Model

702

Standalone
Dual Label
Bottom Applicator

Service Manual

A83209900A
(4/01).00

METTLER TOLEDO®

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METTLER TOLEDO Model 702 Dual Applicator Service Manual A83209900A 4/01

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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
Training Department
1900 Polaris Parkway
Columbus, Ohio 43240
(614) 438-4511

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

PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

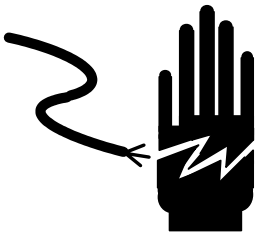
FOLLOW these instructions carefully.

SAVE this manual for future reference.

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

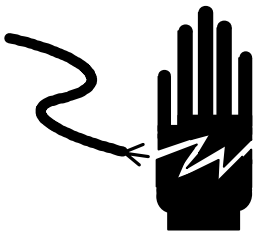
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.



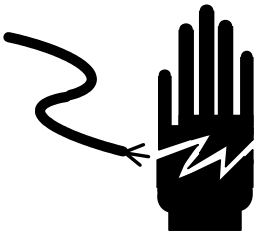
WARNING

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.



WARNING

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



WARNING

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

CAUTION

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

CAUTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

CONTENTS

1 General Description

Introduction

The **METTLER TOLEDO**® Model 702 Standalone Dual Label Bottom Applicator is designed for use with **METTLER TOLEDO**® Model 706, 705, 606, and 602 automatic labeler. The 702 Dual Label Applicator will apply either a safe handling instruction label or an EAS security tag to the bottom surface of a film-wrapped tray.

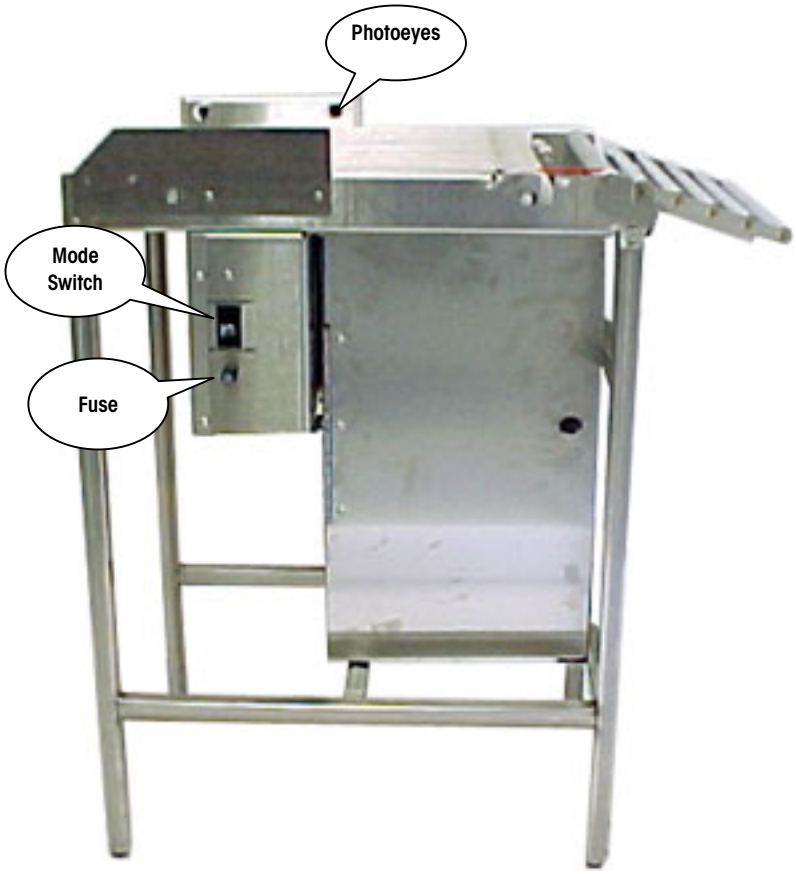


Figure 1-1: Model 702 Standalone Dual Label Bottom Applicator Front View

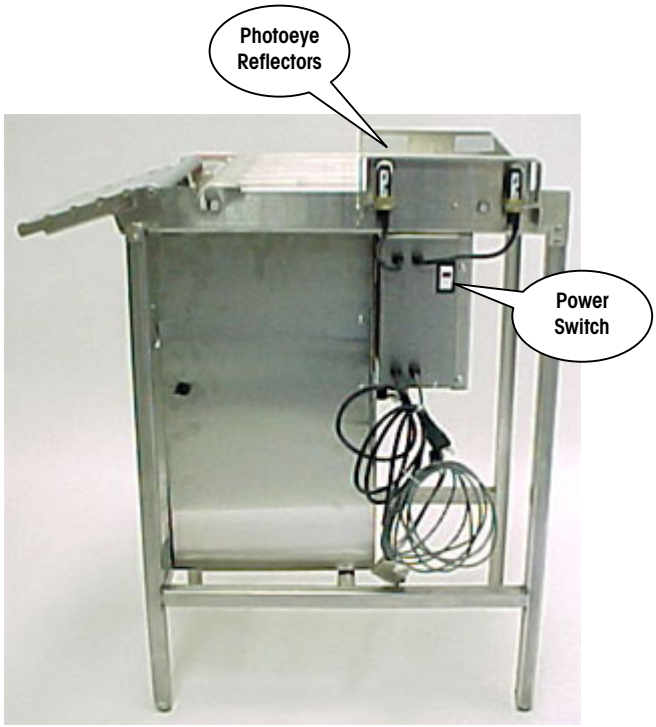


Figure 1-2: Model 702 Standalone Dual Label Bottom Applicator Rear View

Overview

The Model 702 automatically indexes die cut labels using a gap sensor to detect the gaps between labels.

When a label is dispensed, it is partially ejected. The moving tray picks up the label as it is conveyed over the label.

Application is determined by the Mode Switch position. The Model 702 will apply safe-handling instruction labels to every package when the Mode Switch is in the **Safe Handling Only** position. When the Mode switch is set to **Selective Security**, the packages are labeled according to the price/weight threshold established within the controller logic. If the package price or weight is above the threshold a Security tag label will be applied and if the package falls below this level a safe-handling instruction label will be applied. All packages will receive a bottom label of one type or the other.

2 Specifications

Factory Numbers

The Factory order number for the Model 702 Standalone Bottom Label Applicator is **702-0004-000.**

Major Component Map

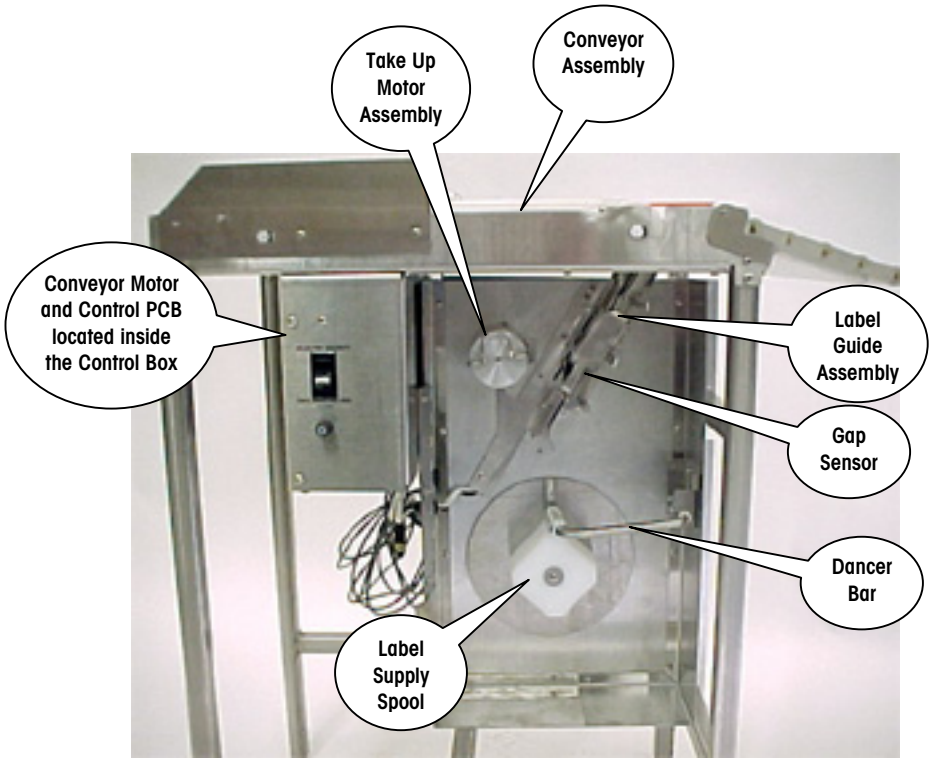


Figure 2-1: Major Components

Model 702 Dimensions

The dimensions are as shown in Figure 2-2.

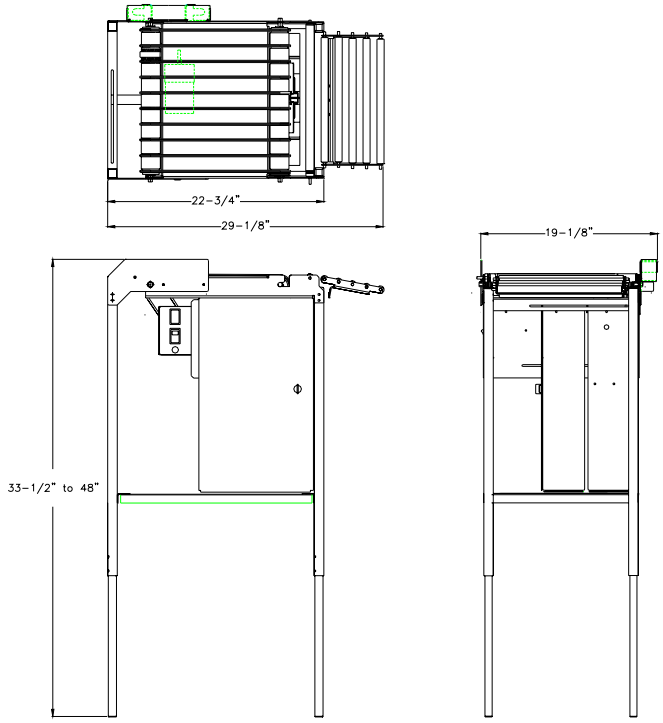


Figure 2-2: Model 702 Dimensions.

Product Specifications

Packs/Minute

The maximum package rate is 26 packs per minute.

Tray Sizes

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

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

Reliability

MTBF is 1,000,000 cycles, (approximately 2 years continuous operation) at 10,000 cycles per week.

Motors

The Model 702 uses a 115 VAC motor to drive the conveyor belts and two 24 VDC motors to advance the labels to the application position and for liner takeup.

Power Requirements

The Model 702 requires 115 VAC, single phase, 60 Hz, at 5A nominal to operate.

Labels

The Model 702 will operate with die cut labels from 1.5″ to 1.75″ wide and 1.7″ to 2.25″ long. The portion of the label, which passes through the gap sensor, must be opaque for proper operation. Labels must be dry for proper operation in the Model 702. The labels must be stored in a cool and dry location away from high humidity and condensation. The Model 702 can be used to apply the following types of labels.

- Nutrition Facts Labels.
- Other Merchandising labels.
- Checkpoint 2010 Meat Security Labels.

NOTE: Safe Handling Instruction labels must be on backing having stripes on BOTH edges, aligned with labels, IF used on rear carriage. SHI labels must also be on 4″ core to function properly with 702-0004 supply spool arrangement. Additionally, stripper bar extension must be installed if labels are shorter than 2 inches.

Environmental Requirements

Labels must be dry for proper operation in the Model 702. The labels must be stored in a cool and dry location away from high humidity and condensation. The Model 702 is designed to operate in ambient temperatures between 40°F and 104°F (4°C to 40°C) with a relative humidity between 10% and 95%, non-condensing.

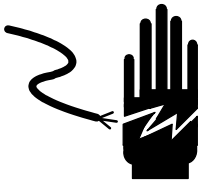
The Model 702 is designed for use in prepackaging backroom environments. This unit is not intended for wash-down operation, or operation in environments of extreme dust, heat, cold, or humidity. The integral control box is designed to prevent moisture from dripping onto the controls. No NEMA rating applies.

3 Setup and Operation

Unpacking

Remove the Model 702 from the shipping crate and carefully inspect for any damage. Report any shipping damage to your carrier immediately.

Installation with the Model 706, 705, 606, and 602



⚠ WARNING

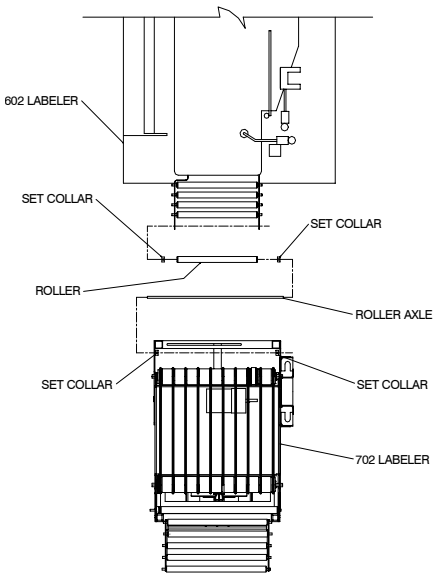
DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

To install the Model 702 behind the Autolabeler, disconnect power to the system, then perform the following steps:

1. Remove the last discharge roller.
2. Adjust the height of the Model 702 so the Model 702 mounting brackets line up with the holes of the removed roller. Adjust the height of the 702 support legs by loosening the two setscrews in each leg and extending the feet.
3. Attach the Model 702 to the autolabeler's discharge bracket using the new roller and shaft that are shipped with the Model 702 Standalone. Refer to Figure 3-1.

ALIGN THE LABEL PATH with the Package Path from Autolabeler.

Depending upon the type of Autolabeler in use, the carriage assembly may need to be adjusted to place the Label Pickup Area in line with the path of the package from the discharge of the labeler.



Mounting the Model 702 to Autolabeler
Figure 3-1

Factory standards place the Twin Carriage Assembly in the middle of the conveyor table. Using the 4 applicator-carriage mounting-screws and the extra length on the shaft for the first roller on the 702, proper package path alignment is possible. Position the set collars on the shaft, outside of the discharge conveyor bracket, to put the label chute approximately in line with the package path. Loosen the two applicator-carriage mounting-screws located inside each label box and the two applicator-carriage set screws located on the end of the center panel and position the label chute in line with the price label applicator. Retighten the screws. (Figure 3-2 & 3-3).

REMEMBER to keep the body of the 702 between the widest parts of the body of the autolabeler.

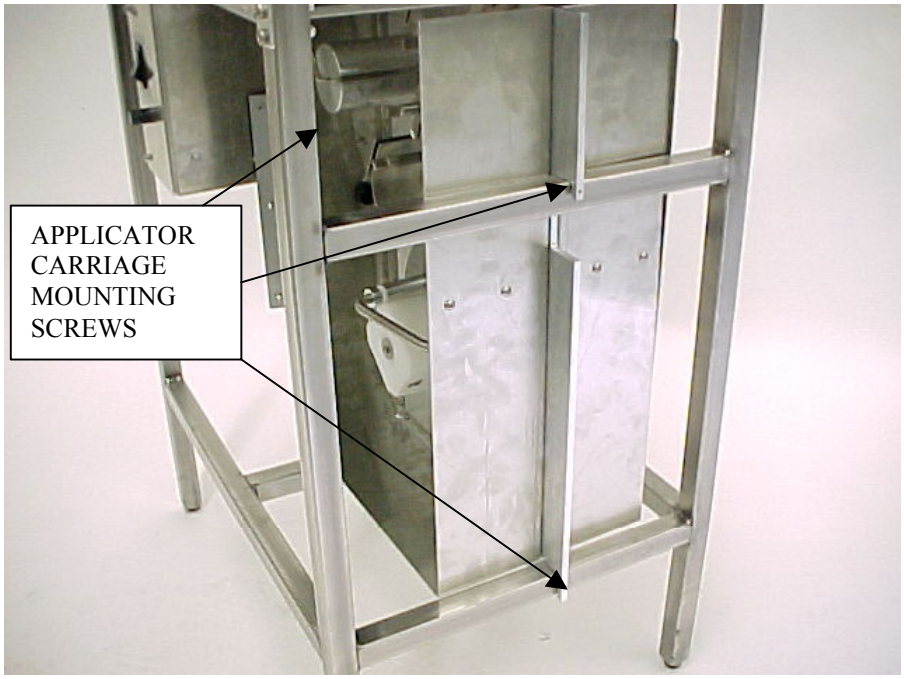


Figure 3-2: Carriage Position Adjustment

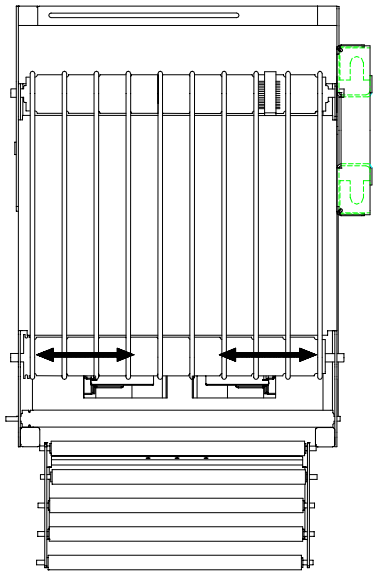


Figure 3-3: Label Chute Alignment

Install the 5-roller discharge conveyor inline with the package path using the extra holes if necessary as shown in Figure 3-4.

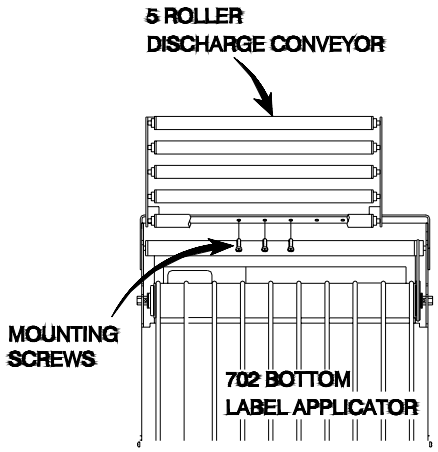


Figure 3-4: Discharge Roller Attachment

Power Switch

Turn the Power Switch to the off position, then plug the AC power cord from the Model 702 into a 115 VAC wall outlet. Press the Power Switch to the "ON" position. The conveyor will begin running when the infeed photo eye is interrupted. A label will be ejected when the position photo eye is blocked. The conveyor will time out after a period of 10 seconds after the last package and go into a standby mode.

Turn the Power Switch "OFF" if the Model 702 will not be used for long periods of unattended use.

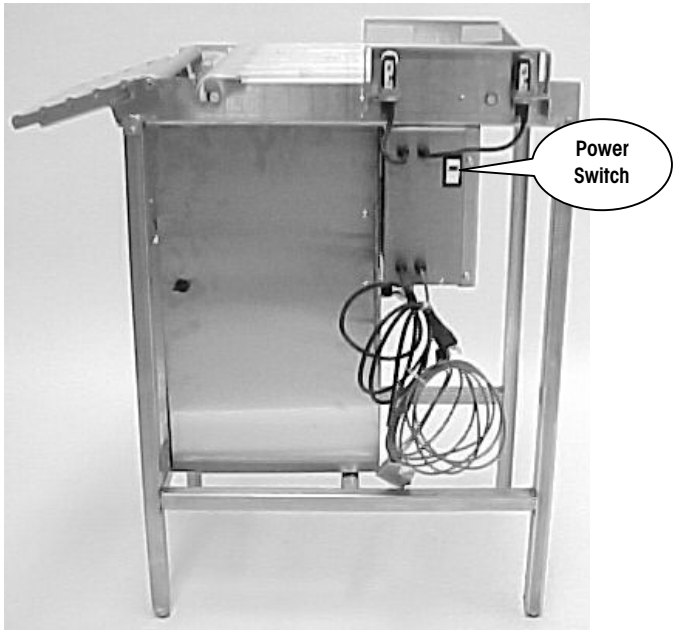


Figure 3-5: Power Switch

Communications

Locate the communications cable connecting the Autolabeler to the controller. Unplug this cable from the controller and plug it into the socket of the connector on the communications cable from the 702. Replace the labeler cable with the D-connector on the 702 Communications cable in the open socket on the controller. The 702 will now be able to sense the weighment character from the controller to determine when to selectively apply the security tag.

Loading Labels

Refer to the Label Threading Diagram below (also located inside the cover of the front carriage) to load labels in the Model 702.

- Insert the label roll on the Supply Spool so the labels are pulled from the front of the roll (counter-clockwise on the front carriage and clockwise on the rear carriage).
- Insert the labels into the Label Guide.
- Peel off about 12 inches of labels and route the liner under the Liner Guide.
- Remove the Clip Retainer from the Take Up Spool, wind the liner onto the bottom of the spool (clockwise for the front carriage, counter-clockwise for the rear carriage), and then secure the liner with the Retainer Clip.

Refer to the notes at the left for proper storage and operation of the labels in the Model 702.

The labels must be dry for proper operation in the Model 702. The labels must be stored in a cool and dry location away from high humidity and condensation.

The Model 702 is designed to operate in ambient temperatures between 40°F and 104°F (4°C to 40°C) with a relative humidity between 10% and 95%, non-condensing.

Figure 3-6: Label Threading Diagram

Security Tags versus Safehandling Labels

Security Tag Label rolls and Safe Handling Instruction labels are available on different size cores. The 702 Dual Label Bottom Applicator is arranged with a larger supply spool in the front carriage to handle the Safe Handling Instruction Labels on a 4-inch core. A smaller supply spool is installed in the rear carriage to handle the Security Tag Labels on a 3-inch core. This factory standard arrangement can be altered if desired. The label type location is controlled via dipswitch; see label-positioning section for further details.

General Operation

The position of the label as it is ready to be picked up on the Model 702 is shown in Figure 3-7.

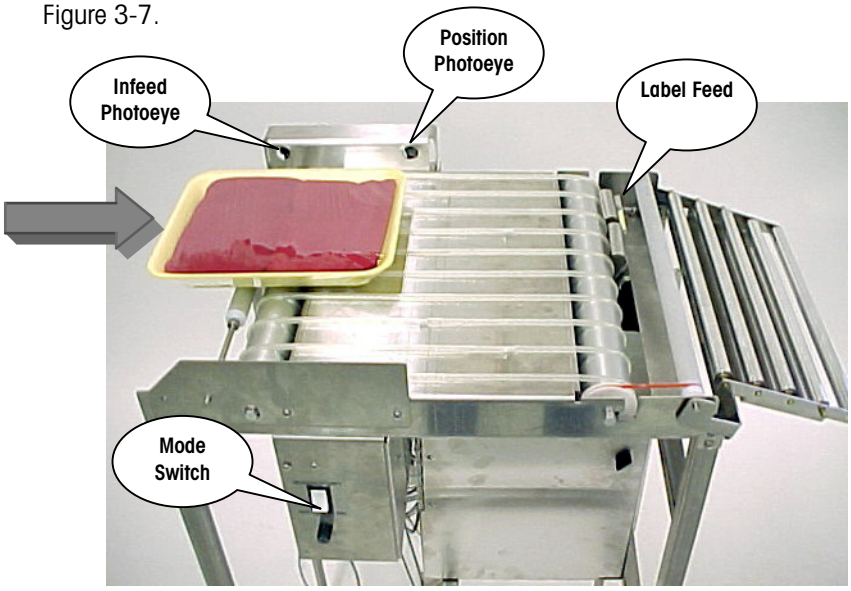


Figure 3-7: Label Application

The Model 702 Bottom Label Applicator has two modes of operation. A Mode Switch located on the operator side of the unit is used to select the mode of operation (see Figure 3-7).

When the switch is set on **Safe Handling Only**, the label feed assembly with the safe handling only instruction labels will be activated for every package.

When the switch is set on **Selective Security**, the Model 702 will check the controller communication to the printer to determine whether a security tag is needed. If the weight/price threshold set in the indicator is met the package will receive a security tag label. Another way a package can be labeled with a security tag is through a specific field in the Controller PLU setup which tags a PLU, regardless of weighed product, to be given a security tag. All other packages will be issued a safe handling instruction label.

Packages are detected by an infeed photoeye, which will activate the conveyor when a package interrupts the beam. A position photoeye controls the label movement to the pickup position. As the conveyor moves the package over the label, it will stick to the

film. The package will then pull the rest of the label out as it is conveyed over the label pickup area.

When the Model 702 detects out of labels or a jam, the beeper will sound as follows:

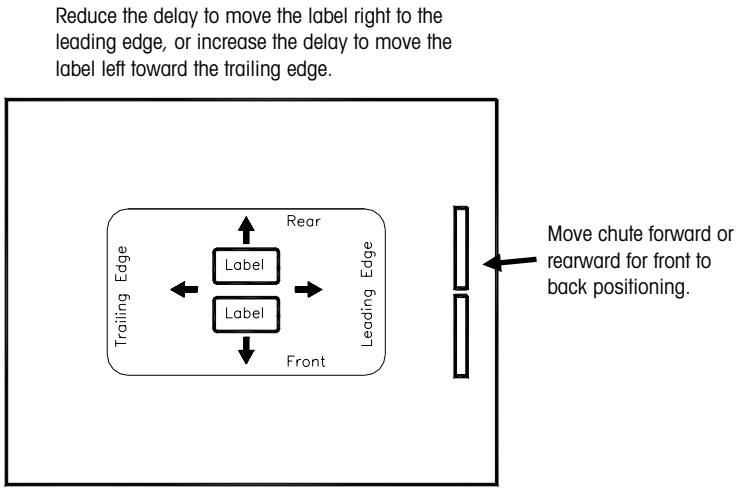
Out of Labels – 2 beeps

Label Jam – 3 beeps

Label Positioning

The label position can be adjusted by manipulating two variable settings:

1. Move the applicator towards the front or rear for front-to-back label positioning. (Figure 3-8. See Installation on the Model 602 for procedure.)
2. Positioning left toward the trailing edge or right toward the leading edge can be configured by time delay DIP switches on the Model 702 Control PCB.



NOTE: The time delay setting needs to be set for both the front and the rear carriages. The stiffness of the labels being applied, the length of the labels, and the type of adhesive used make each application unique. Also note the length of the labels, labels shorter than 2 inches will require the extended stripper bar installed.

There are two dipswitch banks on the control board. Switch bank one (SW1) has eight switches while switch bank two (SW2) has only four switches.

SW1-1 through SW1-3 on the Control PCB are used to set the dispensing delay for the safe handling label positioning. SW1-4 through SW1-6 are used to set the delay for the security tag label positioning. Increase the amount of delay to move the label toward the trailing edge (left) on the package. Decrease the delay to move the label closer to the leading edge (right). See Table 3-9 for incremental values.

Dispensing Delay for Safe Handling Labels				Dispensing Delay for Security Tag			
SW1-1	SW1-2	SW1-3	Delay (ms)	SW1-4	SW1-5	SW1-6	Delay (ms)
0	0	0	0	0	0	0	0
1	0	0	60	1	0	0	20
0	1	0	80	0	1	0	40
1	1	0	100	1	1	0	60
0	0	1	120	0	0	1	100
1	0	1	140	1	0	1	140
0	1	1	160	0	1	1	180
1	1	1	180	1	1	1	220

Figure 3-9 Delay Time Dipswitch Settings on Control PCB

These values are in addition to a base time delay. This base time delay is the average of the actual delivery time of the previous 4 labels. This will adjust for varying dynamics as the label roll diameters change. The base time delay returns to a default value every time the unit is powered up. A minimum of 4 packs must be run to reinitiate the base time delay.

Dipswitch Settings:

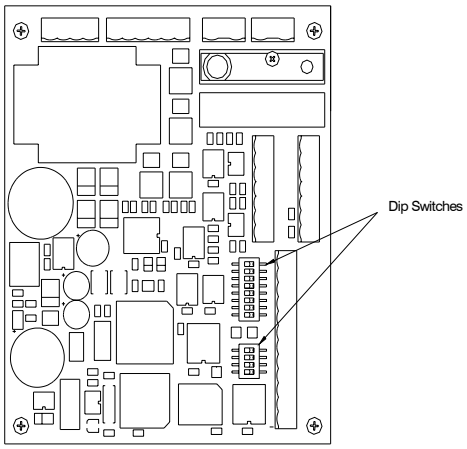


Figure 3-10: Dipswitch Locations on Control PCB

SW1-1 See Figure 3-9

SW1-2 See Figure 3-9

SW1-3 See Figure 3-9

SW1-4 See Figure 3-9

SW1-5 See Figure 3-9

SW1-6 See Figure 3-9

SW1-7 On = Security Tag in Front, Off = Security in Rear

SW1-8 On = Flash Mode, Off = Operating Mode

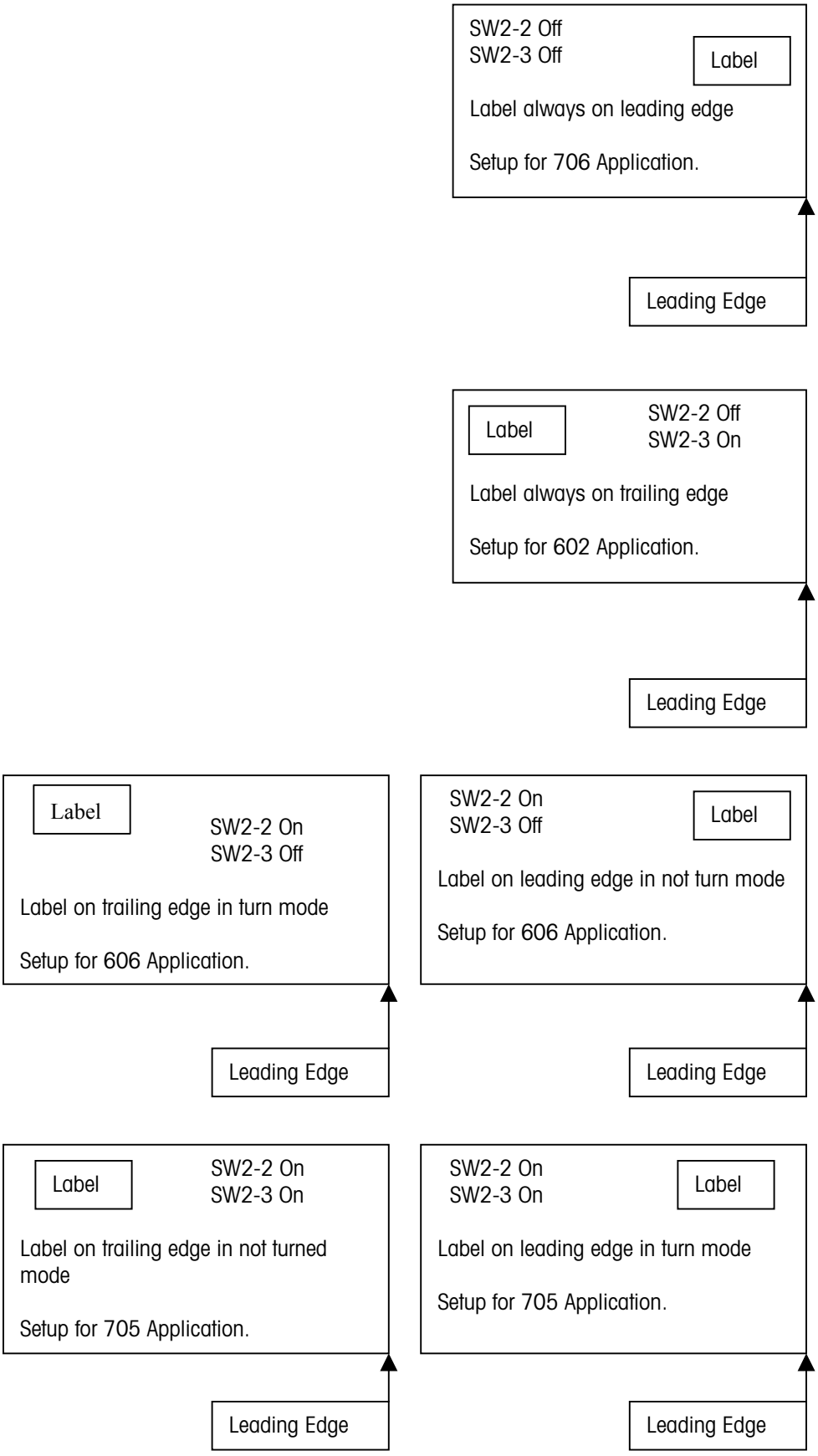
SW2-1 On = Single Error Alarm, Off = Continuous Error Alarm

SW2-2 On = Inverts the selection of SW2-3 in turned label mode

Off = No change for turn label mode * (see figure 3-11)

SW2-3 On = Trailing Edge Trigger, Off = Leading Edge Trigger

SW2-4 On = Test Mode, Off = Normal operation


SW2-2 Off
SW2-3 Off
Label
Label always on leading edge
Setup for 706 Application.
Leading Edge
Label
SW2-2 Off
SW2-3 On
Label always on trailing edge
Setup for 602 Application.
Leading Edge
Label
SW2-2 On
SW2-3 Off
Label on trailing edge in turn mode
Setup for 606 Application.
Leading Edge
SW2-2 On
SW2-3 Off
Label
Label on leading edge in not turn mode
Setup for 606 Application.
Leading Edge
Label
SW2-2 On
SW2-3 On
Label on trailing edge in not turned mode
Setup for 705 Application.
Leading Edge
SW2-2 On
SW2-3 On
Label
Label on leading edge in turn mode
Setup for 705 Application.
Leading Edge

4 General Maintenance, Cleaning, and Lubrication

Disconnecting Power

Before cleaning or servicing the Model 702, disconnect power. "**Disconnect power**" means, set the Power Switch to OFF and unplug the AC line cord from the outlet. Failure to observe these precautions could result in bodily harm as the machine may operate unexpectedly.

⚠ WARNING

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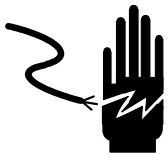

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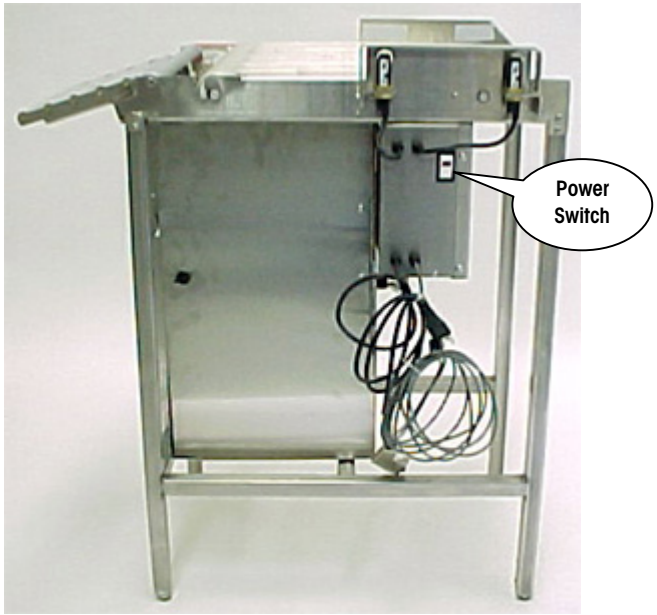
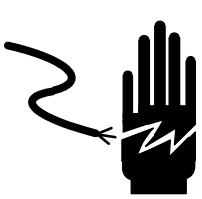


Figure 4-1: Disconnect Power before Servicing

Changing Conveyor Belts



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Before servicing the Model 702, set the Power Switch to OFF and unplug the AC line cord from the outlet.

The conveyor belts use a splice connector.

A damaged belt at the butt splice can be repaired by cutting the damaged end off. A butt splice can be used to repair a belt by ordering Butt Splice P/N 82114200A.

To remove or replace a belt, separate the belt at the splice by pulling on each end. Insert the new belt and push both ends of the belt on the connector.

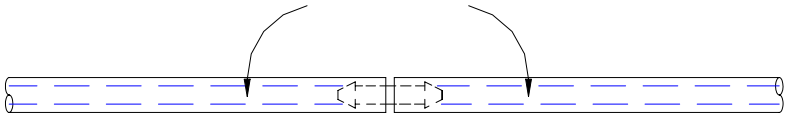
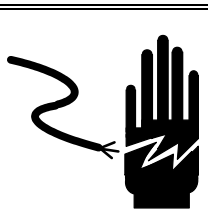


Figure 4-2: Conveyor Belt Joint

Conveyor Motor and Belt Replacement



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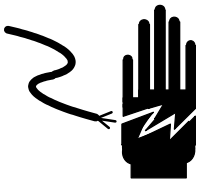
Disconnect AC power to the Model 702 by turning the power switch off and disconnecting the AC power cord from the outlet.

Motor Drive Belt Replacement



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Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

First, remove the conveyor belts by separating each belt at the splice.

Loosen the seven screws holding the electrical box rear cover and remove the cover.

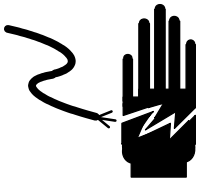
Loosen the four mounting-bracket screws and slide the bracket toward the conveyor to reduce the tension on the drive belt.

Remove the drive belt from the pulley and slide the conveyor roller out. Slide the belt off the conveyor roller. Install the new belt on the conveyor roller and on the motor pulley.

Install the conveyor belts.

Apply hand tight tension to the drive belt by moving the motor bracket away from the conveyor, then tighten the capscrews on the bracket.

Motor Drive Belt Tension



⚠ WARNING

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

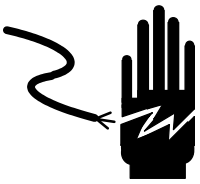
Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

Loosen the seven screws holding the electrical box rear cover and remove the cover.

Loosen the four motor mount bracket screws and slide the bracket toward the conveyor to reduce the tension on the drive belt, or away from the conveyor to increase tension. The tension should be hand tight only.

Tighten the capscrews when the correct tension is set.

Motor Replacement



⚠ WARNING

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

Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

Loosen the seven screws holding the electrical box rear cover and remove the cover.

Disconnect the Red wire and White wire to the capacitor.

Disconnect the Black wire from the motor at Terminal 2 on the 7-pin connector terminal strip (J7).

Loosen the four mounting-bracket screws and slide the bracket to reduce the tension on the drive belt.

Loosen the setscrew on the motor pulley using a 2.5mm Hex Wrench.

Remove the four capscrews securing the motor to the bracket. Install the new motor in reverse order.

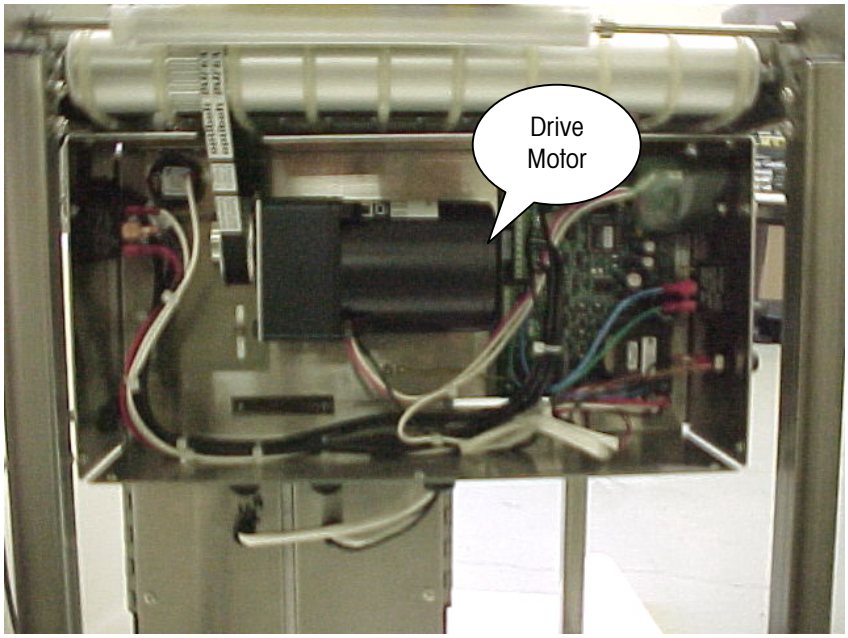
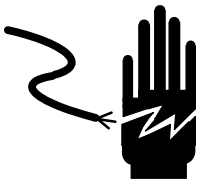


Figure 4-3 Drive Motor Replacement

Gap Sensor Replacement



WARNING

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

Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

Loosen the seven screws holding the electrical box rear cover and remove the cover.

Refer to the wiring diagram, Figure4-4, and remove the 12-pin connector (J2) from the board. Remove the appropriate wires for the faulty gap sensor (either operator side or rear sensor).

Loosen the grip nut on the cord grip on the bottom of the control box, loosen the grip nut on the adjacent cord grip on the carriage as well.

Remove the spool from the label take up motor.

Remove the cable conduit that holds the gap sensor and take up motor wires in place.

Remove the thumb screws and the tracks from the base of the label guide assembly..

Remove the Gap Sensor by removing the two Phillips-head screws. Keep track of the nut bar behind the slots.

Holding one end of the nut bar, align the tapped hole with the slot and the proper hole for the gap sensor. Start one screw slightly and align the second set of holes. Make sure both screws are started into the nut bar adequately.

Route the new cable the same as the old cable; through the wiring cover, the cord grips and to the terminal strip.

Connect the wires as shown below.

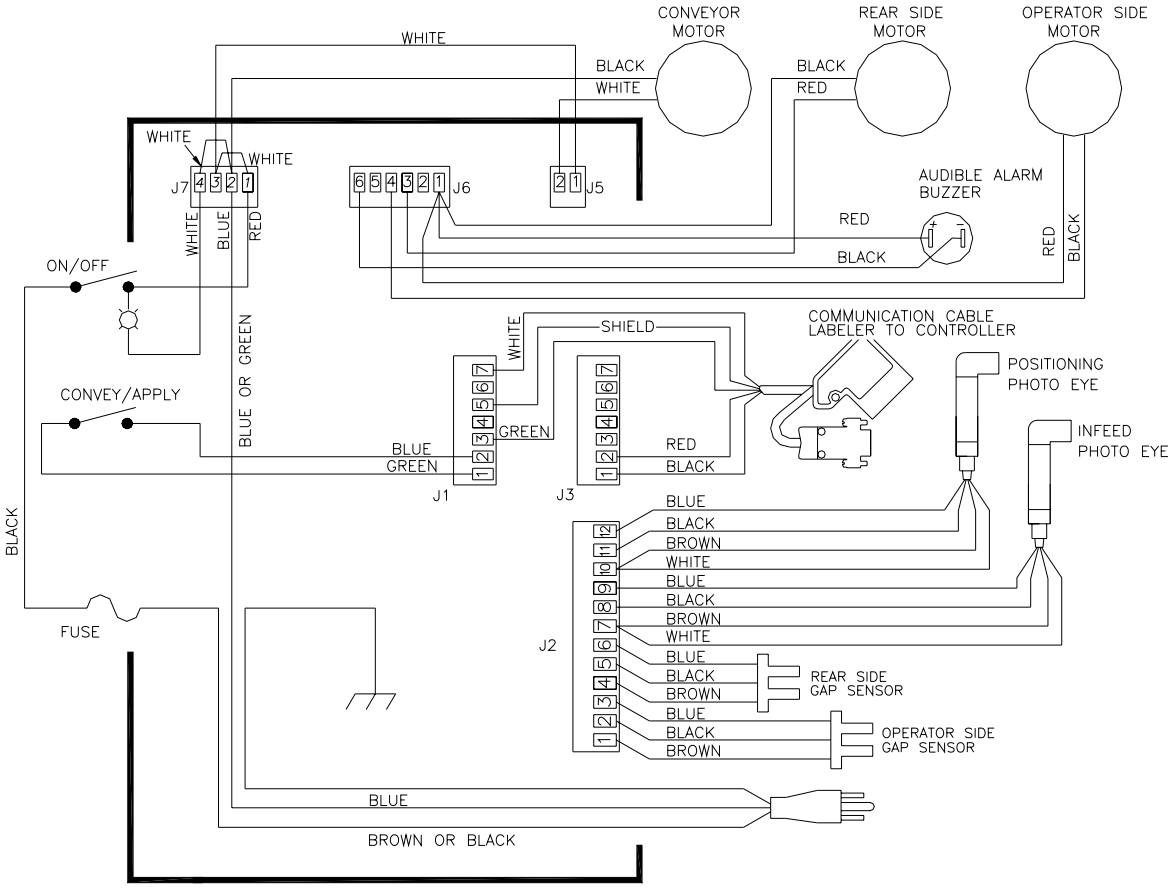


Figure 4-4: Wiring Diagram

Adjust the gap sensor position to allow 0.5 to 1 mm of the label to remain attached to the backing paper at the stripper bar. Note that shorter labels will require a stripper bar extension piece to be included. See Figure 4-5.

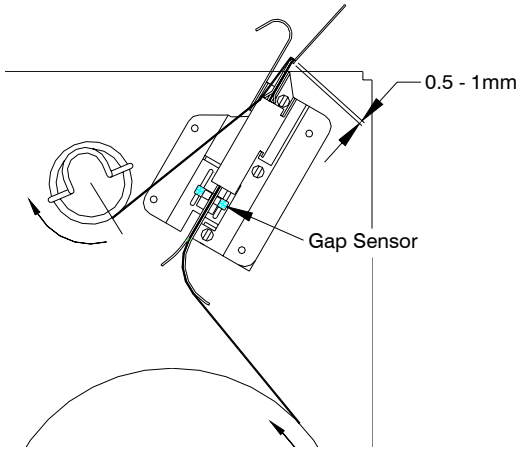
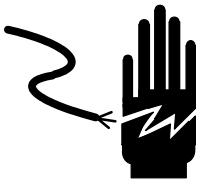


Figure 4-5: Gap Sensor Adjustment

Photoeye Replacement



⚠ WARNING

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Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

Loosen the seven screws holding the electrical box rear cover and remove the cover.

Disconnect the black cable from the faulty photoeye at the 12-pin Terminal Strip (J2) on the appropriate terminals as shown in Figure 4-4.

Remove the photoeye from the bracket.

Install the new photoeye in the bracket.

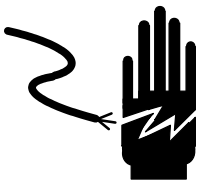
Route the new cable the same as the old cable; through the cord grips, beneath the wire tie on the bottom of the box and to the terminal strip. Pull as much of the cable into the box as possible to leave the least amount of cable exposed outside the box.

Connect the wires as shown on the diagram.

Close the electrical box.

Power up the 702 and adjust the photoeye so the light beam is hitting the reflective strip and is above the level of the belts.

Cleaning



⚠ WARNING

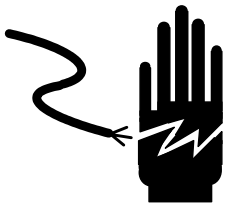
DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet. Failure to observe these precautions could result in bodily harm as the machine may operate unexpectedly.

Use a soft clean cloth dampened with a mild detergent and water to wipe the exterior surfaces. Do not spray liquids directly on the unit. A mild spray cleaner can be used by spraying the cleaning cloth. Do not use solvents or commercial cleaners on the unit. Use a soft clean cloth to wipe the dirt and grime off the conveyor rollers and belts.

Lubrication

The machine should lubricated at least once a year by a factory-trained technician only.



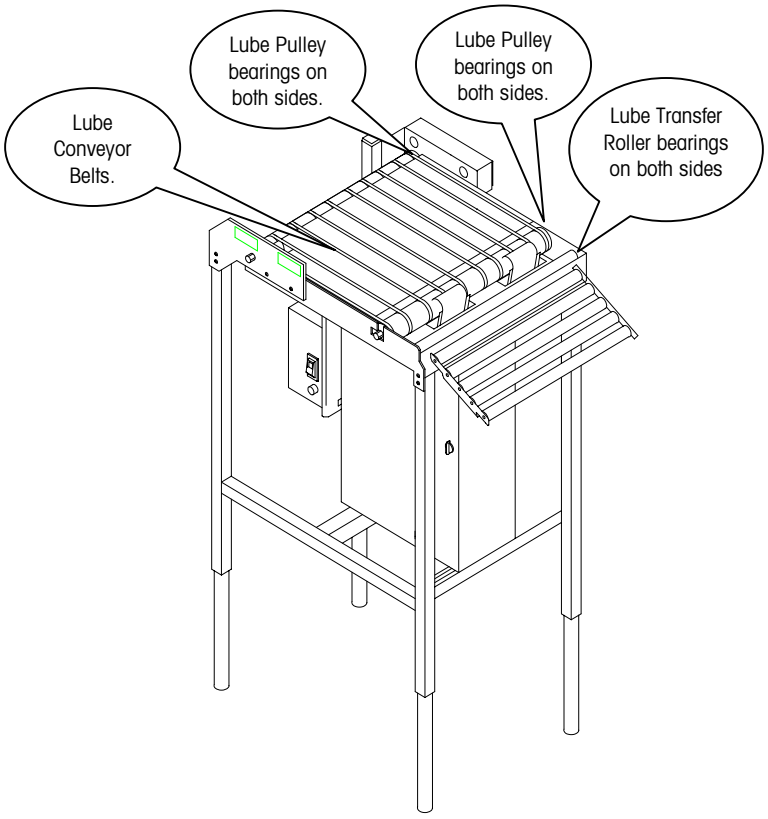
WARNING

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

The Model 702 should lubricated by a factory-trained technician only. Use light oil (FMO 350) on the following parts:

- Head and tail pulley bearings
- Transfer roller bearings (2)

Note: Avoid getting lubricant on the conveyor drive belts.



Lubrication Points

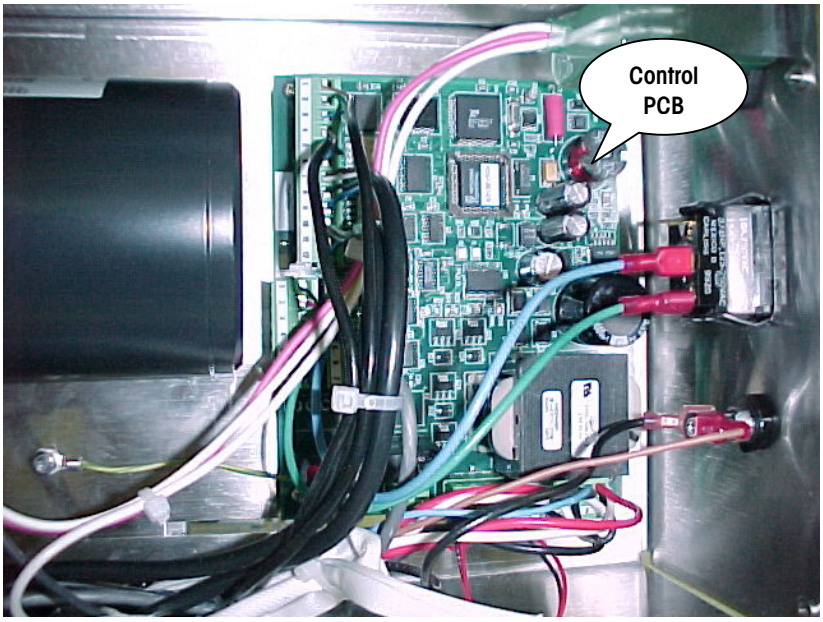
Control PCB Replacement

PCB Replacement

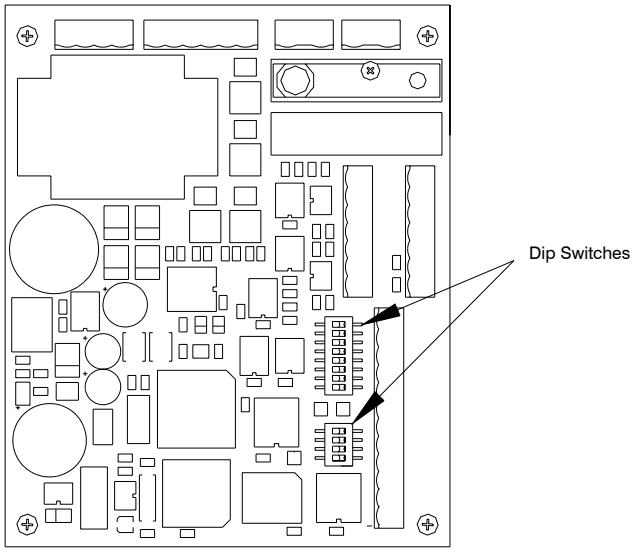
Note: If the Control PCB is replaced, the new Control PCB must be flashed with application software, currently 831643.ABS. See the Flashing Instructions on the next page.

Disconnect AC power to the Model 702 by turning the power switch off, then disconnecting the AC power cord from the outlet.

Loosen the seven screws holding the electrical box rear cover and remove the cover. Disconnect the harnesses from the Control PCB. Remove the three screws securing the PCB from the case.



Control PCB Replacement



Control PCB Layout

Flashing Instructions

If a new Control PCB is installed, the PCB must be flashed with application software before it will function.

The Model 702-0004 Dual Applicator application software is retained in Flash Memory on the Controller PCB. The Flash Memory can be reprogrammed using a PC and downloader program called FLASHPRO. This is called "flashing software". If a new Controller PCB is installed or if the software needs to be updated, the software will need to be flashed into the board. 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 software will be available on the METTLER TOLEDO® Retail Resource Center on the WWW as a self-extracting executable file. (Contact Technical Support If the file is not available on the RRC,). Flashpro is also available on the RRC.

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 flash memory will be created. The current software number is 831643.ABS. (Note: software part numbers are subject to change without notice.)

Turn the Model 702 power off. Connect the serial cable from the Model 702 Control Box to your PC serial port (see below). Open the Control Box and turn ON SW1-8 on the Controller PCB to enable the flash program mode. Turn on the power to the Model 702.

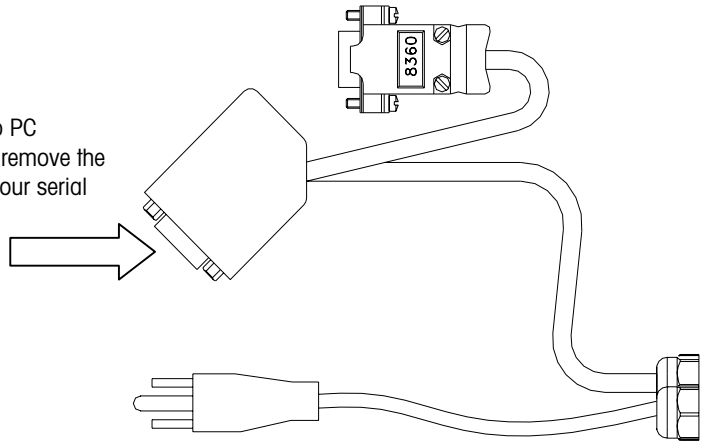
Open an MSDOS® window session. The FLASHPRO command line is as follows:

FLASHPRO –T*FILENAME.ABS* –B9600 –PN –D8

Replace ***filename*** with the actual filename of the uncompressed file created previously. Example: flashpro –t831643.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.

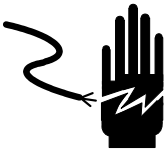
Press the Enter key. When you see Acknowledgement on the PC screen communication has been established with the Combo Control Box. FLASHPRO will display A's during the download process, (Acknowledgement). When the download is complete, FLASHPRO will display the message File Transfer Successful.

Turn power to the Model 702 OFF. Disconnect the serial cable. Turn OFF SW1-8 to return the operation of the Controller PCB to normal. Replace the Control Box cover.



5 Troubleshooting

Error Codes



⚠ WARNING

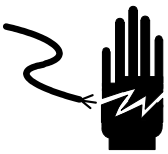
ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

An audible alarm installed inside the control box will communicate the error codes to the operator. The following codes are currently in place:

2 Beeps – Out of Labels. Check that the labels are threaded through applicator properly, See Loading Labels. Label guide must hold labels in gap sensor.

3 Beeps – Label Jam. Clear any restrictions to label movement. Also check the take up motor as shown below.

Conveyor Motor



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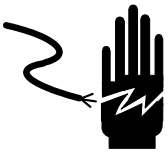
The conveyor motor will begin running when the power switch is ON and for ten seconds after the infeed photoeye has been blocked. After 10 seconds the conveyor will drop into a standby mode. If voltage is present and the motor does not run after the photoeye has been blocked check the following components. First check both photoeyes to see if they were installed incorrectly and if the LED check light illuminates when the beam is interrupted. Check that the LED on K1v illuminates on the control board. Check the voltage at the J5 pin 2 with respect to the line neutral. Beyond this, begin checking the interior of the box for a possible bad connection at the board or capacitor, a broken wire, a faulty motor capacitor, a faulty conveyor motor, a faulty photoeye or the software may be operating incorrectly and needs to be flashed again.

Take-Up Motor



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The take-up motor is a 24VDC gearmotor and will turn for one label when the Position Photoeye is blocked. Which motor turns will depend upon which position the MODE switch is in and the communication signal from the controller. If the Price/Weight/PLU preset is activated a security label will be issued, otherwise a safe handling information label will be issued.

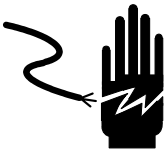
To test, place dipswitch SW2-4 on the Control PCB to the ON position. Once in the test mode, when the infeed photo eye is blocked the conveyor motor will start. When the position photo eye is blocked the mode switch will determine which take up motor will turn. The rear take up motor will turn if the mode switch is in the SELECTIVE SECURITY mode while the front take up motor will turn when the switch is set to SAFE HANDLING ONLY mode. The take up motor will continue to turn until the gap sensor is no longer blocked. This will confirm that the gap sensor is operable as well as the photo eye and take up motor.

If the motor will not run when the photoeye is blocked, but runs when the gap sensor is blocked, the problem is with the photoeye. If the motor will not run when the photoeye is blocked, check for 24VDC at pins 1 and 3 or 1 and 4 of the 6-pin (J6) connector with one of the sensors blocked.

If voltage (24VDC) is not present, the Control PCB is defective. If voltage is present, the problem is a bad connection at the Control PCB or a faulty take-up motor.

Be sure to turn off dipswitch SW2-4 when finished testing.

Gap Sensor



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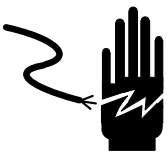
To test the operation of the Gap Sensor, watch the LED on the Gap Sensor while moving label stock in and out of the sensor. The LED should respond to the gap sensor. If this does not occur there is a bad connection between the Control Board and the Gap Sensor or a faulty Gap Sensor.

For further testing and confirmation of the gap sensor see Test Mode description in Take Up Motor troubleshooting.

Mode Switch



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The Mode Switch controls the type of label applied to each package. When in the Selective Security position the Control PCB looks for a character from the controller before issuing a Security label. When in the Safe Handling Only position the 702 will apply a safe handling instruction label to every package which crosses the 702.

To test the switch further see Test Mode description in Take Up Motor troubleshooting section.

Interconnecting Diagram

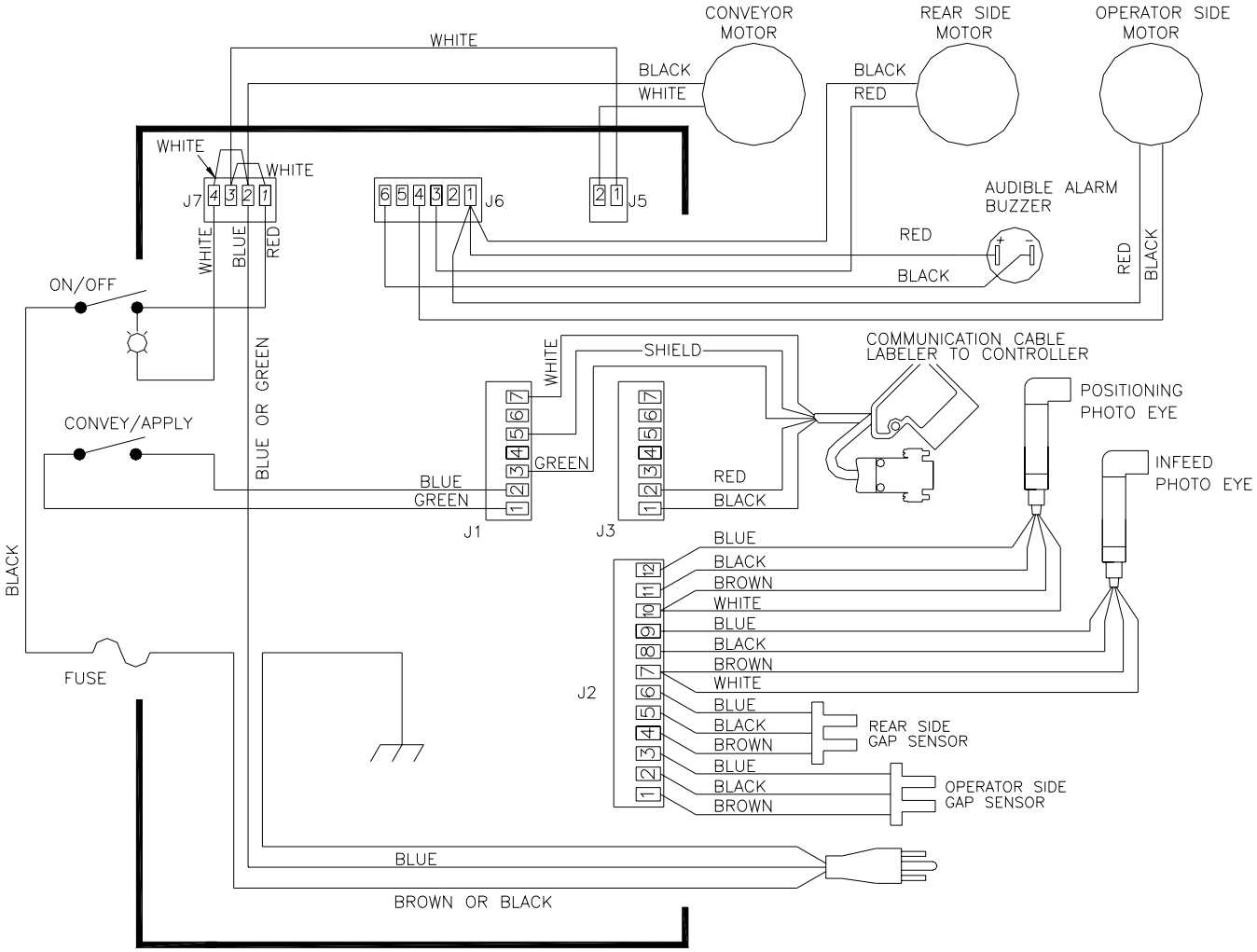


Figure 5-1: Model 702-0002 Wiring Diagram

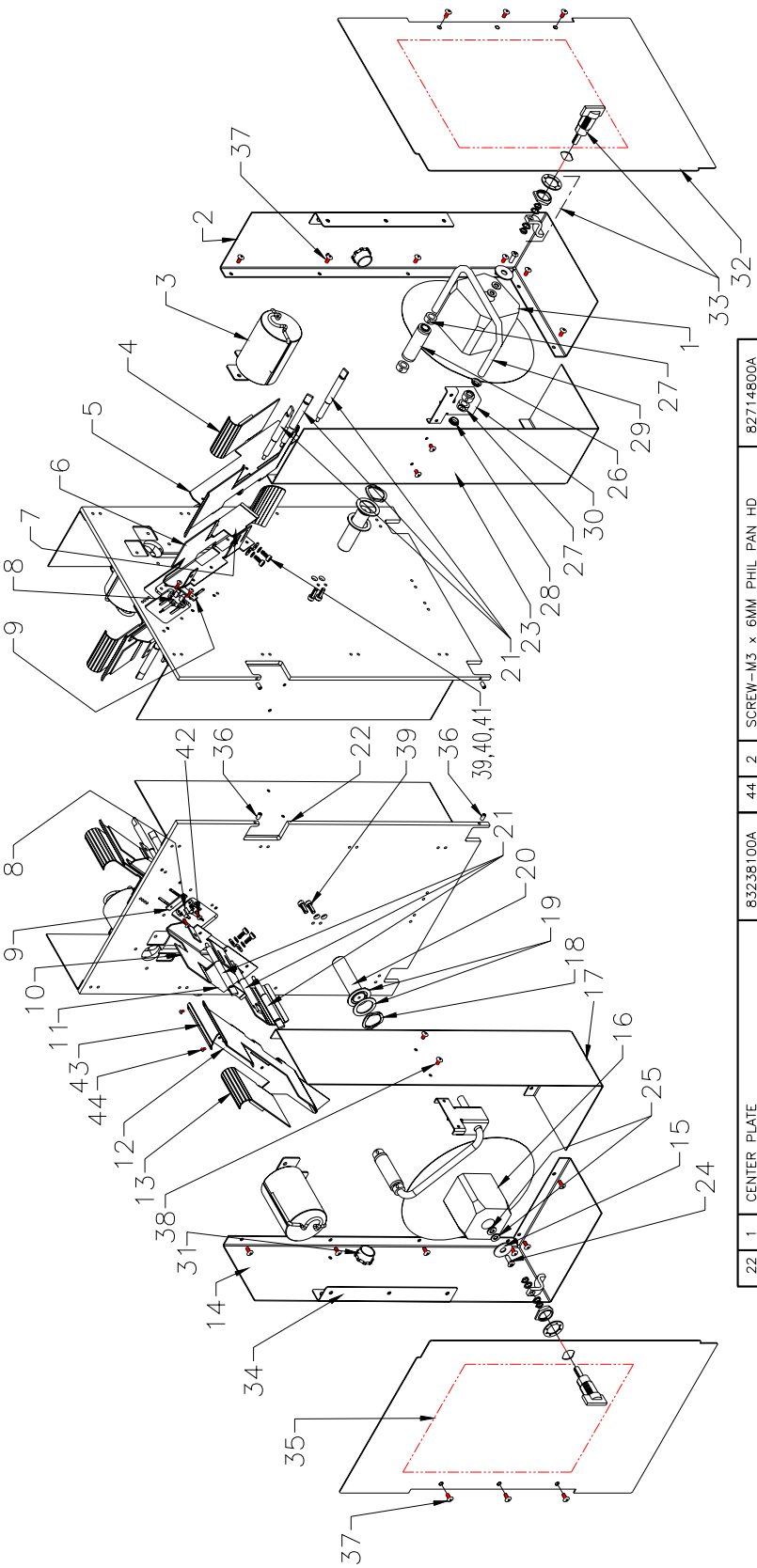
6 Replacement Parts

This chapter lists replacement parts available from METTLER TOLEDO® Aftermarket Parts by calling 1-800-848-3992 (U.S. only) or 614-841-5000.

1-800-848-3992 (U.S. only) or 614-841-5000.

Mettler-Toledo, Inc.
60 Collegeview Rd.
Westerville, OH 43229

Model 702

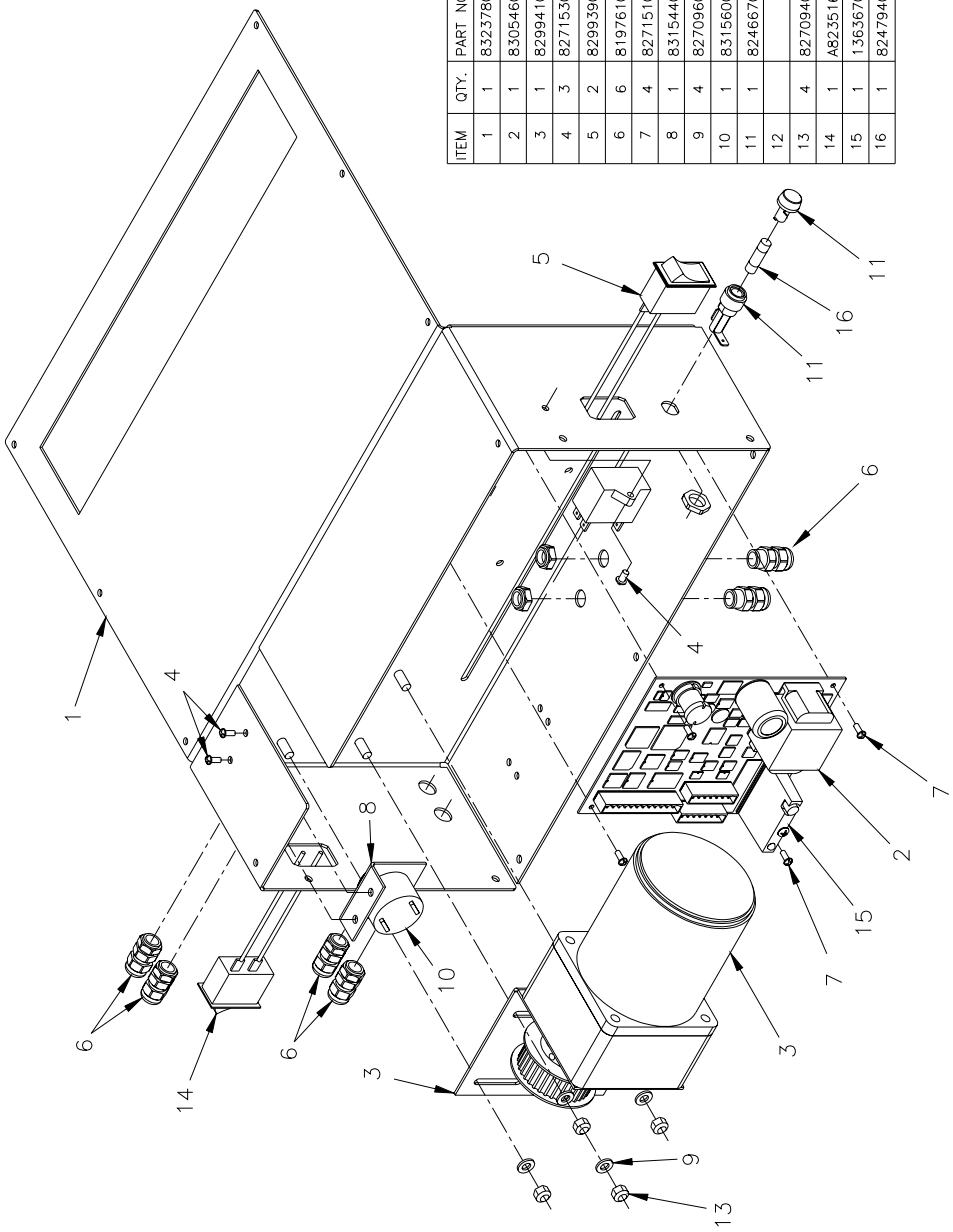


ITEM	QUAN	DESCRIPTION	PART NO.
22	1	CENTER PLATE	83238100A
21	6	THUMBSCREW	83144600A
20	2	SUPPLY SPOOL	83009500A
19	4	M20 FLAT WASHER	82711600A
18	2	WAVE WASHER	83010100A
17	1	FRONT BOX FRONT PANEL	83239300A
16	1	SMALL SPOOL ASSEMBLY	83240900A
15	2	FENDER WASHER	81360500A
14	1	FRONT BOX, BACK PANEL	83239000A
13	1	PACKAGE SUPPORT, FRONT	83238600A
12	1	LABEL TRACK, UPPER FRONT	83238700A
11	1	LABEL LINER GUIDE, FRONT	83238900A
10	1	LABEL TRACK, LOWER FRONT	83238800A
9	2	SENSOR MOUNTING	82962200A
8	2	GAP SENSOR	82993800A
7	1	LABEL LINER GUIDE, REAR	83238500A
6	1	LABEL TRACK, LOWER, REAR	83238400A
5	1	LABEL TRACK, UPPER, REAR	83238300A
4	1	PACKAGE SUPPORT, REAR	83238200A
3	2	TAKE UP MOTOR	83003400A
2	1	REAR BOX, BACK PANEL	83239100A
1	1	LARGE SPOOL ASSEMBLY	83241000A

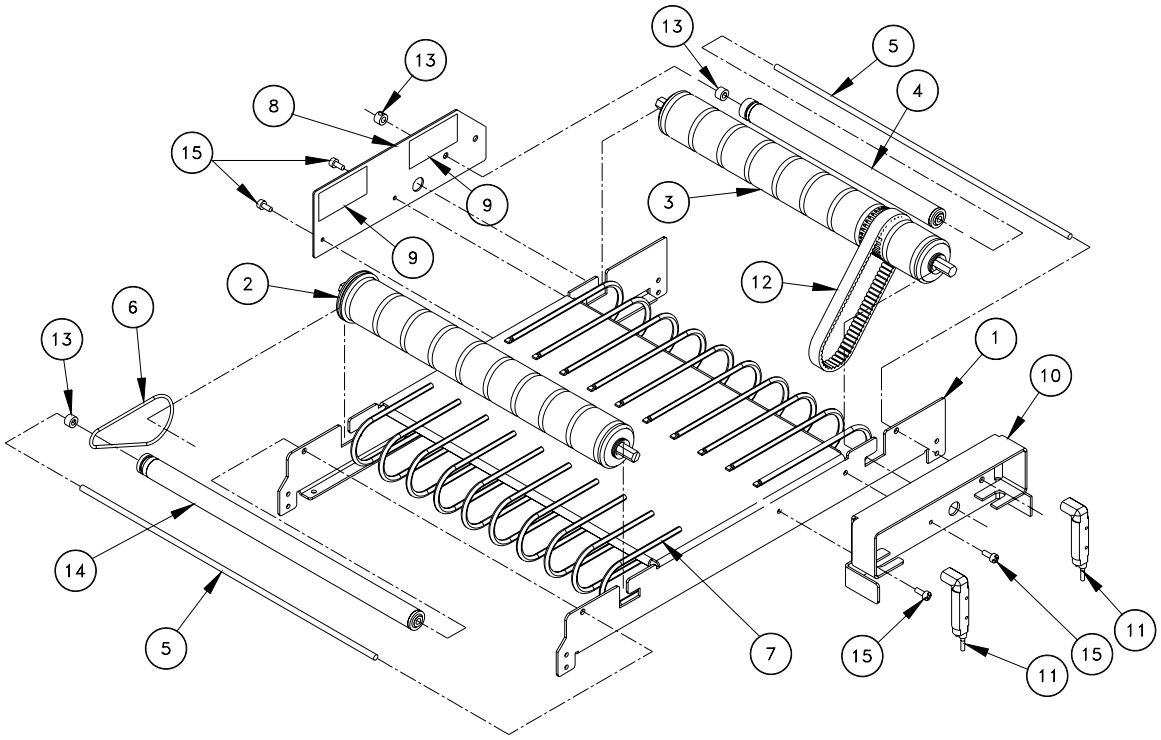
ITEM	QUAN	DESCRIPTION	PART NO.
44	2	SCREW-M3 x 6MM PHIL PAN HD	82714800A
43	1	STRIPPER BAR EXTENSION	83153900A
42	4	SCREW-M3 x 10MM PHIL PAN HD	82714900A
41	4	M4 LOCKWASHER	82709500A
40	4	M4 LOCKWASHER	82710800A
39	8	SCREW-M4 x 12MM SOC HD CAP	82713300A
38	4	SCREW-M4 x 6MM PHIL PAN HD	82715100A
37	34	SCREW-M4 x 8MM PHIL PAN HD	82715200A
36	2	SCREW-M4 x 8MM CONE POINT SET	82718700A
35	2	THREADING DIAGRAM DECAL (ON INSIDE OF DOOR)	83001100A
34	2	HINGE ASSEMBLY	82666300A
33	2	DOOR LATCH-PRINTER	83021200A
32	2	COVER	83028500A
31	2	CORD GRIP-STRAIGHT (.090-.250)	81976100A
30	2	DOOR LATCH BRACKET	83215000A
29	2	LABEL SUPPLY DANCER BAR	83208000A
28	4	BEARING-SNAP IN	81788600A
27	8	SET COLLAR-3/8	81645800A
26	2	DANCER ROLLING BAR	83208200A
25	4	FENDER WASHER, SS, DIN 9021B-M4	82710500A
24	2	M4 x 10MM PHIL FLAT HEAD SCREW	82716800A
23	1	REAR BOX FRONT PANEL	83239200A

Control Box

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	83237800A	SADDLE
2	1	83054600A	PCB ASSEM.-702 CONTROLLER
3	1	82994100A	702 MOTOR ASSEMBLY
4	3	82715300A	PHIL PAN HD SCREW M4 X 10MM SS
5	2	82993900A	ROCKER SWITCH
6	6	81976100A	CORD GRIP - 1/2" LIQUID TIGHT
7	4	82715100A	PHIL PAN HD SCREW M4 X 6MM
8	1	83154400A	BUZZER MOUNTING BRACKET
9	4	82709600A	FLAT WASHER M5 SS
10	1	83156000A	AUDIBLE ALARM BUZZER
11	1	82466700A	FUSE HOLDER - BODY
12			
13	4	82709400A	SELF LOCKING NUT M5 SS
14	1	A82351600A	LIGHTED ROCKER SWITCH
15	1	13636700A	SOLID STATE RELAY
16	1	82479400A	FUSE MDL .25

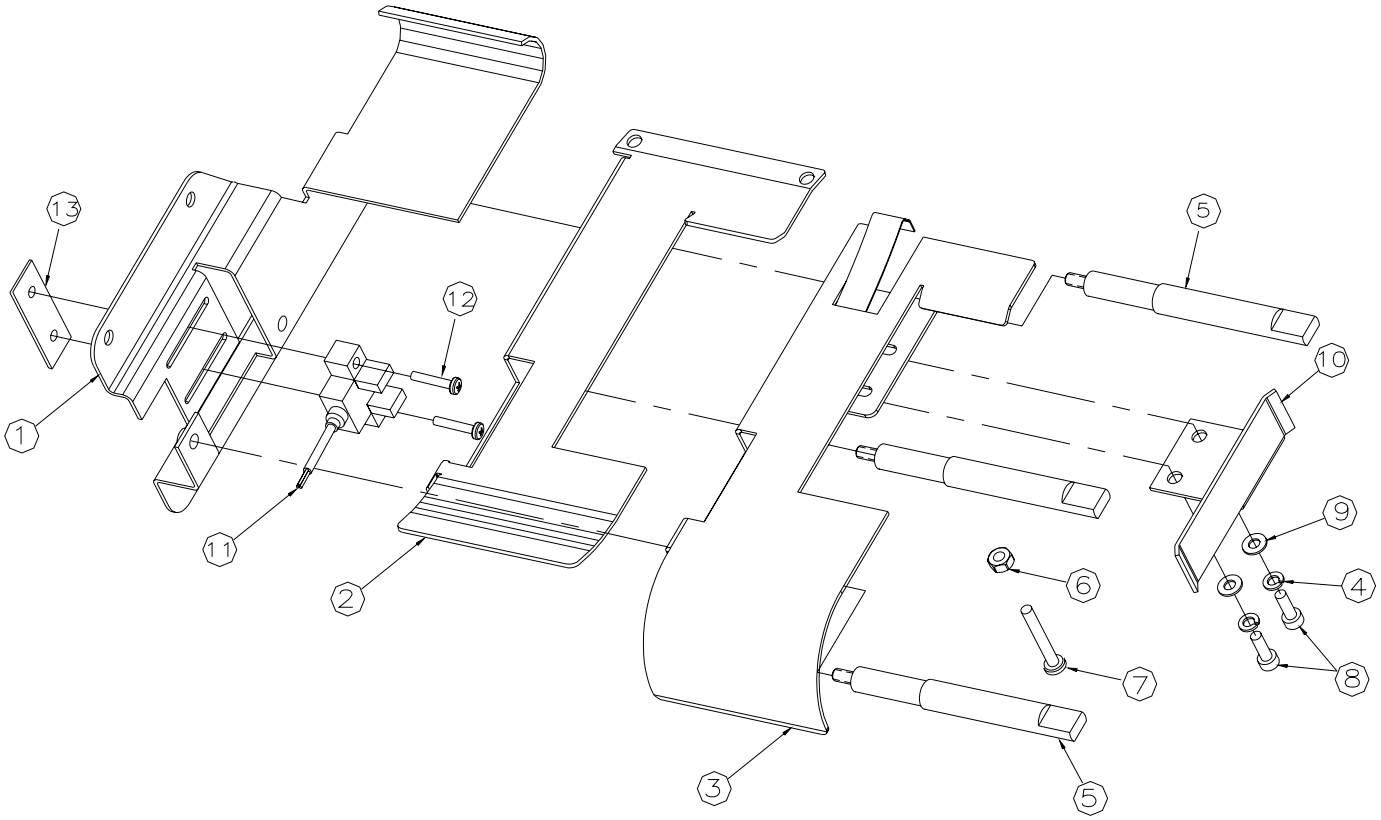


Conveyor Table



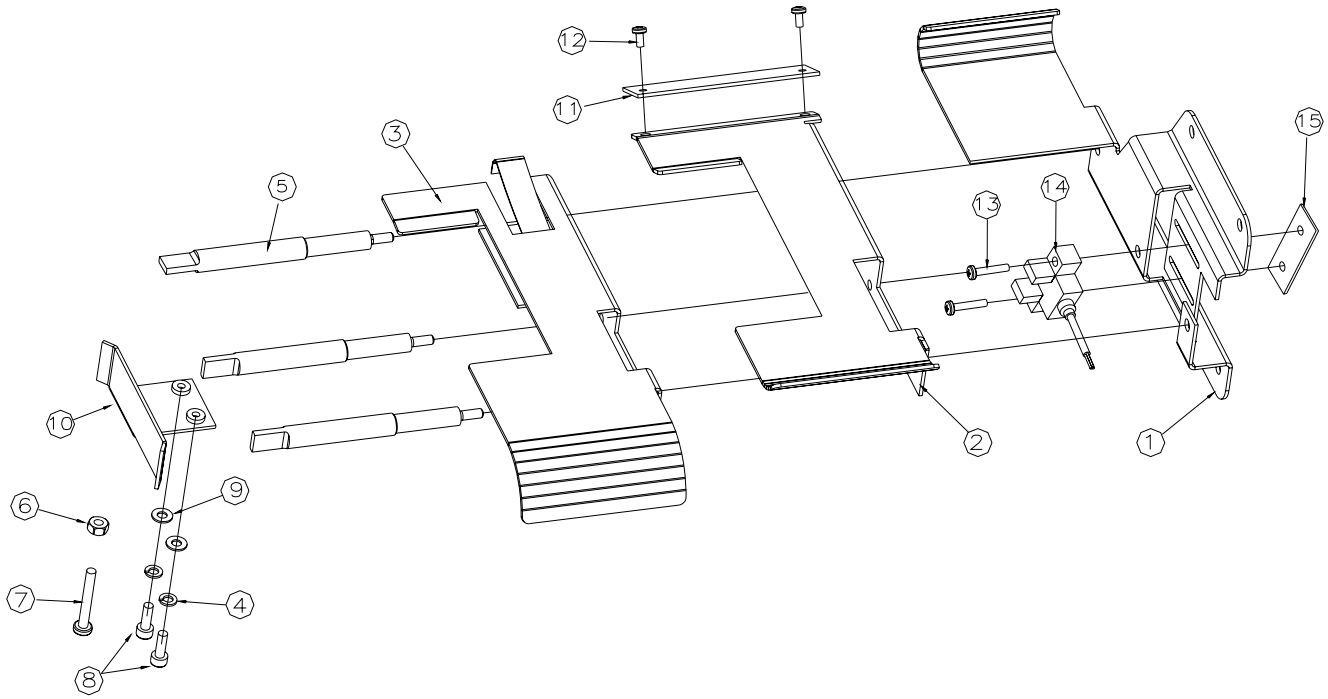
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	83239400A	702−0004 CONVEYOR FRAME
2	1	82987300A	IDLER PULLEY, 702
3	1	82803000A	TAIL PULLEY ASSEMBLY
4	2	82987000A	TUBE ASSEMBLY−ROLLER
5	2	82986800A	SHAFT ROLLER
6	1	82654000A	1/8" DIA. QUICK GO, ORANGE
7	10	82986700A	BELT ø1/4" X 32.75 LG. QUICK GO
8	1	83240100A	REFLECTOR MOUNTING PANEL
9	2	82144300A	REFLECTOR
10	1	83240200A	PHOTO EYE MOUNTING BRACKET
11	2	83002800A	RETRO−REFLECTIVE PHOTOEYE
12	1	82993700A	85 GROOVE TIMING BELT, 5MM PITCH
13	4	81895700A	1/4" SET COLLAR, SS
14	1	82818800A	ROLLER ASSEMBLY
15	4	82715300A	CRHCS, SS, M4 X 10MM

Label Guide, Front



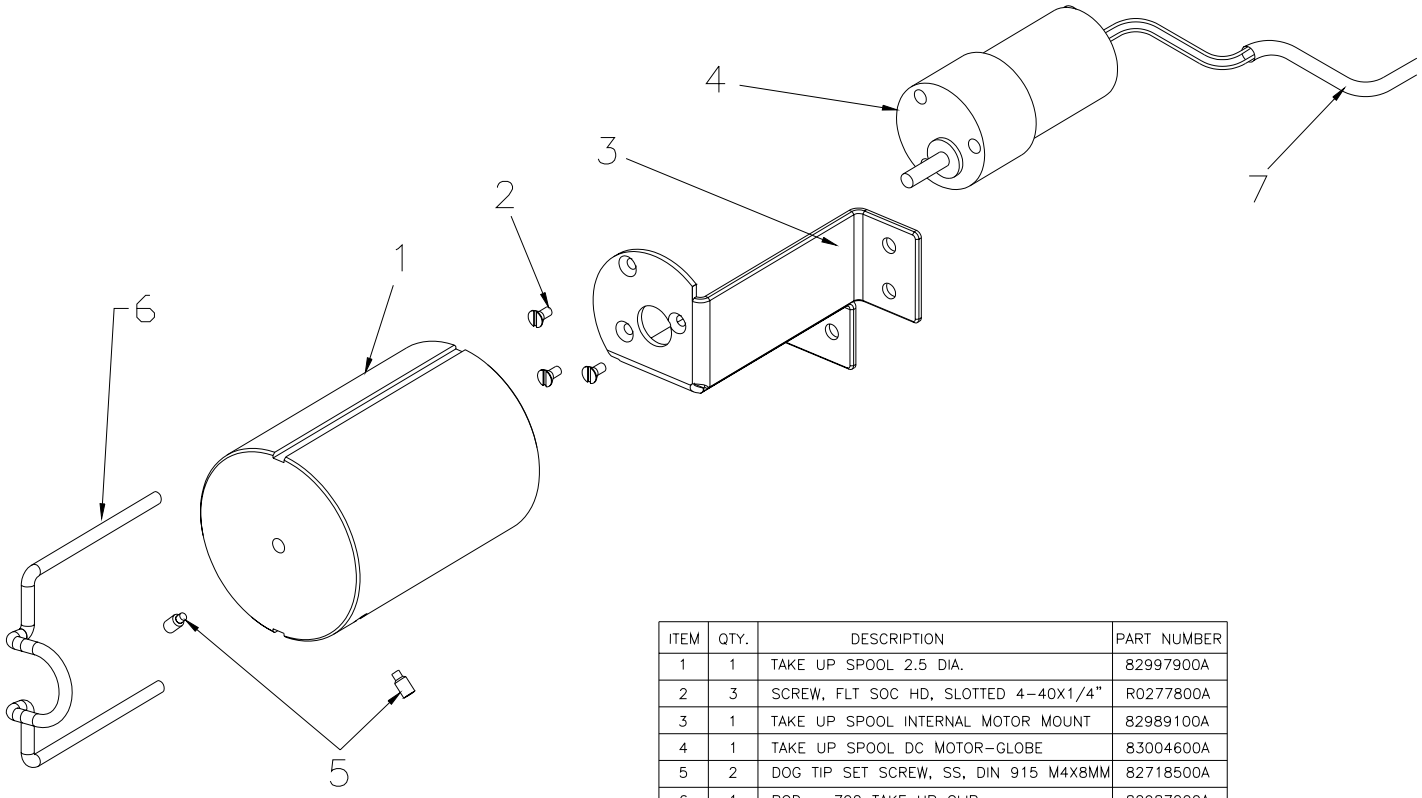
ITEM	QUAN.	DESCRIPTION	QUAN.
1	1	BRACKET–TRACK MOUNT	A83071100A
2	1	TRACK–UPPER–STRIPPER BAR EXTENSION FEATURE	A83070900A
3	1	TRACK–LOWER	A83071000A
4	2	LOCK WASHER M3 STAINLESS STEEL	82710800A
5	3	THUMBSCREW, 78MM SHOULDER	83144600A
6	1	HEX NUT M4 STAINLESS STEEL	82708500A
7	1	CROSS RECESS HD. CAP SCREW M4 X 30MM	82715800A
8	2	SOCKET HEAD CAP SCREW M4 X 12MM	82713300A
9	2	FLAT WASHER M4 STAINLESS STEEL	82709500A
10	1	BRACKET–TRACK MOUNTING	83071200A
11	1	GAP SENSOR	82993800A
12	2	M–3 X 12MM PAN PHILLIPS HD SCREW	82719100A
13	1	PLATE–SENSOR MOUNTING	82962200A

Label Guide, Rear



ITEM	QUAN.	DESCRIPTION	QUAN.
1	1	BRACKET–TRACK MOUNT – DUAL 702	83013500A
2	1	TRACK–UPPER – DUAL 702	83013600A
3	1	TRACK–LOWER – DUAL 702	83013700A
4	2	LOCK WASHER M4 STAINLESS STEEL	82710800A
5	3	THUMBSCREW, 78MM SHOULDER	83144600A
6	1	HEX NUT M4 STAINLESS STEEL	82708400A
7	1	CROSS RECESS HD. CAP SCREW M4 X 30MM	82715800A
8	2	SOCKET HEAD CAP SCREW M4 X 12MM	82713300A
9	2	FLAT WASHER M4 STAINLESS STEEL	82709500A
10	1	GUIDE – LABEL – DUAL 702	83151400A
11	1	STRIPPER BAR EXTENSION	83153900A
12	2	M3X6 CRHCS	82714800A
13	2	M3 X 12MM PAN PHILLIPS HD SCREW	82719100A
14	1	GAP SENSOR	82993800A
15	1	PLATE SENSOR MOUNTING	82962200A

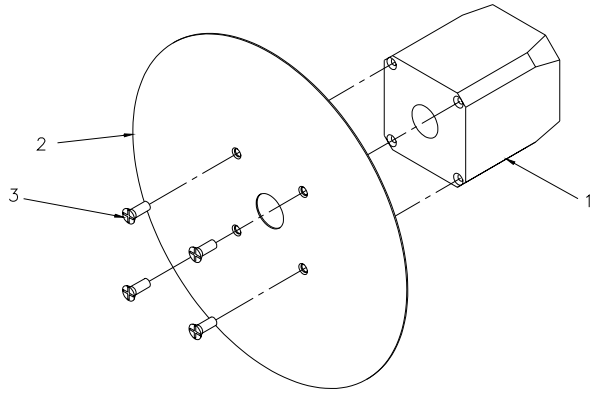
Take Up Motor Assembly



NOTE: USE ITEM #8 LOCTITE TO LOCTITE ITEMS 2 & 5

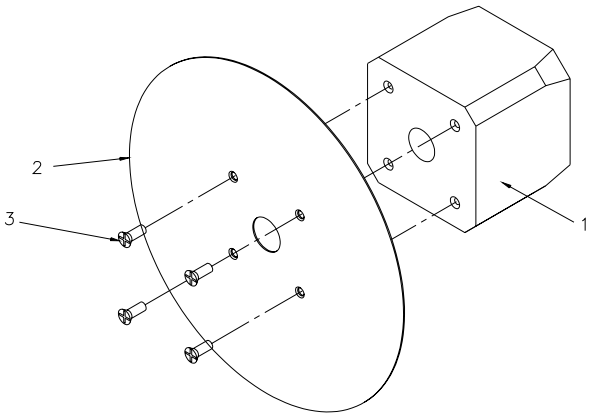
ITEM	QTY.	DESCRIPTION	PART NUMBER
1	1	TAKE UP SPOOL 2.5 DIA.	82997900A
2	3	SCREW, FLT SOC HD, SLOTTED 4–40X1/4"	R0277800A
3	1	TAKE UP SPOOL INTERNAL MOTOR MOUNT	82989100A
4	1	TAKE UP SPOOL DC MOTOR–GLOBE	83004600A
5	2	DOG TIP SET SCREW, SS, DIN 915 M4X8MM	82718500A
6	1	ROD – 702 TAKE UP CLIP	82987200A
7	27"	SLEEVING, PROTECTIVE (#8 ACRYL "C")	16120100A
8	SUFF	LOCTITE	141831R

Small Supply Spool



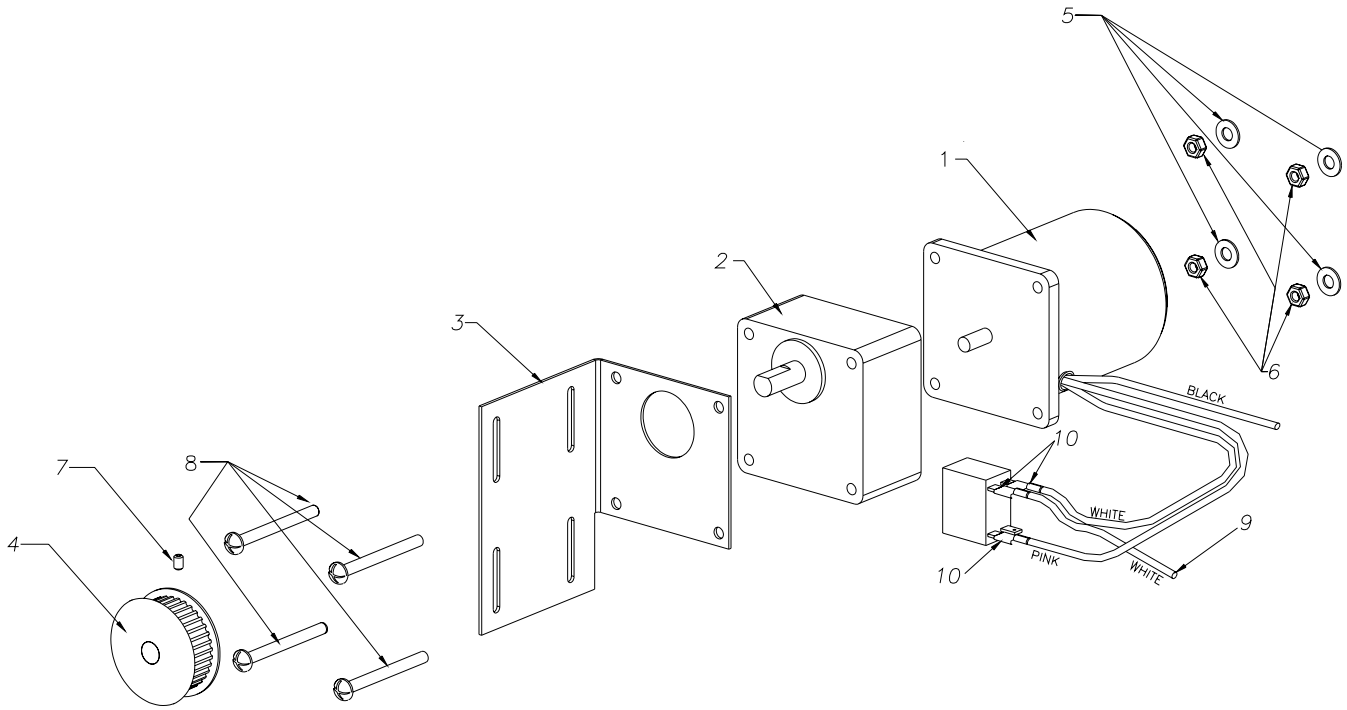
ITEM	QTY	DESCRIPTION	PART NO.
1	1	SMALL SUPPLY SPOOL	83240400A
2	1	SUPPLY SPOOL PLATE	83240600A
3	4	FLAT PHIL HD CAP SCREW M4 X 10MM	82716800A

Large Supply Spool



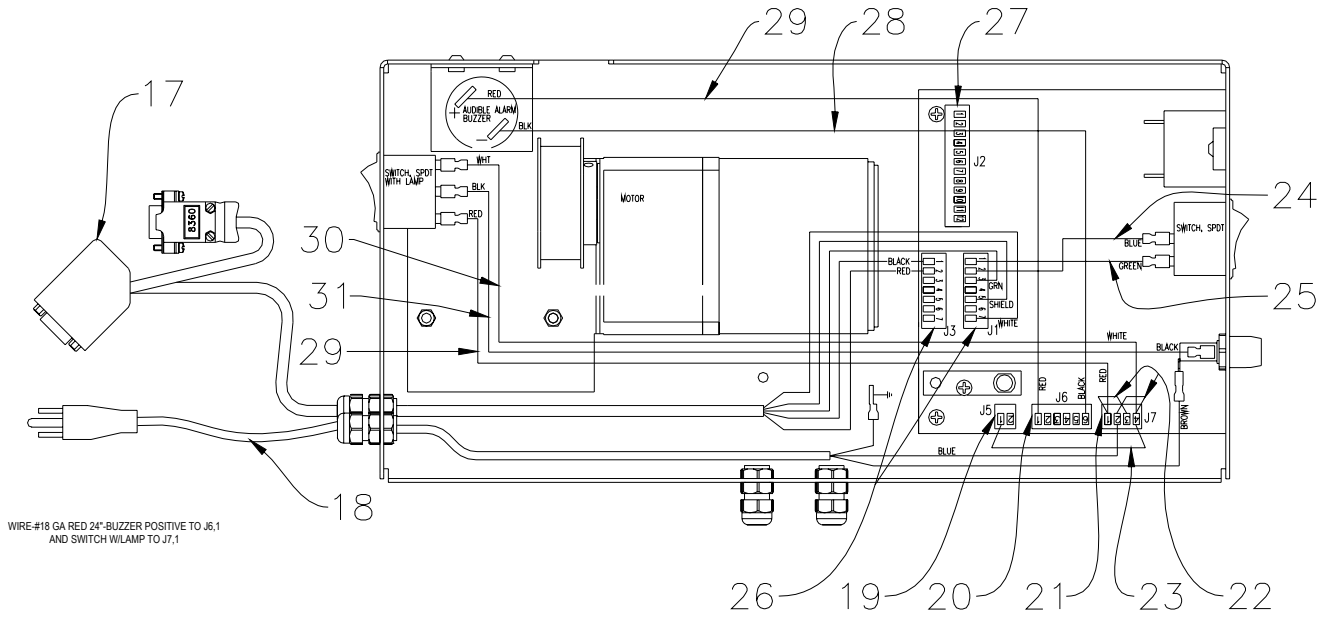
ITEM	QTY	DESCRIPTION	PART NO.
1	1	LARGE SUPPLY SPOOL	83240500A
2	1	SUPPLY SPOOL PLATE	83240600A
3	4	FLAT PHIL HD CAP SCREW M4 X 10MM	82716800A

Conveyor Motor Assembly



ITEM	QTY	DESCRIPTION	PART NO.
1	1	ORIENTAL WORLD MOTOR	82996400A
2	1	ORIENTAL GEAR BOX, RATIO = 9	82996500A
3	1	BRACKET – MOTOR MOUNT	82962700A
4	1	TIMING PULLEY, 5mm PITCH, 36 GROOVES	82996100A
5	4	1/4" FLAT WASHERS (INCLUDED W/ GEARBOX)	82996500A
6	1	1/4–20 NUTS (INCLUDED W/ GEARBOX)	82996500A
7	1	FLAT TIP SET SCREW M5X8mm	82718100A
8	4	1/4X20X3 3/4" PH HEAD SCREW (INC. W/GEARBOX)	82996500A
9	17"	WIRE, 18 AWG MTW WHITE	433118999
10	3	SLIP ON TERMINAL	82468300A

Electrical



31	1	WIRE-#18 GA BLACK 22"-SWITCH W/LAMP TO FUSE	83247500A
30	1	WIRE-#18 GA WHITE 24"-SWITCH W/LAMP TO J7,4	83247400A
29	2	WIRE-#18 GA RED 24"-BUZZER POSITIVE TO J6,1 AND SWITCH W/LAMP TO J7,1	83247300A
28	1	WIRE-#18 GA BLACK 24"-BUZZER NEGATIVE TO J6,6	83247200A
27	1	PHOENIX TERMINAL-12 POINT	13431600A
26	2	PHOENIX TERMINAL-7 POINT	11924100A
25	1	WIRE-#18 GA GREEN 7"LONG	83017200A
24	1	WIRE-#18 GA BLUE 7"LONG	83017300A
23	1	JUMPER-WHITE 5"LONG(J7,4-J5,1)	83247100A
22	2	JUMPER-WHITE 2.5"LONG(J7,1-3 & 2-4)	83081100A
21	1	PHOENIX TERMINAL-4 POINT	13457200A
20	1	PHOENIX TERMINAL-6 POINT	13162500A
19	1	PHOENIX TERMINAL-2 POINT	14708000A
18	1	POWER CORD-702	83005900A
17	1	COMMUNICATIONS CABLE, 702-0004 TO CONTROLLER/LABELER	83164000A
ITEM	QUAN	DESCRIPTION	PART NO.

METTLER TOLEDO
1900 Polaris Parkway
Columbus, Ohio 43240
www.mt.com

P/N: A83209900A

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