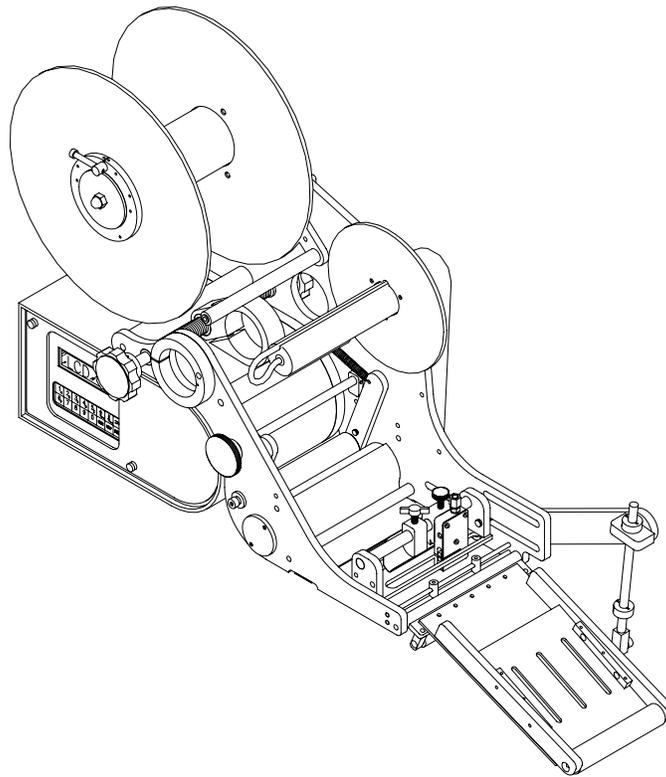




Little David™ Label Application System

LS-500P Passive Applicator Apply Only Labeling System



Version: 06-269

Operator's Manual

LITTLE DAVID™ LABEL APPLICATION SYSTEM

Labeler Operation

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Introduction

ICON KEY

 Important information

Thank you for purchasing the newest Little David™ labeler, the LS-500P. The LS-500P is the low cost labeler designed to be versatile enough to suit a variety of carton labeling requirements with one standard unit. All employees who will be required to operate the labeler should read this manual to ensure proper set-up and a longer machine life. After reading this manual you will know how to perform the following functions,

- How to properly mount the labeler to achieve maximum performance.
- How to thread the labeler and adjust the sensors to apply labels in the most efficient manner.
- How to use the controller interface.
- Troubleshooting and replacing of worn or defective parts.

Throughout this manual there are several illustrations designed to help you perform the variety of tasks described. These illustrations all depict the right-hand version of the machine. You can tell a right hand and left hand machine apart by facing the machine. The side with the larger plate holding all of the rollers is the hand version of the machine. The hand designation of your individual machine does not affect any of the procedures or maintenance operations described below only that your left hand machine appears as a mirrored image of the machine depicted in the illustrations.

Operating Safety

Observe the warnings and cautions below when using the Little David Label Application Systems. Within this manual, a warning indicates that the potential for bodily injury exists, and a caution indicates when the machine may suffer damage.

Instruction: Requirement to System Operation

Instruction: Socket-outlet shall be installed near the equipment and shall be easily accessible.

Instruction: Fuses marked 3A are of type: 250V, 3.0 Amp, Instant Burn

Fuses marked 8A are of type: 250V, 8.0 Amp, Instant Burn

Warning: Potential Bodily Injury

Warning: Always turn off the electrical power before clearing jams, and before performing maintenance.

Warning: Avoid liquid or excessive moisture when using the system. Do not operate the system with wet hands, nor in a very humid environment. Do not spill liquid on the system.

Warning: Do not touch moving parts. Turning hubs can bruise or scrape, rapidly moving label stock can cut like a knife.

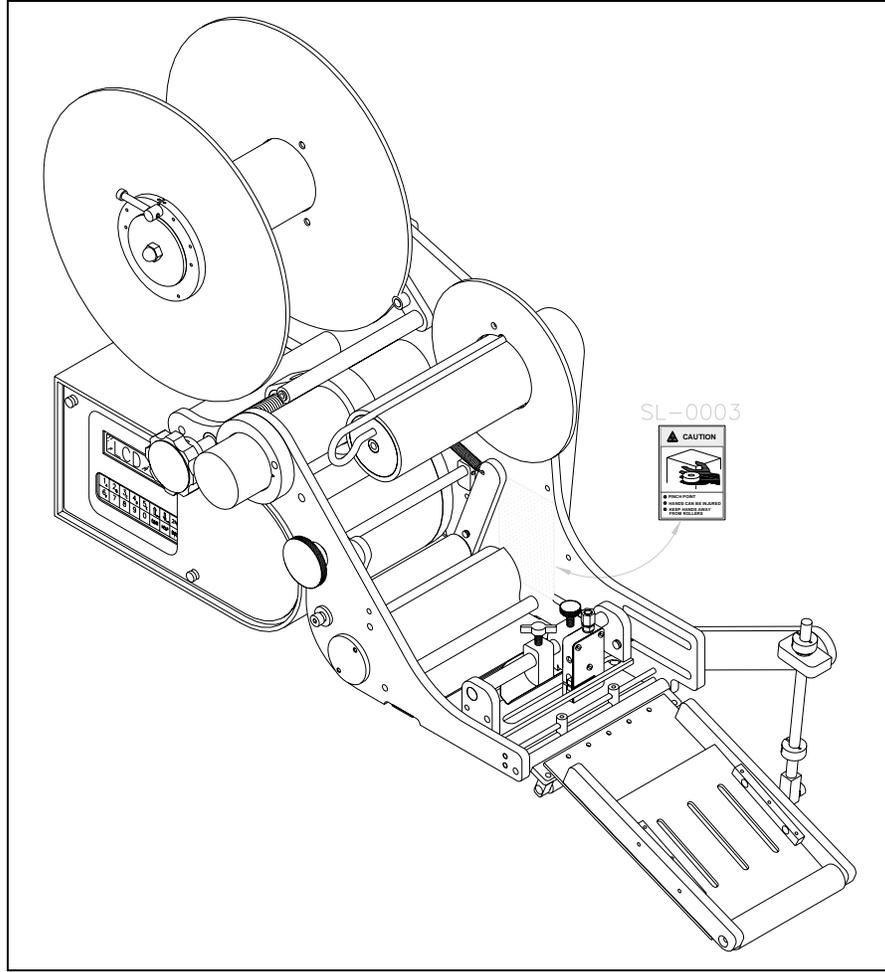
Warning: If a problem arises that is not covered in this manual, do not attempt to repair the system yourself, instead, call your nearest service office for immediate and correct care of the equipment. Trained personnel should perform all adjustments and service.

This manual contains operator information for Little David Application Equipment. It is directed toward the person who operates that system. You should take the time to read through this manual once before operating it. Thereafter, refer to it as necessary.

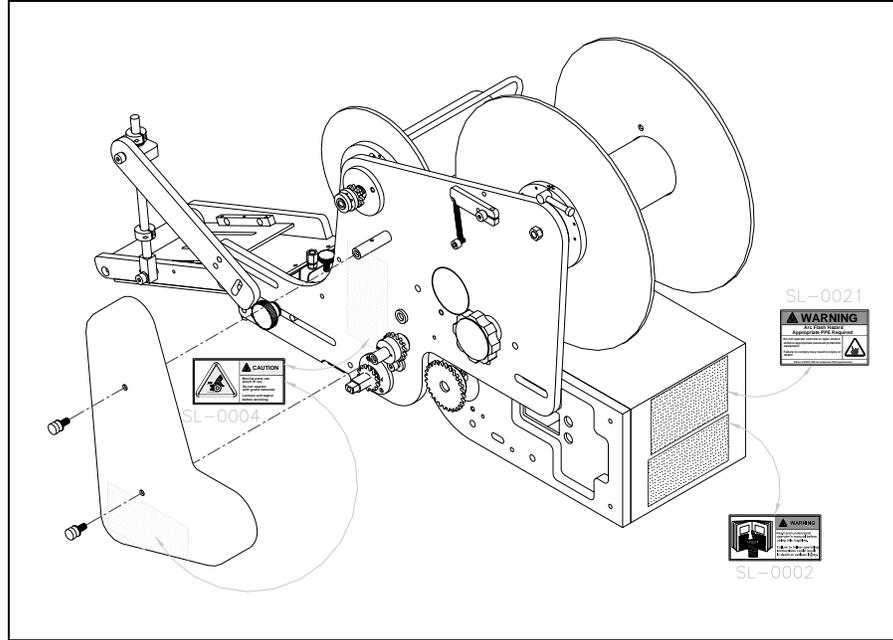
Take special note of all warnings, cautions, and maintenance instructions. Like any other piece of equipment, the Little David Label Application System functions best when cared for and used carefully. Note that only an authorized technician should perform any procedures not described in this manual.

Caution: Potential Machine Damage

- Caution:** Do not install the system in direct sunlight.
- Caution:** Do not install the system near a heater or heat emitting equipment.
- Caution:** Provide and use proper electrical power.
- Caution:** Use Loveshaw Corp tested supplies only. Supplies that do not meet Loveshaw Corp standards may result in poor label application quality or may damage the equipment.
- Caution:** Do not operate, maintain, or otherwise use the system, except as described in this manual. The system is not a toy.



Safety Decal Locations

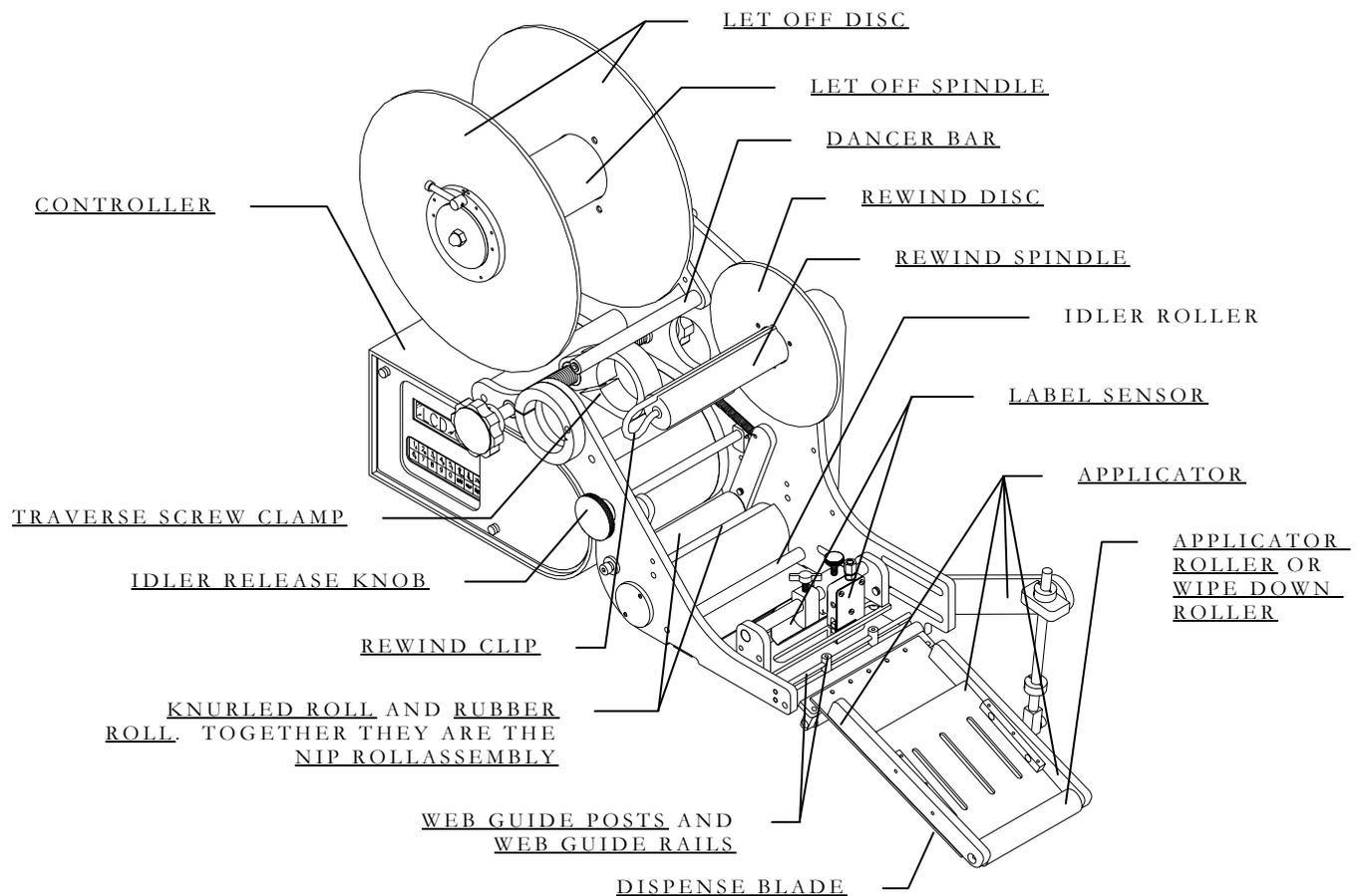


Safety Decal Locations

Labeler Sections

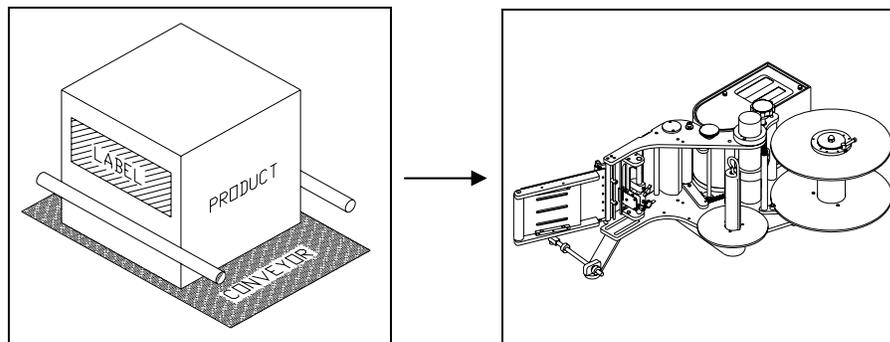
Overview

This manual covers several parts of the machine. The following diagram identifies the key sections of the machine.



Installation and Threading

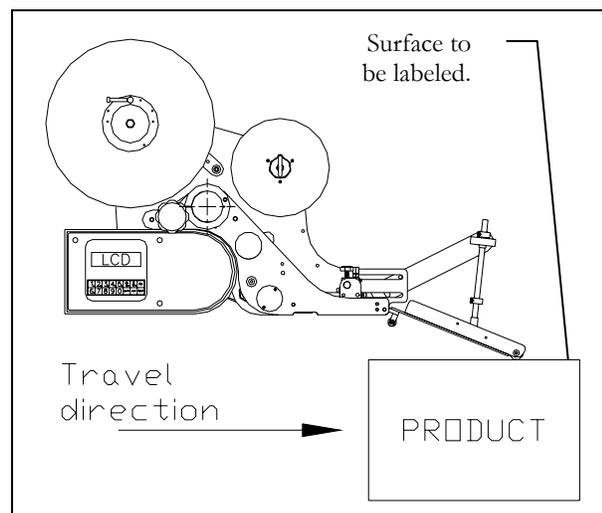
Before you can begin to install the labeler, confirm that the labeler is to be used in a side mount application.



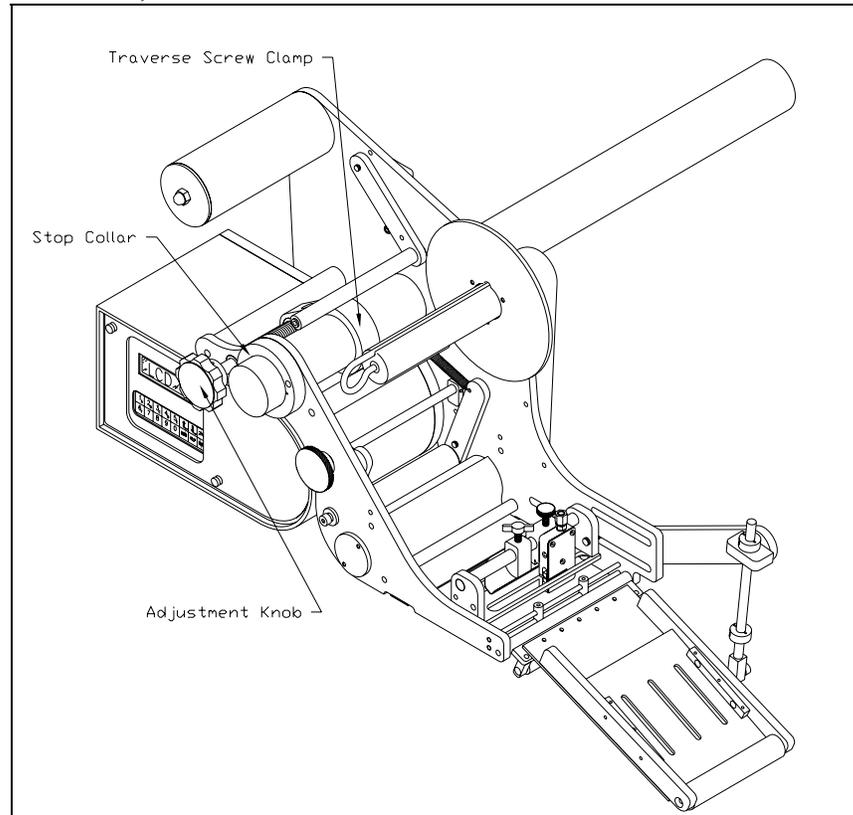
Side labeling on a carton

Completed side mounted labeler assembly

The labeler can only label products that pass in a specific direction. The diagram below shows the direction the product must travel in relative to the labeler.



Step Two: Take the large metal tube and place it in the labeler as shown below,



Turn the Adjustment Knob to place the Traverse Screw Clamp in the center of the labeler. About four inches of tube should extend beyond the Stop Collar. Once the tube is in position tighten the screw in the Traverse Screw Clamp and Stop Collar tightly.

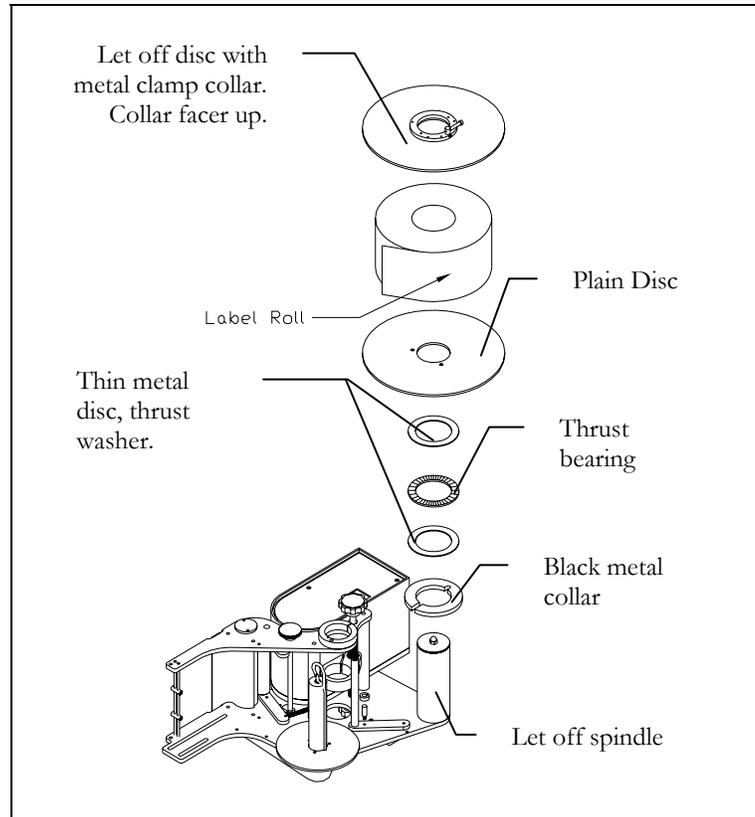
Step Three: *The labeler weighs sixty-five pounds. It is highly recommended that one or more additional people assist you with the next two steps.* Once the cross tube is secured tightly in the labeler, return to the base (21006) and make sure that it is open as wide as possible. Carefully place the end of the tube into the base making sure that it is entirely within the base, if the labeler and tube wobble greatly the tube is not fully through. Rotate the labeler so that the point of label application will gently contact the product and then tighten the base handle.

Step Four: Loosen the Stop Collar. Turn the Adjustment Handle until the bottom of the roller is aligned with where the bottom of the label will be on the product. The labeler can only be adjusted up or down a maximum of 3 1/2". Located opposite the adjustment handle is the clamp lock knob. Turning this knob it is possible to lock the traverse screw clamp in position before tightening the stop collar and prevent movement by accidentally

SECTION 1: PLACING THE MOUNT

bumping the adjustment knob when securing the stop collar. If further adjustment beyond 3 1/2" is desired it is necessary to hold the labeler securely while loosening the screw in the Traverse Screw Clamp and lowering it by the desired amount. After any adjustments in height, always be sure that the Traverse Screw Clamp and Stop Collar are tightly secured.

Step Five: Enclosed with the labeler are two plastic discs (one with a clamp collar and sensor), two thin metal discs, a black aluminum collar, and a thrust bearing. Place the items and your roll of labels on the labeler as shown below.



If any core adaptors are present (additional black collars or plastic sleeves) place single ones where the center of the label roll will be. If more than one core adaptor is present, place the first one an inch above the plain plastic disc and the other one inch in from where the label roll ends at the top.

Turn to Section 2: Threading Label Stock.

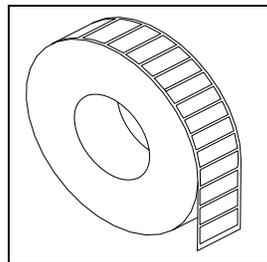
Section 2: Threading the Label Stock

Always make sure that the power is off, the unit is unplugged, and no product are moving past the labeler before threading new label stock or threading re-threading after a web breaks. There is a quick reference sticker on the control side of the labeler showing the label path. Recommended label specifications can be found at the end of this manual and should be consulted when ordering new label rolls.

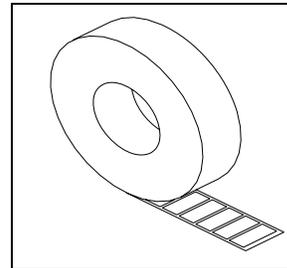
Step One:

- Make sure that the let-off discs are not holding the label roll too tightly. The roll should spin when light pressure is applied to it.
- On top and bottom applications, the labeler is mounted on a 922-A, it is recommended that the labels be placed on the center of the let-off spindle and threaded through the center of the machine.
- Make sure that when the leading edge of the label roll is pulled away, the labels face the top of the machine regardless of the machine orientation to top, side, or bottom application. See Label stock windings below.
- Clear the first 36" of labels.

Label Stock Windings



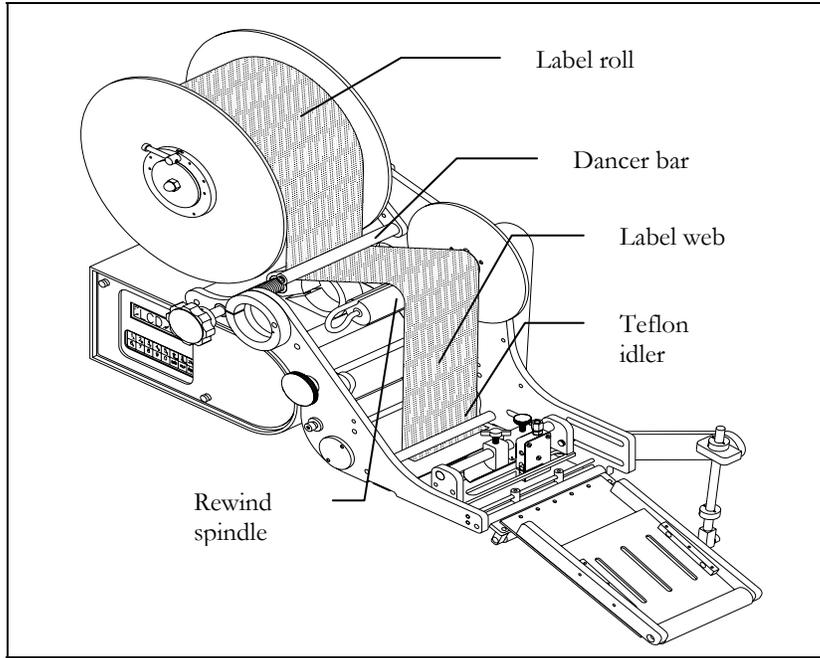
Labels wound outside (mount as shown)



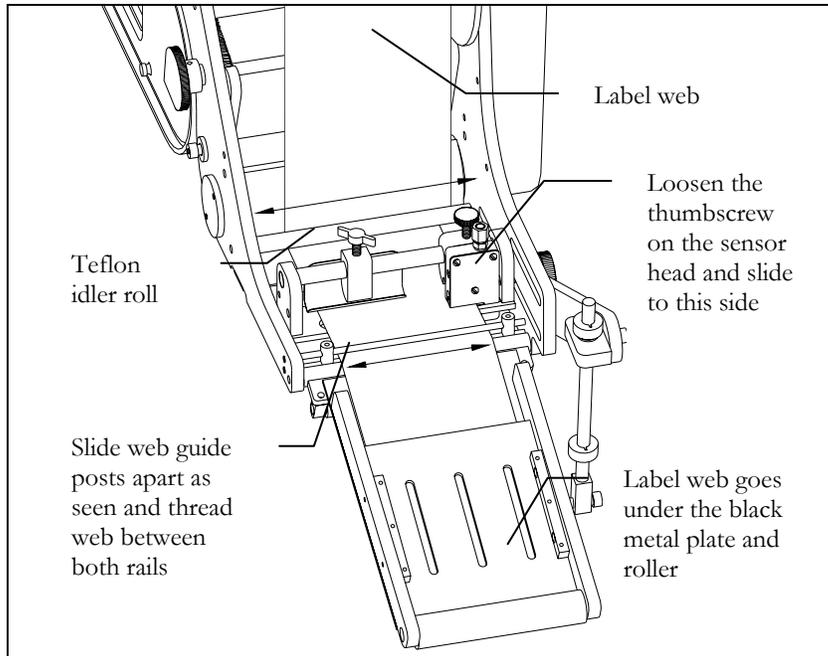
Labels wound inside (mount as shown)

Step Two: Take the cleared strip of label web and thread it under the dancer bar, over the rewind spindle, and under the idler roller.

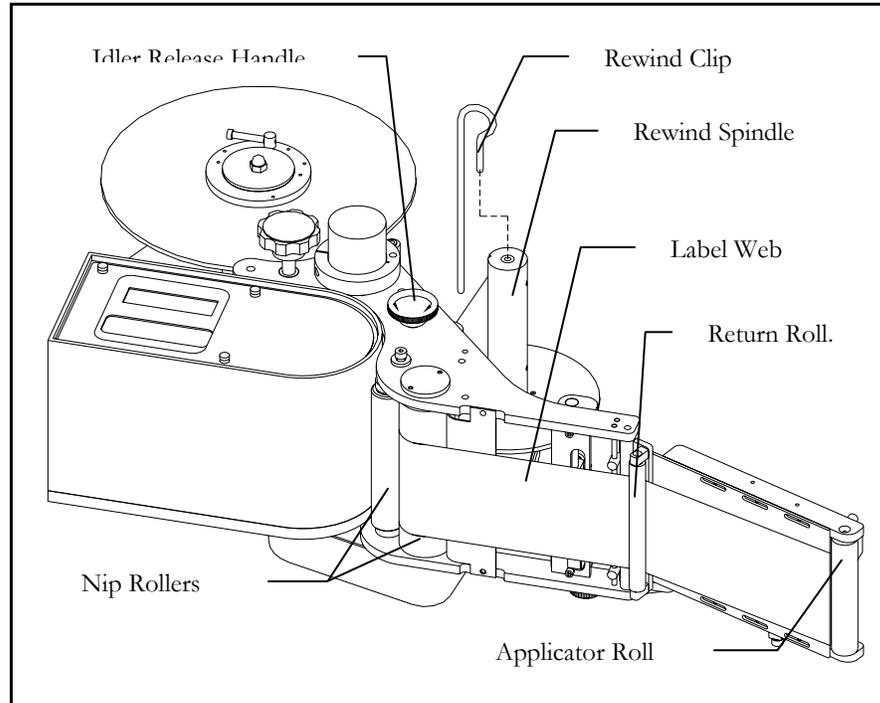
SECTION 2: THREADING THE LABEL STOCK



Step Four: Now take the web and pull it through the label sensor, through the web guide rails and over the dispense blade. To complete this part of the threading process it may be necessary to loosen and slide the sensing head and web guide rails. When done, the web should appear as it does below.



Step Five: Open the idler roll with the idler release handle, the handle 90° (counter-clockwise for right hand; clockwise for left). Thread the web over the return roller, through the idler rollers up to the rewind spindle and clip in place. Close the nip roll.

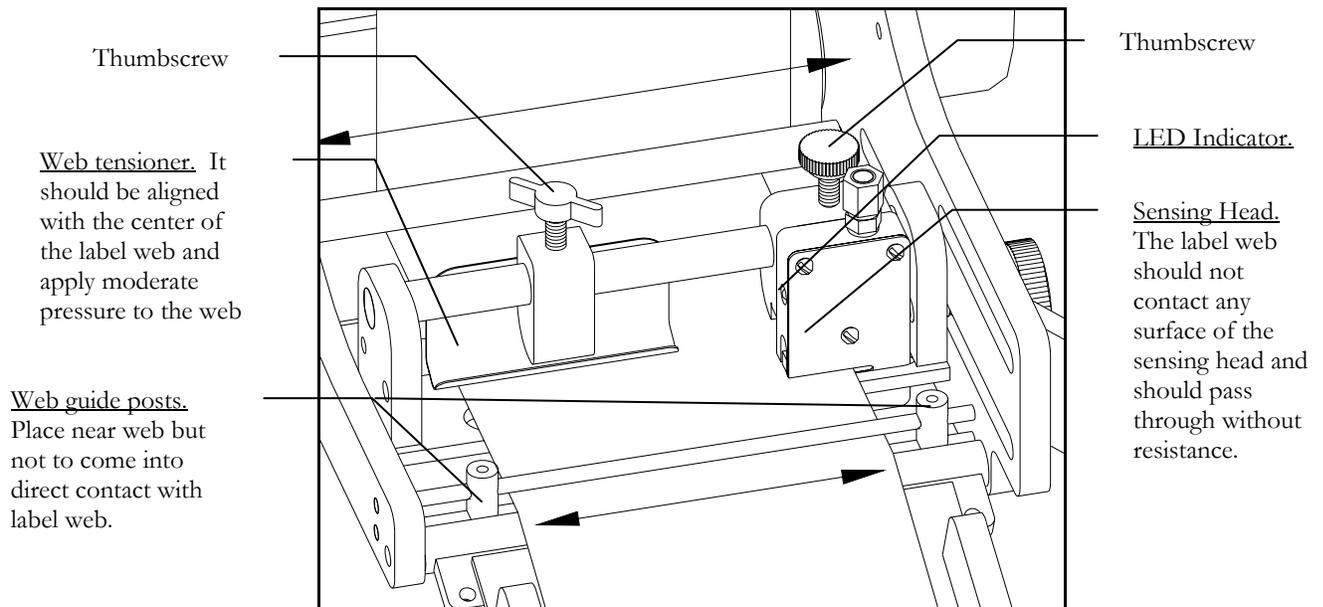


The labeler is now threaded and ready to be plugged in and turned on. Pressing the orange 2nd key on the controller will dispense one label. Check that the label stops dispensing when it just comes to the wipe down roller. If this does not happen, the label comes out too far or not far enough adjustments to the label sensor and/or applicator may be needed. Read chapter 5 to adjust the label sensor and chapter 7 to adjust the applicator

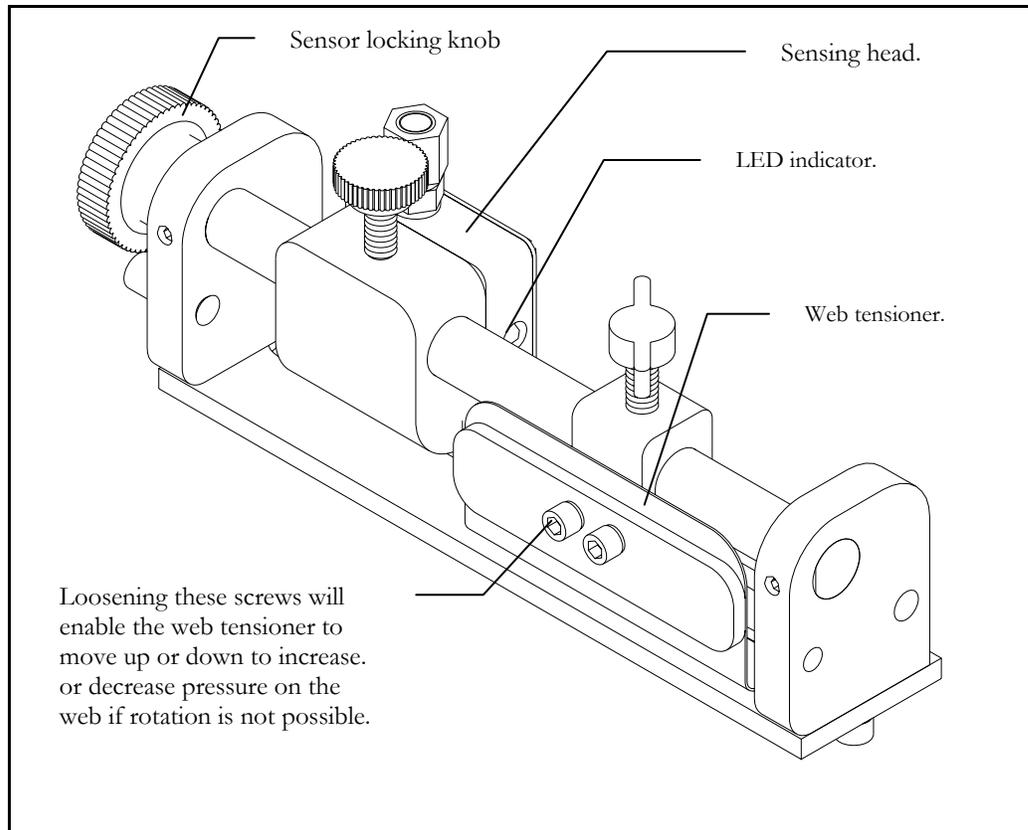
Label Sensing

Photoelectric Label sensor

The LS-500P comes standard with a Photoelectric Label sensor. The function of this piece is to stop the movement of labels through the machine once the first label has cleared the applicator and the next label is in position. The photo-eye located in the sensor head can see the labels and web without the need to contact the web in any way. A web tensioner piece rides the same shaft as the sensing head to keep the web at a steady distance within the photo-eye. The label sensor will already be mounted within the labeler must be plugged into the controller port marked Label Sensor on the rear of the unit during installation. Refer to the illustrations below to adjust the label sensor to suit your specific label size(s) accordingly.



PHOTOELECTRIC LABEL SENSOR



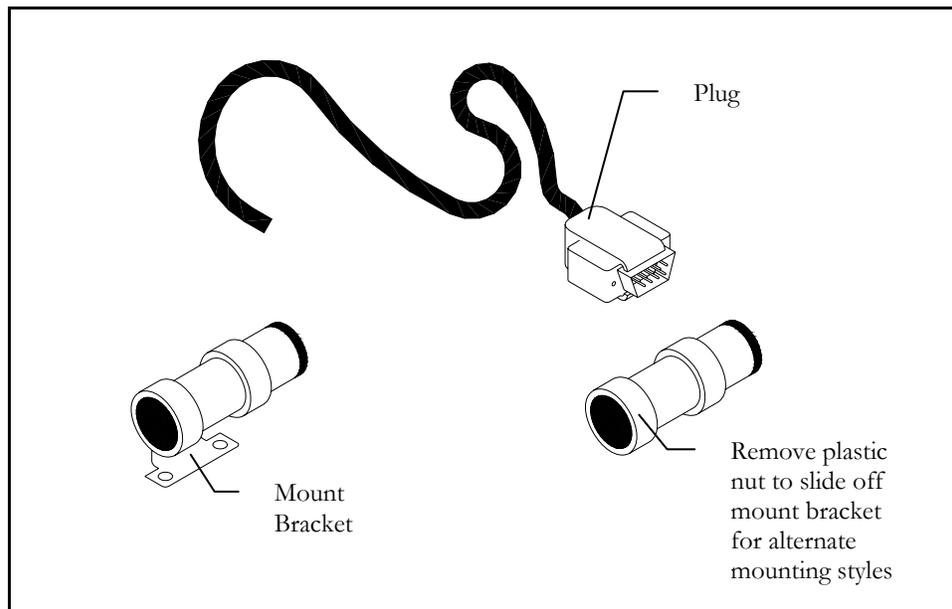
The LED indicator should be **off** when a label is present in the sensor head and **on** when no label or empty web is present in the sensing head.

The label sensor assembly can be moved forward or backward within the head by loosening the Sensor Locking Knob and sliding it to the desired position. Settings contained in the controller can allow the label to move beyond the point of detection. These settings are used to fine tune label placement when manual adjustment of the label sensor is insufficient. To learn how to do this, see *Help Menu: Adjust* in Chapter10

Product Sensing

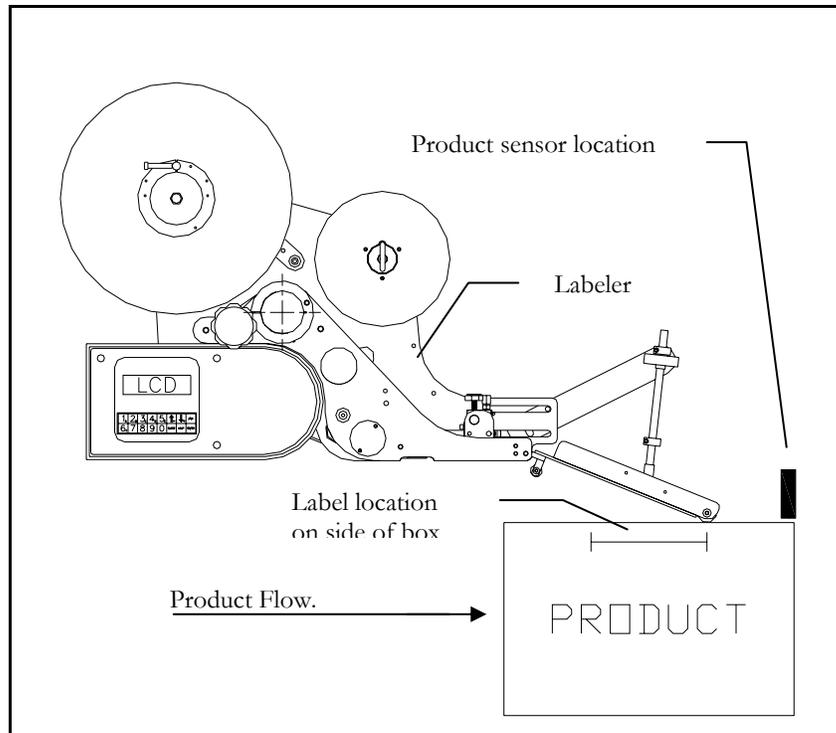
Proximity Photo-eye

The labeler operates when it gets a signal from the product sensor telling it that the product is in place to receive the label. A standard photoelectric eye comes packaged with the machine and plugs into the back of the controller on the port marked product sensor.



A standard mounting bracket allows the photo-eye to be mounted to a conveyor or guide rail but must be placed so that the eye is no greater than 4 inches (10cm) away from the product. Select the position of the product sensor so that the product will pass in front of it when you want the label apply cycle to start.

PROXIMITY PHOTO-EYE



It is possible to adjust the label position on the box by adjusting the time between product detection and label apply. To learn how to do this turn to *Help Menu: Adjust* in chapter 10

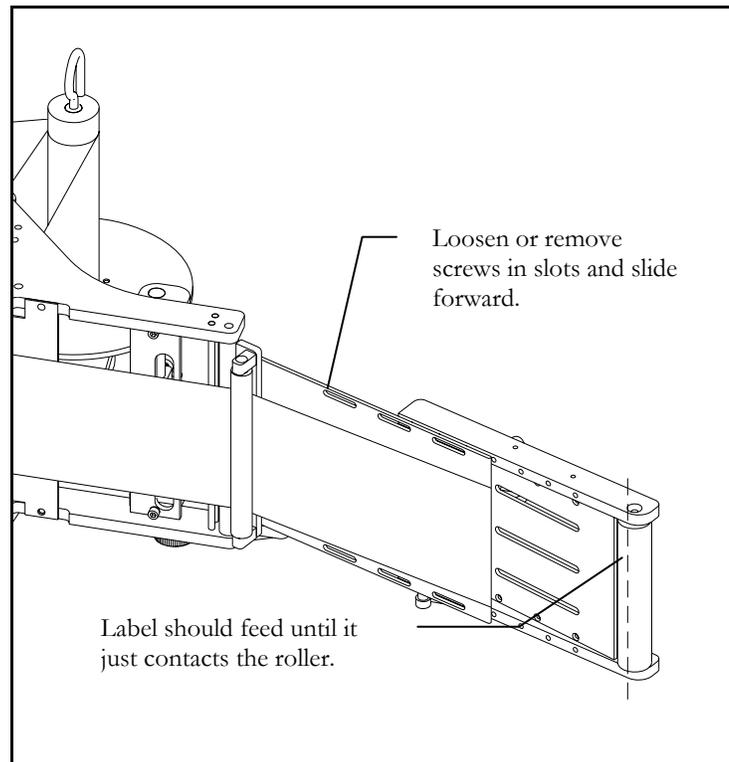
Applicator

Adjusting the Applicator

The applicator has only three adjustments; length, angle, and tension.

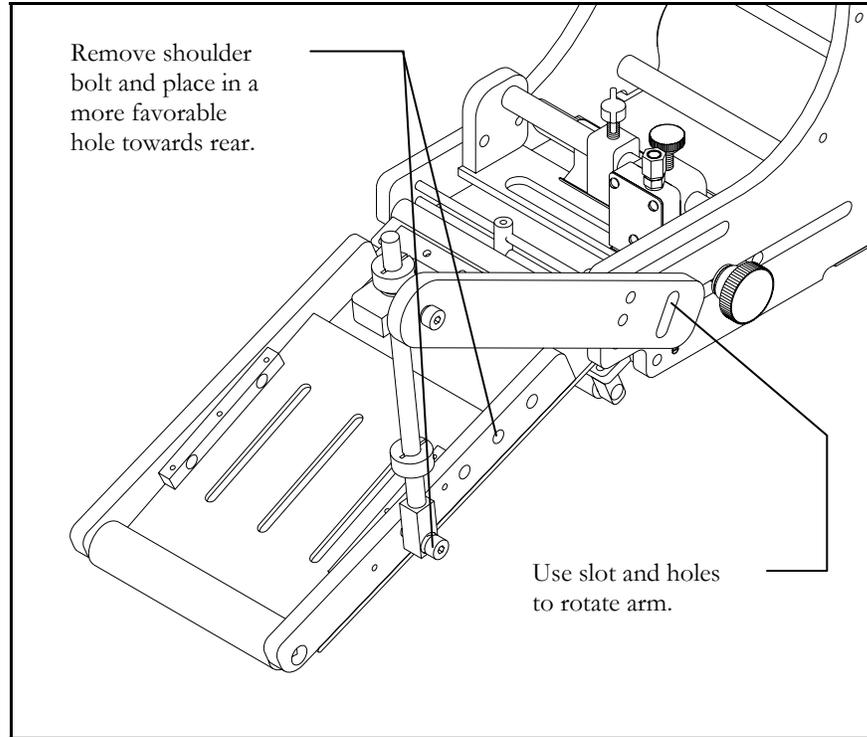
Adjusting the Applicator length

Exceptionally long labels (labels longer than 6") may justify the need to extend the distance between the wipe down roller and the dispense blade edge if the label sensor adjustments cannot place the label at the desired application point.



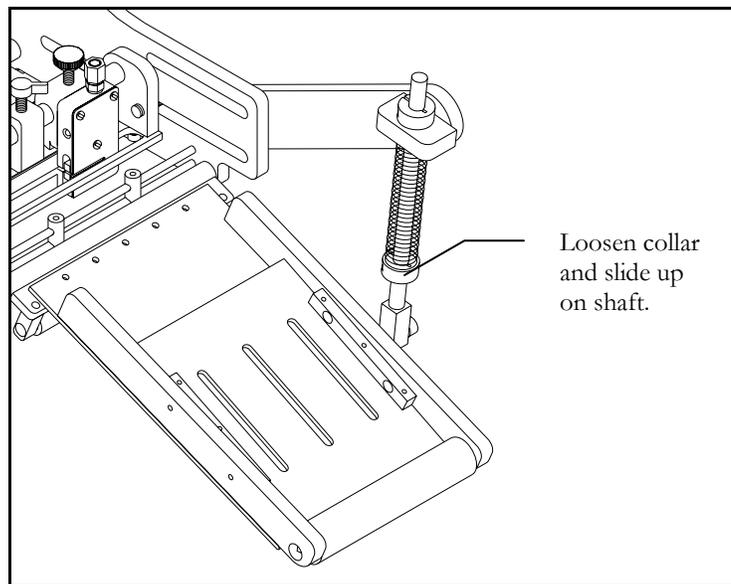
Adjusting the Applicator Angle

If the length of the applicator has been extended, it may be necessary to adjust the angle of the applicator so that it can reach the product.



Adjusting the Applicator Tension

Over time the spring that applies pressure to the wiper roller may lose some firmness. When labels cease to be pressed firmly to the product adjusting the applicator tension may be necessary.



Features and Options

Low Label Sensor

Attached to one of the let off discs is a low label sensor. This sensor, when plugged in to the controller, will let the unit know when the label stock is in small supply. When the labels run low a message on the controller will let the operator know that new roll of labels will soon need to be placed in the machine.

Optional: Light Tower

While the low label sensor is a standard feature of the machine, the light tower is an optional accessory. The light tower should be mounted near the labeler and plugged in to the back of the controller. When the low label sensor indicates that the label roll is low the light tower turns on giving a highly visible indication to all plant employees that a new roll of labels will be needed shortly.

Controller Operation

Keyboard, Screen

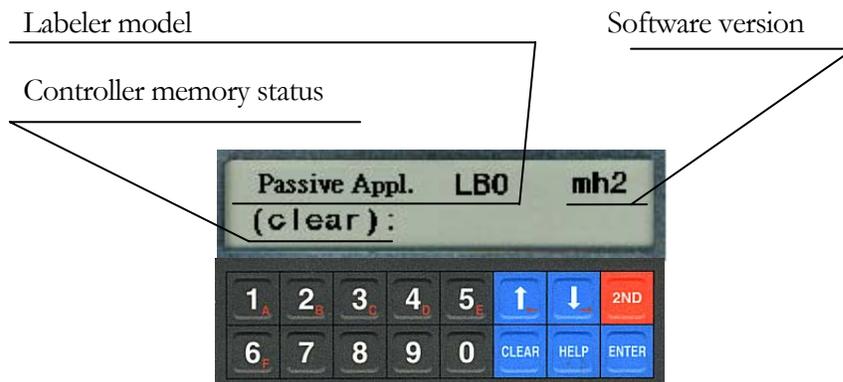
The special-function keys on the keyboard have the following uses:

- HELP shows the menu; CLEAR exits from the menu, and can be used to delete characters in the data entry screens.
- 2ND is the “jog” key; pressing this key starts a label-cycle (see Jog below).
- The \updownarrow arrow keys move through menus and menu features.
- ENTER is used to complete an entry.



Power-On and Unlock

When the unit is turned on the startup screen is shown; this appears below.



If locked or clear appears on the memory status line unit parameters must be adjusted before labeling will occur.

To unlock the unit, enter the factory code 5863434 followed by ENTER — except if the **Unlock code** feature has been used to change the code.

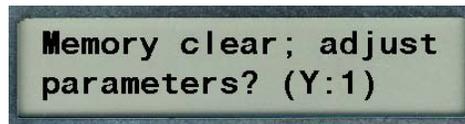
READY

If memory wasn't cleared, or after setting cleared parameters, the normal unit display will appear showing the labeler is ready to operate.



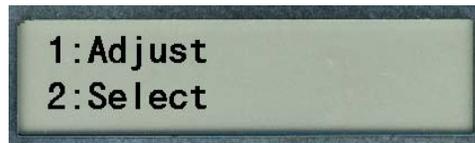
Memory Clear

Once the labeler is unlocked, it will usually show the *READY* legend. If instead the *Memory clear* message appears, the unit memory is clear and labeling parameters should be set by pressing the 1 key to enter the parameter section; see **ADJUST** menu, next chapter. Typically all parameter values for your particular labeler installation should be written down in the back of this manual or optionally on a decal somewhere within labeler vicinity of the labeler and those values should be entered at this point; see **Adjust** below.



Using Help Menu Features

In normal operation, the labeler is simply turned-on and products are moved past its sensor equipment and the labeler responds by applying a label. To adjust system behavior including important labeler parameters, the **Help Menu** must be accessed with the HELP key. The unit then displays a list of numbered features, one of which may be selected by pressing the number or letter next to it. The entire menu can't be seen at once, so use the arrow keys to move through it. It is not necessary to move in this way to an entry, it can be selected any time by pressing its associated number.



HELP shows the menu; CLEAR exits from the menu, and can be used to delete characters in features. To exit the help menu, press ENTER, HELP, or CLEAR.

The following text describes each of the features in the help menu by name. The special-function keys on the keyboard have the following uses:

How Help Menu Features Work

Selecting a typical feature will produce a prompt and a number, like *Feature value: 0*. To change the number, use the arrow keys, or press number keys. The system will automatically prevent values too large or small from being entered. When the desired value is set, press ENTER. Many features adjust timing and are set in milliseconds; 1,000 milliseconds equal one second. Several features use a similar arrangement, but only permit 0 or 1 as values, to control an *on/off* or *yes/no* labeler function. 1 is *on* or *yes*, 0 is *off* or *no*. **Record all settings values on the chart in the back of this manual.**

Help Menu Feature 1: Adjust

The most important feature on the help menu is **Adjust**, which allows control of labeler parameters. Selecting the feature produces another menu just like the help menu, which is used in the same way and has the following entries. Note that some or all of these features will vary depending on the selected unit (see **Help Menu Feature 2: Select**) and/or software version.

- Product Delay controls the time from product detection to start of labeler activity; default setting is 250 milliseconds or 1/4 second.
- Label Overfeed is the time from label sensor detect until label motor stop. A photoelectric sensor positions the label and stops when the label has moved to the right location. The hardware is deliberately designed so that the sensor detects the label too early so it can be fine tuned with this parameter.
- Hold-Off controls the minimum time from the end of a labeling cycle to the beginning of the next cycle; this default value is 0.

Help Menu Feature 2: Select

Choosing this menu item will simply display *Not Implemented*.

Help Menu Feature 3: Language

The feature determines the language in which the Label Controller menus and other informative screens will be displayed. Pressing the arrow keys will “scroll” to show more of it. Then press the desired number.

Allows selection 1. ENG, 2. ITAL, 3. DEUT, 4. FRAN, 5. ESPA, 6. DUTC, 7. PORT

Available languages are English, Italian, German, French, Spanish, Dutch and Portuguese.

Help Menu Feature 4: Net

Some labeler units can operate within a Loveshaw Corp network, allowing control of multiple units from a central computer. In such networks each unit must have a unique identifying number, which can be set in this feature.

This feature is disabled if set to zero. If set to 1 thru 32 a special network using RS-422 may be possible. This selection changes from the normal RS-232 point to point communications to a network Board. The optional Labels

program is required. Labels is a Windows program that runs on PC computers.

Help Menu Feature 5: Speed

This feature sets the feed rate of the label so that it matches the conveyor speed. It is entered in Inches per minute. If the rate is too slow the label might tear or drag/pull off the box and if set too fast the label will crinkle.



Help Menu Feature 6: Unlock code

The default unlock code 5863434 can be altered with this feature. Note that once it is altered if the new code is forgotten Loveshaw Corp cannot retrieve it and the unit will have to be cleared for features to be accessible again.

Help Menu Feature 7: Other

This menu contains factory setting specific to your application. **Do not alter the settings in this menu unless directed by Loveshaw Corp.**

Other Control Functions

666 Memory Clear

To clear all memory in the labeler — if for instance, the unlock code has been altered and then lost — turn the unit off, press and hold the number 6, turn the unit on, wait about a second, release the 6, then press 6, 6, followed by CLEAR, HELP, and the down arrow key ↓; if any error is made in pressing the keys, the memory clear does not occur.

Jog

It is often desirable to cause the labeler hardware to execute a cycle without actual product processing; this is called a Jog. The 2ND key starts a jog cycle.

Normal Operation; Memory Clear Failures

The labeler will normally display the *READY* legend at power-on. When the labeler receives a product signal or the Jog control is used (see above) label cycling will occur and informative messages will appear describing the stages of the cycle.

If, however, memory is clear and parameters have not been adjusted; i.e. if 0 instead of 1 is pressed at power-on in answer to the *Memory clear; adjust parameters?* question, then subsequently whenever the unit should start a cycle, it will instead produce the memory clear prompt all over again. It is easy to exit this prompt without actually adjusting parameters. Pressing 1 followed by ENTER will leave parameters in a nominal default state, and during installation could cause equipment malfunction.

Controller Hardware

Notes

The Label Controller is a 7" Width 6½" Depth 5½" Height enclosure with a twist front piece. When installed it has a metal cover that protects it and the motor. This controller includes a 2 by 20 character display and 2 x 8 button keypad for data entry. This controller interfaces the Print Trigger Devices, solenoids, and other sensors to signal the Stepper Motor or Printer to apply labels to the product.



Overview

Parts include:

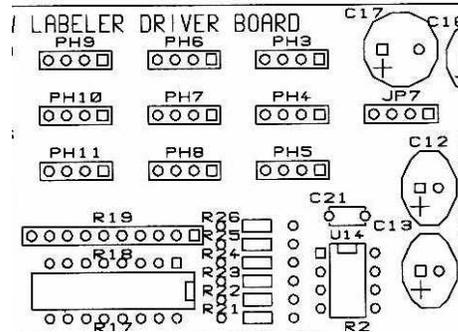
- a) MicroJet Controller Board — is the CPU of the package it provides the user with memory and control to the other subsystems.
- b) Driver Board — connects to the controller board to provided inputs from sensors and outputs for the Motor AC Board/Stepper Board.
- c) The Motor AC and Stepper Board include the voltage power supplies, relays and motor/solenoid controls. These boards provide LED for a visual indication of the motor and solenoids. Two types of motors are available.

The AC stepper motor is used with the Motor AC board and DC stepper motor is used with the Stepper board. The power supply on this board has two fuses for the DC circuitry. A 3Amp fuse for the logic and an 8Amp for the stepper motor/relays (depending on the choice of motor the current draw is 3Amp to 7Amp).

- d) A Keypad and LCD screen provide user-friendly interface. Both of these items are on a twistable plate.
- e) A power cord is plugged into a CORCOM. The CORCOM is selectable for 110/220. The AC Stepper Motor is voltage specific either 110 or 220/240 VAC. The Stepper Board uses DC Stepper Motor and can allow for any voltage settings. Two 3Amp fuses are used in the CORCOM.

- f) An RS-232 port is selected standard but included is a jumper changeable to an RS-422 network.

External Inputs



- JP7 — Label Sensor Analog
- PH3 — Label Sensor Digital
- PH4 — Motor Lock-Out
- PH5 — Stop Solenoid
- PH6 — Inhibit Solenoid
- PH7 — Product Sensor
- PH9 — Low Label Input

Product Sensor			Label Sensor		
	9 Pin D	JP7		9 Pin D	PH7
+12 VDC	6	1	+12VDC	6	1
signal NO	3	2	signal	3	2
signal NC	2	3	output	2	3
ground	5	4	ground	5	4

To use switch from the standard Analog sensor to the Digital with built-in amplifier remove U14 and use PH3.

Interconnect Cables Between The PC And The Label Controllers.

Default setup is RS-232. RS-232 connection is a point-to-point connection where only one COM port may be connected to one Label Controller. A maximum cable length is 300 feet using Braided Shield Extended Quite Cable.

DB9	DB25	Label Controller DB9
2 (RXD)	3 (TXD)	2 (TX)
3 (TXD)	2 (RXD)	3 (RX)
5 (GND)	7 (GND)	5 (Ground)
Shield	Shield	Shield

Some RS-232 boards have different pin-outs, review hardware provided documentation. If RS-232 is used only one unit can be connected to a Windows computer using multitasking. Only one Label Controller can be connected to one RS-232 system at one time. If more units have to be connected or if the cable length is longer than 300 feet, RS-422 must be used. RS-422 allows for up to 32 Label Controller units to be connected to each COM port.

RS-422 connection is a multi drop connection. The PC is the master and the Label Controllers are the slaves to it. A maximum cable length is 1000 feet.

From Master (PC)	to Slave (Labeler)
TXD(PC) (H or +) to RXD	(H or +) TXD(PC) (L or -) to RXD (L or -)
RXD(PC) (H or +) to TXD	(H or +) RXD(PC) (L or -) to TXD (L or -)
Ground(PC) to Ground(Labeler)	pin 5 Shield(PC) to Shield(Labeler)

All units have RS-422; the second Interface connector is used to loop more than one controller. Switching from RS-232 to RS-422 requires a cable and jumper change. RS-232 connection is on the right internal driver board RS2 labeled RS-232. On the Left is RS7 labeled RS-422. Change this ribbon cable connection. It is selected by 3rd pin of RS6 from the two right pins to the two left pins. The last unit must only have pull up resistors on it therefore remove RS4 and RS5 jumper if not the last unit. The cable is specified below.

Pin	Signal Name	Type Label Controller Signals
1	RS485 TX-	Output
2	RS485 RX+	Input
3	RS485 RX-	Input
5	DC Ground	Ground
9	RS485 TX+	Output

Each RS485 board has different pin-outs, review the documentation provided by the board manufacturer. The provided RS485 board may or may not require terminator resistor or jumper change. Each Label Controller unit to next Label Controller unit is:

- 1 — 1 (TX-) 2 — 2 (RX+)
- 3 — 3 (RX-) 5 — 5 (Grounds)
- 9 — 9 (TX+) Shield to Shield

These Label Controller units are slaved to the PC master computer and have all their signals connected to each other.

Miscellaneous Notes

Each unit must have a unique **Net #**. To give the unit a net ID number see **Help Menu** in the preceding chapter. To setup PC computer see Loveshaw Corp *Net RS-232 & RS-485 Setup for Label Controller HR & SI Systems*. For additional information also see the *Label Controller Technical Manual*.

Maintenance

Daily:

Ensure that the product sensor and label sensor is free of debris. Gently wipe away any dust build up on the lens to ensure reliable product and label sensing.

Peel Blade: Ensure that no adhesive residue is built up on the peel blade. Simply remove and adhesive with Alcohol as required.

Rewind Spindle: Remove excess backing paper as required. Too much backing paper could interfere with proper rewinding and label dispensing.

Note: All bushings are oil-lite and do not require lubrication.

Parts List

* - Denotes a recommended spare part

Label Sensors

- Standard Label Sensor Assembly .06950-MP-RH
- Sensor Head Assembly* 06001-MP

Product Sensors

- Wide Beam Proximity Sensor Assembly .935-E-04-MP
- Low Label Sensor Assembly 01400-MP-LH

Main Assembly Parts

- Rewind Bushing Spindle 01045
- Rubber Roll Assembly .01990
- Rewind Clutch* 01112-40

- Rewind Disc Assembly 01960
- Tape Release Pin* 01176
- Spring Dancer Bar B0190-019
- Let Off Disc 12" * 01044
- Rubber Drive Roll Assembly 01990
- Knurled Roll Assembly with Bearings 01930
- Stepper Motor E5000-016
- Teflon & Foam Roller Assembly A0000-119

Gears & Chain

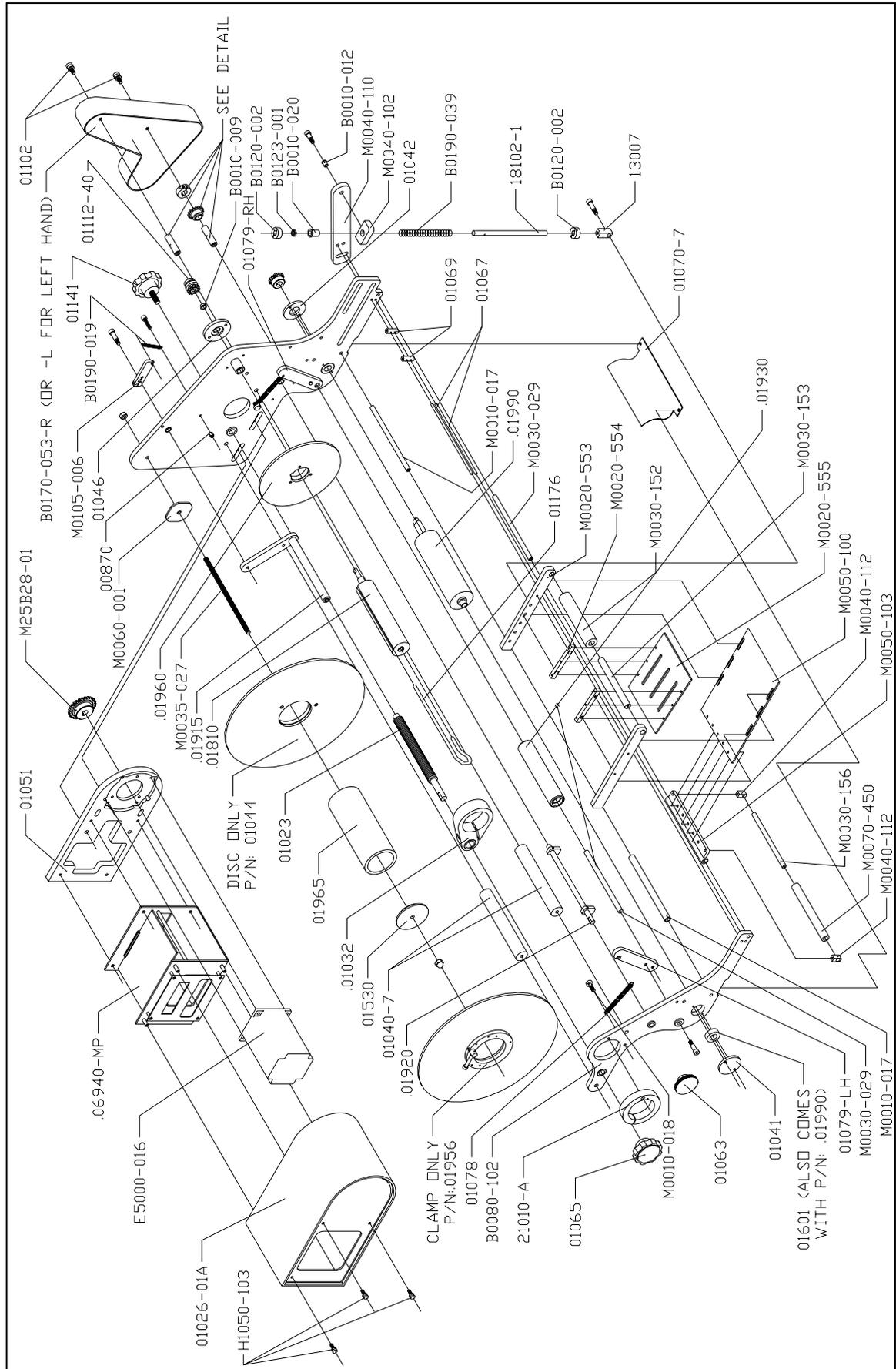
- Sprocket 25B14 B0060-032
- Sprocket 25B28 B0060-033
- Chain B0070-003

Fuses

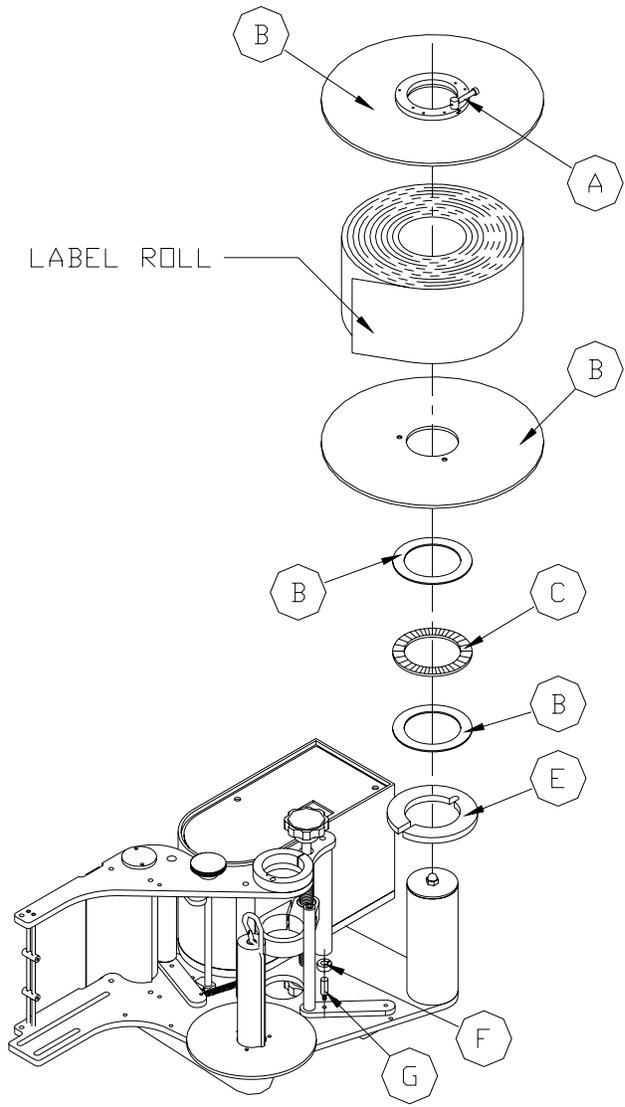
- 3 amp fuse* 01171
- 8 amp fuse* 01173

Controller

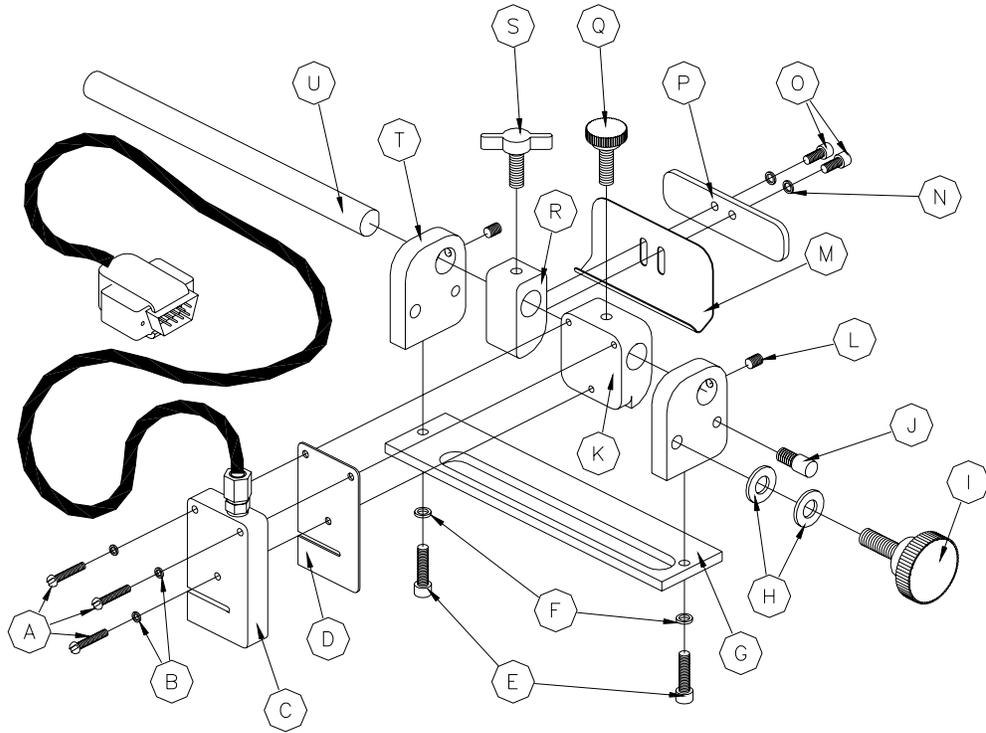
- Printer Circuit Board for CPU* E1000-008
- Printed Circuit Board (Piggy Back)* VLA-002
- Printed Circuit Board for Stepper Motor* VLA-001
- LCD Screen* E9042-031
- Keypad* E9042-030



LIST OF PARTS				
QTY	PART NUMBER	DESCRIPTION	MATERIAL	NO.
1	.01956	LET OFF CLAMP ASSEMBLY	XXXXXX	A
2	01044	LET OFF DISC $\phi 12"$	XXXXXX	B
2	B0030-083	THRUST WASHER	XXXXXX	C
1	B0030-082	BEARING - THRUST	XXXXXX	D
1	01958	CORE ADAPTER 4"	XXXXXX	E
1	15008	COLLAR CLAMP 5/16 I.D.	XXXXXX	F
1	M0035-042	BRAKE POST	SPEC. LENGTH	G

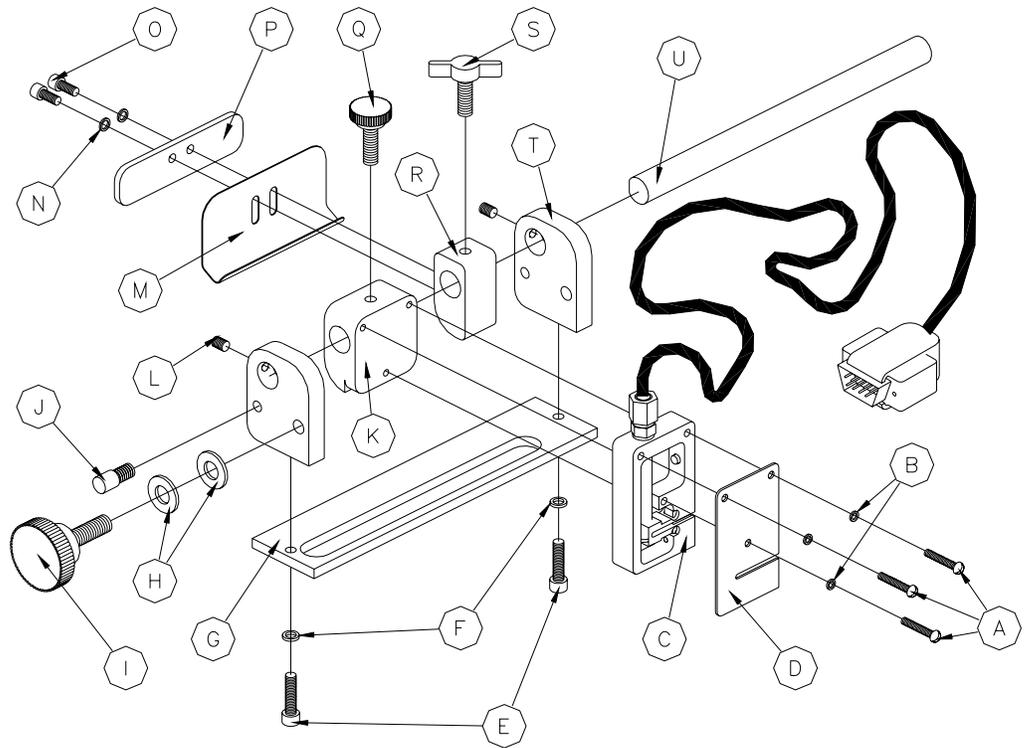


LIST OF PARTS				
QTY	PART NUMBER	DESCRIPTION	MATERIAL	NO.
3	H1010-420	6-32X3/4 ROUND HEAD	300052	A
3	H2010-100	#6 FLAT WASHER	300019	B
1	06001-MP	SENSING HEAD	-	C
1	B0170-005	SENSOR COVER	600181	D
2	H1030-511	10-32X1/2 CAP SCREW	300006	E
2	H2010-117	#10 LOCK WASHER	XXXXXX	F
1	06009	SENSOR MOUNT BASE PLT	600987	G
2	01138	5/16 FLAT WASHER	300022	H
1	01200	SENSOR LOCK KNOB	600184	I
1	01260	SLOT GUIDE PIN	600192	J
1	06007	SENSOR HEAD SLIDE BLOCK	600985	K
2	H1030-834	10-32X1/4 SET SCREW	300061	L
1	06003	WEB TENSION PLATE	600276	M
2	H2010-109	8-32X3/8 CAP SCREW S.S.	XXXXXX	N
2	H1010-502	#8 LOCK WASHER	XXXXXX	O
1	M0020-098	WEB TENSION BLOCK	600750	P
1	B0140-201	KNOB SLK-5	XXXXXX	Q
1	06008	LABEL TENSION SLIDE BLK	600986	R
1	B0140-203	KNOB SLK-12	XXXXXX	S
2	M0020-047	LABEL SENSOR SIDE BLOCK	601724	T
1	M0030-019	SENSOR SHAFT	600984	U



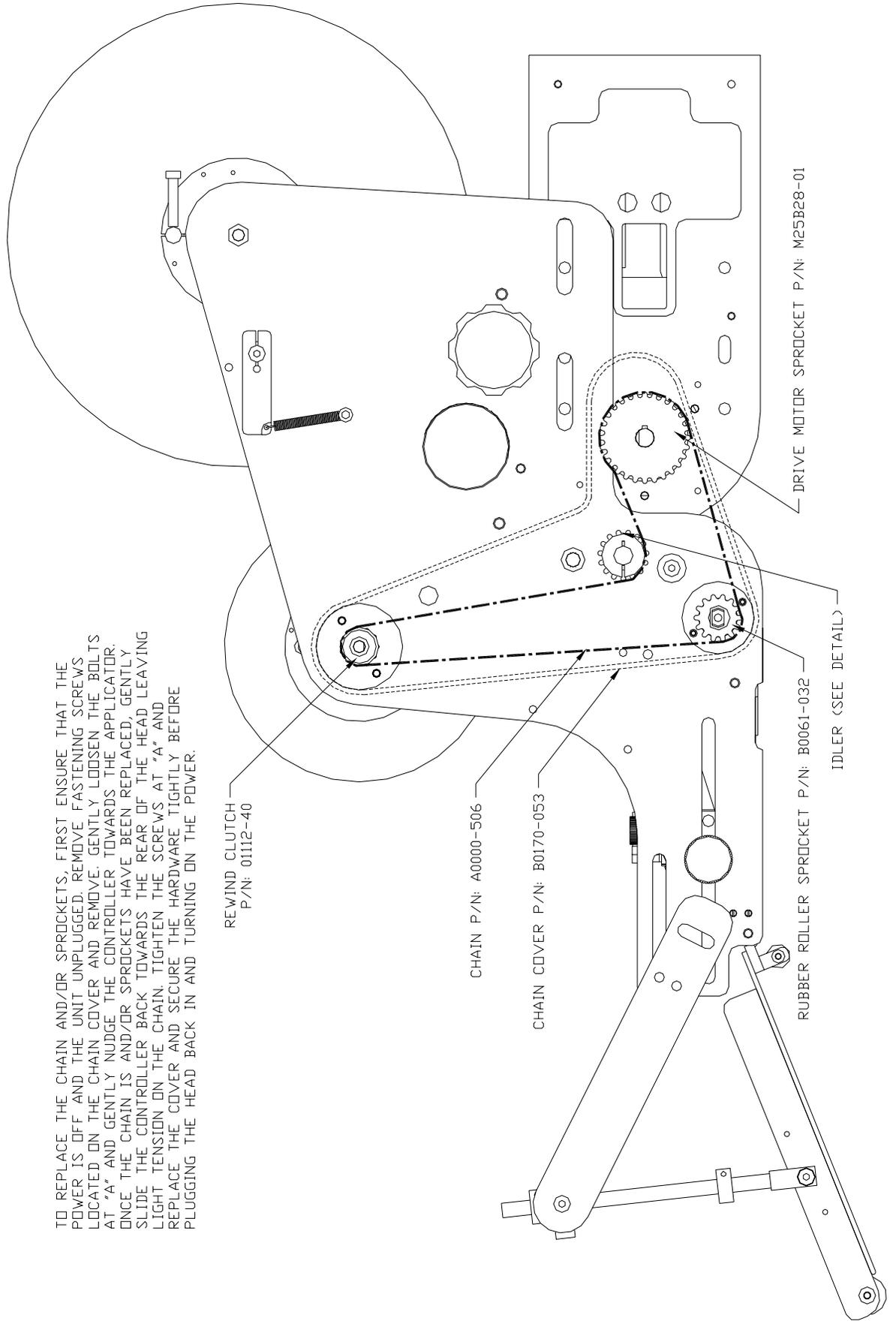
Right Hand Photoelectric Label Sensor Assembly

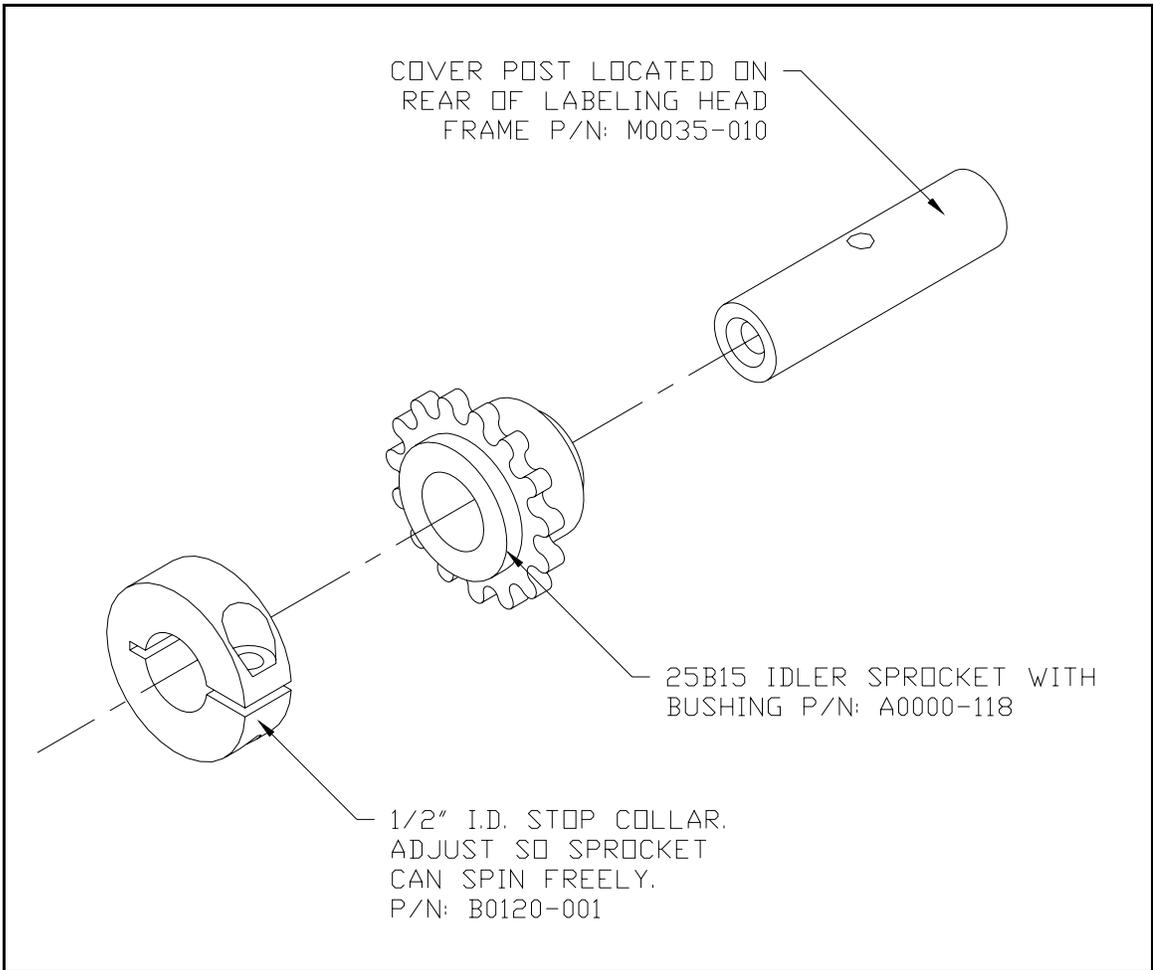
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1	06003	WEB TENSION PLATE	600276	M
2	H2010-109	8/32X3/8 CAP SCREW S.S.	XXXXXX	N
2	H1010-502	#8 LOCK WASHER	XXXXXX	O
1	M0020-098	WEB TENSION BLOCK	600750	P
1	B0140-201	KNOB SLK-5	XXXXXX	Q
1	06008	LABEL TENSION SLIDE BLK	600986	R
1	B0140-203	KNOB SLK-12	XXXXXX	S </td
2	M0020-047	LABEL SENSOR SIDE BLOCK	601724	T
1	M0030-019	SENSOR SHAFT	600984	U



Left Hand Photoelectric Label Sensor Assembly

TO REPLACE THE CHAIN AND/OR SPROCKETS, FIRST ENSURE THAT THE POWER IS OFF AND THE UNIT UNPLUGGED. REMOVE FASTENING SCREWS LOCATED ON THE CHAIN COVER AND REMOVE. GENTLY LOOSEN THE BOLTS AT "A" AND GENTLY NUDDGE THE CONTROLLER TOWARDS THE APPLICATOR. ONCE THE CHAIN IS AND/OR SPROCKETS HAVE BEEN REPLACED, GENTLY SLIDE THE CONTROLLER BACK TOWARDS THE REAR OF THE HEAD LEAVING LIGHT TENSION ON THE CHAIN. TIGHTEN THE SCREWS AT "A" AND REPLACE THE COVER AND SECURE THE HARDWARE TIGHTLY BEFORE PLUGGING THE HEAD BACK IN AND TURNING ON THE POWER.



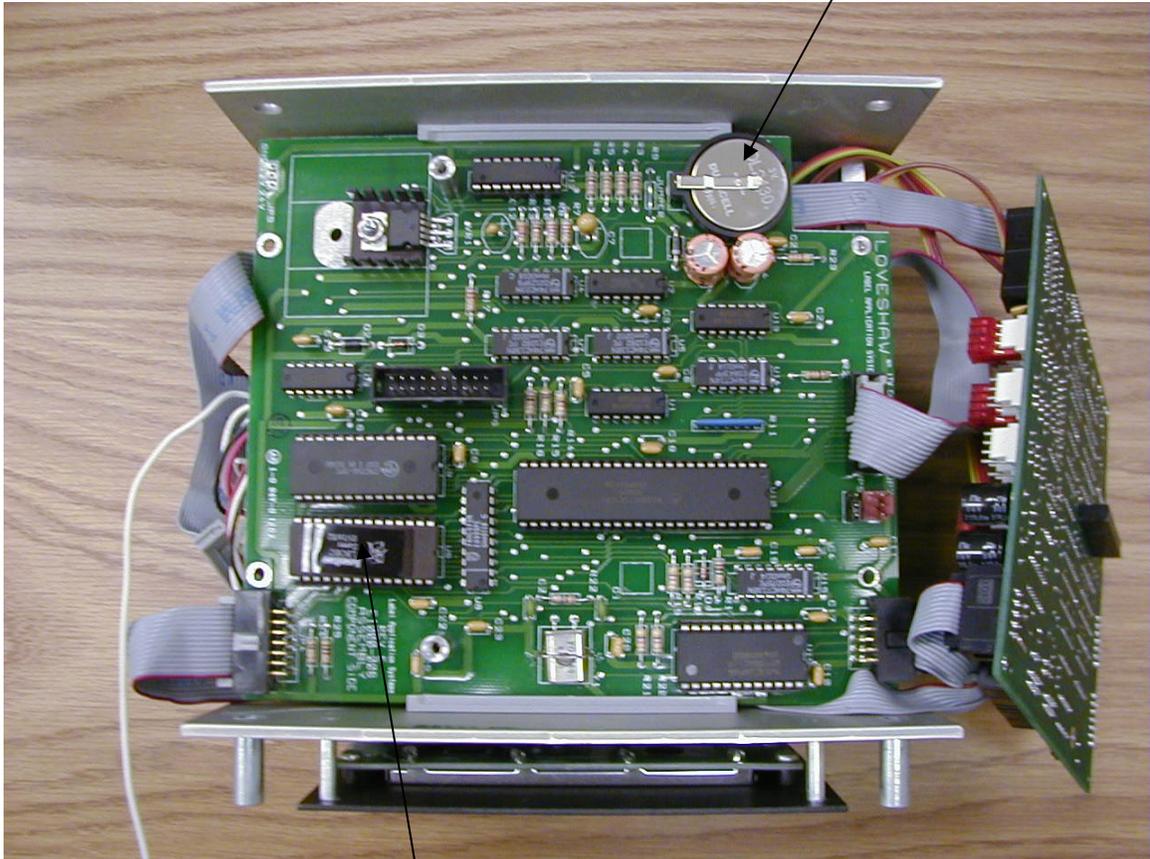


Detail of Idler Sprocket

Battery Replacement

Caution, Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

3 Volt Lithium Battery
Part Number CPMD75-009-0



U9 EPROM

Note where pin 1 is located and insure all
pins are correctly in socket.



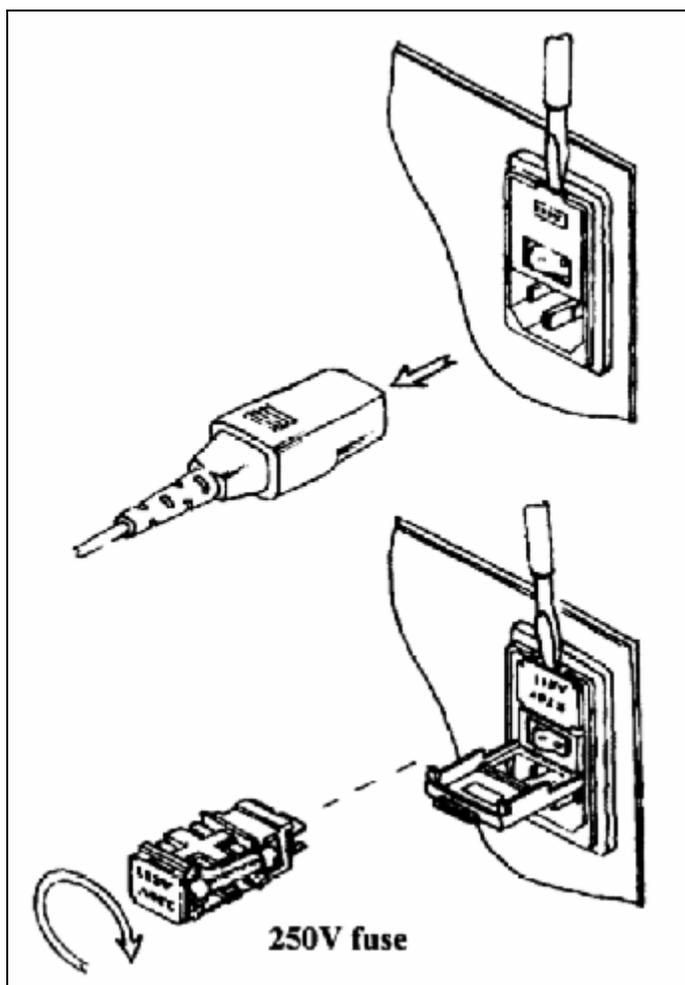


CORCOM

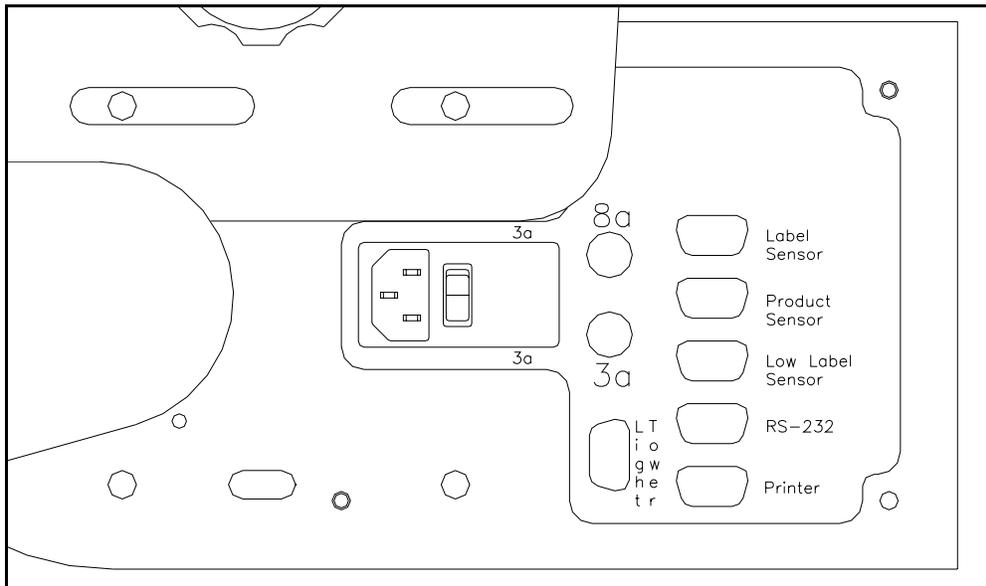
To insure proper operating conditions use dedicated AC drops. Do not use extensions. Use Line Conditioners or UPS to protect against surges, noise, and spikes.

Note: Before plugging in the power cord, ensure the power switch is in the OFF position (Press the 0 on the ON/OFF switch). The ON/OFF switch is located the Power Entry Module on the rear of the Labeler controller.

CAUTION: Double Pole/Neutral Fusing.



Socket- outlet shall be installed near the equipment and shall be easily accessible.



Rear of Controller

Troubleshooting Guide

Nip Roller must be in the close position when operating.

Ensure label feed is under Dancer bar.

Dancer Bar should have tension adjust clamp and spring on back of labeler.

Collar on Dancer Bar arm must contact Let Off Disc.

Adjust Web Tensioner on Label Sensor Assembly.

Ensure chain is not too tight.

Ensure that the Let Off Discs are not too tightly pressed against label roll.

Make sure that the label web passes through the Photo-eye.

Make sure that the proper settings are being used, consult next page.

Controller Settings Log

	Label Size	Product Delay	Label Overfeed	Hold-Off	Speed per Minute	Net #	Notes:
	Defaults =	250	0	0	1200	0	
1							
2							
3							
4							
5							
6							
7							
8							
9							
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11							
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Little David® Warranty

For: LABELING SYSTEMS

1 YEAR WARRANTY

(EXCEPT FOR MOVING PARTS WHICH ARE SUBJECT TO NORMAL WEAR, TEAR AND REPLACEMENT WHICH ARE WARRANTED ONLY TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP).

ABOVE WARRANTY EXCLUDES CUSTOMERS SELECTED OEM THERMAL TRANSFER PRINTER OR MATERIAL HANDLING SYSTEM. PRINTER AND/OR CONVEYOR WARRANTY AVAILABLE UNDER SEPARATE COVER.

*LIMITED WARRANTY – **LOVESHAW**, an **ITW** COMPANY (HEREIN AFTER "**LOVESHAW**")

WARRANTS ONLY THAT THE GOODS SOLD BY IT SHALL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP, UNDER PROPER AND NORMAL USE AND MAINTENANCE,

AS FOLLOWS:

THE WARRANTY PERIOD SHALL COMMENCE AS OF THE DATE OF DELIVERY TO THE PURCHASER. THE OBLIGATION OF LOVESHAW UNDER THIS WARRANTY IS STRICTLY LIMITED TO THE COST OF REPAIRING OR REPLACING, AS LOVESHAW MAY ELECT, ANY PART OR PARTS THAT PROVE IN LOVESHAW'S JUDGEMENT TO HAVE BEEN DEFECTIVE IN MATERIAL OR WORKMANSHIP AT THE TIME THE GOODS WERE SHIPPED FROM LOVESHAW'S PLANT. ANY WARRANTY CLAIM NOT MADE IN WRITING TO LOVESHAW AT ITS HOME OFFICE WITHIN THE APPLICABLE WARRANTY PERIOD AND WITHIN 10 DAYS OF FAILURE WILL NOT BE VALID. THIS IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE UNDER THIS WARRANTY. UNDER NO CIRCUMSTANCES WILL LOVESHAW BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

IF REQUESTED BY LOVESHAW, PURCHASER SHALL RETURN ANY DEFECTIVE PART OR PARTS TO LOVESHAW'S PLANT, FREIGHT PREPAID. ALL WARRANTY PART REPLACEMENTS AND REPAIRS MUST BE MADE BY LOVESHAW OR A LOVESHAW DEALER AUTHORIZED TO HANDLE THE GOODS COVERED BY THIS WARRANTY. ANY OUTSIDE WORK OR ALTERATIONS DONE WITHOUT LOVESHAW'S PRIOR WRITTEN APPROVAL WILL RENDER THIS WARRANTY VOID. **LOVESHAW**, an **ITW** COMPANY WILL NOT ASSUME ANY EXPENSE OR LIABILITY FOR ANY REPAIRS MADE TO ITS GOODS OUTSIDE ITS WORKS WITHOUT ITS PRIOR WRITTEN CONSENT. THIS WARRANTY SHALL NOT APPLY TO ANY ITEM THAT HAS NOT BEEN USED, OPERATED, AND MAINTAINED IN ACCORDANCE WITH LOVESHAW'S RECOMMENDED PROCEDURES. LOVESHAW SHALL HAVE NO LIABILITY WHATSOEVER WHERE THE GOODS HAVE BEEN ALTERED, MISUSED, ABUSED OR INVOLVED IN AN ACCIDENT.

NO PERSON IS AUTHORIZED TO MAKE ANY WARRANTY OR TO CREATE ANY LIABILITY BINDING UPON LOVESHAW WHICH IS NOT STATED IN THIS WARRANTY. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, WHICH ARE HEREBY EXCLUDED. IN PARTICULAR, THE IMPLIED WARRANTY OF MERCHANTABILITY, AS WELL AS THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED.

LOVESHAW

an *ITW* Company

2206 Easton Turnpike, PO. Box 83

SOUTH CANAAN, PA 18459

570.937.4921 - 800.572.3434 - FAX 570.937.3229

LABEL CONVERTING SPECIFICATIONS

In order to insure the labeling machines function, the following label specifications are offered as part of this proposal. Seller recommends that Buyer include a copy of these specifications with Buyer's purchase order for labels from Buyer's label converter. There may be exceptions to these specifications, depending upon the particular label construction used.

- Labels shall be converted with $3 \text{ mm} \pm .13 \text{ mm}$ minimum spacing between labels, and a minimum side gap of $1.5 \text{ mm} \pm .15 \text{ mm}$ slit on each side of the label. Maximum media width is determined as appropriate for the print engine selected. Labels shall not be converted with perforations or other separations between labels.
- A standard minimum 76 mm ID core is recommended [101 mm or 152 mm ID cores may also be acceptable]. Standard maximum roll OD shall be 305 mm [rolls up to 406 mm may also be acceptable]. Cores shall be slit cleanly to the final media width, including tolerance, and shall be of such composition so as to resist crushing distortion. The roll end shall not be attached to the core with tape or adhesive.
- Labels shall be wound to the outside of the roll unless otherwise specified. The labels shall be cleanly die cut, waste removed with no nicks or marks to the outside label perimeter, and centered on the backing media. If possible [unless otherwise specified] the labels shall be oriented: (1) to feed the trailing edge perpendicular to the backing media edge; and, (2) to feed the label with its shortest dimension parallel to the feed path.
- There shall be no strike-through or fractures of the backing media by the label processing die which can be detected by ink or marker penetration after wiping. There shall be no tears or cuts on the backing media edges. The backing media shall be of a uniform density and thickness. It shall be sufficiently translucent as to assure reliable gap detection, given the label stock selected.
- All eye marks or sensing notches shall be located with the same tolerance as specified for the labels and located on the backing media as is appropriate for the print engine selected. Eye marks shall be opaque, of a uniform density, and a minimum of 6 mm in width by 3 mm in the feed direction. Sensing notches, if possible, shall be as small as practical and located away from the edge of the backing media.
- The label rolls shall not be wound so tightly as to cause the adhesive to bleed out from around the label edges nor so loosely as to cause roll telescoping. The labels shall be wound with consistent wind tension and shall be flat within 3 mm when measured from a reference surface.
- Where splicing is necessary in the label roll, splicing shall be consistent with the requirement of the automatic labeling machinery. Preferred splices, when required, shall be of a diagonal style, using a clear transparent pressure sensitive tape applied to the back side of the backing

web only (non-release coated side). All factory splices shall be removed, unless they meet the preferred splice specification.

- All finished label rolls shall be appropriately marked for identification per customer requirements and shall be packed to assure that the rolls arrive clean, flat and without shipping damage.
- The label adhesive shall be tested thoroughly to insure the compatibility of the label to the Buyer's product and to have the proper amount of permanence or removability according to Buyer's specifications. All face stock and adhesive combinations are subject to testing for dispensability on automatic labelers prior to acceptance.