Model
705
Labeler
Service Manual

B14882100A
(4/01).00

METTLER TOLEDO®

Customer Feedback

Attention: Retail Quality Manager - MTWR

If you have a problem with one of our products or publications, or just a suggestion on how we can serve you better, please fill out this form and send it to the address on the opposite side of this page (U.S. postage paid), or fax it to us at **(614) 438-4355**. Your feedback will help us to improve product performance, quality, and service.

Part / Product Name:	
Part / Model Number:	**Date:**
Provided By:	
Customer Name:	
Address:	
Phone Number:	**Fax Number:**

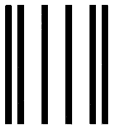
Your comments:

Do not write in space below. For METTLER TOLEDO use only. Response (if appropriate) and corrective action taken.

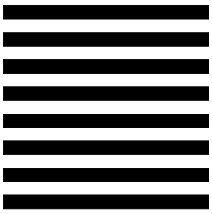
METTLER TOLEDO Model 705 Service Manual B14882100A 4/01

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240

FOLD THIS FLAP FIRST



NO POSTAGE
NECESSARY IF
MAILED IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 414 COLUMBUS, OH

POSTAGE WILL BE PAID BY ADDRESSEE

Mettler-Toledo, Inc.
Retail Quality Manager - MTWR
P.O. Box 1705
Columbus, OH 43216
USA

Please seal with tape.

Training

This publication is provided as a guide for individuals who have received Technical Training in servicing the METTLER TOLEDO product. Information regarding METTLER TOLEDO Technical Training may be obtained by calling (614) 438-4940 or writing to:

METTLER TOLEDO, Training Dept., 1900 Polaris Parkway, Columbus, Ohio 43240

FCC Notice

This device complies with Part 15 of the FCC Rules and the Radio Interference Requirements of the Canadian Department of Communications. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Publication Revision History

Part Number	Date	Revisions
A14882100A (.01)	6/00	Updated format and addresses
B14882100A	4/01	Updated with latest changes, add new softswitch setup and Mega/Max installation.

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

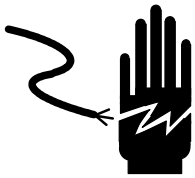
FOLLOW these instructions carefully.

SAVE this manual for future reference.

DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

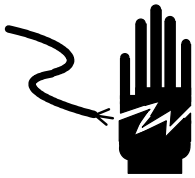
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.



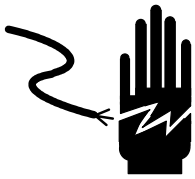
WARNING

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.

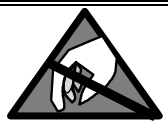


WARNING

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.

CONTENTS

1 General Description

Introduction

The Model 705 Labeler automatically indexes and positions trays for weight/price and DayGlo label application on the same unit. Microprocessor controlled stepper drive-motors are used for positioning accuracy and reliability.

Figure 1-2 shows the system configuration of the Model 705 Labeler, 645 Wrapper, Prepack Controller, and 317 Printers.

Overview

The Model 705 Labeler utilizes three photoeyes, three DC stepper motors, one AC gear motor, and one AC double-head vacuum pump. The two 317 Printers (Price and DayGlo) and the 8361 Controller are powered through the Model 705 Labeler, but wired separately, so the Model 705 Labeler can be powered down and the 317 Printers and the 8361 Controller will still operate. Figure 1-1 shows the major components on the Model 705 Labeler.

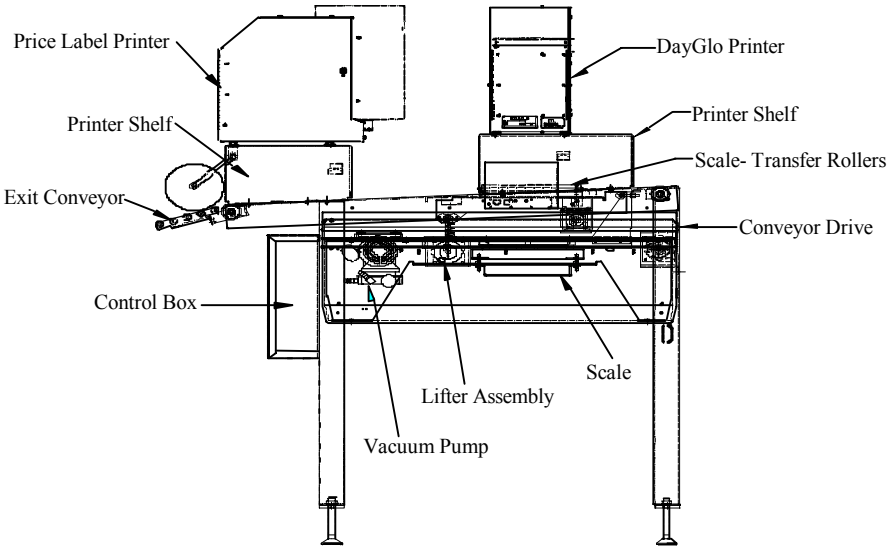


Figure 1-1 Model 705 Labeler Components

The Model 705 Labeler utilizes a software setup and diagnostic feature that can be reconfigured and checked on the Model 705 Control PCB. The controls can be set up for specific applications and can test all the functional hardware. An error log is recorded and can be printed with the 8361 Controller and the 317 Price Label Printer.

Photoeyes

The Model 705 Labeler uses three +24V photoeyes to control its operation. The function of these photoeyes is:

Photoeye #1 = Infeed Photoeye. When the leading edge of the package crosses this photoeye the infeed conveyor and the vacuum pump are turned on.

Photoeye #2 = Scale Transfer Photoeye. This photoeye senses the leading and trailing edge of the package for placement of the DayGlo label, and to drive the package against the package stop. If the DayGlo label printer is disabled or not installed then the package will not stop for placement of a label.

Photoeye #3 = Conveyor Photoeye. This photoeye senses the leading and trailing edge of the package to position it for a price label. The placement depends on the following software settings in the Model 705 Control:

F4 - Leading Edge Stop Position

F5 - Trailing Edge Stop Position

F6 - Label Placement.

Stepper Motors

The Model 705 Labeler is equipped with three DC stepper motors. The functions of these stepper motors are as follows:

Transfer Stepper Motor - conveys the package to the DayGlo label application position (if DayGlo printer is used), and drives the package against the package stop.

Lifter Stepper Motor - lowers the scale rollers for the package to be discharged from the scale and raises the rollers for the next package.

Conveyor Stepper Motor - conveys the package to the price label application position and conveys the package off the labeler.

Miscellaneous

A three-roller conveyor at the infeed to the Model 705 Labeler provides controlled transfer of packages from the wrapper. The first roller is free wheeling. The second and third rollers are powered by an AC gear motor. The conveyor is turned on when a package is sensed by the first photoeye and left on until a package has not been sensed for 10 seconds.

Each roller on the scale-transfer conveyor is driven independently from a common drive shaft powered by a stepper motor.

Vacuum is provided to the DayGlo and price label applicators independently from a double-head pump.

A five-roller gravity conveyor at the discharge end of the labeler is used to guide packages into a roto-tub or onto an accumulation table.

A foam rubber wheel, located above the five-roller gravity conveyor is used to smooth labels on the packages.

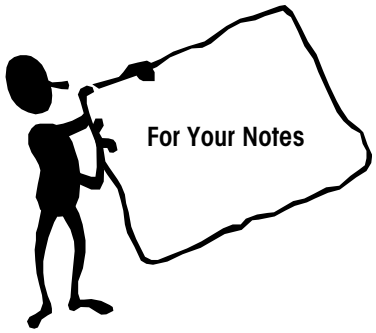
Peripherals

Two printing positions are available on the Model 705 Labeler:

1. **Price Label Printer with Applicator (317-2001-000)**
   - Primary Label Printer
   - Located above the exit conveyor
   - Labels are applied at one of the four corners of the package, approximately one inch from the outer edge (depending on the setup).
   - Label positioning from one edge is accomplished by the physical position of the scale bumper and the print head location.
   - Packages are positioned and straightened by driving the package into the scale bumper. The distance traveled is controlled by measuring the package using the scale transfer photoeye (PE #2). The second edge is located by using the conveyor photoeye (PE #3) to locate the leading or trailing edge of the package and driving an additional given number of steps to the applicator location.

2. **DayGlo Printer with Applicator (317-3001-000)**
   - Optional Secondary Label Printer
   - Located above the scale conveyor
   - Labels are applied to the package centerline before the package is stopped on the scale to be weighed.
   - The label position along the centerline is determined by stopping the microprocessor-controlled stepper-drive motor a given number of steps after the scale transfer photoeye (PE #2) has been cleared.

The Model 705 Labeler comes equipped with a standard 50 lb capacity 8270-2000 scale fitted with conveyor rollers and a lifting device. The scale base is bolted rigidly to the Model 705 Labeler frame.


For Your Notes

2 Specifications

Factory Numbers

The Factory order numbers for the Model 705 Labeler are as follows:

705-ABCD

A = 0 = 705 for Fully Automatic System

B = Not currently used

C = Not currently used

D = 1 = 317 Label Printer

2 = 317 Label Printer and 317 DayGlo Printer

Agency Approval

Approved to the Automatic Weighing Systems code by the National Type Evaluation Program (NTEP).

ETL Approved

Environmental Requirements

The Model 705 Labeler operating range is +5° to +35°C (+41° to +95°F) at 10 to 95% relative humidity, non-condensing. The shipping and storage temperature range is 0° to +66°C (+32° to +150°F) at 10 to 95% relative humidity, non-condensing. The labeler is designed for use in prepackaging backroom environments. This unit is not intended for wash-down operation, nor for operation in environments of extreme dust, heat, cold, or humidity. The integral control box is designed to prevent moisture from dripping onto the controls. No NEMA rating applies.

Product Specifications

Dimensional Information

The Model 705 Labeler occupies approximately 9.5 square feet of space. The complete system of Model 705 Labeler, 645 Solo Plus Wrapper, Prepack Controller, 8270 Scale, and 317 Printers require less than 22 square feet of space.

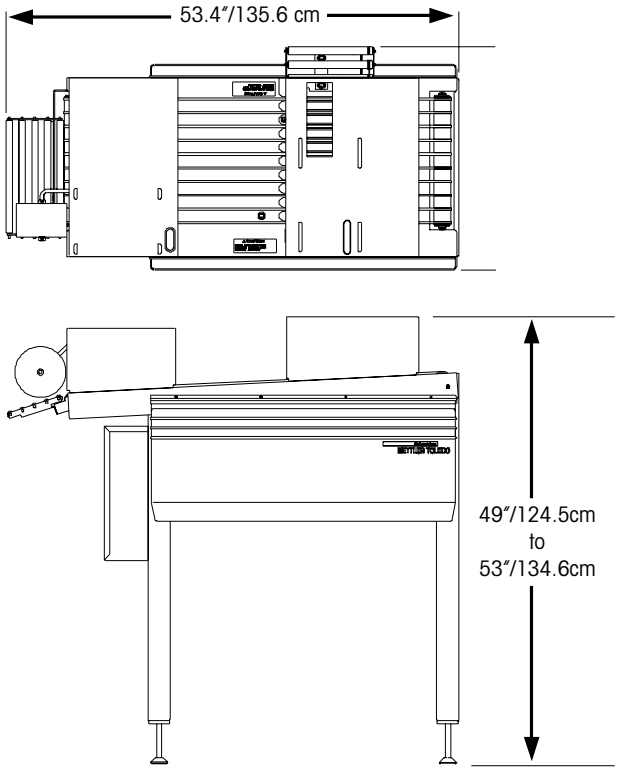


Figure 2-1: Dimensional Views

Packs/Minute

The maximum package rate is 22 packs per minute to match the 645 Solo Plus or the 645 Solo XL wrappers.

Maximum Tray Size

The maximum tray size is 15-3/4 in. Lg. x 10-5/8 in. W. x 5-1/2 in. H.

Minimum Tray Size

The minimum tray size is 4-3/4 in. Lg. x 4 in. W. x 3/8 in. H.

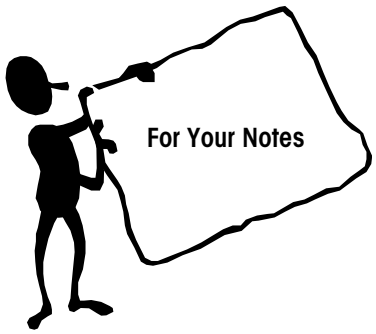
Power Requirements

The Model 705 Labeler requires 115 VAC, 60 Hz., single phase power at 0.5 kVA, 5 AMP nominal to operate. The circuit must be well regulated, transient free, dedicated, and properly grounded.

The Model 705 Control Board and stepper motors operate at 48 VDC. A 115 - 48 volt universal transformer is used. An optional transformer assembly (925-0374-000) is available for 115/220 VAC, 50 Hz., and 230 VAC, 60 Hz., operation.

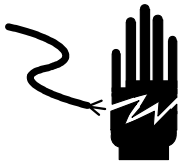
Physical Construction

The Model 705 Labeler maintains a high quality appearance due to the combination of brushed stainless steel support structure and stylish ABS side covers. The components were selected to resist corrosion.


For Your Notes

3 Safety Features and Precautions

Cleaning Precautions



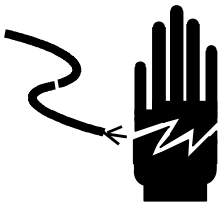
WARNING

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

Before cleaning or servicing this unit, disconnect AC power by turning off the power switch on the side of the machine to the left of the control box and unplugging the AC line cord from the outlet. Failure to observe these precautions could result in bodily harm as the machine may operate unexpectedly. Unplugging the AC line cord for the 705 Labeler will remove power from the 317 Printer(s) and the 8361 Controller.

General Precautions

Do not allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

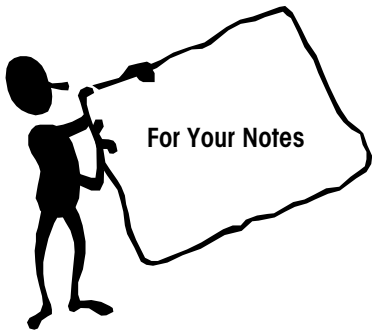


WARNING

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.

CAUTION

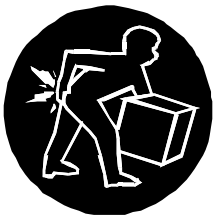
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.


For Your Notes

4 Setup and Operation

Unpacking

Remove the shipping crate from the Model 705 Labeler and carefully inspect for any damage. Two shipping holes are provided at the bottom of each leg next to the levelers for mounting the Model 705 Labeler to a pallet. Unbolt the labeler from the pallet and place it onto the floor.



⚠ WARNING

Use extreme caution when lifting and moving the labeler to the desired location. Do not attempt to lift and move the labeler by yourself. Physical injury or damage to the equipment could occur.

The Model 705 Labeler is shipped with the 8270-2000 Scale installed. The printers and printer shelves are shipped separately in boxes on the pallet. Remove the printer(s) from the box and carefully inspect them for any damage before installation.

All the necessary cabling is installed at the factory. The Model 317 Printer(s) and the Model 8361 Controller need to be installed and connected in the field.

Installation with the Model 645 Wrapper

To install the Model 705 Labeler with the Model 645 Solo Plus or Solo XL Wrapper perform the following steps:

- First move the Model 645 Wrapper to the operating location.
- Level and adjust the Model 645 Wrapper height per the Model 645 Service Manual.
- Remove the two ABS side covers from the sealing belt support on the Wrapper and discard the mounting screws.
- Assemble the two side braces included in the connector bracket KOP and the ABS side covers on the sealing belt support using the four (4) M5 X 16 Phillips-Head capscrews provided. The braces extend out 3 3/8 in. from the sealing belt support on the Solo Plus. The braces extend out 7 1/8 in. from the sealing belt support on the Solo XL (See Figure 4-1).
- Position the Model 705 Labeler so the infeed photoeye is aligned in the center of the discharge sealing belt of the Model 645 Wrapper (See Figure 4-1).
- Attach the Model 705 Labeler to the Model 645 Wrapper by inserting the retaining bar included with the connector bracket KOP through the side braces and the slotted holes in the infeed bracket of the Model 705 Labeler. Secure with the set collars provided (See Figure 4-1).

- Loosen the lock nuts on the Model 705 Labeler adjustable leveling feet with a 15/16 in. Wrench (See Figure 4-2).
- Adjust the height of the Model 705 Labeler by turning the leveling feet using a 1/2 in. open-end wrench in the flattened portion at the bottom of the levelers. The Labeler infeed conveyor height should be 1/16 in. - 1/8 in. below the discharge sealing belt of the Model 645 Wrapper.
- With the Model 705 Labeler raised to the proper height, adjust the leveling feet until the bubble level on the scale lifter platform indicates level and tighten the locking nuts on the leveling feet.

Note: On some units the 25 pin D-connector shell must be removed to route the cable. Re-install the shell after routing.

- Route the Model 705 interface cable and the cables for the Model 8361 controller through the holes in the end frames of the 645 Wrapper.
- Connect the Model 705 interface cable to the 25 pin connector of the Model 645 Wrapper (see Figure 4-3).

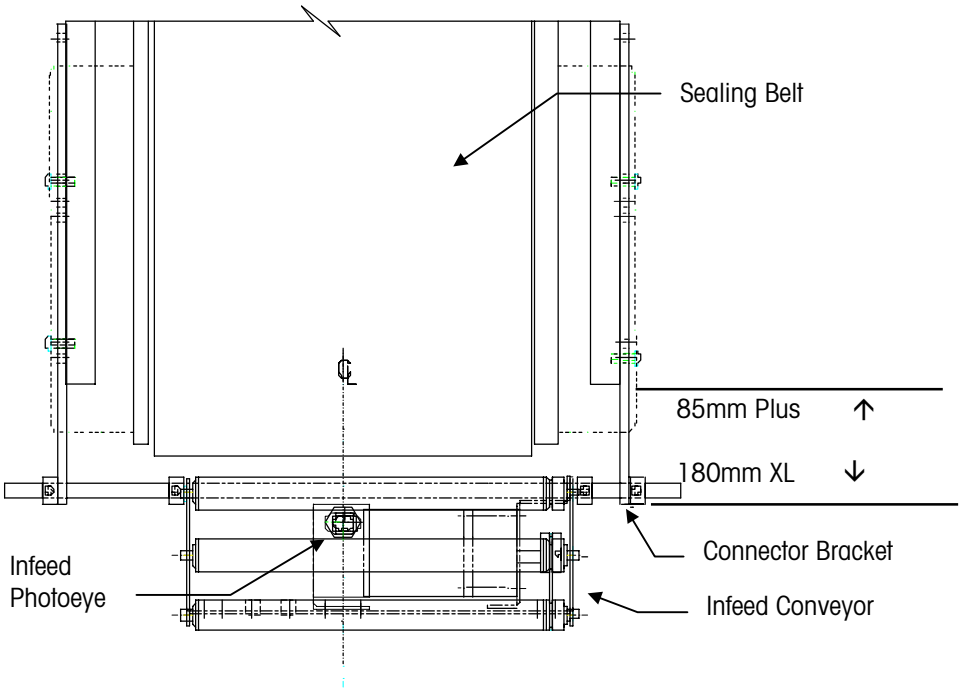


Figure 4-1: Model 645 Wrapper/Model 705 Labeler Connection

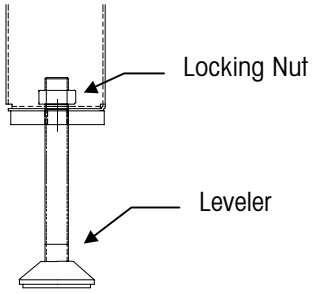


Figure 4-2: Model 705 Labeler Leveler

Note: Interface cable not used or supplied with the semi-automatic systems.

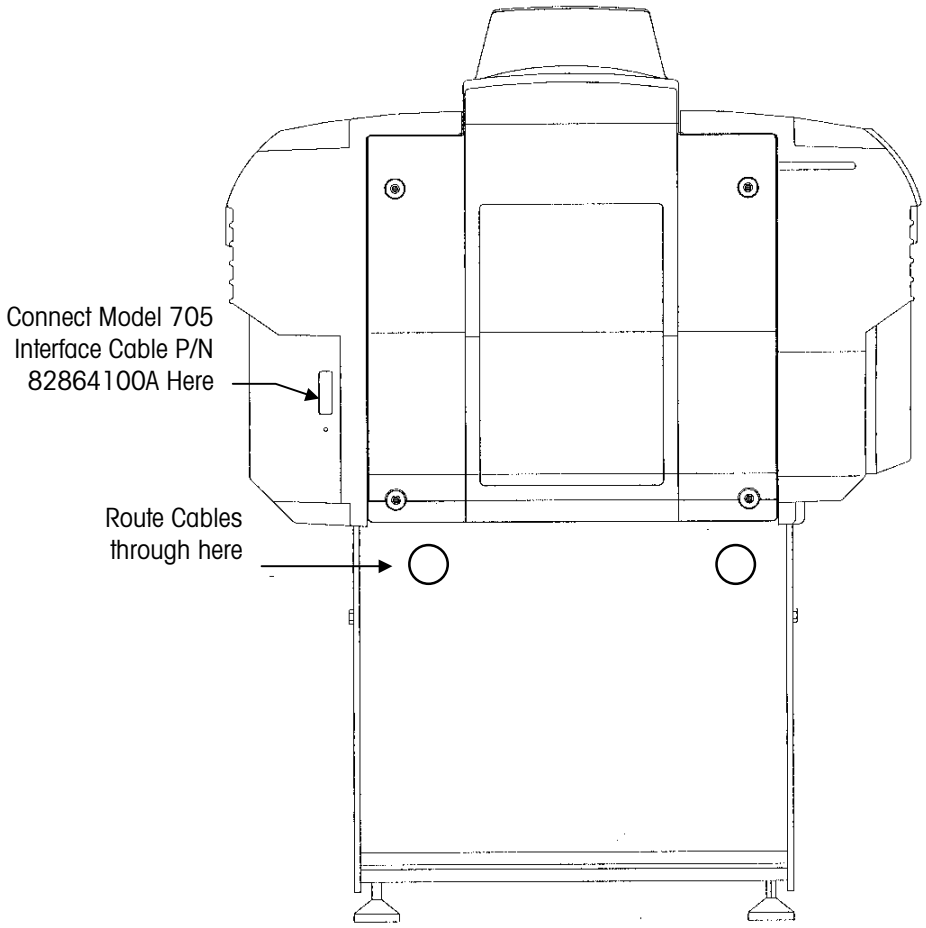


Figure 4-3: Model 705 to Model 645 Interface Cable Connection

Printer Installation

To allow easy access for label replacement, the printer(s) are mounted with the label access door to the inside of the Model 705 Labeler/645 Wrapper system.

DayGlo Printer

- Install the DayGlo printer and the printer shelf above the infeed conveyor.

Note: The applicator faces the 645 Wrapper.

- Install the printer shelf onto the labeler using the three M6 x 12 Hex flanged capscrews. The printer shelf is slotted so the shelf can be adjusted to the desired location for label placement.
- Align the printer feet with the four slots in the printer shelf. The applicator should be positioned properly over the rectangular cutout hole in the printer shelf.

Note: Be certain the printer feet are screwed all the way in. The holes in the printer shelf are slotted so the printer can be moved for various DayGlo locations.

- Screw in the four hold-down bolts from the bottom of the printer shelf up through the printer feet and tighten.
- Remove the four M4 x 8 Phillips screws to the applicator cover, then remove the cover for access to the applicator.
- Remove the three M4 x 8 Phillips screws on the left-hand side door for access to the printer control boards.
- Insert the serial I/O cable with the 25-pin connector through the oval cutout in the printer shelf and through the oval cutout in the bottom of the printer. Plug the cable into the 25-pin serial I/O harness connector. Tighten the screws. Secure the cable with the line clamp that is provided on the base of the printer.
- Insert the AC power cord, the communication line, and the vacuum hose through the oval cutout in the shelf and into the printer.
- Plug the AC power cord into the power inlet; secure the cord with the line clamp that is provided on the base of the printer.

Note: Make sure the connector is plugged in properly and not upside down. Pin 1 is located on the right side of the connector.
Note: Check that all lines are installed properly and are clear of the scale conveyor system and any other moving parts.

- Connect the communication line into TB2 of the Applicator Control Board; secure the cable with the line clamp that is provided on the base of the printer.
- Route the vacuum line through the hole in the front of the printer, above the label-feed button and attach it to the bottom of the applicator valve assembly.
- Reinstall the applicator cover, close the printer door, and secure with the M4 x 8 Phillips screws provided.

Price Label Printer

Note: The applicator faces the DayGlo printer.

- Install the price-label printer and the printer shelf above the exit conveyor.
- Install the printer shelf onto the labeler using the four M6 x 12 Hex flanged capscrews.
- Align the printer feet with the four slots in the printer shelf. The applicator should be positioned toward the DayGlo printer.
- Remove the four M4 x 8 Phillips screws to the applicator cover, then remove the cover for access to the applicator.
- Remove the three M4 x 8 Phillips screws on the left-hand side door for excess inside the printer.
- Insert the serial I/O cable with the 25-pin connector through the oval cutout in the printer shelf and through the oval cutout in the bottom of the printer. Plug the cable into the 25-pin serial I/O harness connector. Tighten the screws. Secure the cable with the line clamp that is provided on the base of the printer.
- Insert the AC power cord and the communication line through the same cutout and into the printer.
- Plug the AC power cord into the power inlet; secure the cord with the line clamp that is provided on the base of the printer.

Note: Make sure the connector is plugged in properly and not upside down. Pin 1 is located on the right side of the connector.

- Connect the communication line into TB2 of the Applicator Control Board; secure the cable with the line clamp that is provided on the base of the printer.
- Route the vacuum line through the hole in the front of the printer and then through the hole above the label-feed button and attach it to the bottom of the applicator valve assembly.

Note: Check that all lines are installed properly and are clear of the scale, conveyor system and any other moving parts.

- Screw in the four hold-down bolts from the bottom of the printer shelf up through the printer feet and tighten. The holes in the printer shelf are slotted so the printer can be moved for various price label locations.
- Reinstall the applicator cover, close the printer door, and secure with the screws provided.

Field Installation of DayGlo Kit

Note: Refer to the instruction sheet provided with the DayGlo KOP and the wiring diagram in Chapter (7) seven for the proper installation. Refer to the "Parts" section in the back of this manual for a list of parts included in the DayGlo KOP.

When upgrading the Model 705 Labeler from a Factory Number X001 to X002, a Model 705 KOP-DayGlo Printer Option (# 0925-0366-000) is required. This kit adds the secondary printer to the system.

Model 8361 Prepack Controller Connections

With the Model 645 Wrapper, the Model 705 Labeler, and the Model 317 Printer(s) installed, mount the Model 8361 Controller to the Model 645 Wrapper as described in the Controller Mount Kit.

Connect the Model 705 Labeler interface cable to C in Figure 4-6, the Model 8270 Scale cable to D, and Model 317 DayGlo Printer cable to A, and the Model 317 Standard Printer cable to B on the rear of the Model 8361 Controller, as shown in Figure 4-6. Connect the power cord to the AC power inlet (E). The cables are identified by labels on the connector shells.

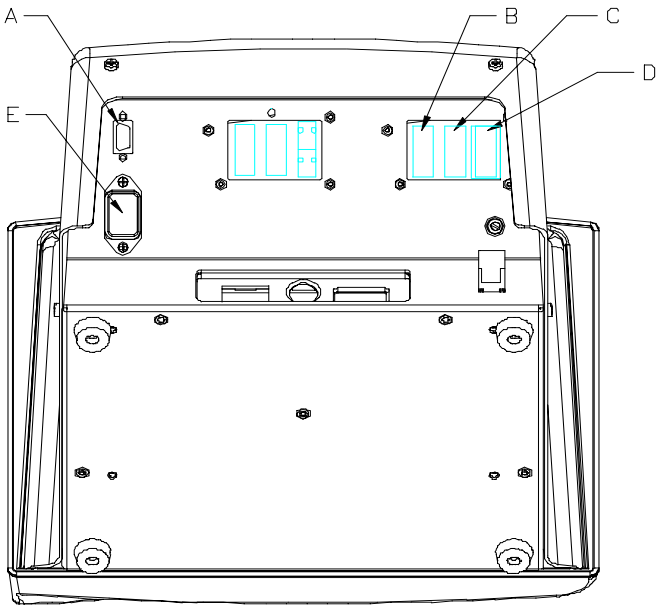


Figure 4-6 Model 8361 Controller Connections

A - Model 317 DayGlo Printer

B - Model 317 Label Printer

C - Model 705 Labeler

D - Model 8270 Scale

E - Power Inlet

50 Hz. Transformer Option

Install the 50 Hz transformer using the following steps:

- Bolt the transformer to existing holes in the rear leg of the Model 705 Labeler using the M6x12 fasteners supplied (See Figure 4-7).
- Cut the Model 705 power cord to the proper length and terminate per the schematic (See Figure 4-8).
- Install the jumpers on the transformer for the correct voltage per the wiring schematic (See Figure 4-8).
- Install the power supply cord (user supplied) per the wiring schematic (See Figure 4-8).
- Install the correct amperage use for the voltage being used per the wiring schematic (See Figure 4-8).

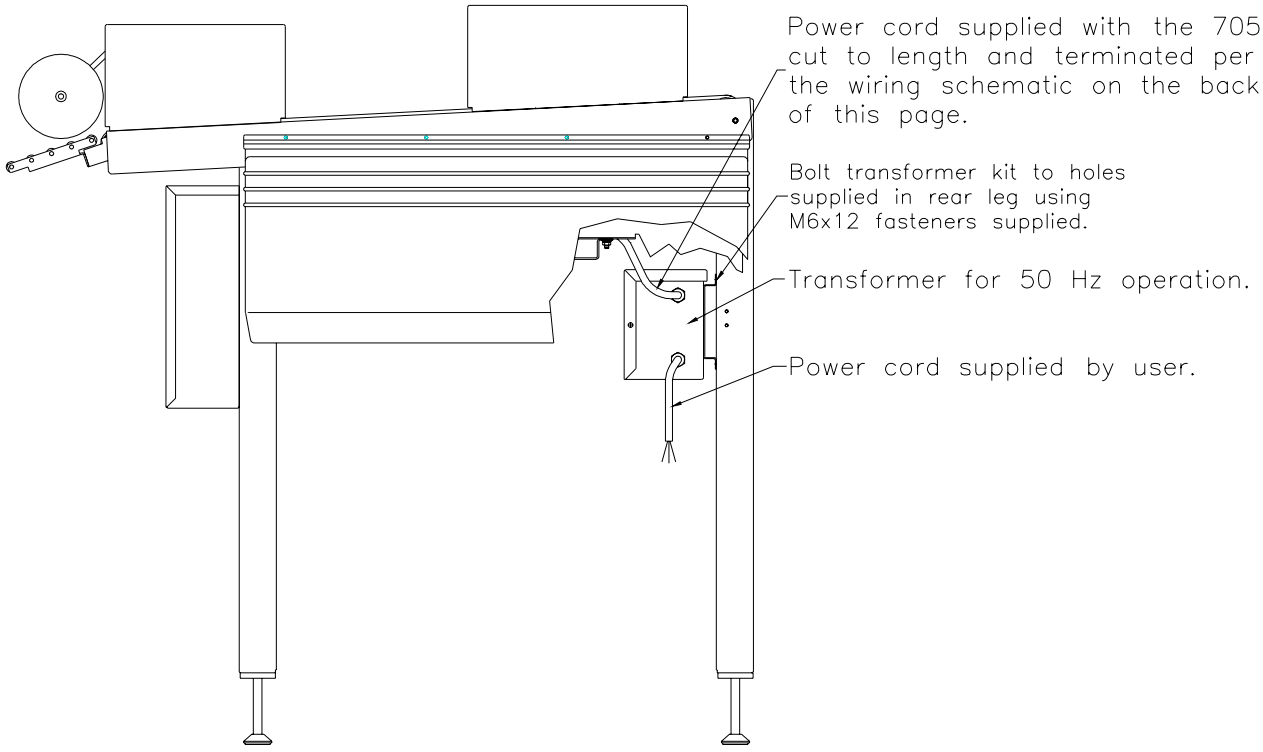


Figure 4-7: 50 Hz Transformer Mounting

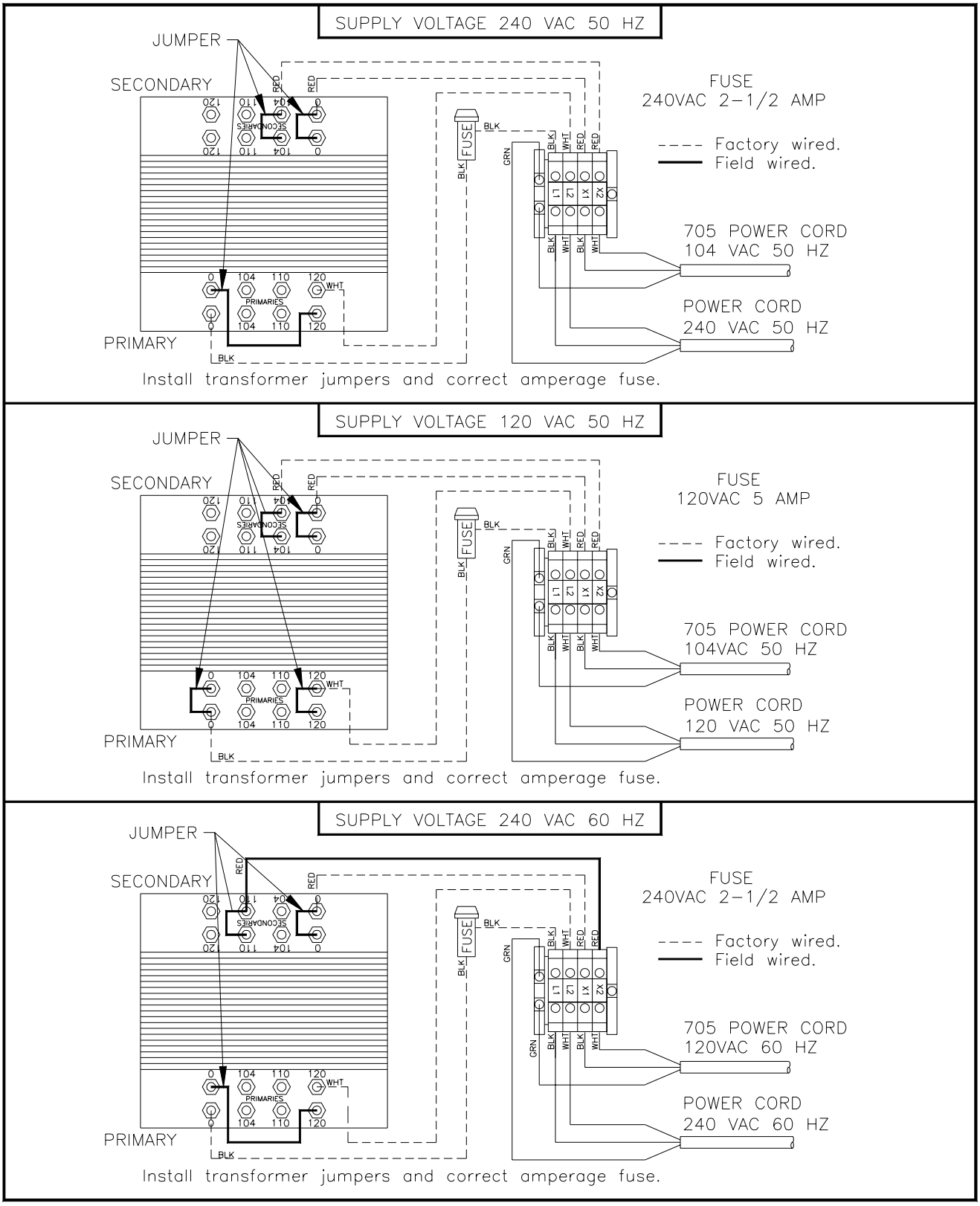


Figure 4-8: 50 Hz Transformer Wiring Diagram

Jumper Settings

The jumper settings on the Model 705 Control PCB are as follows:

W1 Off - Normal Operation

On - Setup/Test Mode

W2 and **W3** - Both on

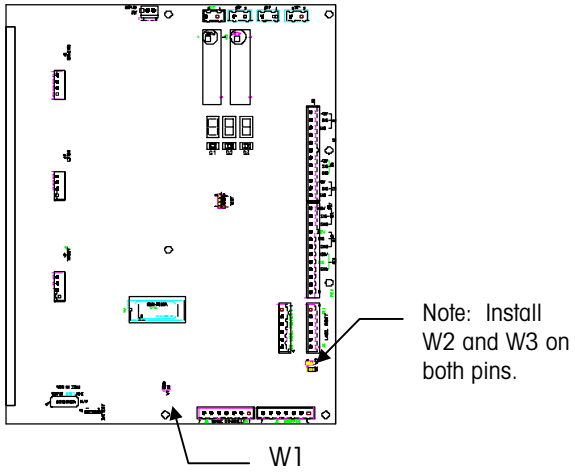


Figure 4-9: Circuit Board Jumper Settings

Power Up

With all the peripherals properly installed and connected, turn all power switches to the off position, then plug the AC power cord of the Model 705 Labeler into a 115 VAC wall outlet. Power up the labeler, printer(s) and the controller by turning on the power switch for each individual unit. The labeler is powered up by pressing the power switch to the on position as shown in Figure 4-10. **NOTE:** To turn on the other peripherals used in the system, refer to the appropriate technical manual.

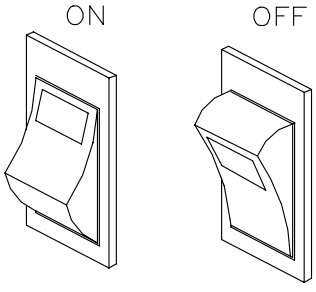
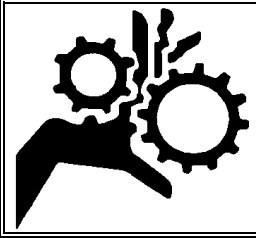


Figure 4-10: Power Switch

Self Test



⚠ WARNING

During self-test, the Scale Lifter will cycle. Do not place materials on the lifter during this test. Keep hands clear of the machine during the test.

During power up the Model 705 Labeler performs several internal checks before the labeler is operable. The Labeler will cycle 1,2,3 and then display "**_OP**" on the 3-digit LED display located on the control PCB. The following checks are performed during these steps:

- Step 1 performs a ROM check
- Step 2 performs a RAM check
- Step 3 initializes the hardware, reads data from NOVRAM and checks the battery-backed RAM.

If all the conditions are met then the Model 705 Labeler will display "**_OP**" for normal operation. The unit will then check the three photoeye inputs to make sure the photoeyes are clear. If not, the appropriate error message is displayed on the LED display and on the screen of the Model 8361 Controller. The applicator control PCB for both printers will reset to reinitialize the applicators. Finally, the scale lifter will go through a homing sequence to make sure the scale lifter is in the raised position.

To indicate that the Model 705 is communicating with the Model 645 wrapper, the display DS1 will light one segment at a time and rotate in a Figure-8 pattern. The Model 645 wrapper must be powered up to communicate with the Model 705.

If a checksum error is detected for the NOVRAM, error "**E_4**" will be displayed for one second on the display. The factory default setup values will be loaded, and the Model 705 Labeler will display "**_OP**" and continue to operate.

If a checksum error is detected for the battery-backed RAM, error "**E_5**" will be displayed for one second on the display. The battery-backed RAM will be re-initialized and the Model 705 Labeler will display "**_OP**" and continue to operate. The only data in the battery-backed RAM is the error log.

Softswitch Setup

The **SETUP** mode allows programming soft switches to configure certain items in the labeler. The softswitch settings are retained in NOVRAM (non-volatile RAM memory) once they have been saved. The softswitches must be programmed to configure the labeler for specific applications and functionality with the printers. The 3-digit LED display, located on the Control PCB, will show the setup status of the labeler. Refer to Figure 4-11 below.

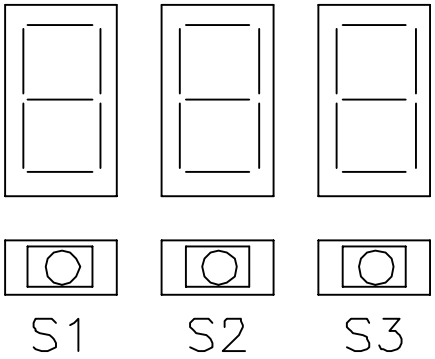


Figure 4-11 Three-Digit LED Display

To enter the setup mode, when "**_OP**" is displayed:

- Jumper **W1** on the control PCB and the display will change from "**_OP**" for normal operation to "**_SU**" for setup. **NOTE:** The Model 705 Labeler also has the capabilities of going into a test mode **(tst)** and a error log mode **(Log)** by toggling S1 with "**_SU**" displaying on the LED's. These two features are described in the troubleshooting chapter of this manual.
- Press and release switch 3 (S3) on the control PCB.
- The display shows "**F_1**" for function 1 setting.
- When the display shows a "**F_X**" setting (where X = 1-21), press switch 3 to see the status of that particular setting. **Ex: F_4 = 128**
- To change the setting, press the button directly below the digit to be changed**. Ex: To change F_4 =128 to F_4 = 130, press S3 twice, then S2 once.**
- Press switches 1 and 3 simultaneously to switch to the next "**F_X"** setting.
- To toggle quickly between "**F_X**" settings without seeing the status of those settings, press switch 1 with "**F_X**" displaying.
- When the switch settings are complete, press switches 1 and 3 to save changes. The display will show "**SAV**" when saving these changes.
- Remove the W1 jumper to get out of setup. The applicator control PCB for both printers will reset to reinitialize the applicators. The labeler will reinitialize the hardware and test the ROM, RAM NOVRAM, and battery backup before returning back to "**_OP**."

Softswitch Settings

Note: The Model 8361 Controller and the Model 705 Labeler both have to be set up for DayGlo labels in order for the DayGlo printer to print. If the second printer (DayGlo) is disabled in the Model 8361 Controller, the system will not recognize the setting for "F_1" on the Model 705 Labeler. If the Model 705 Labeler is programmed for price-label printer only, the system ignores the setting for DayGlo labels in the Model 8361 Controller.

The soft-switch settings must be programmed to set up the labeler for applications with or without a DayGlo printer and to setup the label placements on either printer. To change these selections see the previous section "Softswitch Setup." The factory defaults are shown in bold.

F_1 000 = Price-Label printer only
001 = Price-Label and DayGlo printer

F_2 **000 = Weighs in DayGlo position**
001 = Test Mode (cont. Run)
002 = Factory Test Mode
003 = Weighs at backstop position

F_3 DayGlo stop position **(128)**

F_4 Leading edge stop position **(128)**

F_5 Trailing edge stop position **(128)**

F_6 Label Placement
000 = Upper left
001 = Upper right
002 = Lower left
003 = Lower right

F_7 Error Message Language
000 = English
001 = Spanish

F_8 000 = No DayGlo Errors Displayed
001 = DayGlo Errors Displayed on 8361 Screen

F_20 702 Operating Mode

000 = Disabled (Default)
001 = Manual
002 = Automatic

F_21 702 Label Delivery **(50)**

Label Placement

The settings for "**F_3**," "**F_4**," and "**F_5**" are the number of steps beyond the predetermined steps that the stepper motor will take before stopping the package at a specific location. The settings range from 0 - 255 with the default setting at the mid-point 128. For the DayGlo positioning (F_3), one step equals .008 inch. The maximum adjustment of the DayGlo label from "F_3" = 0 to "F_3" = 255 is 2.04 inches. For the price label positioning (F_4 and F_5), one step equals .011 inch. The maximum adjustment of the price label (F_4 and F_5 = 255), is 2.81 inches.

Label placement can be positioned in the upper right, in the upper left, in the lower right or the lower left corner of the package. This depends on the setting of "**F_6**" in the Model 705 Labeler and if the label mode is turned or not turned in the Model 8361 Controller.

If the price label location is to be in the upper right corner or the lower left corner of the package then a turn label with the Model 317 Printer will use the leading edge of the package and a normal label will use the trailing edge.

If the price label location is to be in the upper left corner or the lower right corner of the package then a turn label with the Model 317 Printer will use the trailing edge of the package and a normal label will use the leading edge.

The following figures use 2S and 8S trays as examples and show the direction they are entered into the Model 645 Wrapper. They also show the label placements on the package after they come off the Model 705 Labeler. The possible label placements are as follows:

EXAMPLE: "**F_6**" = 000 (Upper Left) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode Turned.

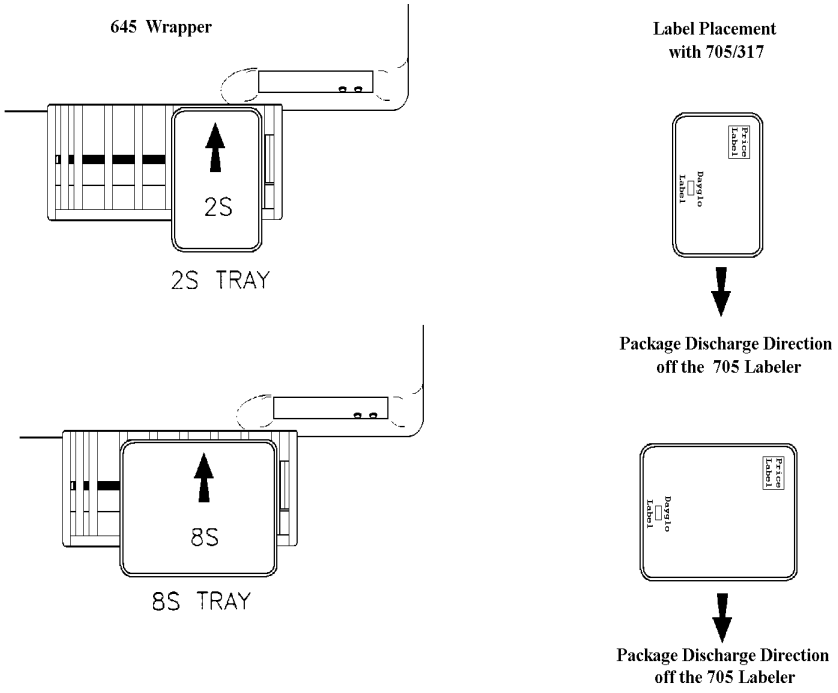


Figure 4-12

EXAMPLE: "**F_6**" = 000 (Upper Left) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode **Not** Turned.

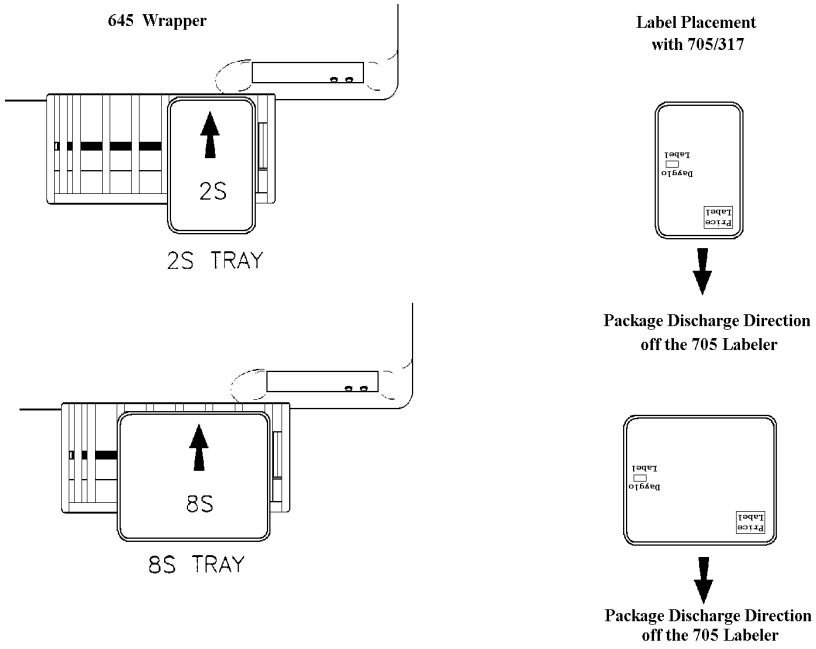


Figure 4-13

EXAMPLE: "**F_6**" = 001 (Upper Right) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode **Not** Turned.

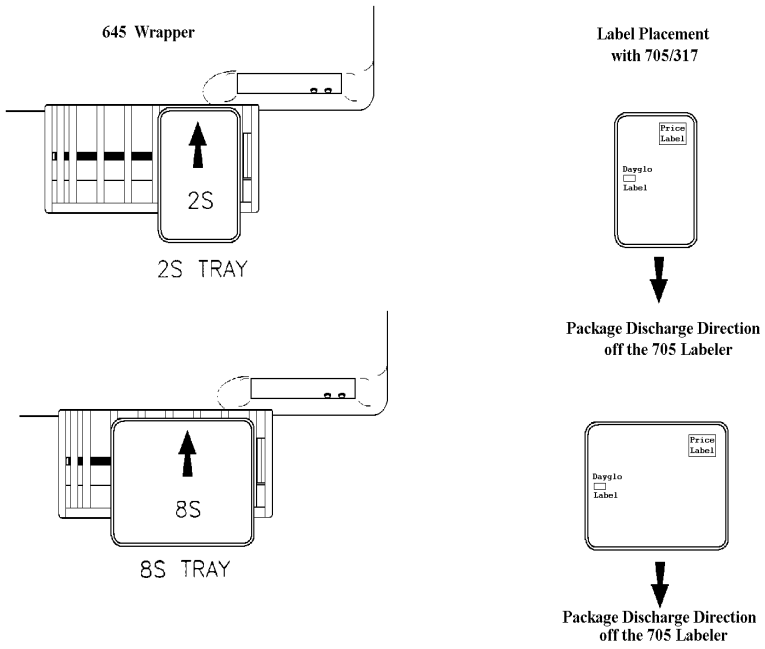


Figure 4-14

EXAMPLE: "**F_6**" = 001 (Upper Right) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode Turned.

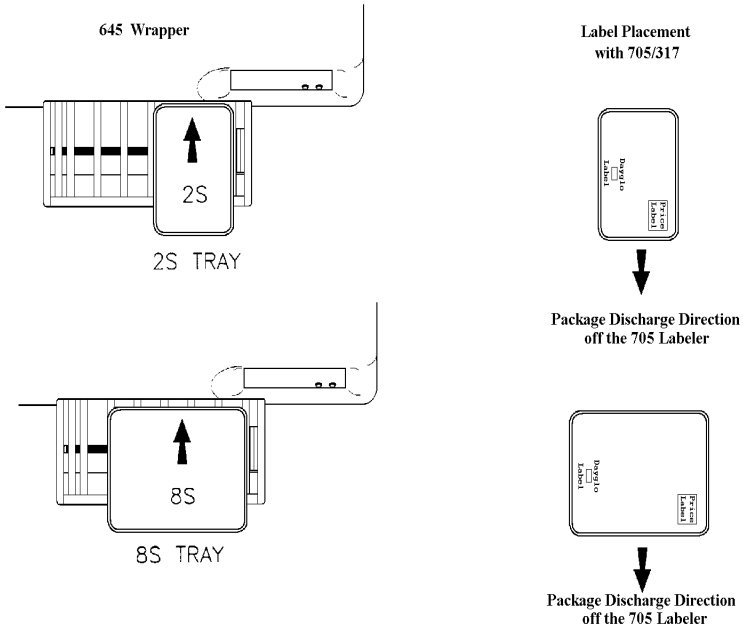


Figure 4-15

Example: "F_6" = 002 (Lower Left) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode **Not** Turned.

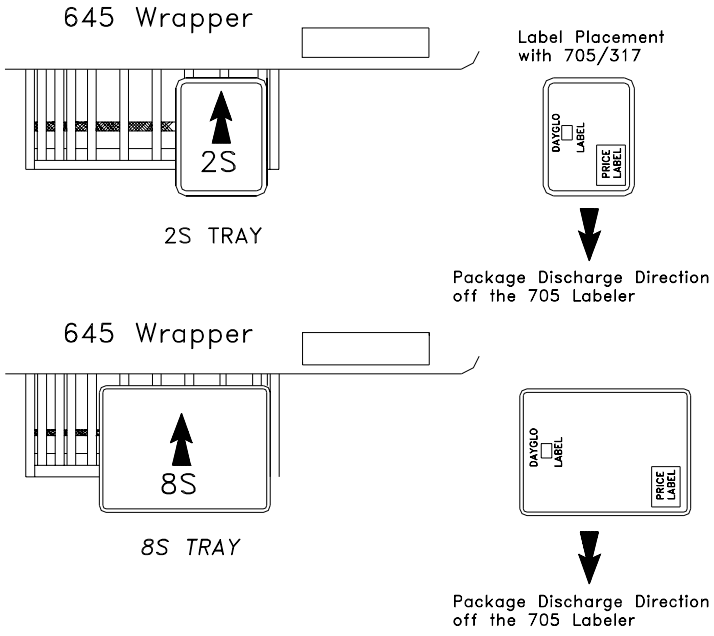


Figure 4-16

Example: "F_6" = 002 (Lower Left) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode Turned.

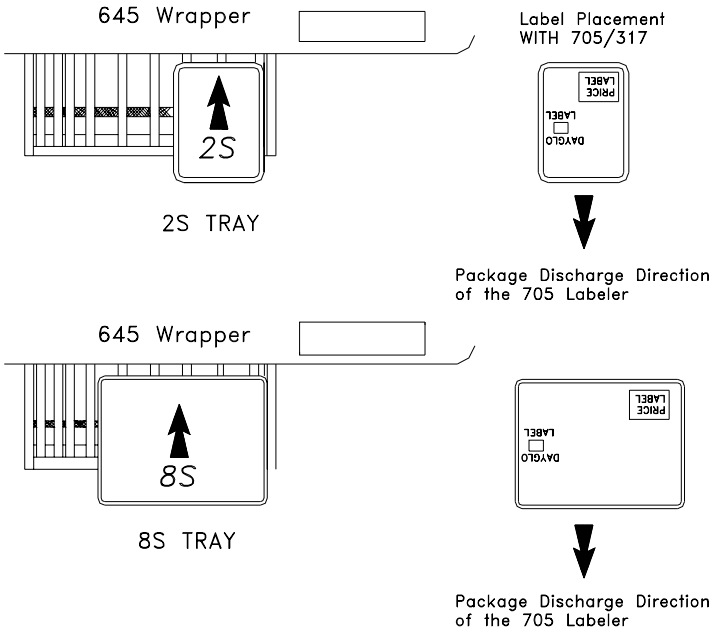


Figure 4-17

Example: "F_6" = 003 (Lower Right) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode **Not** Turned.

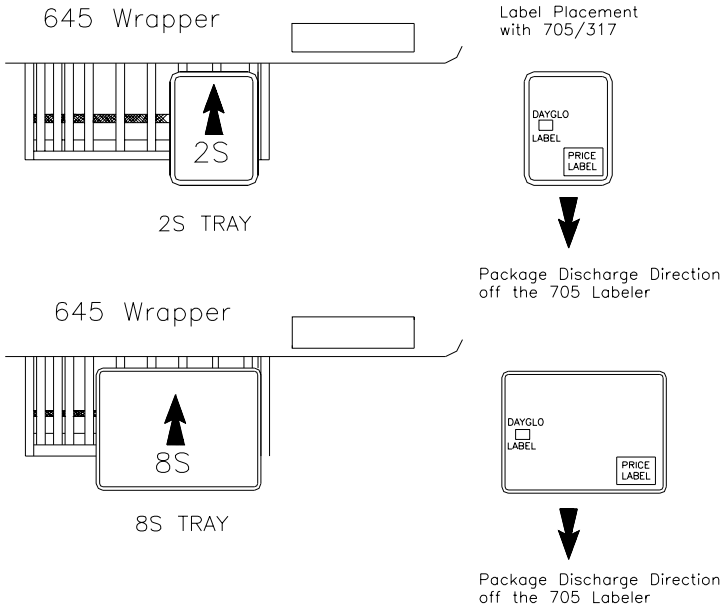


Figure 4-18

Example: "F_6" = 003 (Lower Right) in the Model 705 Labeler and the Model 8361 Controller is set for Label Mode Turned.

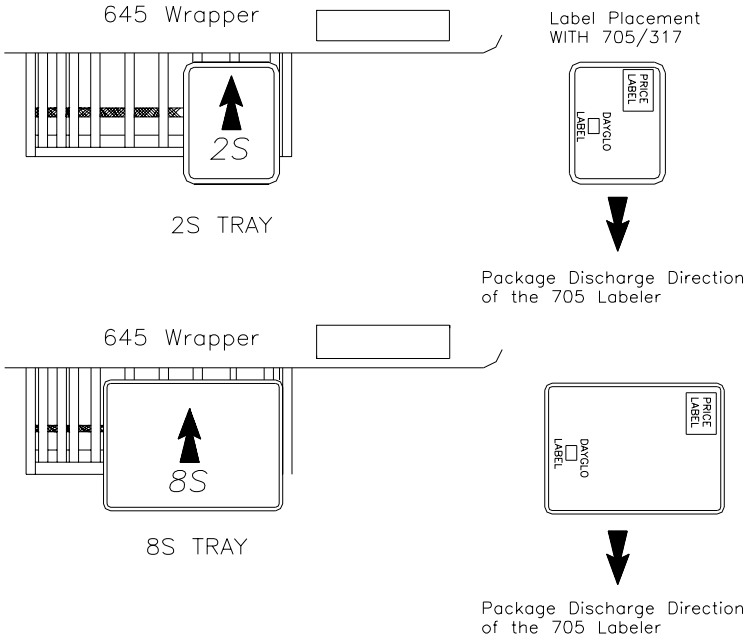


Figure 4-19

Calibration of Scale

Calibration of the Model 8270-2000 Scale is performed through the Model 8361 Controller. Before calibration is made, verify that the scale is level and the upper lifter assembly is free of any binds. Make sure the wires on top of the scale platter are installed properly so that the weighing accuracy is not affected. For information on calibrating the scale base, refer to the Model 8361 Backroom Controller Service Manual.

The shift test should be performed after calibration. Test the Model 705 Labeler for repeatability and accuracy using various weight packages.

Sequence of Operation

As the package is discharged from the Model 645 Wrapper, the front edge of the package moves onto the first roller of the infeed conveyor and blocks the infeed photoeye (PE #1) between the first and second roller. The Model 705 Control PCB receives this signal from the photoeye, and powers the three-roller infeed conveyor and vacuum pump. (Only the second and third rollers on the transfer conveyor are driven by the AC gear motor). The Model 705 Labeler then signals the Model 8361 Controller to print a DayGlo label if it is selected in the PLU record. The conveyor and pump stop after 10 seconds if another package doesn't block the photoeye. The infeed conveyor transports the package to the scale-transfer photoeye (PE #2). When the package blocks PE #2, the scale-transfer conveyor starts running. The length of the package is measured as the package travels on to the scale. After the trailing edge of the package clears PE #2, the package is positioned by stopping the stepper motor a given number of drive steps, which is determined in the "**F_3**" setting of the Model 705 Labeler. The Model 705 Labeler signals the Model 317 DayGlo Printer to apply the DayGlo label, and the package is then conveyed to the scale bumper.

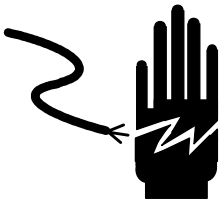
If a DayGlo label is not required, the package is conveyed directly to the scale bumper. The Model 705 Labeler signals the Model 8361 Controller to capture a stable weight, and waits for the weigh complete signal back from the Model 8361 Controller. The 8361 sends the label information to the Model 317 Printer. The Model 317 Printer prints the product label. The scale lifter is lowered to place the package onto the exit conveyor. The package crosses the conveyor photoeye (PE #3) to determine the width for positioning of the price label. Depending on the setup of label placement (F_6) and leading or trailing edge logic (F_4 and F_5), the stepper motor positions the package for the price label. The Model 705 Labeler signals the 317 Primary Label Printer to apply the label. After the price label has been applied, the package is conveyed off the end of the conveyor.

In some cases, such as with uneven packages, increased settling time on the scale will cause the Model 705 to lag behind the 645. This could lead to a situation where two packages are on the Model 705 at the same time. To eliminate this, the Model 705 software sends a stop command to the 645 causing the wrapper to momentarily pause while the weighing task is completed.

5 General Maintenance, Cleaning, and Lubrication

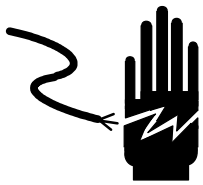
Maintenance

Before cleaning or servicing this unit, disconnect AC power by turning off the power switch on the side of the machine to the left of the control box, then unplug the AC line cord from the outlet. Failure to observe these precautions could result in bodily harm as the machine may operate unexpectedly. Unplugging the AC line cord for the Model 705 Labeler is necessary to remove power from the 317 Printer(s) and the 8361 Controller.



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.



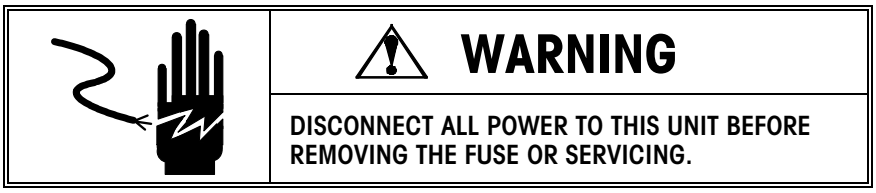
WARNING

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

Removing the Side Covers

The two side covers are designed for easy access to the internal components of the labeler and the scale base. The covers fit in a slot at the top and are held in place by two capscrews on the bottom side. To remove a side cover, loosen the two capscrews with a 8 mm wrench. The bottom of the covers are slotted so the screws do not need to be removed. Swing the bottom of the cover outward and then pull down to remove the top of the cover from the slot.

Removing the Scale Base



WARNING

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

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. To remove the Model 8270 Scale Base from the Model 705 Labeler, the scale base must be lowered out the bottom of the unit. Remove the side covers from the labeler. Insert two 3/8 in. support rods, approximately 24 in. in length, through the lifter support rod holes in the side of the frame (One rod will require a slight bow to clear the lifter motor). This will support the upper lifter assembly. Refer to Figure 5-1 for the location of the support rod holes.

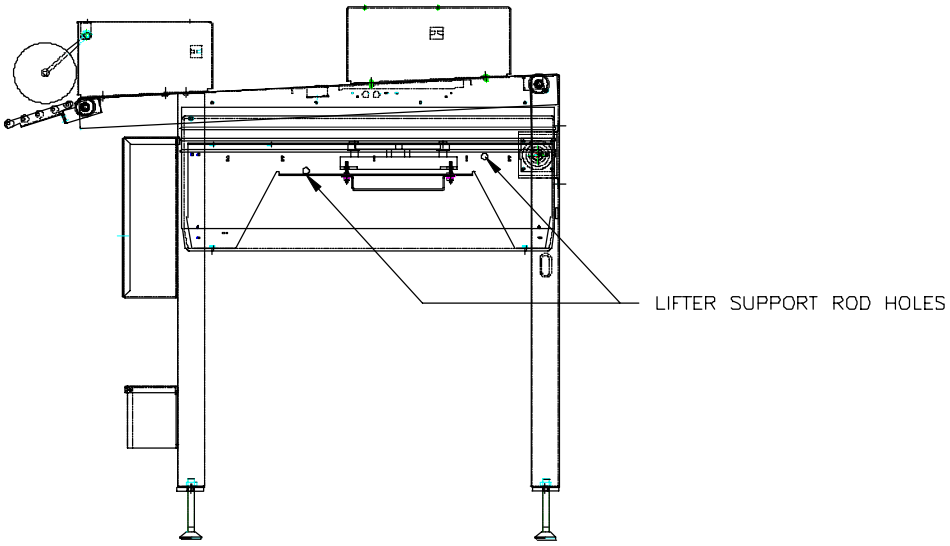


Figure 5-1: Lifter Support Rod Hole Location

Remove two support bolts from the side of the scale support nearest the scale interface cable and replace with wire ties one at a time. Remove the two support bolts from the other side of the cross member and the scale support and the scale base will swing down. **NOTE: Make sure the scale interface cable has plenty of slack when lowering the scale support and the scale base**. Unbolt and remove the scale base from the scale support if necessary for repair. Refer to Figure 5-2 for the location of the adjustable feet.

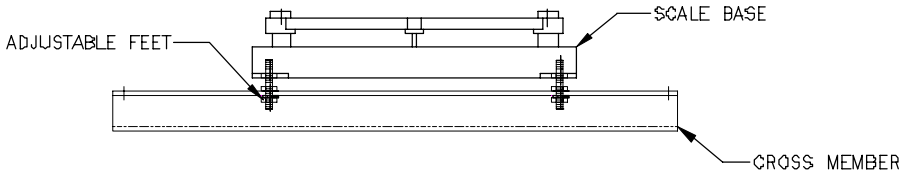
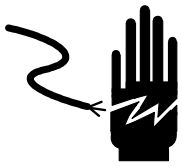


Figure 5-2: Model 8270 Scale Base and Support

After the Model 8270 Scale is bolted to the scale support and reinstalled back into the Model 705 Labeler, verify the alignment of the upper lifter assembly with the scale base. Align the scale transfer rollers with the slots in the slider bed and verify that nothing is obstructing the scale or the lifter assembly. After the scale base is aligned properly, tighten the scale base and the scale support.

Changing the Infeed Conveyor Belt

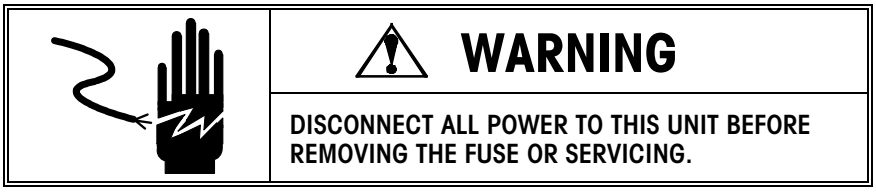


⚠ WARNING

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

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. The second and third rollers on the infeed conveyor are belt driven by a AC gear motor. The belt can be replaced by removing the grip rings on the left end of each belt driven roller assembly. Remove the belt from the groove of each roller assembly. Slide the roller shaft out the right side and remove the roller assembly. Remove and replace the infeed conveyor belt. Reinstall the shaft through the roller assembly and insert the two grip rings. Make sure the belt is installed in the grooves of the rollers.

Changing the Scale Transfer Belts



Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. The Model 705 Labeler comes equipped with three spare transfer belts located at the end of the scale-transfer drive shaft. The spare belts are positioned so that if a transfer belt breaks or is damaged, you can install a spare belt without removing the scale-transfer drive shaft.

Note: To replace a particular transfer conveyor belt, the previous belts closest to the infeed must first be removed.

To replace a scale-transfer conveyor belt with a preinstalled spare belt, the transfer conveyor roller must be removed. The transfer conveyor rollers can be removed by lifting up on the belt end of the roller and disengaging the roller shaft on the opposite end from the carrier. Slide the transfer belt out of the groove and off the roller assembly. It is recommended that after the third belt is replaced, more spare belts should be installed.

To replace the spare transfer conveyor belts, remove all the transfer conveyor rollers as previously described. Remove the four bolts securing the scale-transfer stepper motor and the scale-transfer drive shaft. Slide the scale-transfer stepper motor and the shaft out of the support bearing and replace the belts over the shaft.

Changing the Conveyor Belts

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. The conveyor belts can be replaced without disassembling any major parts. The belts snap together and can be pulled apart by twisting the joint, shown in Figure 5-3, with two pliers. To replace a belt, first remove the side covers, then twist apart the belt at the joint and remove it from the unit. Install the new belt by feeding it through the proper location around the head and tail pulleys and snapping it together in place. Verify the belt is routed correctly around the photoeyes, upper lifter assembly, and the conveyor belts on the underside of the labeler.

Note: Damaged conveyor belts can be repaired by cutting out the damaged area and installing a butt splice (P.N. 82114200A).

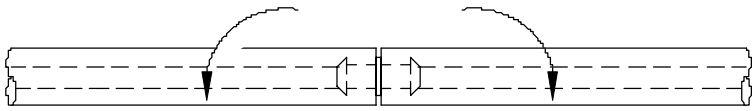
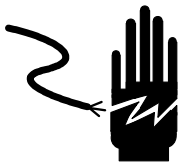


Figure 5-3: Conveyor Belt Joint

Changing the Conveyor Drive Belt



WARNING

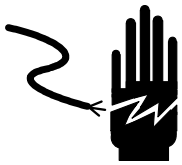
DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING THE FUSE OR SERVICING.

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. To change the conveyor drive belt, remove the 10 conveyor belts as described in the section above and loosen the conveyor drive motor. The conveyor drive pulley is supported in a slot at each end of the pulley. Pull the drive pulley away from the slots towards the outside of the machine and allow the pulley to drop down. Remove the drive belt from the drive pulley and the stepper motor pulley and replace.

Note: There should be 1/4 in. ± 1/8 in. deflection in the belt after the drive motor is tight. Using switch #3 (SW 3) in the normal operation mode, check for smooth tooth engagement when running the conveyor.

After the drive belt is replaced, reposition the drive pulley into the slots, and reinstall the conveyor belts. Pull down on the drive assembly by hand to tension the drive belt and tighten the drive motor.

Lifter Assembly Replacement



WARNING

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

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. Remove the scale base assembly and the conveyor belts as described in previous sections. Disconnect the wires from the lifter stepper motor to the control box. The lifter assembly is held in place by the two lifter support rods. Support the lifter assembly by hand and remove the two support rods.

During installation, position the lifter assembly up into the slider bed and support with the two support rods. Reconnect the wires for the lifter stepper motor and reconnect the conveyor belts. Reinstall the scale base as described in the scale base section.

Lifter Assembly Adjustment

Note: The ball joints are set at three and one half inch (3 1/2″) centers and adjustment is not needed. See Lifter Assembly in the Parts Section for the 3-1/2″ and 5-1/8″ dimensions. These are important if rebuilding the entire lifter.

NOTE: This adjustment should only be made if the scale base or lifter assembly is replaced.

When the lifter is in the down position, the rear end of the rollers should be 1/8 in. - 3/16 in. above the slider bed. When the lifter is in the raised position, the top of the rollers should be aligned with or within 1/4 in. below the top of the infeed rollers. The adjustable link is used only to make the top of the rollers parallel to the scale platter.

To change the height of the scale-transfer rollers, loosen the bottom lock nuts and remove the lower rod ends from the lifter cam and adjust the links as needed. Refer to Figure 5-4.

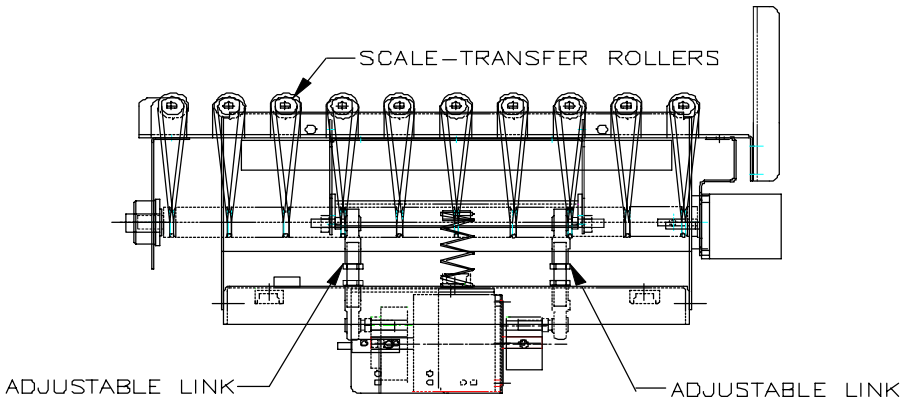


Figure 5-4: Lifter Assembly

Lifter Spring Replacement

When replacing the lifter spring or lifter spring bumper, make sure the top of the spring is properly seated in the cutouts. Align the spring so that it is not bowed when the lifter is in the down position (See figure 5-5). If the rubber spring mount is misaligned, replace it. Clean the mounting surface thoroughly with isopropyl alcohol and allow it to dry prior to installing the rubber spring mount. On newer units the mount is riveted in place.

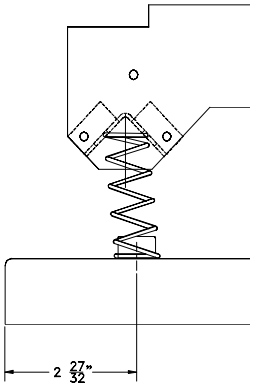
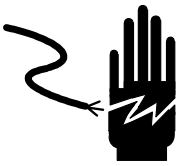


Figure 5-5: Lifter Spring

Cleaning



⚠ WARNING

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

Remove power from the machine by turning the power switch to off and unplugging the line cord before performing this service. 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. A mild spray cleaner can be used by spraying the cleaning cloth. Do not use solvents or commercial cleaners on the unit. Use a soft clean cloth to wipe the dirt and grime off the belts.

Lubrication

The machine should lubricated by a factory trained technician only. Use a light oil (FMO 350) on the following parts:

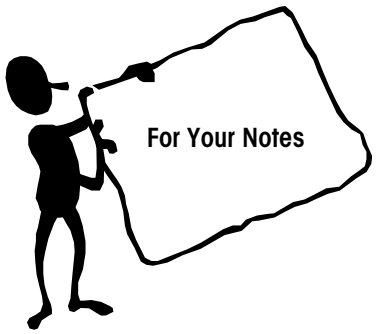
- Head and tail pulley bearings
- Transfer roller bearings (13)
- Transfer drive shaft bearings (1)
- Lifter rod ends (4)
- Conveyor belts

Note: Too much oil may cause the belts to slip

Note: Avoid getting lubricant on the transfer conveyor drive belts.

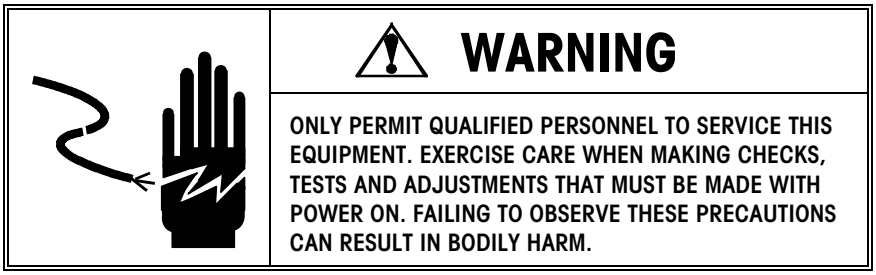
Individual lubrication points are shown on the replacement parts breakdown.

Spray FMO 350 on the conveyor belts and wipe off the excess oil. Lubricate enough to fill the pores of the belts. This will eliminate friction with the slider bed when running heavier packages.


For Your Notes

6 Troubleshooting

Power Supply



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 Power Supply Assembly supplies +48 VDC to the Control PCB. With the Model 705 Labeler plugged in and powered on, the On/Off switch should be illuminated. This is a quick way to check the AC power and the 5-amp fuse. If the on/off switch is not illuminated, check the fuse.

The +48 VDC can be tested at J12 or at TP6 to TP5 on the Control PCB. Place your negative meter lead on J12 pin 1. Place your positive meter lead on J12 pin 2. You should read +43.2 to +52.8 VDC.

If this voltage is missing, check the input and output voltage of the rectifier, located to the right of the filter capacitor and above the transformer, as shown in Figure 6-1. There should be +32.4 to +39.6 VAC across the two red input wires coming from the output of the transformer and +43.2 to +52.8 VDC across the orange and black output wires of the transformer. If the input voltage to the rectifier is within specification but the output voltage is incorrect, replace the rectifier. If the voltage to the control PCB is within specification but the labeler will not power up, replace the control PCB.

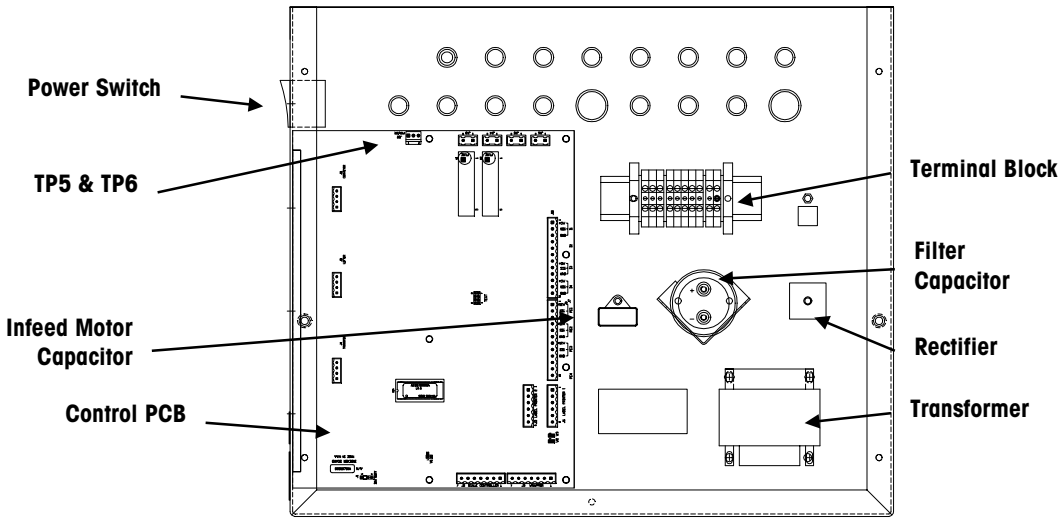


Figure 6-1: Control Box

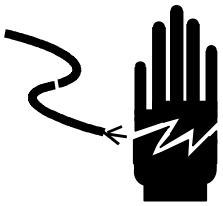
Stepper Motor Test

Operation of the three stepper motors can be tested individually through software. The LED display on the control PCB must be in the "**_OP**" mode for normal operation (W1 not jumpered). The three switches on the control PCB will operate the following stepper motors:

- Switch 1 will run the scale transfer stepper motor
- Switch 2 will run the lifter stepper motor for the scale
- Switch 3 will run the conveyor stepper motor.

The stepper motors will chatter if the mechanism or drive belts are jammed.

Sensor and Photoeye Test



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.

To test the lifter sensors and the photoeyes for proper operation with the Control PCB, perform the following steps:

- Jumper **W1** on the control PCB. (The display will show "**_SU**" for setup.)
- Press Switch 1 to enter the test mode (**tst**).
- Press Switch 3 once to display "**t_1**" (test 1).
- Press Switch 3 again and the sensors and photoeyes will cycle through a test (**L** = low state and **H** = high state). If all the sensors and photoeyes are operating properly, the display will cycle as follows:

  1. S1L Lifter Sensor

  2. S2H (Not used)

  3. S3H 702 Mode Switch

  4. S4H 702 Gap Sensor

  5. P1L Infeed Photoeye

  6. P2L Scale Transfer Photoeye

  7. P3L Conveyor Photoeye

  8. P4L (Not used)

After the self-test has completed, the photoeyes and lifter sensor **(S1)** can be blocked or cleared to change its state from low to high. There is a red LED on the bottom of each photoeye that turns on when the photoeye is blocked indicating the photoeye recognizes the change in state. At the same time, the LED display on the control PCB displays the status of the photoeye or sensor being blocked indicating the microprocessor recognizes the change in state.

This is a good test if you suspect a bad or dirty photoeye or an open circuit in the photoeye wiring.

Press Switch 1 again to enter test 2 **(t_2)**, which tests the Vacuum Pump and the AC Gear Motor as described in the next section. Press Switches 1 and 3 simultaneously to return to the setup mode **(_SU)**. Remove the **W1** jumper to return to normal operation **(_OP)**.

Vacuum Pump and Gear Motor Test

To test the vacuum pump and the AC gear motor for proper operation, perform the following steps:

- Jumper **W1** on the control PCB. (The display will show "**_SU**" for setup.)
- Press Switch 1 to enter the test mode (**tst**).
- Press Switch 3 once to display "**t_1**".
- Press Switch 1 once to enter "**t_2**" (test 2).
- Press Switch 3 and the display will change to "**r_0**."
- Press Switch 3 again to increment to the next test to test the following devices:

  r_0 - All off

  r_1 - K1-Vacuum pump

  r_2 - K2-AC gear motor and Model 702 Conveyor

  r_3 - K3-Not used

  r_4 - K4-Model 702 Take Up Motor

This is a good test if the Vacuum Pump or AC Gear Motor does not operate.

Press Switch 1 to go back to test "**t_1**." Press Switches 1 and 3 simultaneously to get back to setup mode **(_SU)** and remove the **W1** jumper to return to normal operation **(_OP)**.

Vacuum Pump

During normal operation there should be between 22-28 inches of vacuum at the gauge on the printer. If there is not a minimum of 22 inches of vacuum, check the vacuum to the valve and at the vacuum pump. If the vacuum is not within this range, adjust the vacuum relief valve located on the side of the compressor. If the problem still exists, switch the vacuum tube to the other side of the double-head vacuum pump. If problem still exists, replace the vacuum pump.

Printing The Error Log

The error log file of the Model 705 Labeler can be printed using the Prepack Controller and Model 317 printer. To print the error log file from the Prepack Controller:

- Enter **Setup**.
- Choose **Unit** from the **Setup Mode**.
- Select **Wrapper Package Count**.
- Select **Retrieve Indexer Data**.
- Select **Retrieve**.

The error log file prints the following information on the Model 317 Price Label Printer:

- Software number used in the Model 705 Labeler.
- Total package count since the last time the error log was cleared.
- Last 20 error codes and the package count on which it occurred.

- List of all the error codes, number of times each occurred, and at what package count it last occurred. A sample error log label is shown in Figure 6-b below.

```
705   82818600A
PACKAGE COUNT - 084717
E12-082752 \ E12-082856  \ E14-082912  \ E12-083029
E12-083029 \ E14-083277  \ E14-083285  \ E12-083293
E12-083293 \ E11-083293  \ E12-083310  \ E12-083341
E11-083341 \ E12-083490  \ E12-083507  \ E12-083630
E12-084182 \ E12-084374  \ E12-084380  \ E12-084442

E04=0000-000000 \E05=0000-000000 \E10=0092-058500
E11=0079-083341 \E12=0559-084442 \E13=0013-032489
E14=0051-083285 \E20=0017-007220 \E30=0018-007218
E31=0007-000120 \E32=0000-000000 \E33=0000-000000
E34=0000-000000 \E35=0000-000000 \E36=0000-000000
E37=0005-004118 \E40=0001-000062 \E41=0000-000117
E42=0000-000000 \E43=0000-000000 \E44=0000-000000
E45=0000-000000 \E46=0000-000000 \E47=0000-000000
END
```

Figure 6-2: Sample Error Log Label

Clearing The Error Log

The Error Log is cleared through the Model 705 Labeler. This resets the package count to zero and clears all the error codes stored in Battery-Backed RAM. To clear the Error Log File from the Model 705 Labeler:

- Go into setup (W1 jumpered).
- Press Switch 1 until "**Log**" appears on the display (Error Log mode).
- Press Switch 3 to display "**rst**." This resets the error log file.
- Press Switch 3 again to (**clr**) clear the error log file.

Error Codes

Any machine errors encountered will display on the Model 705 Control PCB LED display. If you clear an error code on the Prepack Controller, it sends a command to clear the error on the Model 705 Labeler. These errors are as follows:

ERROR CODE	ERROR
Fatal Errors:	
E_1	EPROM checksum error
E_2	Internal RAM error
E_4	EEPROM checksum error
E_5	BRAM checksum error
Major Errors:	
E10	Lifter stalled or Lifter Sensor not working
E11	Infeed Photoeye blocked
E12	Scale-Transfer Photoeye blocked
E13	Conveyor Photoeye blocked on power up
E14	Conveyor stalled / Photoeye blocked too long
Run-Time Errors:	
E20	Weigh complete time-out error
Primary Label Printer / Applicator Errors:	
E30	Label print complete time-out error
E31	Primary Label Applicator communication error
E32	Invalid response from Primary Applicator
E33	Primary Label Applicator ROM error
E34	Primary Label Applicator RAM error
E35	Primary Label Applicator encoder error
E36	Primary Label Applicator index mark error
E37	Primary Printer Label-Taken Sensor blocked
Secondary (DayGlo) Label Printer / Applicator Errors:	
E40	Dayglo print complete time-out error
E41	Secondary Label Applicator communication error
E42	Invalid response from secondary applicator
E43	Dayglo Label Applicator ROM error
E44	Dayglo Applicator RAM error
E45	Dayglo Applicator encoder error
E46	Dayglo Applicator index mark error
E47	Dayglo Label-Taken Sensor blocked

Note: E14 only occurs if using trailing edge logic.

7 Interconnecting Diagram

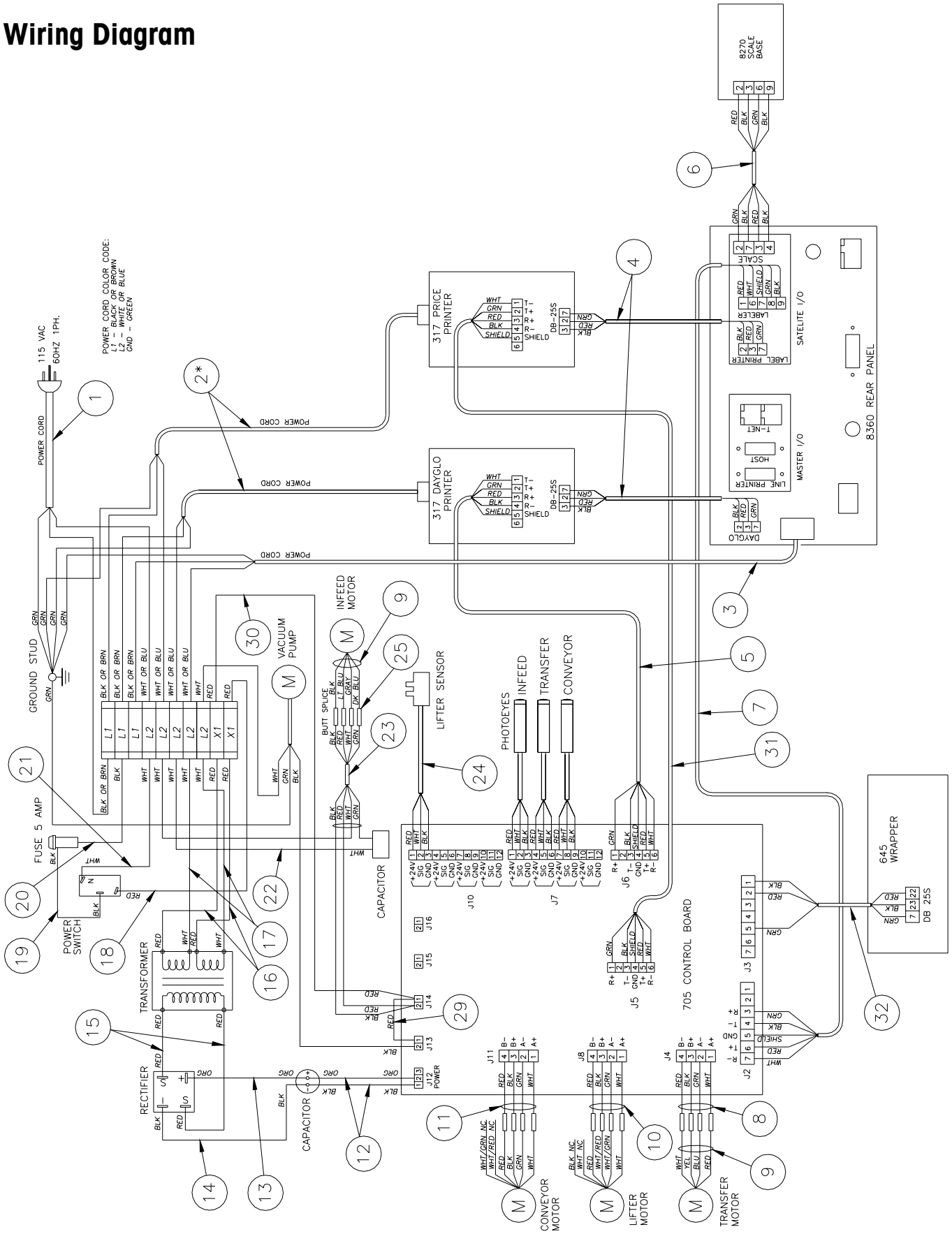
Part Description

Note: Items 2,4 and 5 for DayGlo Printer are called Out on 82820600A.

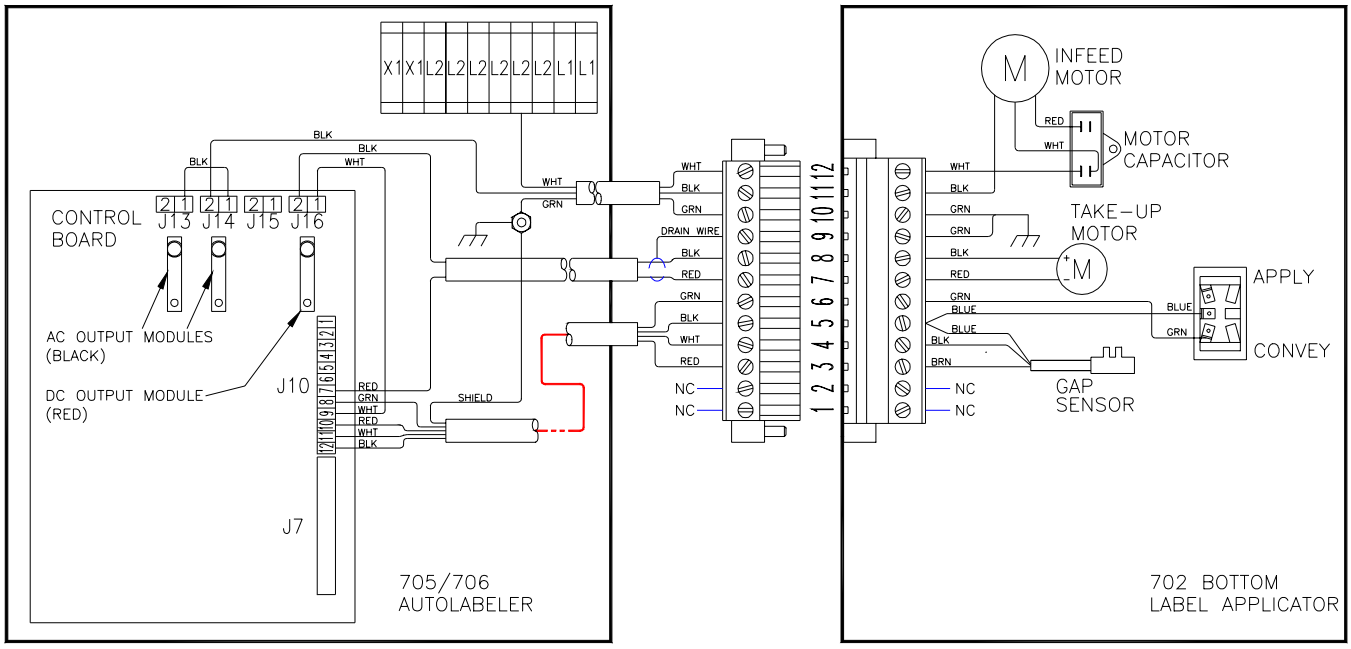
Item	Qty	Part #	Description
1	1	A80958700A	Power Cord 705
2	1	82798900A	Power Cord - Printer
3	1	82799000A	Power Cord 705-8360
4	1	82802200A	Cable 317-8360
5	1	82811500A	Cable 705- Printer
6	1	82802000A	Cable 8360 - Scale
7	1	82686400A	Cable 705 - 8360
8	1	82811600A	Wire Assembly
9	1.3	391302500	Shrink Tubing
10	1	82811400A	Wire Assembly
11	1	82935200A	Wire Assembly
12	1	82810100A	Wire Assembly
13	1	82811000A	Wire Assembly
14	1	82811100A	Wire Assembly
15	2	82810400A	Wire Assembly
16	2	82810300A	Wire Assembly
17	2	82810200A	Wire Assembly
18	1	82811700A	Wire Assembly
19	1	82810500A	Wire Assembly
20	1	82810800A	Wire Assembly
21	1	82810700A	Wire Assembly
22	1	82811800A	Wire Assembly
23	1	82811300A	Wire Assembly
24	1	82799900A	Wire Assembly
25	12	82492900A	Butt Splice
26	15	A80655500A	Wire Tie Label 4 In.
27	10	82176600A	Terminal Label 1-10
28	2	82176700A	Terminal Label 11-20
29	1	82810600A	Wire
30	1	82811900A	Wire
31	1	82812000A	Wire Assembly
32	1	82864100A	Cable Assembly

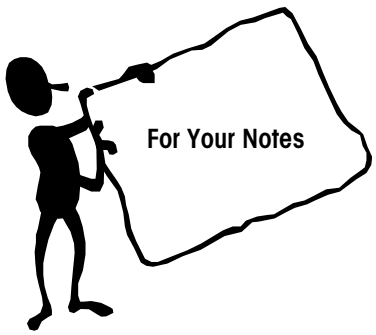
Items 26, 27, and 28 Not Shown

Wiring Diagram



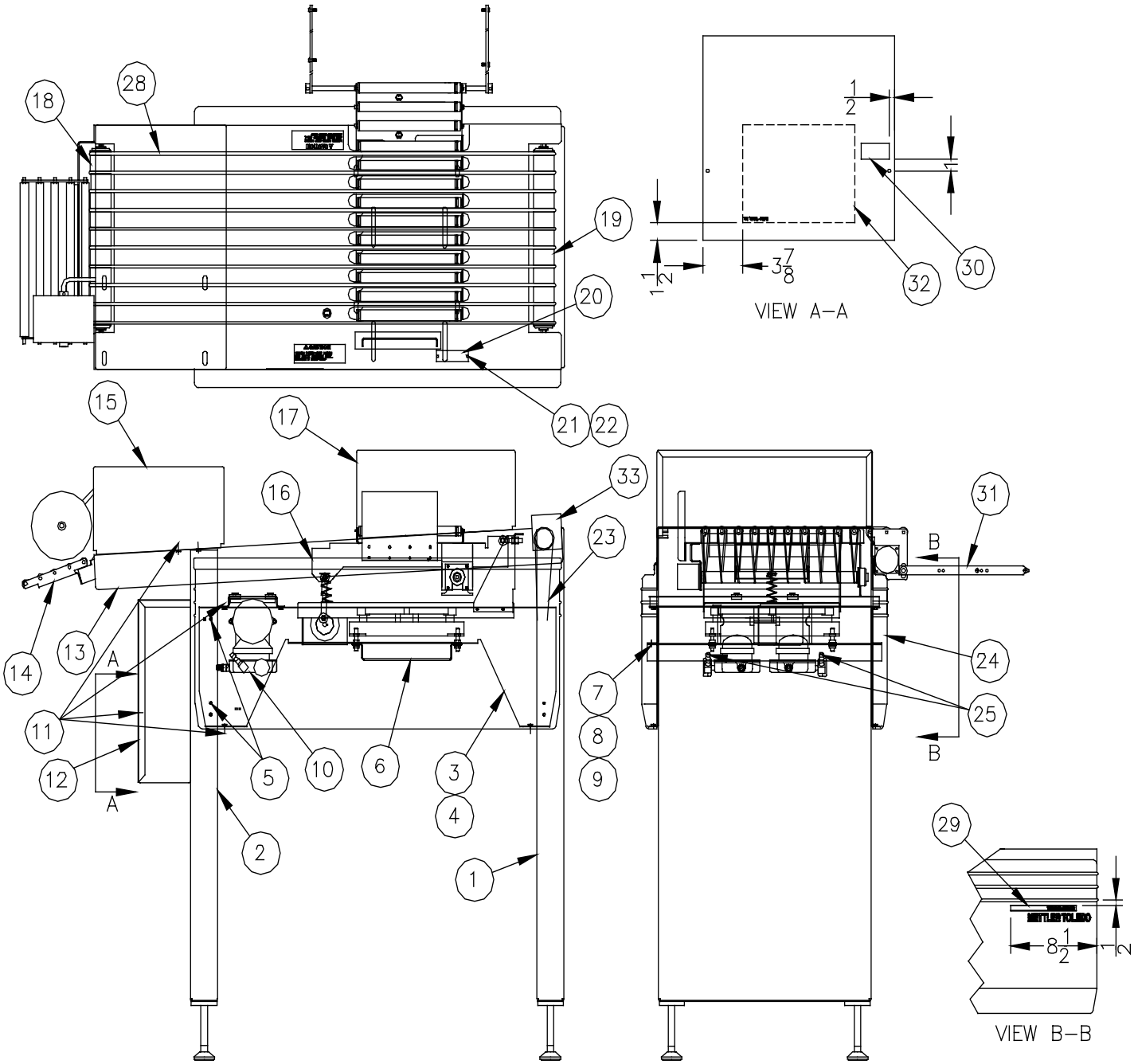
Model 705 to Model 702 Wiring Diagram




For Your Notes

8 Replacement Parts

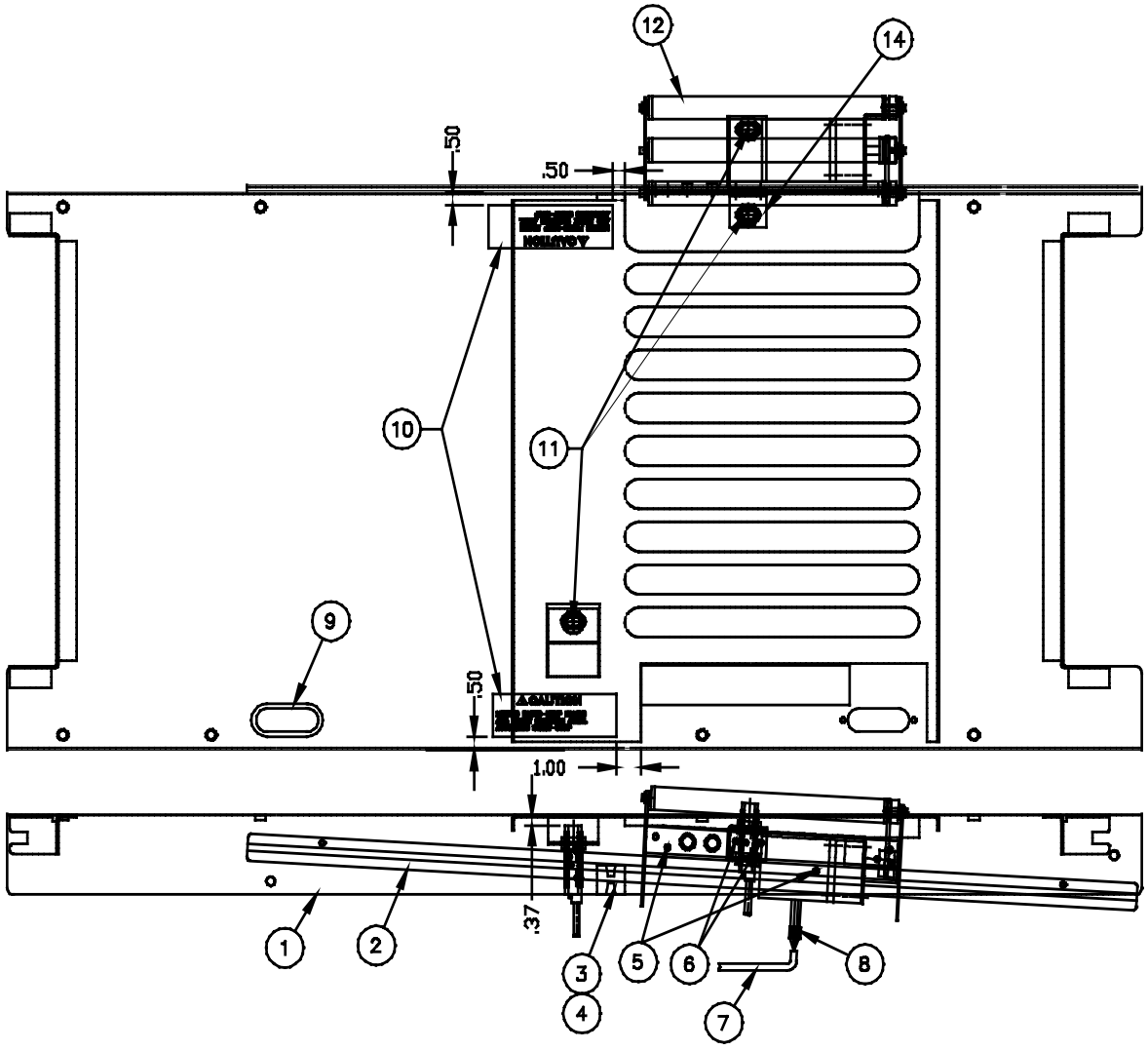
705 Assembly



Parts List for 705 Assembly

Item	Qty Ram 1	Qty Ram 2	Part #	Description
1	1	1	82803700A	Tall Rear Leg Assembly
2	1	1	82803200A	Tall Control Box Assembly
3	1	1	82779000A	Side Panel - LH
4	1	1	82779200A	Side Panel - RH
5	16	16	81861100A	Pop Rivet 3/16 1/8 - 1/4 Grip
6	1	1	A82803100A	Scale Assembly
7	4	4	82813200A	M8 X 1.25 X 20 Hex Hd CS
8	4	4	R00413050	1/4 Std Washer
9	4	4	82711100A	M8 Lockwasher
10	1	1	82803300A	Pump Assembly
11	17	17	82804900A	M6 X 12 Hex Flg CS
12	1	1	82780100A	Control Box Cover
13	1	1	82804100A	Slider Bed Assembly
14	1	1	82804000A	Exit Conveyor Assembly
15	1	1	82803800A	Price Printer Support Assembly
16	1	1	A82820200A	Lifter Assembly
17	0	1	82820600A	Dayglo Printer Option
18	1	1	82802900A	Tail Pulley Assembly
19	1	1	82803000A	Head Pulley Assembly
20	0	.5	82941100A	Hole Liner
21	1	0	82801900A	Cover Plate
22	2	0	82715400A	M4 X 12 Phillips Pan Hd CS
23	1	1	82798200A	Timing Belt 5mm Pitch Htd
24	2	2	82799400A	Cover - Abs
25	3.2	3.2	276290002	Vacuum Hose 38 In. Price - 94 In. Dayglo
26	50	50	A80655300A	Wire Tie 5.5 In.
27	1	1	82767100A	Wiring Assembly 705 Labeler
28	10	10	82843900A	Belting 1/4 Dia. X 88 In. Quick-Go
29	2	2	A82790200A	Logo - 705
30	1	1	81921300A	Label - Power Disconnect
31	1	1	82820500A	Connector Bracket Assembly
32	1	1	82845100A	Decal - 705 Wiring
33	1	1	82873300A	Tail Pulley Cover
Not Shown	10	10	82114200A	Conveyor Belt Butt Splice

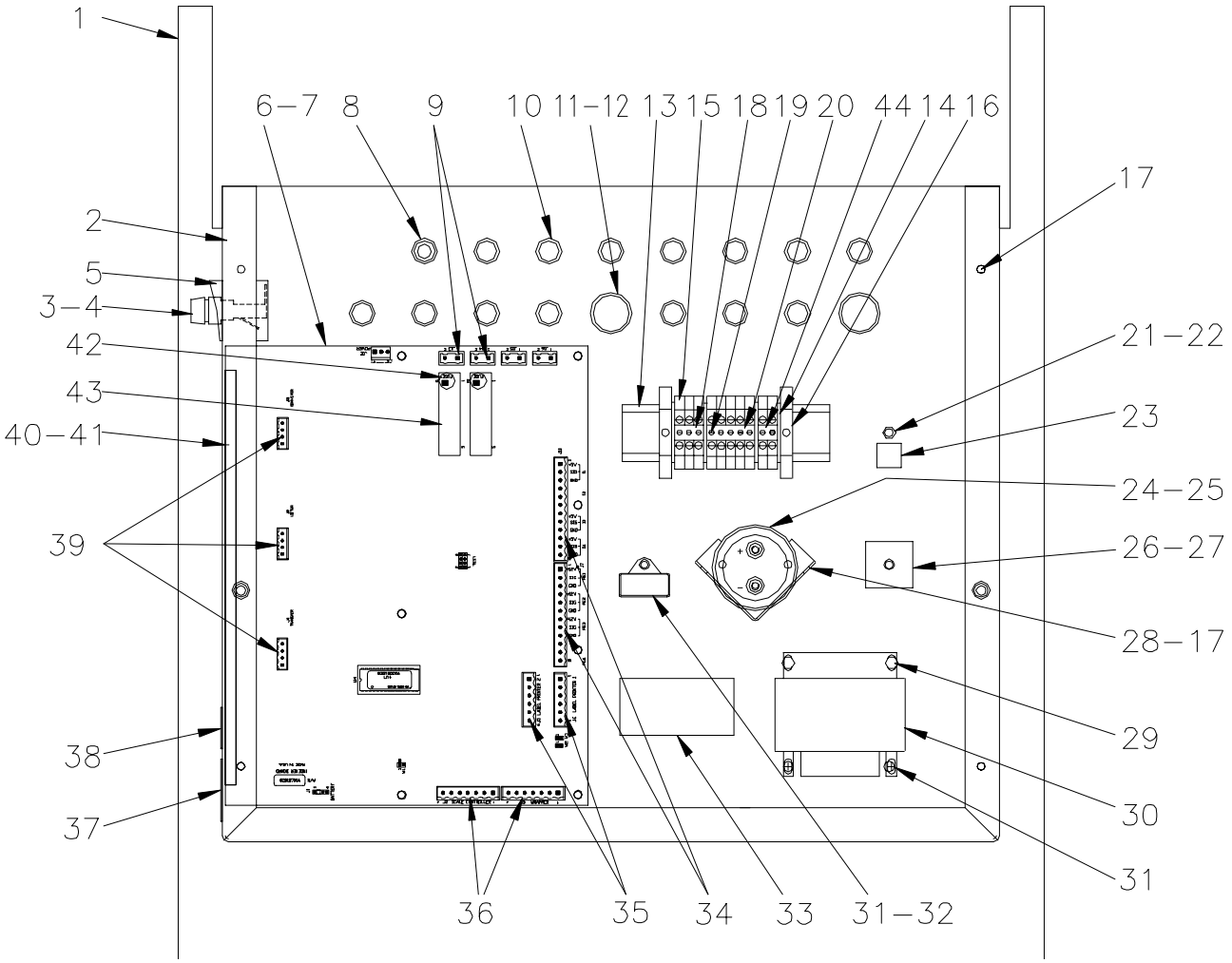
Slider Bed Assembly



Parts List for Slider Bed Assembly

Item	Qty	Part #	Description
1	1	82817100A	Slider Bed Weldment
2	2	82778800A	Trim
3	1	A80690800A	Wire, Tie Anchor
4	1	A80655300A	Wire, Tie 5.5 In.
5	12	81861100A	Pop Rivet 3/16 1/8-1/4
6	2	82843400A	Pop Rivet 3/16 1/4-3/8
7	1	82811300A	#18-4 Cable
8	4	82492900A	Butt Splice #18 Gauge
9	5	82941100A	Hole Liner
10	2	82802100A	Label, Autostart
11	3	82674100A	Photoeye
12	1	82803500A	Infeed Conveyor Assembly
14	1	A82776600A	Photoeye Bracket

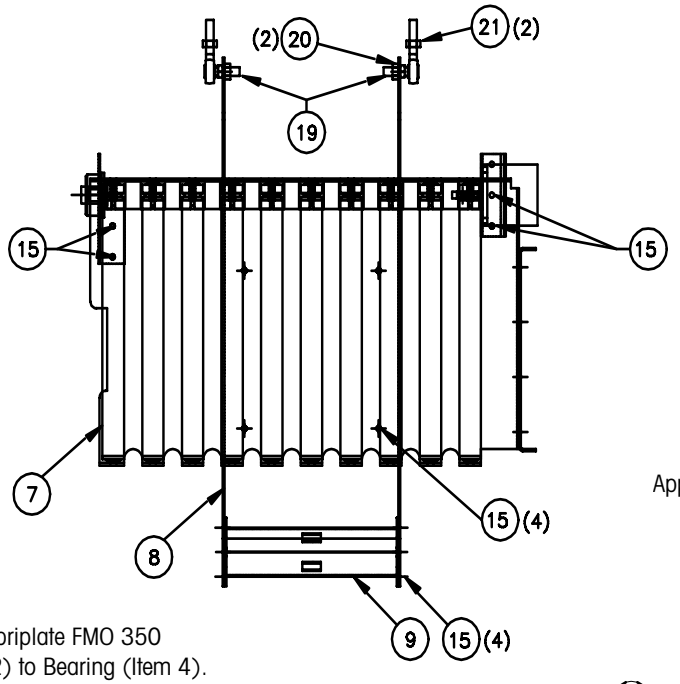
Control Box Assembly



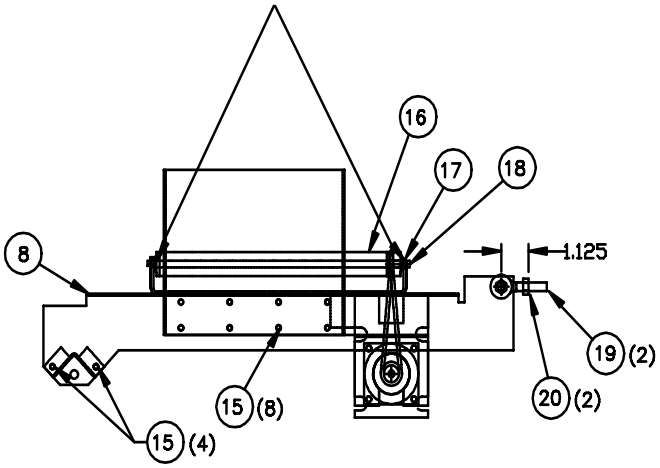
Parts List for Control Box Assembly

Item	Qty Ram 1	Qty Ram 2	Part #	Description
1	1	1	82778600A	Tall Front Leg
1A	1	1	82883400A	Short Front Leg
2	1	1	82780000A	Control Box Sides
3	1	1	82466700A	Fuse Holder
4	1	1	82349700A	Fuse - Buss Mdl-5
5	1	1	A82351600A	Rocker Switch - Lighted
6	1	1	J82818700A	PCB Assembly
7	7	7	82783300A	M3 X 8 Phil Pan Hd CS
8	3	1	82804200A	Plug Heyco 2643
9	2	2	14708000A	Terminal 2 Pt
10	12	12	81976100A	Cord Grip 1/2 W/Nut
11	2	2	82474700A	Cord Grip 7/8
12	2	2	A80077800A	Cord Grip Nut 7/8
13	1	1	82281400A	Din Rail
14	4	4	82478400A	End Plate - Din Rail
15	10	10	82478200A	Terminal - Din Rail
16	2	2	82292200A	Clamp - Din Rail
17	13	13	81861100A	Pop Rivet 3/16 .126 - .250
18	.018	.018	82478300A	Terminal Jumper - 3 Holes
19	10	10	82476500A	Connecting Pin - Jumper
20	.030	.030	82478300A	Terminal Jumper - 5 Holes
21	1	1	82709100A	M5 Locknut
22	1	1	82709600A	M5 Washer
23	1	1	82700100A	Ground Decal
24	1	1	82806200A	Capacitor - Control
25	2	2	A80655300A	Wire Tie 5.5 In.
26	1	1	09394300A	Rectifier
27	1	1	82715600A	M4 X 20 Phil Pan Hd CS
28	1	1	82697100A	Capacitor Bracket
29	2	2	82823300A	M4 X 12 Hex Hd CS
30	1	1	82806100A	Transformer
31	3	3	82715400A	M4 X 12 Hex Hd CS
32	1	1	82797200A	Capacitor - Motor
33	1	1	81921300A	Warning Label - Power
34	2	2	13431600A	Terminal 12 Pt
35	2	2	82781200A	Terminal 6 Pt
36	1	1	11924100A	Terminal 7 Pt
37	1	1	82519600A	Serial Number Label
38	1	1	82844700A	Etl Listing Label
39	3	3	13457200A	Terminal 4 Pt
40	3	3	82783100A	M4 Nut W/Serrated Washer
41	3	3	82715400A	M4 X 12 Phil Pan Hd CS
42	2	2	13637500A	Fuse
43	2	2	13636700A	Solid State Relay
44	.012	.012	82478300A	Terminal Jumper - 2 Holes
45	.1	.1	82845300A	Terminal Marker Set

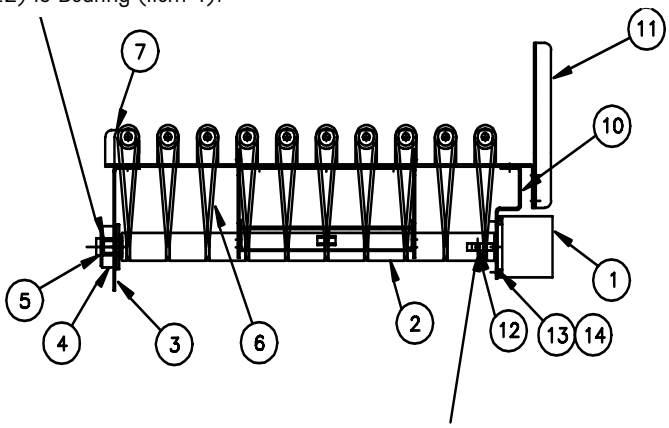
Upper Lifter Assembly



Apply Lubriplate FMO 350 (Item 22) to both roller bearings.
Avoid lubricating roller drive belts.



Apply Lubriplate FMO 350
(Item 22) to Bearing (Item 4).



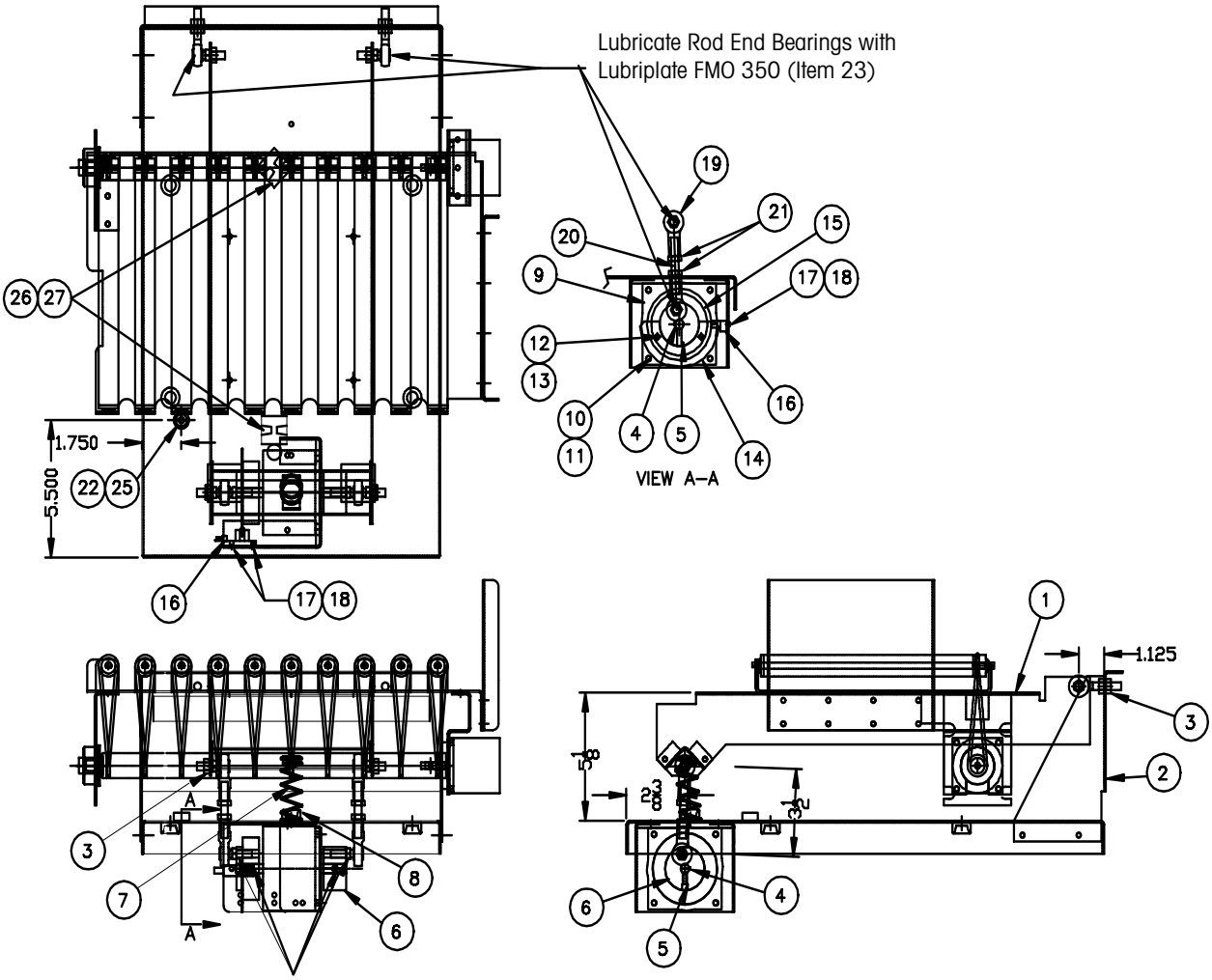
Use Loctite 242 (Blue) (Item 23) on Set Screw (Item 12)

Parts List for Upper Lifter Assembly

Item	Qty	Part #	Description
1	1	82643300A	Stepper-Amp 5023-346
2	1	82769700A	Roller Shaft Drive
3	1	A82647900A	Carrier Bearing Bracket
4	1	82795300A	Delrin Plain Bearing, 1.5 00
5	1	82795400A	Bearing Sleeve, Hex
6	10	82654000A	Belt 1/8 Dia. X 10 Inch
7	1	82694000A	Scale Roller Carrier
8	1	82780400A	Carrier Support
9	1	82648400A	Carrier Spring Support
10	1	82648000A	Carrier Moor Bracket
11	1	82799700A	Bumper Plate
12	1	82718800A	M5 X 0.8 X 8.0 Cone Pt Set Screw
13	4	82712100A	M5 X 16 Hex Capscrew
14	4	82709100A	M5 Locknut
15	20	81861100A	Pop Rivet 3/16 Grip 126-250
16	10	82818800A	Roller Assembly
17	10	82059100A	Grip Ring 1/4
18	10	82654100A	Shaft, 1/4 X 10-5/16
19	2	82673800A	Rod End W/Stud, Male 5/16
20	2	82818000A	5/16-24 UNF Locknut
21	2	R01174050	5/16-24 UNF Nut
22		81863500A	Lubriplate FMO 250
23			Loctite 242 (Blue)

Note: When replacing items 3 or 4 on machines built prior to SN 3072196-3-NY use bracket and bearing assembly part number 82907300A.

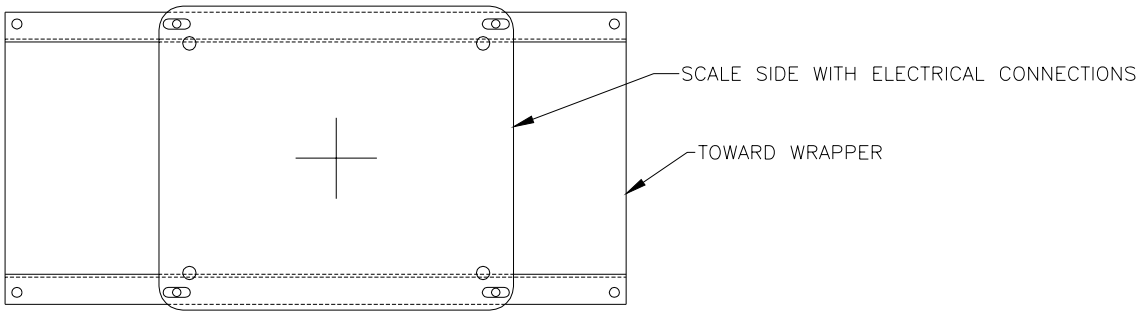
Lifter Assembly

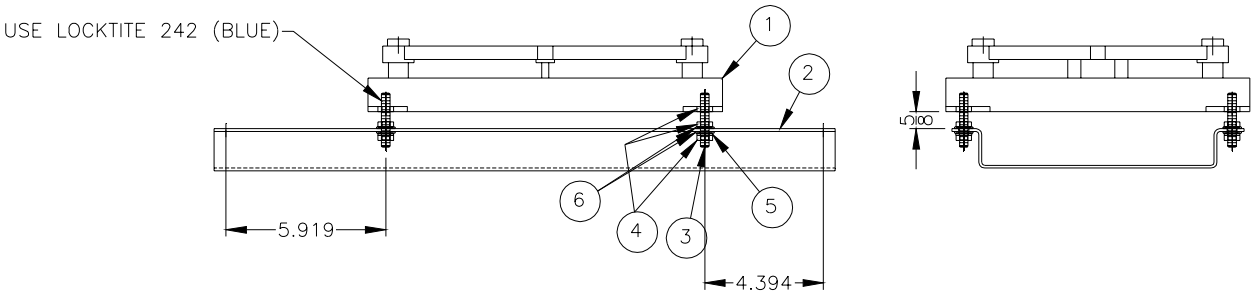


Parts List for Lifter Assembly

Item	Qty	Part #	Description
1	1	82799600A	Lifter Upper Assembly
2	1	82951000A	Scale Platter Assembly
3	2	82818000A	5/16-24 UNF Locknut
4	2	82378400A	Woodruff Key 302.5
5	2	82718800A	M5 X 0.8 X 8.0 Set Screw Cone Pt
6	1	82798300A	Lifter Cam, LH W/O Target
7	1	A82673900A	Spring Lee LC-080I-11-S
8	1	82861300A	Rubber Spring Mount
9	1	82643400A	Stepper Motor, Amp 5034-406
10	4	82712100A	M5 X 16 Hex Capscrew
11	4	82709100A	M5 Locknut
12	2	82713400A	M4 X 0.7 X 16 Socket Hd Capscrew
13	2	82710800A	M4 Lock Washer
14	1	82657400A	Sensor Target
15	1	82657300A	Lifter Cam, RH W/Target
16	1	82700500A	Photo Interrupter
17	2	82719100A	M3 X 12 Philips Head Capscrew
18	2	82818400A	M3 X 0.5 Lock Nut
19	4	82673700A	Rod End With Stud - F 5/16
20	2	82659900A	Threaded Rod 5/16-24 Unf X 2
21	4	R01174050	5/16-24 UNF Nut
22	1	10268900A	Bubble Level
23		81863500A	Lubriplate FMO 350
24			Loctite 242 (Blue)
25			Silicone Adhesive Sealer (for bubble level)
26	2	A82690800A	Wire Tie Anchor
27	5	A80655300A	Wire Tie 5.5 In.

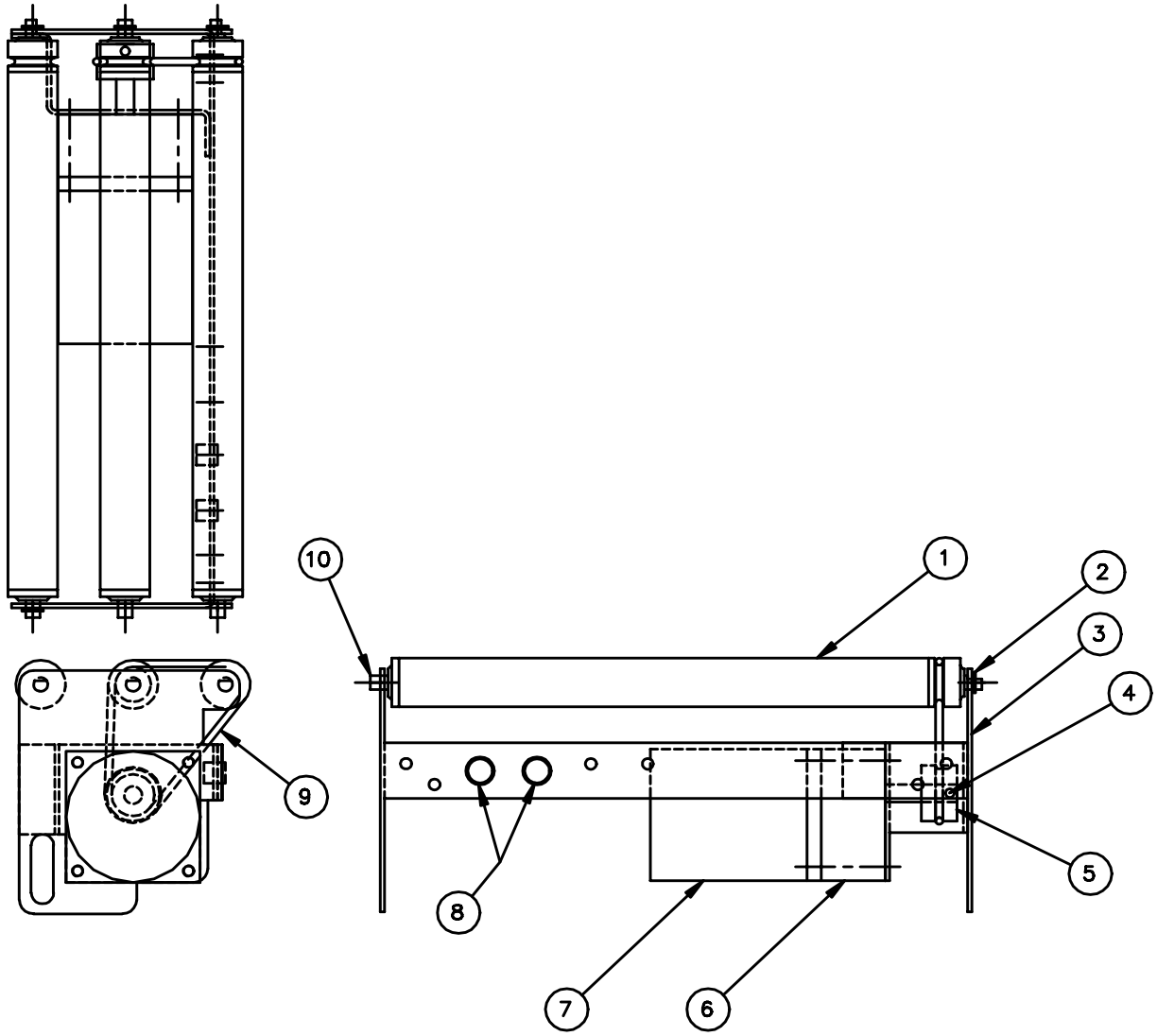
Scale Assembly





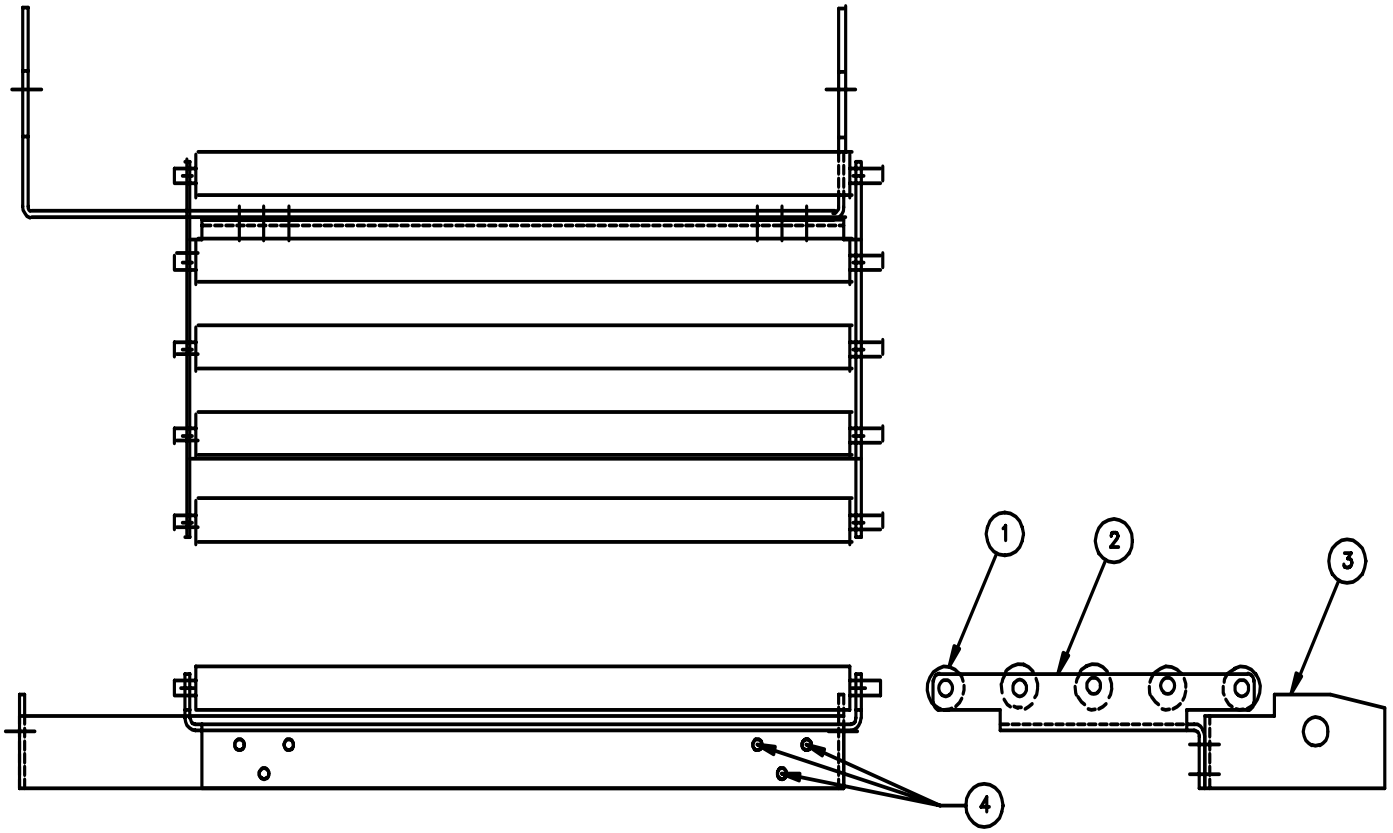
Item	Qty	Part #	Description
1	1	827020000	Scale Base
2	1	82779300A	Scale Support
3	4	82668000A	Threaded Rod 5/16-18 X 2 UNC
4	12	R00433050	Nut 5/16-18 UNC
5	4	R0283100A	5/16 Lock Washer
6	8	R00413050	1/4 Std Washer
7			Loctite 242 (Blue)

Infeed Conveyor Assembly



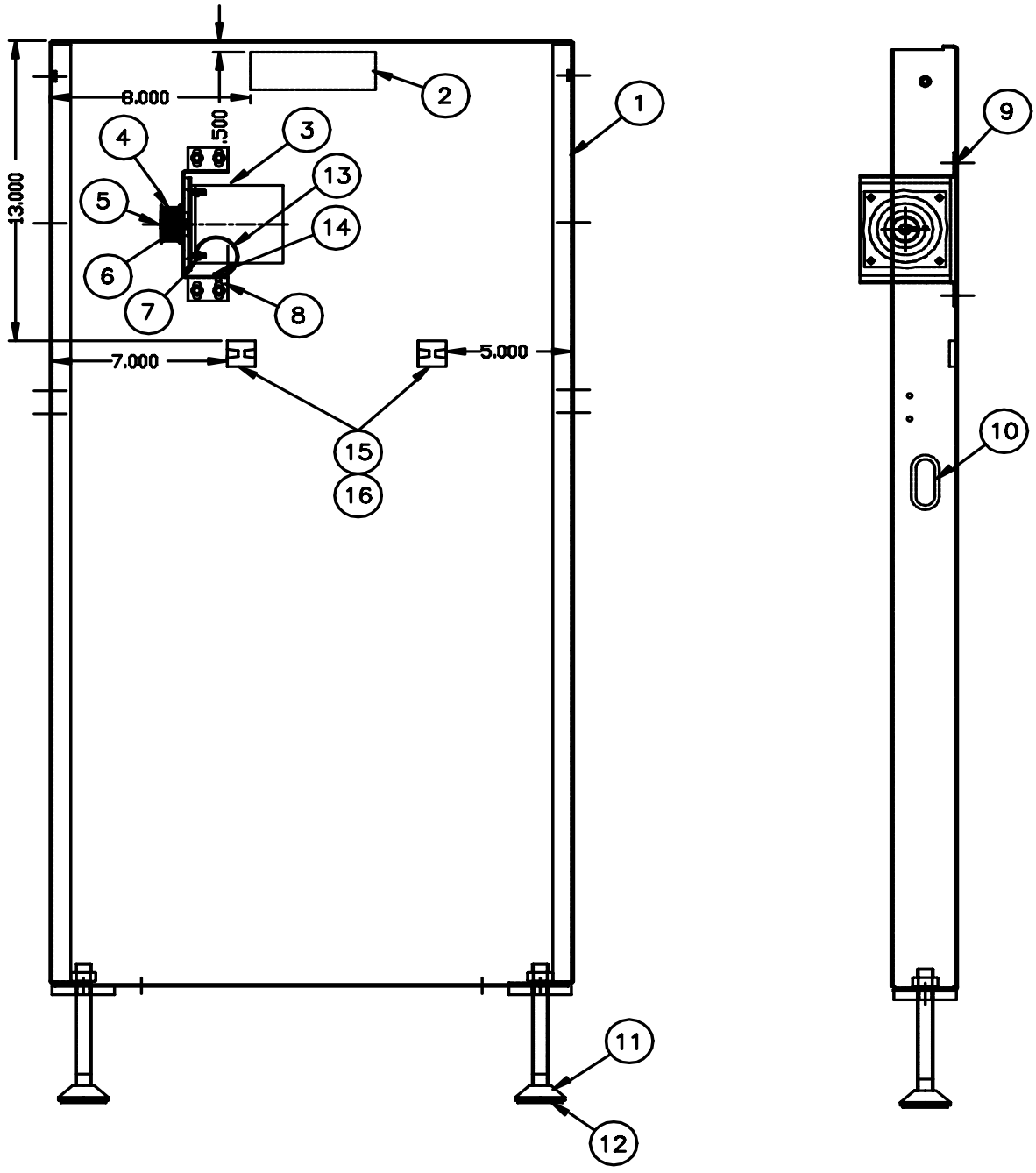
Item	Qty	Part #	Description
1	3	82818800A	Roller Assembly
2	4	82051900A	Grip Ring 1/4
3	1	82817700A	Infeed Conveyor Weldment
4	2	82718700A	M4 X 8 Set Screw CN Pt SS
5	1	82776300A	Pulley - Infeed Drive
6	1	82797100A	Gear Head 5:1
7	1	82797000A	Induction Motor 120 Vac
8	2	82137600A	Heyco Bushing 2871
9	1	82795500A	Belt 1/8 Dia X 8
10	3	82654100A	Shaft 1/4 X 10-5/16

Exit Conveyor Assembly



Item	Qty	Part #	Description
1	5	82172500A	Gravity Roller
2	1	82776900A	Exit Frame
3	1	82777000A	Exit Frame Pivot
4	6	81861100A	Pop Rivet 3/16 Grip .125 - .250
	1	82804000A	Exit Conveyor Assembly

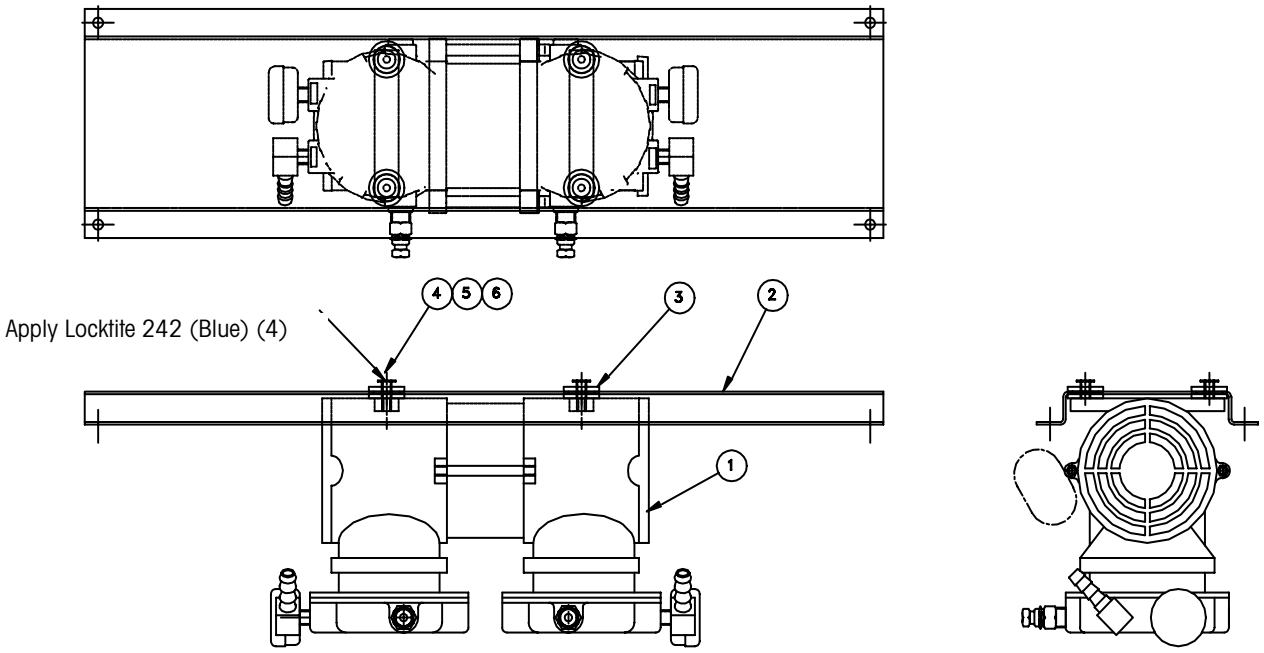
Rear Leg Assembly



Parts List for Rear Leg Assembly

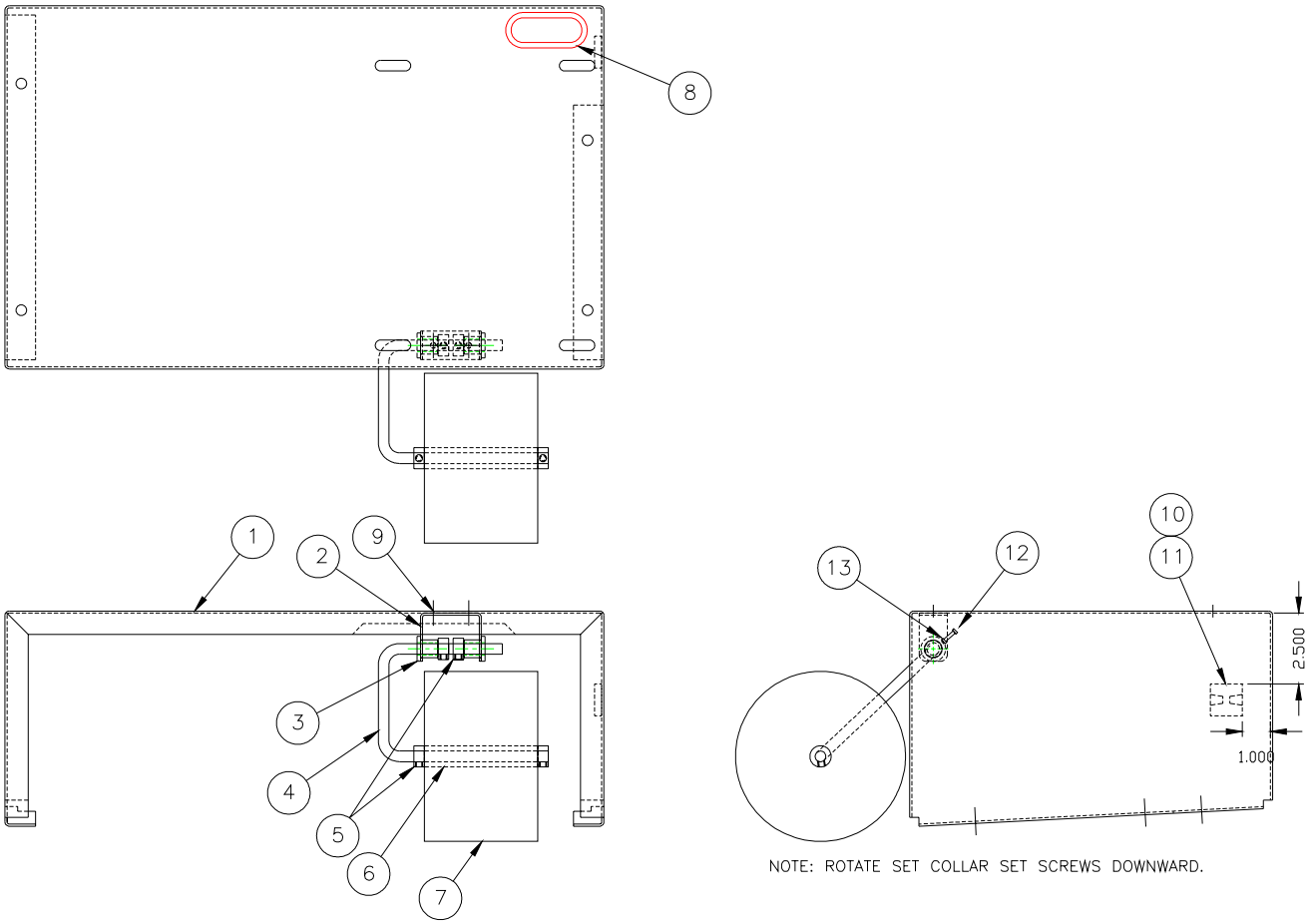
Item	Qty	Part #	Description
1	1	82778700A	Tall Rear Leg
2	1	82802100A	Label, Autostart
3	1	A82765900A	Stepper, Amp 5034 - 407
4	1	82798100A	Drive Pulley Htd Timing
5	1	82378400A	Woodruff Key 3025
6	2	R0268100A	#8-32 X 1/4 Set Screw
7	4	82709100A	M5 Locknut
8	1	82803400A	Motor Bracket Assembly
9	4	82804900A	M6 X 12 Flanged CS
10	5	82941100A	Hole Liner
11	2	82674300A	Leveler W/M16 Nut
12	2	82819400A	Leveler Rubber Pad
13	1	82810900A	Ground Wire
14	1	82861100A	Pop Rivet 3/16 Grip .126 - .250
15	2	A80690800A	Wire Tie Anchor
16	2	A80655300A	Wire Tie 5.5 In.

Pump Assembly



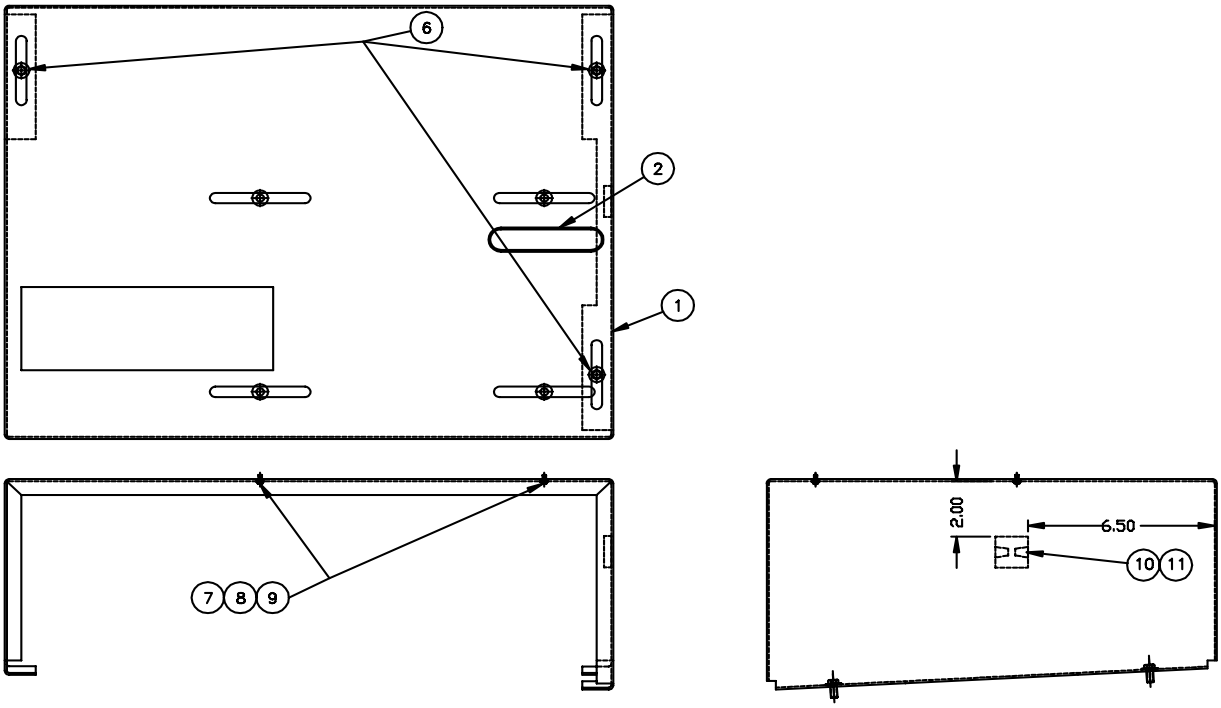
Item	Qty	Part #	Description
1	1	82794900A	Vacuum Pump
2	1	82779400A	Pump Support
3	4	82795600A	Grommet Isolator
4	4	R0382200A	#10-32 X 1-1/4 Hex Hd Screw
5	4	R0282900A	#10 Lock Washer
6	4	R0365700A	Washer 7/16 X 13 / 64 X .040 SS
7			Loctite 242 (Blue)

Price Label Printer Support



Item	Qty	Part #	Description
1	1	82778000A	Price Printer Support
2	1	82778500A	Foam Wheel Pivot
3	2	82805100A	Bushing
4	1	82778400A	Foam Wheel Axle
5	4	A80054600A	3/8 Set Collar
6	1	81733300A	Journal
7	1	A81733100A	Foam Wheel
8	.5	82660100A	Hole Liner
9	2	81861100A	Pop Rivet 3/16 1/8-1/4
10	1	A80690800A	Wire Tie Anchor
11	1	A80655300A	Wire Tie 5.5 In.

DayGlo KOP

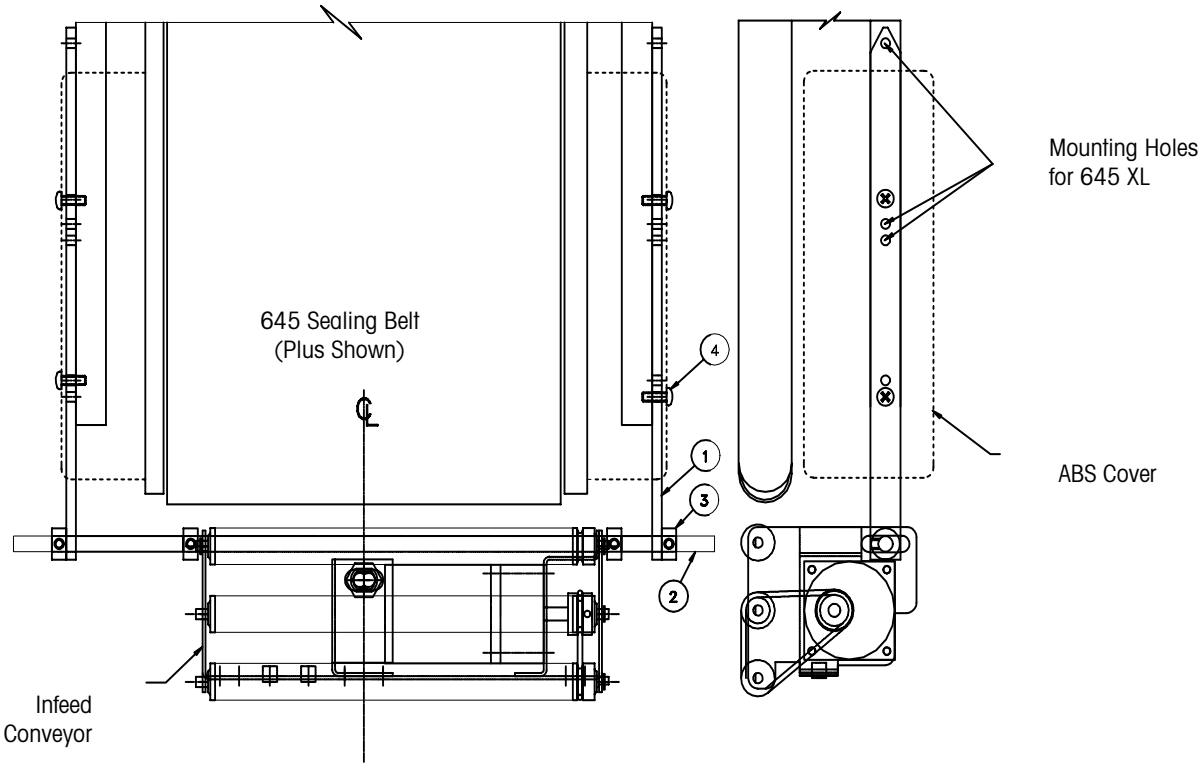


Parts For DayGlo KOP

Item	Qty	Part #	Description
1	1	82778100A	DayGlo Printer Support
2	5 ft.	82941100A	Hole Liner
3	1	82798900A	Power Cord
4	1	82811500A	Cable, 705 to Printer
5	7.8 ft.	275290002	Vacuum Hose 94 in.
6	3	82809400A	M6 X 12 Hex Flanged Capscrew
7	4	R0409800A	#8-32 X 5/8 SS Hex Capscrew
8	4	R0233200A	#8 Lock Washer
9	4	R0365700A	Washer 7/16 X 13 / 64 X .040 SS
10	6	A80655300A	Wire Tie 5.5 In.
11	1	A80690800A	Wire Tie Anchor
12	2	80976100A	Cord Grip 1/2 with Nut
13	2	82781200A	Wire Terminal 6 Pt.
14	1	82802200A	Cable 317 - 8360
15	2	82176600A	Terminal Label 1-10

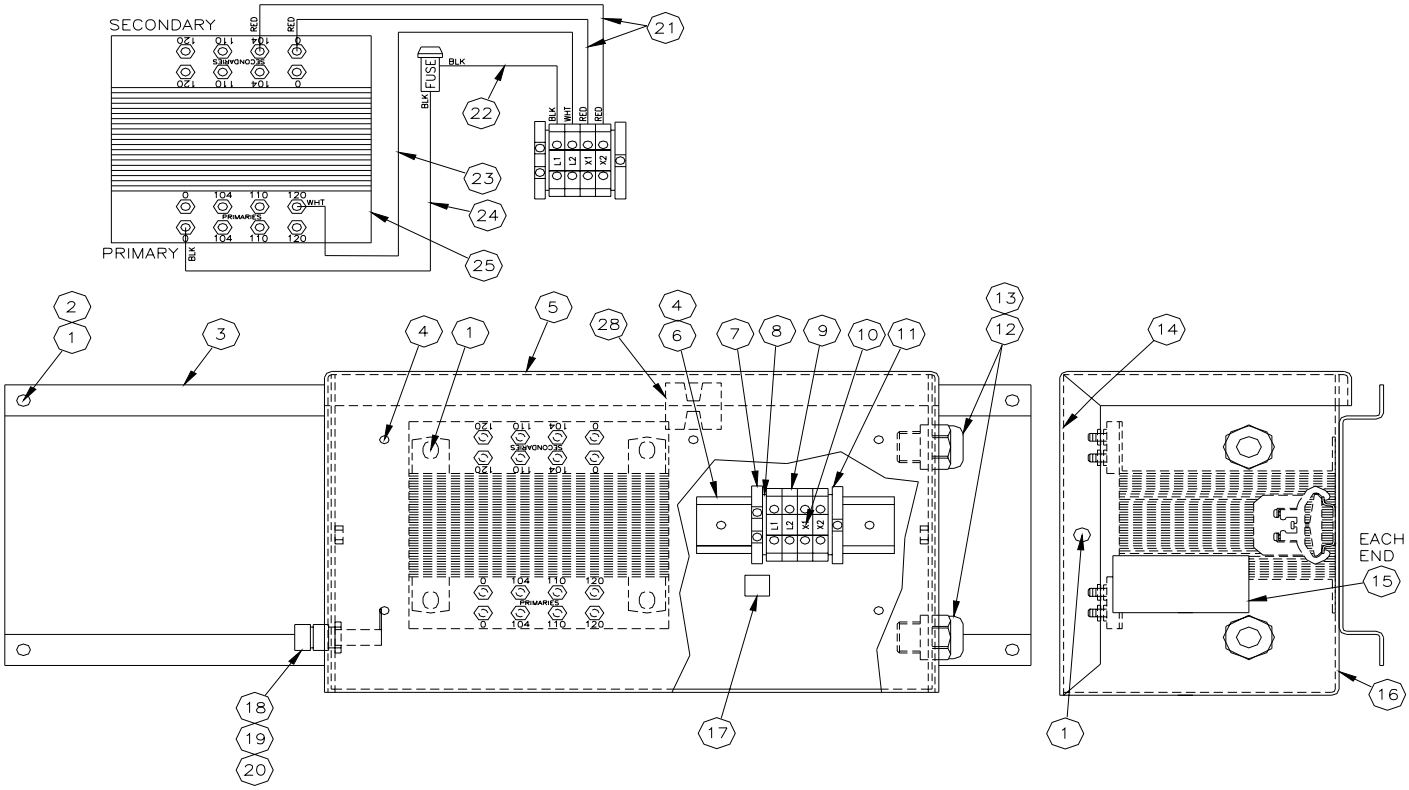
Items 3, 4, 5, 12, 13, 14, and 15 Not Shown

645 Connector Bracket



Item	Qty	Part #	Description
1	2	82796600A	Side Brace
2	1	82797800A	Retaining Bar
3	4	A800545600A	3/8″ Set Collar
4	4	82716100A	M5 X 16 Philips Head Capscrew

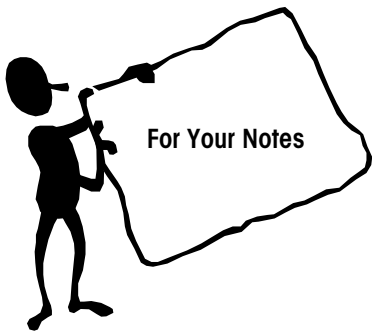
50 Hz Transformer KOP



Parts List for 50 Hz KOP

Item	Qty	Part #	Description
1	10	82804900A	M6 X 12 Hex FLG CS
2	4	82709200A	M6 Locknut
3	1	82849400A	Transformer Support
4	7	81861100A	Rivet 3/16 1/8-1/4 Grip
5	1	82849600A	Transformer Cover
6	1	82281400A	Din Rail
7	1	82476400A	Ground Clamp - Din Rail
8	2	82478400A	End Plate -Din Rail
9	4	82478200A	Terminal - Din Rail
10	1	82850400A	Terminal Marker
11	1	82292200A	Clamp - Din Rail
12	2	82474700A	Cord Grip 7/8
13	2	A80077800A	Cord Grip Nut 7/8
14	1	82849700A	Wiring Label
15	2	81921300A	Warning Label-Power
16	1	82849500A	Transformer Box
17	1	82700100A	Ground Decal
18	1	82466700A	Fuse Holder
19	1	82484600A	Fuse Buss MDL-2 1/2
20	1	82349700A	Fuse Buss MDL-5
21	2	82849800A	Wire Assembly
22	1	82849900A	Wire Assembly
23	1	82850000A	Wire Assembly
24	1	82850100A	Wire Assembly
25	1	82850600A	Universal Transformer
26	4	82850200A	Wire Assembly-Jumper
27	3	A80655500A	Wire Tie 4 in.
28	1	A80690800A	Wire Tie Anchor

Note: Items 26 and 27 Not Shown


For Your Notes

Mettler-Toledo, Inc.
1900 Polaris Parkway
Columbus, Ohio 43240
www.mt.com

P/N: B14882100A

(4/01).00