................................................................................... 38  
3.6 E-stop Operation ..................................................................................... 39  
3.7 Running the Machine ............................................................................. 39  

4.0 MAINTENANCE ....................................................................................... 41  
4.1 Preventive Maintenance ......................................................................... 42  
4.2 Rewind Clutch Spring Adjustment ............................................................. 42  
4.3 Rewind Belt Adjustment and Replacement .............................................. 43  
4.4 Label Edge Sensor Adjustments ................................................................. 44  
4.5 Replacing the Power Entry Module Fuse ................................................ 45  
4.6 Replacing the Beacon Bulb ...................................................................... 45
4.7 Replacing the CPU Fuses ................................................................. 46
4.8 Product Detect Sensor Adjustments .................................................. 46

5.0 TROUBLESHOOTING .............................................................. 47
5.1 Label Will Not Feed ........................................................................ 49
5.2 Labels Feed Slowly ........................................................................ 49
5.3 Labels Feed Intermittently ............................................................... 50
5.4 Labels Do Not Peel ......................................................................... 50
5.5 Labels Feed Continuously ............................................................... 50
5.6 Labels Double Feed ....................................................................... 50
5.7 Labels Rewinding Incorrectly ......................................................... 50
5.8 Tamp Applicator Problems ............................................................ 51
5.9 Misc. Problems ............................................................................ 51

6.0 PARTS KITS ............................................................................. 53

APPENDIX A ..................................................................................... 54
DIP Switch Settings ........................................................................... 55
SYSTEM SPECIFICATIONS

Contents
System Specifications.................................................6
Declaration of Conformity ........................................8
Precautions and Warnings ........................................9
Symbols and Terms..................................................10
### SYSTEM SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>54 inch</td>
<td>1372 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>36 inch</td>
<td>914 mm</td>
</tr>
<tr>
<td>Width</td>
<td>28 inch</td>
<td>711 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>200 lbs</td>
<td>90.80 Kg</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
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<tr>
<td>Humidity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>15-85% relative humidity non-condensing</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>90% relative humidity non-condensing</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>32º F to 115º F</td>
<td>0º C to 46º C</td>
</tr>
<tr>
<td>Storage</td>
<td>0º F to 100º F</td>
<td>-20º C to 38º C</td>
</tr>
<tr>
<td><strong>Air Requirements</strong></td>
<td></td>
<td>80 PSI minimum, 8 cfm</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Input Current</td>
<td></td>
<td>3.15 A</td>
</tr>
<tr>
<td>Rated Input Voltage</td>
<td></td>
<td>90 – 240 VAC</td>
</tr>
<tr>
<td>Rated Frequency</td>
<td></td>
<td>50-60 Hz</td>
</tr>
</tbody>
</table>
### Label Packaging
- **Outer diameter of label rolls:** 12 inch (305 mm)
- **Inner diameter of label core:** 3 inch +/- 1/32 (76.2 mm)

### Tamp Specifications
- **Cylinder Lengths**
  - **Min:** 6 inch (15.24 cm)
  - **Max:** 12 inch (30.48 cm)
- **Tamp/Label Pad Dimensions**
  - **Standard Width**
    - **Min:** 4 inch (4.76 cm)
    - **Max:** 5 inch (12.70 cm)
  - **Standard Length**
    - **Min:** 1 3/4 inch (10.12 cm)
    - **Max:** 12 inch (30.48 cm)
- **Web Width**
  - **Standard Web**
    - **Min:** 4-1/8 inch (15.9 mm)
    - **Max:** 5-1/8 inch (130.2 mm)
- **Minimum Label Gap:** 1/16 inch (1.5 mm)

### Dispense Speed and Delay
- **Label Dispense Speed**
  - **Adjustable in 2 ft/min increments**
    - **Min:** 18 ft/min
    - **Max:** 150 ft/min
- **Product Delay:** 0 to 0.5 seconds
Declaration of Conformity


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, LA/1000-STS, and the parts intended only for use with it: controller, left label head assembly, right label head assembly, and tamp assembly.

Year of Manufacture: 2000

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

Place: St. Louis, Missouri

Date: 1 February 2000

_______________________________
(Signature)

Anthony Bruce Castro

_______________________________
(Full Name)

Director of Quality, Earth City

_______________________________
(Position)
Precautions and Warnings

Intended Use Statements
The LA/1000-STS 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-STS. Contact Diagraph Customer Service for replacement containers.
If it is necessary to transport the LA/1000-STS, then disassemble the LA/1000-STS 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-STS or any component or assembly connected to the LA/1000-STS.

Precautions
• USE PROPER POWER CORD. To avoid a product damage and fire hazard, use only the power cord specified for the power source.
• AVOID ELECTRICAL 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-STS 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-STS with the cover open.
• DO NOT OPERATE IN AN EXPLOSIVE ENVIRONMENT. To avoid risk of injury or product damage, do not operate the LA/1000-STS in an explosive environment.
• DO NOT OPERATE THE LA/1000-STS WITH SUSPECTED FAILURES. To avoid injury or product damage, do not operate the LA/1000-STS with suspected failures, and have the LA/1000-STS inspected by a qualified service technician.
## Symbols and Terms

The following describe the symbols that appear in this manual:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Hand Gesture]</td>
<td>Indicates an Application Note. Carefully read and follow the directive of each application note contained in this manual.</td>
</tr>
<tr>
<td>![Warning Triangle]</td>
<td>Indicates warning or caution conditions. To avoid injury or product damage, carefully read each statement accompanying this symbol.</td>
</tr>
<tr>
<td>![Pinch Point]</td>
<td>Indicates pinch points. To avoid injury keep hands clear of rollers during operation and remove power during maintenance.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Pinch Point]</td>
<td>Indicates pinch points. To avoid injury keep hands clear of rollers during operation and remove power during maintenance.</td>
</tr>
<tr>
<td>![Chassis Ground]</td>
<td>Indicates Chassis Ground terminal.</td>
</tr>
<tr>
<td>![Protective Earth Ground]</td>
<td>Indicates Protective Earth Ground terminal.</td>
</tr>
<tr>
<td>![Danger]</td>
<td>Indicates pinch points. To avoid injury keep hands clear of tamp cylinder during operation and remove power during maintenance.</td>
</tr>
</tbody>
</table>
SECTION 1  SYSTEM OVERVIEW

Contents
1.1 General System Description ......................12
1.2 Labeling Head Application Overview ..........12
1.3 Configuration Diagrams ..........................13
1.4 Stand Dimensions ................................14
1.5 Controller Box ..................................15
1.6 Electrical Block Diagram .......................17
1.7 Labeling Head ....................................18
1.8 Label Application Cycle ..........................20
1.9 Placement Accuracy ...............................20
1.0 SYSTEM OVERVIEW

1.1 General System Description

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

The LA/1000-STS consists of the following standard components:

- Stand
- Controller
- Labeling Head
- Tamp Applicator Assembly
- Product Detect Sensor

The LA/1000-STS consists of the following 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 Labeling Head Application Overview

The LA/1000-STS applies pressure-sensitive adhesive labels to the side, top or bottom surface of a product. When a product is properly conveyed and positioned to the LA/1000-STS, the tamp applicator extends and applies a dispensed label to the surface of the product.

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 Tamp Applicator as it applies pressure to the surface of the product.
1.3 Configuration Diagrams

The following drawings depict the LA/1000-STS in typical side-apply and top-apply configurations. Use these drawings and select the appropriate configuration for the application.
1.4 Stand Dimensions
The stand consists of the following:
- Diagraph Standard T-base
- Upright Post

The LA/1000-STS 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.
1.5 Controller Box

The Controller Box consists of three component groups:

- Front Panel
- Internal Electrical Assemblies
- Inputs and Outputs

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-STS. 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 CPU board and displays operating parameters.
- **+24V Power Supply (C)**: Provides power to the 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.
- **CPU Board (E)**: Main control board. Monitors the inputs and controls the outputs of the LA/1000-STS.

**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.
- **J3 Product Detect Sensor (N)**: Control Box connection for the product-detect sensor (5700-216).
- **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).
1.6 Electrical Block Diagram

<table>
<thead>
<tr>
<th>Electrical Components and Assemblies</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CPU Board</td>
<td>12. To Enclosure Ground Stud</td>
</tr>
<tr>
<td>2. Beacon</td>
<td>13. Stepper Motor Controller</td>
</tr>
<tr>
<td>4. Ferrite Bead with wire twice looped.</td>
<td>15. Power Connection from Main Wiring Harness</td>
</tr>
<tr>
<td>5. Power Entry Module</td>
<td>16. Main Wiring Harness</td>
</tr>
<tr>
<td>6. E-stop Switch &amp; Contact Blocks</td>
<td>17. Stepper Motor Controller to CPU Board Cable</td>
</tr>
<tr>
<td>7. Power Supply wiring harness</td>
<td>18. Key Switch Assembly</td>
</tr>
<tr>
<td>9. Fan</td>
<td>20. CPU Board to Display Board Cable</td>
</tr>
<tr>
<td>11. To Door Ground Stud PE</td>
<td></td>
</tr>
</tbody>
</table>
1.7 Labeling Head

The Labeling Head consists of five component groups:

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

A Blue Air Line Connector
B Tamp Cylinder
C Tamp Cylinder Electrical Connector
D Tamp Cylinder Mounting Bracket
E Label Edge Sensor Amplifier Assy
F Idler Roller, Pinch Arm
G Pressure Roller
H Idler Roller
I Dancer Arm
J Idler Roller
K Unwind Brake
L Label Supply Hub
M Rewind Clasp
N Liner Rewind Hub
O Cam Lever
P Rewind Belt
Q Pressure Roller Spring Adjust
R Driver Roller
S Idler Roller
T Guide Liner
U Peel Blade
V Air Assist Tube
W Tamp Pad
X Red Air Line Connector
Y Dove Tail Bracket
Z Label Edge Sensor
**Label Supply**
The Label Supply consists of the following items:
- Label Supply Hub (L)
- Dancer Arm (I)
- Unwind Brake (K)

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

**Label Drive**
The Label Drive consists of the following items:
- Stepper Motor (Locate on back of main plate)
- Pressure Roller (G)
- Idler Roller (S)
- Cam Lever (O)
- Rewind Belt (P)
- Pressure Roller Spring Adjustment (Q)
- Drive Roller (R)

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 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 consists of the following items:
- Liner Rewind Hub (N)
- Rewind Clasp (M)

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:
- Label Edge Sensor Amplifier Assembly (E)
- Label Edge Sensor (Z)
- Peel Blade (U)
- Air Assist Tube (V)

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 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 tamp applicator assembly applies the label to the surface of the product and the waste liner winds onto the rewind hub.

**Table Applicator Assembly**
The applicator components consist of the following items:

- Tamp Cylinder (B)
- Tamp Cylinder Electrical Connector (C)
- Tamp Pad (W)
- Red Air Line Connector (X)
- Dove Tail Bracket (Y)
- Blue Air Line Connector (A)

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

**1.8 Label Application Cycle**
The LA/1000-STS 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.

**1.9 Placement Accuracy**
The LA/1000-STS 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 INSTALLATION

Contents
2. 1 T-Base Stand and Upright Post .....................22
2. 2 Attaching the Controller Box.......................23
2. 3 Installing the Labeling Head Assembly .......24
2. 4 Attaching the Air Filter ...............................25
2. 5 Attaching the Pneumatic Control Box ..........26
2. 6 Attaching the Tamp Applicator Assy ..........27
2. 7 Cabling Connections...................................28
2. 8 Connecting the Air Lines .............................29
2. 9 Label Webbing for the LA/1000-STS .........30
2. 10 Securing the T-Base Stand to the Floor ......32
2.0 INSTALLATION

2.1 T-Base Stand and Upright Post - 5700-127

Parts:
1 - Up-right post
1 - T-base
1 - Nut and washer for up-right post to T-base connection.

Tools:
1 ⅜” open-end or adjustable wrench
⅜ 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 ⅜ hex key, remove the handle and reverse its position; tighten with hex key.
2.2 Attaching the Controller Box

Parts:
1 – Controller Box
2 – ¼-20 X ½ “ Hex Socket Head Cap Screws
2 – Internal Tooth Lock Washers

Tools:
3/16” Hex Key

Assembly:
1. Attach the 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 Installing the Labeling Head Assembly

Parts:
1 – Yoke
1 – Crossbar
1 – Labeling Head Assembly
1 – 1\(\frac{1}{8}\)” nut
1 – Split lock washer
4 – Crossbar bolts – 5\(\frac{1}{16}\)”-18 x 1\(\frac{1}{8}\)” shoulder screws
2 – Plate Bolts

Tools:
1\(\frac{7}{8}\)” wrench or adjustable wrench
9\(\frac{1}{16}\)” open-end wrench
3\(\frac{1}{16}\)” hex key

Assembly:
1. Attach the yoke to the T-base stand using the 1\(\frac{1}{8}\)” nut and washers; tighten the nut with a 1\(\frac{1}{8}\)” or adjustable wrench.
2. Place one shoulder screw in the upper most tapped receptacle on each side of the yoke; hand-tighten the bolts.
3. Adjust the crossbar for either side or top application. Refer to the drawings below and determine the proper crossbar position.
4. Insert the remaining cap screws in the lower tapped holes; tighten all shoulder screws with a 3\(\frac{1}{16}\)” hex key.

Top Application

Side Application
5. Align the pivot and slotted holes on the main plate with the plate holes on the cross bar.

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

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

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

---

### 2.4 Attaching the Air Filter

**Parts:**
1-Air Filter Assembly
2-1/4-20 x 7/8 Socket Head Capscrew

**Tools:**
Hex Wrench Set

**Assembly:**
Using the hex wrench set and screws, attach the air filter to the base of the stand.
2.5 Attaching the Pneumatic Control Box

Parts:
1 - Pneumatic Control Box
2 - #10-32 x 1 Phillips machine head screws
3 - #10-32 nuts
1 - Cable mount

Tools:
Wrench Set

Assembly:
1. Using the wrench set, loosen the hex screws [I] on the side of the Pneumatic Control Box cover [G]. Remove and retain the hex screws [H] from the front of the Pneumatic Control Box [B]. Remove the front cover from the Pneumatic Control Box.
2. Attach the Pneumatic Control Box to the yoke [F] with screws [A] and nuts [C].
3. Attach the cable mount [E] and nut [D].
4. Replace the Pneumatic Control Box front cover and hex screws.

[A] Phillips Screws
[B] Pneumatic Control Box
[C] Nuts
[D] Cable Mount Nut
[E] Cable Mount
[F] Yoke
[G] Front Cover
[H] Front Hex Screws
[I] Side Hex Screws
2.6 Attaching the Tamp Applicator Assembly

This sections details the steps for installing a tamp applicator assembly to the LA/1000-STS. These steps apply to all lengths of tamp assemblies.

Parts:
1-tamp applicator assembly

Tools:
Hex Wrench Set

Assembly:

1. Loosen the center screw [A] in the cylinder bracket and slide the bracket onto the dovetail guide.
2. Position the assembly so the tamp plate rests approximately 1/8 inch from the peel blade.
3. Tighten the center screw in the bracket to lock the assembly in place.
4. Although the tamp plate height should be preset at the factory, it may be necessary to readjust the height of the tamp pad. To readjust the height of the tamp plate, loosen the two outer screws [C] in the assembly bracket. Adjust the height of the assembly with the captive screw [B] until the tamp plate is 1/16 inch above the peel blade. Rotating the captive screw clockwise lowers the assembly and counterclockwise raises it. (Refer to figure on previous page)
5. Tighten the two outer screws in the bracket.
6. Loosen the two screws [D] in the cylinder bracket and adjust the tamp plate until it is parallel to the peel blade and centered on the label path.
2.7 **Cabling Connections**

Follow the diagram below and connect the cables to the components shown in the diagram.

1. Encoder Cable  
2. Photo Sensor Cable  
3. Warning Tower Cable  
4. Label Low Sensor Cable  
5. Stepper Motor Cable  
6. Tamp Cylinder Cable  
7. Power Cord  
8. Pneumatic Air Box Cable  
9. Label Edge Sensor Amplifier Cable

---

**Diagram:**

- **A.** Encoder Assembly  
- **B.** Warning Tower Assembly  
- **C.** Photo Sensor Assembly  
- **D.** Label Low Sensor  
- **E.** Stepper Motor Assembly  
- **F.** Label Edge Sensor Amplifier  
- **G.** Tamp Cylinder  
- **H.** Pneumatic Air Control Box
2.8 Connecting the Air Lines

Follow the diagram below and connect the air lines to the components shown in the diagram.

1. Green Air Assist Line
2. Clear Tamp Pad Vacuum Line
3. Blue Tamp Cylinder Air Line
4. Red Tamp Cylinder Air Line
5. Black Air Supply Line

A. Pneumatic Air Control Box
B. Air Assist Line
C. Tamp Cylinder Assembly
D. Air Filter
2.9 Label Webbing for the LA/1000-STS

*Power OFF the LA/1000-STS before this label webbing procedure!*

[A] – Idler Roller, Pinch Arm
[B] – Pressure Roller
[C] – Idler Roller
[D] – Idler Roller
[E] – Label Supply Hub
[F] – Rewind clasp
[G] – Liner Rewind Hub

[I] – Drive Roller
[J] – Idler Roller
[K] – Guide Liner
[L] – Peel Blade
[M] – Air Assist Tube
[N] – Label Edge Sensor

[H] – Cam Lever
Label Webbing Directions

1. Disengage the pressure roller [B] by lifting the cam lever [H] 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 liner so that approximately 30 inches of label liner is exposed.

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

4. Place label roll on label supply spindle. Note that labels feed off counterclockwise.

5. Feed the label liner over the idler roller [D] and then around the idler roller [C].

6. Continue feeding the label liner over the idler roller pinch arm [A]. Wrap the liner under the idler roller [J] just upstream of the peel blade. If necessary, adjust the liner guides [K] on the idler roller [J] to the label width. The top of the lower liner guide should be 1.00 inches from the top of the base plate. The bottom of the upper liner guide should be approximately 1/32” wider than the liner.

7. Take the label liner around the peel blade [L] and pass the liner between the back of the peel blade and air assist tube [M].

8. Feed the label liner between the drive roller [I] and pressure roller [B].

9. Remove the rewind clasp [F] from the rewind hub [G].

10. Wind the label liner around the rewind hub. Pull liner tight and replace the rewind clasp.

11. Release the cam lever [H].

12. Replace the top of the label supply hub.
2.10 Securing the T-Base Stand to the Floor

To comply with CE recommendations bolt the t-base stand of the fully assembled LA/1000-STS to the floor to avoid accidental tipping of the machine. The following dimensioned diagram should aide in locating bolt holes for the floor.
SECTION 3       APPLICATOR OPERATIONS

Contents
3. 1  Front Panel Indicators and Controls ..........34
3. 2  Two Button Functions ...............................36
3. 3  Warning Beacon .......................................37
3. 4  Optional Warning Tower .............................37
3. 5  Key Switch ............................................38
3. 6  E-Stop Operation ....................................38
3. 7  Running the Machine .................................39
3.0 APPLICATOR OPERATIONS

The LA/1000-STS keypad provides access to adjustable parameters. These parameters allow the
it 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>
</table>
| Ready      | Green | ON On-line ready to apply labels
|            |       | OFF Standby mode                  |
| Label Low* | Yellow| ON Label supply is getting low   |
| Label Out  | Red   | ON Applicator is out of labels.
|            |       | Two or more consecutive labels are missing from the web.
|            |       | The pinch roller is not engaged against the drive roller.
|            |       | During these conditions the product sensor is disabled
|            |       | and labels are not applied.       |
| Product    | Green | A visual Indicator that the product-detect sensor has detected a
| Present    |       | product and the controller has received the product detection signal. |
| 7-Segment  | Green | Two-digit LED display of the following system settings: label dispense speed, label presentation, product delay, and cylinder dwell time.
| Display    |       | 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, ON is then displayed. |

*Must have Label Low option installed.
<table>
<thead>
<tr>
<th>BUTTON</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="reset" alt="Reset" /> <strong>RESET</strong></td>
<td>Interrupts the LA/1000-STS and performs a Power On initialization procedure. Clears label low or label out conditions, while preserving all operating parameters.</td>
</tr>
<tr>
<td><img src="feed" alt="Feed" /> <strong>FEED</strong></td>
<td>Interrupts or activates the LA/1000-STS. The LA/1000-STS is active when the READY LED is On and inactive when the READY LED is Off.</td>
</tr>
<tr>
<td><img src="feed" alt="Feed" /> <strong>FEED</strong></td>
<td>Dispenses one label. Upon dispensing, the label length is measured, saved, and speed is displayed.</td>
</tr>
<tr>
<td><img src="screwdriver" alt="SPEED" /> <strong>SPEED</strong></td>
<td><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>Min. = 18 ft/min</strong> <strong>Max. = 150 ft/min</strong> <strong>Change Function:</strong> Pressing the <img src="screwdriver+" alt="SPEED+" /> or <img src="screwdriver-" alt="SPEED-" /> again (within 5 minutes) will result in an increase or decrease in the SPEED value.</td>
</tr>
<tr>
<td><img src="filter" alt="Delay" /> <strong>DELAY</strong></td>
<td><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>Min. = 0.005 sec</strong> <strong>Max. = 0.5 sec</strong> <strong>Change Function:</strong> Pressing the <img src="filter+" alt="Delay+" /> or <img src="filter-" alt="Delay-" /> buttons again (within 5 minutes) will result in an increase or decrease in the DELAY value.</td>
</tr>
<tr>
<td><img src="test" alt="Test" /> <strong>TEST</strong></td>
<td>Pressing this button once tests the tamp cylinder of the LA/1000-STS by completing a complete tamp cycle of extending and retracting the tamp cylinder.</td>
</tr>
<tr>
<td><img src="clock" alt="Time" /> <strong>TIME</strong></td>
<td>Pressing this button displays the tamp cylinder dwell time. Tamp cylinder dwell time consists of the length of time the tamp cylinder remains extended before starting to retract. The dwell time is arbitrary and application dependent.</td>
</tr>
<tr>
<td><img src="clock" alt="Time" /> <strong>TIME</strong></td>
<td>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.</td>
</tr>
<tr>
<td><img src="clock" alt="Time" /> <strong>TIME</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
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-STS 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 and the LA/1000-STS 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.

1/8 inch (3.2 mm) Gap
1/16 inch (1.6 mm) Gap
Restoring Default Settings
To reset the LA/1000-STS’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-STS:

<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-STS:

<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-STS:

<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 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-STS, 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-STS 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-STS. E-stop activation interrupts line power to the LA/1000-STS - 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-STS.
3.7 Running the Machine

1. Press the FEED twice. This advances any partially dispensed label and allows the label edge sensor to measure the full length of the label.

2. Make sure that the label liner properly tracks on the rewind disk. If the label liner does not track properly, loosen the main peel blade mounting screw [A] located on the back of the base plate. If the liner tracks in toward the rewind hub [B], turn the right peel blade tow screw [C] clockwise approximately \( \frac{1}{4} \) turn. If the liner is tracking more than \( \frac{1}{8} \)" away from the rewind hub [D], then turn the left peel blade tow screw [E] clockwise approximately \( \frac{1}{4} \) turn. After adjusting the label liner tracking, tighten the main peel blade mounting screw [A].
3. The label should be presented on the tamp pad such that the lagging edge is just flagging the peel blade. If not, see Section 3.2, “Label Presentation Adjustments”.

4. Although the Air Control Box settings are set at the factory, finer adjustments can be made with the regulator knobs on top of the enclosure. In general, tamp pressure controls how hard the tamp plate strikes the product. Vacuum pressure can be set around 30 psig for most applications. Air assist pressure will typically be set between 60 – 80 psig. This control assists in delivering the label properly on the tamp pad.
SECTION 4 MAINTENANCE

Contents
4.1 Preventative Maintenance..............................................42
4.2 Rewind Clutch Spring Adjustment.................................42
4.3 Rewind Belt Adjustment and Replacement......................43
4.4 Label Edge Sensor Adjustments....................................44
4.5 Replacing the Power Entry Module Fuse.....................45
4.6 Replacing the Beacon Bulb...........................................45
4.7 Replacing the CPU Fuses.............................................46
4.8 Product Detect Sensor Adjustments..............................46
4.0 MAINTENANCE

4.1 Preventive Maintenance

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Clean the Air Filter by cycling the OSHA valve ON and OFF</td>
</tr>
<tr>
<td>Weekly</td>
<td>• Using clean dry compressed air, blow paper dust and other debris away from label edge sensor.</td>
</tr>
<tr>
<td></td>
<td>• Using clean dry compressed air, blow paper dust and other debris away from product detect sensor.</td>
</tr>
<tr>
<td></td>
<td>• Using clean dry compressed air, blow paper dust and other debris away from tamp pad sensors.</td>
</tr>
<tr>
<td>Monthly</td>
<td>• Clean the optic surface of the label edge sensor with alcohol.</td>
</tr>
<tr>
<td></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>
<tr>
<td>Six Months</td>
<td>• Replace Pneumatic Supply Filter</td>
</tr>
<tr>
<td></td>
<td>• Replace the Vacuum Filter</td>
</tr>
</tbody>
</table>

*Power OFF the LA/1000-STS and disconnect the power cord.*

*Remove label material from the LA/1000-STS 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 ¼" segments from the tube.
3. Repeat step 2 until desired length is reached.
4. Replace belt and reattach tube with metal coupling.

[A]  [B]
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

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-STS 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-STS.
7. Verify that the LA/1000-STS is now operational.

⚠️  Power Fuse Rating: 3 A SLO-BLO

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

Power OFF the LA/1000-STS 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 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-STS. Verify that the LA/1000-STS is operational.

CPU Fuse Rating:
F1 500 mA
F2 500 mA

4.8 Product Detect Sensor Adjustments

The LA/1000-STS 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 [A] 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 TROUBLESHOOTING

Contents
5. 1 Labels Will Not Feed ........................................49
5. 2 Labels Feed Slowly ...........................................49
5. 3 Labels Feed Intermittently ...........................50
5. 4 Labels Do Not Peel...........................................50
5. 5 Labels Feed Continuously ..........................50
5. 6 Labels Double Feed...........................................50
5. 7 Labels Rewinding Incorrectly .................50
5. 8 Tamp Applicator Problems .........................51
5. 9 Misc. Problems ..............................................51
5.0 TROUBLESHOOTING

This section covers causes and corrective actions to take when the label applicator is having label feed problems. The bolded alphabetized statements are possible causes of problems with solutions following. Review the overall system drawing below for part identification.

A  Blue Air Line Connector  N  Liner Rewind Hub
B  Tamp Cylinder  O  Cam Lever
C  Tamp Cylinder Electrical Connector  P  Rewind Belt
D  Tamp Cylinder Mounting Bracket  Q  Pressure Roller Spring Adjust
E  Label Edge Sensor Amplifier Assy  R  Driver Roller
F  Idler Roller, Pinch Arm  S  Idler Roller
G  Pressure Roller  T  Guide Liner
H  Idler Roller  U  Peel Blade
I  Dancer Arm  V  Air Assist Tube
J  Idler Roller  W  Tamp Pad
K  Unwind Brake  X  Red Air Line Connector
L  Label Supply Hub  Y  Dove Tail Bracket
M  Rewind Clasp  Z  Label Edge Sensor
5.1 Labels Will Not Feed

A. Applicator not webbed properly.
   Re-web the applicator. See section 2.9 of this manual.

B. Pressure roller not engaged.
   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.
   Plug into AC power supply.

D. Setscrews in drive roller loose.
   Remove setscrews and apply removable thread-locker on setscrew; tighten drive roller setscrews. (Item R on Labeling Head drawing, page 48.)

E. Product detect sensor out of alignment.
   Review Section 4.8 (Product Detect Sensor Adjustments) and re-adjust the sensor.

F. Defective product detect sensor.
   Verify operation as defined in Section 4.8 (Product Detect Sensor Adjustments). Replace if sensor fails to function as defined in the procedure.

G. System is in Standby.
   Verify that the Ready LED is ON. If the Ready LED is OFF press 🔄 to activate the LA/1000.

5.2 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 3/16-inch hex wrench and turn the Pressure roller set screw clockwise. (Item G on Labeling Head drawing, page 48.)
   3. After adjusting, be sure the cam lever can open fully. If it will not open, turn the set screw counterclockwise.

C. Defective drive or pressure rollers.
   1. Check rollers for wear.
   2. Clean, or replace if necessary.
5.3 **Labels Feed Intermittently**
Follow **Labels Feed Slowly** corrective action procedures first. If unsuccessful then continue:

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

B. **Malfunctioning product sensor.**
   Replace product sensor.

5.4 **Labels Do Not Peel**

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

B. **Labels not releasing properly.**
   Contact Diagraph Label Sales Representative.

5.5 **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 Adjustments).
   3. Contact Diagraph Label Sales Representative.

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

5.6 **Labels Double Feed**

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

5.7 **Labels Rewinding Incorrectly**

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

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

C. **Liner tracks too low or too high on rewind hub.**
   Adjust peel blade tow.

D. **Rewind webbed improperly.**
   Reload the label material into the LA/1000-STS. See Section 2.9 (Label Webbing for the Applicator).
5.8 **Tamp Applicator Problems**

A. **No Air**
   1. The factory air supply not connected to LA/1000 STS.
   2. Make sure OSHA air shut-off valve is on the ON position.
   3. Check air line for blockage and make sure the line is not obstructed.

B. **Tamp Cylinder Will Not Tamp**
   1. Tamp pressure set too low.
   2. Dwell value not set high enough
   3. Cylinder has not returned to HOME position.
   4. Product Detect signal not received by the LA/1000-STS
   5. Bent Tamp Cylinder.

C. **Auto-Retract Not Working Properly**
   1. Check to be sure that the LA/1000-STS is level, secure and parallel to the product.
   2. Color of product is too dark.
   3. Label placement on tamp-pad not consistent.

5.9 **MISC. PROBLEMS**

This section covers causes and corrective actions to take for problems other than label feed problems.

A. **Label Liner Breaks**
   1. Label roll wound unevenly. Rewind label roll making sure the same copy position is maintained.
   2. Perforated label stock - Replace the perforated stock with continuous label stock.

B. **Lacquer-spotted backing paper.**
   Contact your Diagraph Label Sales Representative.

C. **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.

D. **Rewind Liner Slips between Drive Roller and Pressure Roller.**
   1. Accumulation of adhesive or lacquer on drive and/or pressure roller, clean rollers.
   2. Incorrect pressure between drive roller and pressure roller.
      a. Check to make sure that the pressure roller ‘s lifting lever is released.
      b. Adjust Pressure roller spring tension. (Item G on Labeling Head drawings, page 48.)
G. **Motor Sounds Rough or Vibrates**
   1. Overload caused by restriction.
      a. Check for labels stuck on drive roller or pressure roller.
      b. Check for labels caught in guides.
   2. Check label material for thickness.
   3. Check machine for proper web path.

H. **Defective motor.**
   Replace motor.
SECTION 6    PARTS KITS

Contents

6.0  Parts Kits ........................................................53
USE ESD PROTECTION WHEN WORKING WITH THE COMPONENTS IN THIS KIT. FOLLOW THE INSTRUCTIONS INCLUDED WITH THE WRIST STRAP.

This kit contains four replacement sensors for the PA/5000 tamp cylinder assembly. The Cylinder Home sensor and the End of Stroke sensor mount to the side of the air cylinder while the Label Present sensor and the Auto Retract sensor mount on the tamp plate. Instructions for mounting the sensors are similarly divided because the locations of the sensors dictate the complexity of the replacement procedures.

### Contents

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>[A]</td>
<td>12 inch Cylinder Home Sensor &amp; Cable</td>
<td>6150-501X12</td>
</tr>
<tr>
<td>[B]</td>
<td>12 inch End of Stroke Sensor &amp; Cable</td>
<td>6150-445X12</td>
</tr>
<tr>
<td>[C]</td>
<td>Black Nylon Cable Ties (5)</td>
<td>6150-580</td>
</tr>
<tr>
<td>[D]</td>
<td>12 inch Cylinder Label Present Sensor &amp; Cable</td>
<td>6150-499X12</td>
</tr>
<tr>
<td>[E]</td>
<td>12 inch Cylinder Auto Retract Sensor &amp; Cable</td>
<td>6150-500X12</td>
</tr>
<tr>
<td>[F]</td>
<td>Cylinder Cable Clamp</td>
<td>6150-563</td>
</tr>
<tr>
<td>[G]</td>
<td>Disposable Wrist Strap</td>
<td>6600-196</td>
</tr>
<tr>
<td></td>
<td>Installation Instruction Set</td>
<td>6150-800N</td>
</tr>
</tbody>
</table>

### Required Tools

- #0 Phillips screwdriver
- Slip joint pliers
- Miniature diagonal cutters
- 1.5-mm hex wrench

---

1. Cylinder home sensor
2. Cable clamp
3. Igus chain
4. End-of-stroke sensor
5. Red air tube
6. Air flow adjustment
7. Label present sensor
8. Blue air tube
9. White air tube
10. Tamp Applicator Cable
11. Cylinder I/F box
12. Strain-relief gasket
13. Applicator fastening screw
14. Auto-retract sensor
Removing the Old Cylinder Home or End-of-Stroke Sensor

1. Turn OFF power and disconnect the blue [8] and red [5] air lines from the cylinder assembly.
4. Loosen the fastening screw at [13] and slide the cylinder assembly off of the PA/5000 chassis. Move the assembly to a static-safe workstation.
5. Remove the screws and washers that hold the cover on the I/F box [11]. Set aside the screws and the cover.

Use the diagram at right and identify the connectors for the cylinder home sensor connection and the end-of-stroke sensor connection inside the cylinder I/F box.

6. Disconnect the Cylinder Home and End-of-Stroke MTE plugs (push down on the tabs shown at [A] and [B] on page 1 and pull out). Even if you are replacing only one sensor, both plugs must be disconnected to allow passage through the side of the box (see Step 7).
7. Note that both cables pass through the same strain relief fitting [12] on the left side of the box. Carefully remove the fitting. Feed MTE plugs through the opening one at a time.
8. If the sensor you are replacing has cable clips holding it to the cylinder ([2] on page 1), pry off the clip(s).
9. Note the position of the sensor. Using the 1.5-mm hex wrench, loosen the screw holding it in place on the wall of the cylinder. The new sensor will be attached at the same place. Set aside the old sensor.

Attaching the new Cylinder Home Sensor or End-of-Stroke Sensor

1. Using the 1.5-mm hex wrench, attach the new sensor to the cylinder wall in the same position as the old sensor.
2. Route the sensor cable through the strain relief fitting removed in Step 7 above.
3. Route the MTE plugs through the opening in the side of the I/F box one at a time.
4. Plug the MTE plugs into the appropriate outlet inside the I/F box. Note that the plug ends are labeled.
5. Snap the strain-relief fitting back into the opening on the left side of the I/F box.
6. Dress the cables neatly inside the I/F box and screw down the cover with the screws and washers removed earlier. Make sure that the cables are not pinched between the cover and the I/F box.
7. Route the cable smoothly from the sensor to the I/F box and hold down with any cable clamps removed earlier.
8. Replace the cylinder assembly on the chassis bracket and lock in place with fastening screw at [13].
9. Reconnect the air lines and the tamp applicator cable.

Testing the New Cylinder Home or End-of-Stoke Sensor

1. Turn power ON. You will not need air for these tests.
2. Press [Esc] on the ECM for diagnostics and type a Supervisor’s password. A user’s password will not allow you to access the diagnostics menu.
3. Scroll down the Diagnostics menu to the appropriate sensor test: selection 5 for Cylinder Home or selection 8 for End-of-Stroke.
4. To test either sensor, move the tamp-plate up and down. If the cylinder will not move, turn the airflow adjustment [6] clockwise.

When the cylinder reaches the top of its stroke, the LED on the Cylinder Home sensor will light and the ECM screen will report “Cylinder Home Sensor ON.” Moving the tamp plate away turn the Cylinder Home sensor light off. When the cylinder reaches the end of its stroke, the LED on the End-of-Stoke sensor will light and the ECM screen will report “End of Stroke Sensor ON.”
Removing the Old Auto-Retract or Label Present Sensor

1. Turn OFF power and disconnect the blue [8] and red [5] air lines from the cylinder assembly.
4. Loosen the fastening screw [13] and slide the cylinder assembly off of the PA/5000 chassis. Move the assembly to a static-safe workstation.
5. Remove the screws and washers that hold the cover on the I/F box [11]. Set aside the screws and the cover.
6. Use the diagram at right and identify the connectors for the Auto-Retract sensor connection and the Label-Present sensor connection inside the I/F box.
7. Disconnect the Auto-Retract and Label-Present MTE plugs (push down on the tabs shown at [A] and [B] on page 1 and pull out). Even if you are replacing only one sensor, both plugs must be disconnected to allow passage through the side of the box.
8. Pull up on the cable clamp mounted to the bottom of the I/F box to release the two sensor cables as shown at right.
9. Note that both cables pass through the same strain relief fitting on the right side of the box. Carefully remove the fitting.
10. Feed MTE plugs through the opening one at a time.
11. Both sensor cables are held in place by a cable tie before they enter the Igus chain. Cut the tie wrap and take care not to cut the cables.
12. Open the back of the Igus chain by grasping the outer chain cover at the I/F box with thumb and forefinger and pulling up. Individual chain covers may pop free during removal. When all are removed, reconnect the covers into a chain by inserting T tabs into T channels.
13. Cut any cable ties that hold the sensor cables to the tamp plate and remove all tie mounts that hold cables to the tamp plate.
14. Unscrew the sensor(s) from its recess in the side of the tamp plate.
15. Unscrew the chain mounting bracket from the top of the tamp plate and pry the first chain link free.
16. Work the old sensor and cable up through the bracket and out of the chain. Discard when sensor and cable are free from the chain.

Installing the new Auto-Retract or Label-Present Sensor

1. Route the new sensor and cable along the chain and through chain mounting bracket.
2. Screw the sensor in its recess in the side of the tamp plate. BE SURE to position the sensor at its highest position to avoid the tip of the sensor protruding beyond the bottom of the tamp plate.
3. Screw the chain mounting bracket to the top of the tamp plate.
4. Screw tie mounts to the top of the tamp plate and anchor the sensor cables with tie wraps. Trim off any excess tie wrap.
5. Route the sensor cables and the white tubing along the channel of the Igus chain.
6. Reattach the string of chain covers to the spine of the chain by snapping into place. Take care to keep the T tabs locked in the T channels.
7. Route the cable ends with the MTE connectors through the strain-relief fitting and then into the keyed opening on the right side of the I/F box.
8. Snap the strain-relief fitting into place in the I/F box.
9. Check the labels on the cables and plug in the MTE plugs at the appropriate connection (see illustration above).
10. Bundle the cables and slide them into the round cable holder at the bottom of the I/F box.
11. Secure the cables with a tie wrap in the cable holder between the I/F box and igus chain. Trim off excess tie wrap.
12. Replace the cylinder assembly on the chassis bracket and lock in place with the fastening screw [13].
13. Reconnect the air tubes and the tamp applicator cable.

■ Testing the New Label-Present or Auto-Retract Sensor

1. Turn power ON. You will not need air for these tests.
2. Press \[ \square \] on the ECM for diagnostics and type a Supervisor’s password. A user’s password will not allow you to access the diagnostics menu.
3. Scroll down the Diagnostics menu to the appropriate sensor test: selection 3 for Auto Retract or selection A for Label Present.
4. To test either sensor, hold a piece of scrap cardboard against the sensor. If the sensors have been connected correctly, the LCD will show either “Auto Retract Sensor ON” or “Label Present Sensor ON.”
USE ESD PROTECTION WHEN WORKING WITH THE COMPONENTS IN THIS KIT. FOLLOW THE INSTRUCTIONS INCLUDED WITH THE WRIST STRAP.

This kit contains four replacement sensors for the PA/5000 tamp cylinder assembly. The Cylinder Home sensor and the End of Stroke sensor mount to the side of the air cylinder while the Label Present sensor and the Auto Retract sensor mount on the tamp plate. Instructions for mounting the sensors are similarly divided because the locations of the sensors dictate the complexity of the replacement procedures.

**Contents**

[A] 6 inch Cylinder Home Sensor & Cable 6150-501X06
[B] 6 inch End of Stroke Sensor & Cable 6150-445X06
[C] Black Nylon Cable Ties (5) 6150-580
[D] 6 inch Cylinder Label Present Sensor & Cable 6150-499X06
[E] 6 inch Cylinder Auto Retract Sensor & Cable 6150-500X06
[F] Cylinder Cable Clamp 6150-563
[G] Disposable Wrist Strap 6600-196

Installation Instruction Set 6150-802N

**Required Tools**

#0 Phillips screwdriver
Slip joint pliers
Miniature diagonal cutters
1.5-mm hex wrench

---

[1] Cylinder home sensor
[2] Cable clamp
[3] Igus chain
[5] Red air tube
[6] Air flow adjustment
[7] Label present sensor
[8] Blue air tube
[9] White air tube
[10] Tamp Applicator Cable
[12] Strain-relief gasket
[13] Applicator fastening screw
[14] Auto-retract sensor
Removing the Old Cylinder Home or End-of-Stroke Sensor

1. Turn OFF power and disconnect the blue [8] and red [5] air lines from the cylinder assembly.
4. Loosen the fastening screw at [13] and slide the cylinder assembly off of the PA/5000 chassis. Move the assembly to a static-safe workstation.
5. Remove the screws and washers that hold the cover on the I/F box [11]. Set aside the screws and the cover.

Use the diagram at right and identify the connectors for the cylinder home sensor connection and the end-of-stroke sensor connection inside the cylinder I/F box.

6. Disconnect the Cylinder Home and End-of-Stroke MTE plugs (push down on the tabs shown at [A] and [B] on page 1 and pull out). Even if you are replacing only one sensor, both plugs must be disconnected to allow passage through the side of the box (see Step 7).
7. Note that both cables pass through the same strain relief fitting [12] on the left side of the box. Carefully remove the fitting. Feed MTE plugs through the opening one at a time.
8. If the sensor you are replacing has cable clips holding it to the cylinder ([2] on page 1), pry off the clip(s).
9. Note the position of the sensor. Using the 1.5-mm hex wrench, loosen the screw holding it in place on the wall of the cylinder. The new sensor will be attached at the same place. Set aside the old sensor.

Attaching the new Cylinder Home Sensor or End-of-Stroke Sensor

1. Using the 1.5-mm hex wrench, attach the new sensor to the cylinder wall in the same position as the old sensor.
2. Route the sensor cable through the strain relief fitting removed in Step 7 above.
3. Route the MTE plugs through the opening in the side of the I/F box one at a time.
4. Plug the MTE plugs into the appropriate outlet inside the I/F box. Note that the plug ends are labeled.
5. Snap the strain-relief fitting back into the opening on the left side of the I/F box.
6. Dress the cables neatly inside the I/F box and screw down the cover with the screws and washers removed earlier. Make sure that the cables are not pinched between the cover and the I/F box.
7. Route the cable smoothly from the sensor to the I/F box and hold down with any cable clamps removed earlier.
8. Replace the cylinder assembly on the chassis bracket and lock in place with fastening screw at [13].
9. Reconnect the airlines and the tamp applicator cable.

Testing the New Cylinder Home or End-of-Stoke Sensor

1. Turn power ON. You will not need air for these tests.
2. Press [Diagnostics] on the ECM for diagnostics and type a Supervisor’s password. A user’s password will not allow you to access the diagnostics menu.
3. Scroll down the Diagnostics menu to the appropriate sensor test: selection 5 for Cylinder Home or selection 8 for End-of-Stroke.
4. To test either sensor, move the tamp-plate up and down. If the cylinder will not move, turn the airflow adjustment [6] clockwise.

When the cylinder reaches the top of its stroke, the LED on the Cylinder Home sensor will light and the ECM screen will report “Cylinder Home Sensor ON.” Moving the tamp plate away turn the Cylinder Home sensor light off. When the cylinder reaches the end of its stroke, the LED on the End-of-Stroke sensor will light and the ECM screen will report “End of Stroke Sensor ON.”
Removing the Old Auto-Retract or Label Present Sensor

1. Turn OFF power and disconnect the blue [8] and red [5] air lines from the cylinder assembly.
4. Loosen the fastening screw [13] and slide the cylinder assembly off of the PA/5000 chassis. Move the assembly to a static-safe workstation.
5. Remove the screws and washers that hold the cover on the I/F box [11]. Set aside the screws and the cover.
6. Use the diagram at right and identify the connectors for the Auto-Retract sensor connection and the Label-Present sensor connection inside the I/F box.
7. Disconnect the Auto-Retract and Label-Present MTE plugs (push down on the tabs shown at [A] and [B] on page 1 and pull out). Even if you are replacing only one sensor, both plugs must be disconnected to allow passage through the side of the box.
8. Pull up on the cable clamp mounted to the bottom of the I/F box to release the two sensor cables as shown at right.
9. Note that both cables pass through the same strain relief fitting on the right side of the box. Carefully remove the fitting.
10. Feed MTE plugs through the opening one at a time.
11. Both sensor cables are held in place by a cable tie before they enter the Igus chain. Cut the tie wrap and take care not to cut the cables.
12. Open the back of the Igus chain by grasping the outer chain cover at the I/F box with thumb and forefinger and pulling up. Individual chain covers may pop free during removal. When all are removed, reconnect the covers into a chain by inserting T tabs into T channels.
13. Cut any cable ties that hold the sensor cables to the tamp plate and remove all tie mounts that hold cables to the tamp plate.
14. Unscrew the sensor(s) from its recess in the side of the tamp plate.
15. Unscrew the chain mounting bracket from the top of the tamp plate and pry the first chain link free.
16. Work the old sensor and cable up through the bracket and out of the chain. Discard when sensor and cable are free from the chain.

Installing the new Auto-Retract or Label-Present Sensor

1. Route the new sensor and cable along the chain and through chain mounting bracket.
2. Screw the sensor in its recess in the side of the tamp plate. BE SURE to position the sensor at its highest position to avoid the tip of the sensor protruding beyond the bottom of the tamp plate.
3. Screw the chain mounting bracket to the top of the tamp plate.
4. Screw tie mounts to the top of the tamp plate and anchor the sensor cables with tie wraps. Trim off any excess tie wrap.
5. Route the sensor cables and the white tubing along the channel of the Igus chain.
6. Reattach the string of chain covers to the spine of the chain by snapping into place. Take care to keep the T tabs locked in the T channels.
7. Route the cable ends with the MTE connectors through the strain-relief fitting and then into the keyed opening on the right side of the I/F box.
8. Snap the strain-relief fitting into place in the I/F box.
9. Check the labels on the cables and plug in the MTE plugs at the appropriate connection (see illustration above).
10. Bundle the cables and slide them into the round cable holder at the bottom of the I/F box.
11. Secure the cables with a tie wrap in the cable holder between the I/F box and Igus chain. Trim off excess tie wrap.
12. Replace the cylinder assembly on the chassis bracket and lock in place with the fastening screw [13].
13. Reconnect the air tubes and the tamp applicator cable.

- Testing the New Label-Present or Auto-Retract Sensor
  1. Turn power ON. You will not need air for these tests.
  2. Press [ ] on the ECM for diagnostics and type a Supervisor’s password. A user’s password will not allow you to access the diagnostics menu.
  3. Scroll down the Diagnostics menu to the appropriate sensor test: selection 3 for Auto Retract or selection A for Label Present.
  4. To test either sensor, hold a piece of scrap cardboard against the sensor. If the sensors have been connected correctly, the LCD will show either “Auto Retract Sensor ON” or “Label Present Sensor ON.”
Contents
1 Vacuum Filter Cartridge 6105-322
1 Pneumatic Supply Filter Cartridge 6150-383
1 Packing List 6150-806N
Removing the Old Board
1. Turn OFF power to the PA/5000.
2. Locate tamp cylinder board enclosure [A].
3. Disconnect cable P1(A2A1J1) at [B] and remove the standoffs [C] from the enclosure.
4. Remove the screws and washers from the front cover of the enclosure [D]. Set aside the cover.
5. Disconnect the four cables plugged into the applicator board at J2, J3, J4 and J5.
6. Remove the screws at the corners that hold the board inside the enclosure.
7. Remove the old board by pulling down then out.

Installing the New Board
1. Remove the new board from its anti-static packing and place it inside the enclosure.
2. Anchor the board in the enclosure with the screws removed earlier.
3. Plug in cables at J2, J3, J4 and J5. Carefully fold in loose cable to allow attachment of the front cover.
4. Attach the cover of the enclosure with the screws and washers removed earlier.
5. Attach the connector at the top of the enclosure with the standoffs removed earlier. Plug in cable P1(A2A1J1).
6. Power on PA/5000 and run the diagnostics as described in Section 5.5 of the PA/5000 Operations Manual (6150-437).
## 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.
2. 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.
3. Connect the low label sensor cable [C] to the low label sensor as shown in the corresponding drawing.
4. Attach the ground wire [D] at [E] with the #10-32 x 1 inch Phillips pan head screw.
5. 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.

<table>
<thead>
<tr>
<th>Sensor Position</th>
<th>Approximate Label Supply Diameter</th>
</tr>
</thead>
<tbody>
<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>
</tr>
</tbody>
</table>

---

## Verifying Operation

The “LOW” LED is ON when the label supply falls below the low label sensor activation point.
### Contents

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CPU board and side plate assembly</td>
</tr>
<tr>
<td>1</td>
<td>Disposable Wrist Strap</td>
</tr>
<tr>
<td>1</td>
<td>Instruction Sheet</td>
</tr>
</tbody>
</table>

#### 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.

1. Disconnect 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 broad free from the standoffs.
9. Pry the middle of the CPU broad 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.
Contents

Qty     Description    
1        THRU-BEAM SENSOR HEAD 7532-153
2        CABLE TIE 1900-372
1        INSTRUCTION SHEET 7532-321N

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.
### Contents

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard Web Brush-on Applicator Assembly</td>
<td>7532-072</td>
</tr>
</tbody>
</table>

#### Tools

- Picture of tool

#### 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

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].

1. 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.
2. After positioning the bracket, hold in place and tighten the cap screw.
3. The brush head [G] is also adjustable. If necessary adjust the brush to the proper position.
## 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
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].

1. 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.
2. After positioning the bracket, hold in place and tighten the cap screw.
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.
Contents

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LA/1000 CE Power Supply</td>
<td>7532-807</td>
</tr>
<tr>
<td>1</td>
<td>Instruction Sheet</td>
<td>7532-312N</td>
</tr>
</tbody>
</table>

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.
2. 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 88888888 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.
Installation Instructions

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.
2. 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].
3. Using a Phillips screwdriver, remove the two screws holding the mounting bracket to the controller housing.
4. Remove the two screws holding the stepper controller to the bracket.
5. Discard the old stepper controller.
6. Replace the stepper controller by reversing steps 1 – 4.
7. Using the chart below set the position of the stepper motor controller DIP switches.

<table>
<thead>
<tr>
<th>Switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set switch 7 to OPEN for applications speeds less than 30 fpm.</td>
</tr>
</tbody>
</table>

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1000.935M02
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.
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.
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.
5. Plug in power cord and power ON the LA/1000. Verify that the LA/1000 is operational.
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

1. The light tower’s green lamp will light when the LA/1000 control box’s “READY” LED is ON.
2. The light tower’s red lamp will light when the LA/1000 control box’s “OUT” LED is ON.
3. 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.
APPENDIX A

Contents

DIP Switch Settings ..................................................55
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.

<table>
<thead>
<tr>
<th>SWITCH</th>
<th>FUNCTION</th>
<th>SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
<td>N/A</td>
</tr>
<tr>
<td>2-3</td>
<td>Select applicator type</td>
<td>#2 = OFF #3 = OFF</td>
</tr>
<tr>
<td></td>
<td>(Wipe-on)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Loop System</td>
<td>ON = Loop System OFF = Normal Operation</td>
</tr>
<tr>
<td>5</td>
<td>Auto-retract</td>
<td>ON = Auto-Retract Active OFF = Auto-Retract Active</td>
</tr>
<tr>
<td>6</td>
<td>Ready memory</td>
<td>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.</td>
</tr>
<tr>
<td>7</td>
<td>Key switch by-pass</td>
<td>ON = Keypad always enabled OFF = Keypad controlled by key switch</td>
</tr>
<tr>
<td>8</td>
<td>Shaft encoder</td>
<td>ON = Shaft encoder installed OFF = No shaft encoder</td>
</tr>
<tr>
<td>9</td>
<td>Trailing edge</td>
<td>ON = Label applied using trailing edge product detection OFF = Label applied using leading edge product detection</td>
</tr>
<tr>
<td>10</td>
<td>Dispense direction</td>
<td>ON = Left OFF = Right</td>
</tr>
</tbody>
</table>