SOLO®
XL Combo
Automatic Wrapper/Labeler
Service Manual

For Models:
645-3013
645-3023
645-3033

83166300A
(9/00).00

METTLER TOLEDO®

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METTLER TOLEDO SOLO® XL Combo Service Manual 83166300A 9/00

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METTLER TOLEDO
Scales & Systems
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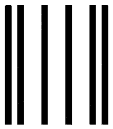

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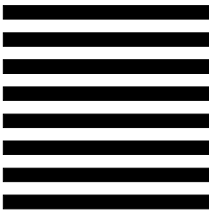

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INTRODUCTION

This publication is provided solely 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 writing to:

Mettler-Toledo, Inc.
1900 Polaris Parkway
Columbus, Ohio 43240
(614) 438-4511

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.

METTLER TOLEDO RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

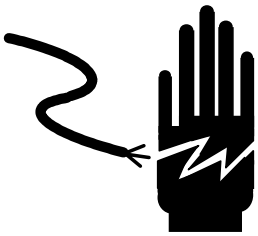
FOLLOW these instructions carefully.

SAVE this manual for future reference.

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

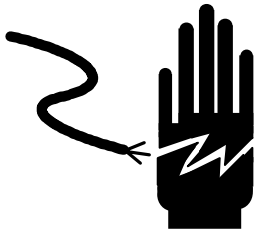
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.



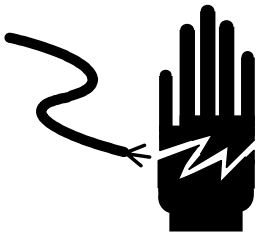
⚠ WARNING

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 AND/OR PROPERTY DAMAGE.



⚠ 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

Overview

The METTLER TOLEDO Model SOLO® XL Combo is an Automatic Wrapper designed to wrap, weigh, and label tray-contained products with stretch films. The wrapper is not designed to wrap loose and/or liquid products.

The SOLO® XL Combo is designed for easy operation and reduced film and labor costs. The SOLO® XL Combo is meant for use in prepackaging backroom environments. This unit is not intended for washdown or hazardous area operation, or for operation in environments of extreme dust, heat, cold, or humidity.

ISO9001
This product was developed, produced and tested in a METTLER TOLEDO facility that has been audited and registered according to international (ISO 9001) quality standards.

SOLO® XL Combo

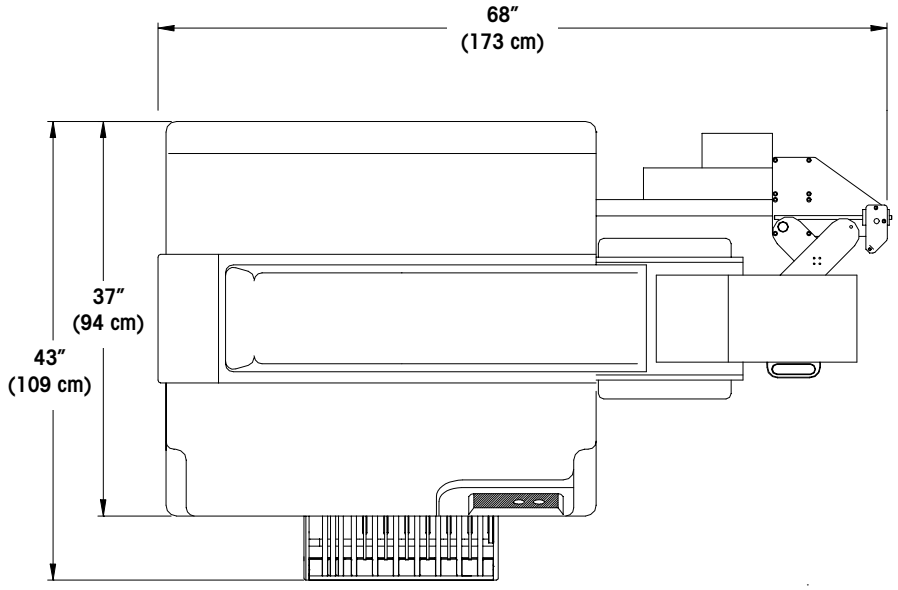
This Manual must be used with the SOLO® XL Wrapper Service Manual, P/N 15715700A. This manual covers the parts of the SOLO® XL Combo Wrapper that have been changed, or are additional features not included in the standard SOLO® XL Service Manual.

Product Specifications

Agency Approvals	ETL Approved Conforms to UL 763 and CSA C22.2
Noise Level Specifications	Equivalent continuous weighted sound pressure level at the workstation is 74.4 dB. Tests performed in conformance with ISO 3746 Standard (UNI 7712-AFNOR S31-069)
Footprint	20.6 sq. ft.
Film size	13 inch
Packages Per Minute	20 maximum
Min. tray size: length	7.08 in. (180 mm)
Min. tray size: width	5.11 in. (130 mm)
Min. tray size: height	0.78 in. (20 mm)
Max. tray size: length*	15.75 in. (400 mm)
Max. tray size: width*	11.40 in. (290 mm)
Max. tray size: height*	5.00 in. (127 mm)
Voltage Requirements (Combo Components)	115 VAC/50-60 Hz, 15A Supply (Includes Combo Control Box, Printer, Scale, and Scale Lifter.)
Voltage Requirements (XL Wrapper Only)	115 VAC/50-60 Hz, 30A Supply 208 VAC/50-60 Hz, 20A Supply 230 VAC/50-60 Hz, 20A Supply
Internal Operating Voltage	48 VAC
Shipping Weight	825 lb
Recommended Operating Temperature Range	40°F to 95°F (5°C to 35°C)
Humidity	5% to 95% Non-condensing

* Tray can only be at the maximum limit in one dimension.

Dimensions



Sequence of Operation

The sequence of operation for a Model 645 Wrapper to wrap a package in weigh and label mode is as follows:

1. A package is placed on the infeed conveyor beneath the package presence photoeye.
2. The scale platform is lifted to transfer the weight of the package onto the scale platter.
3. Once a weight is captured a label is printed and the scale is lowered and the wrapping process continues.
4. The Lifter moves down and the Infeed Door swings open.
5. The Infeed Conveyor moves the package through the horizontal and vertical photoeyes to determine the dimensions.
6. The dimensions are used by the microprocessor to control the number of steps the Infeed Conveyor Stepper Motor is driven to center the package on the lifter. The size of the package will also determine how much film is required.
7. The Center Clamp pulls the proper length of film. The Distributor Magnets are then energized to hold the film.
8. The Film Lifter rises to the film as the Side Clamps move in.
9. The Center Clamp moves back further to pre-stretch the film length-wise.
10. The Side Clamps grip the film, the Distributor Magnets are de-energized, and the Side Clamps pull outward to stretch the film.
11. The Distributor Magnets are energized.
12. The Lifter elevates the package into the film. The Side Clamps move in under the pack and release the film.
13. The Lifter drops down, the package rests on the Side Clamps, and the Distributor Magnets de-energize.
14. The Center Clamp moves toward the package and tucks the film underneath as it discharges the pack.
15. During the discharge movement, the film is cut.
16. The package is wrapped and pushed onto the Sealing Belt to be sealed.
17. The package is sensed on the sealing belt and stopped with the leading edge just beyond the printer applicator head.
18. During the sealing period, the applicator applies the label.
19. After the package is sealed the sealing belt starts and the package is discharged from the machine.

2 Installation and Setup

Unpacking

The SOLO® XL Combo is shipped in two special shipping crates. The Wrapper/printer post is on one pallet and the scale lifter mechanism is in a separate box. Carefully inspect the wrapper for damage and report any shipping damage to your carrier immediately. Unbolt the wrapper from the shipping crate and remove all packing straps and material. Carefully remove the scale lifter from its box and inspect for any signs of damage as well.

⚠ WARNING

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

Caution: The unit is top heavy. Use extreme caution when removing it from the shipping pallet. Lift the wrapper by the main frame only. ***Do not lift or move the wrapper using the Infeed Table, Sealing Belt, or the Printer arm.*** Refer to Figure 2-1.

These instructions refer to procedures unique to the Solo XL Combo wrapper. Refer to S/M 15715700A for additional installation procedures.

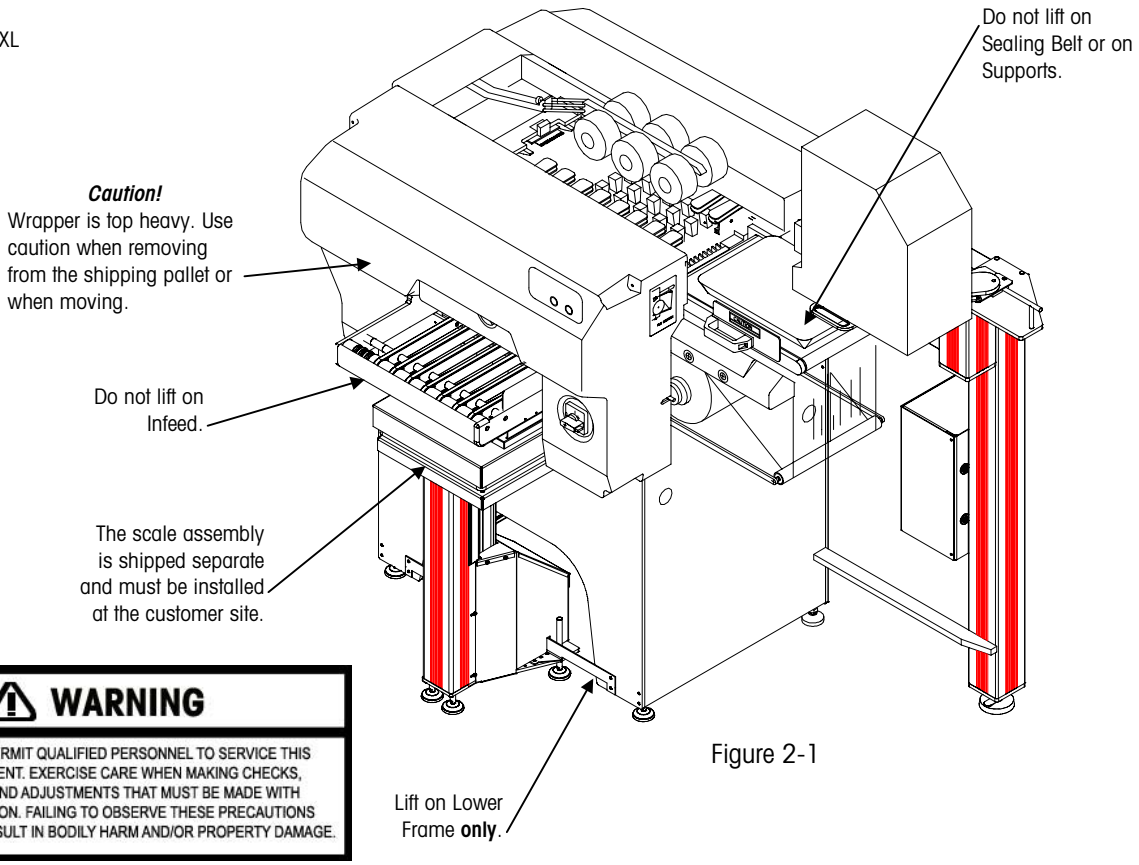


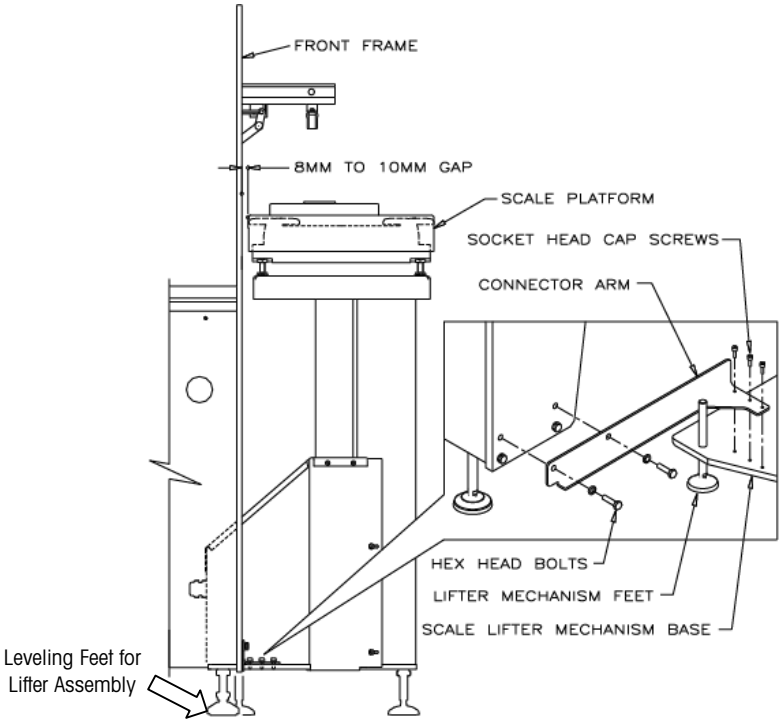
Figure 2-1

Setup & Scale Installation

The SOLO® XL Combo must be leveled during installation. To level, adjust the four support feet fixed to the lower part of the base using a level referenced to the infeed frame. The SOLO® XL Combo must be leveled front to back, and side to side. First level the machine using the four primary feet, then lower the printer shelf foot onto the floor.

The Scale Lifting kit must also be leveled during installation. The connecting brackets will line up as the leveling feet are extended to the proper height. The Scale Lifting kit must be level to ensure proper operation of the scale. Figure 2-2 shows a front and side view of the scale lifter mechanism in front of the wrapper. The scale lift must be accurately positioned beneath the infeed belts for proper operation of the weighing mechanism. The assembly instructions below describe this process.

NOTE: The scale must be leveled to the scale platform during installation as well. To level, adjust the four support feet to position the scale at a level position and at the proper height. The scale is shipped firmly mounted to the platform. This assembly may or may not be the proper height for the scale to fit beneath the infeed properly. First, loosen the nuts then lower the scale as far as possible before scale positioning begins.



Side views of the scale lifter assembly showing the location of the four mounting bolts and the adjustable legs on the scale lifter and the scale.

FIGURE 2-2

Scale Positioning: (Refer to figure 2-2)

1) Remove the four hex head bolts noted in Figure 2-2 from the front frame of the Model 645.
2) Remove the scale platter and risers from the top of the scale platform.
3) The scale cable should be threaded through the center of the scale platform (a large hole has been punched out for this purpose). It should be routed beneath the archway on the front frame.
4) Slide the scale assembly into place beneath the infeed.

5) Extend or retract the lifter mechanism feet to line up the holes on the connector arms with the open holes on the front frame of the wrapper.
6) Thread the bolts through the connector arms and into the front frame of the Model 645.
7) Ensure that there is an 8 to 10 mm gap between the rear of the scale platform and the frame. If not, gently pull the scale assembly away from the wrapper to properly position the connector arms relative to the base plate and front frame. Loosening the three socket head screws on the base plate may help during this step – make sure to firmly tighten when finished positioning the scale.
8) Using a level, check the front and side of the column – ensure it is vertical.

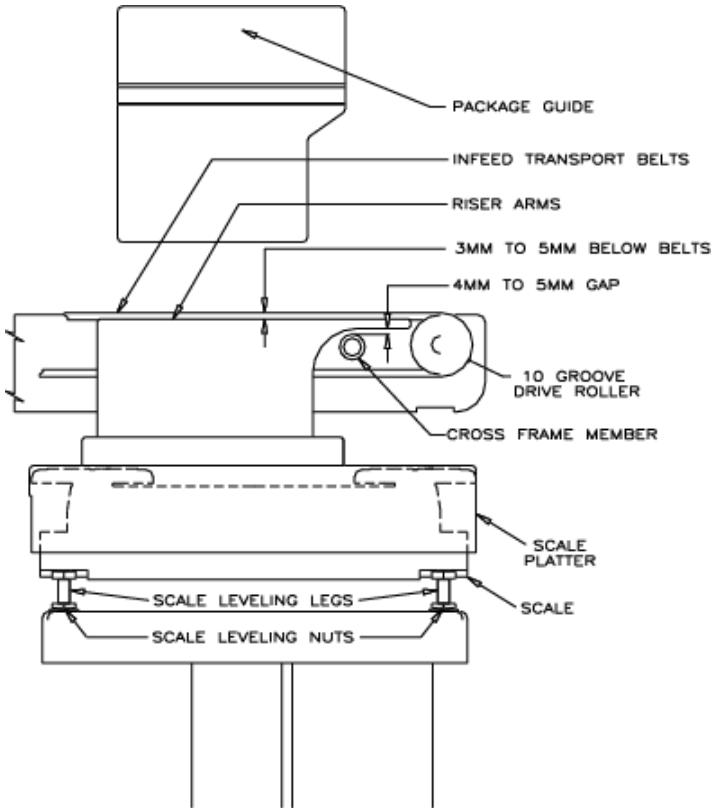


Figure 2-3: Scale Platter Setup

9) With the risers removed from the scale platter, slide the platter into place over the scale and drop into place.
10) Press each riser into place. Pushing the rear of the arm into the back of the slot and then levering the front edge into place will provide a solid fit.
11) Install the Package Stop bracket – the angled cut on the package stop should be pointing outwards when properly installed. This will position the flat of the stop directly above the right hand frame of the infeed.
12) The scale lifter is shipped in the lowered position. With the lifter arms in place, adjust the height of the scale so that a 4 to 5 mm gap exists between the cross frame inside the infeed and the bottom of the lifter arm leading edge.
13) Bring the scale to level with the leveling nuts on the scale feet. The tops of the risers should be 3 to 5 mm below the tops of the belts at all points. Reference the infeed when leveling the scale.

14) Once the scale is level, tighten the nuts on the bottom of the scale platform.

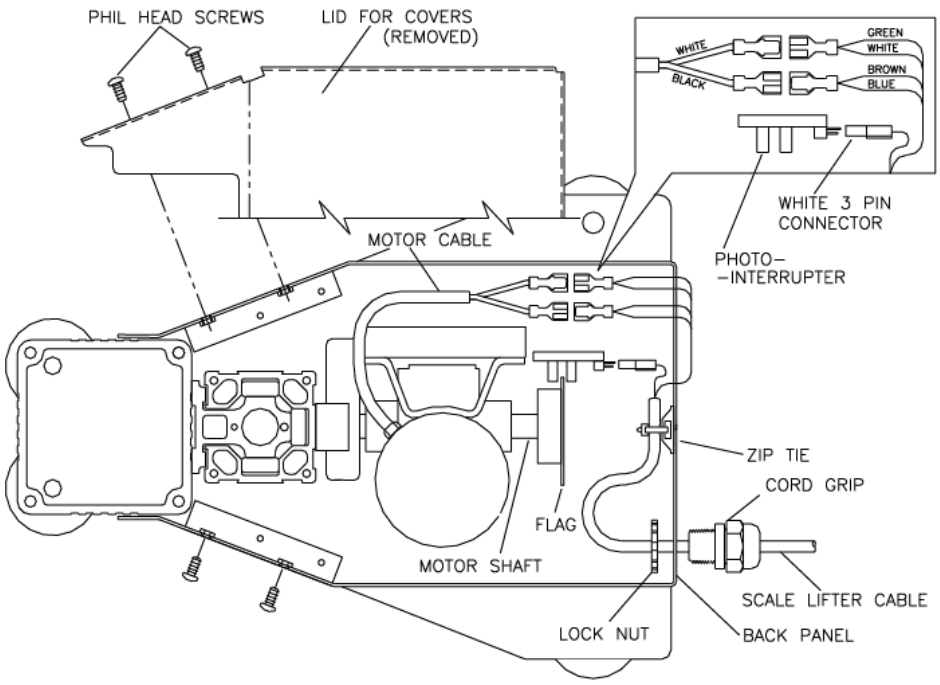


Figure 2-4 Scale Lifter Cable Connections

15) Locate the scale lifter cable hanging just inside the front frame of the wrapper.

16) Remove the lock nut from the cord grip on this cable.

17) Remove the lid from the scale lifter assembly – four cross relief head screws.

18) Thread the cable through the hole on the back panel and tighten the nut onto the cord grip. Make sure to thread the cable through the zip tie (loosely hanging from the rear of the wall of the covers).

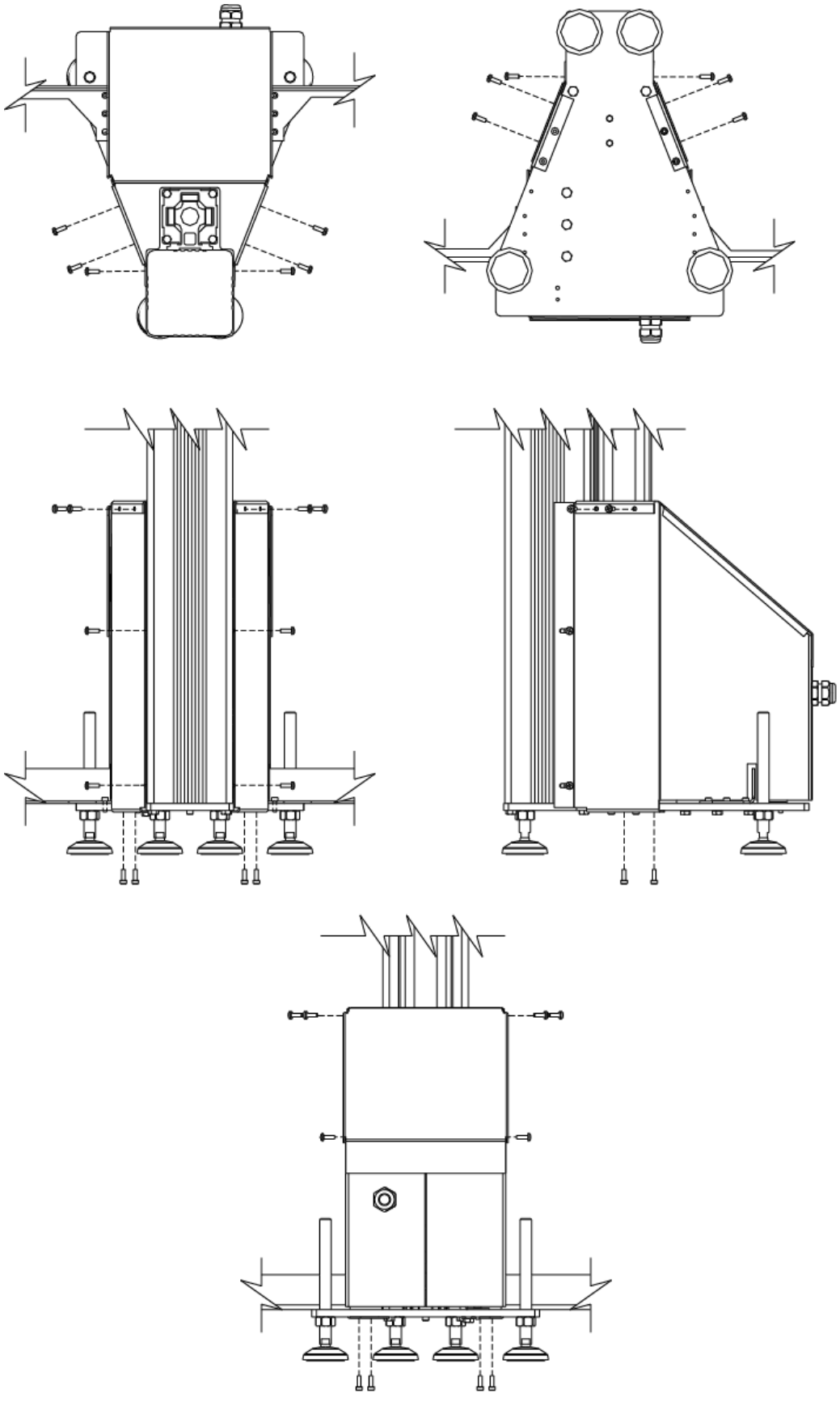
19) Connect the green and white wires to the white wire of the motor cable. Connect the brown and blue wires to the black wire of the motor cable. There is no need for grounding in this case.

20) Connect the white 3-pin connector to the photointerrupter. Ensure that the flag on the motor shaft will pass through the ears of the sensor without interfering with the body of the photointerrupter.

21) Tighten the zip tie to keep the wires away from the motor shaft.

22) Replace the lid for the cover and tighten the four screws.

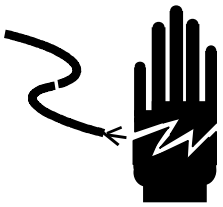
23) Refer to the following illustrations for a re-assembly reference guide. If the holes on the lid do not line up correctly, loosen the side screws first.



Cover Assembly Reference

Printer Installation

To allow easy access for label replacement, the printer is mounted with the label access door facing the operator.



WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

- Remove the printer feet and mount the printer on the moveable printer mount using three 5\16 x 1″ flat head socket cap screws and three spacers between the mount and the printer base.
- Install two of the mounting screws into the threaded holes for the front two printer feet and the third screw into a threaded hole in the middle of the printer base (See Figure 2-5).
- Place the nuts on the mounting screws inside the printer case and tighten.
- Remove the four M4 x 8 Phillips screws from the applicator cover, and then remove the cover for access to the applicator.
- Remove the six M4 x 8 Phillips screws on the left-hand side cover for access to the printer control boards.
- Route the cables and vacuum hose through the (supplied) cable bracket (Refer to Figure 2-5).

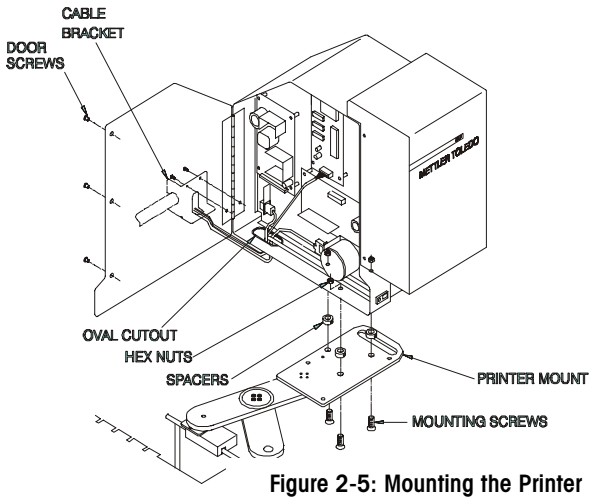


Figure 2-5: Mounting the Printer

- Refer to the 317 Service Manual A82784900A for cable connections and Applicator Setup.
- Mount the Cable Bracket (Figure 2-5) on the back of the printer using the existing M4 x 8 Phillips screws. One is located at the bottom of the backside cover mounting bracket and the other holds the center support to the back panel.
- Reinstall the applicator cover, close the printer door, and secure with the M4 x 8 Phillips screws removed earlier.
- Dress the harness with plastic conduit.

Scale Calibration

The following two methods can be used to calibrate the scale.

Method 1

Refer to the scale controller Service Manual for detailed instructions on how to calibrate the scale.

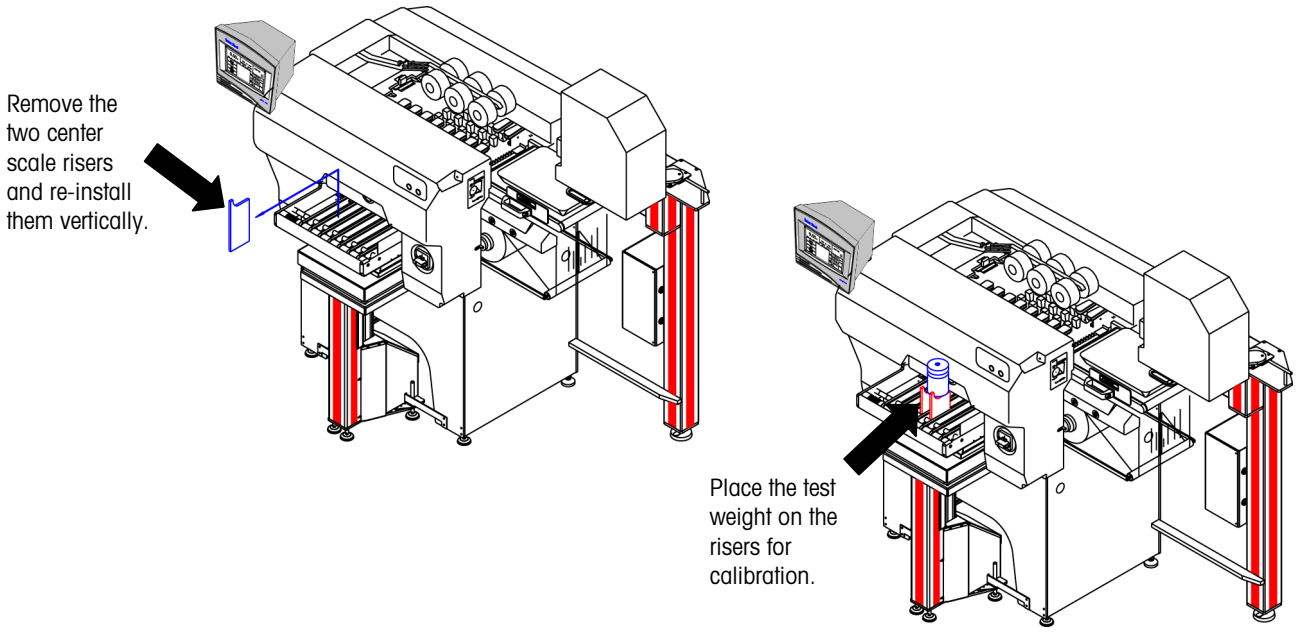
Calibrate existing scales
To raise the scale for calibration, enter a PLU number, then touch the LABEL MODE key until it reads MANUAL on the second line. Block the infeed photoeye so the scale will raise, then open the top cover of the wrapper (or turn the wrapper power switch OFF) to prevent the lift mechanism from lowering the scale when END RUN is touched. You can then calibrate the scale.

Calibrate new scales
If this is a new installation, first enter a PLU number for a Standard Pack PLU, or select Standard Pack for the manual PLU pricing if no PLUs exist yet. At the PLU Edit Screen, touch the LABEL MODE key until it reads MANUAL on the second line. Block the infeed photoeye so the scale will raise, then open the top cover of the wrapper (or turn the wrapper power switch OFF) to prevent the lift mechanism from lowering the scale when END RUN is touched. You can then calibrate the scale normally.

Method 2

In this method, the two center scale risers must be removed and installed vertically as shown below. When the risers are installed vertically, the test weight can be placed on the scale for calibration (see below).

Refer to the scale controller for detailed instructions to calibrate the scale.

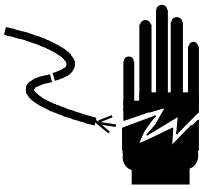


Power Requirements

AC wiring to the transformer must be performed by trained personnel only, and must be wired in accordance with all local and national electrical codes.

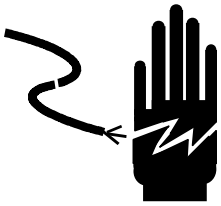
The SOLO® XL Combo is ordered according to the AC voltage requirements. The Solo XL Combo requires two separate power sources. The power requirements for the wrapper portion are listed in the chart below. The scale controller, printer and vacuum pump require a separate 115 VAC 60Hz 15A supply. For more information on the wrapper transformer, refer to the Solo XL Wrapper Service Manual, P/N 15715700A.

Single Phase AC Voltage Supply	Factory Number
XL Combo 115 VAC/50/60 Hz/30A Supply/2350 VA	645-3013
XL Combo 208 VAC/50/60 Hz/20A Supply/2350 VA	645-3023
XL Combo 230 VAC/50/60 Hz/20A Supply/2350 VA	645-3033



⚠ WARNING

NOTE: BEFORE CONNECTING THE SOLO® XL COMBO TO A POWER SOURCE, FIRST VERIFY THE SUPPLY VOLTAGE MATCHES THE UNIT'S VOLTAGE REQUIREMENTS LISTED ON THE DATA PLATE. FAILURE TO OBSERVE THIS WARNING MAY RESULT IN DAMAGE TO THE MACHINE.



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When installing a SOLO® XL Combo, always verify the supply voltage by checking it with a voltmeter. Verify there is a good safety ground.

The wiring from the control box out to the printer, scale controller, and vacuum pump will be complete upon opening the crate. A 6-foot long 115 VAC cord included with the control box will supply power to these components.

DIP Switch Settings

645 Wrapper CPU Board

Verify the switch settings of SW1, located on the Model 645 Wrapper CPU Board. (* = Recommended Setting).

SW1-1 Not Used, must be OFF = 0

SW1-2 Horizontal Photoeye Test at power up = 0, No Test = 1*

SW1-3 Tall Package Photoeye enable. ON = 1, OFF = 0.

SW1-4 Wrap only = 0, Wrap, weigh, and label = 1 (Must be ON)

SW1-5 Heater/Blower OFF = 0, ON = 1 (Must be ON)

SW1-6 Not used, must be ON = 1 or ES4 will occur.

SW1-7 Normal Operation = 0*, Machine step-by-step operations 1 (Test 106)

SW1-8 Normal Operation = 0*, Continuous Operation = 1 (Test 107: program 95)

Combo Controller PCB

Dip Switch assignments on the micro controller inside the combo control box are:

SW1-1 Off selects English error message display, On selects Spanish message display.

SW1-2 Off selects normal label positioning, On selects opposite label positioning.

SW1-3 Not used, leave off

SW1-4 Not used, leave off

SW1-5 Not used, leave off

SW1-6 Not used, leave off

SW1-7 Not used, leave off

SW1-8 On enables Flash operation, Off selects normal operation.

SW2-1 Not used, leave off

SW2-2 Not used, leave off

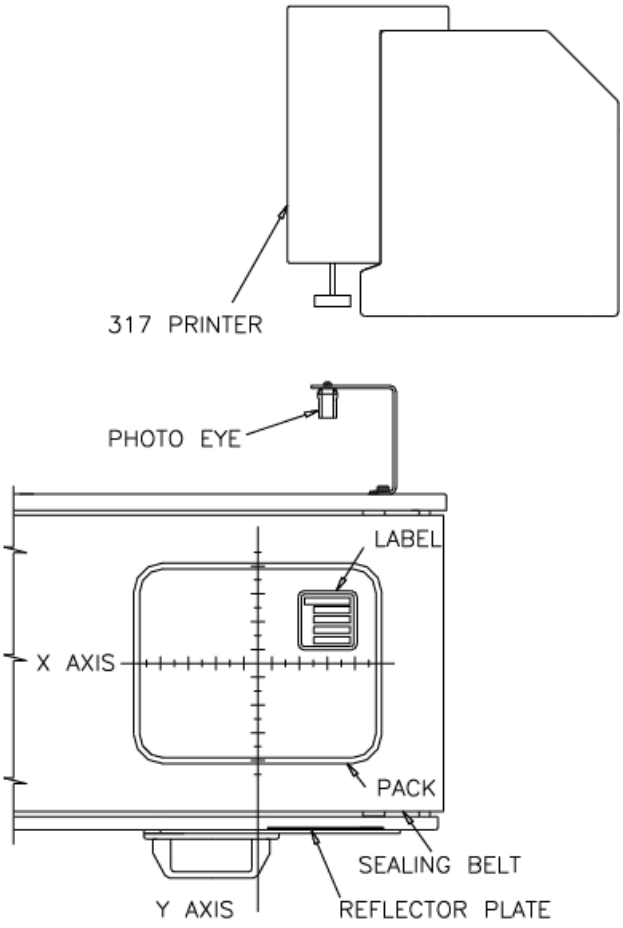
SW2-3 Not used, leave off

SW2-4 Not used, leave off

Label Positioning

To adjust the label along the X Axis, the position of the photoeye must be changed along the slots provided in the bracket. Moving the photoeye towards the end of the sealing belt will move the label away from the edge of the package.

Adjusting the label position along the Y Axis is accomplished through pulling or pushing the applicator shelf appropriately.



3 Operating Instructions

Component Locator

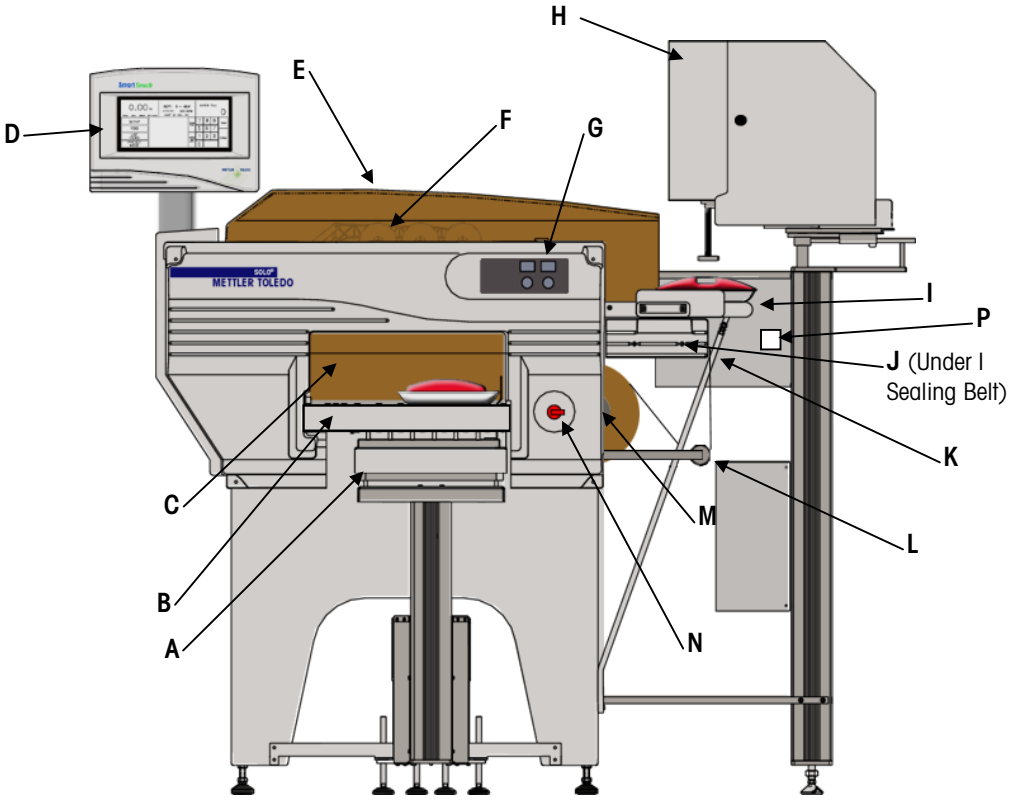
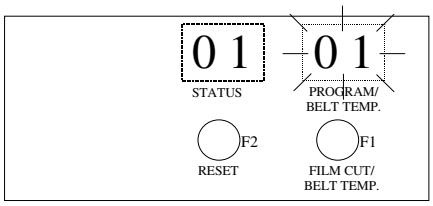


Figure 3-1: SOLO® XL Combo

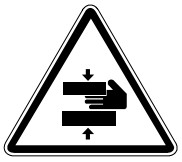
A	Scale	**I**	Sealing Belt
B	Infeed Conveyor/Weighing Platform	**J**	Film Folders
C	Infeed Door	**K**	Curved Roller Assembly
D	Scale Controller	**L**	Dancer Bar
E	Top Cover	**M**	Film Bobbin and Lock
F	Package Pressure Rollers (inside)	**N**	Wrapper Power Switch
G	Wrapper Control Panel	**P**	Labeler Power Switch and Control Box
H	Model 317 Printer/Applicator		

Control Panel

Refer to item G on page 3-1. The Control Panel consists of two 2-digit displays showing **Status** and **Program/Belt Temperature**, and two pushbuttons labeled **Reset F2**, and **Film Cut/Belt Temp**. **F1**.



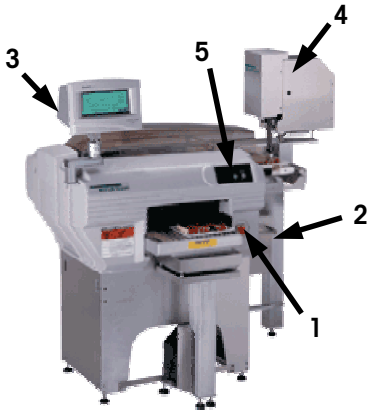
- **Status Display**
  Shows the Status Codes of the machine.
- **Program/Belt Temperature Display**
  Normally displays Wrap Program Number
  Displays Sealing Belt Temperature in setup mode.
- **Reset Button F2**
  Resets machine (***Caution! Pressing Reset initiates a self-test***).
  In setup mode, used to change Wrap Program and Sealing Belt temperature.
- **Film Cut/Belt Temp Button F1**
  Used to cut film.
  In setup mode, used to change Wrap Program and Sealing Belt temperature.



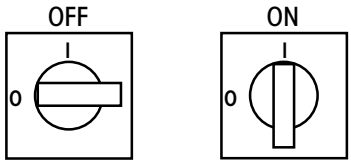
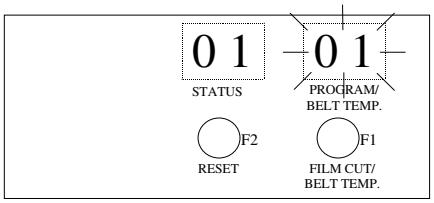
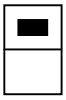
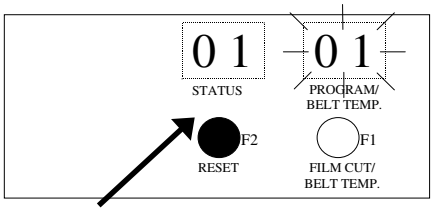
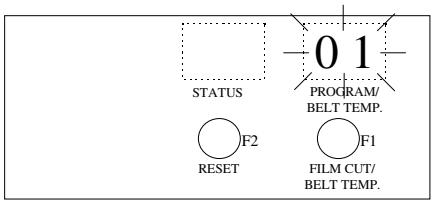
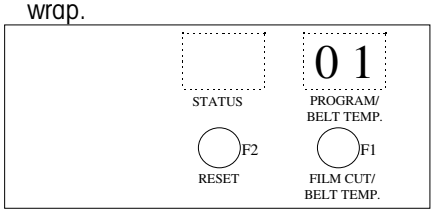
⚠ WARNING!

During self-test the Infeed Belts are in motion and other motors are running. Do not place materials on the belts during this test. Keep hands clear of the machine during the test.

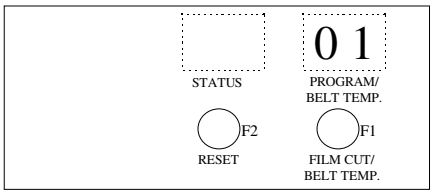
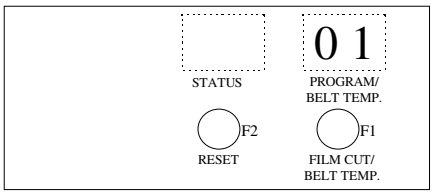
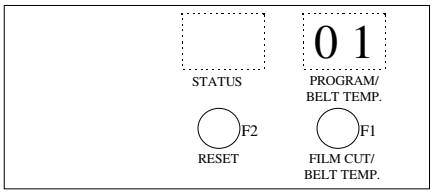
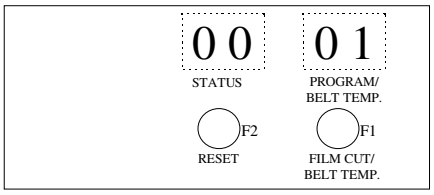
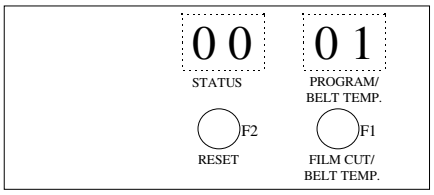
Combo Startup



Warning!
During the self-test, the machine conveyors are in motion. Keep clear of machine during the test. Do not place any materials on the Infeed Belts while the machine is running the test.

Operator Action	Machine Response
Turn power switch (1) from **O** (off) to **I** (on) to turn the wrapper power on.  This controls power to the wrapper motors, electronics, and sealing belt.	• Wrapper startup test. • Status display shows 01 • "PROGRAM/ BELT TEMP" display will blink off/on. 
Flip Rocker Switch (2) on Control Box to ON position.  This switch is on when the LED is illuminated.	Combo Control Board powers up. Vacuum Pump power supply enabled. Scale Lifter power supply enabled.
Flip power switch (3) to ON at the rear of the Controller.	Scale Controller boots up.
Open the Printer door and flip the power switch (4) to ON.	Printer powers up and applicator resets.
Push **F2** button (5) to reset the machine. 	• Machine starts self-test • Status display will be blank. • "PROGRAM/ BELT TEMP" display continues to blink. 
Wait for Sealing Belt to reach specified temperature.	• When "PROGRAM/ BELT TEMP" display stops blinking, the machine is ready to wrap. 

Control Panel Functions

Display on Control Panel	Status or Operator Action	Operation Description
	Machine ready to wrap.	Program Display shows the work program. Status Display shows status codes.
	To Select new Program. **01** Tightest Wrap **03** Standard Wrap **05** Reduced film tension **31** For use with Black Trays	Press and hold the Reset Button **F2** for more than 2 seconds. While holding Reset Button **F2**, select the new program by pressing the Film Cut/Belt Temp Button **F1** until the desired program number is displayed.
	To Change Sealing Belt temperature. **00** Heater Off **01** 78°C (172°F) **02** 81°C (178°F) ↓ Each step = +3°C (5.5°F) **30** 165°C (329°F) Max	Press and hold Film Cut/Belt Temp. Button **F1** for more than 2 seconds. While holding Film Cut/Belt Temp. **F1**, select the new temperature by pressing Reset Button **F2** until the desired temperature setting is displayed. Recommended temperature range is between 18-20.
	Machine stop. Check Status Code.	Status Display shows status code. Refer to the Status Code Table in the Troubleshooting Section. Correct the error condition, then press Reset **F2** to restart.
	To cut film.	Status Display must show **00** or **01**. Press and hold Film Cut/Belt Temp. Button **F1** until film is cut. (Approximately 5 seconds.)

Film Roll Installation

The SOLO® XL Combo requires 13-inch film. The recommended film is a high quality, two-ply 16 micron stretch film that is available through Mettler Toledo Aftermarket. Other films are available that will work on the machine. Contact Mettler Toledo for additional information. To install film on the SOLO® XL Combo proceed as follows:

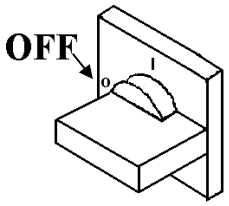


Figure 3-2

Turn the Main Power Switch to OFF.

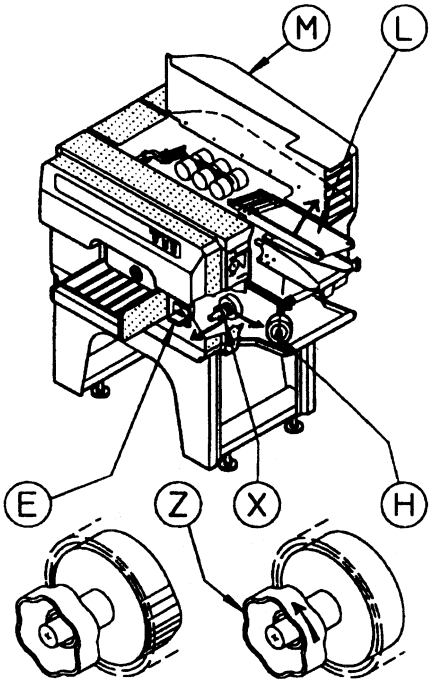


Figure 3-3

Open the top cover (M).

Push the Printer Shelf back, then lift the sealing belt (L).

Release the Bobbin (H) from its housing by moving latch (X) toward the operator side. Pivot the Bobbin outwards.

Hold the Bobbin and rotate the handwheel (Z) counter-clockwise to release the Bobbin Lock.

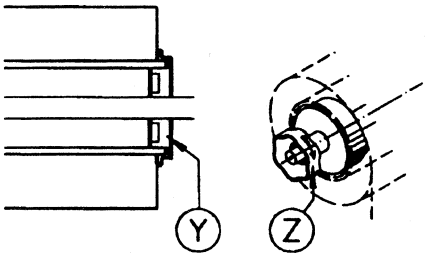
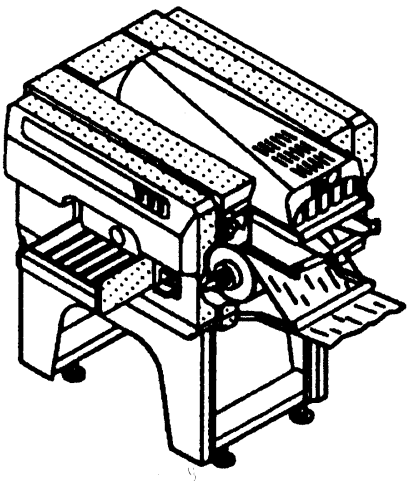


Figure 3-4

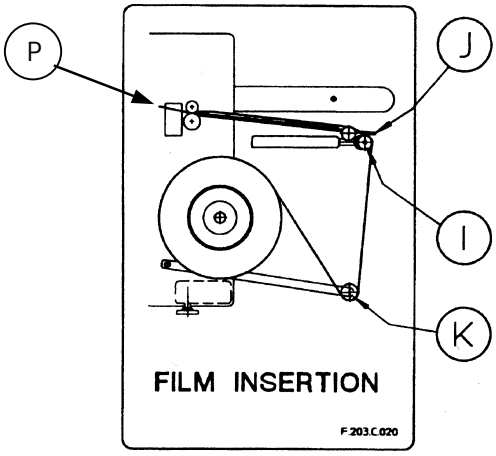
Slide the film roll onto the Bobbin until the roll edge touches the reference disk (Y) in Figure 3-4.

Rotate the handwheel (Z) clockwise to end stop.



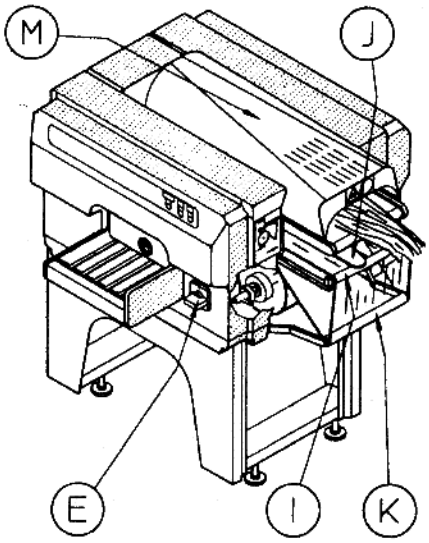
Pull the Bobbin Latch, pivot the Bobbin back to the work position until it locks.

Figure 3-5



Insert the film under the dancer roller (K), over the curved rollers (I), through the film folders (J), and past the distributor (P).

Figure 3-6



Lower the Sealing Belt back to the work position.

Pull out approximately 1 meter (3 feet) of film until it widens at the first roller of the Sealing Belt.

Lower the Top Cover (M) back to the work position.

Turn the Main Power Switch (E) ON to the I position.

Press and hold **F1** until the film is cut, then remove the excess film.

The SOLO® Combo is now ready to wrap packages.

Figure 3-7

Weighing, Wrapping and Labeling Trays

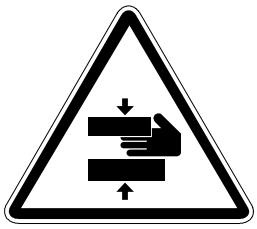
- Within the maximum and minimum size limits, SOLO® XL Combo machines accept any tray size placed on the feed device in any order.
- The wrapper will automatically adjust film quantity and tension, depending on tray dimensions.

CAUTION!

Do not place a tray on the infeed conveyor when the belts are moving.

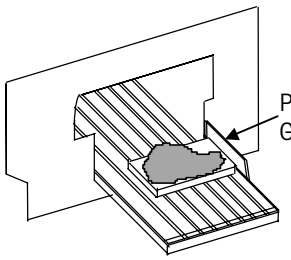
- The wrapper starts when a package is placed beneath the Infeed Photoeye.
- Trays must be placed squarely against the Package Guide (parallel to the belts) to be wrapped properly.

Automatic Weigh, Wrap, and Label



WARNING

Do not put your hands beyond the Infeed Door or beyond the Sealing Belt exit opening while the machine is operating or powering up. On power up, the SOLO® XL Combo will run a self-test. During the self-test, Infeed Belts are in motion and other motors are running. Do not place materials on the belts during this test.

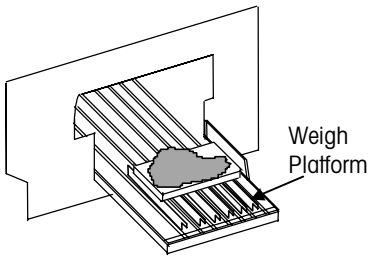


Make sure that the scale is at Zero before beginning any weighing operation.

To start automatic wrapping, first key in the PLU number on the Scale Controller.

Place the tray on the Infeed Belts and against the **package guide**. The infeed photoeye will detect the tray and start the machine.

Place the trays on the infeed conveyor only when the conveyor belts are stopped! Do not place a tray or any object on the moving conveyor belts.



The SOLO® XL Combo will first raise the scale to weigh the package. **Do not touch the tray while it is being weighed.**

Once a stable weight is obtained, the scale will be lowered and the package will be conveyed into the machine and wrapped.

A photoeye on the sealing belt is used to stop the package in the proper position for label application.

The label is applied during the dwell time that the package remains on the sealing belt.

Label Position on the tray can be controlled by moving the applicator as desired.

After a brief delay to seal the bottom of the tray, the conveyor will eject the labeled tray and move the next tray into labeling position.

When you are finished running the product, touch the END RUN key on the Scale Controller.

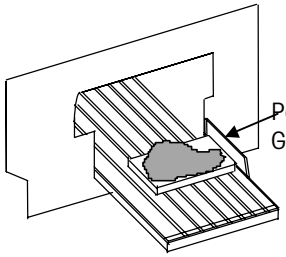
Note: The Combo will switch into a "Wrap Only" Mode when there is an error on the scale controller.

Wrap Only

If a package is fed into the machine after the END RUN key on the scale controller is touched, or if no PLU has been called, the machine will run in Wrap Only mode. The scale table will rise momentarily, but no weight is recorded and no label will print or be applied.

Automatic Weigh and Label

Use this procedure to automatically weigh and label pre-wrapped trays:



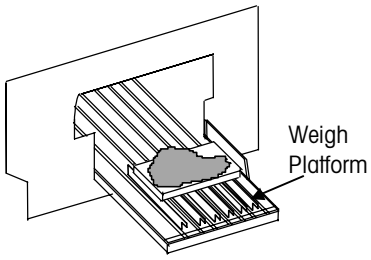
Lift the sealing belt and remove the film from the distributor. Lower the sealing belt.

Key in the PLU number on the Scale Controller.

Place the tray on the Infeed Belts and against the **package guide**. The infeed photoeye will detect the tray and start the machine.

Place the trays on the infeed conveyor only when the conveyor belts are stopped! Do not place a tray or any object on the moving conveyor belts.

The SOLO® XL Combo will first raise the scale to weigh the package. **Do not touch the tray while it is being weighed.**



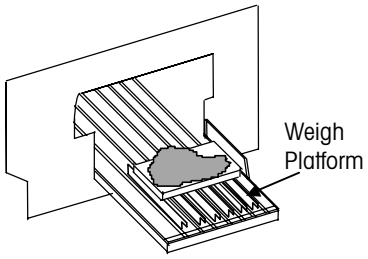
After weighing the package, the infeed belts will transport the package to the sealing belt where a label will be applied. The conveyor will eject the labeled tray and move the next tray into labeling position.

When you are finished running the product, touch the END RUN key on the Scale Controller.

Remember to rethread the film when returning to

the wrap mode.

Manual Weigh and Label



To weigh trays and apply labels manually to a wrapped tray, first key in the PLU number on the Scale Controller.

Next, touch the LABEL MODE key until MANUAL displays on the second line.

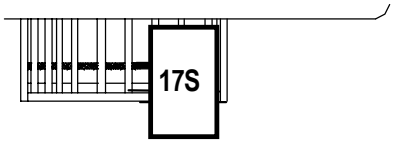
Place the tray on the infeed belts against the package guide. This will raise the scale above the belts for manual weighing. **Do not touch the tray while it is being weighed.**

After weighing the package, the label will automatically print. Remove the package from the scale. Retrieve the label from the printer and apply it to the tray.

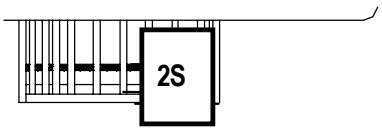
When manually labeling multiple trays, after the label is printed, the tray can be removed and the next tray can be placed on the scale. Remove the label and apply it to the package just removed. Repeat the operation until all of the trays are labeled.

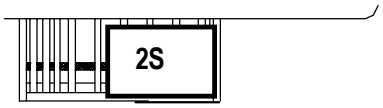
When you are finished running the product, touch the END RUN key on the Scale Controller.

Tray Orientation



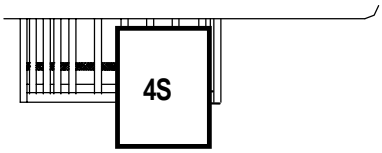
If tray height is less than 3”

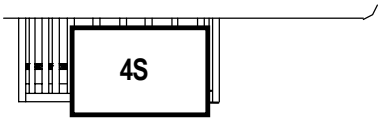




If tray height is greater than 3”

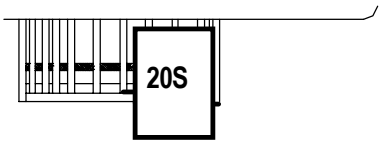
If tray height is less than 3”

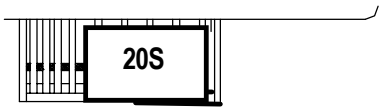




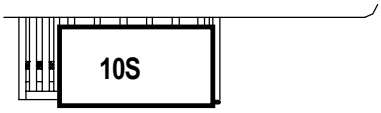
If tray height is greater than 3”

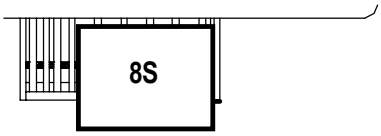
If tray height is less than 3”

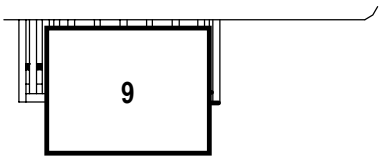


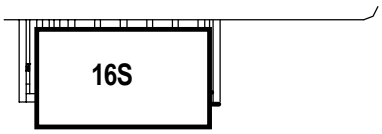


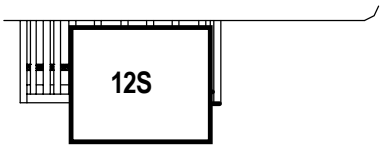
If tray height is greater than 3”

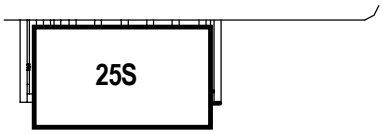


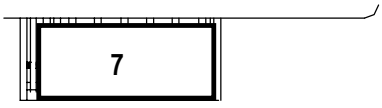


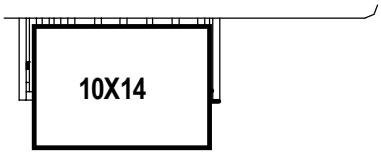




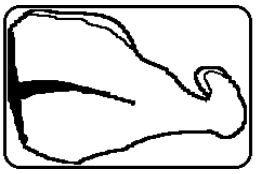






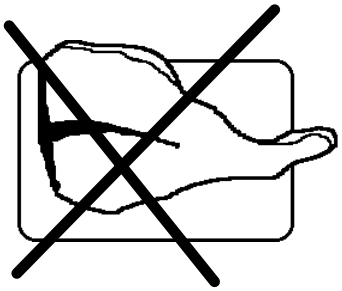


Tips for Trays



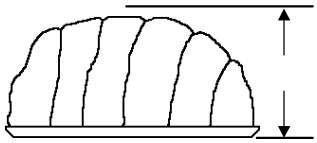
The trays must be stiff enough,

and

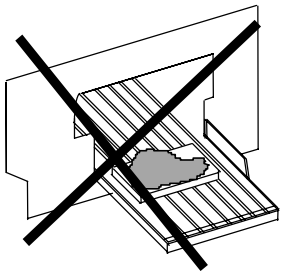


the product must be contained within the tray.

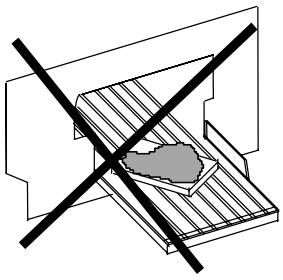
5.0" (127mm)



Height must be less than 5.0″ (127 mm).



The trays must be placed ***against*** the Package Guide to start wrapping. Allow belts to stop before placing next tray.



Trays must be aligned square with the infeed conveyor.

Package Wrapping Check

- Check to see if the tray comes out of the machine well-wrapped and properly sealed underneath. Select the Program that provides the best results for the type of package/product being wrapped.

Program Number	Wrapping Type
01	Wrapping with more film tension and lower items.
03	Standard wrapping for standard tray and items.
05	Reduced tension if film tearing is a problem.
31	Use this program when wrapping black trays.

- The wrapping check should be made after the Sealing Belt temperature is stable (indicated by a steady display on the Program Display).
- If sealing is inadequate, increase the temperature value. If the film appears burned, lower the temperature. The recommended temperature setting is 18-20 for most applications.

Code On Display	Sealing Belt Temperature
00	Heater OFF
01	172°F or 78°C
02	178°F or 81°C
⇓	Every time the code changes one unit, the temperature changes 5.5°F or 3°C.
30	329°F or 165°C

Idle Time

The SOLO® XL Combo power can be left on during short idle periods of time to maintain temperature to the Sealing Belt. If no activity is detected on the infeed Start Switch within 4 hours, the SOLO® XL Combo will automatically lower the temperature on the sealing belt to the minimum setting of 01. A Service Technician can change this time from 1 to 4 hours.

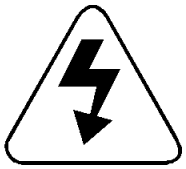
If the SOLO® XL Combo is used daily, leave the power on overnight to keep the unit warm and to control the humidity inside the machine. (Note: Always remove power before cleaning. The power can be turned back on after cleaning is performed.)

If the SOLO® XL Combo will not be used for an extended period of time (more than 1 or 2 days), the power should be turned off using the Power Switch.

4 Maintenance

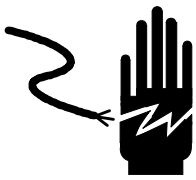
Cleaning Precautions

Advise your customer to follow the cleaning instructions in the Operator's Manual. It is important to clean the machine parts daily. Always make sure the power is turned off to the SOLO® XL Combo and other system components before performing any cleaning. Never aim water directly inside the machine or at the electrical panel or control board.



⚠ WARNING

Always turn the power switch to off whenever the machine is left idle or during maintenance, cleaning, or film change operations. Failure to comply could result in personal injury and/or property damage.

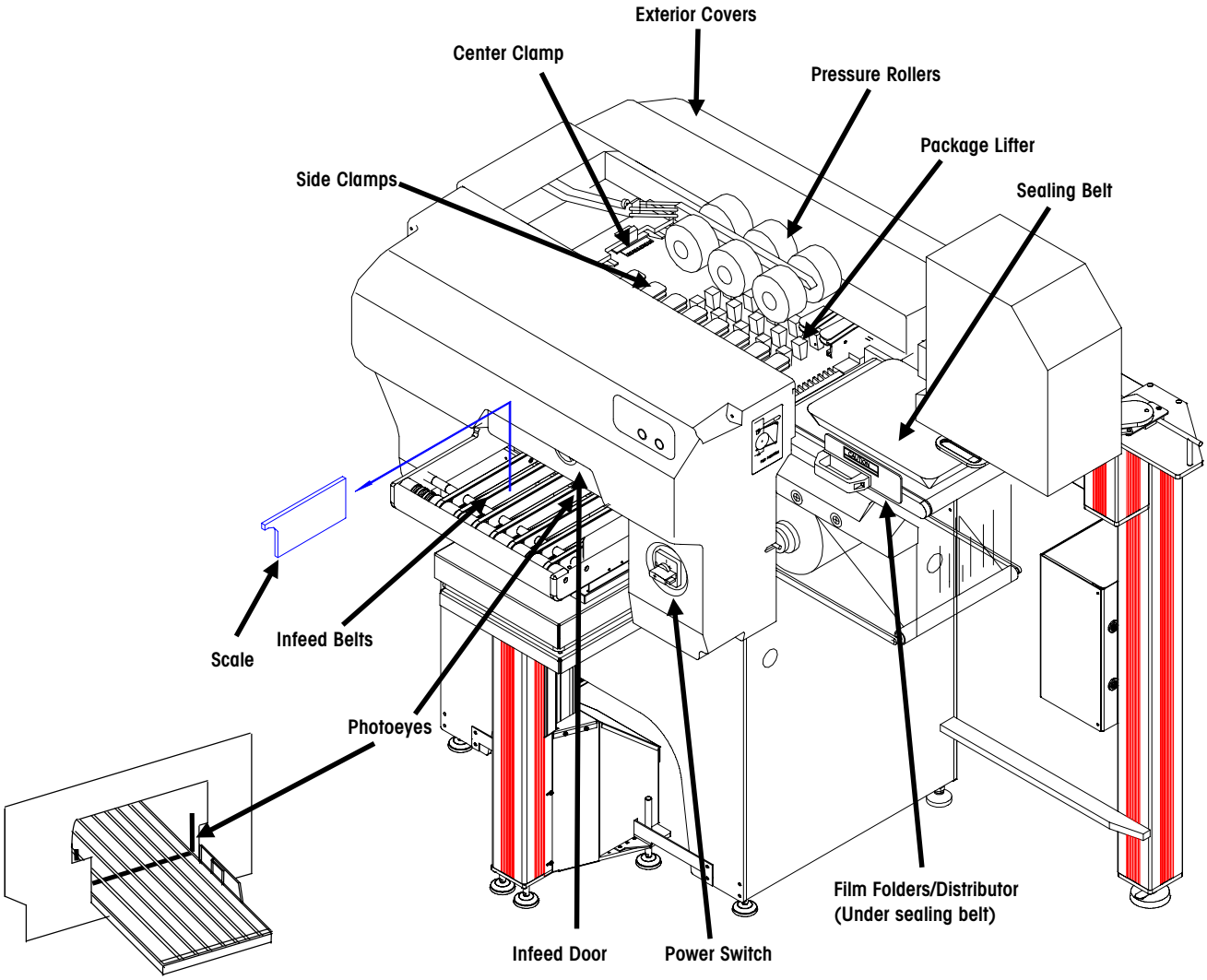


⚠ WARNING

Do not direct water or steam at the inside or outside of the machine. Keep moisture away from the inside of the electrical panel and control board. Failure to comply could result in property damage.

Daily Cleaning

The SOLO® XL Combo is designed to make cleaning operations simple and fast. The following items require attention daily or more frequent as required. Refer to the illustration below for locations of the components on the following pages.

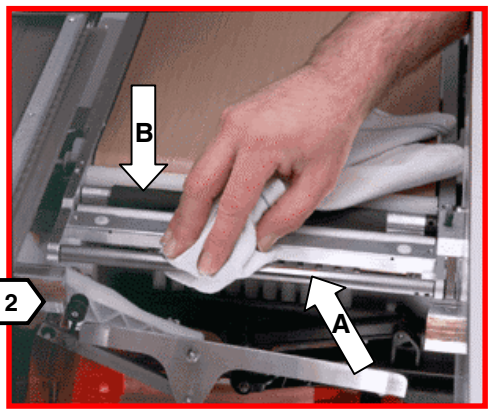


Component Locations for Daily Cleaning

1

Clean the sealing belt with a soft cloth dampened with hot water. **Caution! The belt may be hot. Allow the belt to cool before cleaning.**

Clean the film drive roller (A) with a soft cloth dampened with isopropyl alcohol (recommended) or hot water. Clean the package drive roller (B) with a soft cloth dampened with hot water. Remove any debris from the roller.



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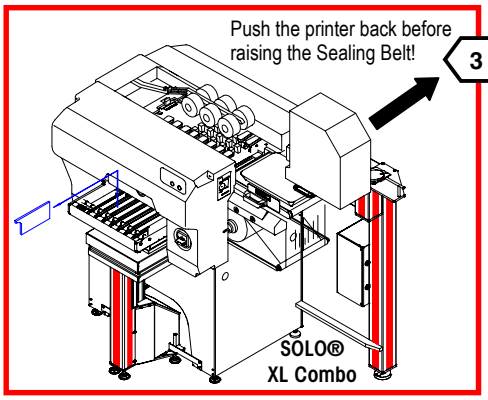
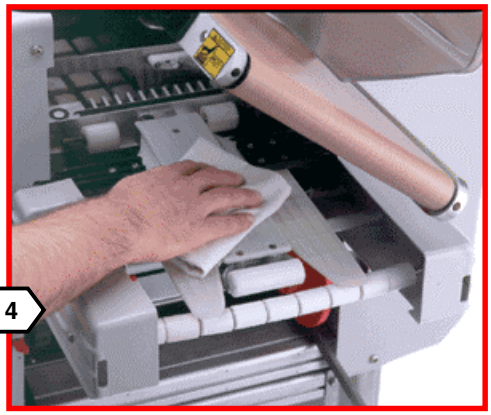


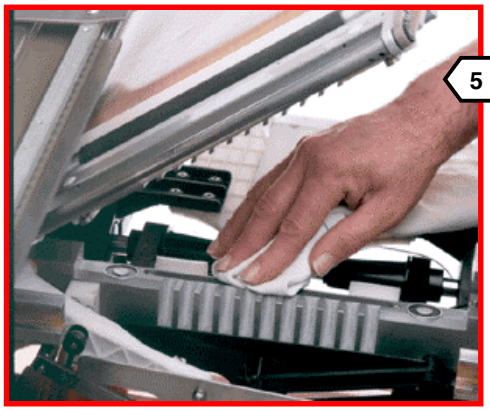
3

Push the printer shelf back before raising the Sealing Belt (see right).

Raise the sealing belt using the handle for access to the distributor, film clamp, and folders below it. **Caution! The belt may be hot.** Clean the film folders, distributor, and curved rollers with a soft cloth dampened with hot water.



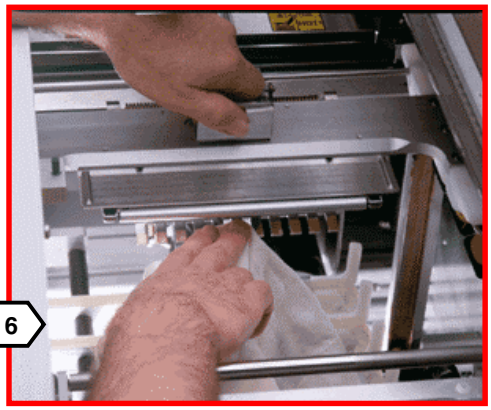
4



5

While the Sealing Belt is raised, Clean the distributor film clamp with a soft cloth dampened with hot water. When lowering the sealing belt, hold the handle and lower it gently to avoid alignment problems.

Remove any debris from the comb. Clean the film gripper on the center clamp with a soft cloth dampened with isopropyl alcohol (recommended) or hot water. Wipe the surfaces dry when done cleaning. (This must be dry before using the machine.)



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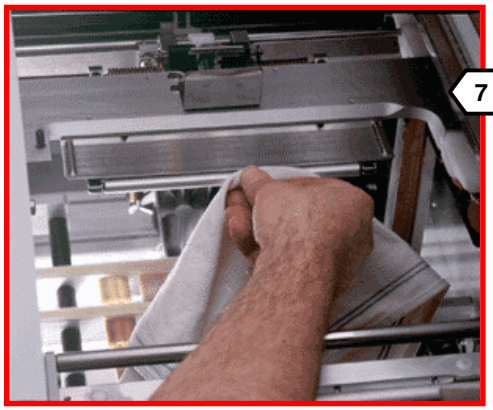
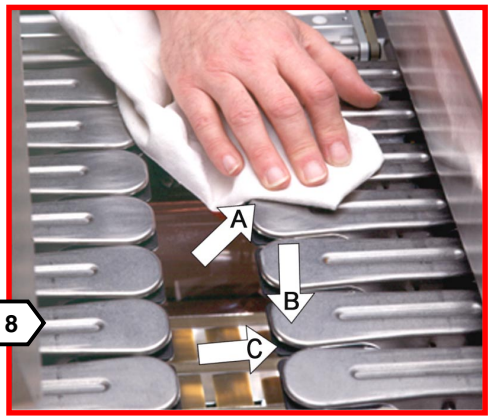


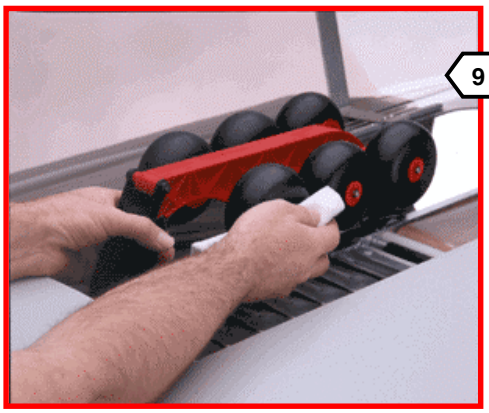
7

Clean the roller on the center clamp with a soft cloth dampened with hot water. Remove any debris from the roller.

Clean the tops (A) of the side clamps with a soft cloth dampened with hot water. Press down on each of the clamps (B) to expose the gripper pads (C). Clean each of the pads (C) with a soft cloth dampened with hot water. Allow to dry before using the machine.



8



9

Clean the pressure rollers with a soft cloth dampened with hot water. Remove any debris from the rollers.

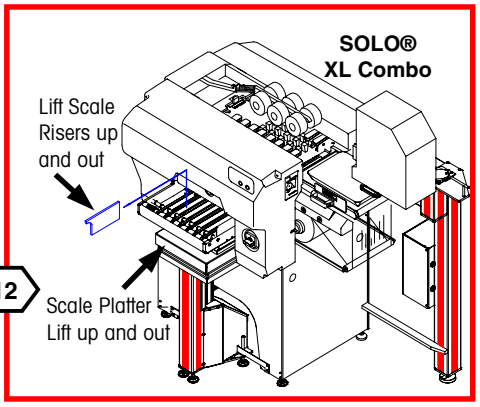
Raise the lifter by pulling it up. Clean the lifter supports with a soft cloth dampened with hot water. Remove any debris from the supports.

10

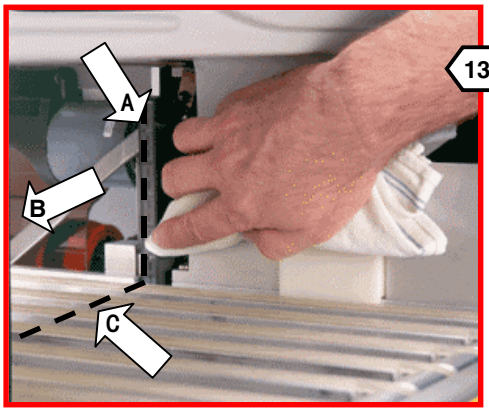
11

Clean the Infeed Belts and the Infeed Door with a soft cloth dampened with hot water. Wipe the belts and rollers to remove any grease or debris.

Remove the scale risers, then the scale platter by lifting the platter up and out. Clean both daily using hot water, soap, and a brush to clean the slots.



12



13

Clean the right (A) and left (B) photoeyes and horizontal photoeyes (C) with a soft cloth dampened with hot water. **Do not use a paper towel or other abrasive material. It will scratch the photoeye lens.**

Clean all exterior surfaces with a soft cloth dampened with hot water.

IMPORTANT!
After all cleaning is completed, turn the wrapper power switch back ON.

14

General Cleaning

Refer to the following Service Manuals for required cleaning for the Solo 645 XL Combo:

Solo 645 XL Automatic Wrapper Service Manual 15715700A

317 Printer Applicator Service Manual A82784900A

8270 Scale Service Manual

8361 Indicator Service Manual

The Combo specific parts requiring specific attention are to be cared for as follows:

- Package Sensor Photo eye on the Infeed should be inspected regularly. If any debris or grease has accumulated on its lens, a clean lint free cloth should be used to wipe it clean. The reflective plate on the scale platter should be kept clean as well.
- Package Sensor Photo Eye on the Sealing Belt should be inspected regularly. If any debris or grease has accumulated on its lens, a clean lint free cloth should be used to wipe it clean. The reflective tape near the lifting handle of the sealing belt should be kept clean as well.

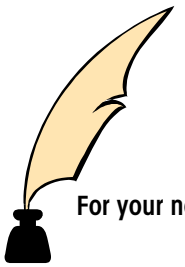
Lubrication

Only a trained technician should lubricate the machine. Lubrication should be performed during the regular PM inspection or more frequently depending on package volume. Follow the instructions outlined below for the lubrication required on the SOLO® XL Combo.

Remove cover from the scale lifter and apply a small amount of food grade grease (GRS460F) to the lifter cam.

Refer to the following Service Manuals for any specific lubrication needs of the Solo 645 XL Combo:

- Solo 645 XL Automatic Wrapper Service Manual
- 317 Printer Applicator Service Manual



For your notes

5 Troubleshooting

Troubleshooting Guide

The information here is specific to the combo. Refer to the 645 XL service manual 15715700A for wrapper specific problems. This section covers common symptoms that may occur and a guide to solve the problems. Refer to the Scale, Printer, Controller Wiring diagram (at the end of this Chapter) and the Theory of Operation for signal definitions and sequence information.

Important Note
For cleaning instructions, refer to Chapter 5 Maintenance before attempting to clean any of the wrapper components.

Important Note
If you continually use the same tray for testing, you may be short of film due to the wear on the tray.

SYMPTOMS	CAUSE	SOLUTION
Continuously Running Infeed Belts	• Infeed Photoeye blocked • Infeed Photoeye not positioned properly • Scale Platter not positioned properly • Soft Switch #4 not turned on	• Clean Reflector on Scale Platter. • Adjust Photoeye • Adjust Scale Lifter Assembly. See Chapter 2. • Check Soft Switch settings and correct according to Chapter 2 – Dip Switch Settings.
Error 79 Solid	• Motor runs – Lift Position Sensor not functioning. • Motor does not run	• Check sensor wiring and PE-SCALE POSITION signal • Check motor connections • Check Interface Board • Check SCALE MOTOR signal • Check +24 VDC supply • Check +70 VDC from wrapper at CN203 • Check sensor to flag relationship • Cycle power to Combo.
Error 80 Blinking	• Wrapper is waiting for a weigh complete signal from scale equipment	• Will occur if there is motion on the scale • Weight is below minimum print threshold • Check WEIGH COMPLETE signal and START WEIGHING signal • Check serial connection from scale controller to combo control board

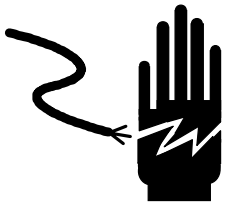
SYMPTOMS	CAUSE	SOLUTION
Error 81 Solid	• Label applied signal was not generated	• Printer may be out of labels. You must press RESET button to clear this error. • If label did apply check the LABEL APPLIED signal • If label printed but did not apply check the APPLY LABEL signal
Error 81 Blinking	• Wrapper is waiting for print complete signal	• Check the PRINT STARTED (LABEL APPLIED) signal
Error 82 Solid	• Sealing belt photoeye never blocked	• Photoeye and reflector plate may be dirty. RESET button must be pressed to clear this error. • Check photoeye wiring and PE-SEALING BELT signal • Adjust photoeye mounting
Film Tearing Film Tracking Poorly	• Bad Roll of Film.	• Replace Film with New Roll.
Trays Left Open Poor Overwrap No Overwrap Short Overwrap	• End of film roll. • Film Pulling Out of Center Clamp. • Film pulling out of side clamps. • Rollers on Sealing Belt Dirty.	• Replace roll of film. • Clean Center Clamp and allow to dry thoroughly. • Clean side clamp gripper pads and allow to dry. • Clean Rollers on Sealing Belt.
Not Picking Film	• Sealing Belt Not in Closed Position. • Film Not Loaded Properly. • Center clamp dirty. Film wrapped around distributor film roller.	• Lift and Re-close Sealing Belt. • Re-load the Film. • Clean Center Clamp and allow to dry. Remove any debris. • Remove any film or debris from distributor film roller.
Error 61 Displayed on Trays Normally Wrapped	• Infeed Belts Slipping.	• Clean and Dry Infeed Belts.
Error 99, 63	• Photoeyes Dirty.	• Clean Photoeyes.
Short Overwrap	• Rollers on Sealing Belt Dirty.	• Clean Rollers on Sealing Belt.
No Power	• Main switch turned to **0.** • Inadequate wiring.	• Turn the Power Switch to **I.** • Check store circuit breaker. • Check the wiring.

SYMPTOMS	CAUSE	SOLUTION
Irregular package wrapping	• Film roll out of position	• Arrange the film roll in the correct position.
	• Film clamp grasp insufficient	• Check and clean Center Clamp and allow to dry.
	• Side Clamps film gripping insufficient	• Check and clean the side clamps and allow to dry.
	• Film Folder dirty	• Clean the Film Folder.
	• Film loading incorrect	• Reload the film.
	• Sealing Belt Rollers Dirty	• Clean Rollers on Sealing Belts.
	• Work program incorrect	• Change the work program setting.
Poor package sealing	• Sealing belt temperature incorrect	• Check the set temperature value.
		• If sealing belt is too hot, lower the temperature value.
		• If sealing belt is too cold, increase the value.
	• Not Enough Overwrap	• Clean rollers on Sealing Belt
	• Weak Trays	• Change the work program to decrease film tension or use sturdier trays.

Model 8361 Status Codes

CODE	DESCRIPTION	ACTION	CAUSE
120	Weigh Complete Timeout Error	No stable weight 5 seconds after scale is activated	Possible momentary interruption of photoeye reflection. Photoeye may not be properly lined up with reflector on scale platter. Below minimum print threshold.
130	Package Timeout Error	Label was not printed and applied within the allotted time. Touch the controller screen to clear error and reset scale. Remove any labels from the printer.	Printer may be out of labels. Communication cable between printer and indicator may be faulty. Wrapper Error not received by Combo. Check Wrapper Error Signal.
131 to 136	Indicates an error with the label applicator	Cycle power to printer to reset applicator. Touch the screen to clear error and reset scale equipment.	Refer to the 317 Service Manual.
137	Label Present Error	Take label sensor is blocked, remove any label present. Touch screen to clear the error and reset scale equipment.	Label size incorrectly set in indicator. Refer to 317 Service Manual.
150	Wrapper Error Occurred. Wrapping operation halts.	Any packages in process will not be labeled. Press RESET button on wrapper and remove any labels present on printer.	Note signals on the Control Panel of the Solo 645 XL Combo to determine source of error. Refer to Solo 645 XL Service Manual

Voltage Checks



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 SOLO® XL Combo is supplied with a power transformer to adapt the machine to different line voltages. Depending on the application, the transformer is wired for either 115V, 208V, or 230V, 50/60 Hz, single phase input with a 48 VAC output. If the Model 645 Wrapper does not power up correctly or does not power up at all, the following voltage checks can be made to isolate the problem:

- Check for proper line voltage coming into the circuit breaker and out of the main power switch.
- 48 VAC ±10% on CN1 of the Stepper Driver board. (Located on the lower left-hand corner of the circuit board.)

The scale, printer and interface are supplied power from a separate 115 VAC source.

Resistance Checks

Refer to the Solo 645 XL Service Manual for the proper resistance check values.

Theory of Operation

The signals for controlling the synchronization between the wrapper and weighing and labeling system are defined below.

The combo control box consists of a control board (PCB) with 645 XL Combo application software and a wrapper interface board. This control box provides for 1) converting digital signals from the wrapper to serial communication to the indicator (scale controller) and label applicator, 2) photo-eye and lift motor connections, 3) vacuum pump control and 4) indicator and applicator power connections.

Signal Information

PE-INPUT PACKAGE SENSE: This digital signal comes from the infeed photo-eye and passes through the control box to the wrapper electronics at CN6.

PE-SEALING BELT: This digital signal comes from the sealing belt photo-eye and passes through the control box to the wrapper electronics at CN6.

PE-SCALE POSITION: This digital signal comes from the scale lifter photo-interrupter and passes through the control box to the wrapper electronics at CN6.

START WEIGHING: This digital signal comes from the wrapper electronics at CN6 and passes to the control box. The control box converts this to a serial command that is sent to the scale controller.

START LABEL: This digital signal comes from the wrapper electronics at CN6 and passes to the control box. There are two meanings for this signal. The low to high transition means PRINT LABEL. The high to low transition means APPLY LABEL. The control box converts the APPLY LABEL to serial commands that are sent to the scale label applicator. The control box responds to a PRINT LABEL by sending PRINT STARTED back to the wrapper

WRAPPER ERROR: This digital signal comes from the wrapper electronics at CN6 and passes to the control box. The control box converts this to a serial command that is sent to the scale controller.

WEIGH COMPLETE: This serial command comes from the scale controller to the control box. The control box converts this to a digital signal that goes from the control box to the wrapper electronics at CN6.

LABEL APPLIED: The control box generates this signal that goes to the wrapper electronics at CN6. There are two meanings for this signal. The low to high transition means PRINT STARTED. The high to low transition means LABEL APPLIED.

SCALE ERROR: The control box generates this signal that goes to the wrapper electronics at CN6. This is not used at this time.

SCALE MOTOR: This digital signal comes from the wrapper electronics and goes to the Interface Board in the control box which contains an electronic switch to control the scale lift motor.

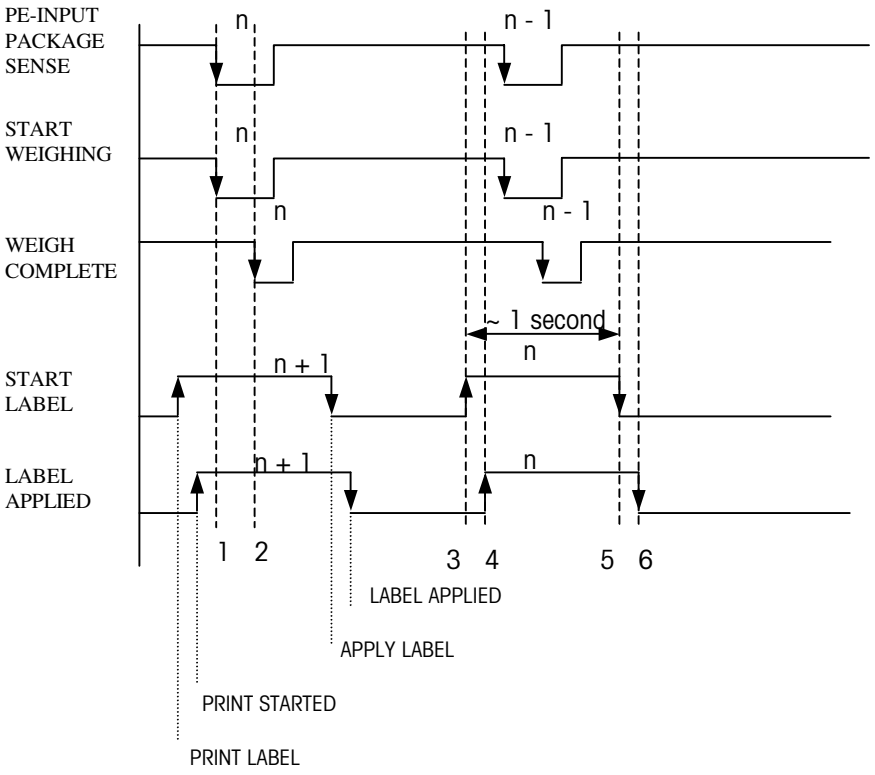
Automatic Operation

1. The operator places the tray on the wrapper infeed. The wrapper senses the PE-INPUT PACKAGE SENSE when the infeed photo-eye is blocked. The wrapper applies SCALE MOTOR and the scale lift motor turns on until the PE-SCALE POSITION indicates the scale lift is in the weigh (high) position.
2. The wrapper sends the START WEIGHING signal.
3. After the scale measures the weight the scale controller sends the WEIGH COMPLETE signal and commands the printer to print the label.
4. After receiving the WEIGH COMPLETE the wrapper applies SCALE MOTOR and the scale lift motor turns on until the PE-SCALE POSITION indicates that the scale lift is in the ready (low) position.
5. The input belts transfer the tray into the wrapper and stop. After the infeed belts stop, another tray can be placed on the infeed to begin the weighing cycle while the previous package gets wrapped and labeled.
6. During the wrapping, when the pusher starts ejecting the tray and about 1 second before the tray will be in position for applying the label, the wrapper sends PRINT LABEL. The control box sends PRINT STARTED. (This provides the wrapper with

the required signal, but the control box has no information on the actual printing of the label)

7. The wrapper senses PE-SEALING BELT and positions the tray on the sealing belt under the applicator. When the tray is in position the wrapper sends APPLY LABEL.
8. The applicator fires and applies the label to the package. The applicator sends LABEL APPLIED.
9. The wrapper starts the sealing belt to discharge the package.

Signal Flow: Normal Sequence



1.	Tray on infeed	tray n
2.	Scale measured stable weight	tray n
3.	Start to print label	tray n (about 1 second before APPLY LABEL)
4.	Labeler responds " Print Started"	tray n
5.	Start applying label	tray n (sealing belt stops)
6.	Label applied	tray n (sealing belt starts again)

Manual Operation

1. The operator selects Manual mode on the scale controller.
2. The wrapper senses the PE-INPUT PACKAGE SENSE when the infeed photo-eye is blocked. The wrapper applies SCALE MOTOR and the scale lift motor turns on until the PE-SCALE POSITION indicates the scale lift is in the weigh (high) position.
3. The wrapper sends the START WEIGHING signal. The scale controller does not respond with a WEIGH COMPLETE so the wrapper display shows an error 80 blinking.
4. The scale measures the weight.
5. The scale controller commands the printer to print the label.
6. The operator removes the package from the infeed and places the label on the package.
7. The scale lift remains in the upper position for up to about 2 seconds.
8. The operator places another package on the infeed.
9. The scale measures the weight.
10. The scale controller commands the printer to print the label.
11. The operator removes the package from the infeed and places the label on the package.
12. The process repeats until the operator selects a non-manual mode on the scale controller.

Weigh and Label Operation

The system performs the same sequence as in the Automatic Mode.

Wrap Only Operation

Wrap Only mode is selected when no PLU is called up, or if the scale controller is not communicating with the combo control board. The system performs a similar sequence as in the Automatic mode except that the combo control board simulates signals from the scale controller and applicator. The combo control board responds to signals from the wrapper by returning the "correct" signals to the wrapper according the normal automatic sequence.

Wrapper Error

If there is an error in the wrapper or if a cover is opened with the removal of one or more trays:

1. The sequence of the signals will continue until all trays are discharged, but the trays will not be labeled.
2. The wrapper sends the WRAPPER ERROR signal and the combo control board sends an Error 150 message to the scale controller and all the stored weights are cleared.

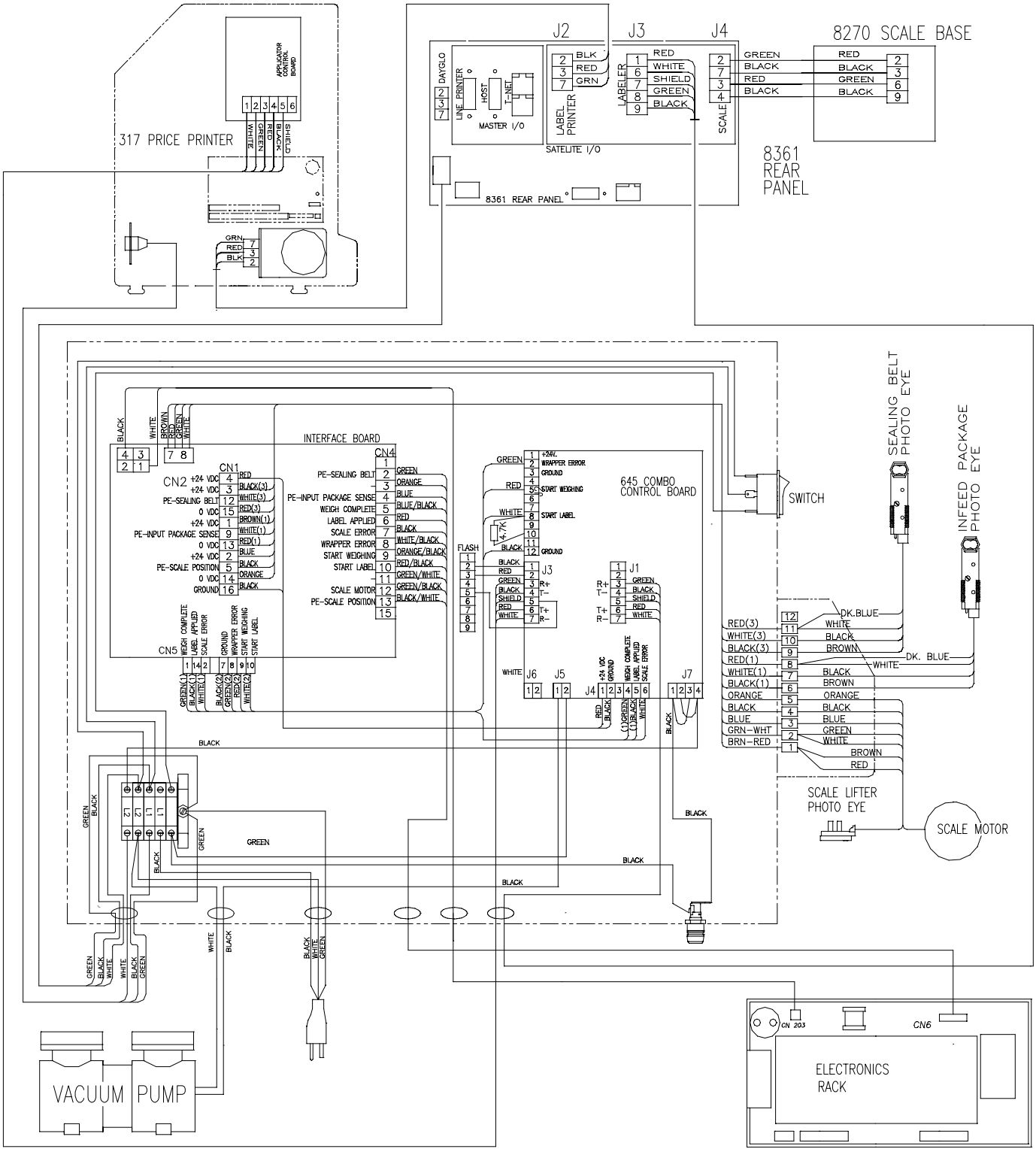
3. The message on the scale controller instructs the operator to take away the label already printed. Otherwise the wrapper does not know where the label is applied. If the WRAPPER ERROR has been active for 300 ms, the wrapper will disconnect the signal PRINT LABEL. As long as the operator has not taken away the label the scale computer shows Error 137 and the wrapper runs in wrap only mode.

Scale/Labeler Error Condition

If an error is detected on the applicator (scale/labeler system):

1. The combo system changes to wrap only mode.
2. The trays that are in the wrapper are discharged without being labeled.
3. The scale controller displays an error message. After the error is cleared the printer and applicator are reset (this takes about 5 seconds) and the combo system returns to normal operation.

Scale, Printer, Controller Wiring



6 Parts Replacement & Adjustments

Measurements

All of the measurements performed in this chapter are shown in millimeters (mm).

Torque Specifications

Table 6.1 lists recommended torque specifications for tightening stainless steel fasteners into aluminum. These limits are assuming a thread engagement of at least three times the thread diameter. Use this chart for reference when servicing METTLER TOLEDO® backroom equipment.

Bolt Size	Recommended Torque (Maximum)
M3	15 in/lb
M4	45 in/lb
M5	100 in/lb
M6	175 in/lb
M8	350 in/lb

Torque Specifications
Stainless Fastener to Aluminum
Table 6.1

Note: Any tightening method involves certain inaccuracies that may be the result of:

1. Estimating the friction factor
2. Manipulation errors of torque wrench
3. Tolerance of the torque wrench itself

Depending on how much these factors can be controlled, either a higher or lower tolerance can be considered.

Infeed Photoeye Adjustments

This section describes how the photoeye on the infeed of the Combo, which senses the package should be adjusted to operate properly.

The Infeed photoeye is mounted on the infeed door pivot bracket and is aimed downward through the infeed between the frame and the first belt. The beam will reflect off the retroreflector plate mounted on the scale platter back to the photoeye. Loosen the photoeye mounting screws and position it over the reflector plate. The LED on the photoeye will be off when the photoeye is positioned properly. When this beam is interrupted the photoeye signals the wrapper that a package is present on the belts and is ready to be wrapped.

Take care when installing the cover that the photoeye is not disturbed. While front cover is off, ensure that the photoeye hardware does not interfere with the operation of the front side clamps. They should not hit any part of the infeed photoeye bracket

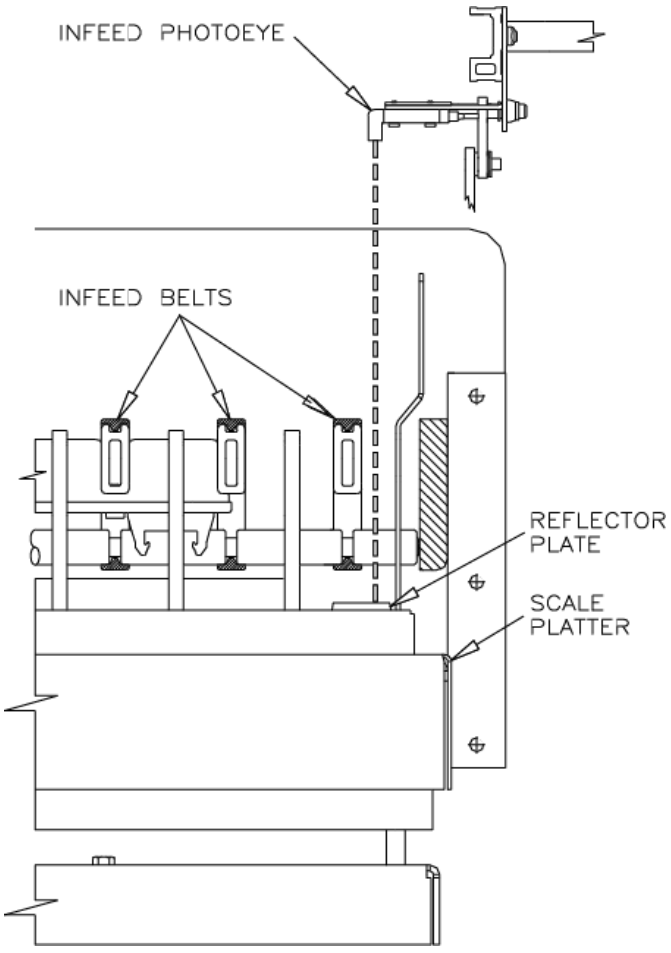


Figure 6-1: Infeed Photoeye aimed downwards through Infeed Belts

Sealing Belt Photoeye Adjustment

This section covers parts replacement and adjustments for the photoeye mounted on the sealing belt. This sensor notes the leading edge of packages for accurate label placement. An LED on the photoeye indicates the status signal (clear or blocked).

The location of the printer will determine the best position for this photoeye. The sealing belt will run until the photoeye is blocked. Once the photoeye senses the package the sealing belt will stop, placing the leading edge of the package at the end of the sealing belt. By adjusting the position of the photoeye, the distance from the edge of the package to the label can be modified. Adjusting the photoeye towards or away from the discharge end of the sealing belt will define the location of the label on the package.

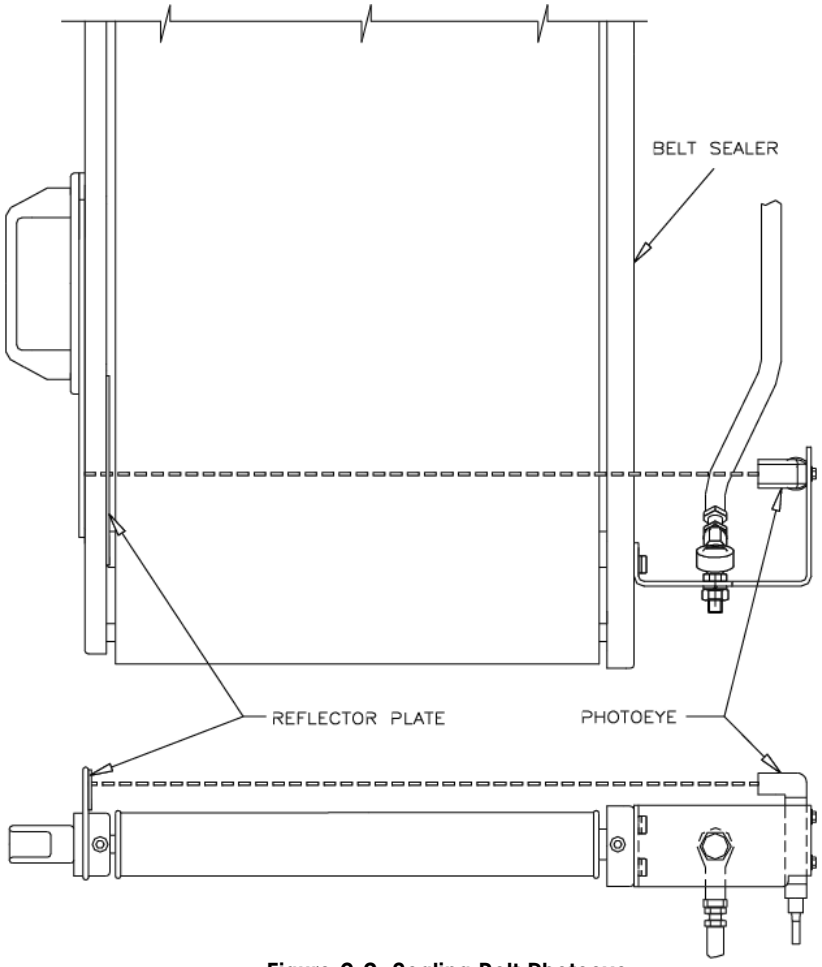
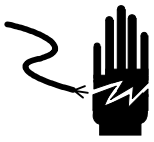


Figure 6-2: Sealing Belt Photoeye

Scale Lift Mechanism

This section covers parts replacement and adjustments for the scale lifting mechanism. This mechanism consists of two columns of aluminum mounted on an aluminum plate adjacent to a DC gear motor. A third aluminum column is slipped onto the first column and provides stable movement in a linear direction vertically. This movement allows the scale to be raised, lifting the package to capture it's weight.



WARNING

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

Lift Bearing Replacement

1 Remove the bolts from Scale Lift Assembly connecting arms.

2 Remove risers and package stop from scale platter.

3 Remove top guard from base of lifter.

4 Disconnect power and sensor connection points.

5 Remove cord grip and slide lifter assembly away from wrapper.

6 Lift scale platform upwards to inspect Lifting Bearing. The bottom surface rides on the offset cam on the motor shaft. Over a period of time this surface may become worn and disfigured. A lip exists on the bearing to prevent excess friction and if this lip is worn away the bearing becomes less efficient.

7 The Lifting Bearing is designed symmetrically, with a lip on the top as well as on the bottom and the mounting holes the proper distance from the edge of this lip. If one end of the bearing is worn away, flipping this bearing upside down will provide adequate lifting performance. If both ends have been badly worn a new bearing must be installed. Refer to Figure 6-3.

8 When reassembling, overtightening the screws into the plastic bearing may result in the tip of the screw rubbing against the components inside the elevator column. The screws, with Loctite™, should only be screwed until the top of the screw head is just below the surface of the lifter bearing.

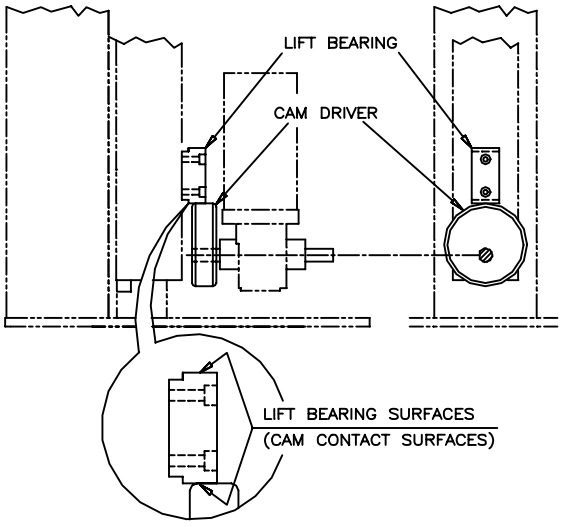


Figure 6-3: Lifting Bearing to Cam Relationship

Lifting Motor Position Sensor Replacement

1 Remove bolts from connecting arms of Scale Lifting Assembly

2 Remove risers and package stop from scale platter.

3 Remove top guard from base of lifter.

4 Disconnect the motor and sensor connections.

5 Remove cord grip and slide lifter assembly away from wrapper.

6 Inspect the photointerrupter sensor located opposite the motor from the elevator column. Any visible signs of damage or disruption indicate the failure of this sensor and dictate its replacement. Two M4 Phillips Head screws through slots mount the sensor bracket to the baseplate. Removing these two screws allows removal of this sensor and replacement without any further disassembly.

7 Install new sensor in reverse order. Make sure the gap in the sensor is aligned with the flag on the motor shaft.

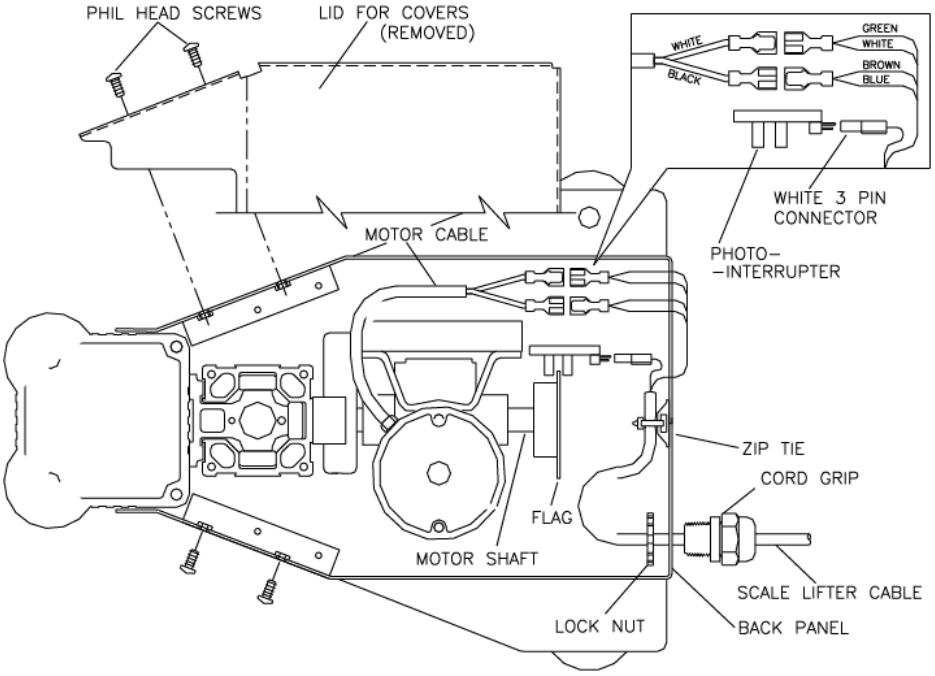


Figure 6-4: Lifting Motor Position Sensor

Lifting Motor Replacement

1. Remove the bolts from the Scale Lifting Assembly connecting arms.

2. Remove the risers and the package stop from the scale platter.

3. Remove the top guard from the base of the lifter.

4. Disconnect the motor and sensor connections.

5. Remove the cord grip and pull the scale lifter away from the base of wrapper.

6. Taking care not to pull on the scale cable, lay the lifter assembly on it's front to access the three M6 hex head bolts which mount the motor assembly into place inside the lifter assembly. Reusing the mounting block, replace the motor assembly in reverse order. Loctite the motor mounting screws into place.

Flashing Software

The SOLO® Combo software is retained in Flash Memory on the Combo Control PCB. The Flash Memory can be reprogrammed using a PC and downloader program called FLASHPRO. This is called "flashing software". If a new Combo Control PCB is installed or if the software needs to be updated, the software will need to be flashed into the Combo Control PCB. FLASHPRO uses the COM1 RS232 Serial Port as a default. If COM2 is required, you will need to add ***–COM2*** at the end of the command line. Typing FLASHPRO alone displays a help screen. The serial flash cable required is the same cable used with FLASHPRO for Retail **METTLER TOLEDO®** scales. FLASHPRO uses special files that contain the combo software. The software is available on the **METTLER TOLEDO®** Retail Resource Center on the WWW as a self-extracting executable file.

The software file is compressed. First copy the file from the web site to a folder on your hard drive. Double-click on the file to uncompress the file. A new file that can be downloaded to the Combo PCB will be created. The current software number is 830766. (Note: software part numbers are subject to change without notice.)

Turn the Wrapper and Combo Control Box power off. Open the Combo Control Box and connect the serial cable from the PC to the DB-9 flash connector located between the PC boards in the combo control box. Turn ON SW1-8 on the Combo Control PCB to enable the flash program mode. Turn on the Combo Control Box power.

Open an MSDOS window session. The FLASHPRO command line is as follows:

flashpro –tfilename.abs –b9600 –pn –d8

Replace filename with the actual filename of the uncompressed file created previously. Example: *flashpro –t830766.abs –b9600 –pn –d8*. If you get a bad command or file name error, check to make sure you have not mis-typed the filename and that the file FLASHPRO.EXE is in your PC's current path or current folder.

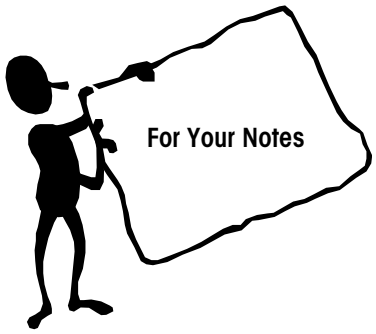
Press the Enter key. When you see Acknowledgement on the PC screen communication has been established with the Combo Control Box. FLASHPRO will display A's during the download process, (Acknowledgement). When the download is complete, FLASHPRO will display the message File Transfer Successful.

Turn off the Combo Control Box power. Disconnect the serial cable. Turn OFF SW1-8 to return the operation of the Combo Control PCB to normal. Replace the Combo Control Box cover. Turn on the Wrapper and Combo Control Box power.

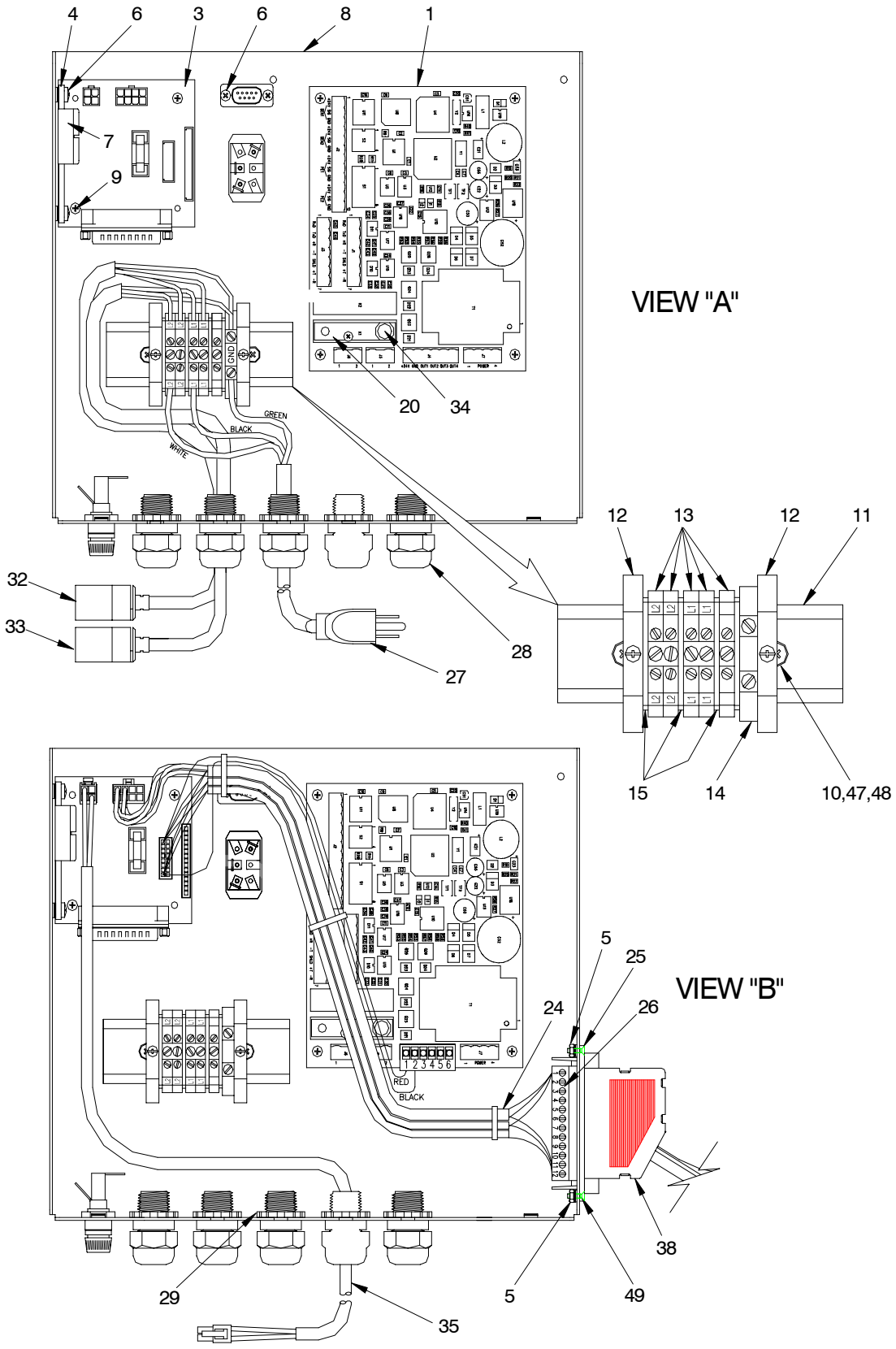
7

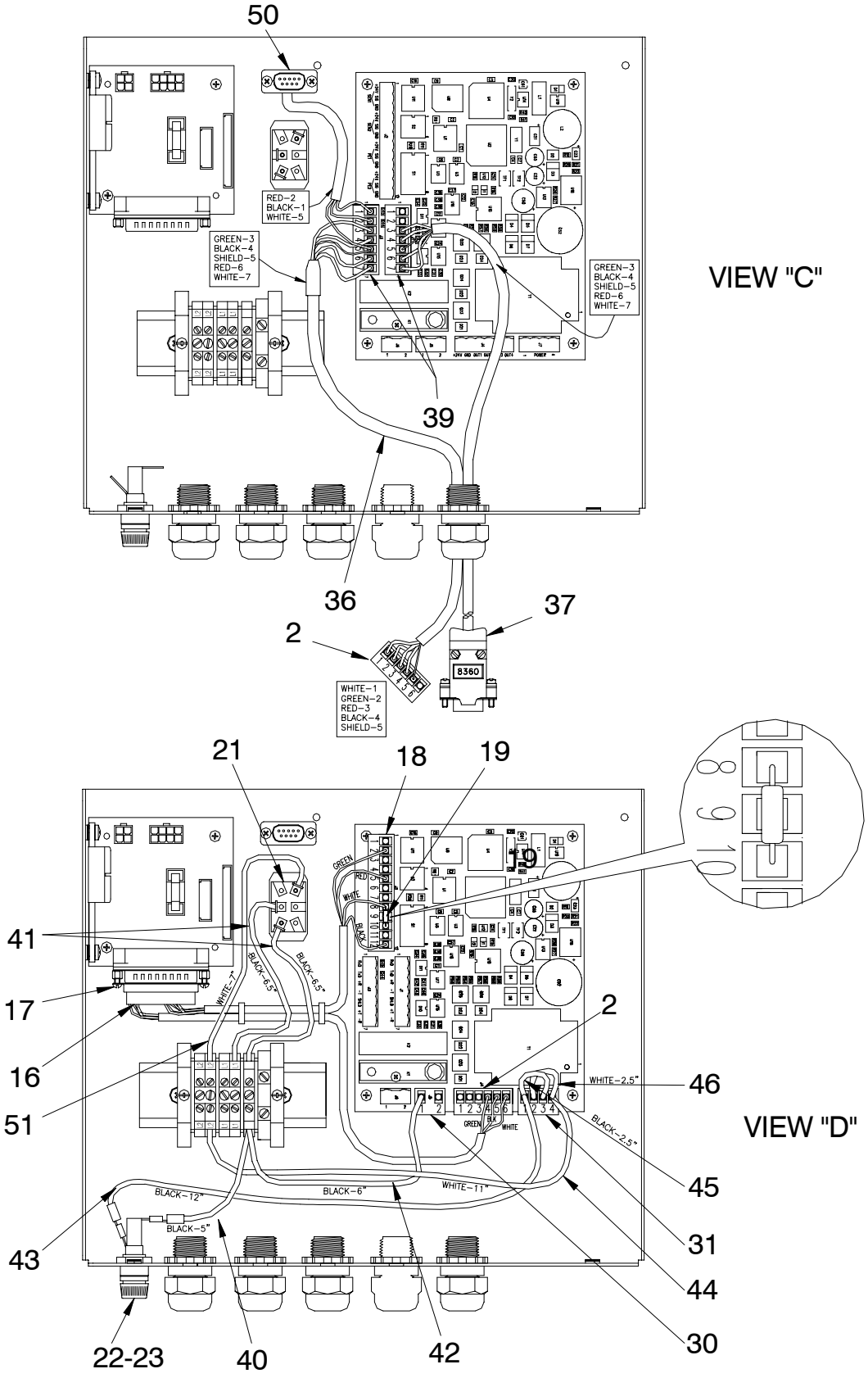
Replacement Parts

This section covers replacement parts that are used only on the SOLO® XL Combo. For other parts not shown, refer to the SOLO® XL Parts Catalog (P/N 15722200A).


For Your Notes

Combo Control Box




50
RED–2
BLACK–1
WHITE–5
GREEN–3
BLACK–4
SHIELD–5
RED–6
WHITE–7
GREEN–3
BLACK–4
SHIELD–5
RED–6
WHITE–7
VIEW "C"
39
36
37
2
8360
WHITE–1
GREEN–2
RED–3
BLACK–4
SHIELD–5
21
18
19
9
41
17
16
51
WHITE–7"
BLACK–6.5"
BLACK–6.5"
2
WHITE–2.5"
46
BLACK–2.5"
45
31
44
30
VIEW "D"
BLACK–12"
BLACK–5"
BLACK–6"
WHITE–11"
43
22-23
40
42

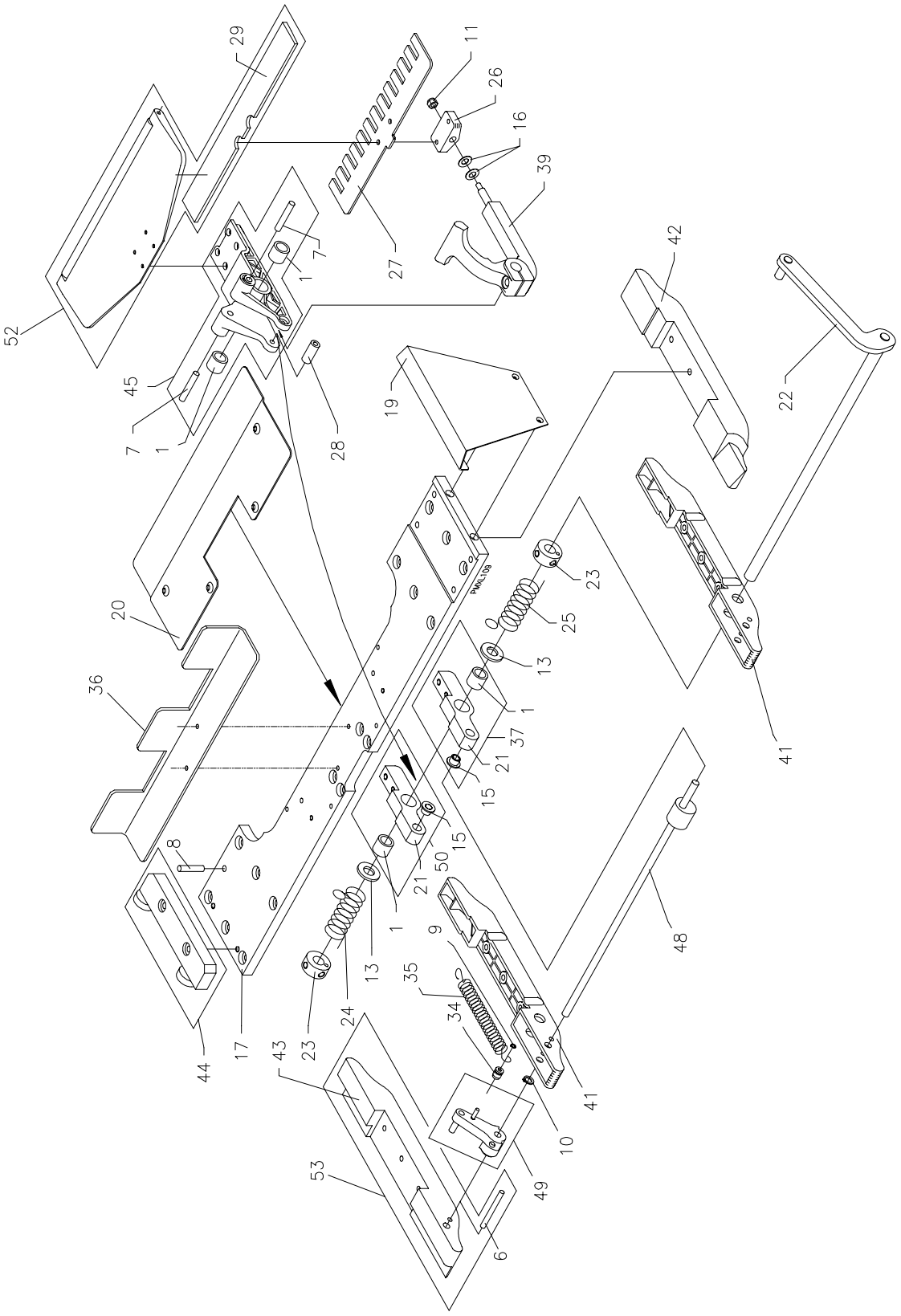
Combo Control Box

ITEM	QTY.	DESCRIPTION	VIEW	PART NUMBER
1	1	CONTROL BOARD	A	83054700A
2	2	CONNECTOR, 6 POSITION	C & D	13162500A
3	1	INTERFACE BOARD	A	83077000A
4	1	HEATSINK	A	83078500A
5	2	HEX NUT, SS, 3M THREAD	B	82708300A
6	4	CROSS RECESS HEAD SCREW, SS, M4 X 8MM LONG	A	82715200A
7	REF.	SPRING CLIP (INCLUDED WITH ITEM 3)	A	14919200A
8	1	CONTROL BOX-BACK	A	83071900A
9	6	CROSS RECESS HEAD SCREW, SS, M3 X 6MM LONG	A	82714800A
10	2	WASHER, SS, M5	A	82709600A
11	1	DIN RAIL, 4" W/MOUNTING HOLES	A	82797500A
12	2	TERMINAL END STOP	A	82292200A
13	5	TERMINAL	A	82478200A
14	1	GROUND TERMINAL	A	A82476400A
15	4	DIN RAIL END PLATE	A	82478400A
16	1	CABLE, COMBO SCALE SIGNAL	D	83077500A
17	2	SCREW, 4-40 X 1/4	D	82790100A
18	1	CONNECTOR, 12 POSITION	D	13431600A
19	1	RESISTOR, 4.7K OHM	D	12562900A
20	1	MODULE, 24-280VAC, FUSED SOLID STATE, OUTPUT	A	13636700A
21	1	SWITCH	D	A82351600A
22	1	FUSEHOLDER	D	82466700A
23	1	FUSE 1/4 AMP.	D	82479400A
24	1	CABLE, SCALE/PHOTO-EYE INTERFACE	B	83077200A
25	1	CONNECTOR BRACKET	B	82992700A

Combo Control Box

ITEM	QTY.	DESCRIPTION	VIEW	PART NUMBER
26	1	CONNECTOR SOCKET, 12 POSITION	B	82992800A
27	1	POWER CABLE	A	A80958700A
28	5	CORD GRIP LARGE	A	A82474600A
29	5	CORD GRIP NUT, 7/8"	B	A80077800A
30	1	TERMINAL, 2 POSITION	D	14708000A
31	1	TERMINAL, 4 POSIITON	D	13457200A
32	1	POWER CABLE	A	82798900A
33	1	POWER CABLE	A	82799000A
34	1	FUSE, RAD, SB, 4 AMP, 250 V, TR5	A	15373400A
35	1	CABLE, 645 XL COMBO SCALE POWER	B	83077400A
36	1	CABLE, CONTROLLER TO LABELER	C	82811500A
37	1	CABLE, CONTROLLER TO SCALE	C	82686400A
38	1	CABLE, SCALE/PHOTO-EYE	B	83077300A
39	2	CONNECTOR 7 POSITION	C	11924100A
40	1	POWER WIRE, SWITCH TO FUSE (BLACK-10")	D	83080500A
41	2	POWER WIRE, TERM. TO SWITCH (BLACK-6.5")	D	83080600A
42	1	POWER WIRE, FUSE TO J5 (BLACK-10")	D	83080700A
43	1	POWER WIRE, FUSE TO J7 (BLACK-12")	D	83080800A
44	1	POWER WIRE, TERMINAL TO J7 (WHITE-11")	D	83080900A
45	1	POWER WIRE, JUMPER (BLACK- 2.5")	D	83081000A
46	1	POWER WIRE, J4 JUMPER (WHITE-2.5")	D	83081100A
47	2	PHILLIPS PAN HEAD SCREW, SS, M5 X10MM LONG	A	82715900A
48	2	HEX NUT, SS, M5 THREAD	A	82709100A
49	2	FLAT HEAD SCREW, SS, M3 X 10MM LONG	B	82716700A
50	1	CABLE, 645 COMBO, FLASH	C	83082300A
51	1	POWER WIRE, TERM TO SW. PILOT LIGHT (WHITE-7")	D	83082400A

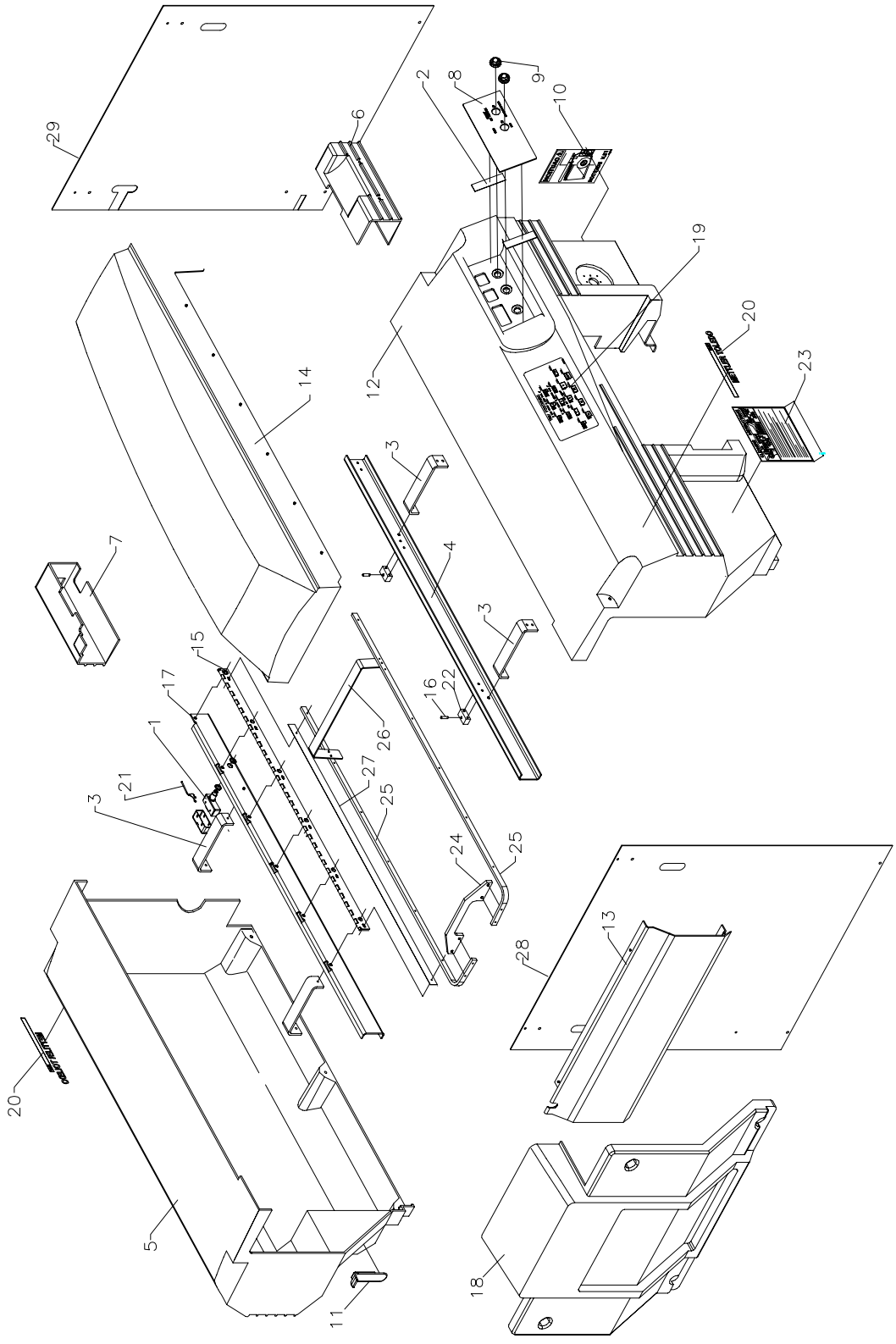
Center Clamp



Center Clamp

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	4	ROLLER BEARING, 10MM ID X 14MM OD X 12MM LONG	82701900A
2	3	DOWEL PIN, 3MM DIA. X 20MM LONG	82702500A
3	1	DOWEL PIN, 5MM DIA. X 20MM LONG	82702900A
4	2	DOWEL PIN, 6MM DIA. X 20MM LONG	82703400A
5	2	BALL BEARING, 6MM ID X 19MM OD X 6MM LONG	82704200A
6	1	TAPER PIN, DIN 1471 4MM DIA. X 35MM LONG	82824300A
7	2	TAPER PIN, DIN 1471 5MM DIA. X 30MM LONG	82705000A
8	1	SPRING HOOK, DIN 1469C 5MM DIA. X 25MM LONG	82706500A
9	1	GRIP RING, EXTERNAL, DIN 471 3MM ID	82707600A
10	1	GRIP RING, EXTERNAL, DIN 471 6MM ID	82707800A
11	1	SELF LOCKING NUT, SS, DIN 985 M4	82709000A
12	2	WASHER, SS, DIN 125A M6	82709700A
13	2	WASHER, POLYMIDE, DIN 125A M10	82710400A
14	1	IGLIDE FLANGE BEARING, 3MM ID X 4.5MM OD X 5MM	82721100A
15	2	IGLIDE FLANGE BEARING, 6MM ID X 8MM OD X 6MM LONG	82721300A
16	2	BELLEVILLE SPRING, DIN 2093B 6.2 X 12	82721800A
17	1	CENTER CLAMP FRAME	82830900A
18	1	BEARING BLOCK-CENTER CLAMP	82732800A
19	1	SENSOR FLAG-CENTER CLAMP	82733000A
20	1	UNDERFOLDER PLATE	82831000A
21	2	GRIPPER BEARING BLOCK-CENTER CLAMP	82733200A
22	1	GRIPPER ACTUATOR LEVER	82831100A
23	2	SET COLLAR-10MM ID X 22MM OD X 10MM LONG	82733400A
24	1	GRIPPER TORSION SPRING-RIGHT	82733500A
25	1	GRIPPER TORSION SPRING-LEFT	82733600A
26	1	GRIPPER ROLLER BEARING-CENTER CLAMP	82733700A
27	1	FILM GRIPPER	82831200A
28	1	ECCENTRIC FOLLOWER PIN-CENTER CLAMP	82733900A
29	1	PAD-FILM GRIPPER UPPER JAW	82831300A
30	1	CENTER CLAMP ROLLER	82831400A
31	1	ECCENTRIC SHAFT	82831500A
32	1	GRIPPER ECCENTRIC	82734300A
33	1	ECCENTRIC ACTUATOR LEVER	82734400A
34	1	GRIPPER SPRING BEARING	82734500A
35	1	ECCENTRIC DRIVE SPRING-CENTER CLAMP	82734600A
36	1	PUSHER	83022400A
37	1	PIVOT ASSEMBLY-XL CENTER CLAMP, RIGHT	82876700A
38	1	GRIPPER BEARING BLOCK	82735100A
39	1	GRIPPER MOUNTING LEVER	82735200A
40	1	GRIPPER UPPER JAW	82831600A
41	1	SKATE-CENTER CLAMP	82735400A
42	1	GRIPPER SKATE-FRONT	82831700A
43	1	GRIPPER SKATE-REAR	82831800A
44	1	CENTER CLAMP GUIDE BEARING ASSEMBLY	82863000A
45	1	CENTER CLAMP UPPER JAW MOUNT ASSEMBLY	82860600A
46	1	UPPER JAW ASSEMBLY-XL CENTER CLAMP	82876300A
47	1	ROLLER ASSEMBLY-XL CENTER CLAMP	82876400A
48	1	ECCENTERIC ASSEMBLY-XL CENTER CLAMP	82876500A
49	1	ECCENTRIC DRIVE LEVER ASSEMBLY	82860400A
50	1	PIVOT ASSEMBLY-XL CENTER CLAMP LEFT	82876600A

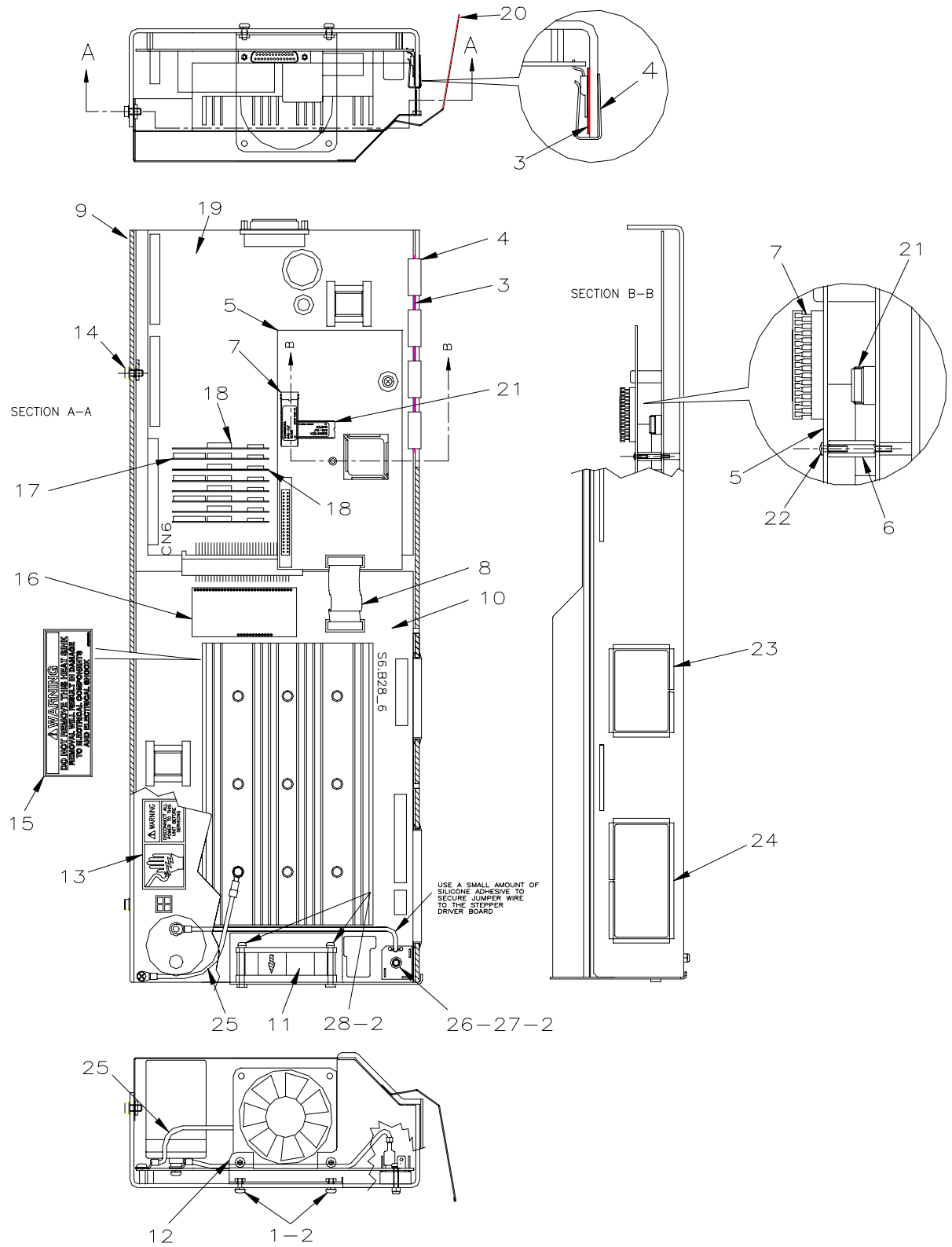
Covers



Covers

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	1	INTERLOCK SWITCH	82517000A
2	1	LENS MOUNTING TAPE	82822800A
3	4	SUPPORT - 645 XL COVER FRAME	82864400A
4	1	FRONT COVER FRAME - 645 XL	82865000A
5	1	REAR COVER - COMBO XL	83054400A
6	1	FRONT FOLDER COVER - 645 XL	82812900A
7	1	REAR FOLDER COVER - 645 XL	82812800A
8	1	SOLO XL DISPLAY LENS	82864300A
9	2	PUSH BUTTON GROMMET	82727700A
10	1	DECAL - FILM INSERTION	82795900A
11	1	SERIAL PORT ACCESS COVER	82727900A
12	1	FRONT COVER - COMBO XL	83054300A
13	1	INTERIOR SHIELD	82829700A
14	1	TOP COVER - COMBO XL	83022600A
15	1	HOOD HINGE	82829900A
16	4	HOOD STOP, 645 COVER	82770900A
17	1	REAR COVER FRAME - 645 XL	82865100A
18	1	LEFT END COVER - 645 XL	82812600A
19	1	TRAY POSITIONING DECAL	82908800A
20	1	DECAL SOLO	82790300A
21	1	POWER CABLE CN3	82848200A
22	4	HOOD BUMPER	82804300A
23	1	DECAL - CLEANING INSTRUCTIONS	82848400A
24	1	HOOD UNION PLATE	82800800A
25	2	645 XL HOOD FRAME	82848600A
26	1	645 XL HOOD BRACE	82915900A
27	1	HOOD MOUNTING CUSHION	82865200A
28	1	BASE PANEL - LEFT	83012200A
29	1	BASE PANEL - RIGHT	83076700A

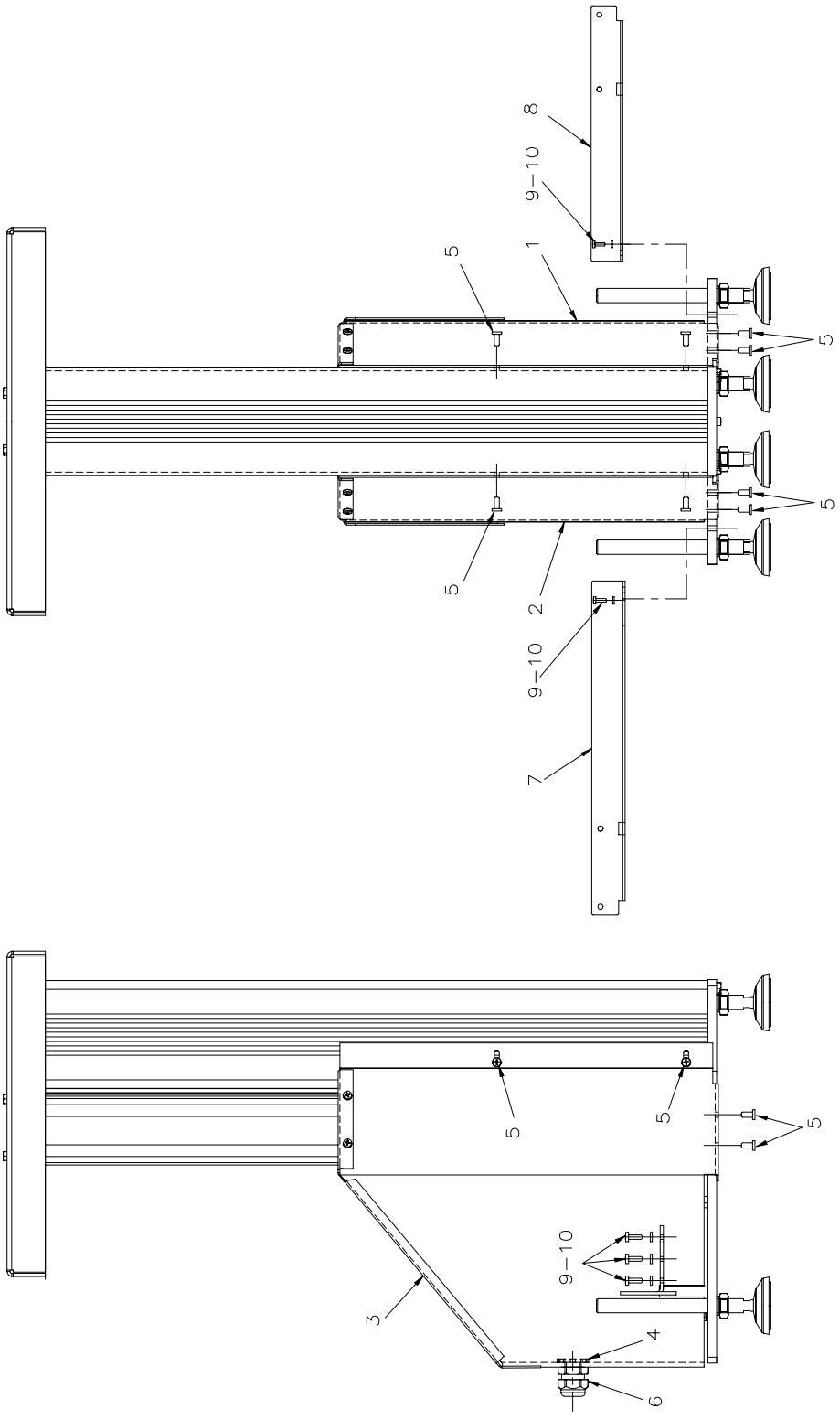
Electronics Rack



Electronics Rack

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	2	CRHCS, SS, DIN 795A - M4 X 8MM	82715200A
2	5	LOCK WASHER, SS, DIN 127B - M4	82710800A
3	6"	ELECTRICAL INSULATION TAPE	82945600A
4	4	CLIP - DUAL MOSFET	14919200A
5	1	SLAVE CPU	14680300A
6	1	CIRCUIT BOARD SUPPORT	82757300A
7	1	PROGRAMMED EPROM - FAST XL SLAVE CPU	82996900A
8	1	SLAVE CPU LINK CABLE	82757500A
9	1	RACK CHASSIS	82960200A
10	1	STEPPER DRIVER BOARD	B153870TFW
11	1	FAN ASSEMBLY - 24 VDC WITH HARNESS	82740300A
12	1	FAN BRACKET GUARD	83073200A
13	1	LABEL - DISCONNECT POWER	81921300A
14	2	HHCS, SS, DIN 933 - M5 X 12MM	82712000A
15	REF.	LABEL - HEAT SINK WARNING	82896100A
16	REF.	PERSONALITY MODULE - PLUS - XL	14680700A
17	1	OUTPUT HYBRID MODULE	14720500A
18	2	INPUT HYBRID MODULE	14720600A
19	1	MAIN CPU BOARD W/O/ SOFTWARE INCLUDES I/O MODULE	14676700A
20	1	GUARD - CIRCUIT BOARD	B82741700A
21	1	PROGRAMMED EPROM FAST XL MAIN CPU	82996700A
22	15	CROSS RECESS HEAD CAP SCREW, SS, M3X6MM LONG	82714800A
23	1	GROMMET-RACK, 8" LONG	83074300A
24	1	GROMMET-RACK, 10" LONG	83074200A
25	1	WIRE ASSEMBLY-18 GA. GREEN 6" LONG	82810900A
26	1	CROSS RECESS HEAD CAP SCREW, SS, M4X20MM LONG	82715600A
27	1	HEX LOCK NUT, M4 THREAD	82709000A
28	2	CRHCS, SS, DIN 7985A M4 X 30MM	82715800A

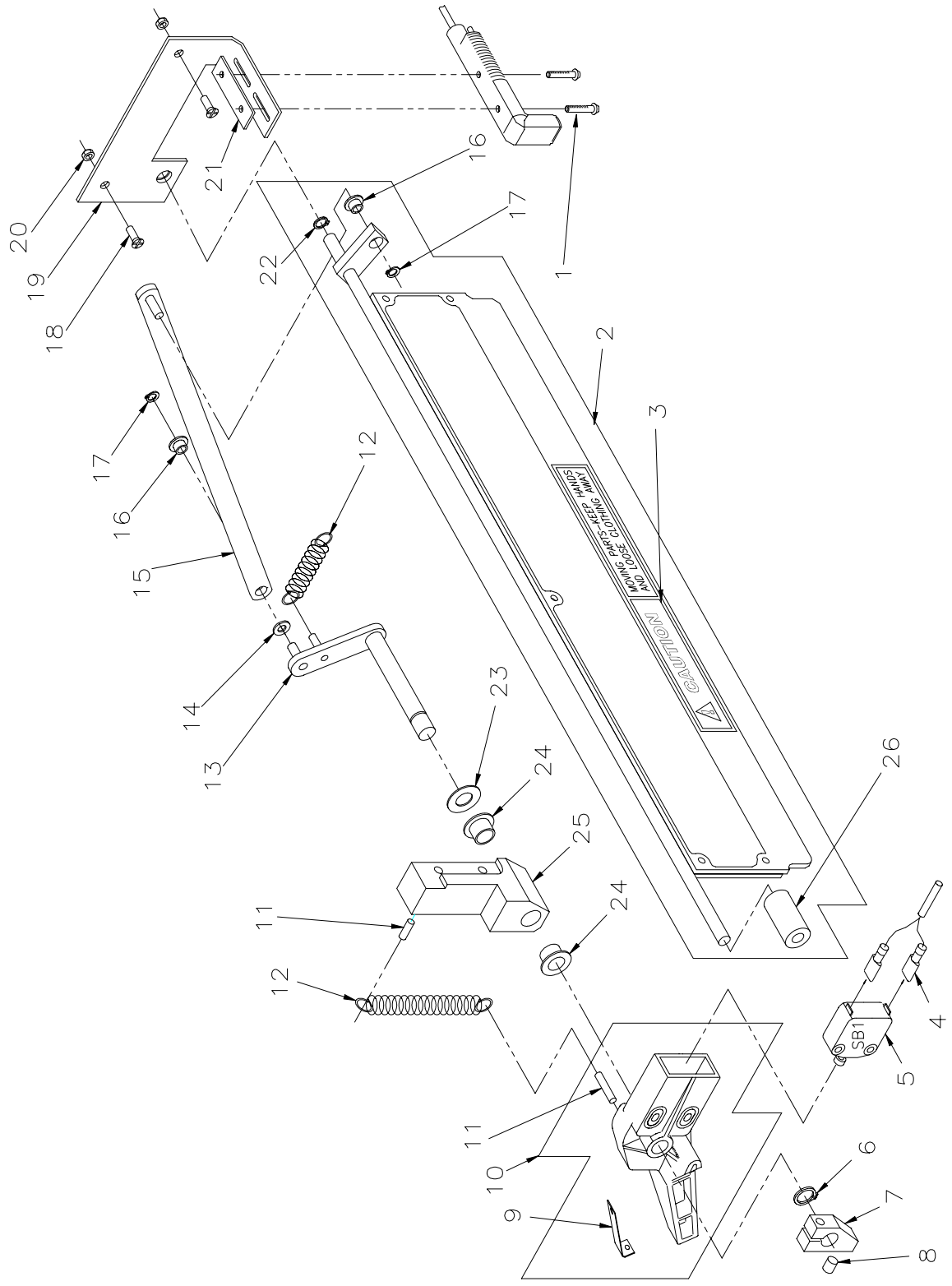
Guards



Guards

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	1	LEFT GUARD-LIFTER	83074700A
2	1	RIGHT GUARD-LIFTER	83074600A
3	1	TOP COVER-VERTICAL MOTOR MOUNT	83074500A
4	1	ELECTRICAL NUT	A80077800A
5	12	CROSS RECESS HEAD SCREW, SS, M4 X 10MM LONG	82715300A
6	1	CORD GRIP	A82474600A
7	1	LOCATING BRACKET-RIGHT SIDE	83065100A
8	1	LOCATING BRACKET-LEFT SIDE	83065000A
9	6	SOCKET HEAD CAP SCREW M4 X 16MM LONG	82713400A
10	6	LOCK WASHER M4	82710800A

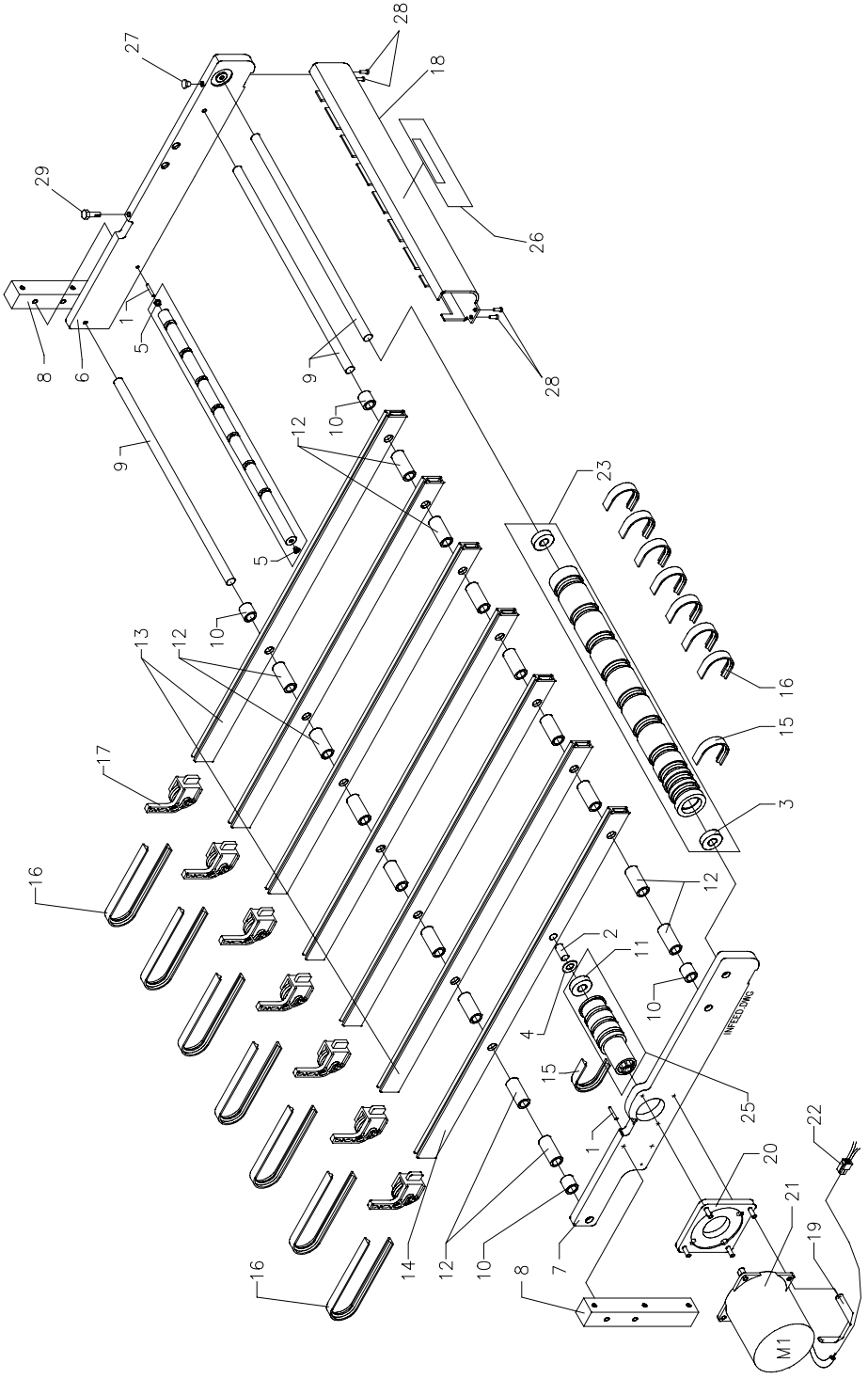
Infeed Door


CAUTION
MOVING PARTS-KEEP HANDS AND LOOSE CLOTHING AWAY!
SB1

Infeed Door

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	2	HEX HEAD MACH. SCREW M3 X 16MM	83082600A
2	1	INFEED DOOR ASSEMBLY	83079200A
3	1	CAUTION DECAL	83080000A
4	1	POWER CABLE CN3	82848200A
5	1	MICRO SWITCH	82700600A
6	1	SNAP RING, EXTERNAL, DIN 471 10MM I.D.	82710300A
7	1	DOOR ACTUATOR STOP, INFEED	82724800A
8	1	DOOR ACTUATOR BUMPER, INFEED	82724900A
9	1	WEAR STRIP	82765200A
10	1	DOOR ACTUATOR ASSEMBLY	82862400A
11	2	SPRING HOOK, DIN 1469C 4MM DIA. X 20MM	82706200A
12	2	SPRING	82725000A
13	1	DOOR ACTUATOR SHAFT ASSEMBLY	82875100A
14	1	WASHER, POLYMIDE, DIN 125A M5	82710300A
15	1	DOOR CONNECTING ROD	82827700A
16	2	IGLIDE FLANGE BEARING, 5MM I.D. X 7MM O.D. X 5MM	82721200A
17	2	GRIP RING, EXTERNAL, BN 832 5MM I.D.	82707700A
18	2	FLAT HEAD CAP SCREW, SS, DIN 965A M5 X 12MM	82717000A
19	1	INFEED DOOR PIVOT ASSEM.	83080100A
20	2	HEX NUT M5 W/NYLON INSERT	82709100A
21	1	NUT PLATE-PHOTO EYE	83074100A
22	1	SNAP RING-EXTERNAL, DIN 471 6MM 1.D.	82706800A
23	1	WASHER BRASS, 10.5MM I.D. X 20MM O.D. X .8MM THICK	82711700A
24	1	IGLIDE FLANGE BEARING, 5MM I.D. X 7MM O.D. X 5MM THICK	82721400A
25	1	DOOR ACTUATOR BEARING BLOCK	82827200A
26	1	DOOR SPACER	82827600A

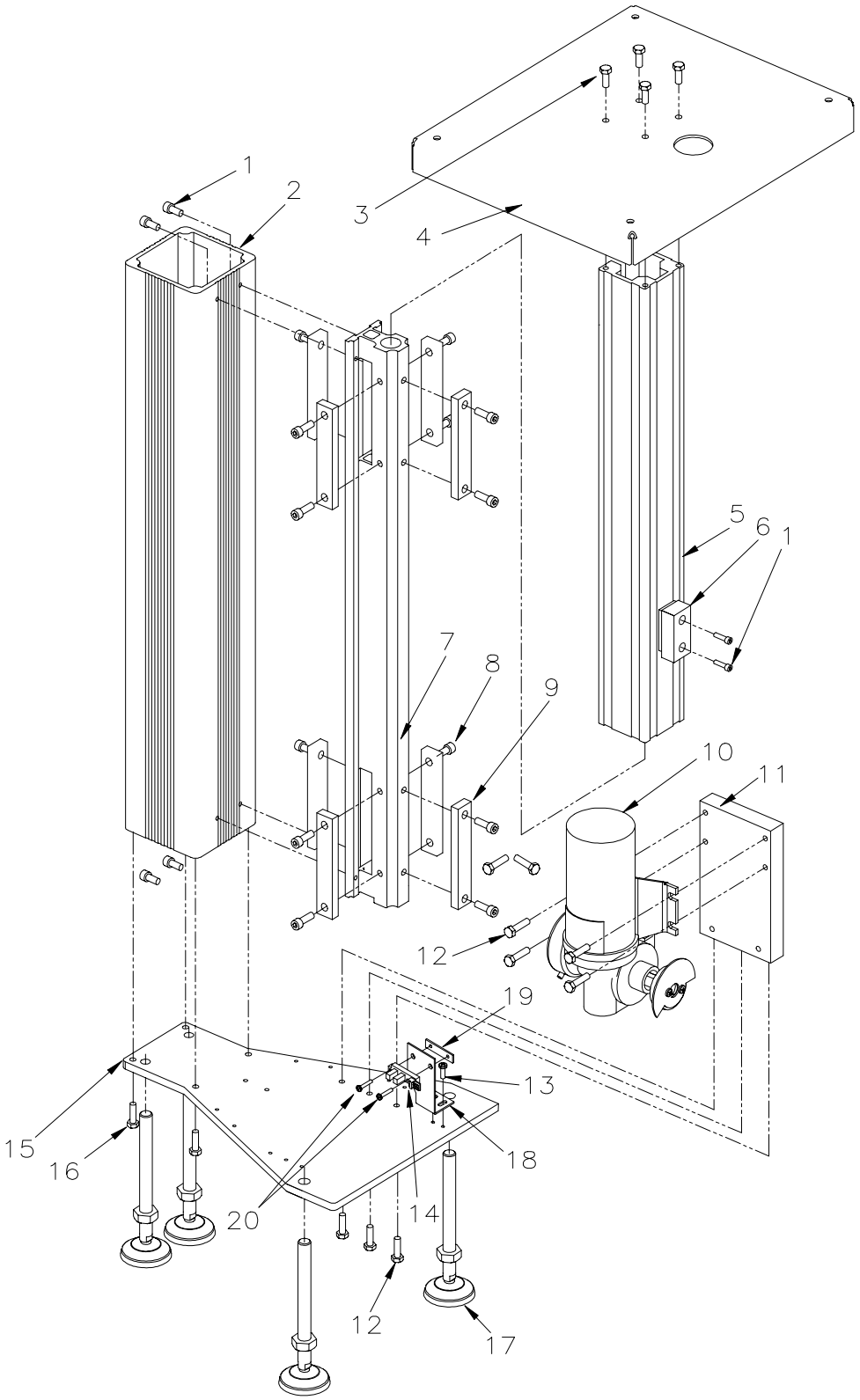
Infeed



Infeed

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	2	DOWEL PIN, 3MM DIA. X 20MM LONG	82702500A
2	1	DOWEL PIN, 10MM DIA. X 20MM LONG	82703700A
3	2	BALL BEARING, 12MM ID X 28MM OD X 8MM	82704600A
4	1	WASHER, BRASS, 10.5 ID X 20 OD X .8 THICK	82711700A
5	2	IGLIDE FLANGE BEARING, 3MM ID X 4.5MM OD X 5	82721100A
6	1	INFEED FRAME - RIGHT HAND	82826300A
7	1	LEFT SIDE PLATE, ALUM, INFEED	82722600A
8	2	SUPPORT BLOCK, ALUM, INFEED	82722700A
9	3	INFEED CROSS BRACE	82826400A
10	4	INFEED SPACER 12MM ID X 17MM OD X 25MM LONG	82826500A
11	1	BALL BEARING, 10MM ID X 26MM OD X 8MM	82704500A
12	7	DELRIN SPACER, 12MM ID X 17MM OD X 38MM	82723100A
13	6	BELT GUIDE - 2 HOLE	82826600A
14	1	BELT GUIDE - 3 HOLE	A82826700A
15	1	BELT, INFEED DRIVE	82723700A
16	7	INFEED TRANSPORT BELT	82826900A
17	7	PULLEY ASSEMBLY	82723900A
18	1	BELT GUARD - INFEED	82827100A
19	1	GROUND STRAP	82742000A
20	1	ISOLATOR - MOTOR MOUNT	82756300A
21	1	STEPPER MOTOR - 3NM	A82765900A
22	1	POWER CABLE CN2	82848300A
23	1	DRIVER ROLLER ASSEMBLY - 10 GROOVE	82874500A
24	1	IDLER ROLLER ASSEMBLY - 7 GROOVE	82874600A
25	1	IDLER ROLLER ASSEMBLY - 3 GROOVE	82874700A
26	1	CAUTION - DO NOT LIFT DECAL	82872100A
27	1	HOLE PLUG	83143400A
28	4	CROSS RECESS HEAD CAP SCREW M4 X 12MM LONG	82719300A
29	1	HEX HEAD CAP SCREW, SS, M5 X 12MM LONG	82712000A

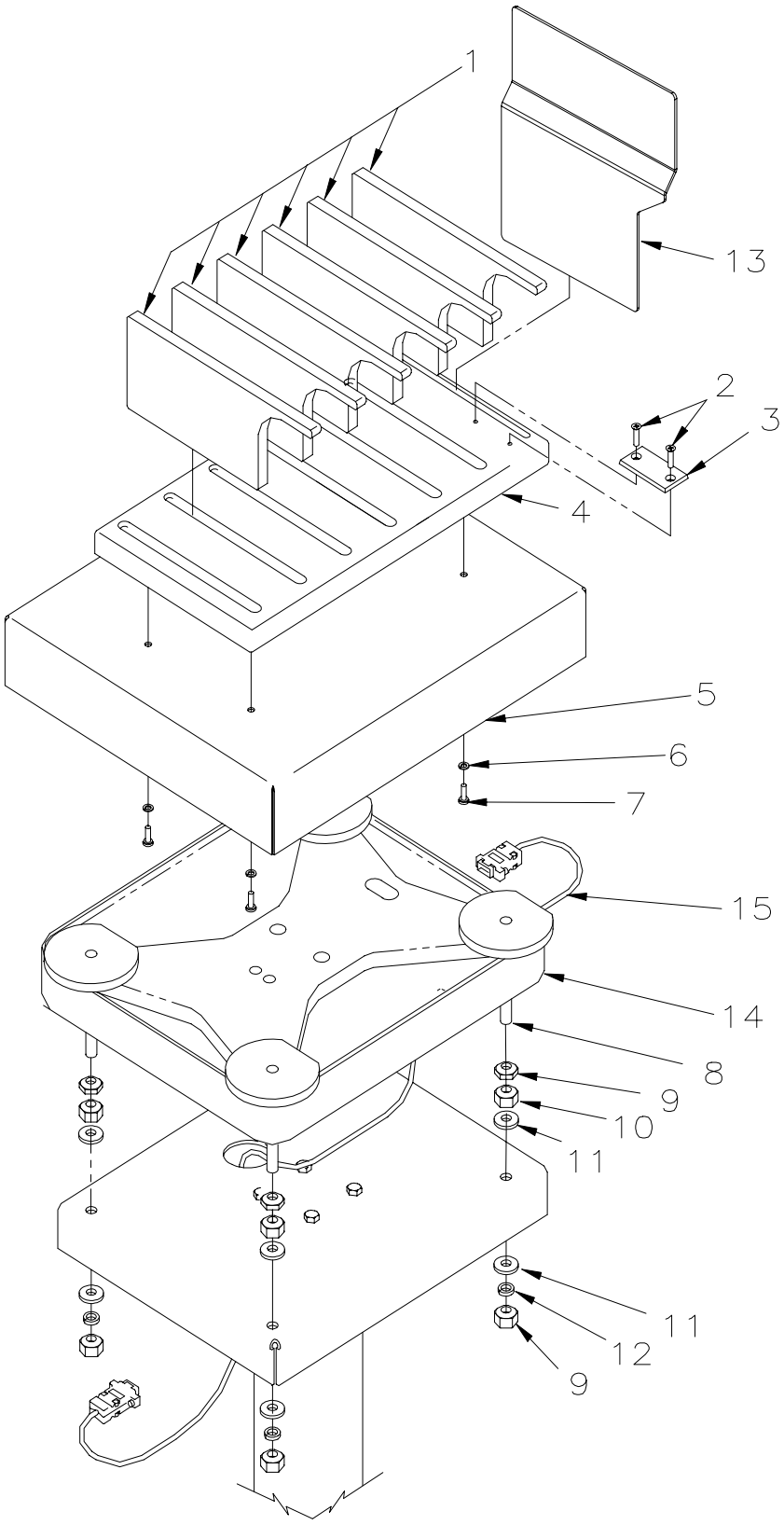
Scale Lifter



Scale Lifter

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	6	SOCKET HEAD CAP SCREW, SS, M5 X 12MM LONG	82713600A
2	1	ELEVATOR SUPPORT TOWER	83064700A
3	4	HEX HEAD CAP SCREW, SS, M5 X 16MM LONG	82712100A
4	1	SCALE BASE PLATFORM	83065200A
5	1	LIFTER CARRIAGE EXTRUSION	83064500A
6	1	LIFTER BEARING	83064900A
7	1	ELEVATOR COLUMN SHAFT	83064600A
8	16	SOCKET HEAD CAP SCREW, SS, M4 X 12MM LONG	82713300A
9	8	SLIDER BEARING	83064800A
10	1	LIFTER MOTOR ASSEMBLY	83052400A
11	1	MOUNTING PLATE, VERTICAL MOTOR	83073400A
12	7	HEX HEAD CAP SCREW, SS, M6 X 25MM LONG	82712600A
13	2	CROSS RECESS HEAD CAP SCREW, SS, M4 X 12MM LONG	82715400A
14	1	PHOTO INTERRUPTER	82700500A
15	1	BASE PLATE OF FLOOR MOUNT	83064400A
16	4	HEX HEAD CAP SCREW, SS, M6 X 20MM LONG	82712500A
17	4	SWIVEL FOOT, 50MM DIA. M12 X 123MM LONG	82721700A
18	1	POSITIONER SENSOR MOUNT	83027000A
19	1	PHOTO INTERRUPTER MOUNTING PLATE	83063900A
20	2	CROSS RECESS HEAD CAP SCRE, SS, M3 X 16MM LONG	82715000A

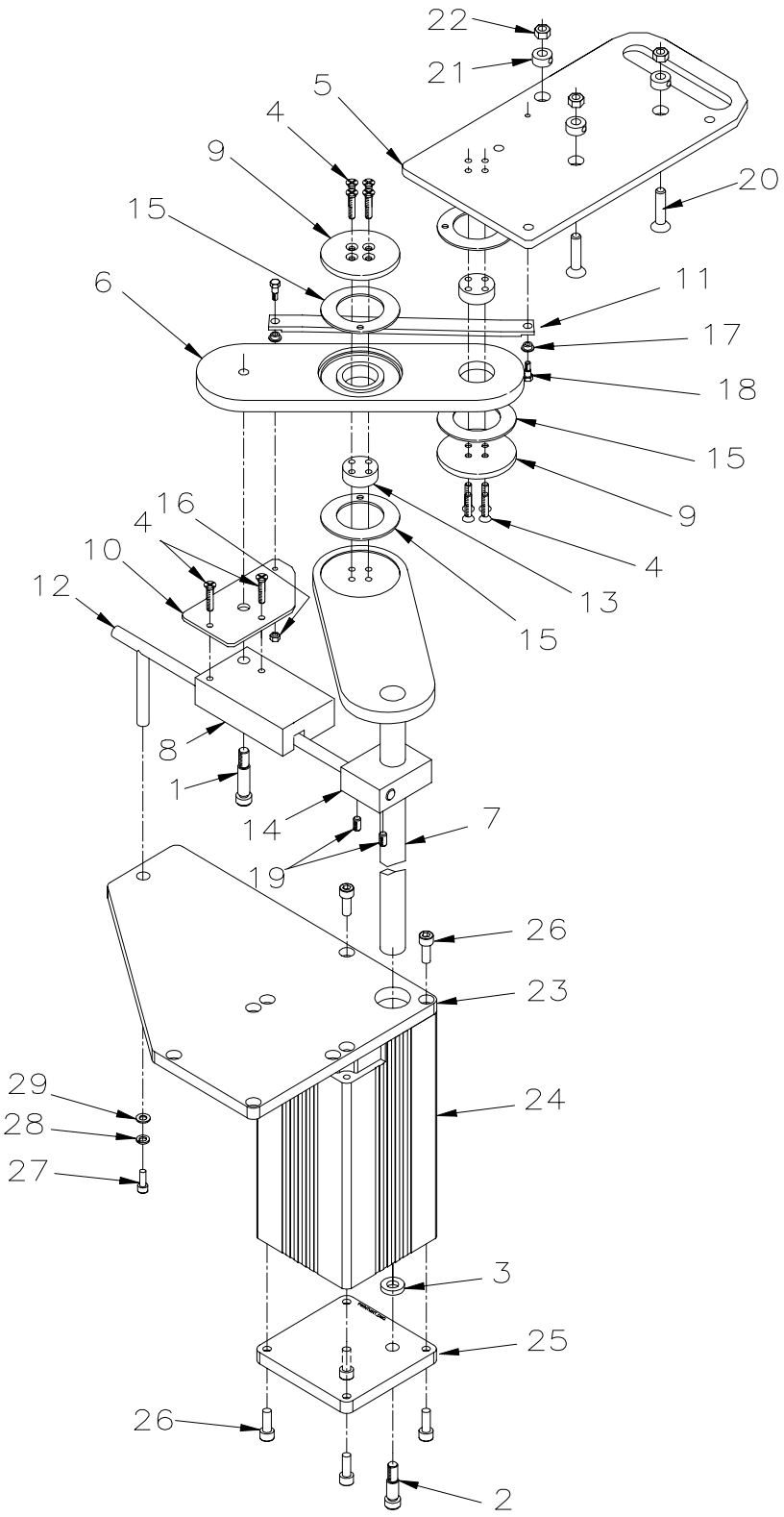
Scale Platter



Scale Platter

ITEM	QTY.	DESCRIPTION	PA
1	6	RISER ARM	83
2	2	M4X16MM FLAT PHIILIPS HED SCREW	82
3	1	RETRO-REFLECTOR PLATE	83
4	1	SLOT TRAY, 3/4" DELRIN	A8
5	1	SCALE PLATTER WITH THRU HOLES	83
6	4	M5 LOCK WASHER	82
7	4	M5X12MM CROSS RECESS HEAD CAP SCREW	82
8	4	5/16" THREADED ROD	82
9	4	5/16-18 HEX JAM NUT	R0
10	8	5/16-18 HEX NUT	R0
11	8	5/16" FLAT WASHER	R0
12	4	5/16 LOCK WASHER	R0
13	1	PACKAGE STOP	A8
14	1	8270 SCALE BASE (REFERENCE)	82
15	1	CABLE ASSEMBLY-SCALE TO CONTROLLER	83

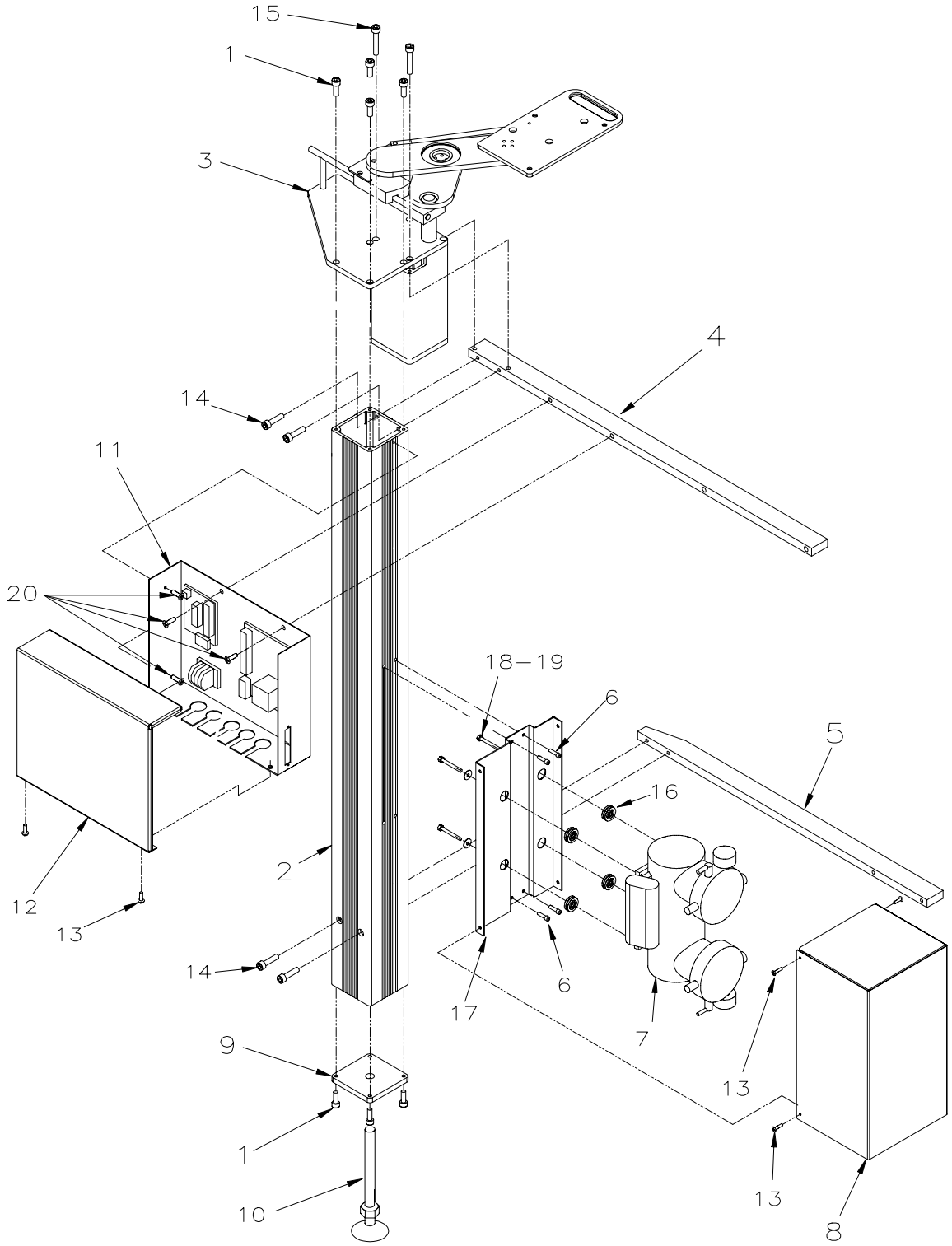
Printer Mount



Printer Mount

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	1	SHOULDER BOLT - 3/8 O.D. X 1" LONG SHOULDER	A80636200A
2	1	SHOULDER BOLT - 3/8 O.D. X 5/8" LONG SHOULDER	A80379700A
3	1	THRUST WASHER	A80363400A
4	10	FLAT HEAD CAP SCREW - CROSS RECESS, SS, DIN 965A M5X20MM	82717200A
5	1	PRINTER SUPPORT PLATE	82967100A
6	1	PRINTER SUPPORT LINK	82967200A
7	1	PRINTER SUPPORT ARM	82967300A
8	1	SLIDE BLOCK	82967400A
9	2	SUPPORT ARM PIVOT PLATE	82967500A
10	1	SLIDE LINK ARM	82967600A
11	1	PARALLEL LINK	82967700A
12	1	GUIDE ROD	83067500A
13	2	PIVOT SEPARATION PLATE	82967900A
14	1	GUIDE ROD TOP MOUNT	82968000A
15	4	THRUST BEARING	82968100A
16	1	KEEPS NUT, BN 1364 M4 THREAD	82783100A
17	2	IGLIDE BEARING	82721200A
18	2	SHOULDER SCREW	82730400A
19	2	CUP POINT SET SCREW M6X6MM DIN 916 SS	82762900A
20	3	FLAT SOCKET HEAD CAP SCREW 5/16-18 X 1" LONG	R0320500A
21	3	5/16 SET COLLAR	A80441100A
22	3	HEX NUT, 5/16-18 ZINC PLATED	R00433050
23	1	TOP PLATE FOR COLUMN	83067900A
24	1	SHAFT CASE	83067600A
25	1	SHAFT SUPPORT	83067700A
26	6	SOCKET HEAD CAP SCREW M6 X 16MM	82714100A
27	1	SOCKET HEAD CAP SCREW M5 X 12MM	82713600A
28	1	M5 LOCK WASHER	82710900A
29	1	M5 FLAT WASHER	82709600A

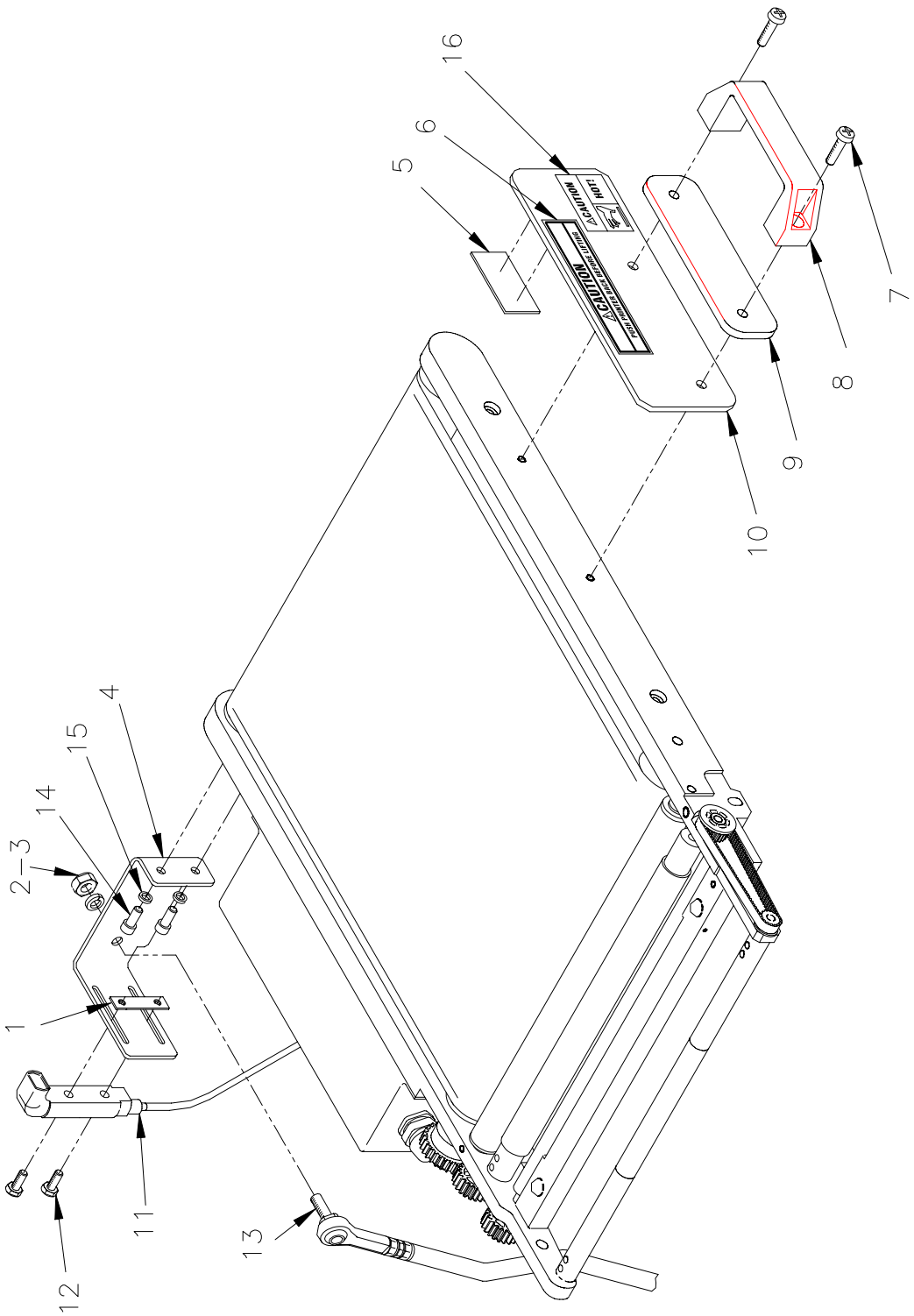
Printer Column



Printer Column

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	8	SOCKET HEAD CAP SCREW M6 X 16MM LONG	82714100A
2	1	COLUMN	83067300A
3	1	PRINTER MOUNT ASSEMBLY	83077800A
4	1	UPPER SUPPORT ARM	83075000A
5	1	LOWER SUPPORT ARM	83075100A
6	4	SOCKET HEAD CAP SCREW M5 X 12MM LONG	82713600A
7	1	VACUUM PUMP	82794900A
8	1	PUMP COVER	83075600A
9	1	FOOT PLATE	83067400A
10	1	FOOT	82674300A
11	1	CONTROL BOX ASSEMBLY	83076800A
12	1	CONTROL BOX COVER	83072000A
13	6	PHILLIPS TRUSS HEAD SCREW M4X8MM LONG	82783000A
14	4	SOCKET HEAD CAP SCREW M6X20MM LONG	82714200A
15	2	SOCKET HEAD CAP SCREW M6X35MM LONG	82713000A
16	4	INSULATION MOUNTS	82795600A
17	1	PUMP MOUNTING BRACKET	83075500A
18	4	HEX HEAD CAP SCREW 10-32 X 1-1/4" LONG	R0382200A
19	4	#10 FLAT WASHER (LARGE)	82910100A
20	4	HEX HEAD CAP SCREW, SS, M4 X 12MM LONG	82823300A

Sealing Belt



Sealing Belt

ITEM	QTY.	DESCRIPTION	PART NUMBER
1	1	NUT PLATE-PHOTO EYE MOUNT	83074100A
2	1	LOCK WASHER 5/16	R0283100A
3	1	HEX NUT 5/16-24	R01174050
4	1	PHOTO EYE BRACKET	83073900A
5	1	REFLECTIVE TAPE	82144300A
6	1	CAUTION DECAL	83081500A
7	2	SCREW, PHILLIPS HEAD M5 X 25MM LONG	82716300A
8	1	U-HANDLE	82720800A
9	1	HANDLE INSULATOR-ABS	82746900A
10	1	REFLECTOR PLATE	83073800A
11	1	PHOTO EYE	83002800A
12	2	SCREW, HEX HEAD M3 X 16MM LONG	83082600A
13	1	ROD END W/5/16-24 STUD	82673700A
14	2	SOCKET HEAD CAP SCREW SS, M5 X 16MM LONG	82713700A
15	2	LOCK WASHER M5 STAINLESS STEEL	82710900A
16	1	DECAL-CAUTION HOT SMALL	82892700A

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