Model
317
Printer
Service Manual

METTLER TOLEDO®

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METTLER TOLEDO Model 317 Printer Service Manual C82784900A

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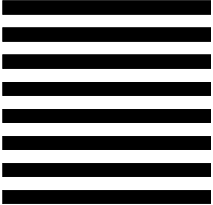
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USA

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Publication Revision History

Part Number	Date	Revisions
C82784900A	12/02	New Manual
C82784900A.01	9/05	Delete Display PCB, Chg Label Guide Adjustment, Added DayGlo settings and info.

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.
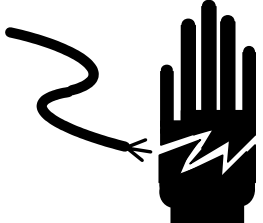
FOLLOW these instructions carefully.

SAVE this manual for future reference.
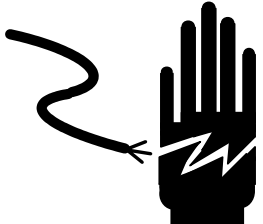
DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.

⚠ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

⚠ **WARNING**

FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD CONNECT TO PROPERLY GROUNDED OUTLET ONLY.
DO NOT REMOVE THE GROUND PRONG.

⚠ **WARNING**

DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING THE FUSE OR SERVICING.

⚠ **CAUTION**

BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT, ALWAYS REMOVE POWER AND WAIT AT LEAST THIRTY (30) SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO, OR DESTRUCTION OF THE EQUIPMENT OR BODILY HARM.

⚠ **CAUTION**

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

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1   General Description

Overview

The Model 317 is a high speed thermal label printer with a large label capacity designed to print labels containing both human-readable information and a UPC/EAN bar code symbol. The Model 317 is available as a stand-alone printer, or with a Label Applicator for use in automatic labeling operations. The applicator version is available in two styles, Price Label Applicator or DayGlo Label Applicator.

For manual application, the Model 317 can be configured to print standard data and nutrifacts labels from 1.9 in. (48mm) to 5.1 in. (130mm) long and up to 2.63 in. (67mm) wide and smaller barcode or DayGlo labels from .9 in.(23mm) to 3.7 in. (94mm) long by 1.56 in. (40mm) wide. When used in an automatic system, the price label applicator can apply 2.63 in. (67mm) wide labels with lengths of 1.9 in. (48mm) to 4.2 in. (106mm). The DayGlo label applicator can apply 1.56 in. (40mm) wide labels with lengths from 0.9 in. (23mm) to 1.5 in. (38mm).

Two interface protocols are supported: Retail Extra Text Printer Interface (Model 315 compatibility) and the Advanced Retail Mode. The Model 317 mechanism has an all steel frame for long life and is designed to both minimize and simplify maintenance. A unique center loading, free floating, self-aligning printhead eliminates all printhead alignment or label tracking adjustments. Label loading is a snap with the self-threading mechanism. The printhead pivots up to provide easy access for cleaning the printhead and paper path. A three-digit display is provided for displaying error codes and entering setup information. On units built prior to Mid-2005, error and setup data is accessible via the scale controller on later uits.

Features

- 8 dot/mm thermal print head.
- RS232, 19200 baud interface to Model 8305 scales (with ET kit installed).
- 38.4k baud RS232 interface in the Advanced Mode.
- Auto-switchable power supply operates from 85 to 264 VAC, 50/60 Hz.
- 5000 label capacity.

Major Component Maps

Model 317

RIGHT HAND SIDE—DOOR OPEN
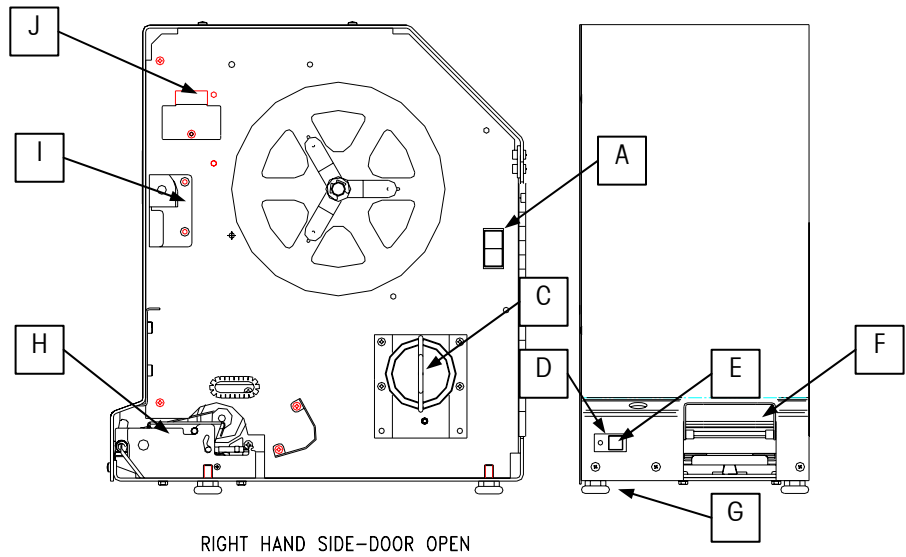
Figure 1-1: Model 317 Printer

Ref	Description
A	Power Switch
B	Ticket Wheel
C	Take-Up Spool
D	Status LED
E	Label Feed Button
F	Label Porch
G	Adjustable Foot
H	Printer Engine
I	Label Retainer Bar
J	Display PCB (Before Mid-2005)

Model 317 Applicator
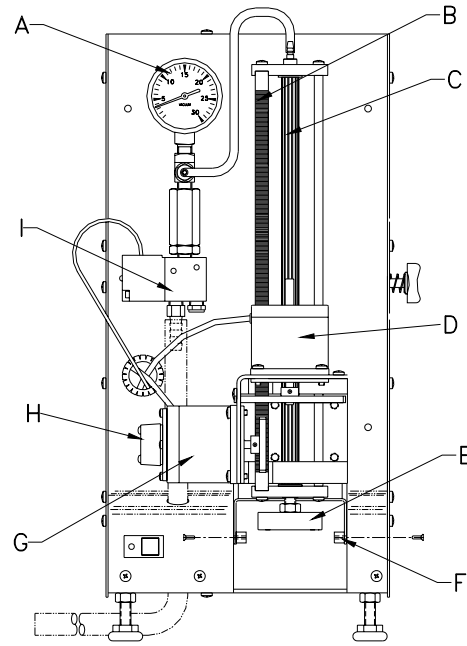
Figure 1-2: Model 317 Applicator

Ref	Description
A	Vacuum Gauge
B	Gear Rack
C	Pinion Shaft
D	Turn Stepper Motor
E	Applicator Head
F	Skis
G	Apply Stepper Motor
H	Optical Encoder
I	Vacuum Control Valve

Factory Numbers

Factory numbers for the Model 317 are as follows:

317 – XXXX-000

XXXX
0001 = 317 Printer
0002 = 317 Printer, Narrow Label
0003 = 317 Wide Label
2001 = 317 Printer, with applicator
2002 = 317 Printer, Narrow Label with applicator
2003 = 317 Wide Label with applicator
3001 = 317 DayGlo Label with applicator

Environmental

Operating and Storage Temperatures

The Model 317 is designed to operate in ambient temperatures from 40 °F to 104 °F (4 °C to 40 °C) with a relative humidity between 10% and 95% non-condensing. Storage temperatures may range from 32 °F to 150 °F (0° C to 65° C), not including media.

Harsh Environments

The Model 317 is intended for normal indoor backroom labeling environments. The Model 317 enclosure is constructed to prevent debris from falling into the enclosure and label media.

- The Model 317 MUST NOT be used in wet or extremely dusty areas.

- The Model 317 MUST NOT be used in washdown applications or where corrosive or caustic substances will come in contact with the printer.

	⚠ **WARNING**
	DO NOT SPRAY OR WASH DOWN. HAZARD OF ELECTRICAL SHOCK OR BURN.

Hazardous Areas

⚠️ **WARNING!**

The Model 317 Printer IS NOT intrinsically safe! DO NOT use the Model 317 printer in areas classified as HAZARDOUS by the National Electric Code (NEC) because of combustible or explosive atmospheres.

Product Conformance

The Model 317 is ETL listed by ETL Testing Laboratories, Inc. and is tested to UL 1950 and CSA C22.2 950-93.

Mechanical

Physical Construction

The Model 317 printer enclosure is constructed of stainless steel. Loading of the label supply roll requires no tools.

Dimensions

The Model 317 is 36.8 cm (14.5 in) deep, 20.6 cm (8.1 in) wide and 45.7 cm (18 in) high.

Operational Interface Mechanisms

The Model 317 contains a simple operator interface which includes a status indicator, label feed button, an ON/OFF switch, and an internal 3 digit error/setup display with push button setup switches (on units built before mid-2005).

Operational Area

Operational clearance required to operate and service the printer is 25 mm (1 in) above and 34.3 cm (13.5 in) on either side.

Electrical

Power Requirements

The Model 317 uses a universal autosensing/autoswitching power supply which operates in the range between 85 VAC to 264 VAC, with a frequency range between 49 to 61 Hz. The power supply has a replaceable, internal 5A/250V fuse. The AC power must not be shared or on a common ground with any types of motors, compressors, thermostats, fluorescent lighting, or other noise generating equipment.

Electrical Interfaces

The Model 317 Printer uses a universal AC power connector IEC 320 type for use with country specific line cords.

Serial I/O Interface

A subminiature DB25 female serial interface connector is located inside the printer for RS-232. Pin connections are as follows:

J1-2 TXD (RS 232 Transmit Data output)
J1-3 RXD (RS 232 Receive Data input)
J1-7 GND (Logic Ground)

Print Specifications

The Model 317 printer is designed for roll fed, die-cut, direct thermal labels. In the Extra Text Printer Mode, the 317 can be setup to print on fixed label lengths of: 1.0, 1.5, 1.7, 1.9, 2.1, 2.4, 3.3, 3.7, 4.2, 4.7, and 5.1 inches or 25, 38, 48, 53, 61, 84, 94, 107, 119, or 130 mm. The Model 317 can also learn the label length for labels between 1 in. (25mm) and 10 in. (245mm). If no specific length is set, the printer will feed the label until the next label gap is detected. In the Advanced Mode, the Prepack controller sets the label length and format.

The Model 317 Applicator version can print and apply 1.9, 2.1, 2.4, 3.3, 3.7, and 4.2-inch labels or 25, 43, 48, 53, 61, 84, 94, and 107 mm labels. The Model 317 DayGlo applicator version can print and apply labels 1.56 in. (40mm) wide with a length of .9 in. (23mm) to 1.5 in. (38mm).

The label print width range is 1.57 in. (40mm) to 3.14 in. (80mm). The Retail Extra Text Protocol will automatically select the 64mm width for standard or safe handling labels.

The liner take up mechanism is provided inside the printer and labels are stripped as they exit the printer. A second mode of operation is non-stripped. In this mode, several labels can be printed without stripping the liner and the printhead is used as a tear off.

The printer is capable of printing continuous stock, if selected. In this mode, the front edge of printhead mounting plate is used to tear off the continuous label stock.

The maximum print speed is 125 mm/second (4.9″/second) for both text and bar code data.

Label Formats

The following built-in label formats are available in the Retail Extra Text mode for use with Model 8422, 8423 or 8305 scale controllers. In the Advanced Mode, the formats are set up in the Prepack controller.

```
PLU Description Line 1
PLU Description Line 2

Grade Line

Variable Data Line

Bar Code Symbol

Store Address/Message Line 1
Store Address/Message Line 1
```
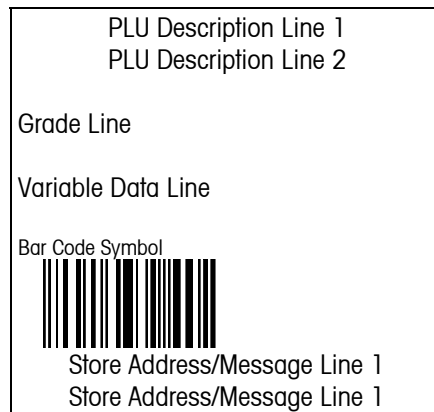
Standard Bar Code Label Example

```
Bar Code Symbol

PLU Description Line 1
PLU Description Line 2

Extra Text Line 1

Extra Text Line 30

Dates and Total Price Legends
Dates and Total Price Data
Net Weight & Unit Price Legends
Net Weight & Unit Price Data

Store Address/Message Line 1
Store Address/Message Line 1
```
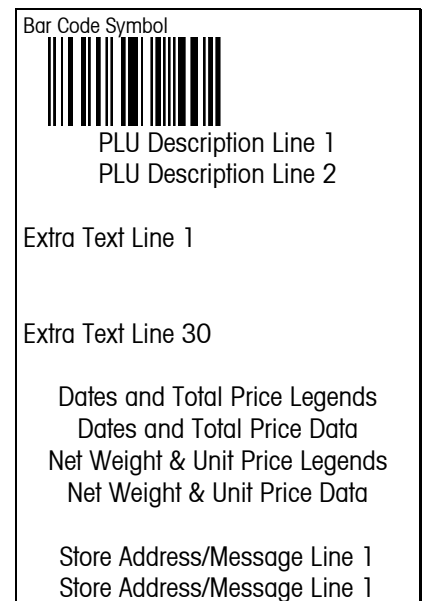
Extra Text Random Weight Label Example

For your notes

2   Setup and Operation

Unpacking

Remove the Model 317 printer from the shipping carton and carefully inspect for any damage. Any shipping damage should be reported to the shipping company immediately. Failure to do so may result in the damage claim being denied. Remove the three screws and open the component side printer door. Verify that there are no loose connections before installation.

The printer mounting screws, software diskette and manuals are shipped inside the door of the printer. Printers are shipped from the factory with Advanced Graphics (Model 8360/8361/UC-PW compatible) software installed in the flash memory. If you are not sure what software is in the printer, see the softswitch setup section of this manual for instructions on how to print a test label. The test label will display the part number of the installed software.

Applicator Setup

⚠️ **CAUTION**

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⚠️ **WARNING**

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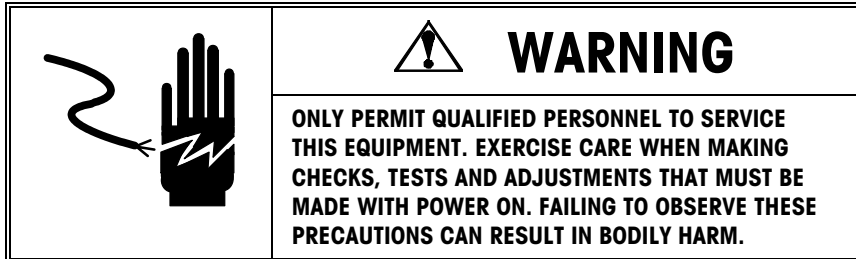
(Refer to the Autolabeler Technical Manual for specific details on connection of the interface cable and vacuum line, and mounting hardware.)

The Model 317 with Applicator Serial Interface must be connected to the Autolabeler for control. The vacuum is supplied by a vacuum pump on the Autolabeler.

DO NOT CONNECT AC POWER AT THIS TIME! Mount the Model 317 to the autolabeler using the hardware supplied with the autolabeler. Remove the three screws securing the left side cover on the Model 317 to allow access to the component side of the printer. Remove the Applicator Cover. Carefully route the vacuum hose up through the printer base and through the hole (A in Figure 2-1) in the front cover. Exercise care when routing the vacuum hose past the Optical Coupler (B) on the Stepper Motor! Connect the vacuum hose to the nipple on the vacuum control valve (C).
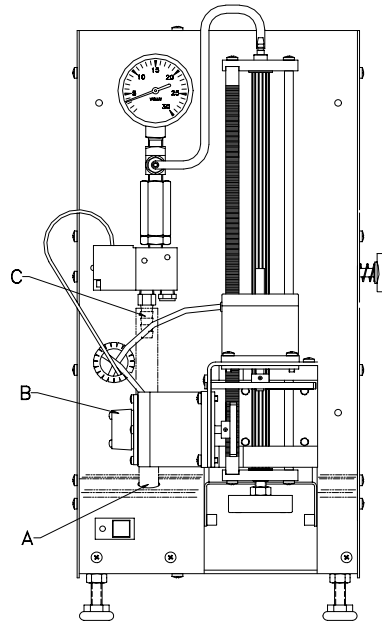
Figure 2-1: Vacuum Hose Routing

The serial interface from the autolabeler must be connected to the Applicator Control PCB at J5. Route the serial interface cable through the bottom of the printer base. Connect the wires to J5 (A in Figure 2-2) on the Applicator Control PCB using the removable connector on J5. Connect the wires on the terminals as follows:

Connection to 606	Connection to 705/706/707
Red Wire to J5 Pin 3	White Wire to J5 Pin 1
Black Wire to J5 Pin 4	Green Wire to J5 Pin 2
Bare Wire to J5 Pin 6	Red Wire to J5 Pin 3
	Black Wire to J5 Pin 4
	Bare Wire to J5 Pin 5

Table 2-1 Wiring Termination to Autolabeler

Next, connect the cable from the scale controller to the DB25 connector (B in Figure 2-2). Connect the supplied Power Cord to the AC Jack (C in Figure 2-2). Connect the other end of the power cord to the autolabeler outlet.
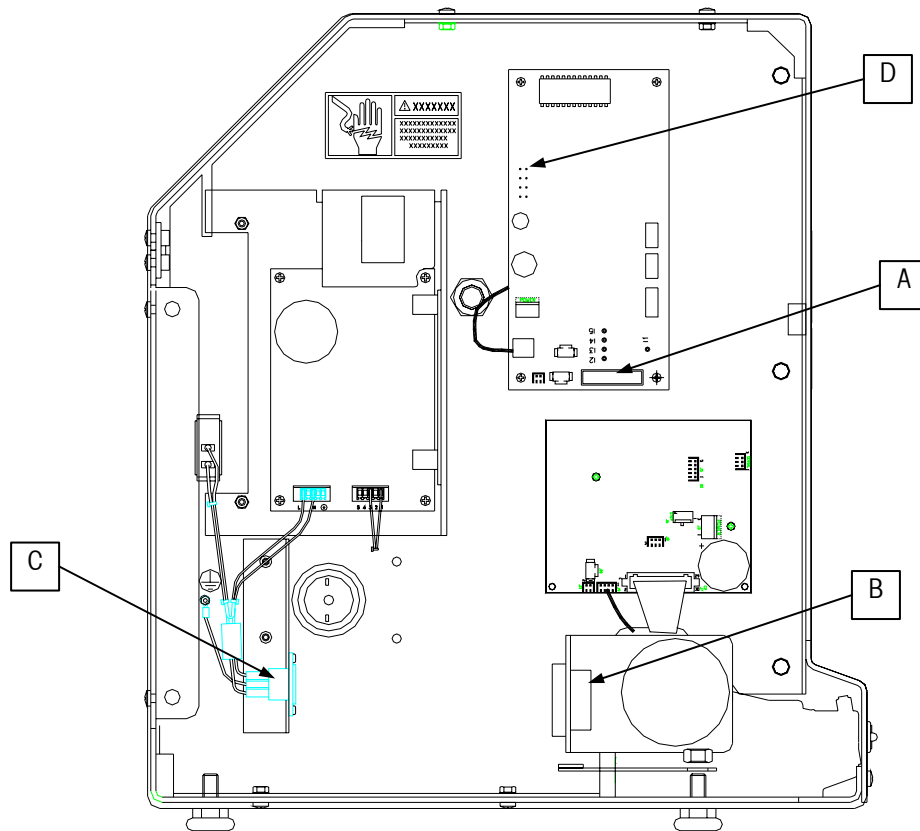
Figure 2-2: Cable Connections & Jumpers

When using the applicator in an automatic weighing mode on the autolabeler, the ski's must be in the lowered position. Jumpers (D in Figure 2-2) on the Applicator Control PCB must be set as follows:

W1   Off = Normal Operating Mode
         On = Test Mode
W2   Used in Test Mode Only
W3   Used in Test Mode Only
W4   Off = Label Applicator as Primary Label Applicator
         On = Label Applicator as Secondary DayGlo Applicator

Connecting to Model 8305

When using the Model 317 with the Model 8305 controller, the standard Extra Text Printer software must be installed in the Model 317. Softswitch SSW 01 must be set to 3 for the Extra Text Mode for the Model 8305, 8422, or 8423. The following cable is used for the Model 317 Printer to connect to the Model 8305 or 8423 controllers.

0900-0306 Cable kit, 317 to 8305/8423 10 feet (A14609200A)

0900-0307 Cable kit, 317 to 8305/8423 25 feet (14609400A)

Connect the cable from the controller to Location B in Figure 2-2. Table 2-2 shows the wiring for an RS-232 cable used to connect the Model 317 to the Mettler Toledo Model 8423 or 8305 scales (Extra Text Harness 13247000A must be installed in Model 8305/8423 or Extra Text Modification must be made in the Model 8305 master scale printer harness).

Model 317 DB-25 M Pin #	Model 8423/8305 DB-9 F Pin #
2 TxD	9 RxD
3 RxD	6 TxD
7 Gnd	7 Gnd

Table 2-2: Model 317 RS232 to 8423/8305 Wiring

Connecting to Model 8360/8361/UC-PW

When using the Model 317 with the Model 8360/8361/UC-PW, the Advanced Graphics Software must be installed in the Model 317. The softswitches must be setup correctly when connected to these controllers. The following softswitches must be set as follows:

SSW 01 - 2 (Advanced Graphics Mode)
SSW 02 - 6 (38400 baud)
SSW 03 - 3 (8 data bits)
SSW 04 - 4 (No Parity)

Connect the cable from the controller to Location B in Figure 2-2. Table 2-3 shows the wiring for an RS-232 cable used to connect the Model 317 to the Prepack controller. Connect the primary printer to the printer one port. If the printer is used for DayGlo labeling connect the printer to the Printer 2 port.

Cable Kit 0900-0304 (14691500A Kit)

Model 317 DB-25 M Pin #	Model 8361/8361/UC-PW DB-9 M Pin #
2 TxD	3 RxD
3 RxD	2 TxD
7 Gnd	7 Gnd

Table 2-3: Model 317 Prepack Controller Wiring, Cable 14582500A

Loading Label Stock
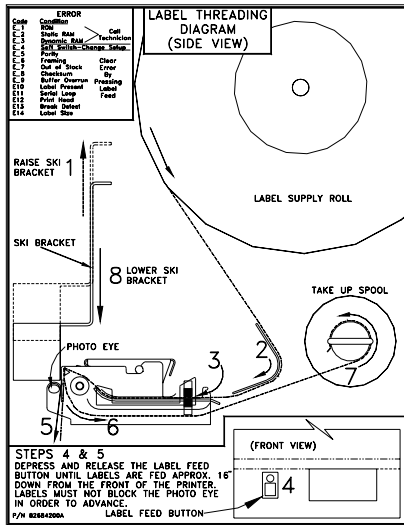
Figure 2-3: Label Threading Diagram Model 317 W/Applicator
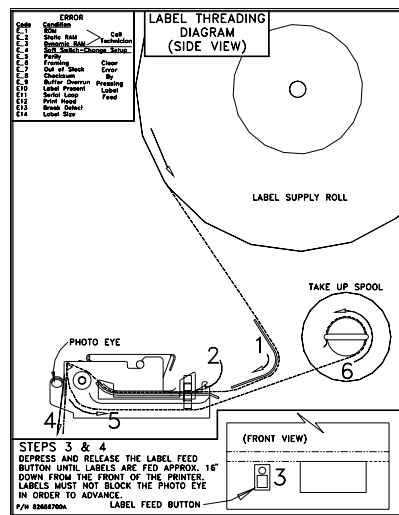
Figure 2-4: Label Threading Diagram Model 317

Open the side cover of the printer and refer to the Label Threading Diagrams in Figure 2-3 or 4-4, or the loading instruction label located on the inside of the Model 317 cover. It is not necessary to unlock the printhead to load paper stock into the Model 317.

1) Remove the liner take-up clip from the take-up spool (Figure 2-3 #7, Figure 2-4 #6). On units with Applicator, raise the Ski Bracket (Figure 2-3 #1).

2) Adjust the label guides for the width of the paper stock you are loading. The paper guides are geared together and adjust symmetrically around the center of the paper path.

3) Install the new roll of labels on the Ticket Wheel with the labels unwinding from the top to the front of the printer. Lower the Label Retainer to secure the roll on the Ticket Wheel.

4) Route the labels around the rear guide (Figure 2-3 #2, Figure 2-4 #1). Insert the end of the paper through the Gap Sensor and into the rear label guides of the printer engine (Figure 2-3 #3, Figure 2-4 #2). Manually feed approximately 2 1/2" of paper stock into the mechanism. The paper will stop when it reaches the platen roller.

5) Press the label feed button (Figure 2-3 #4, Figure 2-4 #3). Gently push the label stock into the rear of the mechanism until the label feeds out the front of the mechanism. Feed out approximately 16 inches of labels, straight down from the stripper bar without blocking the Take Label Sensor (Figure 2-3 #5, Figure 2-4 #4). If the label stock will not feed out the front then there may be a label jam inside the mechanism. An orange Status LED indicates a blocked label taken sensor.

6) Remove the labels from the liner and insert the liner back into the printer (Figure 2-3 #6, Figure 2-4 #5). Wind the liner around the take-up spool and secure with the liner clip (Figure 2-3 #7, Figure 2-4 #6).

7) On units with applicator, lower the Ski Bracket.

8) Close the Model 317 side cover.

Note: Printers are shipped from the factory with the gap sensor set to Mode 1 (Auto Sensing). Potentiometer R55 or R1 on the printer control board is set to 60K ohms. This mode will not always work with perforated or black pre-printed label stock. Part of the initial setup procedure is to test the customers label stock to make sure that the labels index properly. See the Label Gap Sensor Adjustment section of this manual for the adjustment procedure.

Operator Controls

There is an ON/OFF switch located inside the Model 317 printer. The printer has a label feed button and status indicator on the front of the unit. In addition to the status indicator, a three-digit LED information display is located inside the printer (on units built before Mid-2005).

The status indicator is also a low stock indicator as well as a simple error indicator. The indicator has three colors and uses flashing sequences, see Chapter 3.

Power-Up Functions

At power-up, RAM and ROM checks are made automatically. A test label is printed at power up if selected in SSW 80.

If the label feed button is held depressed as power is turned on, the printer will begin a countdown on the information display from 10 to 0. When 0 is reached and the label feed button is released, the flash memory program mode is entered. On later software versions, on power up, the 317 will look for high-speed flash commands for 45 seconds and display HSP on the LED display. After 45 seconds, the printer will perform the normal start up sequence. The printer can also be flashed after power up by sending the reset command first: <SOH>R<CR>. Flashing can be performed using the PCScale Utility or Databack for Windows®.

Softswitch Setup

Printers built after Mid-2005 no longer have the pushbuttons or the display PCB. All of the setup is done from the scale controller. The following instructions are for printers that have the display PCB and pushbuttons.

Note: Technicians can use a display PCB from and earlier 317 as a setup and diagnostic tool. The connector (J2) is still on the printer PCB.

The Setup Mode provides access to soft switches that are used to configure the printer. These softswitch settings are retained when power is removed. The softswitches must be configured to set the printer up for specific interfacing and functionality. The Setup Mode can be accessed when the printer is powered up and is not printing. To enter the soft switch set up mode, open the right side cover of the printer, and remove the cover to access the Push-button Switches on the Display PCB, as shown in Figure 2-5. The 3-digit LED display will show the status of the printer. The display shows -*OP* for normal operation. If an *EXX* is displayed, this indicates an error condition. Refer to the troubleshooting section to determine and resolve the error. To enter the setup mode, when -*OP* is displayed:

- Press and release the left (S1 in Figure 2-5) and right most (S3 in Figure 2-5) pushbuttons of the Display PCB simultaneously.

- The display shows -*SU* for Set Up.

- The display switches to *01X*. This is soft switch 1 (SSW 01) and X is the current setting of SSW 01.

- The pushbutton directly below each display increments that display by one. The first two digits display the SSW number and the third digit displays the setting.

- Refer to the definitions below to set up the softswitches appropriately.
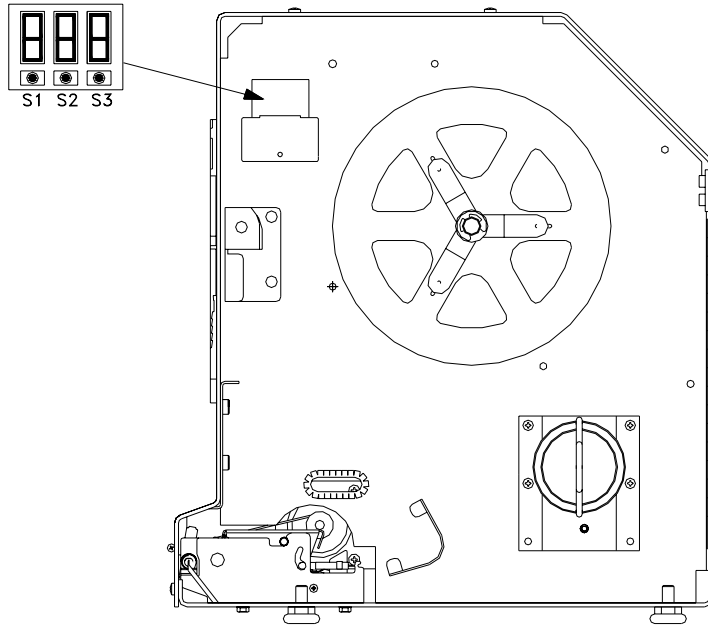
Figure 2-5: Display PCB and Pushbuttons

Once the softswitches have been correctly configured, press and release the left (S1 in Figure 2-5) and right most (S3 in Figure 2-5) pushbuttons of the Display PCB simultaneously. If the softswitches have been changed, the display will briefly show *FLH* as the SSW values are stored in flash memory. The display will then change back to *-OP* for normal operation.

<**> Indicates Advanced Graphics mode default

Softswitches

SSW 01 Interface Mode	0	Simple Interface Mode
	1	886X Mode 1 Emulation
	2**	Advanced Graphics Mode
	3	Extra Text Mode (8305 ET Mode).
	4	Safe Handling Mode (8305ET)
	5	Floral Retail Mode
	6	DayGlo Retail Mode
SSW 02 Baud Rate	0	0300 Baud
	1	1200 Baud
	2	2400 Baud
	3	4800 Baud
	4	9600 Baud
	5	19200 Baud
	6**	38400 Baud
	7	56k Baud
	8	76.8k Baud
	9	115.2k Baud

SSW 03 Data Bits	0	5
	1	6
	2	7
	3**	8
SSW 04 Parity	0	Even
	1	Odd
	2	Space
	3	Mark
	4**	None
SSW 5 STX	0**	No STX required
	1	STX Required
SSW6 Checksum	0**	No Checksum required
	1	Checksum required
SSW 07 Take Label Sensor	0**	Disabled
	1	Enabled
SSW8 Journal Output	0**	Disabled
	1	Enabled
SSW 09 International Character Remapping	0**	USA
	1	France
	2	Germany
	3	U.K.
	4	Denmark
	5	Sweden
	6	Italy
	7	Spain
	8	Japan
	9	Norway
	A	8860 Fonts
SSW10 # of Labels	1-9	Default is 1. This is the number of labels printed per transaction.
SSW 11 Label Width	0	40 mm
	1**	64 mm
	2	80 mm
SSW 12 Label Length In Millimeters	0	25
	1	44
	2	67
	3	80
	4	99
	5	120
	6	160
	7	200
	8**	Printer Determined (Limited 1 to 10 inch/25 to 254 mm)
	9	Continuous
SSW13 Horizontal Justification	0	Left Justified
	1**	Center Justified (Default)
	3	Right Justified

SSW14 Vertical Justification	0	Top
	1**	Center Top to Bottom (Default)
	2	Bottom
SSW15 Interface Timeout to Print	0	350 ms between data fields before printing.
	1**	1 second between data fields before printing.
SSW16 Text Under Barcode	0	No human readable text under barcode.
	1**	Print human readable text under barcode
SSW17 <SO> Select Emphasized Font	0**	<SO> Character selects **BOLD**.
	1	<SO> Character selects *ITALICS*
	2	<SO> Character selects ***BOLD ITALICS***
SSW 18 Print Speed/ Density	2	Printing @ 4.9"/sec, Low power
	3	Printing @ 4.9"/sec, Low-Medium Power
	4	Printing @ 4.9"/sec, High-Medium Power
	5**	Printing @ 4.9"/sec, High Power
	6	Printing @ 4"/sec, High Power
	7	Printing @ 3"/sec, High Power
	8	Printing @ 2.7"/sec, High Power
	9	Printing @ 2.2"/sec, High Power
SSW 19 Printhead Resistance (Must match printhead rating. SSW 90 must be set to 1 to access this SSW)	0	< 623
	1	624-630
	2	631-638
	3	639-645
	4	646-653
	5**	654-660
	6	661-668
	7	669-675
	8	676-683
	9	> 683
SSW20 Reset Label Format to 10 Point HR	0**	Do not reset label formats
	1	Reset Format 1
	2	Reset Format 2
	3	Reset Format 3
	4	Reset Format 4
	5	Reset Formats 1-4
SSW21 Label Format Operator Select	0	Label Format Select Mode Disabled
	1**	Label Format Select Mode Enabled
SSW22 Active Label Format	1**	Formats 1-8
SSW23 Edit Label Format	0**	Do not edit Label Format
	1	Edit Format 1
	2	Edit Format 2
	3	Edit Format 3
	4	Edit Format 4

SSW 24 Label Placement Adjustment		Permits -1.5mm to +3.0mm adjustment of the label stop position relative to the stripper bar in 0.5mm increments.
Position Relative to Front Edge of Stripper Bar	0	3.28mm/.129 in
	1	2.78mm/.109 in
	2	2.28mm/.090 in
	3**	1.78mm/.070 in
	4	1.28mm/.050 in
	5	.78mm/.031 in
	6	.28mm/.011 in
	7	-.22mm/-.009 in
	8	-.72mm/-.028 in
	9	-1.22mm/-.048 in
SSW 26 Staging Location (SSW 26 accessible when SSW90 is set to 1.)	0	Staging for Center Mounted Gap Sensor
	1**	Staging for Edge Mounted Gap Sensor (Normal Position).
SSW 27 Diagnostics	0**	None
	1	Display Label Size
(SSW 26 accessible when SSW90 is set to 1.)	2	Display Gap Size
	3	Display Label Position
	4	Display # K Bytes of Memory Available
	5	Display Printhead Temperature
	6	Display Flash Memory Available
SSW 28 Image Offset		Permits up to ±2mm adjustment of the image on the label. Soft switch 24 should be set first to provide the desired physical eject distance, then soft switch 28 can be adjusted to provide fine tuning of the image on the label.
	1	Lower Image 2.0 mm
	2	Lower Image 1.5 mm
	3	Lower Image 1.0 mm
	4	Lower Image 0.5 mm
	5**	None - Factory Default Position
	6	Raise Image 0.5 mm
	7	Raise Image 1.0 mm
	8	Raise Image 1.5 mm
	9	Raise Image 2.0 mm
SSW 80 Power Up Test Label	0**	No label will print
	1	Software Revision/Test Pattern
	2	Soft Switch Settings Print Out
	3	Serial Port Loop Back Test
	4	Hex Dump Mode
SSW 90 Maintenance Enable	0**	Disable SSW 19, 26, and 27.
	1	Access SSW 19, 26 and 27.
SSW 99 Load Factory Defaults	0**	Do Not Load Factory Defaults.
	1	Load Factory Defaults.

8361 Printer Setup

The Model 317 is configured using softswitches. The softswitches are set using the Model 8361 Controller. The Model 317 shows up on the Model 8361 as Printer 1 (Price) or 2 (DayGlo). To configure the softswitches at the 8361, select Setup, Unit, Printer Setup, and select Printer 1 or 2. The Printer 1 setup screen is shown below.
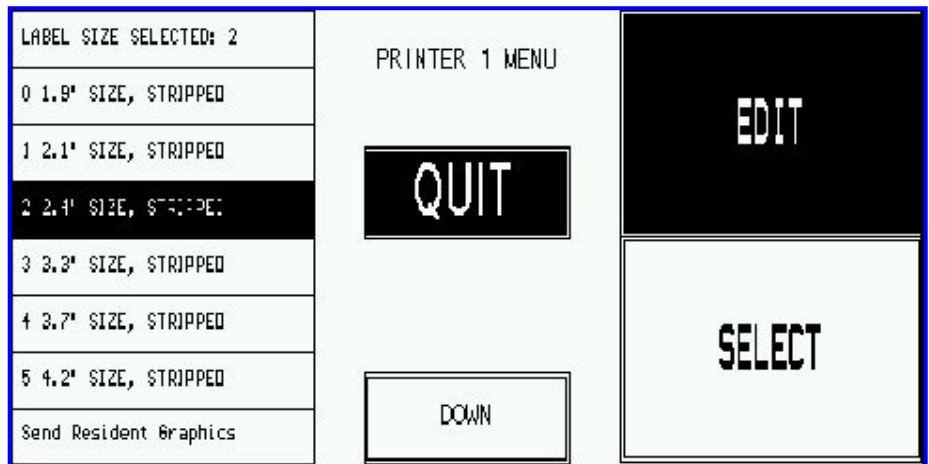
Figure 2-2: Printer 1 Setup Menu Screen One

Select "Down" and the screen below is shown.
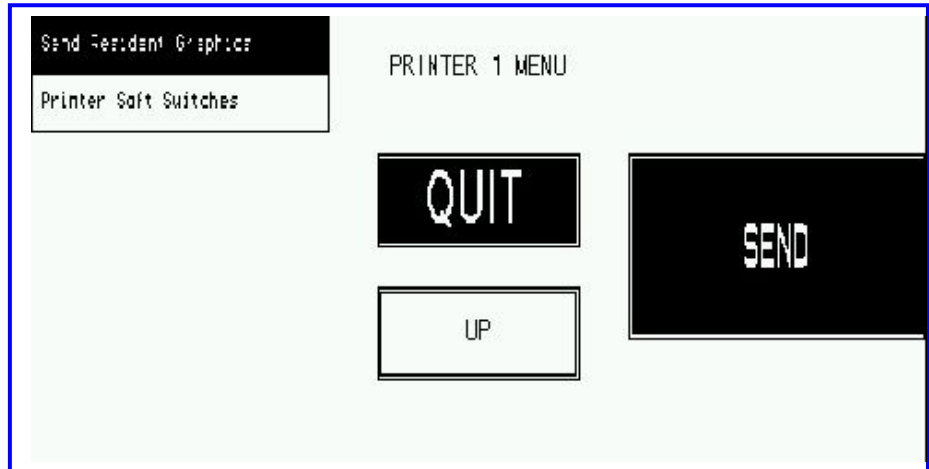
Figure 2-3: Printer 1 Setup Menu Screen Two

The new function on page two of the setup menu is used to set the 317 printer softswitches. Touching the "Printer Soft Switches" box will display a new screen, as shown below.

			SW 26 = X Max = 1	SW 80 = X Max = 4		No Data Received
SW 1 = X	SW 10 = X	SW 16 = X				
SW 2 = X	SW 11 = X Max = 2	SW 18 = X Max = 9	SW 28 = X Max = 9	SW 90 = X Max = 1		QUIT
SW 3 = X	SW 12 = X Max = 9	SW 19 = X Max = 9	SW 29 = X Max = 9			
SW 4 = X	SW 13 = X	SW 22 = X				SEND
SW 7 = X Max = 1	SW 14 = X	SW 24 = X Max = 9				PRINT
SW 9 = X Max = 9	SW 15 = X Max = 1	SW 25 = X Max = 9	SW 27 = X Max = 9			

Figure 2-4: Printer 1 Setup Menu, Softswitches Screen
(No communication with printer screen shown)

If there is no communication with the 317, the screen will show "x" where a value is normally shown, and the message "No Data Received" will show in the upper right box. When there is normal communication with the Model 317, the screen below will display showing current softswitch values and the version number of the software. If there is a single box, the softswitch cannot be changed. If the box is double, the value can be changed by first touching it and entering the new value. The values with single boxes are permanently coded to work with the Model 317 and 8361 and are shown only as a reference.

Softswitches 19, 26 and 27 can be changed by first setting Softswitch 90 to 1 to enable the maintenance softswitches. When Softswitch 90=1, the maintenance softswitches will have a double box, allowing them to be accessed.

			SW 26 = 0 Max = 1	SW 80 = 0 Max = 4		PRINTER VERSION: E160883R 12-16-03
SW 1 = 2	SW 10 = 1	SW 16 = 1				
SW 2 = 6	SW 11 = 1 Max = 2	SW 18 = 5 Max = 9	SW 28 = 5 Max = 9	SW 90 = 0 Max = 1		QUIT
SW 3 = 3	SW 12 = 0 Max = 9	SW 19 = 5 Max = 9	SW 29 = 5 Max = 9			
SW 4 = 4	SW 13 = 1	SW 22 = 1				SEND
SW 7 = 0 Max = 1	SW 14 = 1	SW 24 = 3 Max = 9				PRINT
SW 9 = 1 Max = 9	SW 15 = 1 Max = 1	SW 25 = 0 Max = 9	SW 27 = 0 Max = 9			

Figure 2-5: Printer 1 Setup Menu, Softswitches Screen
(Normal communication with printer screen shown)

PCScale Printer Program

The Printer Engine software is stored in a flash memory that can be updated by sending a new file to the Printer Logic PCB. A Windows® printer utility program is available from **METTLER TOLEDO®** that can be used to flash software and set the softswitches in the Printer Logic PCB. The PCScale Printer Utility is a Windows® program that will perform the following functions:

- Flash new software to the printer (note: because of "flashprt.exe" running in dos mode, some operating systems may not support this function).
- Read and display current printer softswitch values.
- Modify the softswitch values.
- Read and display error status of printer.
- Print test labels (quantity 1 to 1,000,000) continuously. Text that is printed on the test label can either be predefined or selectable from a text file.
- Communication port default is Com2, 9600,8,n,1. The port and baud rate can be selected. Changing the data bits and parity is not allowed.
- When changing communication port settings, the new parameters are saved to disk. When program is re-started, the latest communication settings are used.

The main screen of the PCScale Utility is shown below.
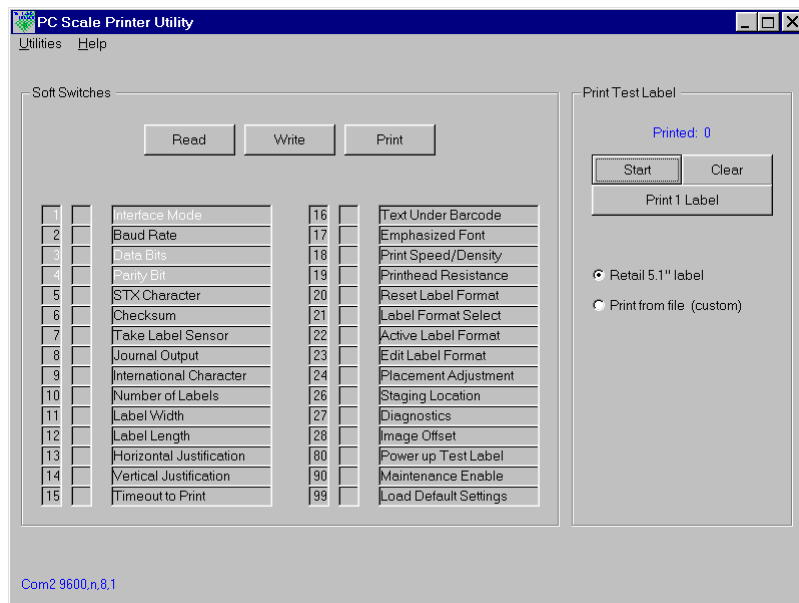
Click the **Read** button to upload current settings from the printer. To change any of the softswitches, double-click on the value in the second column. A new window will open showing available options. Enter the value, then click **OK** or **Cancel** to quit without saving.

Soft Switch #2

Baud Rate

OK

Cancel

0 = 300 Baud
1 = 1200 Baud
2 = 2400 Baud
3 = 4800 Baud
4 = 9600 Baud
5 = 19200 Baud
6 = 38400 Baud
7 = 56k Baud
9 = 115.2k Baud

Enter the softswitch value...

9
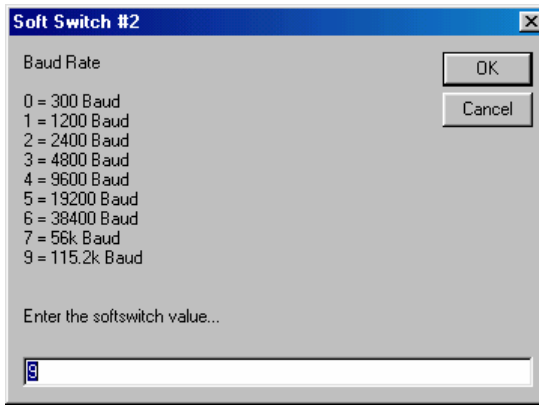
Once the values have been selected, click **Write** to send the softswitch settings to the printer. The **Print** button will print the softswitch settings on a label.

```
Mettler Toledo
P/N B160883R
Date :09-1-01
Soft Switch Printout
SW  1 = 2, SW  2 = 9, SW  3 = 3
SW  4 = 4, SW  5 = 0, SW  6 = 0
SW  7 = 1, SW  8 = 0, SW  9 = 0
SW 10 = 0, SW 11 = 1, SW 12 = 8
SW 13 = 0, SW 14 = 0, SW 15 = 1
SW 16 = 0, SW 17 = 0, SW 18 = 0
SW 19 = 0, SW 21 = 0, SW 22 = 0
SW 24 = 0, SW 28 = 0
```
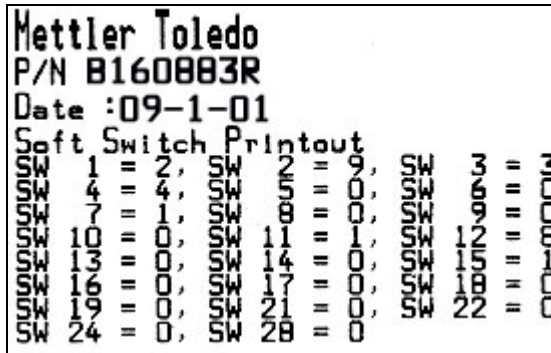
Clicking on the **Utilities** menu will allow setting the communication parameters (Comm Settings), flashing software, requesting printer status, and resetting the printer.

PC Scale Printer Utility

Utilities Help

Comm Settings...

Flashprt...
Request Printer Status...
Reset Printer

Exit

Write   Print

-Click the Value to be Changed.

Print Test Label

Printed: 0

Start   Clear

Print 1 Label

○ Retail 5.1" label
○ Print from file (custom)

1	2	Advanced Mode	16	0	Bar Code
2	9	Baud	17	0	Font
3	3	Data Bits	18	0	Print Speed
4	4	Parity	19	0	Head Resistance
5	0	STX	20	0	Reset Label Format
6	0	Checksum	21	0	Format Select Mode
7	1	Label Taken	22	0	Active Label Format
8	0	Journal	23	0	Edit Label Format
9	0	Character	24	0	Placement Adjust
10	0	Label	26	1	Gap Sensor
11	1	Label Width	27	0	Diagnostics
12	8	Label Length	28	0	Image Offset
13	0	Justified	80	0	Power up Label
14	0	Center	90	0	Tech Mode
15	1	Time Out	99	0	Load Default

Com2 115200,n,8,1

To select a new COM Port and baud rate, click on the **Comm Settings** menu selection. Make sure the baud rate is set to 9600 baud for the 317.
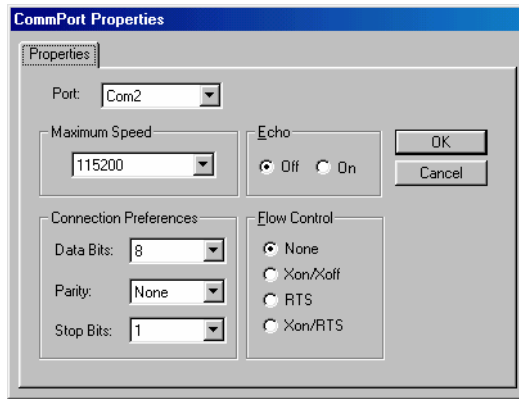
To flash new software, click the **Flashprt** menu selection under the **Utilities** menu. The file selection screen will then prompt for the software file location and name.
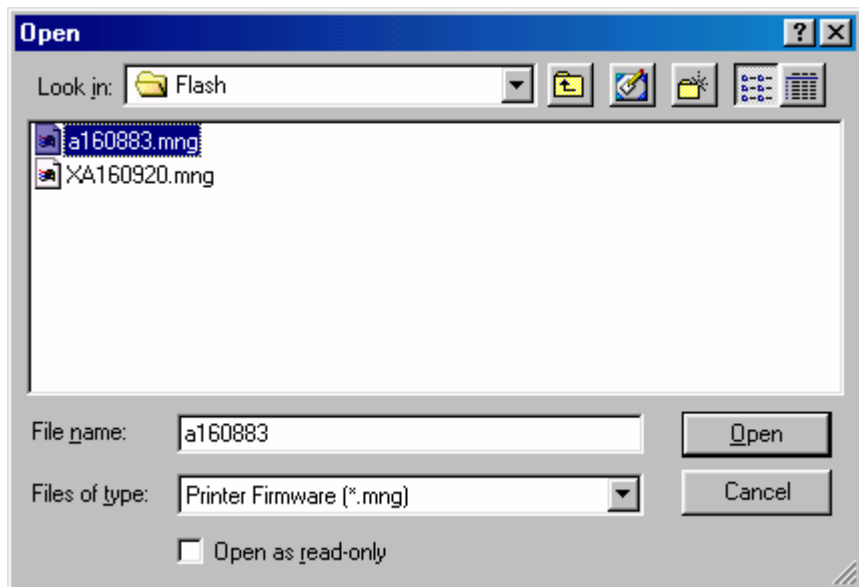
Select the file, then click **Open** to start the file download.

To check the printer status, click on the **Request Printer Status** menu selection under the **Utilities** menu. The printer will return a status code. If the printer returns E=00, the status is normal. Other error codes are shown below.
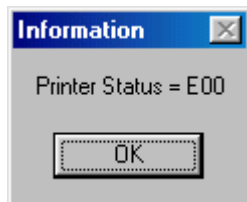
Response	Description
E00	No error – normal operation
E07	Out of Stock Error
E10	Label present
E12	Print Head Error
E14	Label Length Error

For your notes

3   Maintenance

Cleaning

Enclosure Cleaning

Disconnect AC power to the Model 317.

Use a soft clean cloth dampened with a mild detergent and water to wipe the exterior surfaces. Do not spray liquids directly on the unit. Do not use solvents or commercial cleaners on the unit.

	⚠ **WARNING**
	DO NOT SPRAY OR WASH DOWN. HAZARD OF ELECTRICAL SHOCK OR BURN.

Mechanism Cleaning

Open the printer right side cover. To unlock the printhead, first pull the rear of the printhead assembly forward and up at the same time. Once the rear of the assembly is unlocked, lift the front of the printhead assembly. Refer to Figure 3-1. Remove the paper stock and clean the printhead and paper path with a soft clean cloth and isopropyl alcohol. A thermal printer CLEAN-PEN (part # 082287-020) is available from METTLER TOLEDO After Market for cleaning the printhead. To lock the printhead, press the front of the printhead down first, then press the rear down until the locking bar engages the latches (Figure 3-2).
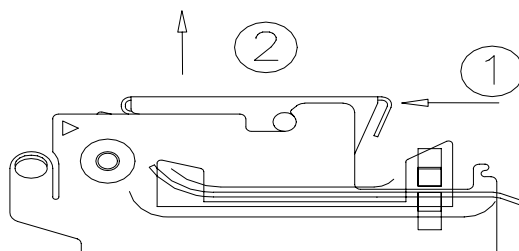
Figure 3-1: Unlocking the Printhead   **Figure 3-2: Locking the Printhead**
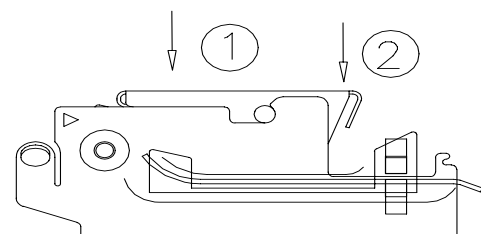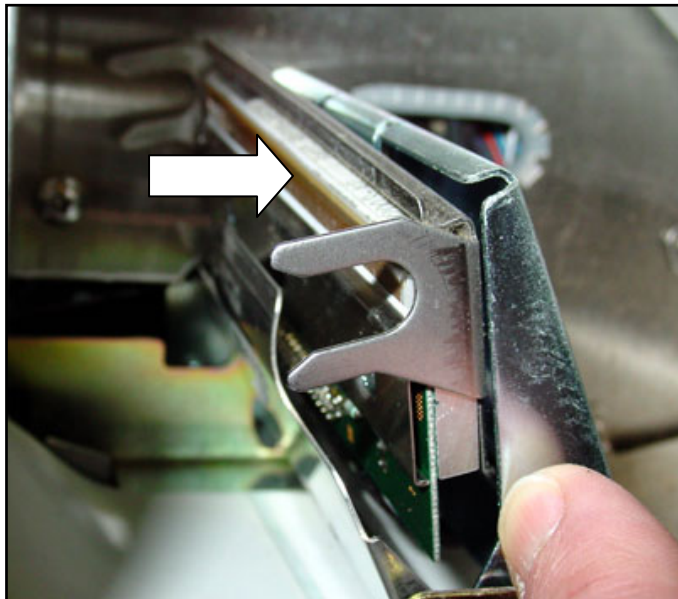
Clean any glue or label debris from the printhead resistor line. Use a soft clean cloth and isopropyl alcohol or a thermal printer CLEAN-PEN (part # 082287-020). Do not scrape the printhead or use any sharp objects that can damage the printhead.
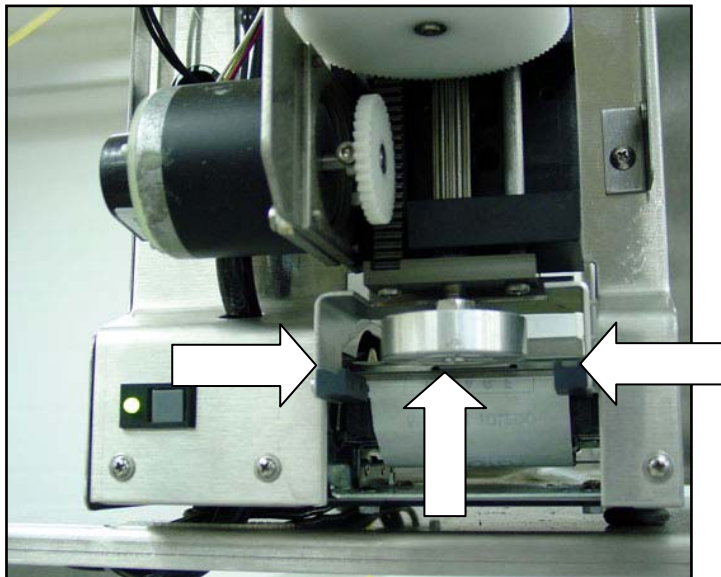
Clean any glue or label debris from the label ski's and the applicator head. Use a soft clean cloth and isopropyl alcohol or a thermal printer CLEAN-PEN (part # 082287-020). Do not scrape the surfaces with any sharp objects that can cause damage.

Error Handling

If an error is detected, the status indicator LED on the lower front cover (A in Figure 3-3) changes to red providing the operator an error indication. In addition to the red LED indicator, a message code is shown on the Display PCB (if equipped) to help pinpoint the exact cause of the error. Refer to the following Error Codes. Press the label feed button (B in Figure 3-3) to clear the error. If data is received during an error condition, no printing occurs.

If a flash memory checksum error is detected during power-up, the status indicator will change to orange. This indicates the printer has entered the flash memory erase / program sequence. If serial data (the new hex file) is not detected within 20 seconds, the indicator will change to red and flash. During downloading of the hex file the indicator will stay orange. A successful download will change the indicator to green. A failure will cause the indicator to change to a flashing red, indicating that the printer has entered the flash memory erase / program sequence again. Refer to the Flash Memory Programming Section.
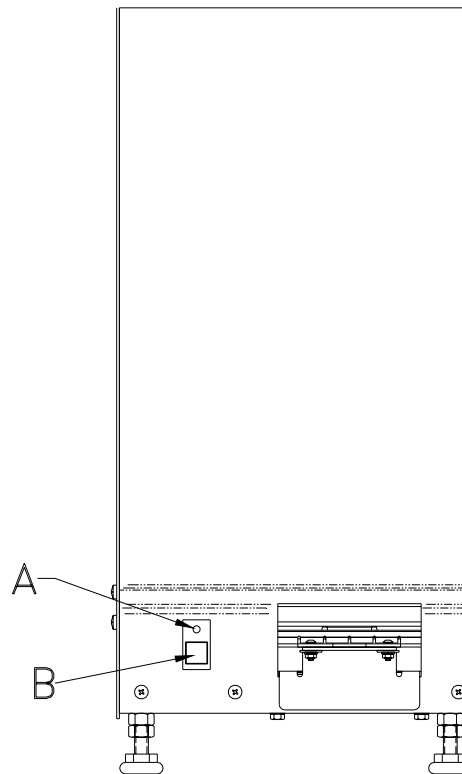
Figure 3-3: Status LED and Label Feed Button

Error Codes

Display PCB Errors

The three digit LED display (A in Figure 3-4) indicates errors and status messages, including serial input errors, processing errors, or printing errors. This is used for technical troubleshooting purposes only and not intended for operator interface. Table 3-1 lists the possible error codes. Units built after Mid-2005 are not equipped with the on board display. They interface through the scale controller display.
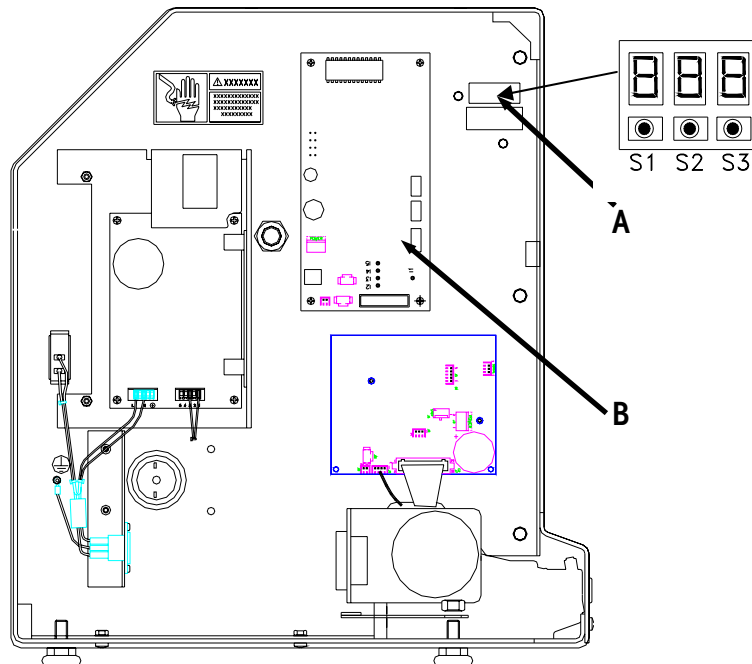
Figure 3-4: Display PCB (A) and Status LED's (B)

CODE	ERROR
E_1	Flash Memory Error – Re-flash Program
E_2	Static RAM Error - Replace Static RAM Daughter Board.
E_3	Dynamic RAM Error - Replace DRAM Daughter Board.
E_4	Softswitch Storage/Format (Softswitch 99 Required)
E_5	Serial Input Parity error
E_6	Serial Input Framing error
E_7	Out of stock
E_8	Serial Input Checksum error
E_9	Serial Input buffer Overrun
E_10	Label present (Label Taken Sensor Blocked)
E_11	Serial loop error
E_12	Print head error
E_13	Break Detect
E_14	Incorrect Label size selected

Table 3-1: Error Codes on Display PCB

Applicator PCB Errors

In addition to the Display PCB, there are four LED's (B in Figure 3-4) on the Applicator Control PCB (marked I2, I3, I4, I5) to aid in troubleshooting problems with the Applicator, by indicating error conditions (visible by removing the side cover). All four LED's are off during normal operation. On power-up, the LED's will illuminate one at a time in sequence. An LED that stays on continuously indicates an error. The errors are shown in Table 3-2.

LED	Error Description
I2	EPROM Checksum Error. Indicates an error has occurred in the EPROM on the Applicator Control PCB. Replace the Applicator Control PCB and retest.
I3	RAM Error. Cycle Power and retry. If condition continues, Replace Applicator Control PCB.
I4	Shaft Encoder Error. Micro did not see Shaft Encoder count change. Check Optical Encoder disk and gear on the Applicator Shaft Stepper Motor. If the gear is slipping on the shaft, tighten the set screw and retry operation. If the optical coupler disk is slipping, refer to Section 6 Applicator Head & Optical Coupler Adjustment to re-adjust the optical coupler. If the problem persists replace Optical Encoder and retry operation. If problem persists replace Applicator Control PCB.
I5	Index Error. Index mark on Encoder not found. Check Optical Encoder disk and gear on stepper motor. If the gear is slipping on the shaft, tighten the setscrew and retry operation. If the optical coupler disk is slipping, refer to Section 6 Applicator Head & Optical Encoder Adjustment to re-adjust the optical coupler. If problem persists replace Optical Coupler and retry operation. If problem persists replace Applicator Control PCB.

Table 3-2: Error Codes on Applicator PCB

Flash Memory Programming

The Model 317 operating software stored in FLASH Memory can be updated by downloading new operating software from a PC through the serial port using the program FLASHPRT.EXE. Specific operating software files must be used depending on connection to and older Model 8305 (Extra Text) or Model 8360/8361/UC-PW Prepack Controller (Advanced Graphics) controllers.

Note: The software download program FLASHPRT.EXE is for IBM-PC or compatible computers only, and is different than the FLASHPRO program used for flashing Model 8461, 8460, 8450, and 8360 products. FLASHPRO will not work with the Model 317.

PC to Model 317 Cables

The PC ends of the interconnect cable between the Model 317 and the PC are either 25 pin or 9 pin (depending on the PC serial port). The factory cables are shown below.

25 Pin PC Serial Port to Model 317 Cable Wiring (P/N 13605300A)

317: DB-25-P (Male)	PC: DB-25-S (Female)
TXD 2	3 RXD
RXD 3	2 TXD
RTS 4	4 RTS
CTS 5	5 CTS
GND 7	7 GND
	6 RD
	8 DSR
	20 DTR

9 Pin PC Serial Port to Model 317 Cable Wiring (P/N 13605400A)

317: DB-25-P (Male)	PC: DB-9-S (Female)
TXD 2	2 RXD
RXD 3	3 TXD
RTS 4	7 RTS
CTS 5	8 CTS
GND 7	5 GND
	4 DSR
	6 DTR

Flashing the Software

To flash software into the Model 317 printer, follow this procedure:

1. Power up your PC and change to the directory that contains FLASHPRT.EXE and the new Model 317 operating software file. If the operating software file has a .ZIP extension then this file is compressed and you must use PKUNZIP to extract the Model 317 operating software file. (See Note 2 below)

2. Turn off the Model 317 power switch.

3. Press and hold the label feed button on the front of the Model 317 (see note 3).

4. Turn on the Model 317 power switch and continue to hold the label feed button. After 5 seconds the LED Display (A in Figure 3-4) inside the Model 317 will begin to count down from 10 to 0. If the 317 is not equipped with a display PCB, hold the button for 15 seconds minimum before releasing it.

5. When the Model 317 operator display shows 0, release the label feed button. The operator display will then show **FLH** and the Status LED (B in Figure 3-3) color will change to orange.

6. When the Model 317 Status LED is orange, type:

       FLASHPRT -T*filename.ext* -s2

Press the Enter key. The *filename.ext* is the program hex file name including the extension of the file you wish to download to the Model 317. (Do not use any files with an EXE extension!) The files used will generally have an extension of *MNG.* The PC will then download the new operating software to the printer.

Note 1
The Model 317 printer will time out and the Status LED will flash red after 20 seconds if no data is transferred. You must then turn power to the printer off and repeat the process.

Note 2
The Model 317 software files may be distributed in a self-extracting zip format. You must first uncompress the file before it can be used. To uncompress the file, first copy it to your hard disk drive, then type in the file name. It will then create a file with an **mng** extension. This is the file you will use with FLASHPRT.

Note 3
If the label feed button is held depressed as power is turned on, the printer will begin a countdown on the information display from 10 to 0. When 0 is reached (15 seconds minimum) and the label feed button is released, the flash memory program mode is entered. On later software versions, on power up, the 317 will look for high-speed flash commands for 45 seconds and display HSP on the LED display. After 45 seconds, the printer will perform the normal start up sequence. The printer can also be flashed after power up by sending the reset command first: <SOH>R<CR>. Flashing can be performed using the PCScale Utility or Databack for Windows®.

Databack for Windows®

Databack for Windows® (Version 1.2 or later) can also be used to flash software into the Model 317. First, click on the "FlashPro" tab. Next, select the file to download and "317/8861 Printer" for the product type. If the Model 317 has "b160883r" software or later, select "Reset Printer Y" and click "Download" to start the file transfer.

If the Model 317 software is not "b160883r" software or later:

Turn off the Model 317 power switch.

Press and hold the label feed button on the front of the Model 317.

Turn on the Model 317 power switch and continue to hold the label feed button. After 5 seconds the LED Display inside the Model 317 will begin to count down from 10 to 0. If the 317 is not equipped with a display PCB, hold the button for 15 seconds minimum before releasing it.

When the Model 317 operator display shows 0 (15 seconds minimum), release the label feed button. The operator display will then show **FLH** and the Status LED color will change to orange.

When the Model 317 status LED is orange, click the "Download" button.
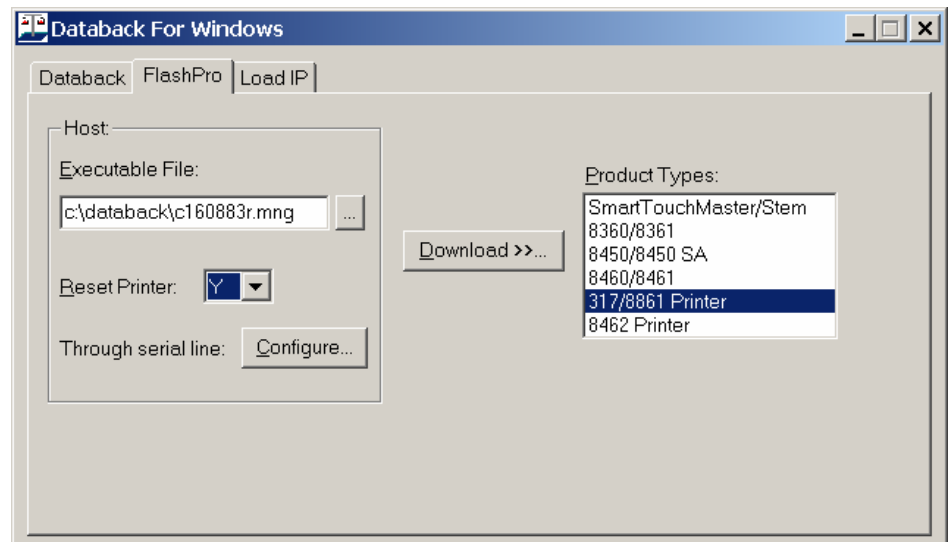
Databack for Windows®
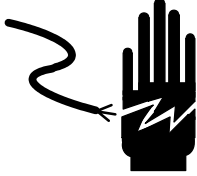
If the label feed button is held depressed as power is turned on, the printer will begin a countdown on the information display from 10 to 0. When 0 is reached (15 seconds minimum) and the label feed button is released, the flash memory program mode is entered. On later software versions, on power up, the 317 will look for high-speed flash commands for 45 seconds and display HSP on the LED display. After 45 seconds, the printer will perform the normal start up sequence. The printer can also be flashed after power up by sending the reset command first: <SOH>R<CR>. Flashing can be performed using the PCScale Utility or Databack for Windows®.

4 Troubleshooting & Adjustments

Power Supply

<table>
<tr>
<td>⚠ CAUTION

OBSERVE PRECAUTIONS FOR HANDLING
ELECTROSTATIC SENSITIVE DEVICES.</td>
</tr>
</table>

<table>
<tr>
<td>⚠ WARNING

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE
THIS EQUIPMENT. EXERCISE CARE WHEN MAKING
CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE
MADE WITH POWER ON. FAILING TO OBSERVE THESE
PRECAUTIONS CAN RESULT IN BODILY HARM.</td>
</tr>
</table>

The Power Supply Assembly supplies +21 VDC to the Printer Logic PCB at J8 and to the Applicator Control PCB at J1. The +21 VDC can be tested with a Volt-Ohm Meter at J8 on the Printer Logic PCB. Place the negative meter lead on J8 pin 1, and the positive meter lead on J8 pin 2. You should read + 21 VDC. If this voltage is missing, check the AC power input and the fuse on the Power Supply PCB. If the AC input voltage is between 85 to 265 VAC, and the fuse is not at fault, replace the Power Supply PCB.

Printer Board

<table>
<tr>
<td>⚠ CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.</td>
</tr>
</table>

<table>
<tr>
<td>⚠ WARNING

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.</td>
</tr>
</table>

15535200A Printer Board

Note: This board has been replaced with the B16199400A Printer Board. See next section.

The Printer Board controls all printer functions. If the +21 VDC checks correctly (refer to previous section) at J8, the voltage on the Printer Logic PCB can be tested with a Volt-Ohm Meter as follows. Disconnect the Label Stepper Motor from J12, the Liner Take-up Motor from J10, and the Label Taken Sensor from J1 and from J11. Set the meter to check DC volts. Check the +5 VDC by placing the negative meter lead on TP2 and the positive meter lead on TP1. You should read +5 VDC ±0.25 VDC. Next check the +21 VDC by placing the negative Meter Lead on TP2 and the positive meter lead on TP3. You should read +21 VDC ± 0.5 VDC. If either of these voltages is out of tolerance replace the Printer Logic PCB.

The 15535200A Printer Board must be used with the 14432500A SIMM 256K Memory Module and the B14432300A Flash Memory Board. The Flash Memory Board contains the printer operating software.
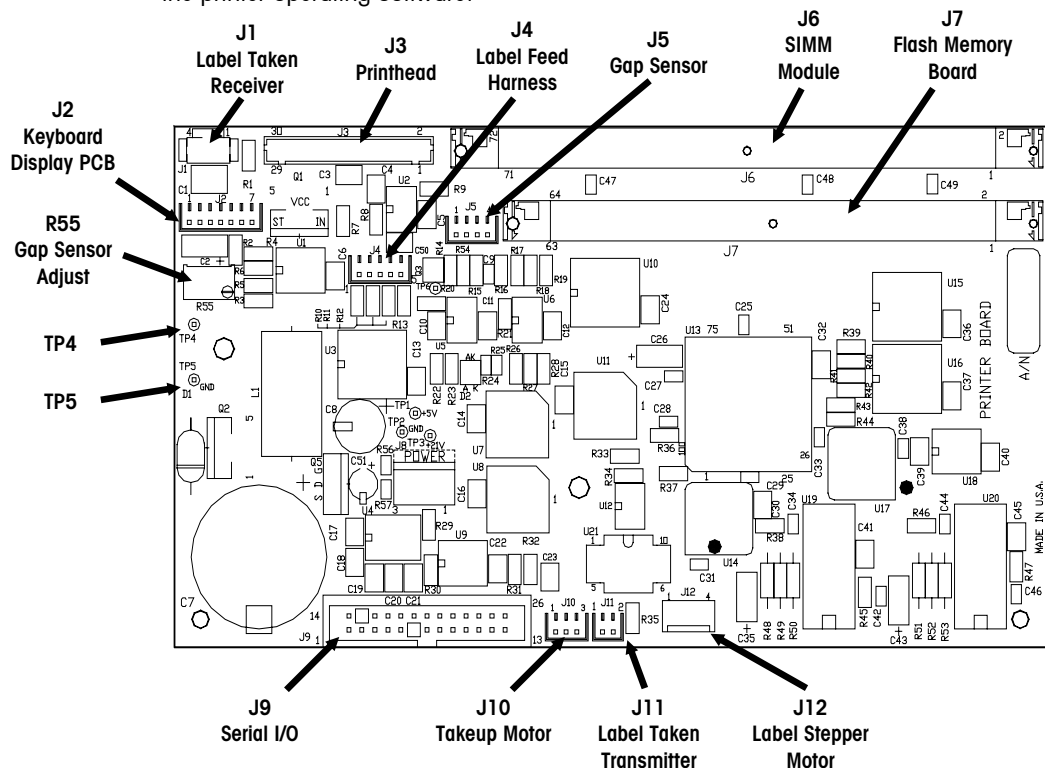
B16199400A Printer Board
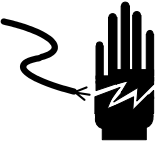
The Printer Board controls all printer functions. The Printer Power Supply supplies 21 VDC supply to the Printer Board. If the 21 VDC supply checks correctly at J3 Pin 2 to J3 Pin 3, the Printer Board can be tested as follows. Disconnect the Gap Sensor harness at J9. The +5 VDC can be tested on the Printer Board by placing the negative meter lead on chassis ground and the positive meter lead on J9 Pin 2 or Pin 3. You should read +5 VDC ±0.25 VDC. If the +5 VDC is out of tolerance, disconnect all of the harnesses on the Printer Board except the power supply harness at J3. Recheck the +5 VDC at J9. If the +5 VDC is still out of tolerance, replace the Printer Board.

Printer Logic PCB
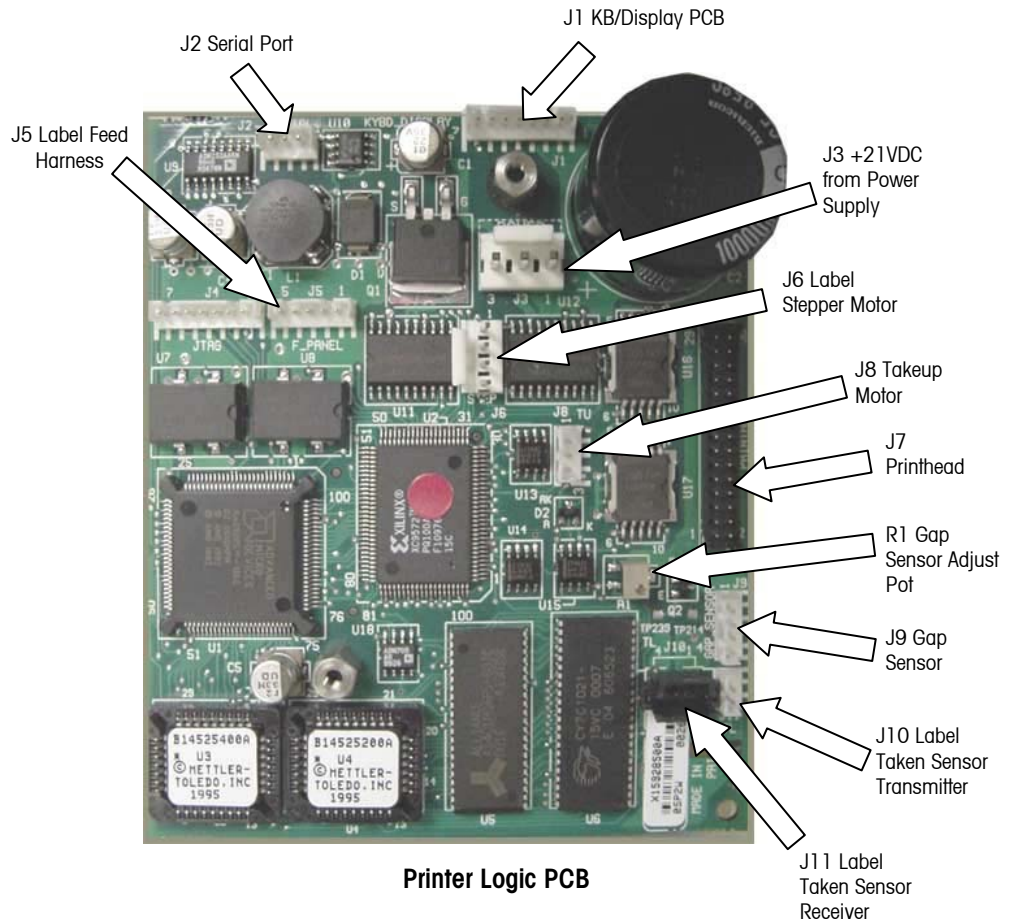
The B16199400A Printer Board directly replaces the earlier 15535200A Printer Board. The 14432500A SIMM Module and the 14432300A Flash Memory Board are not used with this newer board. These components are integrated into the board and are not needed.

Label Drive Motor

⚠ **WARNING**
DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Disconnect AC power before proceeding. The resistance of the windings in the Label Drive Motor can be tested with a Volt-Ohm Meter by disconnecting it from the Printer Logic PCB. Set the meter to Ohms. Connect the meter between pins 1 and 2. You should read less than 2.97 ohms. Next, connect the meter between pins 3 and 4. You should also read less than 2.97 ohms. If these tests pass, and the motor does not appear to have a mechanical bind, suspect the Printer Logic PCB.

Take Up Motor

⚠ **WARNING**
DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Disconnect AC power before proceeding. The resistance of the windings in the Liner Take Up Motor can be tested with a Volt-Ohm Meter by disconnecting the Take Up Motor from the Printer Logic PCB. Set the meter to read Ohms. Connect the meter across pins 2 and 3. You should read a nominal resistance between the pins. A short (0 ohms) or and open (Infinite ohms) indicates the motor is defective. If the motor checks good and does not appear to have a mechanical bind, replace the Printer Logic PCB.

Take Label Sensor

⚠ **CAUTION**

**OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.**

⚠ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
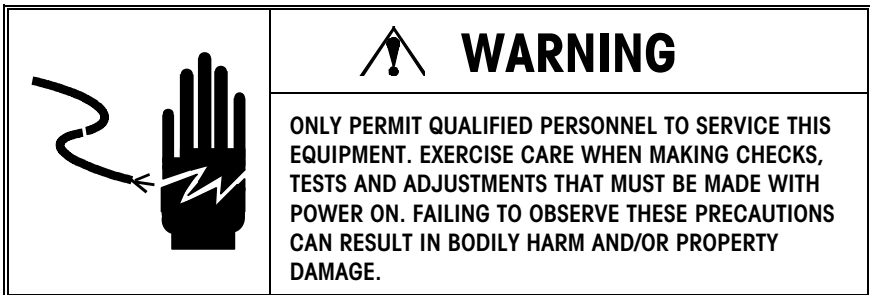
The voltage from the Take Label Sensor can be tested with a Volt-Ohm Meter. Always clean the sensor lens first. If the problem persists, then perform the following test.

This test is performed with power ON.

- Set the meter to read DC voltage.

- Place your positive meter lead on J1 pin 3 on the Printer Logic PCB.

- Place your negative meter lead on J1 pin 2 on the Printer Logic PCB.

- You should read +5 VDC when the Take Label Sensor is blocked.

- You should read 0 VDC when it is not blocked.

If the Take Label Sensor fails this test you can test the transmitter by disconnecting the harness at J11 on the Printer Logic PCB as follows:

This test is performed with power OFF.

- Set the meter to read ohms.

- Place your ohmmeter negative lead on the harness removed from J11 pin 1 and the positive meter lead on pin 2.

- You should read some resistance.

- Reverse the meter leads and you should read an open.

- If the transmitter fails this test replace the Transmitter.

- If it passes this test, replace the Take Label Sensor Receiver.

Tip: The Take label Sensor can be temporarily by-passed by disconnecting the harness at J1 and shorting J1 pin 2 to J1 pin 3. You can also disable the Take label Sensor via SSW 07 (Advanced Mode only). This should be a temporary fix while parts are being obtained.

Label Gap Sensor Test

Test for P/N 15535200A Printer Board

	⚠ **CAUTION**
	OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

	⚠ **WARNING**
	ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.
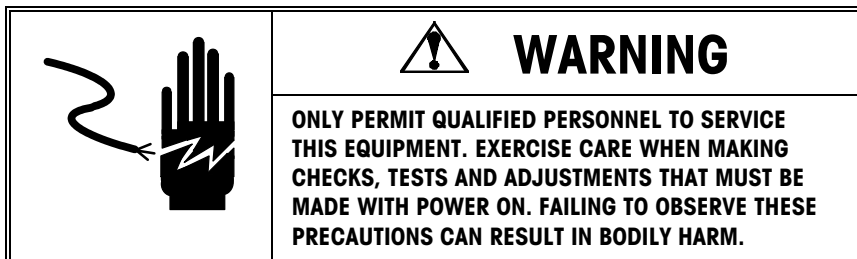
The sensor can be tested and adjusted with a Volt-Ohm Meter. Always clean the sensor lens first. If the problem persists, then perform the following test.

There are two modes of adjustment for the label sensor. Mode 1, also known as the Automatic level adjustment, should be tried first (this is the factory default setting). If you are experiencing label indexing problems with the gap sensor set to Mode 1, proceed to the Mode 2 adjustment. Mode 2 should be used with labels that have perforations or black preprinting.

Part of the initial setup of the printer is to verify that the gap sensor is operating correctly. Adjustment may be necessary depending on what type of label stock you are using.

MODE 1

Automatic level adjustment (Default Factory Setting). Readings can be taken with or without labels or backing paper present in the gap sensor.

This test is performed with power OFF.

Set the meter to read Ohms. With power OFF, place the positive meter lead on TP4 and the negative lead on ground or TP5. Adjust R55 to 60K ohms ($\pm$5K ohms)

MODE 2

Fixed Level Output (Use if labels have perforations, black lines, or black preprinting)

This test is performed with power ON.

Set the meter to read DC voltage. If Mode 1 measurements are within specifications and you are still experiencing problems, place the label and liner, label with black area and liner, or black line with label within the gap sensor and adjust R55 to an output voltage of 1.3 ($\pm$0.2VDC) across TP4 and TP5. Next, check the voltage with the label stock and liner in the sensor. The voltage should be at least 1.3 VDC ($\pm$0.1VDC).

Test for 317 Printer Board, P/N B16199400A

To correct indexing problems, or when installing a new Label Gap sensor, perform the following electrical adjustments.

⚠ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
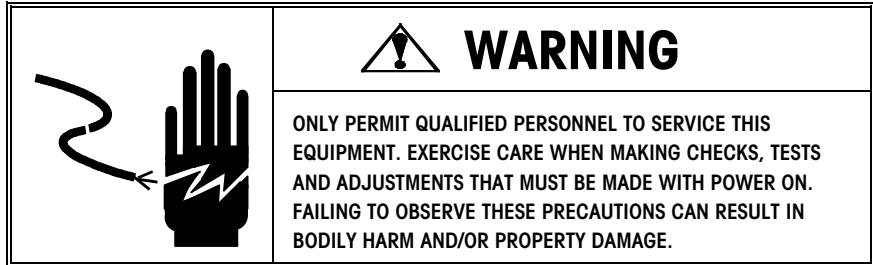
MODE 1

Automatic level adjust. (Default Factory Setting)

Remove AC Power

With all of the harnesses disconnected from the Printer Logic PCB, set the Volt-Ohm Meter to read ohms. Place the positive meter lead on R1 Pin 1 and the negative meter lead on R1 Pin 3. Adjust the potentiometer **R1** so the meter reads 50K to 60K ohms. Reconnect the power connector to J3 on the Printer Logic PCB. See the illustration on the next page for pin locations.

Reconnect AC Power

Set the Volt-Ohm Meter to read DC volts. With the power ON, the output voltage measured across **R1 Pin 1** and **R1 Pin 3** should be +1.9 VDC (± 0.2 VDC).

MODE 2

Fixed Level Output. (Should be used with black preprinted labels or perforations that pass through the sensor.)

Set the Volt-Ohm Meter to read DC volts. If the above test points and readings are within specification and you are still experiencing problems, <u>place the white area of label stock and liner within the Gap Sensor.</u> Apply power and adjust **R1** for an output voltage of +1.3 VDC (± 0.2 VDC) measured across **R1 Pin 1** and **R1 Pin 3**. See the illustration on the next page for pin locations.

If the above adjustments do not correct an indexing problem, replace the Label Gap Sensor and retest the unit. If the Label Gap Sensor has been replaced and tests ok, replace the Printer Board.

NOTE: Readings can be taken with or without labels or backing present in gap sensor.

NOTE: R1 may need to be adjusted many turns before any change in voltage is seen.
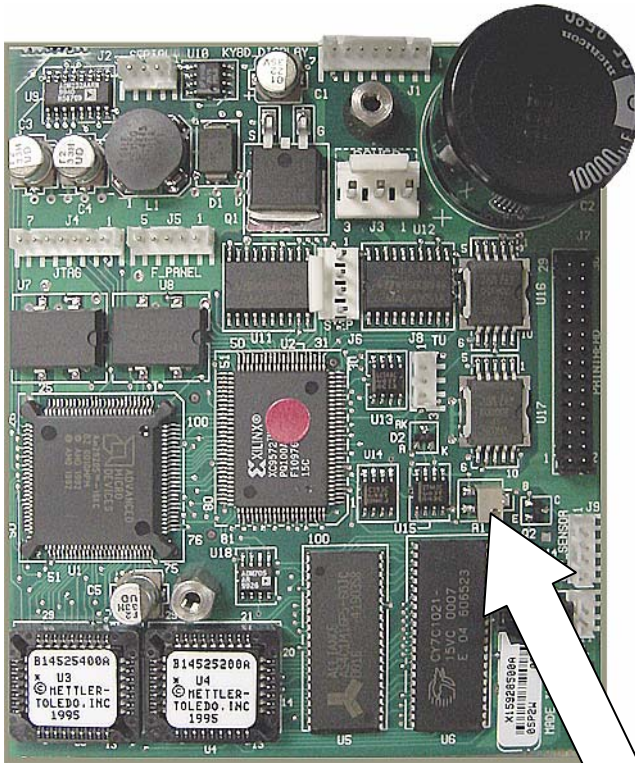
**Printer Board
B16199400A**

R1 Pin 1
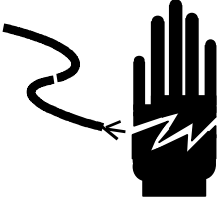
R1 Pin 3
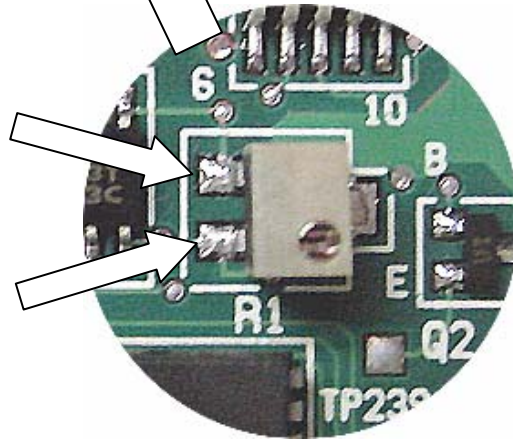
R1 Gap Sensor Voltage Adjustment Potentiometer

Applicator Control PCB

⚠ **CAUTION**

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

⚠ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Note: Jumper W4 must be left in the on position for normal DayGlo applicator operation.

The Applicator Control PCB voltage can be tested with a Volt-Ohm Meter. Set the meter to read DC voltage. Place the positive meter lead on J1 pin 2, and the negative meter lead on J1 pin 1. You should read +21 VDC. If this voltage is missing, see the Power Supply Section in this chapter to test the Power Supply. If this voltage is correct, install the jumper on W1 (Refer to D in Figure 4-2). This places the applicator in test mode. While in test mode, when the take label sensor is blocked, the applicator will cycle through the application sequence. When Jumper W1 is ON, Jumpers at W3 and W4 control the testing of the turn label sequence as show below.

W3	W4	Function
OFF	OFF	Straight Application
ON	OFF	90° Turn Application
OFF	ON	270° Turn Application
ON	ON	180° Turn Application

Sequentially place the jumper in the above listed configurations and press the label feed button. Perform this test with the vacuum pump on. This will allow you to check for proper pick and apply of the label. Verify that the label turn is working correctly in all configurations. If the turn motor or drive motor is not working, test the motors as described in the following sections. Remember to remove all jumpers when testing is complete.

Applicator Drive Motor

⚠ **CAUTION**

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

⚠ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

The Applicator Drive Motor can be tested with a Volt-Ohm Meter by checking the resistance of the windings of the Stepper Motor. Disconnect the Applicator Drive Motor from the Applicator Control PCB. Connect a Volt-Ohm Meter set to Ohms between pins 1 and 2. You should read less than 2.97 ohms. Next, connect the Volt-Ohm meter between pins 3 and 4. You should read less than 2.97 ohms. If the motor checks good and does not appear to have a mechanical bind, replace the Applicator Control PCB, otherwise replace the motor.
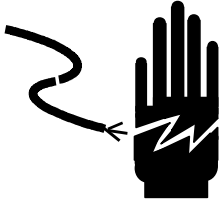
Applicator Turn Label Motor

The Applicator Turn Label Motor can be tested with a Volt-Ohm Meter by checking the resistance of the windings of the stepper motor. Disconnect the Applicator Turn Label Motor from the Applicator Control PCB. Connect the Volt-Ohm meter set to ohms between pins 1 and 2. You should read less than 2.97 ohms. Next, connect the meter leads between pins 3 and 4. You should read less than 2.97 ohms. If the motor checks good and does not appear to have a mechanical bind, replace the Applicator Control PCB, otherwise replace the motor.

Applicator Vacuum Control Solenoid

⚠ **CAUTION**
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

⚠ **WARNING**
ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Disconnect AC power before proceeding. The Applicator Vacuum Control Solenoid can be tested with a Volt-Ohm Meter by disconnecting the wires at TB1.Check the resistance of the coil by placing an ohmmeter lead on each wire. The resistance of the coil should be about 140 ohms. If the Applicator Solenoid Coil is open or shorted replace the Solenoid. Reconnect the wires.

Reconnect AC power. Set the Volt-Ohm Meter to Volts. Place your positive meter lead on TB1 pin 1 and your negative meter lead on ground. You should read +21 VDC. If you do not have +21 VDC check the Power Supply.

Disconnect the wire from TB1 pin 2. Turn on the vacuum pump and pinch the applicator vacuum hose to restrict any airflow. Touch the disconnected wire from TB1 pin 2 to chassis ground. This will manually energize the vacuum control solenoid bypassing the control circuit on the Applicator Control PCB. You should see at least 22 inches of vacuum on the vacuum gauge. If the solenoid does not operate manually, replace the solenoid assembly. If the solenoid does operate manually but does not operate in the normal mode, replace the Applicator Control PCB.

NOTE
If the solenoid fails to operate, try depressing the red relief button on the left side of the valve and then retest the solenoid following the above procedure. This will release the valve if there is a mechanical bind.

Applicator Rack and Pinion Adjustment

⚠ **WARNING**
DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
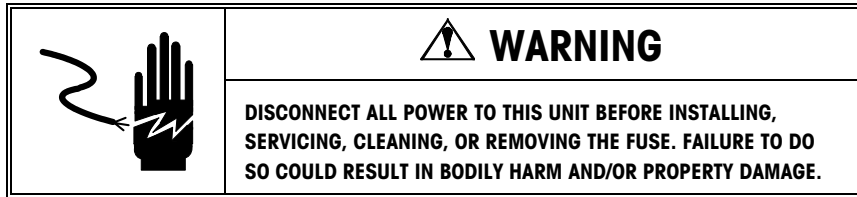
If the stepper motors or parts associated with the Rack and Pinion shafts are replaced, or if problems with label turning or application are encountered, the following adjustments must be checked. Refer to Figure 4-1 for component locations.

1. Loosen the screws on both the Applicator Motor (A) and the Label Turn Motor (B).

2. Place a .254 mm (.010") feeler gauge behind Gear Rack (C) at point (2) between the Rack and Delrin Block.

3. Apply pressure by pressing the Applicator Motor (A) Gear into Rack (C) and tighten screws. Remove the feeler gauge.

4. Press the Turn Motor (B) into Pinion (D), allowing enough clearance to allow free vertical movement of pinion. The gap must allow free vertical movement, but must not be excessive. Too large of a gap will cause movement between the gears which can affect label turning and placement. Re-tighten the retaining screws after adjusting.
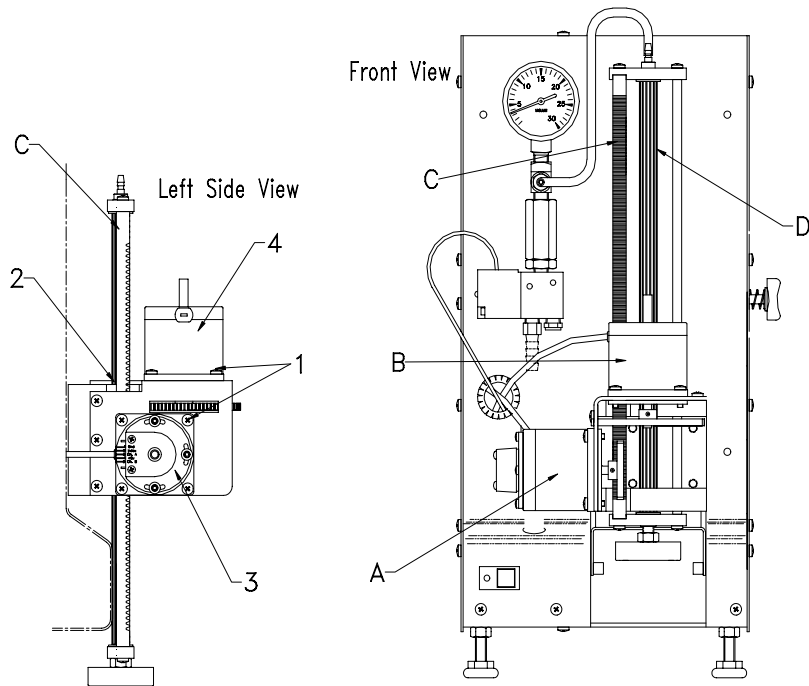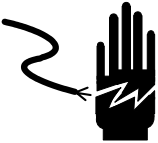
Figure 4-1: Applicator Rack & Pinion Adjustments

Optical Encoder

⚠ **WARNING**

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

The Optical Encoder is used on the Applicator Shaft Stepper Motor to determine the vertical position of the shaft. If the Optical Coupler is replaced, or if the Encoder Disk is moved or replaced, the unit must be adjusted as described in the following section, "Applicator Head and Optical Encoder Adjustment". To replace the Optical Encoder follow these steps.

Mount the base to the Stepper Motor. Make sure the two alignment pins face outward

Alignment Pins

Stepper Motor
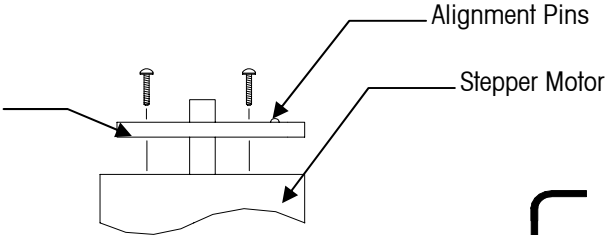
Snap the Alignment Tool over the shaft, then slide Encoder Disk on the shaft until it rests against the tool. Tighten the hub set screw with the supplied hex wrench.
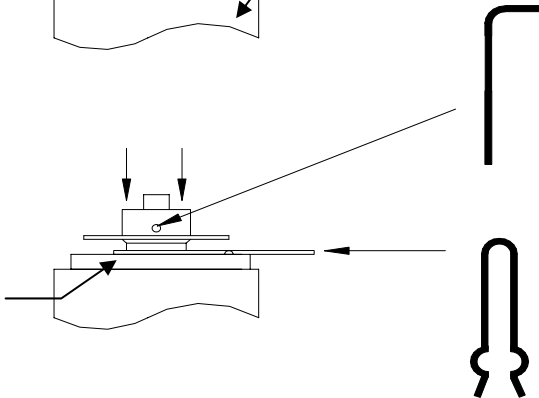
Slip the Optical Module into position on the two alignment pins. Place the cover over the assembly to secure the module and install the two screws.

Applicator Head & Optical Encoder Adjustment

⚠ **WARNING**
ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
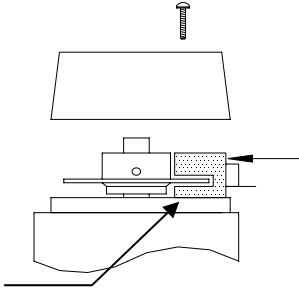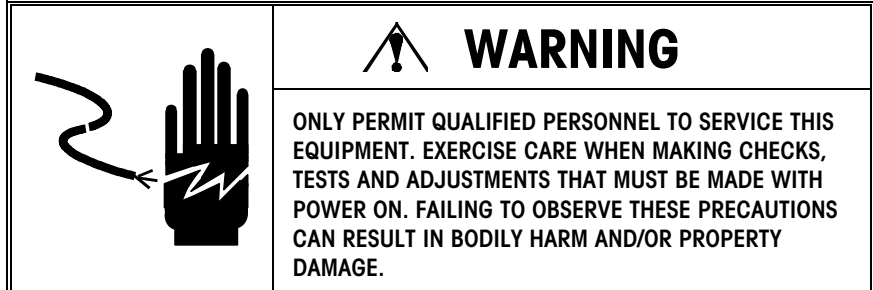
If the Applicator Head is out of adjustment, label application problems can occur. If any of the mechanical parts, stepper motor, or Optical Encoder is replaced, the Applicator Head home position must be set. An Alignment Tool (P/N 82784300A) is supplied to set the necessary alignment of the head to the plane of the skis and stripper bar. A shaft spacer and hex wrench is also included to set the optical encoder on the applicator stepper motor. The Alignment Tools are shipped inside the printer on the component side attached to the front left foot, as shown in Figure 4-2.
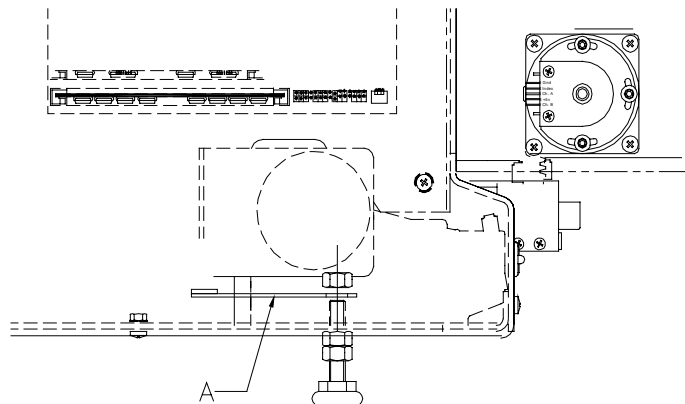
Figure 4-2: Applicator Alignment Tools (A)

The applicator home position can be adjusted as follows. Refer to Figure 4-3 for component locations.

1. Tap the Stripper Bar to make sure it is seated at the bottom of the slots on the Printer Engine frame.

2. Loosen the Applicator Head (A) Lock Nut (B). Turn the head (A) until there is approximately 3/8 in (10 mm) clearance between the Head (A) and the Bottom Pinion Mounting Bracket (C). Do not tighten the lock nut.

3. Turn on the power to the Model 317.

4. Insert the 82784300A Alignment Tool between the Skis (D) and the Head (A) with the thick end of the tool facing down toward the stripper bar. Check that the Applicator Head (A) is parallel to the Skis (and Alignment Tool). Bend the Ski Bracket (E) if necessary until the Skis are parallel to the Head (A).

A - **Head Alignment Tool**
B - **Optical Encoder Hex Wrench**
C - **Encoder Shaft Spacer Tool**
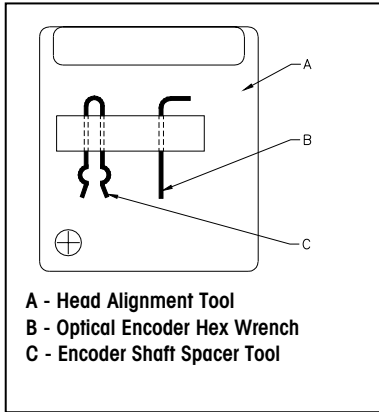
5. Loosen the Ski Mounting Block hex screws (located on rear of front printer cover) until they are just finger tight. Move the Ski Bracket down until the alignment tool is resting on the stripper bar and the tool is also resting flat on the skis. Re-tighten the Ski Mounting Block hex screws.

6. Manually lower the Applicator Head to the closest detent (approximately 1/16 in) above the Alignment Tool on the Skis (D).

7. Next, remove the Optical Encoder cover (F) and snap the Encoder Shaft Spacer Tool (P/N 82784400A) over the Encoder Shaft. Loosen the set screw on the Encoder Wheel with the supplied hex wrench.

8. Holding the Encoder Optical Module against the motor, slightly turn the Encoder Wheel until the LED I1 on the Applicator Control PCB is off. Tighten the set screw on the Encoder Wheel and reassemble the cover. A fine adjustment can be made by loosening the Encoder Mounting Screws (G) on the Stepper Motor and turning the Encoder Assembly while watching the status of LED I1.

9. Turn the Applicator Head (A) until it just touches the tool. This will adjust the head to be .060 inch above the plane of the Skis.

10. When all adjustments are complete, re-tighten the Applicator Head Lock Nut (B).
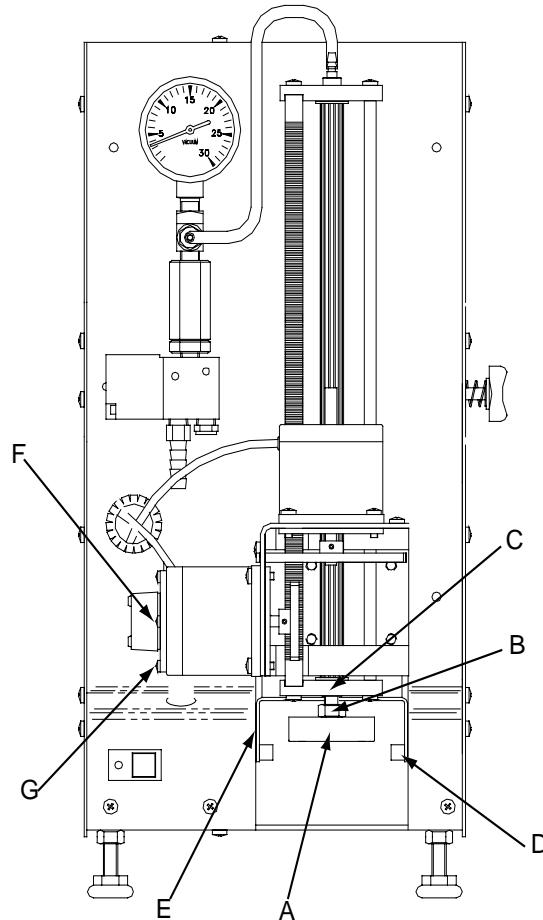
Figure 4-3: Applicator Head/Optical Encoder Adjustment

Applicator Head Adjustment - DayGlo Printer

	⚠ **CAUTION**
	OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

	⚠ **WARNING**
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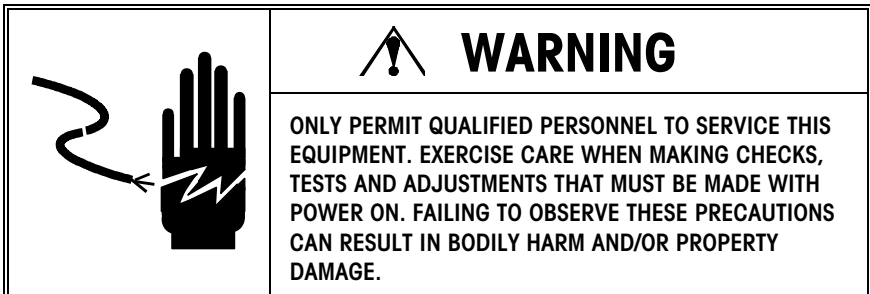
1. Turn printer on.

2. Loosen head lock nut

3. Seat stripper bar by tapping lightly downward on the far ends of the bar.

4. Temporarily set top of head 3/8″ from bottom of pinion bracket. Do not tighten lock nut.

5. Insert a "0.060″ spacer so that it rests on top of stripper bar in between applicator head and the lower level of ski.

6. Adjust ski so that it is parallel to head.

7. Move the label ski adjustment plate to the top position by loosening retaining bolts.

8. Slowly move ski bracket downward until the spacer is resting on the stripper bar and the spacer is also resting flat on the ski.

9. Tighten down bolts for adjustment plate so that plate will remain in position while the ski bracket is moved up and down.

10. Lower head so that it is at the last resting position before contacting adjustment tool (approximately 1/8″).

11. Set home position of encoder.

12. Rotate the head downward until it makes light contact with top of tool.

13. Remove adjustment tool, tighten head lock nut, and test unit.

14. Set applicator control board jumper W4 to ON position.

Printer Engine Alignment

⚠ **WARNING**

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

If the Printer Engine is replaced or removed, it must be properly aligned to the printer base plate. Refer to Figure 4-4. The front of the engine must be set for .062 inch or 1.6 mm in relation to the front of the printer base. The engine must be aligned square to the side of the base .775-inch or 20 mm from the side of the frame.
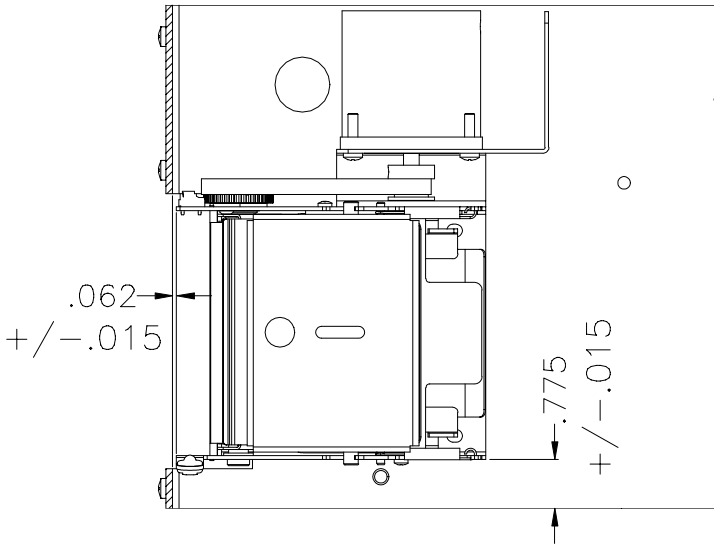
Figure 4-4: Printer Engine Alignment

Label Guide and Gap Sensor Width Adjustment

⚠️ **WARNING**

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
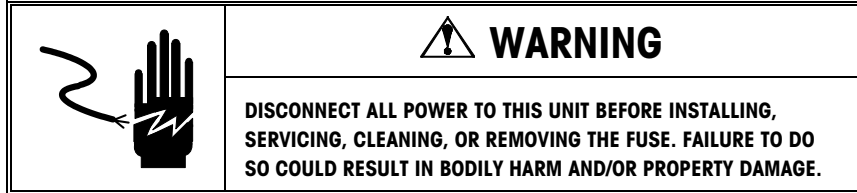
Starting with serial number 3072460-3-PY all printers are shipped from the factory with the label guides and gap sensor locked in a fixed position. If for any reason you need to adjust the width or replace a part, use the following procedure: (See Figure 4-5)

1. Disconnect AC power to the Model 317.

2. Check if unit has three access holes, on the bottom plate of the printer (triangular orientation) directly under the printer mechanism.

If the printer <u>has</u> access holes:

3. Loosen the three screws through the access holes.

4. Using a piece of label stock, adjust the label guides to the correct width and tighten the screws.

If the printer <u>does not</u> have access holes:

3. Remove cover from electronics side of printer.

4. Unplug gap sensor from printer PCB.

5. Remove the label stock guide.

6. Remove the three Phillips head screws (two on the left side, one on the right side) that hold the label guide assembly in the printer engine.

7. Raise the force bracket for clearance.

8. Carefully lift out the label guide assembly. The guide liner will come out with it.

9. Turn over the assembly. Locate and loosen the center screw and washer.

10. Using a piece of label stock, adjust the label guides to the correct width and tighten the screw.

11. Reassemble in reverse order.

LEFT HAND SIDE
(ELECTRONICS SIDE)

RIGHT HAND SIDE
(LABEL SUPPLY REEL SIDE)

RAISE FORCE BRACKET

LIFT ASSEMBLY OUT

REMOVE THESE SCREWS

REMOVE THIS SCREW

REMOVE LABEL STOCK GUIDE

BACK OUT FRONT SCREW AND WASHER
AND REPLACE EXISTING WASHER WITH R0253900A WASHER.
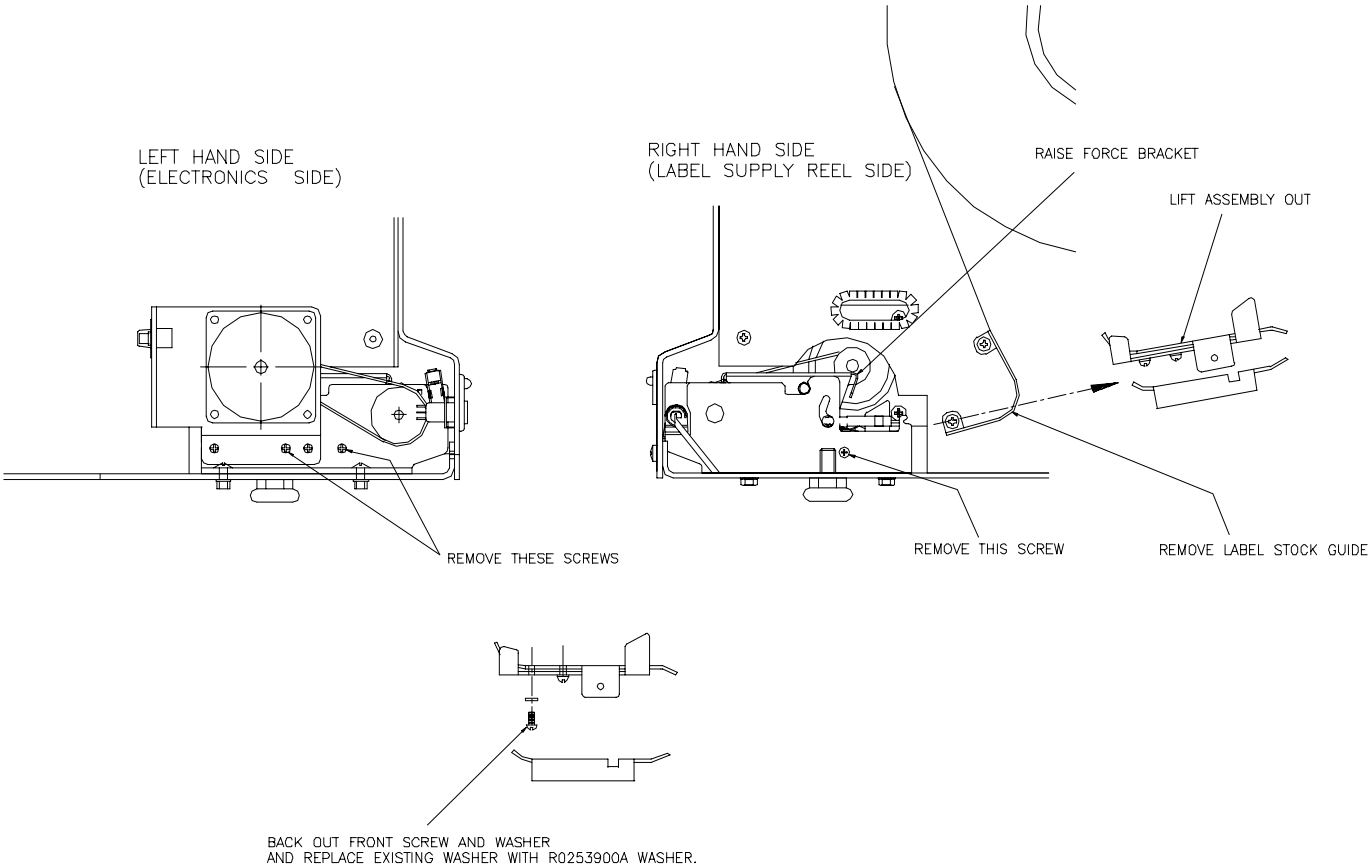
828858.DWG
828858.DOC

Figure 4-5: Label Guide and Gap Sensor Width Adjustment

Label Eject Distance

For price label applicators (0317-2001), the label must remain on the roll backing approximately 1 mm when staged in order to correctly pick and apply labels.

For DayGlo label applicators (0317-3001), the label must remain on the roll backing approximately 2.5 mm when staged in order to correctly pick and apply labels.

Model 8360/8361

The eject distance is set in the Model 8360/8361 in the Setup Mode. To adjust ejection distance from 8360/8361 controller Setup Mode:

- SETUP
- UNIT
- PRINTER SETUP
- PRINTER #1(PRICE) OR PRINTER #2(DAYGLO/NUTRIFACTS)
- SELECT CORRECT LABEL SIZE AND TOUCH EDIT
- PAGE DOWN
- EJECT DISTANCE (97 mm IS THE DEFAULT)

Model 8305

With the Model 8305 controller, the ejection distance is set with Soft Switch 24 in the Model 317 printer. To increase or decrease the ejection distance:

- By reducing the ejection distance, more of the label will remain on the backing.
- By increasing the ejection distance, less of the label will remain on the backing

Note: It is VERY important that the eject distance is adjusted correctly. Incorrect adjustment can cause pick and apply or turn label problems.

Troubleshooting Guide

Following are a list of common questions and symptoms that can be used as an aid in troubleshooting the Model 317 printer and applicator.

No Label Issued

1. Check Power to Printer. Is Power LED on?

2. Check Label Supply.

3. Check for Label Jam.

4. Check/Clean Take Label Sensor.

5. Cycle power to printer and retry.

6. Check for Error Conditions on Display PCB (or Scale Controller)

7. Press Label Feed Button. If label issues when Label Feed is pressed, but not in normal printing mode, check communication cable from scale controller.

Applicator Won't Pick or Apply Labels

1. Label Skis must be in the down position.

2. Remove Applicator Cover and observe operation of Applicator.

3. If applicator mechanical movements are normal, but the label is not picked or applied, check the vacuum to the Applicator Control Valve by watching the Vacuum Gauge. During normal operation, there should be approximately 23 inches of vacuum when a label is picked from the skis.

4. Pinch the tube between the Control Valve and the Pinion shaft and observe the gauge. There should be a minimum of 23 inches of vacuum with the tube plugged. If there is not 23 inches of vacuum, check the vacuum to the valve and at the vacuum pump.

5. If there is 23 inches of vacuum at the gauge, but the applicator still will not pick the label, check for obstructions in the Pinion and the applicator head.

6. Check for loose setscrews on rack and pinion gears.

7. Check label guides in print engine for proper adjustment.

8. Check label ejection for proper distance.

Label Placement Varies on Package

1. Check applicator for mechanical binds.

2. Check for loose setscrews on rack and pinion gears.

3. Check Stepper Motor Gear to Rack and Pinion clearance, as described in "Applicator Rack and Pinion Adjustment" section.

4. Check label ejection for proper distance.

Label Applicator Won't Turn Labels

1. Check controller and labeler programming.

2. Check for loose setscrews on rack and pinion gears.

3. If controller or labeler programming is correct, remove Applicator Cover and check for mechanical binds.

4. Test Applicator Turn Motor.

5. Replace Applicator Control PCB.

Light Print on Labels

1. Check Print Density/Speed setting in softswitches (SSW 18). Set at 7 for standard label stock.

2. Clean Printhead and Platen Roller.

3. Check Printhead Resistance Rating with programmed settings in Softswitches (SSW 19).

4. Test printing with known good batch of labels.

Print Mottled or Missing Segments

1. Clean Printhead and Platen Roller.

2. Test printing with known good batch of labels.

3. Replace Printhead.

Extra Labels Are Printed

1. Check label format for stripped/unstripped mode. In automatic applications, the format must be set to Stripped Mode.

2. Test Take Label Circuit.

3. Test Gap Sensor Circuit.

4. Test with known good labels.

Labels Not Indexing Correctly

1. Clean Gap Sensor.

2. Check Label Format Programming.

3. Test Gap Sensor Circuit.

4. Test with known good labels.

5. Check for loose setscrews on drive motor and platen roller pulleys.

6. Check for loose or worn drive belt.

7. Make sure that the label guides are up against the edge of the label stock.

Label Turn Troubleshooting and Adjustments

Binding or friction of the pinion wire could cause partial turning of the label. Before beginning the checks below: TURN OFF THE POWER SWITCH ON THE PRINTER! For proper label turning to function, all parts must be in specification, the end brackets must be in parallel to each other, and both drive motor gears must be adjusted properly.

PARALLEL END BRACKETS

First check these End Brackets. THEY MUST BE PARALLEL TO EACH OTHER
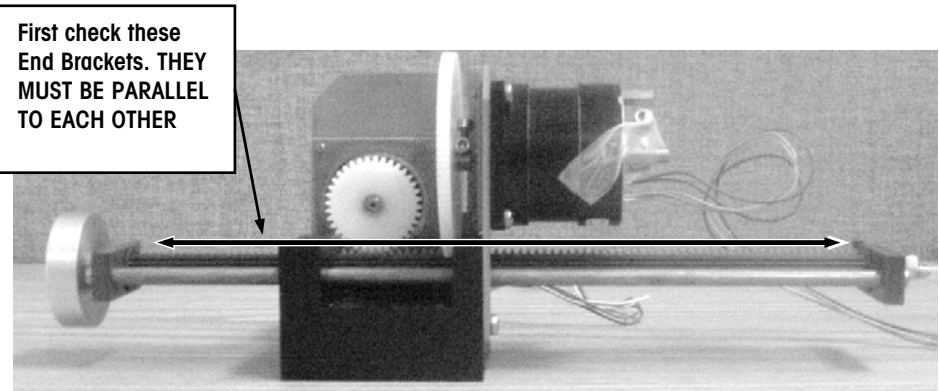
Make sure the front face of both end brackets is parallel to each other. This can be done with a custom tool while still attached to the machine. I made a tool using an applicator rod and two pieces of bar stock that was approximately four inches and screwed one of them to each end of the rod and placed on a flat surface before tightening. This tool can then be held against the two end brackets to verify straightness.

PINION WIRE TURNING FRICTION

Next, check for pinion wire turning friction by first removing the four screws on the pinion wire drive motor. Move it away from the pinion wire to disengage the drive gear from the pinion wire. Turn the pinion wire 180 degrees in each direction at various vertical positions of the applicator. You should feel very little to no resistance. If there is friction, continue with Checks A and B. If there is little to no friction, then proceed with "Gear Rack To Applicator Base Clearance", following Check A and B.

Check A – Gear Rack

Each end of the gear rack must be cut perpendicular to its length. Prior to October 2002, the ends of the gear rack were saw cut to a loose tolerance. This method of cutting allowed **some** gear rack ends to be cut outside of the required perpendicular tolerance. On those gear racks, this non-perpendicular cut causes the pinion wire end brackets to tilt in the direction of the cut when attached to the ends of the gear rack causing friction on the pinion wire bushing. This problem is amplified when the pinion wire is bowed causing more friction during part of the rotation.

Remove the Gear Rack and hold one of the ends against the square and note the gap between the gear rack and the square at the opposite end. Rotate the gear rack 90 degrees and check the gap again. Do this on all four sides. When done, hold the other

end of the gear rack against the square and repeat this check. If the gap is greater than 0.040″, then replace the gear rack. (See Picture Below)

0.040″ MAX GAP

Hold flat against square. Rotate to check all 4 sides.

Check B – Pinion Wire

Using a feeler gauge, place the pinion wire on a Very Flat surface and roll, the largest gap that can develop is 0.005″ as it is rolled across the surface. Replace the pinion wire if it does not meet this spec.
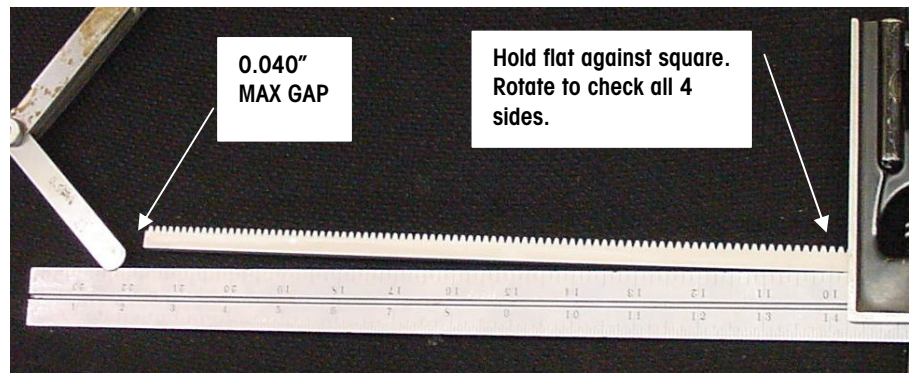
NOTE:

Motion occurs between the bushings and the end brackets, not between the bushing and the pinion wire. Do not sand down the pinion wire ends. The top and bottom brackets are Teflon anodized to provide a slippery interface with the Nylon bushings. Modifying the surface finish of either part will be detrimental to performance. It is unlikely that there is an interference problem here due to the hole or bushing size. It's more likely that the factors listed above are causing the label turning problems.

Gear Rack To Applicator Base Clearance

Gear rack clearance should be set to (0.010″) using a feeler gauge. To adjust for this, loosen the gear rack motor and insert a 0.010″ feeler gauge between the back of the gear rack and the front of the black applicator base. Firmly push motor toward the gear rack until the motor gear engages fully with the gear rack teeth. Tighten the motor screws. The feeler gauge should be able to be inserted and removed freely.

0.010″ Feeler gauge

Place Feeler Gauge Here

Gear Rack Drive Motor
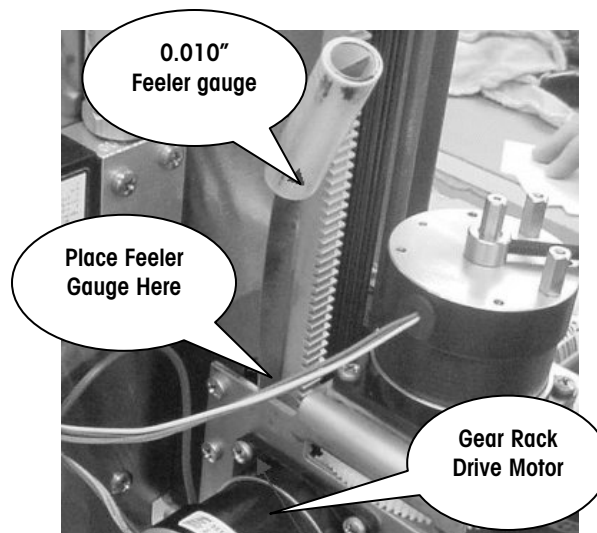
Pinion Wire To Spur Gear Adjustment

To check this clearance, use a 1/4″ wide strip of copy or printer paper (not the heavier ink jet paper). Loosen the label turn motor. Slip the paper between the spur gear and pinion wire by rotating the gear, drawing the paper into the gears. Press the gear firmly against the pinion wire (don't use enough force to bend or distort any of the components). Tighten the motor screws. Rotate the gear to remove the paper and check that the applicator drops freely with the power off. Also check the clearance between the spur gear and the metal mounting bracket and between the spur gear and the black mounting block. There is very little clearance in these areas and could possibly be rubbing during rotation.
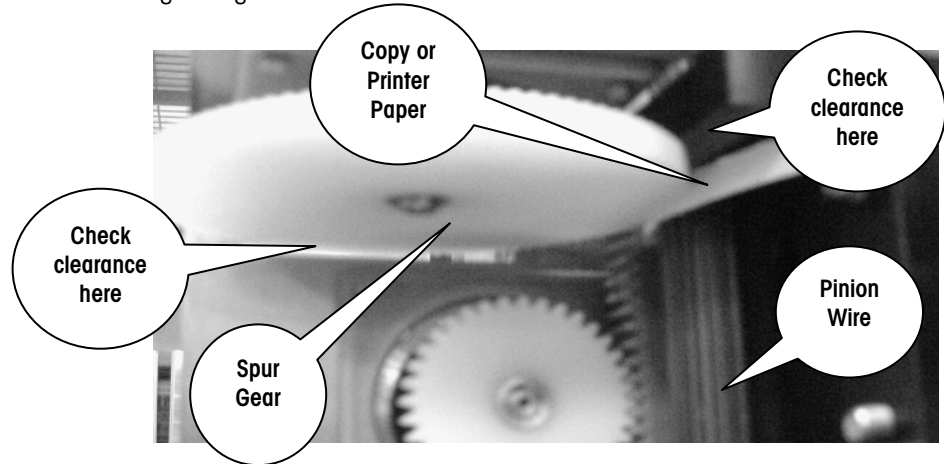
Final Check For Free Movement

After completing adjustments 3 and 4 above, perform the applicator drop test. A quick method to check this is to move the applicator to the up position and release it. The applicator should drop all the way to the down position when released from the up position. A very slight tap is acceptable to overcome the stepper motors magnetic poles to start the drop, but this should not take much of a tap and the applicator should fall completely to the bottom. This test should be performed multiple times throughout the turning radius of the pinion wire. If the applicator does not fall freely to the bottom position no matter what position the pinion wire is turned to, then perform the adjustments "Gear Rack To Applicator Base Clearance" and "Pinion Wire To Spur Gear Adjustment" again.

If the label application is acceptable to the packages in all directions except the 180-degree turn mode, then loosen the collar screw on the pinion wire turn motor and re-position the collar slightly in either direction and re-tighten. Make sure that the collar is not rubbing the top of the motor. Next turn the printer off and back on and recheck the 180-degree turn label placement on some packages to see if this fixed the problem. If it hasn't, try this step again. All other checks and adjustments should be completed before trying this step.
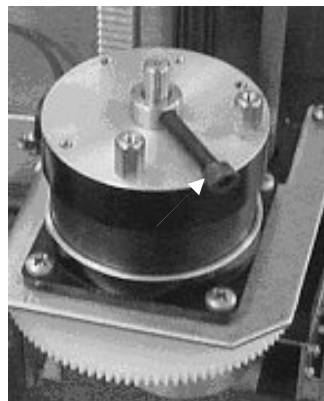
5 Interconnecting Diagrams

With 15535200A Printer Board

NOTE:
1. * INDICATES MAY HAVE LETTER PREFIX

SRAM & FLASH SIMM MODULE *14432300A — P1

DRAM SIMM MODULE *14432500A — P1

PRINTER LOGIC *15535200A

J7 64
J6 72

J2
NC 5
NC 6
NC 7

STEPPER MOTOR ASSEMBLY *14550500A
J12
1 MA13
2 MB13
3 MA17
4 MB17
STEPPER MOTOR

TAKE UP MOTOR ASSEMBLY *82768200A
J10
1
2 TUMOUT
3 GND
TAKE UP MOTOR

LABEL FEED HARNESS *82651300A
GND
LED-RED
GND
LED-GRN
PSWITCH
FRONT PANEL SWITCH
J4
1
2
3
4
5

LABEL TAKEN RECEIVER HARNESS *14550800A
J1
4 +5V
3 TLABEL
2 GND
1
J11
1
2 +5V
TAKE LABEL SENSOR

LABEL TAKEN EMITTER HARNESS *14550700A

115 VAC POWER IN
N
GND
L
POWER SUPPLY *15556000A
J1
1
2
3
4
5
J2
1
2
3
4
5
6
7
8
9
10
11
12
13
AC POWER SWTICH HARNESS *82643800A

DC POWER HARNESS *82652500A
0V
+21V
GND
J8
1
2
3

GAP SENSOR HARNESS *14199700A
J5
1 EDGE-DET
2 +5V
3 +5V
4 LED-GAP
GAP SENSOR

SERIAL PORT
1
25
SERIAL I/O HARNESS *14116600A
J9
1
26

PRINTHEAD HARNESS *14599700A
J3
1
30
PRINTHEAD *14180600A
1
30

W/Applicator and
15535200A Printer Board

With B16199400A Printer Board

PRINTER LOGIC
*16199400A

STEPPER MOTOR
ASSEMBLY *14550500A

1	MA13
2	MB13
3	MA17
4	MB17

J6

STEPPER MOTOR

J1

1	
2	
3	
4	
NC 5	
NC 6	
NC 7	

TAKE UP MOTOR
ASSEMBLY *82768200A

1	
2	TUMOUT
3	GND

J8

TAKE UP MOTOR

LABEL FEED
HARNESS *14227700A

FRONT PANEL SWITCH

GND	1
LED-RED	2
GND	3
LED-GRN	4
PSWITCH	5

J5

LABEL TAKEN RECEIVER
HARNESS *14550800A

4	+5V
3	TLABEL
2	GND
1	

J10

| 1 | |
| 2 | +5V |

J11

LABEL TAKEN EMITTER
HARNESS *14550700A

TAKE LABEL SENSOR

115 VAC POWER IN

N

GND

L

AC POWER SWITCH
HARNESS *82643800A

POWER SUPPLY *15556000A

J1

1	
2	
3	
4	
5	

J2

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	

DC POWER
HARNESS *82652500A

0V	1
+21V	2
GND	3

J3

EDGE-DET | 1
+5V | 2
+5V | 3
LED-GAP | 4

J9

GAP SENSOR
HARNESS *14199700A

GAP SENSOR

SERIAL PORT

| 1 | |
| 25 | |

SERIAL I/O
HARNESS *14116600A

| 1 | |
| 26 | |

J2

| 1 | |
| 30 | |

J3

PRINTHEAD
HARNESS *14599700A

| 1 | |
| 30 | |

PRINTHEAD *14180600A

NOTE:
1. * INDICATES MAY HAVE LETTER PREFIX

W/Applicator and
B16199400A Printer Board

NOTE:
1. * INDICATES MAY HAVE LETTER PREFIX
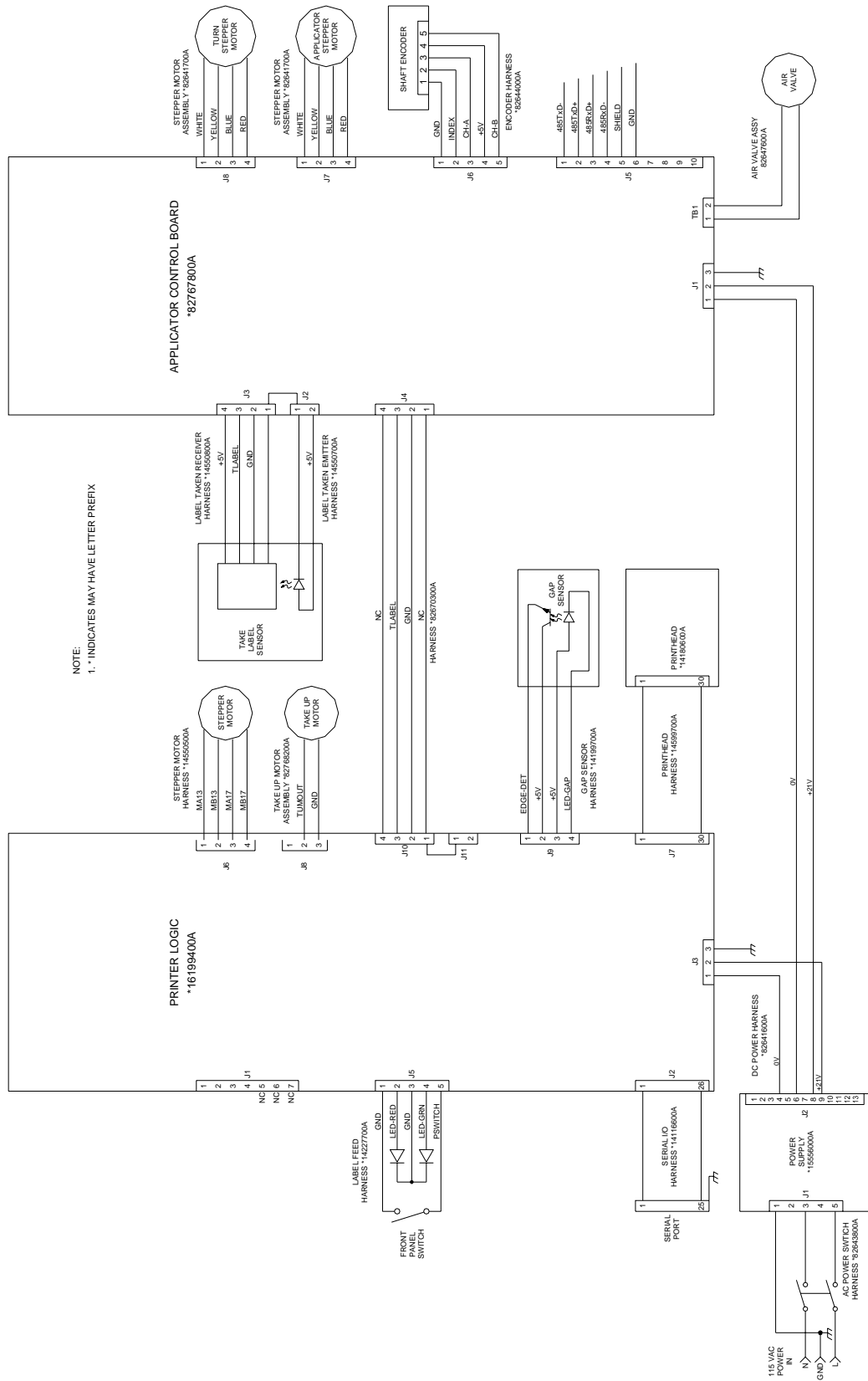
6   Replacement Parts

This chapter lists replacement parts available from METTLER TOLEDO® Aftermarket.

The Aftermarket Operation at METTLER TOLEDO® is dedicated to satisfying every customer every time. The ISO registered facility provides quick, efficient and quality service. Aftermarket services include everything from daily parts shipments and product repairs to load cells and overhaul kits compatible with most scale manufacturers.

Aftermarket Services:

• Same day replacement parts shipment
• Full service repair center
• Printed circuit board repair and exchange program
• Load cell weighing solutions
• Load cell exchange program
• Mechanical scale overhaul kits
• Rental scales

Mettler-Toledo, Inc.
Aftermarket
1150 Dearborn Drive
Worthington, Ohio 43085
Tel: (800) 848-3992
      (614) 430-2555
Fax: (800) 405-6312
      (614) 438-4921

Rental
Tel: (800) 428-4310
Fax: (614) 841-5185
E-mail: rental@mt.com

Major Assembly

With Applicator

LABEL THREADING LABEL

RIGHT HAND SIDE—DOOR SHUT

RIGHT HAND SIDE—DOOR OPEN

REAR VIEW

ETL LABEL

METTLER TOLEDO

Major Assembly With Applicator Parts List

ITEM	QUAN	DESCRIPTION	PART NO.
48	1	LABEL, GROUND	14531400A
47	2	LOCKWASHER, INT.TOOTH,M4, ST.STL.	R0558200A
46	1	WIRE HOLD DOWN	82168100A
45	1	C317 QUALITY CHECKLIST	16134200A
44	1	FORM, CUSTOMER FEEDBACK	A12745800A
43	1	LABEL FORM	A12800700A
42	1	NUT, HEX 5/16-18UNC-2B	R00433050
41	1	HARDWARE KIT	16134100A
40	1	INSERT	16119300A
39	1	CARTON	16119200A
38	2	SCREW-M6X16MM HEX HEAD, SS	82712400A
37	2	CURVED WASHER	82684800A
36	2	LOCK WASHER-M6 SERRATED SS	82783800A
35	1	LABEL SKI ADJUSTMENT PLATE	83058400A
34	2	TYRAP	09591500A
33	1	WIRE - NYLON COATED S.S.	82915200A
32	1	APPLICATOR ADJ SPACER ASSY	82784600A
31	1	CABLE CLAMP .250 DIA	82659200A
30	2	CABLE CLAMP .187 DIA	82684600A
29	1	LABEL - ETL	82781900A
28	1	AC POWER SWITCH HARNESS	82643800A
27	1	WIRE ASSY - 18 GA WHITE	82644200A
26	1	WIRE ASSY - 18 GA BLACK	82644100A
25	1	HARNESS-DISPLAY BOARD	82651200A
24	1	HARNESS-ENCODER	82644000A
23	1	HARNESS- LABEL TAKEN 8IN	82670300A
22	1	HARNESS-DC POWER	82641600A
21	1	WIRE ASSY - 18 GA GREEN (STEPPER GROUND)	82682000A
20	1	WIRE ASSY - 18 GA GREEN	82644300A
19	2	SCREW-M4 x 30 PAN HEAD PHILLIPS	82715800A
18	4	SCREW-M6 x 20 SOCKET HD CAP STNLS STL	82714200A
17	10"	HOSE APPLICATOR	16118600A
16	1	VALVE ASSEMBLY	82647600A
15	1	APPLICATOR ASSEMBLY	82768800A
14	1	APPICATOR COVER ASSEMBLY	82784500A
13	1	APPLICATOR SKI ASSEMBLY	B82772600A
12	1	ON/OFF LABEL FEED HARNESS	14227700A
11	1	FRAME ASSEMBLY	82771200A
10	1	CENTER PLATE ASSEMBLY	82772400A
9	10	NUT-M4 KEPS	R0519600A
8	1	DATA LABEL SHEILD	14801800A
7	2	BRACKET-APPLICATOR COVER	82767500A
6	1	DOOR LATCH-PRINTER	83021200A
5	1	SPACER - AIR VALVE	82784100A
4	1	DOOR-LEFT	82647200A
3	1	PRINTER DOOR (LABEL SIDE)	83028400A
2	1	LABEL DATA - SERIAL NUMBER	14800000A
1	26	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A
ITEM	QUAN	DESCRIPTION	PART NO.

DayGlo with Applicator

DayGlo With Applicator Parts List

ITEM	QUAN	DESCRIPTION	PART NO.
48	1	LABEL, GROUND	14531400A
47	2	LOCKWASHER, INT.TOOTH,M4, ST.STL.	R0558200A
46	1	WIRE HOLD DOWN	82168100A
45	1	C317 QUALITY CHECKLIST	16134200A
44	1	FORM, CUSTOMER FEEDBACK	A12745800A
43	1	LABEL FORM	A12800700A
42	1	NUT, HEX 5/16-18UNC-2B	R00433050
41	1	HARDWARE KIT	16134100A
40	1	INSERT	16119300A
39	1	CARTON	16119200A
38	2	SCREW-M6X16MM HEX HEAD, SS	82712400A
37	2	CURVED WASHER	82684800A
36	2	LOCK WASHER-M6 SERRATED SS	82783800A
35	1	LABEL SKI ADJUSTMENT PLATE	83058400A
34	2	TYRAP	09591500A
33	1	WIRE - NYLON COATED S.S.	82915200A
32	1	DAYGLOW APPLICATOR ADJ SPACER ASSY	82840400A
31	1	CABLE CLAMP .250 DIA	82659200A
30	2	CABLE CLAMP .187 DIA	82684600A
29	1	LABEL - ETL	82781900A
28	1	AC POWER SWITCH HARNESS	82643800A
27	1	WIRE ASSY - 18 GA WHITE	82644200A
26	1	WIRE ASSY - 18 GA BLACK	82644100A
25	1	HARNESS-DISPLAY BOARD	82651200A
24	1	HARNESS-ENCODER	82644000A
23	1	HARNESS- LABEL TAKEN 8IN	82670300A
22	1	HARNESS-DC POWER	82641600A
21	1	WIRE ASSY - 18 GA GREEN (STEPPER GROUND)	82682000A
20	1	WIRE ASSY - 18 GA GREEN	82644300A
19	2	SCREW-M4 x 30 PAN HEAD PHILLIPS	82715800A
18	4	SCREW-M6 x 20 SOCKET HD CAP STNLS STL	82714200A
17	10"	HOSE APPLICATOR	16118600A
16	1	VALVE ASSEMBLY	82647600A
15	1	DAYGLOW APPLICATOR ASSEMBLY	82840600A
14	1	APPICATOR COVER ASSEMBLY	82784500A
13	1	DAYGLOW APPLICATOR SKI ASSEMBLY	C82840200A
12	1	ON/OFF LABEL FEED HARNESS	14227700A
11	1	FRAME ASSEMBLY, DAYGLO	16177800A
10	1	DAYGLOW CENTER PLATE ASSEMBLY W/APPL.	82840100A
9	10	NUT-M4 KEPS	R0519600A
8	1	DATA LABEL SHIELD	14801800A
7	2	BRACKET-APPLICATOR COVER	82767500A
6	1	DOOR LATCH PRINTER	83021200A
5	1	SPACER - AIR VALVE	82784100A
4	1	DOOR-LEFT	82647200A
3	1	PRINTER DOOR (LABEL SIDE)	83028400A
2	1	LABEL-SERIAL NUMBER	14800000A
1	26	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A
ITEM	QUAN	DESCRIPTION	PART NO.

Without Applicator

LABEL THREADING LABEL

RIGHT HAND SIDE–DOOR SHUT

RIGHT HAND SIDE–DOOR OPEN

REAR VIEW

ETL LABEL

METTLER TOLEDO

Without Applicator
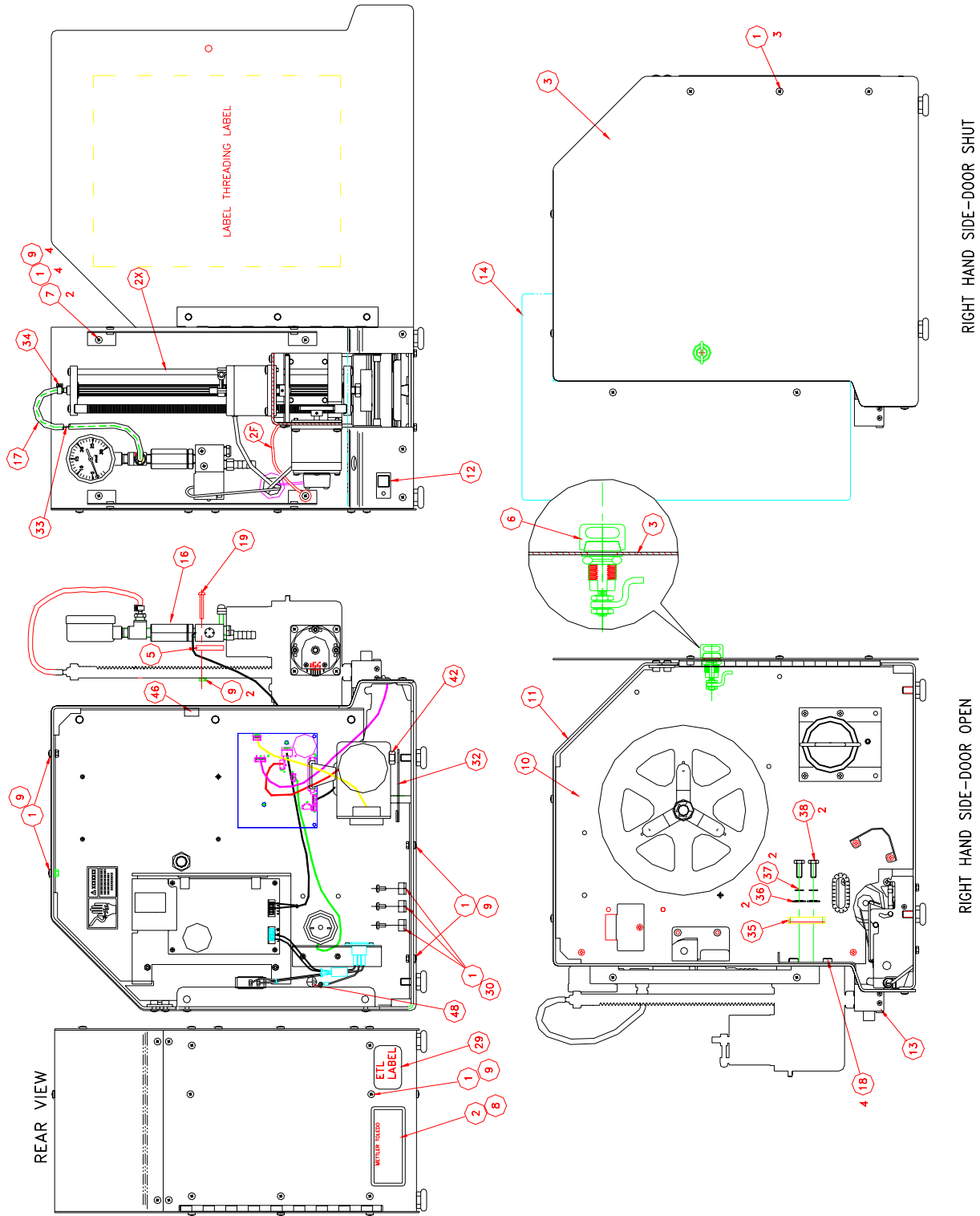
ITEM	QUAN	DESCRIPTION	PART NO.
30	1	LABEL, GROUND	14531400A
29	2	WASHER, INT.TOOTH, M4, ST.STL.	R0558200A
28	1	WIRE HOLD DOWN	82168100A
27	1	C317 QUALITY CHECKLIST	16134200A
26	1	FORM, CUSTOMER FEEDBACK	A12745800A
25	1	LABEL FORM	A12800700A
24	1	HARDWARE KIT	16134100A
23	1	INSERT	16119300A
22	1	CARTON	16119200A
21	1	LABEL METTLER-TOLEDO	82784700A
20	1	CABLE CLAMP - .187 DIA	82684600A
19	1	LABEL - ETL	82781900A
18	1	WIRE ASSY- 18 GA GREEN	82644300A
17	1	CABLE CLAMP - .250 DIA	82659200A
16	1	DATA LABEL SHIELD	14801800A
15	1	DISPLAY BOARD HARNESS	82651200A
14	1	DC POWER HARNESS	82652500A
13	1	AC POWER SWITCH HARNESS	82643800A
12	1	WIRE ASSY - 18 GA WHITE	82644200A
11	1	FRAME ASSEMBLY	82770100A
10	1	CENTER PLATE ASSEMBLY	82771600A
9	8	NUT-M4 KEPS	R0519600A
8	1	LABEL DATA	14800000A
7	1	PORCH ASSEMBLY	82671000A
6	1	DOOR LATCH-PRINTER	83021200A
5	1	WIRE ASSY - 18 GA BLACK	82644100A
4	1	DOOR-LEFT	82647200A
3	1	PRINTER DOOR (LABEL SIDE)	83028400A
2	1	ON/OFF LABEL FEED HARNESS	14227700A
1	15	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A

Center Plate

DayGlo with Applicator

Item	QTY	Description	Part Number	Item	QTY	Description	Part Number
1	1	Printer Divider	A82636200A	14	1	317 Button Cover	82664900A
2	1	Power Supply PCB	15556000A	15	1	Latch Bracket	A83028600A
3	3	Adhesive Wire Hold Down	82168100A	16	3	Standoff	82674400A
4	13	Screw – M3x8 mm PPH	82783300A	17	3.3"	Grommet Continuous Strip	82660100A
5	1	AC Inlet Bracket	82650200A	18	1	Label Guide	82669200A
6	1	AC Power Inlet	82643900A	19	1	Dayglow Supply Reel	82697700A
7	1	Take Up Motor Assembly	82768200A	20	1	Screw, M4x10 PH, SS	82716800A
8	1	Flash Memory PCB	B14432300A	21	8	Screw, M4x12 PH, SS	82715400A
9	1	SIMM 72 Pin DRAM 256x32 Module	14432500A	22			
*10	1	Thermal Printer Engine PCB	15535200A	23	1	Applicator Control Board	G82767800A
11	1	Bumper – PCB Engine	82660000A	24	1	Connector – Term Block	13162500A
				25	1	Hex Bolt – M12 x 35 mm	82839600A
13	1	Switch	11913300A				

* Units with new Printer Board, B16199400A, items 8 and 9 are not used with the new board.
The new B16199400A can be used to replace items 8, 9, and 10. Note: Serial I/O Harness,
16093000A must also be replaced when using the new B16199400A Printer Board in an older printer.

10	1	Printer Board	B16199400A

Standard with Applicator

Item	QTY	Description	Part Number	Item	QTY	Description	Part Number
1	1	Printer Divider	A82636200A	14	1	317 Button Cover	82664900A
2	1	Power Supply PCB	15556000A	15	1	Latch Bracket	A83028600A
3	3	Adhesive Wire Hold Down	82168100A	16	3	Standoff	82674400A
4	13	Screw – M3x8 mm PPH	82783300A	17	3.3"	Grommet Continuous Strip	82660100A
5	1	AC Inlet Bracket	82650200A	18	1	Label Guide	82669200A
6	1	AC Power Inlet	82643900A	19	1	Wheel Assembly Ticket	82768400A
7	1	Take Up Motor Assembly	82768200A	20	1	Screw, M4x10 PH, SS	82716800A
8	1	Flash Memory PCB	B14432300A	21	8	Screw, M4x12 PH, SS	82715400A
9	1	SIMM 72 Pin DRAM 256x32 Module	14432500A	22			
*10	1	Thermal Printer Engine PCB	15535200A	23	1	Applicator Control Board	G82767800A
11	1	Bumper – PCB Engine	82660000A	24	1	Connector – Term Block	13162500A
12							
13	1	Switch	11913300A				

* Units with new Printer Board, B16199400A, items 8 and 9 are not used with the new board.
The new B16199400A can be used to replace items 8, 9, and 10. Note: Serial I/O Harness,
16093000A must also be replaced when using the new B16199400A Printer Board in an older printer.

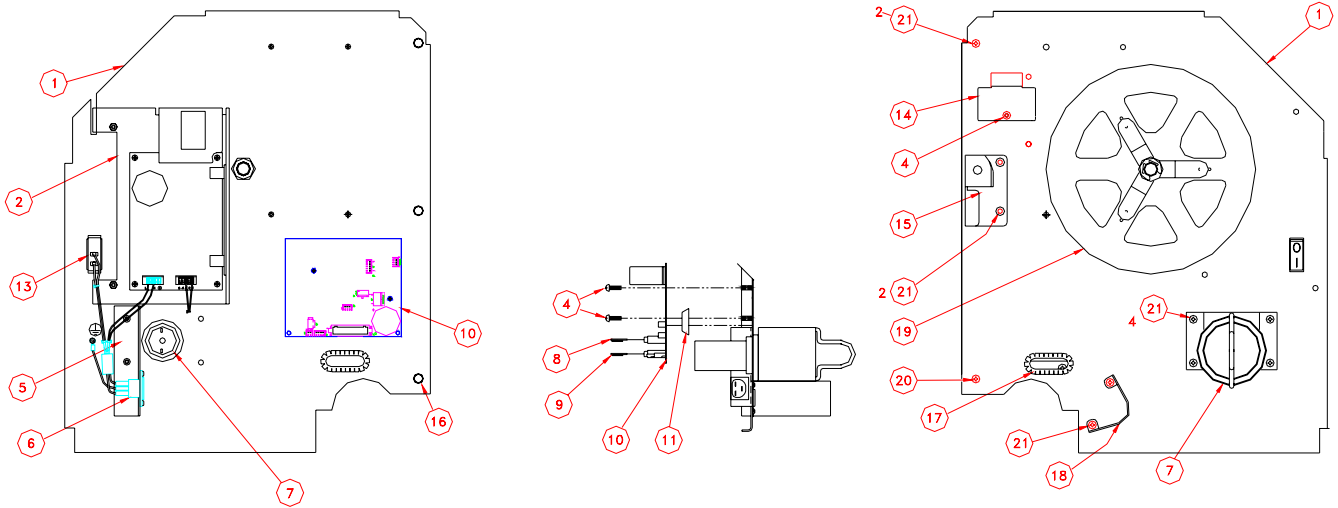| 10	1	Printer Board	B16199400A

Without Applicator

Item	QTY	Description	Part Number	Item	QTY	Description	Part Number
1	1	Printer Divider	A82636200A	14	1	317 Button Cover	82664900A
2	1	Power Supply PCB	15556000A	15	1	Latch Bracket	A83028600A
3	3	Adhesive Wire Hold Down	82168100A	16	3	Standoff	82674400A
4	9	Screw – M3x8 mm PPH	82783300A	17	3.3"	Grommet Continuous Strip	82660100A
5	1	AC Inlet Bracket	82650200A	18	1	Label Guide	82669200A
6	1	AC Power Inlet	82643900A	19	1	Wheel Assembly Ticket	82768400A
7	1	Take Up Motor Assembly	82768200A	20	1	Screw, M4x10 PH, SS	82716800A
8	1	Flash Memory PCB	B14432300A	21	8	Screw, M4x12 PH, SS	82715400A
9	1	SIMM 72 Pin DRAM 256x32 Module	14432500A	22			
*10	1	Thermal Printer Engine PCB	15535200A	23			
11	1	Bumper – PCB Engine	82660000A	24			
12							
13	1	Switch	11913300A				

* Units with new Printer Board, B16199400A, items 8 and 9 are not used with the new board.
The new B16199400A can be used to replace items 8, 9, and 10. Note: Serial I/O Harness, 16093000A must also be replaced when using the new B16199400A Printer Board in an older printer.
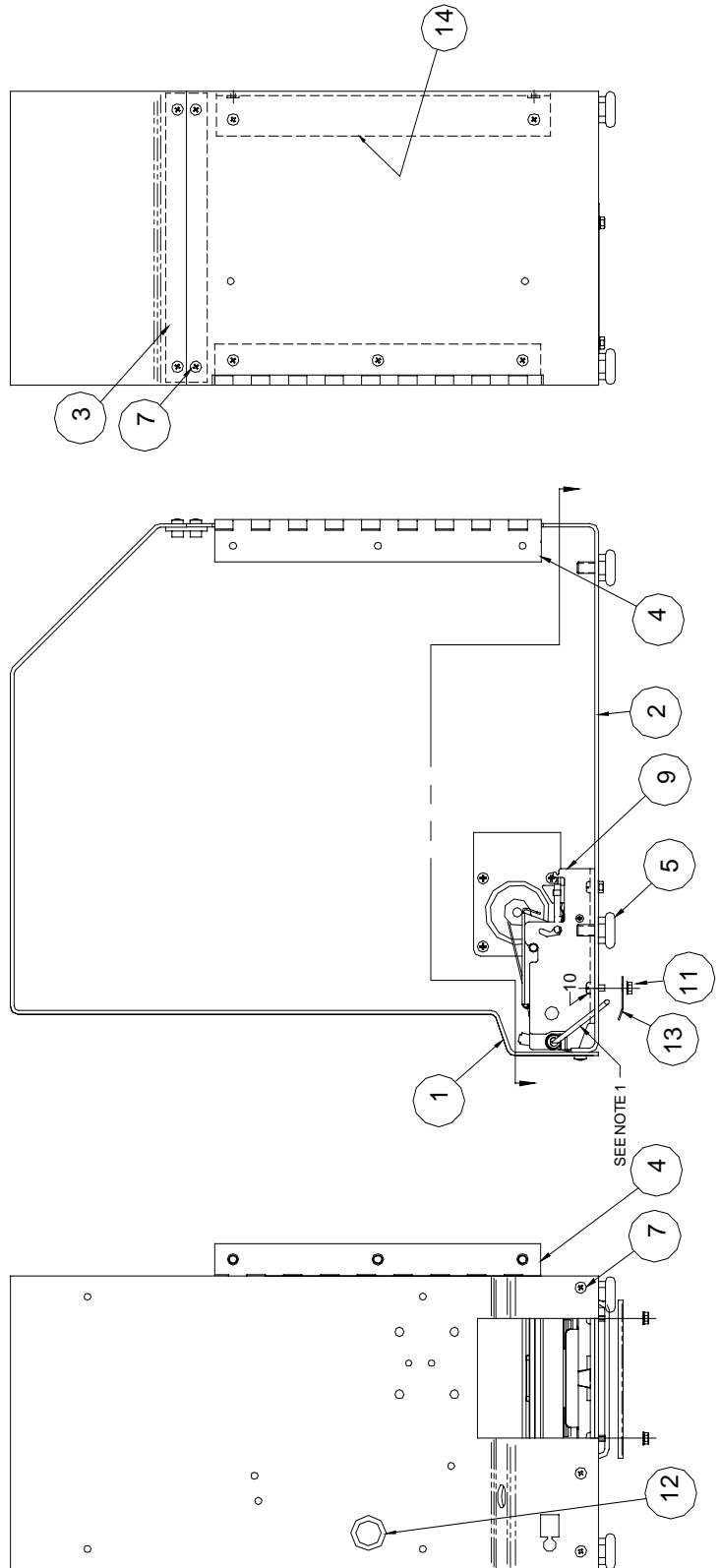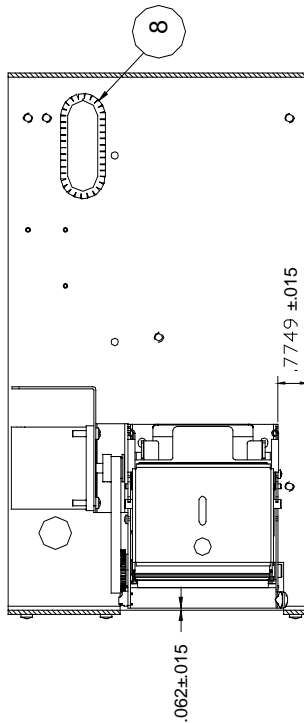
10	1	Printer Board	B16199400A

Frame

DayGlo With Applicator

ITEM	QUAN	DESCRIPTION	PART NO.
14	1	ANGLE BRACKET	83051200A
13	1	WIRE COVER	82816600A
12	1	SNAP BUSHING	82784000A
11	4	NUT-M4 x 0.7 KEPS	R0519600A
10	4	SCREW-M4 x 8 SLOTTED TRUSS HD ST ST	82783200A
9	1	PRINTER ENGINE	A16159900A
8	6"	GROMMET - CONTINUOUS STRIP	16134800A
7	13	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A
6			
5	4	FOOT - 1/2"	82816200A
4	1	HINGE	82666300A
3	1	BRACKET-FRAME	82674700A
2	1	FRAME-PRINTER BOTTOM	A82674600A
1	1	FRAME-PRINTER	82674500A

NOTE 1:
ROUTE LABEL TAKEN EMITTER WIRES BETWEEN PRINTER ENGINE
(ITEM #9) AND WIRE COVER (ITEM #13).

.7749 ±.015

.062±.015

Standard with Applicator

ITEM	QUAN	DESCRIPTION	PART NO.
14	1	ANGLE BRACKET	83051200A
13	1	WIRE COVER	82816600A
12	1	SNAP BUSHING	82784000A
11	4	NUT-M4 x 0.7 KEPS	R0519600A
10	4	SCREW-M4 x 8 SLOTTED TRUSS HD ST ST	82783200A
9	1	PRINTER ENGINE	B14565800A
8	6"	GROMMET - CONTINUOUS STRIP	16134800A
7	13	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A
6			
5	4	FOOT - 1/2"	82816200A
4	1	HINGE	82666300A
3	1	BRACKET-FRAME	82674700A
2	1	FRAME-PRINTER BOTTOM	A82674600A
1	1	FRAME-PRINTER	82674500A

NOTE 1:
ROUTE LABEL TAKEN EMITTER WIRES BETWEEN PRINTER ENGINE
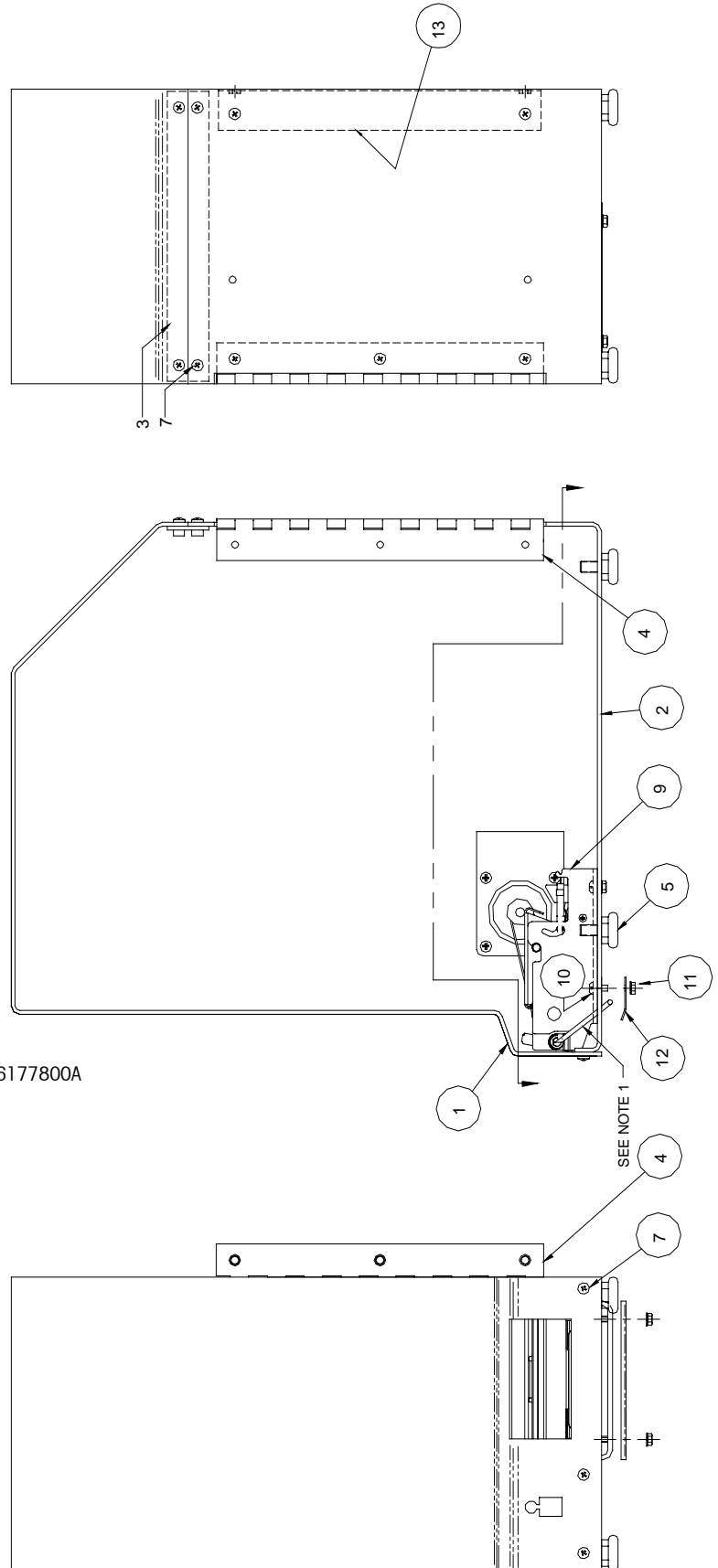(ITEM #9) AND WIRE COVER (ITEM #13).

.7749 ±.015

.062 ±.015

SEE NOTE 1

Without Applicator

ITEM	QUAN	DESCRIPTION	PART NO.
13	1	ANGLE BRACKET	83051200A
12	1	WIRE COVER	82816600A
11	4	NUT-M4 x 0.7 KEPS	R0519600A
10	4	SCREW-M4 x 8 SLOTTED TRUSS HD ST ST	82783200A
9	1	PRINTER ENGINE	B14565800A
8	6"	GROMMET- CONTINUOUS STRIP	16134800A
7	12	SCREW-M4 x 8 PHILLIPS TRUSS HD ST ST	82783000A
6			
5	4	FOOT - 1/2"	82816200A
4	1	HINGE	82666300A
3	1	BRACKET-FRAME	82674700A
2	1	FRAME-PRINTER BOTTOM	A82674600A
1	1	FRAME-PRINTER	82676200A

NOTE 1:
ROUTE LABEL TAKEN SENSOR WIRES BETWEEN PRINTER ENGINE (ITEM #9) AND WIRE COVER (ITEM #12).

16177800A

.062 ±.015   775   ±.015

SEE NOTE 1

Take-Up Motor

317 FRAME

CENTER MEMBER

USE LOCKTITE THREADLOCKER #242 ON THESE FASTENERS

.063±.015
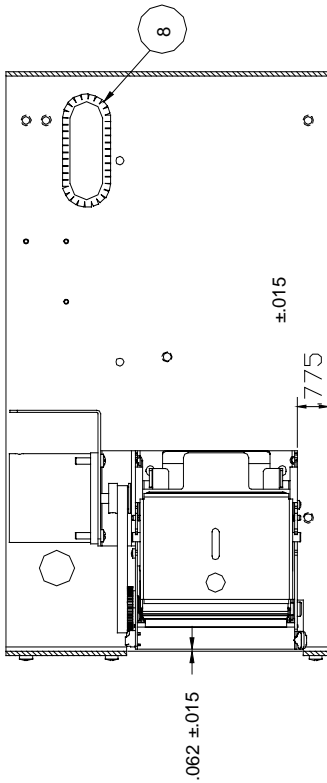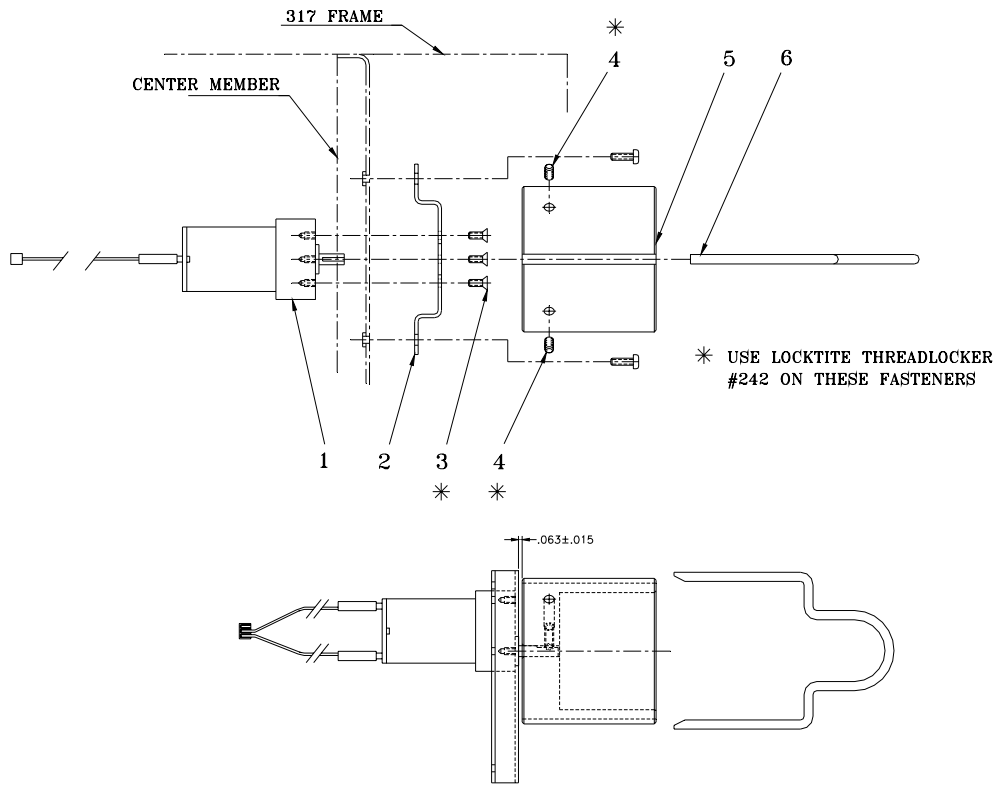
ITEM	QUAN.	DESCRIPTION	PART NUMBER
1	1	MOTOR ASSEMBLY	82688600A
2	1	BRACKET – GEAR MOTOR	82692400A
3	3	SCREW – 4–40 X 1/4" LONG FLAT HEAD	R0277800A
4	2	SCREW – M4 X 5MM LONG SOCKET SET	82783600A
5	1	TAKE UP SPOOL – 2.5 DIA.	82801500A
6	1	TAKE UP ROD – 2.5 DIA.	82801100A

Label Retainer and Door Latch (Metal Latch – Old Style)
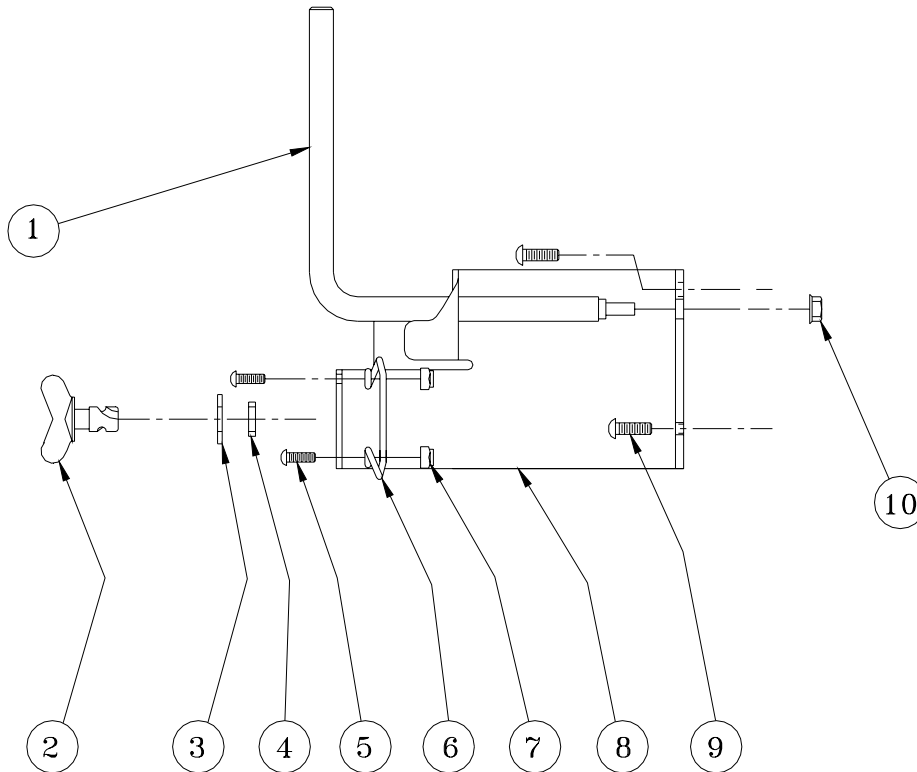
ITEM	QUAN.	DESCRIPTION	PART NUMBER
1	1	LABEL STOP	82665800A
2	1	WING STUD	82910500A
3	1	RETAINING RING 8MM I.D. DIN 471	82706900A
4	1	NYLON WASHER .312 I.D. X .500 O.D.	82910400A
5	2	SCREW M3 X 10MM PHILLIPS HEAD	82714900A
6	1	LATCH RECEPTICAL	A82671700A
7	2	LOCK NUT M3 NYLON INSULATED	82818400A
8	1	BRACKET – LABEL STOP	82910900A
9	2	SCREW – M4 X 12MM PHILLIPS PAN HEAD	82715400A
10	1	NUT – M4 HEX KEPS	82783100A

Door Latch (Plastic Latch – Current Style)

2

4
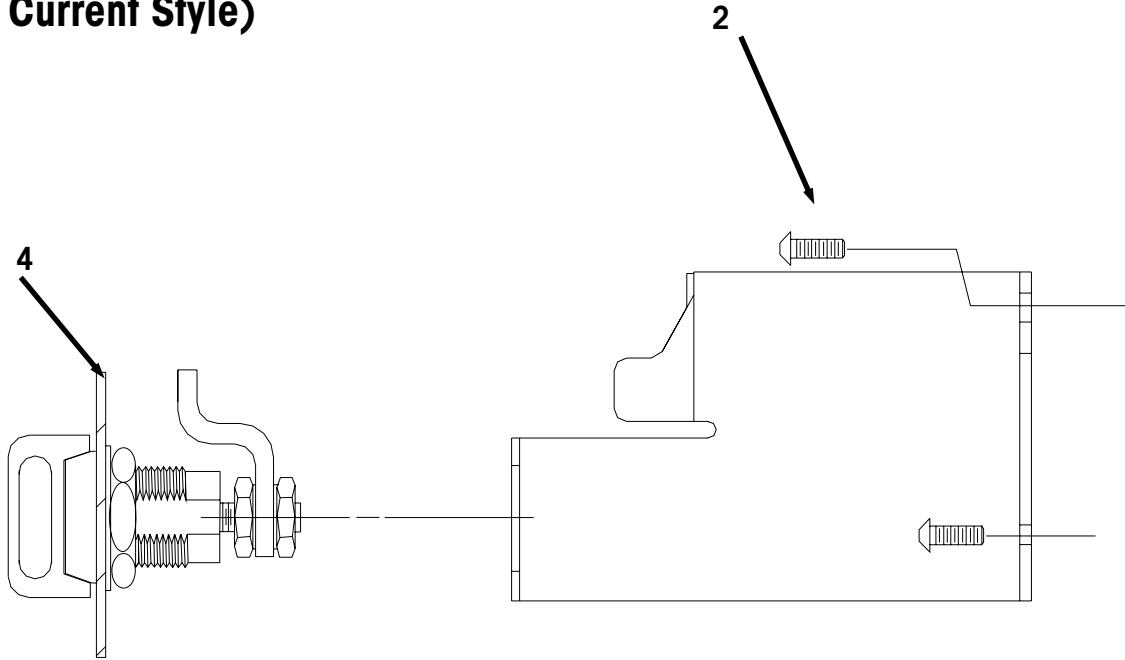
Item	Part Number	Description	Qty
1			
2	82715400A	Screw, M4 x 12mm, Phillips Head	2
3			
4	83021200A	Door Latch Assembly	1

Ticket Wheel
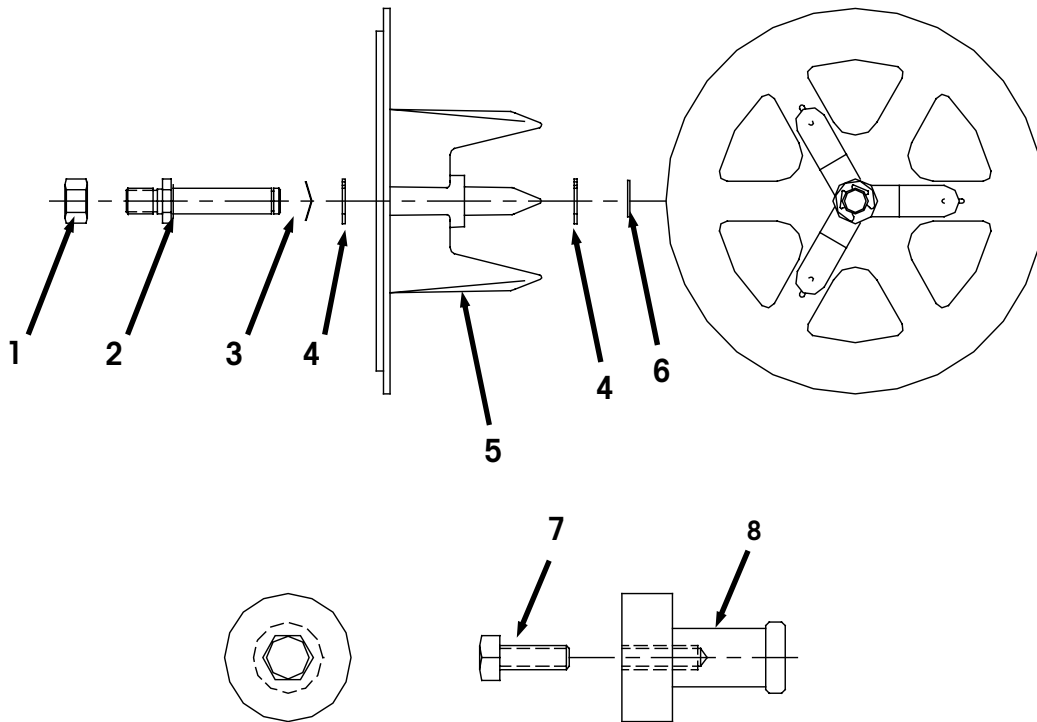
Item	Part Number	Description	Qty
1	82708800A	Nut, M12 x 1.75 Hex	1
2	82642100A	Shaft	1
3	82674200A	Spring Washer	1
4	82646200A	Thrust Washer	2
5	11845900A	Ticket Wheel, Standard	1
	16154700A	Ticket Wheel, 2.75" Core	
6	82646300A	E-Ring	1
7	82839600A	Bolt, M12 x 35 mm Hex Head	1
8	82697700A	Ticket Wheel, DayGlo	1

Applicator Ski

ITEM	QUAN.	DESCRIPTION	PART NUMBER
1	1	APPLICATOR SKI ASSEMBLY DAYGLO (NOT SHOWN)	C82840200A
1	1	APPLICATOR SKI ASSEMBLY - STANDARD	B82772600A
2	1	LABEL SKI ADJUSTMENT PLATE	83058400A
3	2	LOCK WASHER - M6 SERRATED SS	82783800A
4	2	SPRING WASHER - CURVED	82684800A
5	2	SCREW - M6 X 16MM HEX HEAD STAINLESS STEEL	82712400A
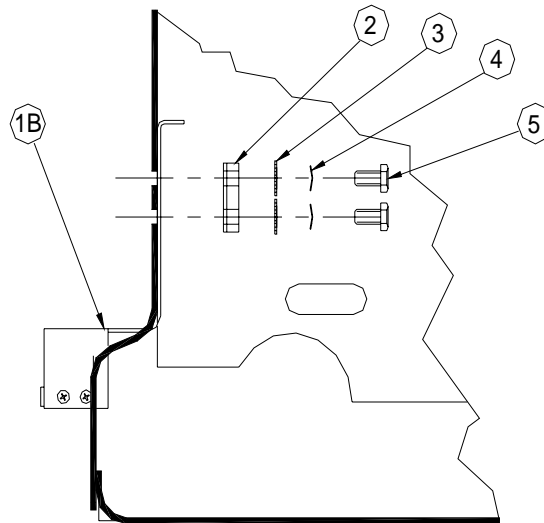
Standard Ski Assembly   Dayglo Ski Assembly

ITEM	QUAN.	DESCRIPTION	PART NUMBER
1	1	LABEL SKI BRACKET - DAYGLO	83068400A
1A	1	LABEL SKI BRACKET - STANDARD	83056800A
2	4	SCREW - M3 X 8MM PHILLIPS PAN HEAD	82783300A
3	1	LABEL SKI - DAYGLO	B82766900A
3A	2	LABEL SKI - STANDARD	A82781300A

Printer Engine W/15535200A Printer Board

SYM	QTY	PART NUMBER	DESCRIPTION
			CONSISTS OF
1A	1	12462200A	GROMMET .12 ID
1B	1	16272300A	ASSY, OPTIC IC/CAP
1C	1	B14180600A	ASSEMBLY, PRINTHEAD
1D	1	A14203500A	BRACKET, PRINTHEAD MTG.
1E	1	14572200A	GUIDE, UPPER
1F	1	14203800A	BRACKET ASSY, FORCE
1G	1	A14211500A	PLATEN
1H	1	A14211600A	BEARING, LEFT PLATEN
1J	1	A14211700A	BEARING, RIGHT PLATEN
1K	2	14212000A	SPRING, EXTENSION
1L	1	14212300A	PULLEY, PLATEN
1M	1	14274800A	CLIP, 1/2 U
1N	1	14213000A	GUIDE, RIGHT
1P	1	14572300A	GUIDE, LEFT
1R	1	14247900A	BUTTON
1S	1	14262600A	SCREW, PRINTHEAD MTG.
1T	1	14270900A	PLATE, COVER
1U	1	14286000A	SHAFT, SPRING
1V	1	14306900A	GEAR, RACK
1W	1	14599700A	HARNESS, PRINTHEAD
1X	1	14550500A	STEPPER MOTOR ASSEMBLY
1Y	1	B14199700A	HARNESS, GAP SENSOR
1Z	1	14550700A	HARNESS, EMITTER, LABEL
2A	1	14550800A	HARNESS, RECEIVER, LABEL
2B	1	A14565600A	FRAME ASSEMBLY
2C	1	A14565700A	GUIDE, LOWER
2D	1	A14565900A	GUIDE, LINER
2E	1	A14566000A	BRACKET, STEPPER MOTOR MTG.
2F	1	14212400A	BELT, TIMING
2G	5	R0379300A	SCREW, M3x4 TRUSS HD.
2G	3	R0379300A	SCREW, M3x4 TRUSS HD.
2H	3	R0253900A	WASHER, FLAT
2J	4	R0515100A	SCREW, M4x16 PH PAN HD.
2L	1	12801200A	LABEL, CAUTION HOT
2M	1	14625000A	CLIP, SENSOR
2N	1	R0521700A	SCREW, M2.5x5 PH PAN HD.
2P	1	13134200A	LABEL
2Q	1	14116600A	HARNESS, SERIAL I/O 0317
	SUFF	11825100A	LUBRICANT, FOOD GRADE
	REF	14930800A	FIXTURE
	SUFF	15546000A	LUBRICANT,RUBBER/PLASTIC
2R	2	15167200A	SCREW,4-40
2S	2	R0330500A	NUT,4-40
2T	2	R0254700A	LOCKWASHER,4-40

Printer Engine W/B16199400A Printer Board

CONSISTS OF			
SYM	QTY	PART NUMBER	DESCRIPTION
1A	1	12462200A	GROMMET .12 ID
1B	1	16272300A	ASSY, OPTIC IC/CAP
1C	1	B14180600A	ASSEMBLY, PRINTHEAD
1D	1	A14203500A	BRACKET, PRINTHEAD MTG.
1E	1	14572200A	GUIDE, UPPER
1F	1	14203800A	BRACKET ASSY, FORCE
1G	1	A14211500A	PLATEN
1H	1	A14211600A	BEARING, LEFT PLATEN
1J	1	A14211700A	BEARING, RIGHT PLATEN
1K	2	14212000A	SPRING, EXTENSION
1L	1	14212300A	PULLEY, PLATEN
1M	1	14274800A	CLIP, 1/2 U
1N	1	14213000A	GUIDE, RIGHT
1P	1	14572300A	GUIDE, LEFT
1R	1	14247900A	BUTTON
1S	1	14262600A	SCREW, PRINTHEAD MTG.
1T	1	14270900A	PLATE, COVER
1U	1	14286000A	SHAFT, SPRING
1V	1	14306900A	GEAR, RACK
1W	1	14599700A	HARNESS, PRINTHEAD
1X	1	16198800A	STEPPER MOTOR ASSEMBLY
1Y	1	B14199700A	HARNESS, GAP SENSOR
1Z	1	14550700A	HARNESS, EMITTER, LABEL
2A	1	14550800A	HARNESS, RECEIVER, LABEL
2B	1	A14565600A	FRAME ASSEMBLY
2C	1	A14565700A	GUIDE, LOWER
2D	1	A14565900A	GUIDE, LINER
2E	1	A14566000A	BRACKET, STEPPER MOTOR MTG.
2F	1	14212400A	BELT, TIMING
2G	5	R0379300A	SCREW, M3x4 TRUSS HD.
2G	3	R0379300A	SCREW, M3x4 TRUSS HD.
2H	3	R0253900A	WASHER, FLAT
2J	4	R0515100A	SCREW, M4x16 PH PAN HD.
2L	1	12801200A	LABEL, CAUTION HOT
2M	1	14625000A	CLIP, SENSOR
2N	1	R0521700A	SCREW, M2.5x5 PH PAN HD.
2P	1	13134200A	LABEL
2Q	1	16093000A	HARNESS, SERIAL I/O 0317
	SUFF	11825100A	LUBRICANT, FOOD GRADE
	REF	14930800A	FIXTURE
	SUFF	15546000A	LUBRICANT,RUBBER/PLASTIC
2R	2	15167200A	SCREW,4-40
2S	2	R0330500A	NUT,4-40
2T	2	R0254700A	LOCKWASHER,4-40

Applicator Assembly
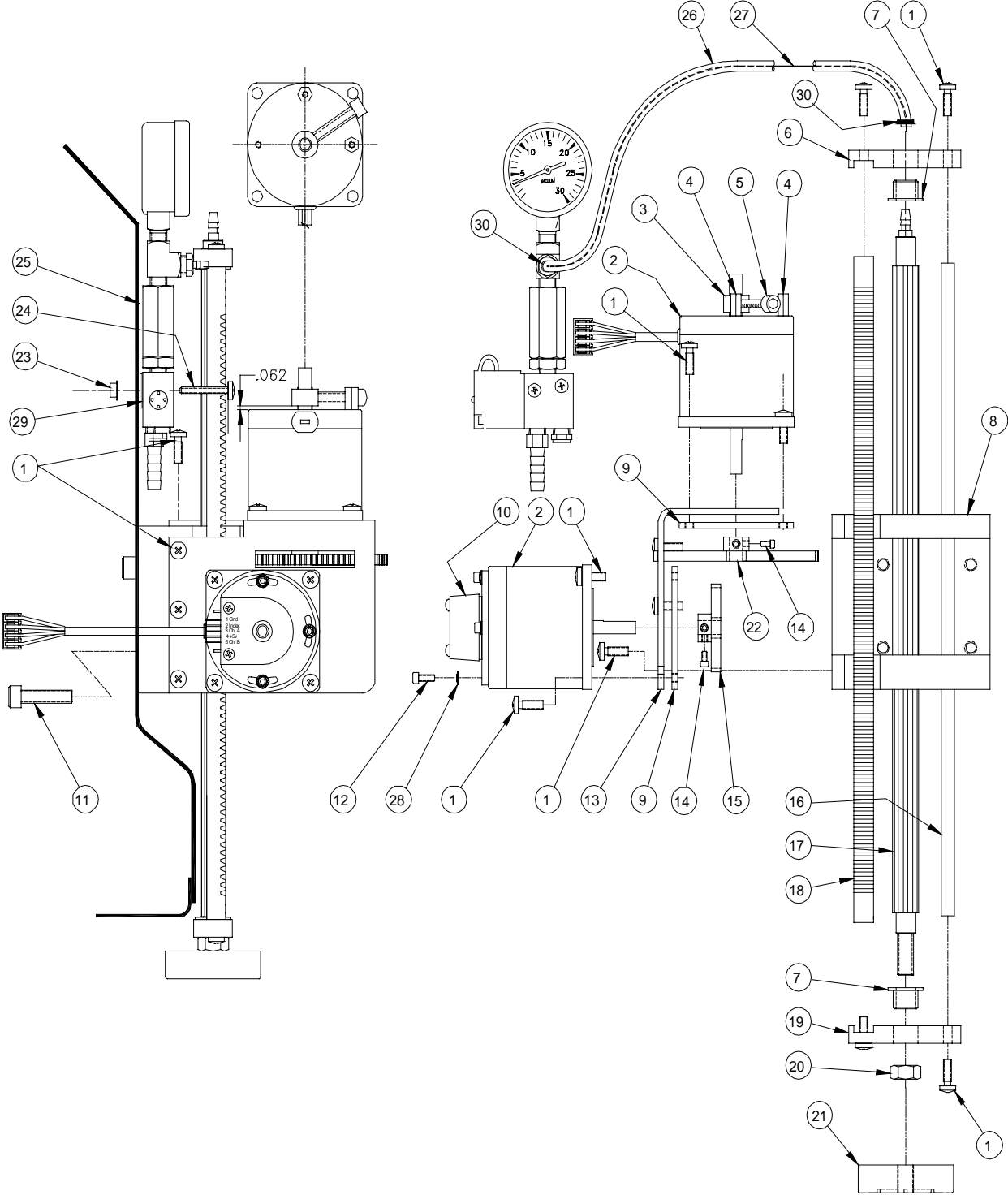
ITEM	QTY	DESCRIPTION	PART NUMBER
1	16	SCREW - M4 X 12MM PHILLIPS PAN HEAD ST.ST.	82715400A
2	2	MOTOR ASSEMBLY	82641700A
3	1	COLLAR - 1/4" SET ST. ST.	81895700A
4	2	STANDOFF	A82805900A
5	1	SCREW - #10-32 X 1" SOCKET HEAD	R0271600A
6	1	BRACKET - TOP PINION MOUNTING	82636400A
7	2	BEARING - FLANGE	82640100A
8	1	BASE - APPLICATOR	82637700A
9	2	PLATE - APPLICATOR NUT	82672300A
10	1	ENCODER - OPTICAL	82642600A
11	4	SCREW - M6 X 20MM SOCKET HEAD CAP ST. ST.	82714200A
12	3	SCREW 4-40 X 5/16" SOCKET HEAD CAP	82914500A
13	1	MOUNT - APPLICATOR STEPPER	82677600A
14	4	SCREW - M4 X 8MM SOCKET HEAD CAP	82713100A
15	1	GEAR - 36 TOOTH SPUR	82641400A
16	1	ROD - APPLICATOR	82670100A
17	1	WIRE ASSEMBLY - PINION	B82807700A
18	1	RACK - GEAR	82632300A
19	1	BRACKET - BOTTOM PINION MOUNTING	82669300A
20	1	NUT - 8MM ST. ST.	82784200A
21	1	HEAD - APPLICATOR (STANDARD)	82687400A
22	1	GEAR - 100 TOOTH SPUR	82641500A
23	2	NUT - M4 X 0.7 KEPS	RO519600A
24	2	SCREW - M4 X 30MM PHILLIPS PAN HEAD	82715800A
25	1	SOLENOID VALVE ASSEMBLY	82647600A
26	10"	HOSE - APPLICATOR	16118600A
27	1	WIRE - NYLON COATED ST.ST.	82915200A
28	3	#4 LOCK WASHER	R0167900A
29	1	SPACER, VALVE	82784100A
30	2	CABLE TIE, HOSE TO FITTING	09591500A

DayGlo Applicator Assembly

82840600A

ITEM	QUAN.	DESCRIPTION	PART NUMBER
1	14	SCREW - M4 X 12MM PHILLIPS PAN HEAD ST.ST.	82715400A
2	2	MOTOR ASSEMBLY	82641700A
3	1	COLLAR - 1/4" SET ST. ST.	81895700A
4	2	STANDOFF	A82805900A
5	1	SCREW - #10-32 X 1" SOCKET HEAD	R0271600A
6	1	BRACKET - TOP PINION MOUNTING	82766300A
7	2	BEARING - FLANGE	82640100A
8	1	BASE - APPLICATOR	82677500A
9	2	PLATE - APPLICATOR NUT	82672300A
10	1	ENCODER - OPTICAL	82642600A
11	4	SCREW - M6 X 20MM SOCKET HEAD CAP ST. ST.	82714200A
12	3	SCREW 4-40 X 5/16 SOCKET HEAD CAP	82914500A
13	1	MOUNT - APPLICATOR STEPPER	82677600A
14	4	SCREW - M4 X 8MM SOCKET HEAD CAP	82713100A
15	1	GEAR - 36 TOOTH SPUR	82641400A
16	1	WIRE ASSEMBLY - PINION	B82807700A
17	1	RACK - GEAR	82632300A
18	1	BRACKET - BOTTOM PINION MOUNTING	82766400A
19	1	NUT - 8MM ST. ST.	82784200A
20	1	HEAD - APPLICATOR (DAYGLO)	82677700A
21	1	GEAR - 100 TOOTH SPUR	82641500A
22	2	NUT - M4 X 0.7 KEPS	RO519600A
23	2	SCREW - M4 X 30MM PHILLIPS PAN HEAD	82715800A
24	1	SOLENOID VALVE ASSEMBLY	82647600A
25	10"	HOSE - APPLICATOR	16118600A
26	1	WIRE - NYLON COATED ST.ST.	82915200A
27	3	#4 LOCK WASHER	R0167900A
28	1	SPACER, VALVE	82784100A
29	2	CABLE TIE, HOSE	09591500A