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# MAINTENANCE & SERVICE MANUAL REVISION 360-2c.10.7

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# **INTRODUCTION**

The CTM Integration 360 Series Modular Labeling System is a high-speed applicator used to apply pressure sensitive labels to moving products on a production line. It is essentially a self-contained module that may be mounted in almost any position to apply labels to the top, bottom, or sides of packages as they pass by on a production line.

The CTM Integration 360 Series Modular Labeling System is unique in that the main module can be adapted to three different types of applicators: Air Blow, Merge, or Tamp by changing the nose assembly. The symmetrical design of the applicator allows labels to be dispensed to the right or left side of the machine. The applicator type and configuration (either left or right -handed) will depend on the type of product to be labeled and the arrangement of the production line.

If your application needs change in the future, a different nose assembly may be purchased but the main module would remain the same. There is no need to purchase a completely new applicator. The CTM Integration 360 Series Modular Labeling System can be easily changed over to a different nose by simply removing the existing nose from the module and replacing it with a different nose.

You can also change the configuration (right-hand or left-hand) by simply moving the applicator nose from one side of the machine to the other. All the parts are interchangeable. Everything you need is already included with each applicator nose to make the change using your existing module.

The labels should be supplied on a liner web with a minimum label gap of 1/8". The applicator will accept and dispense labels from rolls up to 20" O.D. In a typical setup, the applicator detects the leading edge of a package and applies a label with placement accuracy typically within +/-1/32 inch.

For safe trouble free operation of the applicator, carefully follow the instructions in this manual during setup, operation, label roll changes, cleaning, and maintenance. The applicator is designed to operate under the following environmental conditions:

ELECTRICAL SUPPLY: 108 - 132 Volts, 5 Amps, 50 - 60 Hertz, Single-Phase

A three-meter long, three-wire cable with 16 AWG (1.00mm<sup>2</sup>) conductors rated at 10 amperes (in accordance with CENELEC HD-21) is provided for the electrical connection to the IEC 320 receptacle of the applicator. The end of the power cord is terminated with a NEMA5-15 plug.

- **AIR SUPPLY:** minimum 90 100 PSI at 4<sup>\*</sup> SCFM per applicator (Tamp and Air Blow applicators) \* **Note: In the tamp applicator, an increase in venturi vacuum pressure may lead to higher SCFM requirements.**
- **ENVIRONMENT:** Operating temperature: 40 104 degrees F Humidity: 20 95% RH, non-condensing

### NOTE: THE 360 SERIES MLS IS NOT INTENDED TO BE OPERATED IN AN ENVIRONMENT WHERE FLAMMABLE OR EXPLOSIVE GASSES ARE PRESENT. THE 360 SERIES MLS IS NOT TO BE USED IN DIRECT CONTACT WITH FOOD PRODUCTS.

READ THE INSTRUCTIONS CAREFULLY AND COMPLETELY. This manual includes all of the information needed to setup the applicator under normal operating conditions. The instructions include important safety precautions that must not be ignored.

READ THE INSTRUCTIONS IN ORDER. The instructions are written as numbered steps that will take you safely and efficiently through the setup process. Any steps performed out of sequence may result in a hazard and the applicator may not operate properly.

WORK CAREFULLY. Although setting up the applicator is not difficult, it does take time. Do not rush through the process. Careful work will produce good results.

IF SOMETHING DOES NOT WORK PROPERLY, TRY SETTING IT UP AGAIN. Although an applicator malfunction is possible, most problems happen because the applicator is not setup correctly. If the applicator doesn't operate correctly, back up and start over.

FOLLOW ALL SAFETY INSTRUCTIONS. The CTM 360 Series MLS applicator has been provided with a number of safety features. Observe all safety warnings and under no circumstances attempt to remove or defeat safeguards or operate the machine in a manner contrary to the instructions.

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# **DEFINITION OF MACHINE TERMS**

### **AIR BLAST JETS:**

The flexible air blast jets press-fit into the inside face of the vacuum grid and can be re-arranged to provide an air stream pattern that transfers labels of various sizes and shapes to the product. The air jets are connected via a manifold to the output of the "Air Blast" solenoid valve located in the valve bank. The filter regulator assembly mounted upstream of the value controls the air pressure to this solenoid valve. The duration of the air blast is controlled by the "Air Blast Time" function. Refer to the setup procedures for instructions.

NOTE: Any unused air jet tubes should be inserted into the storage block at the rear of the blow box.

### AIR ASSIST TUBE:

The air assist tube is a small stainless steel tube mounted on the underside of the peel edge. It helps to separate the label from the liner as it is being dispensed onto the blow box or tamp label pad for application.

### **APPLICATOR BLOW BOX NOSE:**

The blow box applicator nose is used for dispensing labels via the air blow application. The blow box creates a vacuum to hold the label to the vacuum grid until it is dispensed onto the product. The nose assembly is easily converted from left-hand to right-hand and vice versa using the same parts. Also, the blow box nose assembly can be interchanged with the merge, tamp, or DAT applicator nose assembly.

### **APPLICATOR MERGE NOSE:**

The merge applicator nose is used for dispensing labels via the wipe on/merge application. A label is dispensed from the peel edge and the brush wipes the label onto the product as it is traveling past the applicator. The merge applicator nose is easily converted from left-hand to right-hand and vice versa using the same parts. Also, the merge nose assembly can be interchanged with the air blow, tamp, or DAT applicator nose assembly.

### **APPLICATOR TAMP NOSE:**

The tamp applicator nose is used for dispensing labels via the air blast/tamping application. A label is dispensed from the peel edge onto the label pad. The air cylinder extends the tamp assembly to the product and the label is applied with an air blast. The tamp extend and retract times are configured during applicator setup. The tamp applicator nose is easily converted from left-hand to right-hand and vice versa using the same parts. Also, the tamp nose assembly can be interchanged with the air blow, merge, or DAT applicator nose assembly.

### **APPLICATOR DAT NOSE:**

The DAT (Dual Action Tamp) applicator nose is used for dispensing labels via an air blast to the side of the product with a tamping action and the leading or trailing panel of the same product with a swing action. SWING ONLY and SIDE ONLY operating modes are supported as well. A label is dispensed from the peel edge onto the label pad. Air cylinders extend the tamp or swing arm assembly to the product and the label is applied with an air blast. The tamp/swing extend and retract times are configured during applicator setup.

### **BLOW BOX / VACUUM GRID:**

The blow box/vacuum grid is the cube shaped assembly located next to the peel edge on a blow box applicator. Two axial fans mounted above the grid create the vacuum needed to hold the label in place prior to application.

### **DANCER ARM:**

The dancer arm is attached to the unwind block assembly with a shoulder bolt, thrust bearing, and a bushing. It appears immediately after the unwind mandrel in the web path. The dancer arm has a roller at one end that rides against the label liner and is interconnected to the mandrel tension disk with a spring. The dancer arm maintains tension on the liner loop as it operates the brake on the unwind mandrel when labels are being dispensed. The spring tension should be large enough to properly tension the web but still allow proper operation of the brake. Do not over tension the dancer arm.

### **DRIVE ROLLER:**

The drive roller is coupled to a stepper motor that provides the motive force for advancing the label liner. The drive roller in conjunction with the spring loaded nip roller pull the label liner around the peel edge to dispense a label onto the product, tamp pad, or blow box grid.

### LABEL MANIFOLD:

The label manifold is the mounting block that attaches the label pad to the bottom of the tamp cylinder on the applicator nose. The label manifold is a custom part that is manufactured exactly to the label size being applied. If at any time the label size changes, a new label manifold must be purchased along with the label pad.

### LABEL PAD:

The label pad is a white delrin material mounted onto the label manifold at the bottom of the tamp cylinder of the tamp applicator nose. The label pad is a custom part that is manufactured exactly to the label size being applied. If at any time the label size changes, a new label pad must be purchased.

### LABEL TENSION BRUSH ASSEMBLY:

This is an adjustable brush to help create tension on the label liner. The brush can be released while threading the label liner.

### **NIP ROLLER:**

The spring-loaded nip roller provides positive pressure to the label liner that passes between the drive and nip roller assemblies. These rollers ensure that the liner does not slip during the label dispense cycle. The tension on the rollers may be released by turning the knob located on the top of the nip roller assembly.

### **PEEL EDGE:**

The peel edge is the beveled plate located at the end of the applicator nose. When the label liner is pulled around the peel edge, the label separates from the liner and is transferred to the vacuum grid, tamp pad, or product depending on the applicator type.

### PEEL EDGE LABEL TENSION SPRING:

This tension spring is attached to the bottom of the spring block assembly. It is used to keep the label liner flat on the peel edge surface and assist in controlling the dispensing of the label onto the vacuum grid, tamp pad, or product. The tension is adjustable to accommodate varying label thickness and release properties.

### **REWIND MANDREL / SLIP CLUTCH:**

The rewind mandrel is provided to store the label liner after labels have been removed. It is equipped with a slip clutch and is driven by the stepper motor. The pressure exerted by the slip clutch is adjustable.

### SINKING OUTPUT CONFIGURATION:

The 360 Applicator's Alarm, I/O, and Valve outputs are wired in the sinking configuration. The load current for a sinking output flows <u>into</u> the output terminal. The <u>load</u> common connection is the positive power supply terminal (+V). When the output is active, current flows from the positive terminal of the load power supply through the load into the output terminal to ground. Io(max) = 80 mA

### SOURCING INPUT CONFIGURATION:

The 360 Applicator's Low Label, Web/Tamp, and Product Detect inputs are optically-isolated. The sensors connected to these pins must be able to sink the opto-coupler's input current. The <u>sensor</u> common connection is the negative power supply terminal (ground or -V). When the sensor output is active, current flows from the positive terminal of the load power supply through the optical coupler circuit and <u>out</u> of the input pin and through the sensor output (open collector/drain or SPST N.O relay) to ground. Iin(max) = 15 mA.

### **UNWIND ASSEMBLY:**

The roll of labels is placed on the unwind assembly for dispensing onto the product. The unwind block is used to mount the unwind assembly to the main module. The unwind assembly can be removed and remounted on the opposite side of the module for easy conversion from a right-hand to a left-hand applicator or vice versa.

### **UNWIND ROLL MANDREL:**

The unwind roll mandrel is equipped with an adjustable spring tension disk, a brake, and a quick-change outer disc. The unwind roll mandrel and the dancer arm maintain proper web tension and prevent excessive run-out of the label liner as labels are processed through the machine.

### VALVE BANK:

The valve bank will consist of single valve for a merge applicator with an imprinter, two valves for a blow box applicator, or three valves for a tamp applicator or four valves for a dual action tamp applicator. The valve bank has built in regulators and gauges and plugs into the valve connector on the rear panel.

### WEB PATH:

The web path is the path the label liner follows from the unwind assembly through the various rollers to the applicator nose & onto the rewind assembly.

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# **DISPLAY PANEL**



### **MAIN MENU:**

The main menu or home page screen displays the applicator type, whether it is in a left or right-handed configuration, and the label rate.

### **ONLINE:**

The ONLINE function indicates whether or not the applicator is active. When the online LED is on, the applicator can be jogged or cycled from the product detect signal. When the LED is off, the applicator is disabled and power is removed from the drive roll motor.

### **APPLICATOR TYPE:**

The applicator type function allows the operator to choose the type of label applicator (air blow, merge or tamp) and whether it will be in a left-hand or right-hand configuration. The tamp applicator has an additional menu that allows you to select between normal, inverted, or dual action tamp (DAT) application modes. The standard tamp applicator nose assembly does not support the DAT applicator type.

# NOTE: 1) Password protected. The default password is 1800. Going back to the home screen will disable the last password entry.

2) You must be OFFLINE to change applicator type.

### LABEL STOP:

The label stop key lets you enter the label stop distance value. The label stop value is the distance from the label edge to the label sensor. If the entered value is incorrect, an out-of-range message is displayed and the label stop menu is re-displayed so that a different value may be entered. Allowed values are between 0.03" and (label length - 0.06"). The label stop value may be changed while the applicator is running. Note: After software version 360-2b.25 anything less than .06" comes with a warning that label stop may vary with speed.

### LABEL SETUP:

The label setup menu will change depending on the type of applicator selected. The following is a list of possible setups:

**AUTO SETUP:** The auto setup function will automatically set the label sensitivity, label length, and label stop for most labels. Also, the short feed distance will be calculated if the Multi-Panel Apply option is enabled prior to running auto setup. On labels with low contrast between light and dark areas, the label sensitivity may not setup correctly. Therefore, the label length and label stop will not be correct. In these instances, the operator will have to manually setup the label parameters.

**MANUAL SETUP:** The manual setup function provides additional flexibility in those cases where the label contrast is low or the particular label properties show that a choice between leading or trailing edge detection would improve application performance. The terms leading and trailing edge detection refer to which edge of the label that the label sensor responds to during a dispense cycle.

**LABEL LENGTH:** The label length is defined as the width of the label plus the width of the gap between labels. Stated another way, it is the distance from the leading edge of one label to the leading edge of the next label. Since each application cycle moves the label length distance, it is important to enter the exact label length value. Allowed values are between 0.375-20".

**AIR BLAST:** The air blast time is the interval of time that the air blast valve is turned on. Allowed values are .010 to 1 second for merge and air blow applicators and .010 to (tamp retract - 0.01) sec for tamp applicators.

**EXTENDED AIR ASSIST:** The extended air assist time is the interval of time after the label feed until the air assist is turned off. It is used in blow box and tamp applicators to help hold the label in place on the vacuum pad prior to being blown onto the product. Allow values are .001 - 1 second.

**TAMP/SWING EXTEND:** The tamp/swing extend time is the interval of time allotted for the slide/arm to extend. After the timer has timed out the air blast will occur and the slide/arm will return home. To keep labeling speeds up, this value should be as low as possible. Allowed values are between .001 - 5 sec.

**TAMP/SWING RETRACT:** The tamp/swing retract time is the interval of time allotted for the slide/arm to return home before feeding another label. If this value is too small, a label will feed into the pad or manifold. Allowed values are between .001 - 5 seconds. Note: In a tamp applicator, the tamp slide action may be disabled or enabled by pressing zero (0).

**LABEL PROFILE:** The label profile option is used to merge a label onto a curved surface. The dispense speed of the applicator is changed between two speeds depending on the position of the product surface relative to the peel edge.

**MULTI-PANEL APPLY:** The Multi-Panel Apply option is used to merge a label onto two or three panels of a product. An example might include the leading, top, and bottom panels of a CD case. The applicator is initially setup so that the label is flagged out in front of the product but is still supported on the liner. When the product reaches the peel edge, the flagged out portion of the label is applied to the bottom edge of the product. The applicator then moves the "Short Feed Distance" at web speed to dispense enough label material for the remaining panels of the product. The applicator then waits for the "Product Clearance" time or distance to allow the product to pass by the peel edge before moving the next label to the flagged out position at slew speed.

### HOME:

The home key will take you back to the home screen from any other screen except ones requiring numerical entry. Here it will indicate what type of applicator has been selected (air blow, merge, or tamp) and whether it is in the right-hand or left-hand configuration.

### JOG:

If the applicator is online, the jog key will allow you to dispense one label at a time as long as the product detect input is not active. When using the display jog key, motion begins immediately and the applicator will not wait for the label placement value or perform any of the special applicator options such as profiling or multi-label. The jog key is particularly useful when adjustments are made to label length or label stop values in the **label setup** procedure. If the jog key is pressed for three seconds, the applicator will continuously apply labels. The jog function on the power switch simulates a product detect signal and will perform exactly the same applicator steps that a valid product detect signal would initiate.

### WEB SPEED:

The web speed key allows you to enter the web speed value. If the entered value is incorrect, an out-ofrange message is displayed and the web speed menu is re-displayed so that a different value may be entered. Allowed values are between 100 and 1500 "/min or 100 and 2100 "/min depending on whether it is a normal or high-speed applicator. The web speed value may be changed while the applicator is running.

### **ALARM RESET:**

When a fault occurs (i.e. low label, alarm loop, no labels found, web break, or offline critical) an alarm message will appear on the display indicating the problem. If the applicator is equipped with a light stack, the light will be on solid for warning alarms and flash for critical alarms. Both conditions will remain on until the problem is corrected and "ALARM RESET" is pressed.

### LABEL FORMATS:

The label formats key allows the operator to view, save, load, or delete up to 10 label setups. If a certain size label is used over and over, the label parameters may be saved and reloaded for use at a later date. The label formats menu is password protected to prevent inadvertent loss of data. The tamp switch and Multi-Panel Apply options are turned off when a label format is loaded. **The default password is 1800.** 

### **APPLICATOR OPTIONS:**

The applicator option menu will let you view and choose which options you'll be using in a particular application. **For example:** If you have a loose loop configuration, simply select the loose loop option and press the HOME key to take you back to the main menu.

Option choices: Loose Loop Imprinter Crossover Low Label Web Break Tamp Switch Multiple Label Missing Label Skip Counter

### **OPTION INCOMPATIBILITY**

In some instances, applicator options are incompatible with one another because they are functionally different. In other cases they share hardware or software resources. When the operator attempts to enable an option, the applicator will disable some options automatically or will prompt the user to disable another option before proceeding. The following table illustrates what options are incompatible with others:

Active Option or Mode	Disabled Option(s) or Mode(s)		
	Multi-Panel Apply		
Crossover	Loose Loop		
	Skip Counter		
	Loose Loop		
Imprinter	* Powered Rewind		
	DAT applicator		
	* Critical to DO10		
Label Profiling Multi-Label			
	Crossover		
Multi-Panel Apply	Multi-Label		
	Label Profiling		
	Skip Counter		
	Crossover		
	Imprinter		
Loose Loop	* Powered Rewind		
	DAT applicator		
	* Critical to DO10		
Missing Label	Multi-Label		
	Label Profiling		
Multi-Label	Multi-Panel Apply		
	Missing Label		

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\* These options are found in the special option menu accessible at power-up.

Active Option or Mode	Disabled Option(s) or Mode(s)	
	Imprinter	
* Powered Rewind	Loose Loop	
	DAT applicator	
	* Critical to DO10	
Skip Counter	Crossover	
Tamp Switch	Web Break	
Web Break	Tamp Switch	
	Loose Loop	
	Imprinter	
DAT applicator	Crossover	
	Multi-Label	
	* Pwr'd Rewind/Print/Critical to DO10	
	Loose Loop	
* Critical to DO10	Imprinter	
/DO10&11	* Powered Rewind	
	DAT applicator	

NOTE: 1) The different options are covered in detail in the setup section.

2) If you press the applicator options key, the first screen shows all of the available options and which ones are currently active. Selecting a particular option for the first time requires a password. The default password is 1800. Subsequent selections do not require a password as long as you remain within an option menu. Going back to the home screen will disable the last password entry.

### LABEL PLACEMENT:

The label placement key lets you enter a label placement value. Label placement is the time or distance from the product detect sensor to where the label is dispensed onto the product. If the value entered is outof-range, a message will let you know so that you can re-enter a different value. The allowed values, in seconds if time based or in inches if encoder based, are shown on the last line of the label placement display screen. When the applicator type is set to DAT, a second label placement menu will come up automatically after the first. The first DAT label placement value corresponds to the first swing/tamp action while the second placement value corresponds to the second tamp/swing action selected (leading/trailing). When the swing or tamp only modes are active, the applicator will bring up the appropriate label placement menu. The label placement value(s) may be changed while the applicator is running.

### **PRODUCT SETUP:**

The product setup key provides access to the detector lockout and encoder setup submenus. Also, the current status of the product detect sensor, web speed (if equipped with an encoder), and label counter values are displayed. The user may reset the label counter by selecting that option from the display. If DAT is selected for the applicator type, encoder compensation is not used and is not accessible from the

encoder submenu. Note: This area is password protected. The default password is 1800. Going back to the home screen will disable the last password entry.

**DETECTOR LOCKOUT:** The detector lockout function is used when more than one product detect signal is generated per product. The timer starts at the beginning of a labeling sequence and the applicator will ignore product detect signals until this timer has timed out. Therefore, if you set this timer to a value equal to the time it takes the product to pass by the labeler, it will only see the first product detect signal. Allowed values are between .001 - 20 seconds.

ENCODER SETUP: Please refer to the ENCODER SETUP section of this manual.

# **REAR PANEL**



# **CONNECTORS**

- **VALVE:** When using a Tamp, Blow Box, or a Merge applicator with an imprinter, a valve bank is mounted to the side of the machine. This plug is used to power the valves.
- **ENCODER:** The encoder is connected to this plug. The encoder is enabled through the product setup menu.
  - ALARM: This connector is for an alarm light. Alarm output conditions include:

No Labels Found Web Break Tight Loop at Printer Offline Critical Low Label

**PRODUCT:** This is where the product detect sensor is connected.

- LOW LABEL: When the low label option is used, the sensor is connected here.
  - **WEB/TMP:** This is a dual-purpose connector. Either a web break sensor or a tamp return switch can be connected here (but not both). Enable either option via the applicator options menu.
  - **DISPLAY:** This port is for connecting the display to the applicator.
    - **I/O:** This port is for loose loop, alarm signals to a PLC, and imprinter control. Only one option is available at a time; all are enabled via the applicator options menu.
    - **LINK:** The link port is used to interconnect two labeling heads in "ZERO DOWNTIME" applications. See CROSSOVER in the SETUP section for more information.

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GENERAL SETUP PROCEDURES

# **360 SERIES**

# **SETUP**

# PROCEDURES

# **<u>!!CAUTION!!</u>** DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE YOU THREAD LABELS OR YOU MAY BE CAUGHT BETWEEN THE DRIVE AND NIP ROLLERS IF THE MACHINE CYCLES UNEXPECTEDLY!

# JOB SETUP

#### NOTE: When reading through this section of the manual, refer to the web path diagram section.

### THREADING LABELS

- 1. With the power off remove the outer unwind disk.
- 2. Make sure the inside of the inner disk is at least 1 1/4" away from the faceplate of the applicator.
- 3. Slide a roll of labels over the unwind hubs and push against the inner disk. Make sure the labels are face up as they unwind. Replace the outer disk and lock in place.
- 4. Remove approx. 3 ft of labels from the liner on the leading part of the roll of labels.
- 5. Thread labels through the machine referring to the web path diagram section that applies to your configuration.
  - a. When going between the nip and drive rollers, turn the knob on top of the nip assembly to spread the two rollers.
  - b. If the applicator is a blow box or tamp, make sure the web goes between the peel edge and the air assist tube.
- 6. Remove rewind pin, lay the label liner over the pin slot and replace pin.
- 7. Align guide collars with the unwind assembly.
- 8. Lower the nip roller so that it comes into contact with the drive roller.
- 9. Make sure the label tension brush is against the roller. This keeps the web tight between this point and the peel edge.
- 10. Re-locate the spring block assembly so that it is in the center of the label and is applying slight pressure to the top of the labels. This aids in the dispensing of labels off of the peel edge.

# LABEL SENSOR SETUP

The label sensor is a "U"-shaped optical sensor that is connected to the sensor electronics with fiber optic cable. To insure proper operation of the label sensor, there should be no sharp bends in the fiber optic cable from the sensor to the applicator housing. The two sensor forks contain a light emitter and a receiver. For best accuracy, both surfaces should be kept free of contaminants and the light emitter should be in the lower fork. The web must be positioned inside the forks of the sensor so that the sensor can see the label surface. The contrast inside the label should be fairly uniform to avoid false edge detects. If the liner appears within the label, move the sensor in or out to avoid this area on the label. The label sensor has two detection modes available for instances where the entire leading or trailing edge of the label is similar in contrast to the label gap. The terms leading and trailing edge refer to the first and second label edges that the sensor encounters as the label moves past the sensor. Select the edge option that gives the most reliable performance for your particular label. The applicator comes from the factory set for leading edge detection.

# AUTO SETUP

In auto setup, the applicator will automatically set the label sensitivity, label length, and label stop values. Also, it will calculate the "short feed distance" if the Multi-Panel Apply option is enabled prior to running auto setup. The following steps summarize the auto setup sequence:

- 1. With the applicator <u>offline</u>, select "1" from the LABEL SETUP menu.
- 2. The display will show the two edge detection modes discussed in the paragraph above. Select "1" for label LEADING EDGE or "2" for label TRAILING EDGE detection. If your selection is different than the current sensor configuration, the applicator will display a message that it is reconfiguring the sensor. This process takes approximately 8 seconds to complete. If you want to bypass this section, press "ENTER".
- 3. The applicator will instruct you to move the web so that the label gap is under the sensor. Manually turn the drive roller to advance the web to the label gap position and press "LABEL SETUP". The applicator will dispense 10" of label while dynamically setting the label sensitivity. If you want to bypass this section, press "ENTER".
- 4. If the MULTI-PANEL APPLY option is <u>off</u>, go to step 6. The applicator will instruct you to move the label leading edge to the peel edge and press "LABEL SETUP".
- 5. Enter the number of labels between the label sensor and the peel edge. Make sure to include the label directly under the label sensor in this number. Press "ENTER", three labels are dispensed while the applicator is calculating the peel edge to label sensor distance and the "Short Feed Distance" values.
- 6. The applicator will instruct you to move the web to the desired label stop position and press "LABEL SETUP". Three labels are dispensed while the applicator is calculating the label length and label stop values. If you want to bypass this section, press "ENTER".
- Note: If the controller calculates a label stop value that is less than 0.03" or greater than (label length 0.06"), the controller will select the value closest to these limits and a warning message is displayed indicating that the label stop may need adjusting. The operator may override the controller's value using the "LABEL STOP" menu.

### MANUAL SETUP

The manual setup function is provided for those instances where auto setup does not work. The following steps summarize the manual setup sequence:

- 1. With the applicator <u>offline</u>, select "2" from the LABEL SETUP menu.
- 2. The display will show the two edge detection modes discussed in the paragraph above. Select "1" for label LEADING EDGE or "2" for label TRAILING EDGE detection. Pressing "ENTER" at this point will bypass the following steps and take you back to the "LABEL SETUP" menu.
- 3. If LEADING EDGE DETECT was selected, the applicator will instruct the operator to place the label and liner under the sensor and press "LABEL SETUP" to continue.

If TRAILING EDGE DETECT was selected, the applicator will instruct the operator to place the liner only under the sensor and press "LABEL SETUP" to continue.

The sensor measures the label sensitivity at this position and uses this value for the "ON" condition.

4. If LEADING EDGE DETECT was selected, the applicator will instruct the operator to place the liner only under the sensor and press "LABEL SETUP" to continue.

If TRAILING EDGE DETECT was selected, the applicator will instruct the operator to place the label and liner under the sensor and press "LABEL SETUP" to continue.

The sensor measures the label sensitivity at this position and uses this value for the "OFF" condition.

- 5. The display will show whether the sensor is looking at the gap or the label in the current position. If the web is manually adjusted by turning the hand wheel, the display status will change as the web moves past the label sensor. Pressing "ENTER" will take you to the LABEL LENGTH menu.
- The display will show the current label length setting. If it is incorrect, enter a new label length. If the value shown is correct, pressing "ENTER" will take you back to the LABEL SETUP menu.
  For additional help, see the LABEL LENGTH explanation shown below.
- 7. If the label length value was changed in step 6, the applicator will dispense a label and advance to the "LABEL STOP" menu. The operator may accept or modify the current label stop value as needed and return to the LABEL SETUP menu by pressing "ENTER". For additional help, see the LABEL STOP explanation shown below.

## LABEL LENGTH SETUP

- 1. Measure the distance from the leading edge of one label to the leading edge of the next. This will be the "label length" value.
- 2. From the LABEL SETUP menu press "3" to adjust the "LABEL LENGTH" value.
- 3. Enter the length and press "ENTER". If the value is less than 0.375" or more than 20", the display will show an out-of-range message for 2 seconds then switch back to the label length menu. If the value shown is correct, pressing "ENTER" will take you back to the LABEL SETUP menu.
- 4. If the label length value was changed in step 3, the applicator will dispense a label and advance to the "LABEL STOP" menu. The operator may accept or modify the current label stop value as needed and return to the LABEL SETUP menu by pressing "ENTER".
- 5. Press "HOME" to go to the main menu.
- NOTE: It's important to set the label length to exactly what it is (don't guess). If there is a missing label on the liner, the web will feed the label length distance. This is important because of the label sensor's position relative to the peel edge.

After 3<sup>\*</sup> missing labels in a row, a "no labels found" message will appear on the display. If a light stack is connected to the applicator, it will flash at a steady rate. Correct the problem and press "ALARM RESET" to clear the alarm. **\*After software version 360-2b.25, the number of missing labels before a "no labels found" alarm is user adjustable in the SPECIAL OPTIONS menu.** 



## LABEL STOP

- 1. The label stop value is the distance from the label edge to the label sensor. Allowed values are between 0.03" and (label length -0.06").
- NOTE: After software version 360-2b.25 any value less than .06 comes with a warning that says the label stop can move when the web speed changes.
- 2. Press the "LABEL STOP" key. Enter a new value and press "ENTER". If the value is out-of-range, the display will show an out-of-range message for 2 seconds and then switch back to the label stop menu.
- 3. A valid label stop entry will send you back to the main menu.
- 4. With the applicator <u>online</u>, press "JOG". If the label stop is not where you want it, go back into the "LABEL STOP" menu and enter a new value.

#### NOTE: This adjustment can be made while the machine is running.

# LABEL FORMATS

This option will let the operator view, save, load or delete up to 10 label setups. If a certain size label is used over and over, you can save the label format and reload it at a later date. Parameters that are saved are:

APPLICATOR TYPE	LABEL PLACEMENT #2	TAMP EXTEND	AIR BLAST TIME
LABEL LENGTH	WEB SPEED	TAMP RETRACT	LABEL ADVANCE
LABEL STOP	ENCODER ON/OFF	SWING EXTEND	ACCELERATION
LABEL PLACEMENT #1	RATE COMPENSATION	SWING RETRACT	DECELERATION

Press the "LABEL FORMAT" key. If the Label Format Protect feature is enabled in the Special Options menu, enter the default password "**1800**" to gain access to the following options:

VIEW LABEL FORMAT
LOAD LABEL FORMAT
SAVE LABEL FORMAT
DELETE LABEL FORMAT

#### Warning: The applicator must be offline to enter this menu!

View Format

This option will allow the operator to view the individual format parameters. Pick "1" at the label format menu and select the format number you want to see. Pressing "ENTER" will take you back to the Label Format menu.

# LABEL FORMATS (cont.)

#### Load Format

This option will allow the operator to load the values of a previously stored format in to the system as current values. Pick "2" at the label format menu and select the number of the format you want to load. If you want to exit without loading any format, press "ENTER". Continue to press "ENTER" to exit to the label setup menu. Warning: Once you pick a format, it will change the current parameters to what was in the format. There will be no warning!

### Save Format

This option will allow the operator to save the current parameters to a format with a four-digit name. Pick "3" at the label format menu and enter up to four digits for the format name. When finished, press "ENTER". If you do not want to save a format, press "ENTER" before you type in a format name. By typing in the same name as an existing format, the variables saved in that format will be over-written. Continue to press "ENTER" to exit to the label setup menu.

### Delete Format

This option will allow the operator to delete a format from the list. Pick "4" at the label format menu and select the number of the format you want to delete. If you want to exit this section without deleting anything, then press "ENTER" before pressing any numbers. Continue to press "ENTER" to exit to the label setup menu. Warning: Once a format number has been selected, it will be deleted. There is no warning!

# WEB SPEED

Web speed is the velocity of the label web in inches per minute. In a merge application the web speed should be set at the velocity of the product. In tamp or blow box applications the web speed will vary depending on the label size and product rate. Some labels will have to be run at a slower speed so that it will properly feed out onto the label pad/grid.

1. Press the "WEB SPEED" key and enter a value between 100" and 1500" per min. for normal speed applicators or between 100" and 2100" per min. for high-speed applicators. Press "ENTER" to return the main menu. If the value is out-of-range, the display will show an out-of-range message for 2 seconds then switch back to the web speed menu.

### NOTE: This adjustment can be made while the machine is running.

# SLEW SPEED

The slew speed value allows the applicator to speed-up the label dispense cycle in certain time critical applications. The slew speed menu will automatically appear after the web speed menu when the **Missing Label** or **Multi-Panel Apply** options are **ON**. The default value is set at 1200 "/min.

1. Enter a value between 100" and 1500" per min. for normal speed applicators or between 100" and 2100" per min. for high-speed applicators. Press "ENTER" to return the main menu. If the value is out-of-range, the display will show an out-of-range message for 2 seconds then switch back to the slew speed menu. Note: In order to improve performance, the slew speed setting must be larger than the current web speed or encoder rate value.

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# MERGE APPLICATOR SETUP

The merge applicator is used to apply labels to products moving on a conveyor. A label is feed onto the surface of the product at the same speed that the product is moving.

- 1. On the display, under "APPLICATOR TYPE" select "MERGE" applicator. Also, indicate whether it is in a right-hand or left-hand configuration using the "RT/LT HAND" selection.
- 2. Go through the general label setup procedure.
- 3. Position the peel edge so it's between 1/8" and 1/2" away from the product at approximately 20 degrees to the product surface.
- 4. Adjust the applicator brush so that it will lightly touch the product. It should be angled so that the label is supported as it is fed out. **NOTE: The applicator brush is used to aide in the tacking of the label to the product. It is not made to be a wipe down.**
- 5. Label stop can be set so that the label is flagged past the peel edge but must miss the passing product.
- 6. Web speed should be set to match the speed of the product.
- 7. Go to the product setup section of this manual to finish setup.

# MERGE LABEL PROFILING

Profiling is used to aide in labeling products that have a concave or convex surface. If the surface of the product is convex, the labeler will dispense a label at web speed during the "rise area" distance. When this distance has been traveled, the web speed changes to (web speed) x (web ratio) during the "flat area" distance. After traveling the combined rise plus flat distance, the labeler returns to web speed for the remainder of the move. The reason for this action is that convex products start out farther away from the peel edge than it will be by mid-product. The label is dispensed at normal speed at the beginning of the product. As the product surface moves closer, the label must slow down so that the labels do not wrinkle. As the product surface moves away, the label speeds-up.

On concave products the label is dispensed at web speed initially. As the surface of the product moves away, the label is dispensed faster to force the label into the product. The label dispense speed is slowed as the product surface moves closer to the peel edge.

#### NOTE: 1) Label profiling is a function of the merge applicator only.

- 2) Label profiling is enabled when the "web ratio" is set to something different than "1".
- 3) Max. speed for the labeler is 1500 "/min. for normal speed applicators or 2100 "/min for high speed applicators. The machine will not exceed this speed even if the web ratio is set to a number higher than "1".

# ENTERING LABEL PROFILING VALUES

- 1. Press "LABEL SETUP" then select "LABEL PROFILING".
- 2. The label profiling menu shows the following three items:

Profile Rise Area Profile Flat Area Web Ratio

- 3. Press "1) PROFILE RISE AREA". This is the distance the label travels before changing to the mid-product labeling speed. Enter a value between 0.5 and 20. A valid entry will send you back to the label profiling menu.
- 4. Press "2) PROFILE FLAT AREA". This is the distance the label travels while at the midproduct labeling speed. Enter a value between .001 and 20. A valid entry will send you back to the label profiling menu.
- 5. Press "3) WEB RATIO". The web ratio is a multiplier applied to the web speed value to either slow or speed-up the applicator during the profile flat area. This number will vary depending on product shape and is usually determined by trial and error. Enter a value between .5 and 1.5. A valid entry will send you back to the label profiling menu.

### NOTE: Label profiling is disabled when using the multi –label option.

### PROFILING SUMMARY

Condition	Product Shape
WEB RATIO < 1.0	Convex
WEB RATIO $= 1.0$	Flat Surface
WEB RATIO > 1.0	Concave

Web	Speed during	Speed during	Speed during flat
Ratio	0" to rise	rise to flat distance	to label length
Setting	distance		distance
< 1.0	web speed	(web speed) (web	web speed
	_	ratio)	_
= 1.0	web speed	web speed	web speed
> 1.0	web speed	(web speed) (web	web speed
		ratio)	

# ESTIMATING RISE AREA AND FLAT AREA

This process will give you a starting point for profile variables. Some experimentation is necessary for best results. The example shown is for a convex or oval product.

1. Apply a label by hand to the product. Measure the rise area by looking at the beginning of the label to where it starts to flatten out. Also measure the length of the flat area. Use the diagram below as an example.



- 2. Use these numbers when inputting values to the display.
- 3. When using this type of product, web ratio is set less than "1". This will slow web speed during the flat area.

# **RISE AREA AND FLAT AREA FINAL ADJUSTMENT**

The system will work best with the smallest rise area value and the largest flat area value that properly applies the label. Use the instructions below to find these values.

- 1. With the applicator online, send several products down the conveyor and observe the labels that are applied.
- 2. If the leading edges of the labels were all applied at the same position on the products, go on to step #3.

If the leading edges of the labels were placed at various positions on the products, the Rise Area Length is too short.

Slightly increase the Rise Area Length and run some more products. Repeat until the leading edge label placement is consistent.

3. If the leading edges of the label were applied at the required position on the product, go on to step #4.

If the leading edge of the label is applied at the incorrect position, adjust the "LABEL PLACEMENT", or re-position the product detector. Run some more products. Repeat until the leading edge of the label is applied at the required position on the product.

4. If there are no wrinkles or bubbles in the first half of the applied labels, go on to step #5.

If a wrinkle or bubbles appear from the top to the bottom of the first half of the label, the rise area is too long.

Slightly decrease the rise area and run some more products. Repeat until the wrinkle in the first half of the label is removed.

5. If there is no wrinkle in the center of the label, go on to step #7.

If a wrinkle appears from the top to the bottom at the center of the label, either the Web Ratio is too high, or the Flat Area is too short.

The Web Ratio will be adjusted first. Before adjusting, note the Web Ratio setting. Slightly decrease the Web Ratio and run some more products. Repeat until the wrinkle is removed. Go on to step #7.

- 6. Increase the Flat Area slightly and run some more products. Repeat until the wrinkle is removed.
- 7. If the labels are applied wrinkle free from lead edge to trail edge, go on to step #8.

If small horizontal wrinkles appear on the trailing edge on the label, the Flat Area is too long.

Slightly decrease the Flat Area and run some more products. Repeat until wrinkles are eliminated.

8. When the Web Ratio, Rise Area and the Flat Area are established, the setup is complete.

# MERGE MULTI-PANEL APPLY

The Multi-Panel Apply option is used to merge a label onto two or three panels of a product. An example might include the leading, top, and bottom panels of a CD case. The applicator is initially setup so that the label is flagged out in front of the product but is still supported on the liner. When a product detect signal is received, the applicator will wait for the label placement time or distance depending on whether the encoder is off or on. At label placement, the applicator will feed the "Short Feed Distance" at web speed or encoder speed. This will place the next label at the peel edge. The applicator will wait for the "Product Clearance" time or distance to allow the product to pass by the peel edge before moving the next label to the flagged out position at slew speed. The figure below illustrates a hypothetical setup with four labels between the peel edge and the label sensor along with the measurement definitions:

- A: label sensor to peel edge distance
- B: label length
- C: label flag distance
- D': label stop distance with C = 0 (not shown)
- D: label stop distance
- E: short feed distance
- N: # of labels between sensor and peel edge



The AUTO SETUP feature will calculate all of the dimensions shown above if the Multi-Panel Apply option is enabled prior to running auto setup. The operator may override these settings by measuring values B through E above and entering them via the display. Note: The Multi-Panel Apply option will work in a time based system but performance is better if an encoder is purchased.

### CONFIGURING MULTI-PANEL APPLY WITH AUTO SETUP

- 1. Make sure the applicator is powered and offline.
- 2. Press "LABEL SETUP" and select "5) MULTI-PANEL APPLY"
- 3. Select "1) MULTI-PANEL APPLY OPTION IS: ON" from the Multi-Panel Apply submenu.
- 4. Select "3) PRODUCT CLEARANCE TIME / DISTANCE" and enter the time or distance after the label is dispensed to when the product clears the peel edge. The distance in an encoder system should be approximately the length of the product that the label is applied to.
- 5. Press "ENTER" to return to the label setup menu.
- 6. Select "AUTO SETUP" and follow the on screen prompts (see: AUTO SETUP in GENERAL SETUP PROCEDURES).
- 7. Select "WEB SPEED" and enter the product conveyor speed. The "Slew Speed" menu will automatically come up after web speed.
- 8. Enter a "SLEW SPEED" value and press "ENTER" to return to the home menu. Slew speed is the web speed used to move the label to the flagged position in preparation for the next product.

### CONFIGURING MULTI-PANEL APPLY MANUALLY

- 1. Make sure the applicator is powered and offline.
- 2. Using the hand wheel, position the label in the flagged out position.
- 3. Press "LABEL STOP" and enter the distance measured for dimension D shown above. Note: If the label sensor is set for trailing edge detection, add the label gap distance to dimension D.
- 4. Press "LABEL SETUP" and select "3) LABEL LENGTH". Enter the length measured for dimension B shown above.
- 5. Press "5) MULTI-PANEL APPLY" to gain access to the Multi-Panel Apply submenu.
- 6. Select "1) MULTI-PANEL APPLY OPTION IS: ON" from the Multi-Panel Apply submenu.
- 7. Select "2) SHORT FEED DISTANCE" and enter the distance measured for dimension E above.
- 8. Select "3) PRODUCT CLEARANCE TIME / DISTANCE" and enter the time or distance after the label is dispensed to when the product clears the peel edge. The distance in an encoder system should be approximately the length of the product that the label is applied to.
- 9. Select "WEB SPEED" and enter the product conveyor speed. The "Slew Speed" menu will automatically come up after web speed.
- 10. Enter a "SLEW SPEED" value and press "ENTER" to return to the home menu. Slew speed is the web speed used to move the label to the flagged position in preparation for the next product.

# AIR BLOW APPLICATOR SETUP

The air blow applicator is a versatile labeler in the sense that many different label sizes can be used without buying a new pad or manifold. Products can also be labeled at a stand still without contact. The blow box consists of two axial fans mounted in the top of the assembly that produce the vacuum needed to hold the label. Inside the blow box are eighteen flexible tubes that provide the air blast to apply the label. These tubes may be arranged in a variety of ways to apply many shapes and sizes of labels.

- 1. On the display, under applicator type select "BLOW BOX" applicator. Also, indicate whether it is in a right-hand or left-hand configuration using the "RT/LT HAND" selection.
- 2. Place the applicator as close to the product as you can without hitting it.
- 3. Go through "general setup" procedure (i.e. label sensor, setup, web speed, etc.)

# AIR BLOW LABEL STOP

- 1. With the applicator online, jog a couple of labels.
- 2. Label stop position should be 1/32" from the peel edge tip.
- 3. If needed, change the label stop value. (Refer to Label Stop setup in the general job setup)


# AIR BLOW PEEL EDGE ALIGNMENT

- 1. Turn power on to the applicator and make sure it's offline.
- 2. Advance the web using the drive roller and notice how the label feeds onto the grid. A normal paper label should deflect 5-10 degrees to the bottom surface of the label grid. A stiffer label should feed straight onto the grid.
- 3. To adjust the peel edge, loosen the two 1/4 S.H.C.S. screws on the peel edge faceplate and move the assembly to a position close to the grid. Allow enough room for the label and liner to pass between the peel edge and the grid.
- 4. Repeat step #2 to check label angle. Re-adjust if needed.
- Note: The top of the peel edge should be slightly higher than the bottom surface of the label grid. If a label on the grid will slide back onto the peel edge, the peel edge is too low.

# AIR BLOW GRID SETUP

- 1. With the power on and the applicator online, jog a label onto the grid and tape it in place.
- 2. Turn the power off and remove the blow box cover. Arrange the air jet tubes in a symmetrical pattern with most of the tubes in the center of the label. Insert any unused tubes in the storage block. WARNING: Make sure the air jet tubes are not in the axial fan.
- 3. The blow box is equipped with two fans and a switch. With the switch in LOW position, only one fan will run. With the switch in the HIGH position, both fans will run. Select the appropriate switch position to insure that enough vacuum is generated to hold the label in place.



# AIR BLOW AIR ASSIST

The air assist tube blows a stream of air onto the label to force it up against the blow box grid during the label feed. The air assist starts to blow when the web starts to move and stops when the label is on the grid. The extended air assist time allows the air assist to blow after the label feed to help stabilize the label.

- 1. Adjust the air assist tube so it's blowing into the center of the label. Ensure that the label feeds out against the grid properly.
- 2. The regulator for the air assist is on the valve bank and should be set between 10 and 15 PSI. This is a typical setting but it may be changed as needed.
- 3. If a longer air assist is needed to help position the label, press "LABEL SETUP" on the display. Pick "EXTENDED AIR ASSIST" and enter a value between .001-1 second.
- 4. A valid air assist entry will send you back to the label setup menu.
- 5. Press "HOME" to return to the main menu.

# AIR BLOW AIR BLAST

The air blast transfers the label from the grid to the product and is a function of time and air pressure. The air blast pressure is regulated by the filter/regulator assembly located upstream of the valve.

- 1. The regulator for the air blast should be set between 40-50 PSI. This is the typical setting but it may be changed as needed.
- 2. If the air blast time needs changed, press "LABEL SETUP" on the display. Pick "AIR BLAST" and enter a value between .010-1 second.
- 3. A valid air blast entry will send you back to the label setup menu.
- 4. Press "HOME" to return to the main menu.

# TAMP APPLICATOR SETUP

The tamp applicator consists of a tamp slide, label manifold, and a label pad. The label is fed out onto the label pad and is tamped within 1/8" of the labeling surface. The label is then blown off by an air blast. The tamp applicator has higher placement accuracy and is less dependent on product movement. **NOTE: Before proceeding, make sure you've selected tamp under "APPLICATOR TYPE" on the display. Choose one of the following types of tamping action:** 

- **NORMAL TAMP:** A label feeds out onto the label pad and the labeler will wait for a product detect signal to tamp and apply the label. After applying the label, the tamp pad returns home to receive another label.
  - **ITB TAMP:** A label feeds out onto the label pad and tamps. The tamp will wait for a product detect signal before applying the label and returning home to receive another label.
  - **DAT TAMP:** The dual action tamp has a swing action to apply a label to the leading or trailing panel of the product and a tamp action to apply a label to a side panel of the product. The DAT applicator has two modes of operation: Swing first then Tamp (Leading), or Tamp first then Swing (Trailing). Within these modes, a Swing Only and a Side Only option is available. **Contact your distributor if you require this function and your 360 applicator was purchased without a factory installed DAT assembly.**
- 1. With the tamp slide extended make sure the label pad is approx. 1/8" from the product.
- 2. Go through "general setup" procedure (i.e. label sensor, web speed, etc.)

# TAMP PEEL EDGE ALIGNMENT

- 1. Turn the power on, move the tamp assembly up and make sure the applicator is offline.
- 2. Advance the web using the drive roller. Stop when half of the label is off the peel edge tip. The label should be at an angle between 5 and 15 degrees from the label pad surface. The stiffer the label, the flatter the angle.
- 3. To adjust the peel edge, loosen the two 1/4 S.H.C.S. screws on the peel edge faceplate and move the assembly close to the tamp pad. Allow some clearance distance between the peel edge and tamp assembly. Repeat step #2 to check label angle. Re-adjust if needed.
- 4. If OK go to label stop.

# TAMP LABEL STOP

- 1. With the applicator online, jog a couple of labels.
- 2. Label stop position should be 1/32" from the peel edge tip.
- 3. If needed change the label stop value. (Refer to label stop setup in the general job setup)



# TAMP VACUUM

The tamp vacuum is generated by a vacuum venturi located on the applicator. This vacuum is used to hold the label on the label pad until the air blast releases it. Too much or too little vacuum can affect label placement on the pad. The amount of vacuum may be changed by adjusting the air pressure to the vacuum regulator feeding the venturi. A setting of 30-40 PSI is typical but it may be changed as needed.

### WARNING: It is important to match label size with the label pad size so that no holes are uncovered when the label is on the pad. This may result in losing vacuum.

# TAMP AIR ASSIST

The air assist tube blows a stream of air onto the label to force it up against the tamp pad during the label feed. The air assist starts to blow when the web starts to move and stops when the label is on the pad. The extended air assist time allows the air assist to blow after the label feed to help stabilize the label.

- 1. Adjust the air assist tube so it's blowing in the center of label. Ensure that the label feeds out against the label pad.
- 2. The regulator for the air assist is on the valve bank and should be set between 10 and 15 PSI. This is a typical setting but it may be changed as needed.
- 3. If a longer air assist is needed to help position the label, press "LABEL SETUP" on the display. Pick "EXTENDED AIR ASSIST" and enter a value between .001-1 second.
- 4. A valid air assist entry will send you back to the label setup menu.
- 5. Press "HOME" to return to the main menu.

# TAMP AIR BLAST

The air blast transfers the label from the label pad to the product and is a function of time and air pressure.

- 1. The regulator for the air blast is on the valve bank and should typically be set between 40-50 PSI.
- 2. To change the air blast time, press "LABEL SETUP" on the display. Pick "AIR BLAST" and enter a value between .010 and (tamp retract 0.01) second.
- 3. A valid air blast entry will send you back to the label setup menu.
- 4. Press "HOME" to return to the main menu.

# TAMP SLIDE

The tamp slide is used to move the label pad and manifold toward the product. The speed at which it travels is a function of air pressure and airflow. The valve and regulator for the tamp assembly is part of the valve bank mounted to the side of the applicator. Typically, the air pressure should be set between 40 and 50 PSI but it may be changed as necessary. Two adjustment knobs are provided on the air cylinder to adjust the tamp extend and retract times. Turning the knobs clockwise will slow the movement of the cylinder. Turning the knobs counter-clockwise will speed up the cylinder. Note: The tamp extend and retract times must be setup by the operator since they are dependent on the setting of the adjustment knobs. Both timers are in the "LABEL SETUP" section of the display.

- **EXTEND TIME:** 1. The tamp extend time is the time necessary to fully extend the tamp slide assembly. After the "tamp extend" time, an air blast forces the label off of the label pad onto the product. In order to keep cycle times low, set the extend time so that the air blast occurs when the slide reaches the fully extended position.
  - 2. To change the extend time press "LABEL SETUP" on the display. Pick "TAMP EXTEND" and enter a value between .001-5 seconds.
  - 3. A valid tamp extend entry will send you back to the label setup menu.
  - 4. Press "HOME" to return to the main menu.
- **RETRACT TIME:** 1. The tamp retract time is the time necessary to fully retract the tamp slide assembly. At the end of the "tamp retract" time a label will be fed out onto the pad. Too small of a value will cause a label to feed out before the label pad is in the home position. Too high of a value will cause long cycle times.
  - 2. To change the retract time, press "LABEL SETUP" on the display. Pick "TAMP RETRACT" and enter a value between .001-5 seconds.
  - 3. A valid tamp retract entry will send you back to the label setup menu.
  - 4. Press "HOME" to return to the main menu.
- NOTE: If tamp switches are used, it is only necessary to set both tamp extend & retract times to a value higher than the time required. The tamp switches will override any excess time.

# **DUAL ACTION TAMP**

#### DAT: LEADING SEQUENCE

With the applicator ONLINE and a label on the pad, the labeler gets a product detect signal. It will wait the label placement distance or time and swing the label pad out in front of the product. At the end of the swing extend time, the air blast valve turns on to apply a label to the leading panel of the product, the swing arm starts to return home, and the swing retract timer is started. When the swing retract timer finishes, a label is fed out on to the pad at <u>web speed</u> and the applicator will wait for the second label placement. The second label placement, whether distance or time is started at the same time as the first label placement. When the second label placement time or distance is reached, the tamp assembly will extend towards the side of the product. The applicator will wait the tamp extend time, blow the label onto the product, start to retract the tamp assembly, and start the tamp retract timer. At the end of the retract time, another label is fed out onto the label pad at web speed. **Note: If DAT: TRAILING is selected, the tamp action occurs first and the swing action applies a label to the back panel of the product.** 

#### APPLICATOR TYPE

If Dual Action Tamp (DAT) is selected, the following submenu appears that allows the user to define the type of motion that occurs during each product application cycle:

- 1) DAT: Leading
- 2) DAT: Trailing
- 3) Swing Only
- 4) Side Only

Selecting "1" will cause the applicator to run the sequence described above. Selecting "2" will cause the applicator to run the sequence described above except the tamp action occurs first followed by the swing action. Selecting "3" will cause the applicator to swing only and selecting "4" will cause the applicator to tamp only.

#### LABEL SETUP

The label setup menu for the DAT applicator has the following selections:

0) Tamp is Active/Not Active	4) Air Blast Time
1) Auto Setup	5) Extended Air Assist
2) Manual Setup	6) Swing Timers
3) Label Length	7) Tamp Timers

If the swing only or side only modes are active, the tamp timer menu or the swing timer menu will not be enabled. Once the swing or tamp timer selection is made, both the extend and retract timer menus for that valve will appear automatically. The swing and tamp extend timers determine how long the tamp or swing valves are on before the air blast will occur. The extend timers should be set long enough to insure that the label pad is fully extended before the air blast occurs. The swing and tamp retract timers determine how long the valve will be off before a label is fed out onto the label pad. The retract timer values should be set long enough to insure that the label pad is nome before feeding a label. (See Tamp Slide: Extend and Retract Time explanation for further details.)

## **DUAL ACTION TAMP SETUP**

#### GENERAL SETUP PROCEDURES

- 1) The label stop must be properly set for the applicator to work correctly. Adjust the label stop so the label stops at the peel edge or slightly back from the peel edge.
- 2) Tamp height should be adjusted so that the label feeds out in contact with the label pad. If the pad is too high, the label will not land consistently on the pad. If the label pad is too low, the label will dispense into the back of the pad and jam. Most of this adjustment is done with the peel edge and is discussed in the manual (See Labeler Setup/Tamp Applicator/Peel Edge Adjustment). It is important to adjust the rotary actuator so the label pad is level with the applicator. Making it level will involve moving the retract shock for the swing arm. Moving this up and down will the move the pad accordingly (See Dual Action Tamp Shock Absorbers and Flow Controls).
- 3) Make sure the label is aligned with the pad so there is no over-hang. To adjust this, move the web in or out by adjusting the guide collars and unwind disks.
- 4) Position the air assist tube so the hole or holes are centered on the label and pointing approximately <sup>1</sup>/<sub>4</sub>"in from the label pad. The air pressure should be set at 20-30 P.S.I. Make sure the tamp is <u>not active</u> in the label setup menu under selection 0). Press "Jog" to dispense a label. If the label doesn't feed out against the label pad and the vacuum doesn't capture it, try increasing the air pressure. Continue until the vacuum captures the label.
- **Warning:** There are other factors that can keep the label from staying on the label pad. You may need more vacuum, increased or decreased label dive, or the air assist tube may need to be rotated.
- 5) Air pressure for the tamp slide and rotary actuator should start at 40 P.S.I., the air blast at 40-60 P.S.I., and the vacuum pump at 20-40 P.S.I.
- 6) Air blast time is set through the display and should be set long enough to apply a label firmly to the product. Setting the time too high will result in fewer labels/min. Start at .03 seconds. <u>The same air blast time applies to both the swing and tamp sequences.</u>

#### DUAL ACTION TAMP SHOCK ABSORBERS AND FLOW CONTROLS

#### NOTE: To avoid injury, make sure the applicator is offline for this adjustment!

Both the linear and rotary actuators have shock absorbers on them that need to be adjusted. The rotary actuator has a stop collar installed on the home shock. This collar should be adjusted so there is about 1/8" of shock travel. Adjust the shock so the swing arm stops in the right position. Press the manual override on the rotary actuator valve and watch the movement of the swing arm. The arm should hit the shock and stop without bouncing. If it bounces too much, slow the actuator down by adjusting the flow controls. The flow controls are integrated into the actuator and are located on the side of the longer cylinders. Turning the screws in with a small screwdriver will slow the speed at which the arm rotates and turning them out will speed it up. The slide shock absorbers are larger and have longer strokes to insure a smooth stop when moving larger loads. The shocks should be adjusted to insure that there is at least an 1/8" or more travel available when the slide stop hits the body of the slide. Do not allow the shocks to bottom-out. To adjust the shocks, loosen the clamping screws on the shock mounts and screw the shock in or out. When in position, re-tighten the clamp so the shock will stay in position. The flow controls for the slide are mounted on the valve bank. Screwing the knobs in will slow the speed of the slide while turning the knobs out will speed it up. Note: The tamp extend and retract times must be setup by the operator since they are dependent on the setting of the adjustment knobs. See "Extend and Retract Times" section of this insert.

#### **Extend and Retract Times**

It's important to make sure these timers are setup correctly. Power-up the applicator and bring it online. Press the jog button on the applicator and watch when the label is blown off on both the swing and tamp cycles. The swing arm or the slide should be fully extended. If not, increase the extend times. If the retract times are too short, a label will be fed out into the manifold and not onto the label pad. Increase the retract times if necessary. It's better to have these times a little on the high side but they will affect the labeling rate. The higher the times, the fewer products per minute you can label.

#### **Positioning the Applicator**

The product must be presented to the applicator in a consistent manner. Label accuracy cannot be maintained if the surface being labeled changes speed or distance relative to the label pad.

**NOTE**: The following directions are for the DAT applicator. The single tamp action is not discussed but you should be able to interpret their setup from the following instructions.

With the air and power off to the applicator, rotate the swing arm to the extended position. Make sure the slide is fully retracted. Push the product down the conveyor within the guides and stop in front of the label pad. Move the applicator in or out and up or down to position the pad where the label should go. Retract the swing arm and move the product in front of the applicator. Move the slide forward, making sure the swing arm is retracted, and stop when there is about 1/8" between the product and the label pad. You may need to move the slide extend stop by loosening the clamping screw and sliding the stop against the slide body. Some minor changes may be required before you start applying labels but this will get you close.

#### **Product Detect Sensor Position**

Before going through this section. Make sure the extend and retract times are properly setup. The setup described assumes no encoder is used. For encoder applications some values may change. Power-up the applicator, turn on the air, and bring the applicator ONLINE. Position the product detect sensor about 6 inches upstream of the extended swing arm. Set the #1 label placement to 0.001 and turn the conveyor on. Put a product on the conveyor and watch when the label is blown off the label pad. If the product hit the label pad before it retracted, move the product detector sensor upstream more. If it retracted too soon, move the sensor downstream. Ideally, the label will be blown onto the front of the product and retract without ever touching the product. Now look at the position of the label on the side of the product. If it was applied too late, decrease the #2 label placement. If it was applied too early, increase the label placement is too low compared to the cycle time of the first half of the labeling sequence, a warning will be displayed saying "Product Rate Warning". The Product Rate Warning section outlines several methods to correct this problem.

#### **Product Rate Warning**

If the applicator is unable to start the label dispense cycle at the proper label placement time or distance, the applicator displays a WARNING: PRODUCT RATE IS TOO FAST FOR THE CURRENT 2<sup>nd</sup> LABEL PLACEMENT VALUE message. To correct this problem try one or more of the following:

- increase applicator web speed setting
- increase 2<sup>nd</sup> label placement value (time or distance )
- decrease tamp and/or swing extend and retract times
- adjust flow controls at the air cylinders to increase speed
- decrease conveyor speed

#### Label Static Test

It's important to know if the applicator can consistently place labels in the same place over and over on the product. Without knowing this, you will not know whether label placement problems that occur on the line are due to the machine or to the product being labeled.

To test repeatability, configure the applicator for <u>side only</u> action and position the applicator so the tamp assembly is extended and the label pad is approximately 1/8" away from the product. Jog several labels onto the product. If the label stack is not within the tolerances you have to work with, go through the following suggestions to help find the problem.

- 1) Make sure the labels are consistently stopping in the same place on the label pad. If this is OK go to step 7; if not, go to step 2.
- 2) Check label stop. One label should be completely dispensed off the liner while the next label should be 1/32" away from the peel edge. If this varies more than 1/32" with each cycle, reset the label sensor. If you still have the problem go to the troubleshooting section of the 360 manual and follow its suggestions. When this is corrected, go back and try the static test again. If this was OK, go to step 3.
- 3) Make sure the label pad surface is clean. If clean, go to step 4. If not, clean and re-try the static test again.
- 4) Make sure the vacuum is set right. If the label flutters when feeding across the pad, the vacuum is too high. If the label falls off or moves after the label has left the liner, the vacuum is too low. If the label feed looks smooth, go to the next step.
- 5) Work with the air pressure and the position of the air assist tube until the label feeds more consistently onto the pad. Re-try the static test. If the results are still not good enough, go to step 6. Otherwise go to 7.
- 6) Make sure you are working with good label stock. Try another roll of labels and see if you get the same results.
- 7) Check the distance from the label pad to the product. If the distance is too large, the labels may float too much. Try lowering the machine so the label pad just clears the product (within 1/8").
- 8) Is the label pad made for the label you're using? Exposed holes on the pad will reduce the available vacuum used to hold the label in place and results will be uncertain.

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# PRODUCT SENSOR



The factory product sensor is a reflective type. Other types can be used but the following setup procedure is for a reflective sensor.

- 1. Make sure the sensor is plugged into the applicator.
- 2. Turn the power on and leave the applicator offline.
- 3. Set the sensor to DO (dark operation) by gently turning the output select screw completely counter-clockwise.
- 4. Make sure the sensor is aligned with the reflector. When the red LED on the back of the sensor is flashing at its fastest rate, the two are in the best alignment.
- 5. Place a product between the sensor and the reflector. The LED should go out.
  - a). On translucent products, the sensor may fail to detect a product if the sensor gain is set too high. In these cases, reduce the sensor gain by turning the gain pot counter-clockwise to avoid "burning thru" the product.
- 6. Go to the "PRODUCT SETUP" portion on the display.

# PRODUCT SETUP

- 1. Make sure the power is on and the applicator is offline.
- 2. Press "PRODUCT SETUP" on the display.
- 3. The product setup screen will show the status of the detector lockout function, whether the encoder is on or off and its speed, the label counter value, and whether the product sensor is detecting a product or not. Note: If you are set for light operate "LO" on the product sensor, the product detect indicator will say "YES" when there is no product in between the sensor and reflector.
- 4. There are three submenus associated with this screen:

**DET LOCKOUT ON/OFF:** The product detector lockout function is used if more than one product detect signal is generated per product. When the first product detect signal is received, a timer is started and all other product detect signals are ignored until this time expires. Warning: this works only when the product sensor is set for dark operate "DO".

- a) To add detector lockout, select "DET LOCKOUT" and enter a value between .001-20 seconds.
- b) A valid detector lockout entry will send you back to the product setup menu. Starting with version 2c.10.4.6, a second detector lockout screen appears when the crossover option is enabled and configured as a secondary applicator. This screen applies to the <u>primary</u> applicator's product detect sensor and operates identical to the description above.

ENCODER SETUP: SEE THE ENCODER SETUP SECTION OF THIS MANUAL

**LABEL COUNTER:** The label counter is a user resettable counter that keeps track of the number of labels applied by the applicator since it was last reset. With this feature, the number of labels per hour, per shift, etc. may be monitored.

- a) To reset the label counter, select "LABEL COUNTER" from the product setup menu.
- b) Select "YES" to reset the counter or "NO" to go back to the product setup menu.

# **LABEL PLACEMENT** (also known as Label Delay)

When a product detect signal is received, the product must travel the "label placement" time or distance before the applicator will dispense a label. Label placement gives you the ability to adjust where the label is applied on the product.

### More label placement = label moves back on the product Less label placement = label moves forward on the product

- 1. To change label placement, press "LABEL PLACEMENT" on the display. Enter a value between .001 and 20 seconds and press "ENTER".
- 2. A valid label placement value will send you back to the main menu.

# LABEL PLACEMENT (cont'd)

- NOTE: 1) The applicator will be slower and less accurate for larger label placement values. Keep this value to a minimum by moving the product sensor closer to the peel edge.
  - 2) If the encoder option is on, the label placement value is in inches. If the encoder is off, the label placement value is in seconds.
  - 3) This adjustment can be made while the machine is running.

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# **ENCODER OPTION**

The encoder option is useful when the product velocity varies during the application cycle. An example of such an application is forms on a forms table. With the encoder installed and enabled, the labeler adjusts the label dispense speed to insure accurate label placement on the product.

The applicator has a differential quadrature incremental encoder interface with times four interpolation built into the controller board. The encoder connector located on the rear panel has +5V and ground to power the sensor and the A and B channel interface. The encoder wiring diagram and pin-out information appear in the Drawings section in this manual and should be consulted for user supplied encoders. Factory encoders generate 2500 pulses per revolution.

NOTES: Label placement units with the encoder option on is in inches; not seconds.

The encoder option will not be accurate with the tamp applicator set to normal tamp.

It's important to make sure that the applicator is setup properly so labels are dispensed consistently.

If product speeds are too fast causing the compensated label placement to lag behind the current label placement, a warning will be given to raise the label placement value.

# **ENCODER MOUNTING**

The method of coupling the encoder to the conveying system is an important consideration because errors or stress can be introduced to the system. If the encoder is coupled to a drive shaft, motor, etc., a flexible coupling should be used to compensate for any misalignment between the shaft and the encoder. This compensation is required because the smallest misalignment can result in high radial loads that may induce premature bearing failure. If the encoder is connected to the machine using belts and pulleys, be careful not to over tighten the belts.

An optional mounting kit may be purchased which has a rubber-coated wheel on the encoder shaft. The kit comes with a mounting plate and a spring loaded pivot plate to hold the wheel against the conveyor surface.

NOTE: Since the encoder output signal is rotational sensitive, it may be necessary to reverse the A+ & Awires going to the control board at connector J5.

WARNING: Change wires with the power disconnected from the machine.

## ENCODER SETUP

1. Select "ENCODER SETUP" at the product setup menu.

NOTE: This area is password protected. The default password is 1800. Going back to the home screen will disable the last password entry.

2. Turn the encoder on by pressing "1".

NOTE: If the encoder was already enabled, you would turn off the encoder by pressing "1".

3. Select "PULSE LENGTH" and enter the distance the product travels per pulse of the encoder. The pulse length may be calculated using the following formula:

#### Pulse Length = (Distance Product Moves / Rev) / ((Encoder Pulses / Rev) x 4)

**EXAMPLE:** An encoder is mounted to a conveyor drive pulley and the circumference of that pulley is 18.75". Therefore, with one revolution of the encoder, the product on the conveyor will travel 18.75". The encoder is a factory encoder that generates 2500 pulses per revolution.

Pulse length = 18.75" / (2500 x 4) Pulse length = 18.75" / 10,000 Pulse length = 0.001875"/pulse

Enter the pulse length value and press "ENTER". Allowed values are between .00001 and 1.

A valid pulse length entry will send you back to the encoder menu.

4. Select "Velocity Filter Time" on the display. Enter a filter value between 0.006 and 0.1 and press "ENTER".

The velocity filter value is proportional to the number of past encoder pulse rates used in computing the average encoder velocity. The average encoder velocity is multiplied by the pulse length setting to obtain the product velocity. The applicator's ability to track changes in product velocity is proportional to the velocity filter setting. Larger filter values will slow down the applicator response time but will result in more consistent label placement. Small filter settings may lead to inconsistent label placement. A good overall filter value is 0.03.

Velocity Filter = (0.002)(# of past encoder rates: N)

Avg. Encoder Rate (t) = (ER(t-1) + ER(t-2) + ... + ER(t-N)) / N

Product Velocity = (Avg. Encoder Rate)(Pulse Length)

A valid filter number will take you back to the encoder setup menu.

# **ENCODER SETUP** (cont.)

5. Rate Compensation for Air Blow and ITB Tamp Applicators:

When selecting a value for rate compensation, start at 0.025. Apply labels to the product at a slower speed. Then run the product at production speeds or faster. If the labels are applied in the same place, the compensation is correct. If labels move back the faster you go, **INCREASE RATE COMPENSATION**. If the labels move forward, **DECREASE RATE COMPENSATION**. Whenever the rate compensation value is adjusted, re-run the product at slower and faster speeds to make sure that the labels are applied in the same position.

To change values, select "COMPENSATION" from the encoder setup menu and enter a value between .001 and 1. A valid rate compensation entry will send you back to the encoder setup menu.

#### NOTE: The web speed of the applicator will not follow the speed of the encoder.

6. Rate Compensation for Merge Applicators:

When selecting a value for rate compensation, start at 0.007. Apply labels to the product at a slower speed. Then run the product at production speeds or faster. If the labels are applied in the same place, the compensation is correct. If labels move back the faster you go, **INCREASE RATE COMPENSATION**. If the labels move forward, **DECREASE RATE COMPENSATION**. Whenever the rate compensation value is adjusted, re-run the product at slower and faster speeds to make sure that the labels are applied in the same position.

To change values, pick "COMPENSATION" from the encoder setup menu and enter a value between .001 and 1. A valid rate compensation entry will send you back to the encoder setup menu.

#### NOTE: The web speed of the applicator will follow the speed of the encoder.

7. Press "HOME" to return to the main menu.

NOTE: With the encoder enabled the following apply:

- 1) Label Placement values are inches.
- 2) If the conveyor stops after a product detect signal is received, the applicator will wait for the encoder signal (conveyor) to resume before continuing with the label application cycle. Otherwise, the labeler would continue to cycle and the label placement would not be correct in instances when some operation must be performed on the product at a standstill. The operator may abort the cycle by going offline.
- 3) When the applicator type is set to DAT, encoder rate compensation is not used and the "COMPENSATION" menu is not accessible.

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## CROSSOVER OPTION

The crossover option allows for "zero downtime" operation by interconnecting two applicators with **identical setup configurations**. Both applicators are placed on the conveyor system one upstream of the other. The upstream applicator is the "Primary" labeler while the downstream applicator is the "Secondary" labeler. When the "Primary" applicator encounters a critical alarm condition, the "Secondary" labeler is activated and continues to apply labels to the product. Possible critical alarm conditions include: no labels found, web break, and primary offline.

The crossover sequence operates in the following manner. If there are products between the primary and secondary applicator's product detect sensors, the PRODUCTS BETWEEN PD SENSORS value in the secondary applicator must be configured appropriately. The primary and secondary heads are brought online and the secondary applicator pre-loads the PRODUCTS BETWEEN SNSRS counter with the PRODUCTS BETWEEN PD SENSORS value. The primary head will begin labeling. At the same time, it will send its product detect signal to the secondary labeler. A counter in the secondary labeler will count up for each primary product detect signal while it will count down for each secondary product detect signal. When a critical alarm condition occurs in the primary labeler, it is taken offline and the secondary labeler is activated. At this point the secondary labeler assumes there are the PRODUCTS BETWEEN SNSRS number of labeled products between the two applicators. When the first unlabeled product reaches the secondary applicator, it will start applying labels incrementing the counter for each product passing the primary and decrementing for each product passing the secondary. It will continue in this fashion until the primary applicator's alarm condition is cleared and "ALARM RESET" is pressed. When the primary applicator is brought back online, the secondary will continue to label the products in between the heads but it will become disabled once the first labeled product from the primary labeler reaches the secondary applicator.

The detector lockout option may be used when multiple product detect signals are being generated by either of the primary or secondary applicators. The operator should verify the sensor setups on both applicators to insure the sensitivity is set correctly. Due to the crossover-counting scheme, multiple detector signals are especially problematic for the secondary applicator since it receives detector signals from both applicators. Starting with version 2c.10.4.6, a second <u>crossover</u> detector lockout function is available on the <u>crossover secondary</u> applicator only. The first detector lockout screen applies to the secondary applicator's product detect sensor while the second screen applies to the primary (x-over) applicator's sensor. The second x-over detector lockout value should be set to the time it takes for the product to pass by the primary sensor (time = width of product in sensor path divided by velocity of product). Consult the Product Setup section for additional details on the detector lockout option.

## **CROSSOVER SETUP**

- From the factory default configuration menu accessible at power-up, select 2) SPECIAL OPTIONS and make sure that 5) CRTL TO: ANLG is selected on the primary applicator. Also, if an offline condition in the primary labeler is to trigger an alarm, select 2) OFFLINE CRTL: ON. From the second page of the Special Options menu, select 4) RESET LABEL SENSOR (see: CROSSOVER PRECAUTIONS).
- 2. Configure the label sensor, label length, label stop, label placement, and encoder on both applicators with the crossover option off (see General Setup Procedure). Also, make sure that the crossover cable is connected to both applicators.
- 3. If a web break condition is to trigger a critical alarm, press the "APPLICATOR OPTIONS" key and select 5) WEB BREAK.

- 4. From the "APPLICATOR OPTIONS" menu, select "3) X-OVER".
- 5. Select 1) CROSSOVER: ON to enable the crossover option.
- 6. Select 2) to toggle between "PRIMARY LABELER" and "SECONDARY LABELER". The primary labeler serves as the main or upstream applicator. The secondary labeler is the backup or downstream applicator.
- 7. If the applicator is a "SECONDARY LABELER", select 4) PRODUCTS BETWEEN PD SENSORS and enter the number of products between the primary and secondary applicator's product detect sensors. This is used in continuous film applications where material between the applicators cannot be removed.
- 8. Press "ENTER" to return to the applicator options menu.
- 9. Press "HOME" to return to the main menu and bring both applicators "ONLINE".

# **CROSSOVER MONITORING**

If the applicator is a secondary labeler, the crossover sub-menu will have a MONITOR SECONDARY SETUP selection. This menu is provided to aid the operator in setting up the crossover network and is particularly helpful if the secondary applicator is not labeling or is double labeling products. If this is selected, a screen will show the status of the following items:

- PRODUCTS BETWEEN SNSRS: xx
- PRODUCTS BEFORE LABEL: --/xx
- SECONDARY INHIBIT INPUT: ON/OFF

The products between sensors counter indicates how many products are between the primary and secondary applicators while the products before label value indicates how many of these products are already labeled. The secondary inhibit status indicates whether the secondary labeler is enabled or not. If the inhibit input is ON, the secondary applicator is not labeling. If the inhibit input is OFF, the secondary applicator is labeling.

# **CROSSOVER PRECAUTIONS !**

The crossover option insures that all products on a conveyor system are labeled by providing a redundant system that will be activated if the primary applicator encounters a critical alarm. The following precautions should be observed for reliable operation of the crossover network:

- Both the primary and secondary applicators should be of the same type and have identical setups. The label sensors should be reset to factory default values and configured to detect the same edge on the label.
- Make sure the product detect sensors are properly configured so multiple product detect signals are not sent to the applicators. Multiple product detects will cause the crossover counters to be wrong. When setting-up the system, it is a good idea to monitor the "Products Between Sensors" counter. When there are no products between the product detect sensors, this counter should be

zero. If the number of products displayed by this counter does not match with what the operator physically counts between the sensors, multiple product detects are being generated.

- Make sure that both applicators are brought online before the primary applicator labels the first product. Going online synchronizes the two applicators.
- Do not take products off the conveyor system that are between the heads. This will cause the crossover counters to be wrong.
- When the primary applicator enters into a critical alarm condition, allow the secondary applicator to begin labeling before bringing the primary applicator back online. Failure to observe this precaution will result in double labeled or skipped products. Generally this will not be a problem since it will take some time to correct the problem, press alarm reset, and bring the primary applicator back online.
- If either applicator is powered down, the other applicator will not receive product detect signals. Disconnect the crossover cable between the applicators when performing service on one of the applicators or when crossover is not being used.
- If the applicator is taken offline right after labeling a product with OFFLINE CRITICAL: ON, a label will <u>not</u> be dispensed onto the pad or vacuum grid.
- When an END OF WEB or NO LABELS FOUND alarm occurs, the applicator will complete the labeling cycle and advance a label onto the pad or vacuum grid prior to going to the offline state.

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# LOOSE LOOP SETUP

The loose loop option<sup>1</sup> allows labels to be printed and applied from one system by tying a thermal printer into the web path of the applicator. As the labels exit the printer, they go around a dancer arm to maintain web tension. Three proximity switches monitor the dancer arm position<sup>2</sup>. The loose loop dancer arm assembly should be free to travel from the 'loose' loop prox, past the 'tight' loop prox, up to the 'alarm' loop prox position. In the at rest position, the lower 'loose' prox switch is active and the printer is off. When the dancer arm assembly reaches the 'tight' loop prox, the printer begins printing labels. If the upper 'alarm' prox switch is active, the applicator enters an "ALARM LOOP" condition and a "CHECK PRINTER OR APPLICATOR SPEED" message is displayed. The applicator is taken offline<sup>3</sup> and will not apply labels until the dancer arm returns to the lower 'loose' loop position. When properly set-up under normal operating conditions, the arm will <u>not</u> reach the 'alarm' prox position. If the 'alarm' prox is active, the 360 Applicator is dispensing faster than what the printer can print and dispense. To correct this issue, decrease the product rate or increase the printer speed.

- 1. Select "APPLICATOR OPTIONS" key from the display.
- 2. Select "LS-LOOP" to enable the loose loop option<sup>4</sup>. This option is password protected. The default password is 1800.
- NOTE: 1) The loose loop option is not available with a DAT applicator, when a powered rewind is used, or when the print output is used for alarms.
  - 2) Due to the number of the different applications, the factory should be consulted on the mechanical layout of the loose loop.
  - 3) Starting with software version 2c.10.3, the applicator remains online but is inhibited.
  - 4) The loose loop option will turn off the crossover and imprinter options if they are on.
  - 5) This is a factory-installed option
  - 6) In Zebra printer applications, the printer must be set to rewind mode (print mode: rewind).

#### MISC.

- The printer receives a "Print Start" signal through the 360 I/O interface cable.
- The print engine goes "offline" when a printer "Ribbon Out" or "Media Out" condition occurs.

# **IMPRINTER SETUP**

The imprinter option allows a hot stamp printer to be installed into the web path of the applicator. It is useful in instances where one line printing or date coding is required. The option is enabled and the dwell time or stamp duration is setup in the imprinter submenu.

- 1. Select "APPLICATOR OPTIONS" key from the display.
- 2. Select "2) IMPRINT" to gain access to the imprinter submenu. This option is password protected. The default password is 1800.
- 3. Select "1) IMPRINTER IS ON" from the imprinter submenu.
- 4. Select "2) IMPRINTER DWELL TIME" and enter a time between 0.001 and 1 seconds. A valid entry will return you back to the imprinter submenu.

- 5. Press "ENTER" to return to the main menu.
- 6. The print placement on the label may be adjusted by sliding the registration roller forward or backward in the slot on the mounting bracket (see imprinter web path diagram).
- **NOTE: 1)** The imprinter option is not available with a DAT applicator, when a powered rewind is used, or when the print output is used for alarms.
  - 2) This is a factory-installed option.

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# LABEL OPTIONS

This section will discuss options that control how the applicator dispenses a label or handles a missing label on the liner web. These options appear in the "APPLICATOR OPTIONS" menu and are password protected. **The default password is 1800.** 

- **MULTIPLE LABEL**: The multiple label option allows more than one label to be applied to a product from one product detect signal.
  - **MISSING LABEL**: The missing label option monitors all labels between the peel edge and the label sensor. If a label is missing, the applicator will advance another label to the peel edge to insure that all products are labeled.
  - **SKIP COUNTER**: The skip counter option allows the applicator to label every x<sup>th</sup> product and skip the rest.

# MULTIPLE LABEL SETUP

The applicator has the ability to apply multiple labels per product detect signal. The number of labels per product detect signal and the center-to-center distance between the labels is configured in the multiple label submenu.

- 1. Press the "APPLICATOR OPTIONS" key and select "7) MULTI-LBL" to enter the multiple label submenu.
- 2. Select "1) MULTI-LABEL FUNCTION: ON" to enable the option. Pressing "1" repeatedly will toggle the multi-label function on and off.
- 3. Select "2) NUMBER OF LABELS PER PRODUCT" and enter the number of labels to be applied to each product. A valid entry between 1 and 99 will take you back to the multiple label submenu.
- 4. Select "3) LABEL CNTR-TO-CNTR DISTANCE" and enter the center-to-center distance between the labels. The minimum center-to-center distance is either equal to label length or the time it takes to travel label length at the current web speed depending on whether the encoder is on or off. A valid entry will take you back to the multiple label submenu.
- 5. Press "ENTER" to return to the main menu.
- NOTE: 1) If the encoder is turned on, the units are in inches. Otherwise, they are in seconds.
  - 2) If the label center-to-center distance is too small, a message will appear on the display warning you that the applicator cannot keep up. The applicator will continue labeling but label placement will not be accurate.
  - 3) Label Profiling, Multi-Panel Apply, and Missing Label options are disabled when Multiple Label is on.
  - 4) After software version 360-2c.10.1 the skip counter option and the display jog function will work correctly with the Multiple Label option.

# MISSING LABEL

The applicator has the ability to track missing labels between the peel edge and the label sensor. When a missing label is detected on the label liner, the applicator will feed a new label to the peel edge at slew speed.

- 1. Press the "APPLICATOR OPTIONS" key and select "8) MISS LBL" to enter the missing label submenu.
- 2. Select "1) MISSING LABEL: ON" to enable the option. Pressing "1" repeatedly will toggle the missing label function on and off.
- 3. Select "2) NUMBER OF LABELS TO PEEL EDGE". Enter the number of labels between the peel edge and the label sensor including any labels partially hanging over the peel edge and any under the label sensor. A valid entry between 1 and 30 will take you back to the missing label submenu.
- 4. Press "ENTER" to return to the main menu.
- NOTE: 1) When label length is changed, the Missing Label option is turned off. This insures the operator will change the number of labels to the peel edge if necessary.
  - 2) If the applicator goes offline, either manually or because of a critical fault, with missing labels between the peel edge and the label sensor, a warning will come up on the screen. This message will inform the operator that the applicator will not track the missing labels when it is brought back online.
  - 3) The second label feed occurs as soon as the blank section reaches the peel edge.
  - 4) Multiple Label option is disabled when using Missing Label.

### MISSING LABEL: LABEL STOP CORRECTION DISTANCE

A new feature was added to the Missing Label option that allows the applicator to compensate for stretch in film liner material. When a missing label appears on the liner web, the applicator switches from web speed to slew speed to move a label to the peel edge. The speed change stretches the film liner causing erratic label stop positions. The operator may enter a correction value in the missing label option menu under 3) LABEL STOP CORRECTION. The maximum correction distance is +/- 0.2" but may be less depending on the distance from the label sensor to the label edge/gap boundary. The last line of label stop correction menu shows the allowed range in these instances.

- 1. Adjust the label stop position so that the leading edge of the label is even with the peel edge at the desired WEB SPEED setting.
- 2. Remove a label from the liner web upstream from the label sensor. With the applicator ONLINE and the web and slew speeds configured as necessary, use the key switch jog function to initiate a missing label dispense.
- 3. Observe the label stop position for the label immediately after the missing label. Measure the distance from the peel edge to the leading edge of the label. This is the LABEL STOP CORRECTION distance.

- 4. Press the "APPLICATOR OPTIONS" key and select "8) MISS LBL" to enter the missing label submenu.
- 5. Select 3) LABEL STOP CORRECTION. If the label is flagged out past the peel edge, enter the distance measured in step 2 above. If the label is back or upstream from the peel edge, enter + the distance measured in step 2.
- 6. If necessary, repeat steps 2 through 6 to yield a consistent label stop position for labels prior to and after a missing label dispense (ex: leading edge of label even with peel edge).

# SKIP COUNTER

The applicator has the ability to skip products on the conveyor system. The skip counter submenu displays the CURRENT PRODUCT COUNT: the number of products remaining before a label will be applied, SKIP COUNTER: ON/OFF, and the LABEL EVERY "x" PRODUCTS value: the desired product labeling interval.

- 1. Press the "APPLICATOR OPTIONS" key and select "9) SKIP CNT" to enter the skip counter submenu.
- 2. Select "1) SKIP COUNTER: ON" to enable the option. Pressing "1" repeatedly will toggle the skip counter function on and off.
- 3. Select "2) LABEL EVERY "x" PRODUCTS:" and enter a number between 2 and 10,000. A valid entry will take you back to the skip counter menu. **EXAMPLE:** If you want to label every sixth product, enter "6" above.
- 4. Press "ENTER" to return to the main menu.
- NOTE: The second line of the skip counter menu will display the current product count. When this value reaches zero, a product will be labeled and the current label count is reloaded with the label every "x" products value.

# **CONFIGURATION MENU**

Pressing "9" within the first five seconds of power-up will bring up the factory configuration menu. This screen is hidden from normal use and serves as a place for options that are not normally adjusted. The following two entries appear in this screen:

1) RESET TO FACTORY DEFAULTS 2) SPECIAL OPTIONS

(PRESS "ENTER" FOR MAIN MENU)

## 1) RESET TO FACTORY DEFAULTS

The reset to factory defaults selection is useful when the applicator will not dispense labels due to a configuration problem. Resetting to factory defaults will bring all of the settings to something that works and adjustments can be made from there. Pressing "1" from the configuration menu will bring up a confirmation screen:

ARE YOU SURE YOU WANT TO **RESET TO FACTORY DEFAULTS?** 1) YES 2) NO

Selecting "1" from the confirmation screen will restore all variables to factory settings and reset the label sensor to its factory defaults. Therefore, an auto or manual label setup should be performed before attempting to dispense labels. All label formats will be lost and the applicator will be configured as a right-hand merge. If "2" is selected, the applicator will return to the configuration menu without making any changes.

## 2) SPECIAL OPTIONS

The special option menus contain configuration options that are normally adjusted at the factory by experienced personnel. Therefore, care should be exercised when changing any of these options. Selecting "2" from the factory default menu will bring up the first of two special options menus. NOTE: This section is password protected. The password is 5115. The items shown in **bold** type are factory default settings. Each of these options will be discussed in the following sections.

Special Options Menu (page 1)

1) <b>PRINT</b> /PWR RWND/SWING/CRTCL <b>TO DO10</b>	4) NORMAL/HIGH SPEED
2) OFFLINE CRTL: OFF/ON	5) CRTCL TO: ALRM/ANLG/DO10/DO10&11
3) NO LBLS FOUND CNT	6) NEXT PAGE

Special Options Menu (page 2)

1) ACCEL/DECEL MENU 2) I/O DIAGNOSTICS 3) DEBOUNCE DELAY

4) RESET LABEL SENSOR 5) PASSWORD 6) PREVIOUS PAGE

## 1) PRINT/PWR REWIND/SWING/CRTCL ALRM TO DO10 (pg. 1)

Selecting "1" from the special options menu configures the source that drives digital output 10 (DO10). The display in 1) will toggle between PRINT TO DO10, PWR REWIND TO DO10, and SWING TO DO10 each time "1" is pressed. Although the software drivers are supplied with the applicator, the hardware for a loose loop printer, an imprinter, or a powered rewind is an option that must be purchased separately.

If 1) PRINT TO DO10 is selected (factory default), printer information is directed to DO10. This would include output to a loose loop printer or an imprinter if either of these options are installed and enabled in the "applicator options" menu.

If 1) PWR REWIND TO DO10 is selected, DO10 is used to drive a powered rewind system. A powered rewind is recommended when web speeds are greater than 1500 "/min.

If 1) SWING TO DO10 is displayed, DO10 is used to drive the swing valves on a DAT applicator. This selection must be made before the DAT applicator can be selected in the "applicator type" menu.

1) CRTCL ALRM TO DO10 is automatically displayed when 5) CRITICAL TO: DO10 or 5) CRITICAL TO: DO10&11 is selected in the special options menu. Pressing "1" will not have any effect or change any options. This insures that if critical alarms are being sent to DO10, the user can't inadvertently turn off an alarm by pressing "1".

Note: When the software cycles through the different modes available in 1), any other option that is incompatible with the current setting is disabled. Example: If LOOSE LOOP is enabled and the operator cycles from PRINT TO DO10 through the other options and back to PRINT TO DO10, LOOSE LOOP will be disabled in the Applicator Options menu. Please consult the option incompatibility table in the 'Applicator Options' section of this manual.

## 2) OFFLINE CRTL: ON/OFF (pg. 1)

The OFFLINE CRTL: ON/OFF entry allows the user to configure whether or not an "offline" condition is a critical alarm. When this option is ON and the applicator is taken "offline", a critical alarm will occur. The display will toggle between on and off each time "2" is pressed.

## 3) NO LBLS FOUND CNT (pg. 1)

The NO LBLS FOUND CNT selection allows the user to configure the number of consecutive missing labels that must appear on the liner web before a "NO LABELS FOUND" alarm occurs. In previous software versions, it was fixed at 3. The user may now enter any integer number between 1 and 10.

## 4) NORMAL/HIGH SPEED (pg. 1)

The NORMAL/HIGH SPEED entry allows the user to select between either a "normal speed" or a "high speed" applicator each time "4" is pressed. If NORMAL SPEED is selected (factory default), the applicator will operate at web speeds up to 1500 "/min (25 "/sec). If HIGH SPEED is selected, the applicator will operate at web speeds up to 2100 "/min (35 "/sec). Choose this setting only if web speeds

greater than 1500 "/min will be encountered in your application. The powered rewind option is recommended when operating at these speeds due to web handling issues.

## 5) CRTCL TO: ALRM/ANLG/DO10/DO10&11 (pg. 1)

The CRTCL TO: ALRM/ANLG/DO10/DO10&11 selection allows the user to direct critical alarms to specific applicator outputs. The program cycles through ALRM, ANLG, DO10, and DO10&11 each time "5" is pressed. The following critical alarms are supported: no labels found, web break, alarm loop at printer, and applicator offline. Warning alarms are always directed to the alarm output (DO11). Note: Starting with software version 2c.10.3, alarm loop at printer is no longer a critical alarm (changed to an inhibit).

If CRTCL TO: ALRM is selected (factory default), critical alarms are directed to the alarm output (DO11, C2/6). A light stack is typically connected to this output and would flash at a 1 Hz., 50% duty cycle rate when a critical alarm occurs. The light stack is on steady for a warning alarm. Note: Previously, a hardware module in the light stack controlled the flash rate. It is now implemented in software. If you plan on upgrading to a 360-2c.10.x software version and have a system manufactured before 5/1/03, check with the factory to see if your light stack is compatible.

If CRTCL TO: ANLG is selected, critical alarms are directed to the analog output (AO22). This setting is used when two applicators are interconnected in a crossover configuration **and the applicator is set as the primary labeler** (see the applicator options crossover explanation for more details). Also, the CRTCL TO: ANLG selection may be used to provide a system 'READY' or conveyor shutdown signal in custom applications. The ANLG 'READY' option would require additional wiring and a relay that are not included with a standard applicator. **Note: The analog output does not have all of the protection circuitry that a standard digital I/O circuit would have. This output is not for general-purpose use!** 

If CRTCL TO: DO10 is selected, critical alarms are directed to the print output (DO10, C2/4) and the loose loop printer, imprinter, and powered rewind options are not available. Also, the standard light stack will no longer flash when a critical alarm occurs but it will be on solid when a warning alarm such as low label or alarm loop occurs. The critical to DO10 option is provided to insure backward compatibility with older software versions (360-2b.xx). Note: Some system level wiring changes may be necessary to insure proper operation of critical alarms when CRTCL TO: DO10 is selected. Contact the factory for information about your system if you plan to upgrade to version 2c.10.x and use the CRTCL TO: DO10 option.

If CRTCL TO: DO10&11 is selected, critical alarms are directed to the print output (DO10, C2/4) and the alarm output (DO11, C2/6). The loose loop printer, imprinter, and powered rewind options are not available. A light stack connected to DO11 will be on solid when a warning alarm occurs and flash at a 1 Hz., 50% duty cycle rate when a critical alarm occurs. The DO10 output may be used to provide a system 'READY' or conveyor shutdown signal. The system 'READY' signal may require additional components depending on your application. Note: This option will be available starting with version 2c.10.4.

\* The table shown on the following page summarizes the various alarm options and provides additional information concerning: multi-output modes, signal levels, alarm reset, and intended usage.

### 6) NEXT PAGE (pg. 1)

If next page is selected, the second page of the configuration menu will appear.

## <u>Alarm Summary</u>

	Output			Intended
Special Options 5) CRTCL TO:	Print DO10 "ready & 2 light"	Alarm DO11 "1 & 2 light"	Analog AO "xover & ready"	Use
ALRM reset	* *	Steady> warning Flash> critical ALARM RESET	*	1 light alarm
ANLG reset	* *	Steady> warning Flash> critical ALARM RESET	0V> not critical 10V> critical ONLINE	1 light alarm with xover and/or ready w/added relay (custom application)
DO10 reset	Steady> critical ALARM RESET	Steady> warning ALARM RESET	*	2 light alarm or system PLC monitor
DO10&11 reset	Steady> critical ONLINE	Steady> warning Flash> critical ALARM RESET	*	1 light alarm with ready

	*	no change	
Legend	steady	OV	
key	flash (w/light stack)	0 - 24V, 1Hz., 50% dc	
	off	open circuit or 24V	

The 'READY' signal may require the use of the OFFLINE CRITICAL: ON function for proper operation.

# 1) ACCEL / DECEL (pg. 2)

Selecting ACCEL/DECEL will bring up a series of submenus that change the drive motor acceleration, deceleration, and current limit values. On a blow box applicator, a "pre-dispense" menu appears that allows the applicator to start dispensing a label before the air blast time expires which increases the label rate. The larger the acceleration and deceleration values the faster the applicator will start and stop. This will increase label rates but web handling may become erratic. The maximum acceleration and deceleration rates that can be achieved depend on the available motor torque. The inertia of the label roll and the system components, friction, and dancer arm spring tension are all factors in determining how much torque is required to operate at a given acceleration/deceleration rate and web speed setting.

Higher torque requirements increase the motor current and temperature. Both of these parameters are monitored by the applicator to insure reliable performance. The "NORMAL" motor current limit value is set to 80% of the maximum motor current rating at the factory. The "HIGH" setting increases the current limit to 100% and should be used only if the motor needs more power. Check for mechanical problems

before switching to the high setting. If you are going to alter any of these settings, verify system performance and accuracy with a new roll of labels while operating at the highest anticipated web speed. **WARNING: The factory default values should work in most cases and should <u>not</u> be changed. Please consult factory before making changes.** 

## 2) I/O DIAGNOSTICS (pg. 2)

The I/O DIAGNOSTICS menu provides a means to check devices connected to the applicator. From here, the operator can manually turn on valve outputs; monitor inputs such as: product detect, web break, and low label; and verify the operation of the analog input and output.

## 3) DEBOUNCE DELAY (pg. 2)

The DEBOUNCE DELAY value helps eliminate false product detect signals that are electrical in nature. This feature is provided to eliminate the possibility that the applicator will 'start-up' on it own in the presence of high levels of EMI/RFI interference. When the product detect signal becomes active, the applicator waits the "debounce delay" time and checks to see if the product detect signal is still active. If it is, the applicator will start the drive motor and dispense a label. If the product detect signal is not active, the applicator assumes that the original signal was a 'glitch' and will abort the label application cycle. The default debounce setting is 0.001 seconds but the operator may enter any value between 0. and 0.05 sec.

## 4) RESET LABEL SENSOR (pg. 2)

If RESET LABEL SENSOR is selected, the label sensor will be reset to its factory default values. If "4" is pressed, the display will show a series of stars as the sensor reconfigures its settings. There is no warning or confirmation screen and the previous settings are permanently deleted so make sure this is what you want before proceeding. When the process is complete, the applicator will return to the configuration menu. Note: The RESET LABEL SENSOR function should be used before enabling the X-OVER option and when the sensor is behaving erratically. Before attempting to dispense labels, the operator should perform either a manual or auto setup procedure to select the edge detection mode and set the label sensitivity.

## 5) PASSWORD (pg. 2)

The PASSWORD option allows the user to select whether or not the Label Format menu is password protected, change the main password to any other 4 digit numerical value, or restore the main password to "1800".

\* 1) LABEL FORMAT PROTECT
2) CHANGE MAIN PASSWORD
3) RESTORE MAIN PASSWORD

An asterisk beside LABEL FORMAT PROTECT indicates that the Label Format menu is password protected. The CHANGE MAIN PASSWORD selection requires the user to enter the old password, the new password, and a new password confirmation before the existing password is changed. The RESTORE MAIN PASSWORD selection will restore the main password to the default "1800" value. Note: The modification described above does not apply to the special options menu password.

# 6) PREVIOUS PAGE (pg. 2)

If previous page is selected, the first page of the configuration menu will appear.

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GENENRAL MAINTENANCE

# **360 SERIES**

# GENERAL

# MAINTENANCE

# PROCEDURES
### **!!CAUTION!!** DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE DOING THE FOLLOWING PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN INJURIES FROM MOVING PARTS OR ELECTRICAL SHOCK.

### **MAINTENANCE**

# NOTE: Since all three types of applicator are covered in this section, some items discussed will not pertain to your application.

### **DAILY MAINTENANCE**

- 1. Examine the peel edge, vacuum grid, label pad and rollers for excessive adhesive build-up. If necessary, clean these surfaces with alcohol or similar solvent.
- 2. Examine air filter for water or oil collection. Drain if necessary.
- 3. Examine for loose screws, rollers, etc.

### WEEKLY MAINTENANCE

- 1. Clean rollers, vacuum grid, label pad, and peel edge of adhesive build-up and dust.
- 2. Examine air lines and connections to make sure there are no leaks.
- 3. Examine for loose screws, rollers, etc.
- 4. Examine teflon tape on peel edges. Replace if needed.

### **MONTHLY MAINTENANCE**

- 1. Examine dancer arm tension and unwind brake O-ring.
- 2. Examine drive and rewind belts for wear and to make sure they are properly adjusted.
- 3. Examine rollers for free rotation and play.
- 4. Examine rewind slip clutch disk for wear.
- 5. Replace air inlet filter.
- 6. Examine teflon tape on peel edges. Replace if needed.

### SEMI-ANNUAL MAINTENANCE

- 1. Replace air filter and clean collection bowl.
- 2. Clean inside and outside of machine using an industrial vacuum cleaner.

#### NOTE: Do not use compressed air to blow dust off of the electrical section of the applicator.

- 3. Replace slip clutch disk. Clean both friction surfaces.
- 4. Check roller clutch on the rewind shaft for correct operation.
- 5. Examine pulleys for wear.
- 6. Perform the monthly maintenance section.

### DANCER ARM ADJUSTMENT

The dancer arm maintains tension on the label liner and operates the brake on the unwind mandrel when labels are dispensed. The spring holding the dancer arm should be adjusted so that there is enough braking force to keep the unwind mandrel from continuing to roll after a label feed yet still release the applicator when it is cycled.

- 1. Loosen the screw going to the spring tension disk.
- 2. Rotate disk to proper spring tension.
- 3. Re-tighten screw.

### **!!CAUTION!!** PERFORM THE FOLLOWING PROCEDURES WITH THE MACHINE OFFLINE TO AVOID INJURIES FROM UNWANTED MOVEMENT OF THE APPLICATOR.



### **!!WARNING!!** DISCONNECT THE POWER AND AIR TO THE MACHINE BEFORE DOING THE FOLLOWING PROCEDURES. INJURIES COULD OCCUR FROM MOVING PARTS OR ELECTRICAL SHOCK.

### REWIND SLIP CLUTCH ADJUSTMENT

# More or less tension may be needed on the rewind if the liner is being wound too loose or tight. Different conditions will warrant this adjustment:

- 1. Change in label width or length.
- 2. Applicator attitude.
- 3. Web speed changes.
- 4. Motor acceleration or deceleration value changes.

#### Use the following procedure to adjust the rewind tension or replace the slip clutch disk:

- 1. Remove all AC power and air to the machine.
- 2. Remove lower stainless cover.
- 3. Use 3/16" Allen wrench to remove the screw at the end of the drive roller shaft.
- 4. Remove the washers, spring keeper, and spring from the drive roller shaft.
- 5. If you're replacing the slip clutch disk, remove the thrust bearing and walk the rewind belt off of the slip clutch pulley. Slide the pulley for the rewind off the drive roller shaft. Clean friction surfaces, replace clutch part, and replace assembly.
- 6. If **more** rewind tension is needed, **remove** one shim washer from the inboard side of the spring keeper and re-install on the outboard side of the keeper. If **less** tension is needed, **remove** one shim washer from the outboard side of the spring keeper and re-install on the inboard side of the spring keeper.
- 7. Replace and tighten the screw on the end of the drive roller .
- 8. Replace the lower stainless cover and tighten the mounting screws.
- 9. Re-connect AC power and air to machine.
- 10. Test machine and observe the rewind from beginning to end of a roll of labels.
- 11. Re-adjust if necessary.

### **!!WARNING!!** DISCONNECT THE POWER AND AIR TO THE MACHINE BEFORE DOING THE FOLLOWING PROCEDURES. INJURIES COULD OCCUR FROM MOVING PARTS OR ELECTRICAL SHOCK.

### DRIVE BELT ADJUSTMENT

- 1. Remove all AC power and air to the machine.
- 2. Remove the lower stainless cover. Rotate the 360 so the drive roll assembly is facing the floor. This orientation will aid you when it comes time to set angular alignment.
- 3. Remove the air lines interconnecting the two sides of the applicator to gain access to the drive belt.
- 4. Remove both splice plates that are mounted on either side of the motor. Use a 5/32" Allen wrench to remove the 12 screws holding the splice plates. There are enough remaining screws to keep rewind and applicator plates in place. Discard broken/worn belt. Check pulley integrity and alignment flanged motor pulley hub should extend beyond the motor shaft approx. 1/16". The 3" main drive pulley dimensioning, 45/64" from the backside of the 360 faceplate to the inside edge of the pulley. Place replacement belt onto flanged motor pulley. Cautiously / slowly walk the belt over the main drive pulley to keep from crimping / nicking belt edge.
- 5. Loosen the four (4) screws on the side of the motor mounting plate using a 5/32" Allen wrench.
- 6. Push the motor mount assembly upward and re-tighten mounting screws. Make sure the motor assembly is 90 degrees from the faceplate to insure proper angular alignment \*see note
- 7. Disengage nip roller and turn the drive roller. Make sure there is no severe catching as you turn the roller.
- 8. Check belt tension. With light finger pressure on one side of the belt, adjust the tension so that the belt deflects approximately 1/16" to 1/8".

# NOTE: Do not over tighten the belts. This may result in shortened motor life. If belts are too loose, label stop may become erratic.

- 9. Replace the two splice plates.
- 10. Replace the air lines interconnecting the two sides of the applicator.
- 11. Replace the stainless cover and tighten the mounting screws.
- 12. Re-connect the AC power and air.

\*Note: One method to verify angular alignment is to use ½" wide X .025" thick banding material/strapping. Cut 2 pcs. approximately 8" long. Place each pc. between the faceplate and the motor mount side frames. Place your hand on the end of the motor and firmly push the motor toward the faceplate – making sure motor mount side frames are running parallel to the faceplate. Verify belt tension is correct – see step #8 above. Snug the 4 screws, remove banding strips and tighten the 4 screws. (This page is intentionally blank.)

PROBLEM	POSSIBLE CAUSE	SOLUTION
WITH THE POWER SWITCH ON, NO COOLING FAN; NO DISPLAY	POWER CORD DEFECTIVE OR UNPLUGGED	INSPECT AND CORRECT
	AC FUSE BLOWN	DETERMINE CAUSE AND REPLACE FUSE
WITH THE POWER SWITCH ON, COOLING FAN ON; NO DISPLAY	DISPLAY CABLE NOT PLUGGED IN TO THE BACK OF THE APPLICATOR	RECONNECT CABLE
	DISPLAY PORT SETTINGS INCORRECT	LOCATE SW1 NEAR THE AIR FILTER MAKE SURE SWITCHES 1 & 6 ARE UP
	LOSS OF 12 VDC	CALL A FACTORY REPRESENTATIVE
	DEFECTIVE CABLE	REPLACE CABLE
	DEFECTIVE DISPLAY BOARD	REPLACE DISPLAY BOARD
LABEL LINER BREAKING	LABELS ARE THREADED INCORRECTLY	SEE THREADING DIAGRAM
	BAD ROLL OF LABELS	REPLACE LABEL ROLL
	SIDE NICKS IN LINER; HEAVY DIE CUT ON LINER	REPLACE LABEL ROLL
	ROLLER COLLARS ARE STRESSING THE LABEL STOCK	CHECK TO MAKE SURE GUIDE COLLARS LINE UP WITH UNWIND
		SHOULD HAVE 1/64" CLEARANCE BETWEEN LABEL STOCK AND COLLAR
	ADHESIVE BUILD-UP ON PEEL EDGE	CLEAN PEEL EDGE SURFACE
	PEEL BAR TENSION SPRING TOO TIGHT	RELEASE SPRING TENSION

PROBLEM	POSSIBLE CAUSE	SOLUTION
LABEL DOES NOT ADVANCE AND DISPLAY IS WORKING	NIP ROLLER NOT ENGAGED AGAINST DRIVE ROLLER	INSPECT AND CORRECT
	DRIVE BELT IS BROKEN	REPLACE BELT
	LOST KEY IN DRIVE PULLEY	FOLLOW PROCEDURE FOR SLIP CLUTCH ADJUSTMENT. WHEN YOU GET TO STEP #6 AND HAVE REMOVED THE PULLEY GOING TO THE REWIND, GO AHEAD AND REMOVE THE DRIVE PULLEY. REPLACE KEY AND PUT BACK TOGETHER
LABEL DOES ADVANCE BUT DOES NOT STOP IN THE SAME PLACE EVERY TIME OR DOES NOT STOP IN THE RIGHT PLACE	LABEL SENSOR NEEDS SET UP	REFER TO LABEL SENSOR SETUP IN THE GENERAL SETUP PROCEDURES SECTION
	LABEL SENSOR NOT LOOKING AT A LABEL	MOVE LABEL SENSOR OVER THE LABEL PATH
	LABEL SENSOR OR FIBER CABLE IS DAMAGED	REPLACE LABEL SENSOR
	NIP ROLLER NOT ENGAGED AGAINST DRIVE ROLLER	INSPECT AND CORRECT
	LABEL LENGTH SET WRONG	REFER TO LABEL LENGTH SETUP IN THE GENERAL SETUP PROCEDURES SECTION
	LABEL STOP SET WRONG	REFER TO LABEL STOP SETUP IN THE GENERAL SETUP PROCEDURES SECTION

PROBLEM	POSSIBLE CAUSE	SOLUTION
LABEL LINER NOT WINDING UP	REWIND SLIP CLUTCH NEEDS TENSIONING OR REPLACED	SEE SLIP CLUTCH ADJUSTMENT IN THE MAINTENANCE SECTION
	ONE-WAY CLUTCH BEARING NOT WORKING	REPLACE REWIND SHAFT ASSEMBLY
	BROKEN BELT	REPLACE BELT
LABELS ARE NOT HELD ON LABEL GRID OR LABEL PAD	<u>AIR BLOW</u> VACUUM FAN NOT WORKING	CHECK FOR BLOWN FUSE
		OBSTRUCTION IN FAN
		REPLACE FANS
	TAMP NOT ENOUGH VACUUM ON PAD	INSPECT FOR CLOGGED OR DEFECTIVE VENTURI
		VENTURI EXHAUST IS BLOCKED
		NEEDS MORE AIR PRESSURE
	BOTH AIR BLOW & TAMP PEEL EDGE OUT OF ADJUSTMENT	REFER TO PEEL EDGE ALIGNMENT IN THE LABELER SET UP SECTION

PROBLEM	POSSIBLE CAUSE	SOLUTION
LABEL PLACEMENT ON GRID OR LABEL PAD NOT CONSISTENT	<u>AIR BLOW</u> IMPROPER VACUUM	YOU MAY HAVE TO MASK OFF THE HOLES NOT USED BY THE LABEL ON THE INSIDE OF THE VACUUM BOX
		YOU CAN ADD MORE VACUUM BY TURNING THE VAC SWITCH TO HIGH
	<u>TAMP</u> IMPROPER VACUUM	ADJUST AIR PRESSURE
	<u>BOTH</u> ADHESIVE STRINGS ON LABEL AND LINER	REPLACE LABEL ROLL
	<u>BOTH</u> PEEL EDGE OUT OF ADJUSTMENT	REFER TO PEEL EDGE ALIGNMENT IN THE LABELER SET UP SECTION
	BOTH INCORRECT EXTENDED AIR ASSIST TIME	EXAMINE AND CORRECT
	<u>BOTH</u> AIR ASSIST TUBE NOT ALIGNED PROPERLY	REFER TO AIR ASSIST SET UP IN THE LABELER SET UP SECTION
LABEL FAILS TO LEAVE THE LABEL GRID OR LABEL PAD	<u>AIR BLOW</u> TOO MUCH VACUUM	SWITCH TO LOW ON VAC SWITCH
		REMOVE MASKING
	BOTH NO AIR BLAST	AIR BLAST TIME TOO SMALL
		IF BAD VALVE; REPLACE
	<u>AIR BLOW</u> INCORRECT AIR JET PATTERN	INSPECT AND CORRECT

#### FAULT CODE REGISTER

Following a fault condition, the controller runs a section of code to determine the cause of the fault. The display will show a fault type message, its corresponding fault code value, and the fault code register value. If a fault occurs, record these three values and contact the factory for assistance. The display will only show the first error condition encountered but the fault code register value encodes the status of all fault conditions. The controller will also check the SRAM memory for corrupt variables and allow the operator to restore factory default settings if a problem is detected. The controller memory is verified at power-up and during fault conditions. The controller continuously monitors the following conditions:

Fault Code	Fault Type
0	POWER FAILURE
1	RESERVED
2	SOFTWARE FAULT
3	LOST ENABLE
4	DIGITAL OUTPUT FAULT
5	INVALID COMMAND IN STRING
6	TRANSMIT BUFFER OVERFLOW
7	RESOURCE NOT AVAILABLE
8	INVALID VARIABLE POINTER
9	MATHEMATICAL OVERFLOW
10	MATHEMATICAL DATA ERROR
11	VALUE OUT OF RANGE
12	STRING TOO LONG
13	NONEXISTANT LABEL
14	GOSUB STACK UNDERFLOW
15	GOSUB STACK OVERFLOW
16	INVALID MOTION
17	RESERVED
18	RESERVED
19	NETWORK POWER FAILURE
20	DUPLICATE NETWORK ADDRESS
21	EXCESSIVE FOLLOWING ERROR
22	EXCESSIVE COMMAND INCREMENT
23	POSITION REGISTER OVERFLOW
24	RESERVED
25	MOTOR POWER OVERVOLTAGE
26	MOTOR POWER CLAMP DC/UV
27	MOTOR POWER CLAMP OC/DC
28	MOTOR OVER-CURRENT FAULT
29	RESERVED
30	CONTROLLER OVER TEMPERATURE
31	NETWORK COMMUNICATION ERROR

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### When Ordering parts, present Serial Number of 360

### 360 Series Core Unit Spare Parts List

RECOMMENDED TOOL				
Part Number	Recommended Qty	Description		
PE-TE6000	1	ENTRELEC WIRING TOOL		
WEAR ITEMS				
Part Number	Recommended Qty	Description		
MP-200-0235	1	NIP ROLLER LIFT CAM		
PM-BELT1018	1	140XLO37 NIP TO MOTOR BELT		
RECOMMENDED SPARE PARTS				
Part Number	Recommended Qty	Description		
ASS-200-0410	1	24VDC POWER SUPPLY		
MP-200-0242 or	1	5" DRIVE ROLL w/ COATING		
MP-200-2242 or	1	7.5" DRIVE ROLL w/ COATING		
MP-200-5242	1	10" DRIVE ROLL w/ COATING		
PE-FU2070	1	5 amp FUSE		
PE-SE3080	1	FIBER OPTIC LABEL SENSOR		
EXTENDED SPARE PARTS	EXTENDED SPARE PARTS			
Part Number	Recommended Qty	Description		
ASS-200-0427	1	PRODUCT DETECT SENSOR ** job specific**		
PE-RT1000-6	1	REFLECTIVE TAPE (1" WIDE x 6" LONG) **job specific**		
PE-CO1020	1	214-3508 16/3 X 10' POWER CORD (BELDEN)		
MP-DR1010	1	IMC-78005773 MOTOR CONTROLLER		
PE-IN1040	1	OIP-73005774 DISPLAY DRIVER		
PE-IN1041	1	OIP-51505775 DISPLAY MEMBRANE OVERLAY		
ASS-200-1034	1	N32HRFL-LNK-NS-00 STEPPER MOTOR		
PM-BE1230	1	EW-5/8 LIFT THRUST WASHER		
PM-BE1232	1	EW-3/4 REWIND CLUTCH THRUST WASHER		
ASS-200-0128R or	1	REWIND BEARING BLOCK ASSEMBLY W/ SHAFT		
ASS-200-0128L	1	REWIND BEARING BLOCK ASSEMBLY W/ SHAFT		
SAS-200-0129O	1	OUTSIDE DRIVE ROLL SUPPORT ASSEMBLY		
SAS-200-0129I	1	INSIDE DRIVE ROLL SUPPORT ASSEMBLY		
ASS-200-0130 or	1	5" NIP ROLLER ASSEMBLY WITH SHAFT		
ASS-200-2130 or	1	7.5" NIP ROLLER ASSEMBLY WITH SHAFT		
ASS-200-5130	1	10" NIP ROLLER ASSEMBLY WITH SHAFT		
SAS-200-0135 or	1	5" TENSION ROLLER ASSEMBLY w/o SHAFT		
SAS-200-2135 or	1	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT		
SAS-200-5135	1	10" TENSION ROLLER ASSEMBLY w/o SHAFT		

### When Ordering parts, present Serial Number of 360

### NON-POWERED UNWIND ASSEMBLY SPARE PARTS LIST

WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-OR1007	1	O-RING
RECOMMENDED SPARE PARTS (12	" NON-POWERED UNWIND)	
Part Number	Recommended Qty	Description
SAS-200-0131 or	1	5" DANCER ROLLER ASSEMBLY w/o SHAFT
SAS-200-2131 <b>or</b>	1	7.5" DANCER ROLLER ASSEMBLY w/o SHAFT
SAS-200-5131	1	10" DANCER ROLLER ASSEMBLY w/o SHAFT
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30437	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY
RECOMMENDED SPARE PARTS (16	" & 20" NON-POWERED UNWI	ND)
Part Number	Recommended Qty	Description
SAS-200-0135 or	2	5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-2135 or	2	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-5135	2	10" TENSION ROLLER ASSEMBLY w/o SHAFT
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30480	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY

STANDARD REWIND ASSEMBLY SPARE PARTS LIST			
WEAR ITEMS (STANDARD REWIND)			
Part Number	Recommended Qty	Description	
PM-BELT1023	1	180XLO37 NIP TO REWIND BELT	
PM-CL1010	1	3" LEATHER CLUTCH PAD	
ASS-200-0143	1	SLIP CLUTCH ASSEMBLY	

When Ordering parts, present Serial Number of 360

### NON-POWERED UNWIND with POWERED REWIND SPARE PARTS LIST

WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-OR1040	1	CLEAR O-RING
RECOMMENDED SPARE PARTS (16" &	20" UNWIND with POWERED	REWIND)
Part Number	Recommended Qty	Description
ASS-200-0460	1	PROXIMITY SWITCH
PE-FU2065	1	3 AMP FUSE
PE-MC1109	1	MOTOR DRIVER CONTROLLER
PE-MO1008	1	LEESON GEAR MOTOR
PE-PO1030	1	5K SPEED POTENTIONMETER
PE-RE1001	1	24VDC RELAY IDEC
PE-RE1012	1	CROUZET RELAY
PE-SI1050	1	ISOLATER BOARD
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING
PM-BE1266	2	DANCER ARM THRUST BEARING
PM-FASP30480	1	TENSION SPRING
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY

### **360 APPLICATOR SPARE PARTS LIST** When Ordering parts, present Serial Number of 360

### MERGE SPARE PARTS LIST

WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1000 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE ( 5 7/16" Wide x 7" Lg.)
PM-T1015	1	UHMW TAPE FOR 7.5" & 10" PEEL EDGE (8" Wide x 4" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X <b>or</b>	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)

### When Ordering parts, present Serial Number of 360

#### AIR BLOW SPARE PARTS LIST

WEAR ITEM			
Part Number	Recommended Qty	Description	
PM-T1010 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)	
PM-T1015	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)	
ASS-211-0113 or	1	AIR TUBE ASSEMBLY	
ASS-211-0113E	1	AIR TUBE ASSEMBLY FOR EXTENDED BLOW BOX	
ASS-215-0110X-X <b>or</b>	1	5" WIPER ASSEMBLY (specify length & material)	
ASS-215-2110X-X <b>or</b>	1	7.5" WIPER ASSEMBLY (specify length & material)	
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)	
RECOMMENDED SPARE PARTS			
Part Number	Recommended Qty	Description	
MP-211-0217-7	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**	
ASS-211-0103 <b>or</b>	1	AIR TUBE MANIFOLD ASSEMBLY	
ASS-211-0103E	1	AIR TUBE MANIFOLD ASSEMBLY FOR EXT. BLOW BOX	
EXTENDED SPARE PARTS			
Part Number	Recommended Qty	Description	
PM-FIL1010	1	WATTS FILTER	
PM-VA2395M	1	5.4 WATT DC SOLENOID	
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR	
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR	
ASS-211-0106M	1	AIR BLOW 2-STATION VALVE BANK ASSEMBLY	
ASS-211-0109	1	AIR FILTER REGULATOR ASSEMBLY	

### When Ordering parts, present Serial Number of 360

### **RVB SPARE PARTS LIST**

WEAR ITEM			
Part Number	Recommended Qty	Description	
PM-T1010 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)	
PM-T1015	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)	
ASS-215-0110X-X <b>or</b>	1	5" WIPER ASSEMBLY (specify length & material)	
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)	
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)	
RECOMMENDED SPARE PARTS	RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description	
MP-211-X217-X	1	AIR ASSIST TUBE **JOB SPECIFIC** (SEE DWG)	
EXTENDED SPARE PARTS	EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description	
PM-FIL1010	1	WATTS FILTER	
PM-VA2395M	1	5.4 WATT DC SOLENOID	
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR	
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR	
ASS-211-0112M	1	RVB 2-STATION VALVE BANK ASSEMBLY	

#### **FFS SPARE PARTS LIST**

WEAR ITEM						
Part Number	Recommended Qty	Description				
PM-T1010	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)				
ASS-215-0110X-X <b>or</b>	1	5" WIPER ASSEMBLY (specify length & material)				
ASS-215-2110X-X <b>or</b>	1	7.5" WIPER ASSEMBLY (specify length & material)				
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)				
RECOMMENDED SPARE PARTS						
Part Number	Recommended Qty	Description				
MP-211-X217-X	1	AIR ASSIST TUBE ** JOB SPECIFIC** (SEE DWG)				
EXTENDED SPARE PARTS						
Part Number	Recommended Qty	Description				
PM-FIL1010	1	WATTS FILTER				
PM-VA2395M	1	5.4 WATT DC SOLENOID				
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR				
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR				
ASS-211-0117M	1	FFS STYLE 2-STATION VALVE BANK ASSEMBLY				

### When Ordering parts, present Serial Number of 360

#### TAMP SPARE PARTS LIST

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WEAR ITEM		
Part Number	Recommended Qty	Description
PM-T1010 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015 <b>or</b>	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
PM-T1010	1	UHMW TAPE FOR 10" PEEL EDGE (6" Wide x 11" Lg.)
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)
ASS-215-2110X-X <b>or</b>	1	7.5" WIPER ASSEMBLY (specify length & material)
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-X217 <u>-X</u>	1	AIR ASSIST TUBE **JOB SPECIFIC** (SEE DWG)
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR
ASS-214-0105M	1	TAMP 3-STATION VALVE BANK ASSEMBLY
SLIDE ASSEMBLIES		
Part Number	Recommended Qty	Description
ASS-214-0108-1 or	1	1" SLIDE ASSEMBLY
ASS-214-0108-2 <b>or</b>	1	2" SLIDE ASSEMBLY
ASS-214-0108-3 or	1	3" SLIDE ASSEMBLY
ASS-214-0108-4 <b>or</b>	1	4" SLIDE ASSEMBLY
ASS-214-0108-6 <b>or</b>	1	6" SLIDE ASSEMBLY
ASS-214-0108-8 <b>or</b>	1	8" SLIDE ASSEMBLY
ASS-214-0108-10 <b>or</b>	1	10" SLIDE ASSEMBLY
ASS-214-0108-12	1	12" SLIDE ASSEMBLY

### **360 APPLICATOR SPARE PARTS LIST** When Ordering parts, present Serial Number of 360

#### SWING TAMP SPARE PARTS LIST

WEAR ITEM							
Part Number	Recommended Qty	Description					
PM-T1010 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)					
PM-T1015 <b>or</b>	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)					
ASS-215-0110X-X <b>or</b>	1	5" WIPER ASSEMBLY (specify length & material)					
ASS-215-2110X-X <b>or</b>	1	7.5" WIPER ASSEMBLY (specify length & material)					
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)					
RECOMMENDED SPARE PARTS							
Part Number	Recommended Qty	Description					
MP-211-X217-X	1	AIR ASSIST TUBE ** JOB SPECIFIC** (SEE DWG)					
EXTENDED SPARE PARTS							
Part Number	Recommended Qty	Description					
PM-FIL1010	1	WATTS FILTER					
PM-VA2395M	1	5.4 WATT DC SOLENOID					
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR					
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR					
ASS-214-0105M	1	TAMP 3-STATION VALVE BANK ASSEMBLY					
PM-SA0990	1	SHOCK ABSORBER (HOME)					
PM-SA1000	1	SHOCK ABSORBER (EXTEND)					
ROTARY ACTUATOR							
Part Number	Recommended Qty	Description					
PM-AC1250	1	STANDARD DUTY ROTARY ACTUATOR **NOTE** CONTACT SALES DEPARTMENT FOR HEAVY DUTY ROTARY ACTUATOR					

### 360 APPLICATOR SPARE PARTS LIST When ordering parts, present Serial Number of 360

### DUAL ACTION TAMP SPARE PARTS LIST

WEAR ITEM							
Part Number	Recommended Qty	Description					
PM-T1010 <b>or</b>	1	UHMW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)					
PM-T1015 <b>or</b>	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)					
PM-T1010	1	UHMW TAPE FOR 10" PEEL EDGE (6" Wide x 11" Lg.)					
ASS-215-0110X-X or	1	5" WIPER ASSEMBLY (specify length & material)					
ASS-215-2110X-X or	1	7.5" WIPER ASSEMBLY (specify length & material)					
ASS-215-5110X-X	1	10" WIPER ASSEMBLY (specify length & material)					
RECOMMENDED SPARE PARTS							
Part Number	Recommended Qty	Description					
PM-SA0950	2	SHOCK ABSORBER					
PM-SA0990	1	SHOCK ABSORBER (HOME)					
PM-SA1000	1	SHOCK ABSORBER (EXTEND)					
PM-BELT1039	1	TIMING BELT (NOT REQ'D FOR INLINE DAT)					
SLIDE ASSEMBLIES							
Part Number	Recommended Qty	Description					
PM-AC1237 <b>or</b>	1	3" SLIDE ASSEMBLY					
PM-AC1239 <b>or</b>	1	6" SLIDE ASSEMBLY					
PM-AC1241	1	8" SLIDE ASSEMBLY					
ROTARY ACTUATOR							
Part Number	Recommended Qty	Description					
PM-AC1248	1	STANDARD DUTY ROTARY ACTUATOR **NOTE** CONTACT SALES DEPARTMENT FOR HEAVY DUTY ROTARY ACTUATOR					

## 360 APPLICATOR SPARE PARTS LIST When ordering parts, present Serial Number of 360

360 OPTIONS SPARE PARTS LIST					
OPTIONS: RECOMMENDED SPARE PA	RTS (LOW LABEL, WEB BRE	AK ALARMS)			
Part Number	Recommended Qty	Description			
PE-LI1085	1	RED LED ALARM LIGHT			
ASS-200-0422	1	LOW LABEL SENSOR (w/o BRACKET)			
ASS-200-0423	1	END OF WEB SENSOR (w/o BRACKET)			
OPTIONS: RECOMMENDED SPARE PA	RTS (TAMP HOME SENSOR)				
Part Number	Recommended Qty	Description			
ASS-200-0478	1	TAMP HOME SENSOR (w/o BRACKET)			
** CYLINDER MUST BE DESIGNATED V	VITH AN "E"**				
OPTIONS: RECOMMENDED SPARE PA	RTS (SMART TAMP - PHOTO	EYE)			
Part Number	Recommended Qty	Description			
PE-SE0985	1	SM312W-QD SENSOR **JOB SPECIFIC**			
OPTIONS: RECOMMENDED SPARE PA	RTS (SMART TAMP - MECHA	NICAL)			
Part Number	Recommended Qty	Description			
PE-SW1110 <b>or</b>	1	OMRON LIMIT SWITCH (ARM STYLE)			
PE-SW1105 <b>or</b>	1	OMRON LIMIT SWITCH (BUTTON ROLLER STYLE)			
PE-SW1100	1	OMRON LIMIT SWITCH (BUTTON STYLE)			
OPTIONS: RECOMMENDED SPARE PA	RTS (VACUUM OFF OPTION)				
Part Number	Recommended Qty	Description			
ASS-200-0459	1	VACUUM SWITCH CABLE ASSEMBLY			
OPTIONS: RECOMMENDED SPARE PA	RTS (LINE RATE COMP)				
Part Number	Recommended Qty	Description			
PE-MW1000	1	ENCODER WHEEL			
PE-GE2105	1	90 Deg. PULSE ENCODER			
OPTIONS: RECOMMENDED SPARE PA	RTS (LINE RATE COMP (CON	VEYOR MOUNTED))			
Part Number	Recommended Qty	Description			
PE-GE2105	1	90 Deg. PULSE ENCODER			
OPTIONS: RECOMMENDED SPARE PA	RTS (QUICK DISCONNECT P	AD & MANIFOLD)			
Part Number	Recommended Qty	Description			
PM-FASSBP11000	4	BALL PLUNGERS			
MP-238-0270	1	QUICK CHANGE SLIDE TRANSITION PLATE			

### When Ordering parts, present Serial Number of 360

#### 360 or 360a SERIES INTEGRATED TYPE LOOSE LOOP SPARE PARTS LIST

WEAR ITEM		
Part Number	Recommended Qty	Description
PM-FASP30437	1	TENSION SPRING FOR UNWIND DANCER ARM
PM-S1060	2	3/8" DIA. X 9" LG. HARDENED PRECISION SHAFT
PM-OR1007	1	BRAKE HUB O-RING
PM-BE1305	4	SUPER 6 LINEAR BEARING
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-OR1024	6	3/16" ID X 5/16" OD X 1/16" Thick, BUNA-N O-RING
PM-AC1017	1	AIR CYLINDER ALIGNMENT COUPLER, #10-32 THREADS
PM-AC1425	1	AIR CYLINER, 7/16" BORE - Reverse Single Acting - Spring Return - 5.50" Stroke
PE-SE10108	3	TURCK PROX SWITCH with QUICK DISCONNECT
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
ASS-200-0128R or	1	REWIND BEARING BLOCK ASSEMBLY w/ SHAFT
ASS-200-0128L	1	REWIND BEARING BLOCK ASSEMBLY w/ SHAFT
ASS-200-0126R or	1	TENSION BRUSH ASSEMBLY with SHAFT for 5" APPLICATOR - RH
ASS-200-0126L	1	TENSION BRUSH ASSEMBLY with SHAFT for 5" APPLICATOR - LH
ASS-200-2126R or	1	TENSION BRUSH ASSEMBLY with SHAFT for 7.5" APPLICATOR - RH
ASS-200-2126L	1	TENSION BRUSH ASSEMBLY with SHAFT for 7.5" APPLICATOR - LH
SAS-200-0135 or	9	5" TENSION ROLLER ASSEMBLY w/o SHAFT
SAS-200-2135	9	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT

360 or 360a SERIES INTEGRATED TYPE "SHORT" LOOSE LOOP SPARE PARTS LIST						
WEAR ITEM						
Part Number	Recommended Qty	Description				
PM-FASP30437	1	TENSION SPRING FOR UNWIND DANCER ARM				
PM-S1060	2	3/8" DIA. X 9" LG. HARDENED PRECISION SHAFT				
PM-OR1007	1	BRAKE HUB O-RING				
PM-BE1305	4	SUPER 6 LINEAR BEARING				
RECOMMENDED SPARE PARTS						
Part Number	Recommended Qty	Description				
PM-OR1024	6	3/16" ID X 5/16" OD X 1/16" Thick, BUNA-N O-RING				
PM-AC1017	1	AIR CYLINDER ALIGNMENT COUPLER, #10-32 THREADS				
PM-AC1428	1	AIR CYLINER, 9/16" BORE - Reverse Single Acting - Spring Return - 5.50" Stroke				
PE-SE10108	3	TURCK PROX SWITCH with QUICK DISCONNECT				
EXTENDED SPARE PARTS						
Part Number	Recommended Qty	Description				
ASS-200-0128R or	1	REWIND BEARING BLOCK ASSEMBLY w/ SHAFT				
ASS-200-0128L	1	REWIND BEARING BLOCK ASSEMBLY w/ SHAFT				
ASS-200-0126R or	1	TENSION BRUSH ASSEMBLY with SHAFT for 5" APPLICATOR - RH				
ASS-200-0126L	1	TENSION BRUSH ASSEMBLY with SHAFT for 5" APPLICATOR - LH				
ASS-200-2126R or	1	TENSION BRUSH ASSEMBLY with SHAFT for 7.5" APPLICATOR - RH				
ASS-200-2126L	1	TENSION BRUSH ASSEMBLY with SHAFT for 7.5" APPLICATOR - LH				
SAS-200-0135 or	9	5" TENSION ROLLER ASSEMBLY w/o SHAFT				
SAS-200-2135	9	7.5" TENSION ROLLER ASSEMBLY w/o SHAFT				

### **360 APPLICATOR SPARE PARTS LIST** When Ordering parts, present Serial Number of 360

#### SPARE PARTS LIST FOR RETIRED ASSEMBLIES

RECOMMENDED SPARE PARTS (16" & 20" NON-POWERED UNWIND w/ POWERED REWIND w/ DANCER)								
Part Number	Recommended Qty	Description						
PM-BE1238	2	#R4 BALL BEARING						
ASS-200-0460	1	PROXIMITY SWITCH						
SAS-211-0120 <b>or</b>	2	5" IDLER ROLLER ASSEMBLY						
SAS-211-2120 or	2	7.5" IDLER ROLLER ASSEMBLY						
SAS-211-5120	2	10" IDLER ROLLER ASSEMBLY						
PM-BE1250	2	#R8FF BALL BEARING						
PE-FU2065	1	3 AMP FUSE						
PE-MC1109	1	MOTOR DRIVER CONTROLLER						
PE-MO1008	1	LEESON GEAR MOTOR						
PE-PO1030	1	5K SPEED POTENTIONMETER						
PE-RE1001	1	24VDC RELAY IDEC						
PE-RE1012	1	CROUZET RELAY						
PE-SI1050	1	ISOLATER BOARD						
PM-BEBF1015	1	FF-520-10 DANCER ARM BUSHING						
PM-BE1266	2	DANCER ARM THRUST BEARING						
PM-FASP30480	2	TENSION SPRING						
ASS-200-0134	1	UNWIND BEARING BLOCK ASSEMBLY						
OPTIONS: RECOMMENDED SPARE PA	RTS (AC INCANDESCENT AL	ARM LIGHT - ALLEN BRADLEY)						
Part Number	Recommended Qty	Description						
PE-LI2070	1	LAMP (FOR ALARM LIGHT)						
PE-RE1001	1	RELAY (FOR ALARM LIGHT)						

# **AIR BLOW SEQUENCE OF OPERATION**



# **TAMP SEQUENCE OF OPERATION**



# **ITB TAMP SEQUENCE OF OPERATION**



## **MERGE SEQUENCE OF OPERATION**



### FLOWCHARTS

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## ACCESSORIES

### **ELECTRONIC CROSSOVER:**

The Electronic Crossover or "Zero Downtime" accessory is an electronic interface between two labeling heads positioned in series that will monitor the primary applicator's fault conditions and switch to a secondary applicator to prevent interruption of production flow. Includes control with all interface cabling.

### **IMPRINTER:**

The Imprinter accessory is a Hot Stamp Imprinter device mounted on special bracketry attached to the labeling head.

### LOOSE LOOP:

The Loose Loop accessory is designed to integrate a labeling head with a Thermal / Thermal Transfer printer in "Loose Loop" fashion. This option includes electrical modifications to the printer, sensor array to monitor loop condition, and all mounting hardware (including yard arm) to support the labeling head and printer from a vertical upright.

### LOW LABEL DETECTION:

The Low Label Detection accessory is a sensor that generates a signal when the unwind is low on labels. The applicator will display an alarm screen and activate the strobe light (if purchased) to inform the operator that the unwind is about to run out of labels.

### **TAMP SWITCH:**

The Tamp Switch accessory uses two sensors to control the tamp slide assembly when labeling products with differing heights. When the tamp home switch is activated, the applicator dispenses a label onto the tamp pad. The tamp return switch senses the product, a label is applied, and the tamp returns to the home position.

### WEB BREAK DETECTION:

The Web Break Detection accessory is a sensor that generates a signal when there is a break in the web. The applicator will display an alarm screen and flash the strobe light (if purchased) to inform the operator that the label web is broken. (This page is intentionally blank.)





DISPLAY ENCLOSURE WHT/RED 1 (DISPLAY DRIVE WHT/YEL 5 WHT/BLU 6 9 PIN SUB-D WHT/ORG 8 WHT/PUR 9 BRN 12V BLU 0V YEL 2 ORG 3 PNK 5 9 PIN SUB-D MALE	R) P2	ASS-200-040	WRITTEN PERMISSION OF CIM INTEGRATION INC.	OR (AFTER PROGRAM #360-2c.10.0)	3 S. F: \Engineering\Standard Parts\Applicator\360 200\ASS-200-0402	
-200-0467 ODER w/ CABLE			GRATION INC. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE V	PARTEWIRING FOR 360 APPLICAT	REV. DATE         REV. BY:         Scale:         Date:         Date:	
-TB1 TE AC/LINE INPUT POWER AC/LINE INPUT POWER AC/NEUTRAL INPUT POWER AC/NEUTRAL INPUT POWER PRODUCT DETECT INPUT LOW LABEL INPUT WEB BREAK OR TAMP EXT./HOME ALARM LOOP PROX TIGHT LOOP PROX LOOSE LOOP PROX TAMP VALVE AIR ASSIST VALVE VACUUM VALVE	TB1-14       Image: Second secon	LOOSE LOOP/IMPRINTER ALARM OUTPUT LABEL SENSOR SETUP OUTPUT +24 VDC +24 VDC +24 VDC 0 VDC 0 VDC 0 VDC 0 VDC 0 VDC 0 VDC ANALOG OUTPUT LABEL DETECT INPUT GROUND	THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTE	<sup>TITE:</sup> 360 SERIES APPLICATOR: ELECTRICAL	REV. REV. DESCRIPTION 3 WIRING CORRECTION	



T	ERMINALS	
	TB1-14	LOOSE LOOP/IMPRINTER
	TB1-15	ALARM OUTPUT
	TB1-16	LABEL SENSOR SETUP OUTPUT
	TB1-17	+24 VDC
	TB1-18	+24 VDC
	TB1-19	+24 VDC
	TB1-20	0 VDC
	TB1-21	OVDC
	TB1-22	OVDC
	TB1-23	ANALOG OUTPUT
	TB1-24	LABEL DETECT INPUT
	TB1-25	GROUND

ASS-200-0403 Dept. Code 70

THIS DRAWING AND DESIGN IS THE PROPERTY OF CIM INTEGRATION INC. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF CIM INTEGRATION INC. TILE: 360 SERIES APPLICATOR: ELECTRICAL
EV. REV. DR. DEVERED REWIND MODULE WIRING SCHEMATIC
EV. REV. DESCRIPTION
12 NEW WIRING FOR 24 VOLT LED LIGHTSTACK
200\ASS-200-0403

REV. REV. DESCRIPTION 12 NEW WIRING FOR 24 VOLT LED LIGHTSTACK

+ CAPTURE INPUT ANALOG OUTPUT OVDC 12VDC OUTPUT COM. INPUT COM. ENABLE - LIMIT + LIMIT LABEL SENSOR SET ALARM OUTPUT PRINT BLOW OFF VALVE AIR ASSIST VALVE TAMP VALVE L-LOOP/REWIND OFF T-LOOP/REWIND ON A-LOOP WEB BREAK/TAMP SWITCH/ZEBRA LED LOW LABEL PRODUCT DETECT

> THIS SHOWS THE WIRING FOR AC INCANDESCENT LIGHTSTACK (2)<u>WHT</u>

CR1 RED ①-( R )-@-YEL (3-(CR1)-(14) BRN (5)





	BILL OF MATERIA	L						455-200-0	1467X-X
	ASS-200-0467X->	<							
ITEM QTY CTM PART	NUMBER PART DESCRIPTION						360; SINGLE CA		
1 PE-GE2105	90 DEG. PULSE ENC	ODER (2500 pulses/rev)					360; SPLITTER CA	BLE -04	167B-1X
2 1 PE-200-04	06-X ENCODER CABLE -	SINGLE							t I
HOLES F PHILLIPS (PROVIDE	PAN HEAD w/ LOCK WASHER (4 PI D BY ENCODER/BRACKET MANUFACT	<u>Y OF CTM INTEGRATION INC. AND N</u>				2 REFE ENCC (SPE	ER TO B.O.M. FOR CORRED DDER CABLE PART NUMBI ICIFY LENGTH)	10 FT. 15 FT. 20 FT. 25 FT.	10 15 20 25
JOU SERIES	APPLICATUR: ELECTRICA	L		90 DEG	KEE ENCODER	K WITH CABLE			70
REV. REV. DESCRIPTIO		RE	ev. date   rev. e )5/29/03   TC	BY: Scale: R 1=2	Date: DRAV 11/19/01	BOB S.	F: \Engineering \Standard F 200 \AS	°arts\Applicator` SS—200—04	∖ <sup>360</sup> 167X−X




BILL OF MATERIAL SOU						
ASSE	MBLY	MOD-200-X121L		S		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			
1	1	UNWIND BEARING BLOCK ASSEMBLY	UNWIND BEARING BLOCK ASSEMBLY ASS-200-0134			
2	1	SPRING MOUNTING BRACKET MP-200-0203				
3	1	SPRING TENSION BLOCK	MP-200-0201			
4	1	TENSION SPRING	PM-FASP30437	S		
5	1	SPRING ANCHOR	PM-FASP30500			
6	1	BRAKE HUB	MP-200-0204			
$\bigcirc$	1	O−RING ~ BUNA−N	PM-0R1007			
8	1	FLANGED BUSHING	PM-BEBF1015			
9	2	3/8 Ø THRUST BEARING	PM-BE1266			
10	1	5/7.5 DANCER ROLL ASS'Y w/SHAFT	ASS-200-X131	S		
(1)	1	12" DANCER ARM	MP-200-0202			
12	1	UNWIND BLOCK MOUNT	MP-200-0209			
13	1	3/8" x 1" Lg. SS SHOULDER BOLT	PM-FASB10045			
14	1	5/7.5 UNWIND SHAFT	MP-200-X210	S		
(15)	1	12" INSIDE UNWIND DISK	ASS-200-0132	S		
16	1	12" OUTSIDE UNWIND DISK	ASS-200-0133	S		
$\bigcirc$	1	UNWIND CORE SUPPORT SPACER	MP-200-0267CS			
18	1	LOCK COLLAR	PM-C01015			
19	1	5/16"-18 x 1/2" Lg. SS SET SCREW	PM-FASS48061			
20	2	DOWEL PIN, 3/16" ø x 1/2" Lg.	PM-FADP0930			
	2	1/4"-20 UNC x 3/4" SHCS	NONE			

NOTE: ADD PM-C01025 BEHIND THE INSIDE UNWIND DISK ON 5" WIDE & 7-1/2" WIDE APPLICATORS IN REELS-UP POSITION REDESIGNED DANCER ARM MOUNTING ANYTHING SOLD BEFORE 11/01/04 WILL BE THE OLD STYLE. UNWIND BLOCK IN ASS-200-0134 & DANCER ARM MP-200-0202 ARE NEW DESIGNS AND THRUST BEARINGS REPLACE BRONZE WASHERS.







MOD-200- 5" WIDE 7.5" WIDE	X121L -0121L -2121L Sol NIC:	/12" DIA. UNWIND DISKS Dept. Code 70	: \Engineering\Standard Parts\Applicator\360 200\M0D-200-0121L
	C. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMIS:	PART:5/7.5/10 WIDE/LH/UNWIND ASS'Y w	REV. DATE     REV. DATE     REV. BY:     Scale:     Date:     Date:     Date:     Date:     Diametrial     F.       11/18/05     TDR     1=3     06/02/98     DRAWN BY:     F.     F.
	THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTEGRATION	TILE: 360 SERIES APPLICATOR: UNWIND ASSEMBLY	REV. REV. DESCRIPTION 5 ADDED DOWEL PINS TO B.O.M. (ITEM #20)



IATERIAL				
–X121R				
	CTM PART NUMBER			
SEMBLY	ASS-200-0134	S		
-	MP-200-0203			
	MP-200-0201			
	PM-FASP30437	S		
	MP-FASP30500			
	MP-200-0204			
	PM-0R1007			
	PM-BEBF1015			
	PM-BE1266	S		
w/SHAFT	ASS-200-X131	S		
	MP-200-0202			
	MP-200-0209			
	PM-FASB10045			
	MP-200-X210	S		
	ASS-200-0132	S		
	ASS-200-0133	S		
PACER	MP-200-0267CS			
	PM-C01015			
′2" LG. SS	PM-FASS48061			
2" Lg.	PM-FADP0930			
S	NONE			

IN REELS-UP POSITION AND REPLACE ASS-200-0132 WITH ASS-200-0132A FOR ALUMINIUM DISC ASSEMBLY

MOD-200-X121R		e	
5" WIDE -0121R 7.5" WIDE -2121R		Dept. Coo 70	tor\360 -X121R
	RMISSION OF CTM INTEGRATION INC.	Y w/12" UNWIND DISKS	F: \Engineering \Standard Parts \Applicat 200\MOD-200-
	WHOLE OR IN PART WITHOUT THE WRITTEN PEF	7.5/10 WIDE/RH/ UNWIND ASS	cele: Date: Drawn BY: 1=3 06/02/98 BDB S.
	NC. AND MAY NOT BE REPRODUCED IN		REV. DATE REV. BY: So 11/18/05 TDR So
	THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTEGRATION	TILE: 360 SERIES APPLICATOR: UNWIND ASSEMBLY	REV. REV. DESCRIPTION 5 ADDED DOWEL PINS TO B.O.M. (ITEM #20)



MOD-200-3121L-X -3121L-5 -3121L-7					Dept. Code 70	rtor\360 -3121L-X	
				SOLD	V INC.		arts\Applicat )D-200-
005			_	SULU	ATION	1	<sup>P</sup> N
ISSE IEM					TEGR	1	
17)	1		CIM PART NUMBER		N N	1	g∕st
<u>10</u>	1		MP-200-3208	•	E E	1	eerin
6	1	5/7.5 LINWIND SHAFT	MP-200-3307	•	N D	1	ngine
3	1		MP-200-X210	•	SSIO	LLI	ы Ч
3	1	$3/8"-18 \times 1/2"$ La SS SET SCREW		·	ERMI		
29	4	1/4"-20 LINC x 7/8" LG SHCS	PM-FA5540001	·	N N	10	
	т	174 - 20 ONC X 770 EG. SHOS	NUNE		RITE	$\sim$	S.
	R A W	EDESIGNED DANCER ARM MOUNT NYTHING SOLD BEFORE 11/01/0 /ILL BE THE OLD STYLE.	TNG 4		PART WITHOUT THE W	_H_16" UNWIN	2/99 DRAWN BY: BOB
	U	NWIND BLOCK IN ASS-200-013	4		Z	Ē	/27
	8	CDANCER ARM MP-200-0202			9 R	MD	8 0 0
		RE NEW DESIGNS AND THRUST	BEARINGS		민	Ъ.	۳'n
		EPLACE BRONZE WASHERS.			N	5	
					B	RT: C	ŝ
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BILL OF MATERIAL SOL					
ASSE	ASSEMBLY MOD-200-3121R-X			S	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		
1	1	16" OUTSIDE UNWIND DISK ASS'Y.	ASS-200-3133	S	
2	1	1 16" INSIDE UNWIND DISK ASS'Y. ASS-200-3132			
3	1	UNWIND CORE SUPPORT SPACER	MP-200-0267CS		
4	1	UNWIND BEARING BLOCK ASSEMBLY	ASS-200-0134	S	
5	1	SPRING MOUNTING BRKT.	MP-200-0203		
6	1	SPRING TENSION BLOCK	MP-200-0201		
$\bigcirc$	D 1 TENSION SPRING PM-FASP30480				
8	1 SPRING ANCHOR PM-FASP30500				
9	9 1 BRAKE HUB MP-200-0204				
10	0 1 O-RING (BUNA N) PM-OR1007			S	
(1)	1	FLANGED BUSHING	PM-BEBF1015		
12	2	3/8" Ø THRUST BEARING	PM-BE1266		
13	3 5/7.5 TENSION ROLLER ASS'Y w/SHAFT ASS-200-X135			S	
14	4 1 16" DOUBLE DANCER ARM MP-200-3202A				
(15)	1 3/8" x 1" Lg. SS SHOULDER BOLT PM-FASB10045				
16	(16) 1 EXTENSION PLATE FOR 16" UNWIND MP-200-3209				
NO	TE:	ADD PM-CO1025 BEHIND THE IN	ISIDE UNWIND DI	SK	

ON 5" WIDE & 7-1/2" WIDE APPLICATORS IN REELS-UP POSITION

BILL OF MATERIAL 50						
ASSE	ASSEMBLY MOD-200-3121R-X S					
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			
3	1	SUPPORT FOR 16" UNWIND	MP-200-3208			
8	1	UNWIND MOUNT PLATE MP-200-3307				
<b>(</b>	1	5/7.5 UNWIND SHAFT MP-200-X210				
0	1	LOCK COLLAR	PM-C01015			
3	1	5/16"-18 x 1/2" Lg. SS SET SCREW	PM-FASS48061			
	4	1/4"-20 UNC x 7/8" LG. SHCS	•			

REDESIGNED DANCER ARM MOUNTING ANYTHING SOLD BEFORE 11/01/04 WILL BE THE OLD STYLE. UNWIND BLOCK IN ASS-200-0134 & DANCER ARM MP-200-0202 ARE NEW DESIGNS AND THRUST BEARINGS REPLACE BRONZE WASHERS.

(16)





	BILL OF MATERIAL					
	ASS-200-X120R/L					
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION			
	1	ASS-200-X142	NIP DRIVE w/REWIND & MOTOR PULLEYS — consisting of the following parts —			
0		(1) ASS-200-X129	NIP_ROLL_DRIVE_ASSEMBLY			
2		(1) ASS-200-0143	SLIP_CLUTCH_ASSEMBLY			
3		(1) MP-200-0229	Clutch spring keeper			
•		(1) MP-200-0233	DRIVE PULLEY			
5		(1) PM-BE1232	3/4" THRUST BEARING ASSEMBLY			
6		(1) PM-BELT1018				
0		(1) PM-BELT1023	TIMING_BELT			
8		(1) PM-CL1010	3" LEATHER CLUTCH PAD			
9		(1) PM-C01020	3/4" ID_LOCK_COLLAR - SS			
1		(1) PM-FASH430080	SHCS, 1/4-20 x 1.00 LG. SS			
①		(1) PM-FASP30540	COMPRESSION SPRING			
12		(10) PM-FAW30275	FLAT WASHER - 1/4 NOM SS			
	1	ASS-200-X140R/L	RWD. MANDREL w/BLOCK, SHAFT & PULLEY — consisting of the following parts —			
13		(1) ASS-200-0128R/L	REWIND BEARING BLOCK ASSEMBLY			
1		(1) ASS-200-X147	STANDARD REWIND MANDREL			
15		(1) MP-200-0231	REWIND PULLEY			
16	1	ASS-200-0453	MOTOR ASSEMBLY			







ASS-200-X120R/L 5" WIDE -0120R/L 7.5" WIDE -2120R/L 10" WIDE -5120R/L	RMISSION OF CTM INTEGRATION INC. Dept. Code	F: \Engineering \Standard Parts \Applicator\360\ HOUSING \ASS-200-X120RL
	NC. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PE TITLE: LABEL NIP / REWIND ASSEMBLY	REV. DATE     REV. BY:     Scale:     Date:     Date:
TRANSITION PLATE #MP-200-0266 (NOT INCLUDED IN ASS'Y)	APPLICATOR SERIES: APPLICATOR WDTH(S): GROUP: HOUSING 360 5"/7.5"/10":	REV REV. DESCRIPTION 3 UPDATED DWG., CHG'D PART/ITEM #'s











			(4)	A ~	5
	-				
				 	Ç_SHAFT & ROLLER
	- )			 	ن SHAFT
				A -	2
BILL OF MATERIA	L SOLD				<u> </u>
ASSEMBLT ASS-200-X120L	CTM PART NUMBER				
1 TENSION BRUSH ROLL MOUNTING BRKT.	MP-200-0256 .				
2 1 5/7.5/10 TENSION ROLLER SHAFT	MP-200-X254 .				HS: اباک
(3) 1 5/7.5/10 TENSION ROLL ASS'Y W/SHAFT	ASS-200-X135 S				AFT ROI
(4) 1 5/7.5/10 TENSION BRUSH MTG SHAFT	MP-200-X253 .				
I 377.3/10 ILINSION BRUSH ASSEMBLY	ASS-215-X110 S				20
2 SHCS, 1/4"-20 UNC x 1" LG.	NONF				
2 FLAT WASHER, 1/4" NOM.	NONE .	_			<u>SECTIONAL VI</u>
2 BHCS, 1/4"-20 UNC x 3/4" LG.	NONE .	(REV)			(RUIAIED 90





	BILL OF MATERIAL SOLD					
ASSE	MBLY	ASS-200-X126R		S		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			
1	1	TENSION BRUSH ROLL MOUNTING BRKT.	MP-200-0256			
2	1	5/7.5/10 TENSION ROLLER SHAFT	MP-200-X254			
3	1	5/7.5/10 TENSION ROLL ASS'Y w/SHAFT	ASS-200-X135	S		
4	1	5/7.5/10 TENSION BRUSH MTG SHAFT	MP-200-X253			
5	1	5/7.5/10 TENSION BRUSH ASSEMBLY	ASS-215-X110	S		
6	1	LOCK LEVER	PM-LL0850			
	2	SHCS, 1/4"-20 UNC x 1" LG.	NONE			
	2	FLAT WASHER, 1/4" NOM.	NONE			
	2	BHCS, 1/4"-20 UNC x 3/4" LG.	NONE			





BILL OF MATERIAL     SOD       TRM WT MU DISAFFORM     ASS=200-X129     S       TI SASSELV     ASS=200-X129     S       TI SASSELV     TASS=200-X129     S       TI SASSELV     S     S       TI SASSELV     SSS=200-X129     S       TI SASSELV     S     S       TI SASSELV     Mark Dev End LasePark     H=200-203       TI SASSELV MERAL SERVER VIEW     H=200-203     S       TI SASSELV MERAL SERVER VIEW     H=200-203     S       TI SASSELV MERAL SERVER VIEW     H=200-203     S       TI SASSELV MERAL SERVER VIEW     H=200-203     H=200-204       TI I TAS DERING     H=200-204     H=200-204       TI I TASSE NOR ING IN THE MARK MERAL PLANESSINS     H=200-204       TI I TASSEN TO HERING     H=200-204     H=200-204       TI I TASSE NOR ING IN THE MARK MERAL PLANESSINS     H=200-204       TI I TASSEN TO HERING     H=200-204     H=200-204       TI I TASSEN TO HERING     H=200-204     H=200-204       TI I TASSEN TO HERING     H=200-204     H=200-204       TASSENTER SCALENTARY H=200-110				
ASSURD X 200-X129 S ASSURD X 200-X129 S 0 1 0075 ENE KOLL MARKER 0 1 0075 ENE KOLL SUPPORT MF-200-2025 0 1 0075 ENE KOLL SUPPORT MF-200-2025 0 1 577570 MF ROLL VOR MF-200-2025 0 1 1 VFT ROB MF-20	BILL OF MATERIA	AL	SOLD	
TRU 07: 104 ISSURPTION   DBM PRIL INVERT   Immunication     0 1 3 /37/300 BRK R0L INVER   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication   Immunication     0 1 3 /37/300 BRK R0L INVERT   Immunication   Immunication   Immunication   Immunication   Immunication   Immunication     1 3 /37/300 BRK R0L INVERT   Immunication   Immunicati	ASSEMBLY ASS-200-X129		s	
0   1   37.5%   BMC BRUK RULL   W=2-200-2023     0   1   HORD BROK RULL SUPPORT   W=2-200-2023     0   1   S77.5%   MP ROLL TORE   W=2-200-2024     1   1   TOT ROD   W=2-200-2024   H     0   1   UTT ROD   W=2-200-2024   H     0   1   UTT ROD   W=2-200-2024   H     0   1   UTT ROD PN   W=2-200-2024   H     0   1   WT ROD   W=2-200-2024   H     0   1   WT ROD NM   W=2-200-2024   H     0   1   WT ROD NM   W=2-200-2024   H     0   2   SetS.6%16*-16.4   W=2-200-2024   H     0   2   SetS.6%16*-16.4   W=2-200-2024   H     2   2   SetS.6%16*-16.4   H   H     1	ITEM QTY ITEM DESCRIPTION	CTM PART NUMBER		
0:1   1   VOISDE EMRE SUL SUPPORT   UP-200-0223     1:1   1   S757/0 MP ROLL SUPPORT   UP-200-0223     1:1   S757/0 MP ROLL SUPPORT   UP-200-0220     1:1   UP ROLL NOBG   UP-200-0224     1:1   UP ROLL NOBG   UP-200-0220     2:1   SIG SUBRY, 1/4-20 × 1' 1.0.   NOE     2:1   SIG SUBRY, 1/4-20 × 1' 1.0.   NOE     1:1   UP ROLL 2   PLACES @     1:1   UP ROLL 2   PLACES @     1:1	1 5/7.5/10 DRIVE ROLL	MP-200-X242	S	
0)   1   HSUE EVEK ROLL SUPPORT   H=-200-0223   -     1)   1   57/5/10 MF POLL NOBB   H=-200-0223   -     1)   1   57/5/10 MF POLL NOBB   H=-200-0223   -     1)   1   1/7 5/7/10 MF POLL NOB   H=-200-0220   -     1)   1   1/7 5/7/10 MF POLL NOB   H=-200-0220   -     1)   1   1/7 7/00 MF POLL NOB   H=-200-0220   -     1)   1   1/7 7/00 MF POLL NOB   H=-200-0220   -     1)   1   1/7 7/00 MF POLL NOB   H=-200-0224   -     1)   1   1/7 7/00 MF POLL NOB   H=-200-0224   -     1)   1   1/7 7/00 MF POLL NOB   H=-200-0224   -     1)   1   NET ROUTING   H=-200-0224   -     2)   2   SET SKEN (1/-02 x)*1 L0   PUE-FXSES0200   -     2)   2   SET SKEN (1/-02 x)*1 L0   PUE-FXSES0200   -     1   1   NEP FXSES1715   -   -     2   1   SET SKEN (1/-02 x)*1 L0   PUE-FXSES0200   -     JACKING SCR	2 1 OUTSIDE DRIVE ROLL SUPPORT	MP-200-0236	•	
0   1   IPMER RUL INVOID   IPM-200-0223   .     0   1   1   1/5/1/10 MF RUL INVOID   IPM-200-0220   .     0   1   1/5/1/10 MF RUL INVOID   IPM-200-0220   .   .     0   1   1/5/1/10 MF RUL INVOID   IPM-200-0220   .   .     0   1   1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .     1   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     1   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     1   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     1   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     1   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     2   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     2   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     2   1/1/5/1/10 MF RUL INVOID   IPM-200-0214   .   .   .     2   1/1/5/1/10 MF R	3 1 INSIDE DRIVE ROLL SUPPORT	MP-200-0237		
0   1   3/73/10 WF POLL X05KUT / 4/5WT / 55-200-4130   5     0   1   3/73/10 WF POLL X05 F00/WF   HF-200-2230   -     0   1   1/73/10 WF POLL X05   HF-200-2230   -     0   1   VICT K00   HF-200-2231   -     0   1   UT K00   HF-200-2231   -     0   1   UT K00   HF-200-2231   -     0   1   UT K00   HF-200-2231   -     0   1   WT K00   HF-200-2231   -     0   1   WT K00   HF-200-2024   -     0   1   WT K00   HF-200-2024   -     0   2   SET SKRM, V/+20 × 1" L0.   H00/E200   -     2   LODOWT, 1/4-20 × 1" L0.   H00/E200   -     2   LODOWT, 1/4-20 × 1" L0.   H00/E200   -     3/8   -   -   JACKING SCREW LOCATION   -     JACKING SCREW LOCATION   -   -   -   -     3/8   -   -   -   -   -     3/8   -   -	4 1 DRIVE ROLL KNOB	MP-200-0223		
0   1   1/3/3/10 MP ROLL TORE   MP-200-X840     1   1   1/3/3/10 MP ROLL TORE   MP-200-X830     0   2   Comercision Signer   MP-300-2031     0   1   UPT Roc   MP-200-2035     2   SESEW, 1/4-20 at 1' L0.   NM-452200 -     2   SESEW, 1/4-20 at 1' L0.   NM-452200 -     2   UDENHIT, 1/4-20   MM-452200 -     1   UPT Roc   NM-452200 -     2   UDENHIT, 1/4-20   MM-452200 -     JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION     JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION	5 1 5/7.5/10 NIP ROLL ASSEMBLY w/SHAFT	ASS-200-X130	S	
0)   1   1/3/3/10   MP BRUE TOP SUPPORT   MP-302-X33     0)   1   WFT ROO   MP-302-0214   WF-302-0214     0)   1   WFT ROO PN   WF-302-0214   WF-302-0214     0)   2   SK5, S/1(**-18 x 1* 10.   WF-302-0214   WF-302-0214     2   2   UCOBUT, 1/4-20   YF-1748-02004   WF-302-0214     2   1000BUT, 1/4-20   YF-1748-02004   WF-302-0214   WF-302-0214     JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION     JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION   JACKING SCREW LOCATION	6 1 5/7.5/10 NIP ROLL YOKE	MP-200-X240		
(C)   12   COUPERSION SPAND   IN-HS250422     (C)   1   INFT ROP   IN-HS250422     (C)   1   INFT ROP PN   IN-HS250422     (C)   INFT ROP PN   IN-HS250422   IN-HS250422     (C)   INFT ROP PN   IN-HS250422   IN-HS250422     (C)   IN-HS250422	1 5/7.5/10 NIP ROLL TOP SUPPORT	MP-200-X239		$(\overline{7})$
Image: Boreau   PH-BEI220     Image: Boreau   Image: Boreau     Image: Boreau <td>8 2 COMPRESSION SPRING</td> <td>PM-FASP30428</td> <td></td> <td>Y</td>	8 2 COMPRESSION SPRING	PM-FASP30428		Y
I LIFT F00   WP-200-0214     I LIFT F00   WP-200-0223     I LIFT F00 PN   WP-200-0224     I LIFT F00 PN   PN-F8050500     I LIFT F00 PN   IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	9 1 THRUST BEARING	PM-BE1230		
I UFT CAM   IMP 200-023     I I MF ROLL KNOB   IMP-200-023     I I NF ROLL KNOB   IMP-200-024     I I NK   PM-TAKS35020     II I KK   IIII NK     IIII I KK   IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	1 LIFT ROD	MP-200-0214		
I UFT ROD PM   UP-200-0213     I INP ROLL KNOB   INP-200-0224     I INP ROLL KNOB   INP-200-024     I INP ROLL KNOB   IINP ROLL KNOB     I INP ROLL K	1 LIFT CAM	MP-200-0235		
Important	1 LIFT ROD PIN	MP-200-0213		
Image: Normal state of the	1 NIP ROLL KNOB	MP-200-0224	1.	
Image: Section of the section of th	14 1 KEY	PM-FAKS30520		
JACKING SCREW LOCATION 3/8 JACKING SCREW LOCATION 3/8 JACKING SCREW LOCATION JACKING SCREW LOCATION	(15) 2 BALL BEARINGS	PM-BE1270		
Z SET SCREW, 1/4-20 X 1" LG. PM-FAV20064	2 SHCS, 5/16"-18 x 1" LG.	NONE		
2 LOCKINUT, 1/4-20 PM-FANU20004	2 SET SCREW, 1/4-20 x 1" LG.	PM-FASS45175	1.	
JACKING SCREW LOCATION 3/8 3/8 3/8 3/8 3/8 3/8 3/8 3/8	2 LOCKNUT, 1/4-20	PM-FANU20004	1.	
JACKING SCREW LOCATION 3/8 3/8 3/8 3/8 4 4 4				TYPICAL 2 PLACES (8)
	JACKING SCREW LOCATION			JACKING SCREW LOCATION 3/8 4 1



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BILL OF MATERIAL	ASS-200-X140R/I
ASS-200-X140R/L	
ITEM QTY CTM PART NUMBER PART DESCRIPTION	5" WIDE <u>-0140R/L</u>
1 ASS-200-0128R/L REWIND BEARING BLOCK ASSEMBLY	7.5" WIDE –2140R/L
(2) 1 ASS-200-X147 STANDARD REWIND MANDREL	10" WIDE 5140P /
(3) 1 MP-200-0231 REWIND PULLEY	10 WIDE
THIS DRAWING AND DESIGN IS. THE PROPERTY OF CTM INTEGRATION INC. 7 APPLICATOR SERIES: APPLICATOR WIDTH(S): GROUP: REWIND	NOT INCLUDE IN ASSEMBLY         Intermediate account of the matrix method the wattree previous of the matrix and the previous of th
REV. REV. DESCRIPTION	REV. DATE REV. BY: Scale: Date: DRAWN BY: F:\Engineering\Standard Parts\Applicator\360\
1 UPDATED B.O.M.	12/06/05   TDR   1=2  01/18/02   TDR   Unwind-Rewind\ASS-200-X140RL

BILL C	DF MATERIAL					ASS-200-X14
ASS	-200-X142					A55 200 X14
ITEM QTY CTM PART NUMBER	PART DESCRIPTION					5" WIDE -0142
① 1 ASS-200-X129	NIP ROLL DRIVE ASSEMBLY					7.5" WIDE -2142
② 1 ASS-200-0143	SLIP CLUTCH ASSEMBLY					
3 1 MP-200-0229	CLUTCH SPRING KEEPER					10″ WIDE5142
(4) 1 MP-200-0233	DRIVE PULLEY					
(5) 1 PM-BE1232	3/4" THRUST BEARING ASSEMBLY					
(6) 1 PM-BEL11018						
	IMING DELT					
9 1 PM-C01020	3/4" ID LOCK COLLAR - SS					
(10) 1 PM-FASH430080	SHCS. 1/4-20 x 1.00 LG. SS					
(1) 1 PM-FASP30540	COMPRESSION SPRING					
10 PM-FAW30275	FLAT WASHER - 1/4 NOM SS					
2 SECTIONAL VIEW OF SLIP CLUTCH ASSEMBL	T	e e e e e e e e e e e e e e				
THIS DRAWING AND D APPLICATOR SERIES: APPLICATOR WIDTH	SIGN IS THE PROPERTY OF CTM INTEGRATION INC. A	ND MAY NOT BE F				MISSION OF CTM INTEGRATION INC.
<u>560 SERIES 5"/7.5"/10</u> REV. REV. DESCRIPTION		REV. DATE	REV. BY:	Scale:	Date: DRAWN BY:	FULLI ASSEMIDLI 70 F:\Engineering\Standard_Parts\Applicator\360\Core Unit
2 ADDED ASS-200-X129	TO BOM & TABULATED FOR 5/7.5/10	02/19/09	TDR	1=2	06/02/98  BOB S.	NIP DRIVE\ASS-200-X142

		BILL OF MATERIA	L	SOLE
ASSE	MBLY	ASS-200-X150R/L		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
1	1	APPLICATOR HOUSING ASSEMBLY	ASS-200-0122R/L	
2	1	NIP DRIVE ASSEMBLY	ASS-200-X129	S
3	1	HOUSING COMPONENTS LAYOUT	ASS-200-0124	
4	1	ELECTRIC SHELF ASSEMBLY	ASS-200-0123	
5	1	BANNER LABEL SENSOR	ASS-200-0450	S
6	1	STEPPER MOTOR ASSEMBLY	ASS-200-0453	
$\bigcirc$	1	5/7.5/10 TENSION ROLLER ASS'Y	ASS-200-X135	S
8	1	NIP/REWIND DRIVE ASSEMBLY	ASS-200-0142	

NOTE: AVAILABLE IN RH & LH ORIENTATIONS — RIGHT HAND ASSEMBLY SHOWN — (SEE DWG #ASS-200-0122R/L FOR DIFFERENCES)



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ASS-200-	-X150R/L	j e		
5" WIDE 7.5" WIDE 10" WIDE	-0150R/L -2150R/L -5150R/L	ISSION OF CTM INTEGRATION INC.	. 70	F: \Engineering\Standard Parts\Applicator\360 200\ASS-200-X150s1
		C. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMI   PART: ACCULATION OF A CONTRUCTION OF A CONTRUCT OF A C	CURE UNIT FOR SID. REWIND (SAT I OF 2	REV. DATE     REV. BY:     Scale:     Date:     Date:
		THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTEGRATION IN	JOU SERIES APPLICATOR: HOUSING ASSEMBLY	REV. REV. DESCRIPTION 2 ADDED POWER CORD CLIP ASSEMBLY





	BILL OF MATERIAL SI						
ASSE	ASSEMBLY ASS-211-0105-X						
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
1	1	SPRING BLOCK	MP-211-0201				
2	1	X" WIDE WEB TENSION SPRING (see note)	PM-211-0216-X				
3	1	LOCK LEVER	PM-LL0902				



## ASS-211-0105-X 1" WIDE -0105-1 2" WIDE -0105-2 3" WIDE -0105-3 4" WIDE -0105-4

BILL OF MATERIA	L SOLD	ASS-211-(	0110
ASSEMBLY ASS-211-0110	S	A53 211 0	
ITEM QTY ITEM DESCRIPTION	CTM PART NUMBER		
1 SPRING BLOCK STOP COLLAR	MP-211-0223 .		
2 1 DOWEL PIN (DWG #MP-211-0224)	PM-FADP1001 .		
3 1 SHCS, 1/4"-20 UNC x 3/4" LG.	NONE .		
THIS DRAWING AND DESIGN IS THE PRO	PERTY OF CTM INTEGRATION INC TAMP/BLOW/MERGE/R	Image: Note the reproduced in whole or in part without the written permission of cin integration inc.	ept. Code
REV. REV. DESCRIPTION	,, <b>_</b> , <b>_</b> , <b>_</b> , <b>_</b> , <b>_</b> ,	REV. DATE REV. BY: Scale: Date: DRAWN BY: F:\Engineering\Standard Parts\Applicator\36	0
O NEW RELEASE		02/06/03   TDR   2=1  02/18/02   TDR   211\ASS-211-0110	)





		BILL OF MATERIA	L			
ASSEMBLY CTM-211-0101RL-16X						
ITEM QTY ITEM DESCRIPTION						
1	1	5" WIDE; CORE UNIT	ASS-20			
2	1	5" WIDE; AIR BLOW NOSE MODULE	MOD-2			
3	1	U-ARM ASSEMBLY	WAS-20			
4	1	5" WIDE; 16" UNWIND w/ DISKS MOD.	MOD-20			
5	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-20			
	1	STANDARD MANDREL (SHOWN)	ASS-20			
6	1	FILM REWIND MANDREL	ASS-20			
	1	COLLAPSIBLE MANDREL	ASS-20			
	1	DISPLAY UNIT ASSEMBLY	ASS-20			
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200			
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-20			
		ORDER THIS ITEM SEPARATELY: 1.) PRODUCT DETECT SENSOR				





	BILL OF MATERIAL								
CTM-211-0101R/L-16PXX									
ITEM QTY CTM PART NUMBER PART DESCRIPTION									
6	1	CTM-200-0151R	5.00" WIDE R.H. 360 CORE UNIT						
$ $ $\square$	1	CTM-200-0151L	5.00" WIDE L.H. 360 CORE UNIT						
6	1	MOD-211-0101R	5.00" WIDE R.H. AIR BLOW NOSE MODULE						
	1	MOD-211-0101L	5.00" WIDE L.H. AIR BLOW NOSE MODULE						
	1	MOD-200-3157R-5	5.0" WIDE R.H. 16" Pwr REWIND, Std MANDF						
	1	MOD-200-3157L-5	5.0" WIDE L.H. 16" Pwr REWIND, Std MANDR						
	1	MOD-200-3158R-5	5.0" WIDE RH 16" Pwr COLLAPSIBLE REWIND						
6	1	MOD-200-3158L-5	5.0" WIDE LH 16" Pwr COLLAPSIBLE REWIND						
9	1	MOD-200-3157R-5-RU	5.0" Wide, RH 16" Pwr Rewind, Std Mandrel,						
	1	MOD-200-3157L-5-RU	5.0" Wide, LH 16" Pwr Rewind, Std Mandrel,						
	1	MOD-200-3158R-5-RU	5.0" Wide, RH 16" Pwr Rewind, Collap. Mandrel,						
	1	MOD-200-3158L-5-RU	5.0" Wide, LH 16" Pwr Rewind, Collap. Mandrel,						
4	1	ASS-200-3106	HI/LO REGULATOR Assy,						
5	1	ASS-200-3161	ALARM LIGHT ASSEMBLY						
	1	OTDER SEPARATELY	PRODUCT DETECT SENSOR & CABLE						















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			BILL OF MATERIA	L	SOLD				BILL OF M
	ASSE	MBLY	ASS-211-0104				ASSE	MBLY	ASS-211-0104
I	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			ITEM	QTY	ITEM DESCRIPTION
I	1	1	FAN BOX FRONT	MP-211-0203			(19)	1	SPRING PIN BRACKET
I	2	1	FAN BOX SIDE (SILK SCREEN)	MP-211-0202R			20	1	STOP BLOCK
I	3	1	FAN BOX SIDE	MP-211-0202L			21	1	SPRING PIN
ĺ	4	1	FAN BOX TOP	MP-211-0213			22	1	STOP BLOCK
I	5	1	BLOW BOX GRID	MP-211-0214			23	1	COMPRESSION SPRING
ſ	6	1	BLOW BOX ACCESS DOOR	PM-211-0211			24	1	PLASTIC KNOB
ſ	$\bigcirc$	1	BLOW BOX TOP FAN	MP-211-0218			25	2	CAPTIVE SCREW
	8	1	BLOW BOX BOTTOM FAN	MP-211-0219			26	2	SPLIT WASHER
	9	2	FAN HOUSING GUARD	PE-FAN1080			2	2	ADJUSTABLE FRICTION HINGE
	10	1	HI/LO AIR BLOW SWITCH	PE-SW3000				1	WARNING LABEL
		1	BLOW BOX FAN WIRING HARNESS FOR STANDARD BLOW BOX	PE-200-0413-A	•				
	(1)	1	BLOW BOX FAN WIRING HARNESS FOR 6" & 12" SNORKLES	ASS-200-0413-B	•	R	EV 2		(22
		1	BLOW BOX FAN WIRING HARNESS FOR 18" & 24" SNORKLES	ASS-200-0413-C	•				
	(12)	1	PRESTOLOK BRASS FITTING (1/4 NPT MALE – 3/8 TUBE FEMALE)	PM-PF1020		-	—F0	r s	TD.
	$\cup$	1	TUBE FTG, ELBOW (3/8 TUBE-1/4 NPT)	PM-PF1060		-	—F0	r si	NORKLES _
I	13	2	BRASS THUMB SCREWS	PM-TS1010					-
	14	1	AIR BLOW TUBE MANIFOLD SUB-BASE	MP-211-0220					
	(15)	1	AIR BLOW TUBE MANIFOLD ASS'Y.	ASS-211-0103					
	16	1	AIR BLOW AIR TUBE HOLDER	MP-211-0222					
	$\overline{\mathbb{O}}$	1	BLOW BOX GRID COVER	MP-211-0227					
	18	1	HINGE BRACKET	MP-211-0240					





1ATERIAL							
4 (continued)							
	CTM PART NUMBER						
	MP-211-0241						
	MP-211-0242						
	MP-211-0243						
	MP-211-0244						
	PM-FASP30430	S					
	PM-HK1070						
	PM-TS1050						
	PM-FAW30615						
	PM-HI1030						
	PM-WL1220						

ASS-211-0104-X

-0104-A

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		BILL OF MATERIA	L	SOLD		CTM_21	1_0100P/I_10V
ASS	ASSEMBLY CTM-211-0122RL-12X		(	s			11-0122N/L-12/
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				-0122R/L-12S
1	1	5" WIDE; CORE UNIT	ASS-200-0150R/L				
2	1	5" WIDE; AIR BLOW w/ 12" DD SNORK.	MOD-211-0122R/L	S		REWIND	-0122R/L-12C
3	1	U-ARM ASSEMBLY	WAS-200-0247		FILM R	REWIND	-0122R/L-12F
4	1	5" WIDE; 12" UNWIND w/ DISKS MOD.	MOD-200-0121R/L	S			,
6	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	S			
	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	S	COLLAPSIBLE RWD		
	1	STANDARD MANDREL (SHOWN)	ASS-200-0147	S			
6	1	FILM REWIND MANDREL	ASS-200-0137	S	FILM REWIND	9	
	1	COLLAPSIBLE MANDREL	ASS-200-3140-5	S		REV	
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S		Ŭ	
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S	]		
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138		]		
	1	PRODUCT DETECT SENSOR & CABLE	ASS-200-0427	S	]		










		BILL OF MATERIA	L	SOLD	CTN 211 0126P / 12
ASSE	MBLY	CTM-211-0126RL-12X	(	s	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		STANDARD REWIND -0126R/L-12S
$\bigcirc$	1	5" WIDE; CORE UNIT	ASS-200-0150R/L		
2	1	5" WIDE; AIR BLOW w/12" EXT. SNORKEL	MOD-211-0126R/L	s	COLLAPSIBLE REWIND -0126R/L-12C
3	1	U-ARM ASSEMBLY	WAS-200-0247		FILM REWIND   -0126R/L-12F
④	1	5" WIDE; 12" UNWIND w/ DISKS MOD.	MOD-200-0121R/L	s	
a	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	S	→
9	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	S	COLLAPSIBLE RWD
	1	5" WIDE STANDARD MANDREL (SHOWN)	ASS-200-0147	S	STANDARD RWD
6	1	5" WIDE FILM REWIND MANDREL	ASS-200-0137	S	FILM REWIND
	1	5" WIDE COLLAPSIBLE MANDREL	ASS-200-3140-5	S	COLLAPSIBLE RWD (REV)
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	s	RH & I H ASSEMBLIES AVAILABLE
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S	-RH ASSEMBLY SHOWN-
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138		
	1	PRODUCT DETECT SENSOR	ASS-200-0427	S	]





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	<sup>TTLE:</sup> 360 SERIES APPLICATOR:	AIR BLOW BOX: SNORKEL (Sh	t. 2 of 2)	PART: AIR BL	OW BOX w/ 12	2" EXTENDED SN	IORKEL (VERTICAL ASSY)	Dept. Code 70
ſ	REV. REV. DESCRIPTION		REV. DATE RE	EV. BY: Scale:	Date: DRA	AWN BY:	F: \Engineering \Standard Parts \Applicator \	360 1 10V-0
	I INEW CULLAPSIBLE MAINUREL				2 [03/10/99]	DOD 3.		



		BILL C	OF MATERIAL	RH & LH ASSEMBL
		MOD-2	11-3101R/L-X	-RH ASSEMBL
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
	1	ASS-211-3101R/L-X	BLOW BOX ASSY w/TRANSITION PLATE	
5	1	ASS-211-0106M	AIR BLOW MAC VALVE ASSEMBLY	
	1	PM-PF1010	FTG, 1/4" TUBE to 1/4" NPT	
	2	PM-PF1020	FTG, 3/8" TUBE to 1/4" NPT MALE	
	1	PM-PF1105	BUSHING, 1/8" NPT FEMALE to 1/4" NPT MALE	
		PM-PF1169	HOSE BARB, 1/4" IUBE to 1/8" NPT	
	1	PM-P11080 PM-AH1000	AIR ASSIST TURING x 12" La	
E			• MATERIAL	
		ASS-21	11-3101R/L-X	
ITEM	ΟΤΥ	CTM PART NUMBER	PART DESCRIPTION	REV
1	1	SAS-211-X101R/L	VACUUM BOX WITH TRANSITION PLATE	$\square$
Ő	1	ASS-200-X126R/L	5"/7.5" TENSION BRUSH ASSEMBLY	
Ĩ	1	ASS-211-3102R/L-X	AIR BLOW CLEAR LABEL PEEL EDGE	
Ĭ	1	ASS-200-0430	#6110 CLEAR LABEL SENSOR	
Ť	6	PM-FASH429075	SHCS, #10-32 x 5/8" Lg. SS	



## ASSEMBLIES AVAILABLE ASSEMBLY SHOWN-











		BILL OF MATERIA	L	SOLD	RH & L
ASSE	MBLY	ASS-200-4101R/L-X-	12	S	–LH
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		10
0	1	5"/7.5" WIDE; 12" UNWIND ASSY (MINUS MP-200-0209)	MOD-200-X121R/L	s 1/4-20 x 3/4 LG	
2	1	5"/7.5" TENSION BRUSH ASSEMBLY	ASS-200-X126R/L	s SHCS (1 PLC.) $1/4-20 \times 1$ LG. $1/1$	< <b>\</b>
3	2	2" DIA. GUIDE COLLAR w/ SET SCREW	MP-238-0247		
4	1	5"/7.5" TENSION ROLLER ASSEMBLY	ASS-200-X135	S	
(5)	2	5"/7.5" IMPRINTER GUIDE ROLLER ASSY	ASS-200-4104-X	S	
6	1	UNWIND MOUNTING PLATE	MP-200-4201		
$\bigcirc$	1	REGISTRATION ROLLER SLIDE PLATE	MP-200-4202		
8	1	IMPRINTER MOUNTING BAR	MP-200-4203		╺╧┥┎╇╤┑┈╵╨
9	1	IMPRESSION MOUNTING BAR	MP-200-4204		<u> </u>
10	2	IMPRINTER ASSY SUPPORT ARM	MP-200-4207		
Ĩ	1	IMPRINTER FACEPLATE	MP-200-4208		
12	1	5"/7.5" IDLER ROLLER	MP-211-X209		
(13)	1	5"/7.5" TENSION ROLLER SHAFT	PM-200-X254		
(14)	2	ROLLER CAP	PM-200-0295-1.25		
15	1	1/2" ID LOCK COLLAR	PM-C01005		
Ĩ	1	1/2" I.D. RED FIBER WASHER	PM-FAW30920		======
m	4	1.25" I.D. GUIDE COLLAR w/ SET SCREW	MP-211-0210		
	8	SHCS. 1/4-20 x 7/8" La.	PM-FASH430079		
		7443			
				8 #10-32 x 5/8 LG. SHCS	
				8 #10-32 x 5/8 LG. SHCS 6 SCREWS - 2 PLCS. 12 TOTAL 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1/2 L	4–2 G. S	D x 1-1/2 D x 1-1/2 D x 1-1/2 MOUNTING	FASTENERS	B 12) NOTE: ROLLER ASS'Y ITEMS 12 thru 17 (FEMOVED FROM B.OM. AT CTM LEVEL B.O.M.)	



	BILL OF MATERIAL s						
ASSE	MBLY	ASS-200-4101R/L-X-1	6	S			
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
1	1	5/7.5 WIDE; 16" UNWIND ASSY. (MINUS (2) ASS-200-X135)	SAS-200-3121aR/L-X	•			
2	1	16" INSIDE UNWIND DISK ASSEMBLY	ASS-200-3132	S			
3	1	5/7.5 WIDE; TENSION BRUSH ASSY.	ASS-200-X126R/L	s			
4	1	5/7.5 WIDE; DANCER ROLLER ASSY.	ASS-200-X131	s			
(5)	1	5/7.5 WIDE; TENSION ROLLER ASSY.	ASS-200-X135	S			
6	2	5/7.5 WIDE; IMPRINTER GUIDE ROLLER ASSY.	ASS-200-4104-X	S			
$\bigcirc$	1	UNWIND MOUNTING PLATE	MP-200-4201				
8	1	REGISTRATION ROLLER SLIDE PLATE	MP-200-4202				
9	1	IMPRINTER MOUNTING BAR	MP-200-4203				
1	1	IMPRESSION MOUNTING BAR	MP-200-4204	•			
1	2	IMPRINTER ASSY. SUPPORT ARM	MP-200-4207				
12	1	IMPRINTER FACEPLATE	MP-200-4208				
13	1	ROLLER SUPPORT PLATE	MP-200-4209R/L				
14	1	16" OUTSIDE UNWIND DISK ASSEMBLY	ASS-200-3133	S			
15	1	5/7.5 IDLER ROLLER	MP-211-X209				
16	1	5/7.5 TENSION ROLLER SHAFT	PM-200-X254	•			
$\bigcirc$	2	ROLLER CAP	PM-200-0295-1.25	•			
18	1	1/2" ID LOCK COLLAR	PM-C01005				
19	2	1.25" I.D. GUIDE COLLAR w/ SET SCREW	MP-211-0210				
20	1	1/2" I.D. RED FIBER WASHER	PM-FAW30920				
2	2	2" DIA. GUIDE COLLAR w/ SET SCREW	MP-238-0247				
	8	SHCS, 1/4-20 x 7/8" LG.	PM-FASH430079				























		BILL C	OF MATERIAL
		MOD-	211–0111R/L
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
~	1	ASS-211-0111	RVB w/ TRANSITION PLATE
6	1	ASS-211-0112M	RVB VALVE BANK ASSEMBLY (MAC)
NC D	) <u>TE:</u>		
(F(	DR N	ANIFOLD BLANKS R	EFER TO DWG. #MP-211-0238-X)
MA OT	NIF HER	OLD TEMPLATES AVAI SIZES ARE CUSTON	LABLE FOR 2", 3", 4" AND 5" WIDE LABELS.
			Т
		(A)	
			SCALE: 3"=1'-0"

		BILL C	F MATERIAL		
		ASS-2	211-0111R/L		
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION		
1	1	MP-211-0235	RVB TRANSITION PLATE		
2	1	ASS-200-0126R/L	TENSION BRUSH ASSEMBLY		
3	1	MP-211-0237	MANIFOLD MOUNT PLATE		
4	1	ASS-211-0102R/L	AIR BLOW PEEL EDGE		
5	1	ASS-211-0108-2	FIBER OPTIC SENSOR w/2" MTG. SHAFT		
	6	PM-FASH429075	SHCS, #10-32 x 5/8" La, SS		





	BILL OF MATERIAL				
	ASS-211-0112M				
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION		
1	1	MP-214-0202	VALVE FASTENING MOUNTING PLATE		
2	1	MP-214-0206	VALVE MOUNTING PLATE		
3	1	PE-200-0405	VALVE CABLE		
4	1	PM-REG1500	REGULATOR		
5	1	PM-VA2384	0-160 PSI PRESSURE GUAGE		
6	2	PM-PF1180	NPT 90° STREET ELBOW 1/8" FEMALE TO 1/8" MALE		
$\bigcirc$	1	PM-PUMP1010	VACUUM PUMP, 55 PSI FEED PRESSURE, MUFFLED EXHAUST		
8	1	PM-VA2358M	2 STATION MAC VALVE BANK		
9	1	PE-C02000	CORD GRIP		
$\textcircled{1}{2}$	3	PM-FT1200	1/4" NPT SOCKET HEAD PLUG		
1	1	PM-PF1200	TEE 1/4" NPT FEMALE 3 ENDS		
12	1	PM-PF1143	NIPPLE, 1/4" NPT X 1 1/2" LG.		
13	1	PM-PF1220	ADAPTOR, 3/8" NPT FEMALE TO 1/4" NPT MALE		
14	1	PM-PF1157	REDUCER, 3/8" NPT TO 1/8" NPT		
15	1	PM-PF1159	FITTING, 3/8" NPT MALE BOTH ENDS		
16	1	PE-EN9125	1 1/4" BLACK PLASTIC THREADED PLUG		
$\bigcirc$	1	PE-COND1084	STEEL REDUCER		
18	1	PM-PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE		
19	1	PM-PF1010	FITTING, 1/4" TUBE w/ 1/4" NPT STRT		
20	1	PM-PF1020	FITTING, 3/8" TUBE w/ 1/4" NPT STRT		
2	1	PM-PF1167	3/8" NPT SOCKET HEAD PLUG		
2	10.5"	PM-PT1070	1/4" OD TUBING		
23	1	ASS-214-0106	AIR FILTER		
24	1	PM-PF1055	90° ELBOW 1/4" TUBE TO 1/4" NPT MALE		
0	2	PM-FASH430079	1/4"-20 UNC x 7/8" LG. SS SHCS		
0	2	PM-FAW30275	1/4" SS FLAT WASHER		
0	2	PM-FASH430078	1/4"-20 UNC x 3/4" LG. SS SHCS		
0	4	PM-FASH429088	10-32 X 2 1/2" LG. SS SHCS		
0	4	PM-FAW30265	#10 SS FLAT WASHER		



VALVE BANK SPARE PARTS: <u>SOLENOID</u>: #PM-VA2395M <u>AIR ASSIST REGULATOR W/GUAGE</u>: #PM-VA2396M <u>BLOW/TAMP/IMPRINTER REGULATORS W/GUAGE</u>: #PM-VA2397M <u>AIR ASSIST REGULATOR GUAGE</u>: #PM-VA2382M <u>BLOW/TAMP/IMPRINTER REGULATOR GUAGES</u>: #PM-VA2380M

MOVE PLUG FROM TEE \_\_\_\_ ON THIS SIDE TO "IN" PORT ON OPPOSITE SIDE & ATTACH AIR FILTER ASSEMBLY HERE (TO TEE) FOR RH APPLICATORS



(6)



23 <u>AIR FILTER</u> SHIP LOOSE -CUSTOMER TO INSTALL -







	BILL OF MATERIAL				SOLD		CTM_21	1_01310/1_10
A	SSE	MBLY	CTM-211-0131RL-12>	(	s			11-01311YL-12/
Π	ΈM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		STANDARD		-0131R/L-12S
	D	1	5" WIDE; CORE UNIT	ASS-200-0150R/L				04.740 / 400
$\left[ \right]$	2	1	5" WIDE; RVB w/ 12" DD SNORK.	MOD-211-0131R/L	S		REWIND	-0131R/L-12C
	3)	1	U-ARM ASSEMBLY	WAS-200-0247		FILM R	REWIND	-0131R/L-12F
	€	1	5" WIDE; 12" UNWIND w/ DISKS MOD.	MOD-200-0121R/L	S		L	,
	5	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	S			
Ľ	ש	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	S	COLLAPSIBLE RWD		
Γ		1	5" STANDARD MANDREL (SHOWN)	ASS-200-0147	S			
	6)	1	5" FILM REWIND MANDREL	ASS-200-0137	S	Film Rewind	0	
		1	5" COLLAPSIBLE MANDREL	ASS-200-3140-5	S		REV	
		1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S		0	
		1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S			
		1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138				
		1	PRODUCT DETECT SENSOR	ASS-200-0427	S	]		





SOLD CTM-211-0134R/L-12X S CTM PART NUMBER -0134R/L-12S STANDARD REWIND ASS-200-0150R/L -0134R/L-12C COLLAPSIBLE REWIND MOD-211-0134R/L S -0134R/L-12F WAS-200-0247 FILM REWIND MOD-200-0121R/L s - STD & FILM REWIND ASS-200-0145R/L S ASS-200-3167R/L S -COLLAPSIBLE RWD -STANDARD RWD ASS-200-0147 S -FILM REWIND ASS-200-0137 S REV ASS-200-3140-5 s - COLLAPSIBLE RWD ASS-200-0125 S PE-200-0407-5 s RH & LH ASSEMBLIES AVAILABLE ASS-200-0138 -RH ASSEMBLY SHOWN-S ASS-200-0427



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BILL OF MATERIAL						
ASSE	MBLY	CTM-211-3111R/L-12X		S		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			
⊝	1	5" WIDE; CORE UNIT	ASS-200-0150R/L			
0	1	5" WIDE; RVB CLR. LBL. NOSE MODULE	MOD-211-3111R/L	S		
3	1	U-ARM ASSEMBLY	WAS-200-0247			
€	1	5" WIDE; 12" UNWIND ASSY	ASS-200-0121R/L			
6	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	S	١	
9	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	S	1	
	1	STANDARD MANDREL (SHOWN)	ASS-200-0147	S	1	
6	1	FILM REWIND MANDREL	ASS-200-0137	S	1	
	1	COLLAPSIBLE MANDREL	ASS-200-3140-5	S	1	
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S		
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S		
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138			
	1	PRODUCT DETECT SENSOR	ASS-200-0427	S		
	0	ORDER CLEAR LABEL SENSOR SE	PARATELY			
#ASS-200-0430-A ~ FOR LRD2100 #ASS-200-0430-B ~ FOR LRD6110						



			1				
		BILL OF MATERIA		SOLD			
ASSE	MBLY	MOD-211-3111R/L		S			
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
_	1	RVB w/TRANSITION PLATE	ASS-211-3111R/L	S			
(5)	1	RVB VALVE BANK ASSEMBLY	ASS-211-0112	S			
		ORDER CLEAR LABEL SENSOR SI #ASS-200-0430-A ~ FOR #ASS-200-0430-B ~ FOR	EPARATELY LRD2100 LRD6110				
NO PA (FC MA	D <u>TE:</u> D & DR M	: MANIFOLD ARE JOB SPECIFIC. IANIFOLD BLANKS REFER TO DW OLD TEMPLATES AVAILABLE FOR 2	CUSTOM TO ORD G. #MP-211-023 2", 3", 4" AND 5	)er se 38-x) 5" Wil	EPARATELY. DE LABELS.		
		SIZES ARE COSTOM.					
			Ę	5	VALVE BANK SCALE: 8"	<u>⟨ ASSEMB</u> =1'-0"	<u>LY</u>
		BILL OF MATERIA	L	SOLD			
ASSE	MBLY	ASS-211-3111R/L		s			
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
	1	RVB TRANSITION PLATE	MP-211-0235				
$\check{2}$	1	5" TENSION BRUSH ASSEMBLY	ASS-200-0126R/I				
<u></u> (3)	1	MANIFOLD MOUNT PLATE	MP-211-0237				
Ă	1	5" CLR. LBL. AIR BLOW PEEL EDGE ASSY	ASS-211-3102R/I	s			
<u> </u>	6	SHCS, #10-32 x 5/8" LG.	NONF				
		ORDER CLEAR LAREL SENSOR SI					
		(REV) #ASS−200−0430−A ~ FOR #ASS−200−0430−B ~ FOR	LRD2100 LRD6110				





				-			
	BILL_OF_MATERIALs						
ASSE	MBLY	CTM-211V-4102R/L		S			
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
1	1	5" WIDE; CORE UNIT	ASS-200-0150R/L	S			
2	1	5" WIDE; RVB NOSE MODULE	MOD-211-0111R/L	S			
3	1	U-ARM ASSEMBLY	WAS-200-0247				
4	1	5" WIDE; STD REWIND BLOCK & SHAFT	ASS-200-0145R/L	S			
5	1	5" STANDARD REWIND MANDREL	ASS-200-0147	S			
6	1	NORWOOD IMPRINTER ASSEMBLY	ASS-200-4102R/L-12	S			
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S			
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S			
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138				
	1	PRODUCT DETECT SENSOR	ASS-200-0427	S			



<u>NOTE</u> PAD (FOR	<u>:</u> & Manif( Manifold	)LD ) BL
MAN	FOLD TEM	





	BILL OF MATERIAL			SOLD	
ASSEMBLY		MBLY	ASS-211-0112		S
	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
	€	1	VALVE FASTENING PLATE	MP-214-0202	
	0	1	VALVE MOUNTING PLATE	MP-214-0206	
	3	1	VALVE CABLE	PE-200-0405	
	4	1	REGULATOR w/ GAUGE	PM-REG1500	
	5	1	VACUUM PUMP	PM-PUMP1000	
	6	1	VALVE BANK	PM-VA2358	
	$\bigcirc$	1	CORD GRIP	PE-C02000	
	8	1	EXHAUST MUFFLER	PM-MU1021	
	9	1	AIR FILTER	ASS-214-0106	S
	1	1	3/4" NPT PLUG	PE-EN9110	
	(1)	1	1/4" x 3-1/2" NIPPLE	PM-PF1141	
	12	2	1/4" x 1-1/2" NIPPLE	PM-PF1143	
	$\textcircled{1}{3}$	1	1/4" TEE	PM-PF1200	
	14	1	1/4" STREET ELBOW	PM-PF1185	
	(15)	1	1/8" STREET ELBOW	PM-PF1180	
	16	5	1/4" NPT PLUG	PM-FT1200	
	$\bigcirc$	1	FITTING, 1/4" TUBE to 1/4" NPT STRT	PM-PF1010	
	18	1	FITTING, 3/8" TUBE to 1/4" NPT STRT	PM-PF1020	
	19	1	FITTING, 1/4" TUBE to 1/8" NPT STRT	PM-PF1005	
	20	1	FITTING, 1/4" TUBE to 1/4" NPT ELBOW	PM-PF1055	
	2	1	BUSHING, NPT 3/4" MALE to 1/2" FEMALE	PE-COND1080	•
	22	1	1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)	PM-PT1070	•
	23	2	SHCS, 1/4"-20 UNC x 7/8" LG.	NONE	•
	24	2	FLAT WASHER, 1/4" NOM. (STAINLESS)	NONE	.

VALVE BANK SPARE PARTS:

<u>SOLENOID</u> : #PM-VA2395	
AIR ASSIST REGULATOR: #PM-VA2396	6
BLOW/TAMP/IMPRINTER REGULATORS:	#PM-VA2397





(14)

(16)

(12(13(16)

22 20 (1)







	BILL OF MATERIAL		
	MOD-214-X101R/L		
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	1	ASS-214-X101R/L	TAMP ASSEMBLY w/TRANSITION PLATE
5	1	ASS-214-0105M	TAMP VALVE BANK ASSEMBLY (MAC)
	1	PM-AH1000	AIR ASSIST TUBING x 12" Lg.
	5	PM-PF1010	1/4 TUBE to 1/4 NPT MALE CONNECTOR
	2	PM-PF1020	3/8 TUBE to 1/4 NPT MALE CONNECTOR
	1	PM-PF1105	1/8 NPT FEMALE to 1/4 NPT MALE BUSHING
	1	PM-PF1169	1/4 TUBE TO 1/8 NPT MALE HOSE BARB ELBOW
	1	PM-PT1070	1/4" OD SMC TUBING x 40" Lg.
	1 PM-PT1080 3/8" OD SMC TUBING x 36" Lg.		
	ORDER THESE ITEMS SEPARATELY:		
	1.) TAMP SLIDE w/MOUNTING PLATEASS-214-X103R/L-X 2.) LABEL PAD		



NEW TITLEBLOCK

0



SCALE	: 2	"=1'	-0'

BILL OF MATERIAL			
ASS-214-X101R/L			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	MP-214-0207	TAMP TRANSITION PLATE
0	1	ASS-200-X126R/L	TENSION BRUSH ASSEMBLY
3	1	ASS-214-X102R/L	TAMP PEEL EDGE ASSEMBLY
4	1	ASS-211-0108-2	FIBER OPTIC SENSOR w/ 2" MTG. SHAFT
	6	PM-FASH429075	SHCS, #10-32 x 5/8" Lg. SS
THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTEGRATION INC.			
<sup>ITLE:</sup> 360 SERIES APPLICATOR: TAMP ASSEMBLY			
REV.	REV	. DESCRIPTION	

rev. date 04/08/03














PART NO.	DIM "A"	
CTM-214-0120R/L-12X	27.50	
CTM-214-2120R/L-12X	30.00	
CTM-214-5120R/L-12X	32.50	



BILL OF MATERIAL

ASSEMBLY

(1)

ITEM QTY ITEM DESCRIPTION

1 5/7.5/10 WIDE; CORE UNIT

CTM-214-X120RL-12X

CTM PART NUMBER

ASS-200-X150R/L



















		BILL OF MATERIA	L	Sold			RH & LH ASSEM	BLIES AVAILABLE	MOD-214-X125R/I
ASSE	MBLY	MOD-214-X125R/L		S	( <u>NOTE:</u>	·		BLY SHOWN-	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		PLEASE INDICATE	WHETHER			ASS-214-X125R/L
	1	5/7.5 ~ TAMP 6" EXT. P.E. ASSY	ASS-214-X125R/L	S	HORIZONTAL OR	/ERTICAL			5" WIDE _01258 /
9	1	TAMP VALVE BANK ASSEMBLY	ASS-214-0105	S	ASSEMBLY IS REG	UIRED.	)		
	1	AIR ASSIST TUBING x 28" Lg.	PM-AH1000					$\overline{(7)}$	7.5 WIDE -2125R/L
	5	1/4 TUBE to 1/4 NPT MALE CONNECTOR	PM-PF1010		(4)			Υ g	
	2	3/8 TUBE to 1/4 NPT MALE CONNECTOR	PM-PF1020		Ŷ	(1)	(5)		
	1	1/8 NPT FEMALE to 1/4 NPT MALE BUSHING	PM-PF1105			Ŷ	(6) _		╶╻═┲╡║╽
	1	1/4 TUBE to 1/8 NPT MALE HOSE BARB ELBOW	PM-PF1169			1			
	1	1/4" OD SMC TUBING x 56" Lg.	PM-PT1070					<u>,</u> 	
	1	3/8" OD SMC TUBING x 46" Lg.	PM-PT1080			) )			
÷					5	÷	5 VERTICAL ASSEMB		
		(8) <u>VALVE_BANK_ASSEN</u> SCALE: 2"=1'-0	<u>/BLY</u> ,				5 3	PAD, MAN	
		BILL OF MATERIA		SOLD	4	Ψ			
				SOLD	$\sim$	•			
ASSE								୭ <del> 0-0</del> 0-	
	1		UND 200 3757						
B	1	TAMP TRANSITION PLATE	MP-200-3357	•		$\rightarrow$	<del>((@))</del>		
R	1		MP-200-3350	•		(®)-		<b>b b</b> <del>b</del>	
Å	1	5/7.5 WIDE TENSION BRUSH ASS'Y	MF-200-3333	• •	T I	$\sim$			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3	5/7.5 TENSION BOLLER ASS'Y	ASS-200-X12017L	3 ()				6 D	└╧┠┲╧┿┷┙
l	2	GUIDE COLLAR	MP-211-0210	5	(5)				
	1	5/7.5 PEEL EDGE ASSEMBLY	ASS-211-X102R/I	S	FOR 5/7 5				
$\bigcirc$	1	10 PEEL EDGE ASSEMBLY	ASS-214-5102R/L	S	FOR 10				
	6	SHCS, #10-32 x 5/8" LG.	NONE			(F	$\langle $		<u>+~0</u>
	1	STANDARD FIBER OPTIC LABEL SENSOR	ASS-211-0108-2	S		0	HORIZONTAL ASSEM	<u>IBLY</u>	
<b></b>		THIS DRAWING AND DESIGN IS THE PRO	I PERTY OF CTM INTEGRA	ATION	NC. AND MAY NOT BE REPRODUCE	D IN WHOLE OR IN	N PART WITHOUT THE WRITTEN PEI	RMISSION OF CTM INTEGRA	TION INC.
	<sup>:</sup> 360	D SERIES APPLICATOR: TAMP	ASSEMBLY			"12" EXTEND	ED SNORKEL ASSEMBL	Ý	Dept. Code
REV.	REV.	. DESCRIPTION N TITLERLOCK: DWG No WAS 200-	3190		REV. DATE REV. BY: 05/21/03 TDR	Scale: Date: 1=4 0.3/	DRAWN BY: 10/99 BOB S.	F: \Engineering \Standard	d Parts\Applicator\360 MOD-214-X125RI

PART NO.	DIM "A"
CTM-214-3101R/L-5-12X	27.50
CTM-214-3101R/L-7-12X	30.00
CTM-214-3101R/L-10-12S	32.50



			BILL OF MATERIA	L	SOLD	
	ASSE	MBLY	CTM-214-3101RL-X-12	2X	S	
	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		
	€	1	5/7.5/10 WIDE; CORE UNIT	ASS-200-X150R/L		
2 1 5/7.5/10 CL SPECIFY STR		1	5/7.5/10 CLR. LBL. TAMP NOSE MOD. SPECIFY STROKE LENGTH	MOD-214-3101R/L-X	S	
	3	1	U-ARM ASSEMBLY	WAS-200-0247	•	
	4	1	5/7.5/10 WIDE; 12" UNWIND w/ DISKS MOD.	MOD-200-X121R/L	S	
	6	1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	S	-
	9	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	S	-
		1	STANDARD MANDREL (SHOWN)	ASS-200-X147	S	1
	6	1	FILM REWIND MANDREL	ASS-200-X137	S	-
	1 COLLAPSIBLE MANDE		COLLAPSIBLE MANDREL	ASS-200-3140-X	S	-
		1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S	
		1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S	
		1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-X138		
		1	PRODUCT DETECT SENSOR	ASS-200-0427	S	
			ORDER THESE ITEMS SEPARATEL 1.) CLEAR LABEL SENSOR #ASS-200-0430-A ~ FOR #ASS-200-0430-B ~ FOR 2.) TAMP SLIDE w/ MOUNTING F 3.) LABEL PAD 4.) LABEL MANIFOLD	Y LRD2100 LRD6110 PLATES		







		BILL (	DF MATERIAL					RH & LH	ASSEMB	LIES AVAI		1R/I_X
		MOD-2	14-3101R/L-X					-RH	ASSEMBL	Y SHOWN		
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION								ASS-214-3101	R/L-X
	1	ASS-214-3101R/L-X	TAMP ASSEMBLY w/ TRANSITION PLATE		÷,	+						, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
5	1	ASS-214-0105M	TAMP VALVE BANK ASSEMBLY	F	╷╶┵╪┙╴╶┙	   <del> </del>	<b>I</b>				5 WIDE -310	IK/L-5
	1	PM-AH1000	AIR ASSIST TUBING x 12" LONG	Line and the second sec		<del>唐</del> 一一					7.5" WIDE  -310	/1R/L-7
	5	PM-PF1010	1/4 TUBE to 1/4 MALE CONNECTOR	L	∃ ╨ H			┯╨╢╋╢				
	2	PM-PF1020	3/8 TUBE to 1/4 NPT MALE CONNECTOR		1		l l i l					
	1	PM-PF1105	1/8 NPT FEMALE to 1/4 NPT MALE BUSHING									
	1	PM-PF1169	1/4 TUBE to 1/8 NPT MALE HOSE BARB ELBOW			i l			$\left  \right  = \left  \right $			
	1	PM-PT1070	1/4" OD SMC TUBING x 40" LONG									
	1	PM-PT1080	3/8" OD SMC TUBING x 36" LONG					_				
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		╶ <mark>╵┟<u>╴</u>╶╹</mark> ────────			(2	$\mathbf{D}$	$\gamma$		<b>_₩</b> <u></u> ₽₩	<b>A</b>		
		配風		h	7		/		$\square$ —	TAMP ST	ROKE IS JOB SPECIEL	C
			$\forall$				/				AMP SLIDE SEPARATE	ΠY
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						Ð				ASS-214		
		(5) VAI	VE BANK ASSEMBLY		t <b>@</b> /(	學ノ		ter i	"ia			
			CAIF' 2"=1'-0"						F			
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					$\downarrow$	<b>\⊕</b> ,		─────	4			
		BILL (	DF MATERIAL	4		1-2	110h			<b>،</b> ח		
		ASS-2	14-3101R/L-X	K			-HOF				NU & MANIFULU	
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION					-		00		
1	1	MP-214-0207	TAMP TRANSITION PLATE	-@						(0	RUER SEPARATELT)	
2	1	ASS-200-X126R/L	5/7.5/10 TENSION BRUSH ASSEMBLY	4				থ				
3	1	ASS-214-3102R/L-X	5/7.5/10 CLR. LABL. TAMP PEEL EDGE ASSY.				_					
4	1	ASS-200-0430	6110 CLEAR LABEL SENSOR			(3	3)					
	6	PM-FASH429075	SHCS, #10-32 x 5/8" Lg. SS									
APP		THIS DRAWING AND E	IS THE PROPERTY OF CTM INTEGRATION INC. A	AND MAY NOT BE F	TITLE: TALA			NIHOUT THE WE	ACCENT	SSION OF CTM	MINIEGRATION INC.	
PEV	3	60   5"/7.5"/10	IAMP ASSEMBLI				IT LABEL I	DRAWN BY	ASSEME	$\frac{D \Gamma W}{F_{1} + F_{1} + F_{2}}$	RANSIIIUN PLAIE	70
						1=3	06/14/97	BOB	S.	. VEndigeering v	TAMP\ASS-214-310	1RL–X





		BILL OF MATERIA	L	SOL					
ASSE	MBLY	CTM-214-4102R/L-X-1	2S	S					
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER						
1	1	5"; 7.5" WIDE; CORE UNIT	ASS-200-X150R/L	S					
2	1	5"; 7.5" WIDE; TAMP NOSE MODULE	MOD-214-X101R/L	S					
3	1	U-ARM ASSEMBLY	WAS-200-0247						
4	1	5";7.5" WIDE; STD RWD BLOCK & SHAFT	ASS-200-X145R/L	S					
5	5 1 NORWOOD IMPRINTER ASSEMBLY		ASS-200-4102R/L-X-12	S					
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S					
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S					
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138						
	1 PRODUCT DETECT SENSOR ASS-200-0427								
	ORDER THESE ITEMS SEPARATELY 1.) TAMP SLIDE w/ MOUNTING PLATES 2.) LABEL PAD 3.) LABEL MANIFOLD								







		BILL C	OF MATERIAL		
		ASS-	-214-0107M		$\sim$
ITEN		CTM PART NUMBER	PART DESCRIPTION	$\neg$ $(2)$ $(17)$	
1	1	MP-214-0202	VALVE FASTENING MOUNTING PLATE	$\neg$ $\land$ $\land$	
$\tilde{2}$	1	MP-214-0206	VALVE MOUNTING PLATE	(1) $(1)$	(
3	1	PE-200-0405	VALVE CABLE		MAC
4	1	PM-REG1500	REGULATOR		۲
5	1	PM-VA2384	0-160 PSI PRESSURE GUAGE		3
6	2	PM-PF1180	NPT 90° STREET ELBOW 1/8" FEMALE TO 1/8" MALE		MAC
$\bigcirc$	1	PM-PUMP1010	VACUUM PUMP, 55 PSI FEED PRESSURE, MUFFLED EXHAUST		
8	1	PM-VA2361M	4 STATION MAC VALVE BANK		
9	1	PE-C02000	CORD GRIP		
1	2	PM-MU1027	3/8" NPT MALE BRONZE EXHAUST MUFFLER		
1	3	PM-FT1200	1/4" NPT SOCKET HEAD PLUG		」 『
12	1	PM-PF1200	TEE 1/4" NPT FEMALE 3 ENDS	_ 1/4-20 x 7/8 LG. SHCS \	
(13)	1	PM-PF1143	NIPPLE, 1/4" NPT X 1 1/2" LG.	w/F.W. (2 PLACES) \  ®	
(14)	1	PM-PF1220	ADAPTOR, 3/8" NPT FEMALE TO 1/4" NPT MALE		
(15)	1	PM-PF1157	REDUCER, 3/8" NPT TO 1/8" NPT		
10		PM-P+1159	FILLING, 3/8" NPT MALE BOTH ENDS		
	1	PE-EN9125	1 1/4 BLACK PLASTIC THREADED PLUG		÷
		PE-CONDI084	STEEL REDUCER		I
	5		BUSHING, 1/4 NPT FEMALE TO 3/6 NPT MALE		
8	1	PM-PF1010	FITTING, 1/4 TUDE W/ 1/4 NPT STRT		
6	1	PM_PF1167	3/8" NPT SOCKET HEAD PLUC		
03	10.5	5" PM-PT1070	1/4" OD TUBING		(VALVE
6	1	ASS-214-0106			
25	$\frac{1}{2}$	PM-PA1800			
26	1	PM-PF1055	90° ELBOW 1/4" TUBE TO 1/4" NPT MALE	$\neg$	
ň	2	PM-FASH430079	1/4"-20 UNC x 7/8" LG. SS SHCS		<u>IAMP, IM</u>
ŏ	2	PM-FAW30275	1/4" SS FLAT WASHER		PRESSUR
ŏ	2	PM-FASH430078	1/4"-20 UNC x 3/4" LG. SS SHCS		AIR ASSIS
Ŏ	4	PM-FASH429088	10-32 X 2 1/2" LG. SS SHCS		PRESSUR
Õ	4	PM-FAW30265	#10 SS FLAT WASHER		
	SOL AIR BLC	VALVE BANK ENOID: #PM-VA2395 ASSIST REGULATOR W/TAMP/IMPRINTER W/TAMP/IMPRINTER	SPARE PARTS:         M         W/GUAGE:       #PM-VA2396M         REGULATORS       W/GUAGE:       #PM-VA238         GUAGE:       #PM-VA2382M         REGULATOR       GUAGES:       #PM-VA2380M         ON       ON       ON         ON       ON       ON	397M MOVE PLUG FROM TEE IN THIS SIDE TO "IN" PORT OPPOSITE SIDE & ATTACH IN FILTER ASSEMBLY HERE TEE) FOR RH APPLICATORS 200 200 200 200 200 200 200 20	
		-	SHIP LOUSE -CUSTOMER TO INSTALL -		L





BILL OF MANIFOLD BASE         Image: Constraint of the second						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			OUTLINE OF MANIFOLD E 1/4–20 x 3/4 LG. SHCS – 2 PLACES	BASE		D VIEW "A" NK & MTG. ONLY)
ASSEMELY       ASS-214-0107       S         TTEM       QTY       ITEM DESCRIPTION       CTM PART NUMBER         (1)       1       VALVE FASTENING PLATE       MP-214-0202       .         (2)       1       VALVE FASTENING PLATE       MP-214-0206E       .         (3)       1       VALVE CABLE       PE-200-0405       .         (4)       1       REGULATOR/GAUGE(PM-VA2384)       PM-REG1500       .         (5)       1       VACUUM PUMP       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       1       1/4" x 1-1/2" LG. NIPPLE       PM-PF1185       .         (15)       1       1/8" STREET ELBOW       PM-PF1180       .         (16)       4       1/4" TUBE w/ 1/4" NPT SIRT       PM-PF1020			BILL OF MATERIA	L	SOLD	
ITEM       QTY       ITEM       DESCRIPTION       CTM       PART       NUMBER         (1)       1       VALVE       FASTENING       PLATE       MP-214-0202       .         (2)       1       VALVE       FASTENING       PLATE       MP-214-0206E       .         (3)       1       VALVE       CABLE       PE-200-0405       .         (4)       1       REGULATOR/GAUGE(PM-VA2384)       PM-REG1500       .         (5)       1       VACUM       PUMP       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-M-PF1141       .         (10)       1       3/4" NAT       NPLE       PM-PF1143       .         (11)       1       1/4" STREET ELBOW       PM-PF1180       .       .         (12)       1       1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .       .         (13)       1       1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .       .	ASSE	MBLY	ASS-214-0107	L	S	-
1       1       VALVE FASTENING PLATE       MP-214-0202       .         (2)       1       VALVE MOUNTING PLATE       MP-214-0206E       .         (3)       1       VALVE CABLE       PE-200-0405       .         (4)       1       REGULATOR/GAUGE(PM-VA2384)       PM-REG1500       .         (5)       1       VALVE BANK       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-MU1021       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1143       .         (12)       1       1/4" x 1-1/2" LG. NIPPLE       PM-PF1185       .         (13)       1       1/4" STREET ELBOW       PM-PF1180       .         (14)       1       1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (15)       1       FMTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (16) <t< td=""><td>ITEM</td><td>QTY</td><td>ITEM DESCRIPTION</td><td>CTM PART NUMBER</td><td></td><td>1</td></t<>	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		1
(2)       1       VALVE MOUNTING PLATE       MP-214-0206E       .         (3)       1       VALVE CABLE       PE-200-0405       .         (4)       1       REGULATOR/GAUGE(PM-VA2384)       PM-REG1500       .         (5)       1       VACUUM PUMP       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1185       .         (13)       1       1/4" STREET ELBOW       PM-PF1180       .         (16)       4       1/4" NPT PLUG       PM-PF1020       .         (17)       5       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (18)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1055       .         (20)	$\bigcirc$	1	VALVE FASTENING PLATE	MP-214-0202	•	1
(3)       1       VALVE CABLE $PE-200-0405$ .         (4)       1       REGULATOR/GAUGE(PM-VA2384) $PM-REG1500$ .         (5)       1       VACUUM PUMP $PM-PUMP1000$ .         (6)       1       VALVE BANK $PM-VA2361$ .         (7)       1       CORD GRIP $PE-C02000$ .         (8)       1       EXHAUST MUFFLER $PM-MU1021$ .         (9)       2       1/4" BRONZE EXHAUST MUFFLER $PM-MU1025$ .         (10)       1       3/4" NPT PLUG $PE-E09110$ .         (11)       1       1/4" x 3-1/2" LG. NIPPLE $PM-PF1141$ .         (12)       2       1/4" x 1-1/2" LG. NIPPLE $PM-PF1185$ .         (13)       1       1/4" STREET ELBOW $PM-PF11200$ .         (14)       1       1/4" NPT PLUG $PM-PF1100$ .         (15)       1       1/8" STREET ELBOW $PM-PF1020$ .         (16)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT $PM-PF1020$ .         (17)       5       FITTING, 1/4" TUBE w/ 1/4" NPT STRT $PM-PF1020$ . <tr< td=""><td><math>\underline{(2)}</math></td><td>1</td><td>VALVE MOUNTING PLATE</td><td>MP-214-0206E</td><td>•</td><td>-</td></tr<>	$\underline{(2)}$	1	VALVE MOUNTING PLATE	MP-214-0206E	•	-
(4)       1       REGULATOR/GAUGE(PM-VA2384)       PM-REG1500       .         (5)       1       VACUUM PUMP       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1183       .         (13)       1       1/4" STREET ELBOW       PM-PF1180       .         (14)       1       1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (15)       1       1/8" STREET ELBOW       PM-PF1020       .         (16)       1       FITTING, 3/8" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (19)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1025       .         (20)       1       ISHING, NPT GUT TO 7" LENGTH)       PE-COND1080       .	$\underline{3}$	1	VALVE CABLE	PE-200-0405	•	
(5)       1       VACUUM PUMP       PM-PUMP1000       .         (6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1185       .         (13)       1       1/4" TEE       PM-PF1185       .         (15)       1       1/8" STREET ELBOW       PM-PF11200       .         (16)       4       1/4" NPT PLUG       PM-PF11200       .         (17)       5       FITTING, 3/8" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (19)       1       FITTING, 3/8" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (20)       1       FITTING, NPT       PE-COND1080       .         (21)       1       BUSHING, NPT       PE-COND1080       .         (22)       1	(4)	1	REGULATOR/GAUGE(PM-VA2384)	PM-REG1500	•	(14)
(6)       1       VALVE BANK       PM-VA2361       .         (7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1       1/4" x 5TREET ELBOW       PM-PF1185       .         (14)       1       1/4" STREET ELBOW       PM-PF1180       .         (15)       1       1/8" STREET ELBOW       PM-PF1020       .         (16)       4       1/4" NPT PLUG       PM-PF1020       .         (17)       5       FITTING, 3/8" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (19)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1055       .         (20)       1       BUSHING, NPT       PE-COND1080       .         (21)       1       NOL POLYURETHANE TUBING       PM-PT1070       .         (23)	5	1	VACUUM PUMP	PM-PUMP1000	•	(12)(3)(6)
(7)       1       CORD GRIP       PE-C02000       .         (8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1       1/4" TEE       PM-PF1185       .         (15)       1       1/8" STREET ELBOW       PM-PF1180       .         (16)       4       1/4" NPT PLUG       PM-PF1020       .         (17)       5       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (18)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (19)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1055       .         (20)       1       BUSHING, NPT       PE-COND1080       .         (21)       1       1/4" O.D. POLYURETHANE TUBING       PM-PT1070       .         (23)       2       1/4" FLAT WASHER       NONE       . <t< td=""><td><math>\underline{(6)}</math></td><td>1</td><td>VALVE BANK</td><td>PM-VA2361</td><td>•</td><td></td></t<>	$\underline{(6)}$	1	VALVE BANK	PM-VA2361	•	
(8)       1       EXHAUST MUFFLER       PM-MU1021       .         (9)       2       1/4" BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1       3/4" NPT PLUG       PE-EN9110       .         (11)       1       1/4" x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1       1/4" TEE       PM-PF1185       .         (13)       1       1/4" STREET ELBOW       PM-PF1180       .         (16)       4       1/4" NPT PLUG       PM-PF1180       .         (16)       4       1/4" NPT PLUG       PM-PF1020       .         (17)       5       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (19)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1055       .         (20)       1       FITTING, 1/4" TUBE w/ 1/4" NPT ELBOW       PM-PF1070       .         (21)       1       1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)       PM-PT1070       .         (23)       2       1/4" FLAT WASHER       NONE       .         (23)       2       1/4" FLAT WASHER       NONE       . </td <td><math>\bigcirc</math></td> <td>1</td> <td>CORD GRIP</td> <td>PE-C02000</td> <td>•</td> <td></td>	$\bigcirc$	1	CORD GRIP	PE-C02000	•	
(9)       2 $1/4^{*}$ BRONZE EXHAUST MUFFLER       PM-MU1025       .         (10)       1 $3/4^{*}$ NPT PLUG       PE-EN9110       .         (11)       1 $1/4^{*}$ x 3-1/2" LG. NIPPLE       PM-PF1141       .         (12)       2 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1143       .         (14)       1 $1/4^{*}$ x 1-1/2" LG. NIPPLE       PM-PF1185       .         (15)       1 $1/4^{*}$ STREET ELBOW       PM-PF1180       .         (16)       4 $1/4^{*}$ NPT PLUG       PM-PF1010       .         (17)       5       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT STRT       PM-PF1020       .         (20)       1       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT ELBOW       PM-PF1055       .         (21)       1       BUSHING, NPT (CUT TO 7" LENGTH)       PM-PT1070       .       . <t< td=""><td>8</td><td>1</td><td>EXHAUST MUFFLER</td><td>PM-MU1021</td><td>•</td><td></td></t<>	8	1	EXHAUST MUFFLER	PM-MU1021	•	
Image: triangle intermediate intermedi		2	1/4 BRONZE EXHAUST MUFFLER	PM-MU1025	•	
(1)       1       1/4 x 3-1/2 LG. NIPPLE       PM-PF1141       .         (12)       2       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (13)       1       1/4" x 1-1/2" LG. NIPPLE       PM-PF1143       .         (14)       1       1/4" x TEE       PM-PF1200       .         (15)       1       1/8" STREET ELBOW       PM-PF1185       .         (15)       1       1/8" STREET ELBOW       PM-PF1180       .         (16)       4       1/4" NPT PLUG       PM-PF1000       .         (17)       5       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (18)       1       FITTING, 1/4" TUBE w/ 1/8" NPT STRT       PM-PF1005       .         (20)       1       FITTING, 1/4" TUBE w/ 1/4" NPT ELBOW PM-PF1055       .         (21)       1       BUSHING, NPT       PE-COND1080       .         (22)       1       1/4" O.D. POLYURETHANE TUBING       PM-PT1070       .         (23)       2       1/4" FLAT WASHER       NONE       .         (23)       2       1/4" FLAT WASHER       NONE       . <td< td=""><td></td><td>1</td><td>3/4 NPT PLUG</td><td>PE-EN9110</td><td>•</td><td></td></td<>		1	3/4 NPT PLUG	PE-EN9110	•	
U2       2 $1/4^{+}$ x $1-1/2$ LG. NIPPLE       PM-PF1143       .         (13)       1 $1/4^{*}$ TEE       PM-PF1200       .         (14)       1 $1/4^{*}$ STREET ELBOW       PM-PF1185       .         (15)       1 $1/8^{*}$ STREET ELBOW       PM-PF1180       .         (15)       1 $1/8^{*}$ STREET ELBOW       PM-PF1180       .         (16)       4 $1/4^{*}$ NPT PLUG       PM-PF11200       .         (17)       5       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT STRT       PM-PF1010       .         (18)       1       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT STRT       PM-PF1020       .         (19)       1       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT STRT       PM-PF1055       .         (20)       1       FITTING, $1/4^{*}$ TUBE w/ $1/4^{*}$ NPT ELBOW       PM-PT1055       .         (21)       1       BUSHING, NPT       PE-COND1080       . $3/4^{*}$ MALE to $1/2^{*}$ FEMALE       .       .       .         (22)       1 $1/4^{*}$ -20 UNC x $7/8^{*}$ LG. SHCS       NONE       .         (23)       2 $1/4^{*}$ FLAT WASHER       NONE       .         (25)       2       FLOW			1/4 X J-1/2 LG. NIPPLE	PM-PF1141	·	
Image: Constraint of the second structure in t		2 1	1/4" TEE	PM-PF1143	•	4
Image: Construct and the second se			1/4" STREET FLDOW	PM-Pr1200	•	4
Image: Second structure       Image: Second structure <td></td> <td>1</td> <td>1/8" STREET FLROW</td> <td></td> <td>•</td> <td>-</td>		1	1/8" STREET FLROW		•	-
Image: Constraint of the interval of the inter	l m	4	1/4" NPT PILIG		· ·	-
(1)       1       FITTING, 3/8" TUBE w/ 1/4" NPT STRT       PM-PF1010       .         (1)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1020       .         (1)       1       FITTING, 1/4" TUBE w/ 1/4" NPT STRT       PM-PF1005       .         (20)       1       FITTING, 1/4" TUBE w/ 1/4" NPT ELBOW       PM-PF1055       .         (21)       1       BUSHING, NPT       PE-COND1080       .         (22)       1       1/4" O.D. POLYURETHANE TUBING       PM-PT1070       .         (23)       2       1/4" -20 UNC x 7/8" LG. SHCS       NONE       .         (23)       2       1/4" FLAT WASHER       NONE       .         (24)       2       1/4" FLAT WASHER       NONE       .         (25)       2       FLOW CONTROLS       PM-PA1800       .	l m	5	FITTING. 1/4" TUBE w/ 1/4" NPT STRT	PM_PF1010	•	-
(i)       1       FITTING, 1/4" TUBE w/ 1/8" NPT STRT       PM-PF1020       .         (ii)       1       FITTING, 1/4" TUBE w/ 1/8" NPT STRT       PM-PF1005       .         (iii)       1       FITTING, 1/4" TUBE w/ 1/4" NPT ELBOW       PM-PF1055       .         (iii)       1       BUSHING, NPT strt       PE-COND1080       .         (iii)       1       1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)       PM-PT1070       .         (iii)       2       1/4"-20 UNC x 7/8" LG. SHCS       NONE       .         (iii)       2       1/4" FLAT WASHER       NONE       .         (iii)       2       FLOW CONTROLS       PM-PA1800       (REV)	1 1 1 1 1 1 1 1	1	FITTING, 3/8" TUBE w/ 1/4" NPT STRT		·	-
20       1       FITTING, 1/4" TUBE w/ 1/4" NPT ELBOW PM-PF1055       .         21       1       BUSHING, NPT	m	1	FITTING, 1/4" TUBE w/ 1/8" NPT STRT	PM-PF1005		1
(2)       1       BUSHING, NPT 3/4" MALE to 1/2" FEMALE       PE-COND1080       .         (2)       1       1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)       PM-PT1070       .         (23)       2       1/4"-20 UNC x 7/8" LG. SHCS       NONE       .         (24)       2       1/4" FLAT WASHER       NONE       .         (25)       2       FLOW CONTROLS       PM-PA1800       .	ă	1	FITTING, 1/4" TUBE w/ 1/4" NPT ELROW	PM-PF1055		1
<sup>(22)</sup> <sup>1</sup> <sup>1</sup> <sup>(4")</sup> <sup>(1,4")</sup>	Ø	1	BUSHING, NPT 3/4" MALE to 1/2" FEMALE	PE-COND1080		
23     2     1/4"-20     UNC x 7/8"     LG. SHCS     NONE     .       24     2     1/4"     FLAT WASHER     NONE     .       25     2     FLOW CONTROLS     PM-PA1800     (REV)	22	1	1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)	PM-PT1070	•	
2     1/4" FLAT WASHER     NONE     .       (25)     2     FLOW CONTROLS     PM-PA1800     (REV)	23	2	1/4"-20 UNC x 7/8" LG. SHCS	NONE		BLOW/TAMP/IMPRINT
25 2 FLOW CONTROLS PM-PA1800 (REV)	(24)	2	1/4" FLAT WASHER	NONE		
	25	2	FLOW CONTROLS	PM-PA1800		REV 2





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	2"0S SWG	<sup>e</sup> arm –0110R/L-2-12	2 i X		
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		BILL OF MATERIA	L	SOLD			
ASSE	ASSEMBLY MOD-214-X110R/L-X						
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER				
	1	5/7.5 SWING TAMP ASSEMBLY	ASS-214-X110R/L-X	S			
	1	TAMP 3-STATION VALVE BANK ASS'Y	ASS-214-0105M	S	19		

BILL OF         MATERIAL         SOLD           ASSEMBLY         ASS-214-X110R/L-X         S           ASSEMBLY         ASS-214-X110R/L-X         S           TEM QTY         ITEM DESCRIPTION         CTM PART NUMBER           (1)         1         5/7.5 TENSION BRUSH ASS'Y         ASS-200-X126R/L         S           (2)         1         5/7.5 TENSION BRUSH ASS'Y         ASS-200-X126R/L         S           (2)         1         5/7.5 TAMP PEEL EDGE ASSEMBLY         ASS-214-X102R/L         .           (3)         2         SHOCK STRIKE PLATE         MP-214-0210         .           (4)         1         ROTARY ACTUATOR HUB DETAIL         MP-214-0211         .           (5)         1         HOME SHOCK MOUNT         MP-214-0213         .           (6)         1         OFFSET BLOCK         MP-214-0213         .           (7)         1         EXTEND SHOCK MOUNT         MP-214-0214         .           (8)         1         EXTEND SHOCK MOUNT         MP-214-0217-X         .           (10)         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           (11)         1         TRANSITION PLATE         MP-214-0219         .											
ASS=VMBLY       ASS=214-X110R/L-X       S         TEM       QTY       TEM       DESCRIPTION       CTM       PART       NUMBER         ①       1       5/7.5       TENSION       BRUSH       ASS-200-X126R/L       S         ②       1       5/7.5       TENSION       BRUSH       ASS-214-X102R/L       .         ③       2       SHOCK STRIKE       PLEL       EDGE       ASSEMBLY       ASS-214-X102R/L       .         ④       1       ROTARY       ACTUATOR       HUB       DETAIL       MP-214-0210       .         ④       1       ROTARY ACTUATOR       HUB       DETAIL       MP-214-0211       .         ⑤       1       OFFSET       BLOCK       MP-214-0213       .         ⑦       1       EXTEND SHOCK MOUNT       MP-214-0213       .         ⑧       1       EXTEND SHOCK ACTUATOR TRANS. PLATE       MP-214-0217-X       .         ⑨       1       SUNG ARM       MP-214-0218-X       .         ⑨       1       SUNG ARM       MP-214-0218-X       .         ⑨       1       ROTARY ACTUATOR       MP-214-0218-X       .         ⑨       1       ROTARY ACTUATOR       MP-214-0218-X <td></td> <td></td> <td>BILL OF MATERIA</td> <td>L</td> <td>SOLD</td>			BILL OF MATERIA	L	SOLD						
ITEM         QTY         ITEM         DESCRIPTION         CTM         PART         NUMBER           ①         1         5/7.5         TENSION         BRUSH         ASS-200-X126R/L         S           ②         1         5/7.5         TENSION         BRUSH         ASS-200-X126R/L         S           ③         2         SHOCK         STRINE         PLEL         EDGE         ASS-214-X102R/L         .           ③         1         ROTARY         ACTUATOR         HUB         DETAIL         MP-214-0210         .           ④         1         ROTARY ACTUATOR         HUB DETAIL         MP-214-0211         .           ⑤         1         HOME         SHOCK         MOUNT         MP-214-0213         .           ⑥         1         OFFSET         BLOCK         MUNT         MP-214-0213         .           ⑧         1         EXTEND         SHOCK/ACTUATOR         TRANS.PLATE         MP-214-0217-X         .           ⑨         1         SMING ARM         MP-214-0218-X         .         .           ⑨         1         ROTARY         ACTUATOR         MP-214-0218-X         .           ⑨         1         ROTARY ACTUATOR	ASSE	MBLY	ASS-214-X110R/L-X		S						
1       5/7.5 TENSION BRUSH ASS'Y       ASS-200-X126R/L       S         2       1       5/7.5 TAMP PEEL EDGE ASSEMBLY       ASS-214-X102R/L       .         3       2       SHOCK STRIKE PLATE       MP-214-0210       .         4       1       ROTARY ACTUATOR HUB DETAIL       MP-214-0210       .         5       1       HOME SHOCK MOUNT       MP-214-0212       .         6       1       OFFSET BLOCK       MP-214-0213       .         7       1       EXTEND SHOCK MOUNT       MP-214-0214       .         8       1       EXTEND SHOCK MOUNT       MP-214-0215       .         9       1       SWING ARM       MP-214-0217-X       .         10       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         11       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         11       1       ROTARY ACTUATOR       PM-AC1250       S         13       1       MC-25L SHOCK ABSORBER       PM-SA0990       .         14       1       MC-25H SHOCK ABSORBER       PM-SA1000       .         15       2       LOCK NUT (FOR LIGHT DUTY SHOCK)       MP-214-0242       .         15<	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER							
(2)       1       5/7.5 TAMP PEEL EDGE ASSEMBLY       ASS-214-X102R/L       .         (3)       2       SHOCK STRIKE PLATE       MP-214-0210       .         (4)       1       ROTARY ACTUATOR HUB DETAIL       MP-214-0210       .         (5)       1       HOME SHOCK MOUNT       MP-214-0212       .         (5)       1       OFFSET BLOCK       MP-214-0213       .         (6)       1       OFFSET BLOCK       MP-214-0213       .         (7)       1       EXTEND SHOCK MOUNT       MP-214-0213       .         (7)       1       EXTEND SHOCK MOUNT       MP-214-0213       .         (8)       1       EXTEND SHOCK MOUNT       MP-214-0213       .         (9)       1       SWING ARM       MP-214-0214       .         (10)       1       ROTARY ACTUATOR TRANS. PLATE       MP-214-0215       .         (10)       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         (11)       1       TRANSITION PLATE       MP-214-0219       .         (12)       1       90° ROTARY ACTUATOR       PM-AC1250       S         (13)       1       MC-25L SHOCK ABSORBER       PM-SA10000       .	$\bigcirc$	1	5/7.5 TENSION BRUSH ASS'Y	ASS-200-X126R/L	S						
3       2       SHOCK STRIKE PLATE       MP-214-0210       .         4       1       ROTARY ACTUATOR HUB DETAIL       MP-214-0211       .         5       1       HOME SHOCK MOUNT       MP-214-0212       .         6       1       OFFSET BLOCK       MP-214-0213       .         7       1       EXTEND SHOCK MOUNT       MP-214-0213       .         8       1       EXTEND SHOCK MOUNT       MP-214-0214       .         8       1       EXTEND SHOCK MOUNT       MP-214-0215       .         9       1       SWING ARM       MP-214-0217-X       .         10       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         11       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         11       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         11       1       RANSITION PLATE       MP-214-0218-X       .         11       1       RANSITION PLATE       MP-214-0218-X       .         12       1       90° ROTARY ACTUATOR       PM-214-0218-X       .         13       MC-25L SHOCK ABSORBER       PM-SA0990       .       .         14 <td>2</td> <td>1</td> <td>5/7.5 TAMP PEEL EDGE ASSEMBLY</td> <td>ASS-214-X102R/L</td> <td></td>	2	1	5/7.5 TAMP PEEL EDGE ASSEMBLY	ASS-214-X102R/L							
④         1         ROTARY ACTUATOR HUB DETAIL         MP-214-0211         .           ⑤         1         HOME SHOCK MOUNT         MP-214-0212         .           ⑥         1         OFFSET BLOCK         MP-214-0213         .           ⑦         1         EXTEND SHOCK MOUNT         MP-214-0213         .           ⑦         1         EXTEND SHOCK MOUNT         MP-214-0213         .           ⑧         1         EXTEND SHOCK MOUNT         MP-214-0214         .           ⑧         1         EXTEND SHOCK/ACTUATOR TRANS. PLATE         MP-214-0215         .           ⑨         1         SWING ARM         MP-214-0217-X         .           ⑩         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           ⑪         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           ⑪         1         ROTARY ACTUATOR         PM-AC1250         S           ⑬         1         ROTARY ACTUATOR         PM-AC1250         S           ⑬         1         MC-25L SHOCK ABSORBER         PM-SA1000         .           ⑬         1         MC-25L SHOCK ABSORBER         PM-SA1000         .           ⑲	3	2	SHOCK STRIKE PLATE	MP-214-0210							
(5)       1       HOME SHOCK MOUNT       MP-214-0212       .         (6)       1       OFFSET BLOCK       MP-214-0213       .         (7)       1       EXTEND SHOCK MOUNT       MP-214-0213       .         (7)       1       EXTEND SHOCK MOUNT       MP-214-0213       .         (8)       1       EXTEND SHOCK MOUNT       MP-214-0214       .         (8)       1       EXTEND SHOCK/ACTUATOR TRANS. PLATE       MP-214-0215       .         (9)       1       SWING ARM       MP-214-0217-X       .         (10)       1       ROTARY ACTUATOR MOUNTING PLATE       MP-214-0218-X       .         (11)       1       TRANSITION PLATE       MP-214-0219       .         (12)       1       90° ROTARY ACTUATOR       PM-AC1250       S         (13)       1       MC-25L SHOCK ABSORBER       PM-SA0990       .         (14)       1       MC-25H SHOCK ABSORBER       PM-SA1000       .         (15)       2       LOCK NUT (FOR LIGHT DUTY SHOCK)       MP-214-0242       .         (15)       2       LOCK NUT (FOR LIGHT DUTY SHOCK)       MP-F1000       .         (17)       2       STR. TEL, 1/8" MPT TO 1/4 TUBE 90" ELBOW       PM-PF1025	٩	1	ROTARY ACTUATOR HUB DETAIL	MP-214-0211							
⑥         1         OFFSET BLOCK         MP-214-0213         .           ⑦         1         EXTEND SHOCK MOUNT         MP-214-0214         .           ⑧         1         EXTEND SHOCK MOUNT         MP-214-0214         .           ⑧         1         EXTEND SHOCK MOUNT         MP-214-0215         .           ⑨         1         SWING ARM         MP-214-0217-X         .           ⑨         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           10         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           11         1         RANSITION PLATE         MP-214-0219         .           11         1         TRANSITION PLATE         MP-214-0219         .           12         1         90° ROTARY ACTUATOR         PM-AC1250         S           13         1         MC-25L SHOCK ABSORBER         PM-AC1250         S           14         MC-25H SHOCK ABSORBER         PM-SA1000         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           15         SHOCK STOP COLLAR         PM-PF1205         .           16         1         SHOCK STOP COLLAR<	5	1	HOME SHOCK MOUNT	MP-214-0212							
(7)         1         EXTEND SHOCK MOUNT         MP-214-0214         .           (8)         1         EXTEND SHOCK/ACTUATOR TRANS. PLATE         MP-214-0215         .           (9)         1         SWING ARM         MP-214-0217-X         .           (10)         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           (11)         1         TRANSITION PLATE         MP-214-0219         .           (12)         1         90° ROTARY ACTUATOR         PM-AC1250         S           (13)         1         MC-25L SHOCK ABSORBER         PM-AC1250         S           (13)         1         MC-25H SHOCK ABSORBER         PM-SA1000         .           (15)         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           (15)         1         SHOCK STOP COLLAR         PM-C01040         .           (17)         2         STR. TEE, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1205         .           (18)         4         FIG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           (20)         2         1/4" O.D. SMC TUBING X 7" LONG         PM-PF1070         .           (21)         4         3/16 Ø DOWEL PIN x 1/2" LG.<	6	1	OFFSET BLOCK	MP-214-0213							
(8)         1         EXTEND SHOCK/ACTUATOR TRANS. PLATE         MP-214-0215         .           (9)         1         SWING ARM         MP-214-0217-X         .           (10)         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           (11)         1         TRANSITION PLATE         MP-214-0218-X         .           (12)         1         90° ROTARY ACTUATOR         PM-AC1250         S           (13)         1         TRANSITION PLATE         MP-214-0219         .           (12)         1         90° ROTARY ACTUATOR         PM-AC1250         S           (13)         1         MC-25L SHOCK ABSORBER         PM-SA0990         .           (14)         1         MC-25H SHOCK ABSORBER         PM-SA1000         .           (15)         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           (15)         1         SHOCK STOP COLLAR         PM-C01040         .           (17)         2         STR. TEE, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1205         .           (18)         4         FIG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SIMVEL         PM-PF1030         .           (20)         2         1/4" "O.D. SMC TUBING X 7" LONG	0	1	EXTEND SHOCK MOUNT	MP-214-0214							
④         1         SWING ARM         MP-214-0217-X         .           ①         1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           ①         1         TRANSITION PLATE         MP-214-0218-X         .           ①         1         TRANSITION PLATE         MP-214-0219         .           ①         1         90° ROTARY ACTUATOR         PM-AC1250         S           ①         1         90° ROTARY ACTUATOR         PM-AC1250         S           ①         1         MC-25L SHOCK ABSORBER         PM-SA0990         .           ①         1         MC-25H SHOCK ABSORBER         PM-SA1000         .           ①         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           ①         1         SHOCK STOP COLLAR         PM-C01040         .           ①         2         STR. TEE, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1205         .           ①         2         STR. TEE, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           ②         2         1/4" O.D. SMC TUBING X 7" LONG         PM-PF1070         .           ②         2         1/4" O.D. SMC TUBING X 7" LONG         PM-FADP0930         .<	8	1	EXTEND SHOCK/ACTUATOR TRANS. PLATE	MP-214-0215							
1         ROTARY ACTUATOR MOUNTING PLATE         MP-214-0218-X         .           11         1         TRANSITION PLATE         MP-214-0219         .           12         1         90° ROTARY ACTUATOR         PM-AC1250         S           13         1         MC-25L SHOCK ABSORBER         PM-AC1250         S           13         1         MC-25L SHOCK ABSORBER         PM-SA0990         .           14         1         MC-25H SHOCK ABSORBER         PM-SA1000         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           15         1         SHOCK STOP COLLAR         PM-C01040         .           17         2         STR. TEE, 1/8" MPI TO 1/4 TUBE 90" ELBOW         PM-PF1050         .           18         4         FIG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1030         .           20         2         1/4" O.D. SMC TUBING X 7" LONG         PM-PT1070         .           21         1/4" O.D. SMC TUBING X 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .           1         STANDARD FIBER OPTIC LABEL SENSOR         ASS-211-0108-2         S           w/ 2" LG. MIG. SH	9	1	SWING ARM	MP-214-0217-X							
1)       1       TRANSITION PLATE       MP-214-0219       .         12)       1       90° ROTARY ACTUATOR       PM-AC1250       S         13)       1       MC-25L SHOCK ABSORBER       PM-SA0990       .         14)       1       MC-25L SHOCK ABSORBER       PM-SA1000       .         15)       2       LOCK NUT (FOR LIGHT DUTY SHOCK)       MP-214-0242       .         16)       1       SHOCK STOP COLLAR       PM-C01040       .         17)       2       STR. TEE, 1/8° MALE NPT x (2) FEMALE 1/8° NPT       PM-PF1205       .         18)       4       FTG, 1/8° NPT TO 1/4 TUBE 90° ELBOW       PM-PF1050       .         19)       2       FTG, 1/8° NPT TO 1/4 TUBE 90° ELBOW SMINEL       PM-PF1030       .         20)       2       1/4″ O.D. SMC TUBING x 7″ LONG       PM-PF1070       .         20)       2       1/4″ O.D. SMC TUBING x 7″ LONG       PM-FADP0930       .         6       SHCS, #10-32 x 5/8″ LG.       NONE       .       .         1       STANDARD FIBER OPTIC LABEL SENSOR       ASS-211-0108-2       S         w/ 2″ LG. MTG. SHAFT       THIS DRAWING AND DESIGN IS THE PROPERTY       THIS	10	1	ROTARY ACTUATOR MOUNTING PLATE	MP-214-0218-X	•						
1         90" ROTARY ACTUATOR         PM-AC1250         S           13         1         MC-25L SHOCK ABSORBER         PM-SA0990         .           14         1         MC-25L SHOCK ABSORBER         PM-SA0990         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           16         1         SHOCK STOP COLLAR         PM-C01040         .           17         2         STR. TEE, 1/8" MALE NPT x (2) FEMALE 1/8" NPT         PM-PF1205         .           18         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1050         .           19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-PT1070         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .           1         STANDARD FIBER OPTIC LABEL SENSOR         ASS-211-0108-2         S           w/ 2" LG. MTG. SHAFT         THIS DRAWING AND DESIGN IS THE PROPERTY         THIS <td>Ū</td> <td>1</td> <td>TRANSITION PLATE</td> <td>MP-214-0219</td> <td>· ·</td>	Ū	1	TRANSITION PLATE	MP-214-0219	· ·						
1         MC-25L SHOCK ABSORBER         PM-SA0990         .           1         MC-25H SHOCK ABSORBER         PM-SA1000         .           1         MC-25H SHOCK ABSORBER         PM-SA1000         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           16         1         SHOCK STOP COLLAR         PM-C01040         .           170         2         STR. TEE, 1/8" MMLE NPT x (2) FEMMLE 1/8" NPT         PM-PF1205         .           18         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1050         .           19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           20         2         1/4" O.D. SMC TUBING x 7" LONG         PM-PT1070         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	12	1	90° ROTARY ACTUATOR	PM-AC1250	s						
1         MC-25H SHOCK ABSORBER         PM-SA1000         .           1         MC-25H SHOCK ABSORBER         PM-SA1000         .           15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           16         1         SHOCK STOP COLLAR         PM-C01040         .           17         2         STR. TEE, 1/8' MALE NPT x (2) FEMALE 1/8' NPT         PM-PF1205         .           18         4         FTG, 1/8' NPT TO 1/4 TUBE 90' ELBOW         PM-PF1050         .           19         2         FTG, 1/8' NPT TO 1/4 TUBE 90' ELBOW SMIVEL         PM-PF1030         .           20         2         1/4" O.D. SMC TUBING x 7" LONG         PM-PT1070         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	Ō	1	MC-25L SHOCK ABSORBER	PM-SA0990	<u>.</u>						
15         2         LOCK NUT (FOR LIGHT DUTY SHOCK)         MP-214-0242         .           16         1         SHOCK STOP COLLAR         PM-C01040         .           17         2         STR. TEE, 1/8" MALE NPT x (2) FEMALE 1/8" NPT         PM-PF1205         .           18         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1050         .           19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMIVEL         PM-PF1030         .           19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMIVEL         PM-PF1030         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-PT1070         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	Ā	1	MC-25H SHOCK ABSORBER	PM-SA1000	<b>.</b>						
1         SHOCK STOP COLLAR         PM-C01040         .           17)         2         STR. TEE, 1/8" MALE NPT x (2) FEMALE 1/8" NPT         PM-PF1205         .           18)         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1050         .           19)         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           19)         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030         .           20)         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-PT1070         .           20)         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR         ASS-211-0108-2         S           w/ 2" LG. MTG. SHAFT         THIS DRAWING AND DESIGN IS THE PROPERTY         THIS	<b>(</b> 5)	2	LOCK NUT (FOR LIGHT DUTY SHOCK)	MP-214-0242							
10         2         STR. TEE, 1/8" MALE NPT x (2) FEMALE 1/8" NPT         PM—PF1205         .           13         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM—PF1050         .           19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM—PF1030         .           10         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMIVEL         PM—PF1030         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM—PT1070         .           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM—FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	16	1	SHOCK STOP COLLAR	PM-C01040							
13         4         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW         PM-PF1050           13         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMINEL         PM-PF1030           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-PF1030           20         2         1/4" 0.D. SMC TUBING x 7" LONG         PM-PF1070           21         4         3/16 Ø DOWEL PIN x 1/2" Lg.         PM-FADP0930           6         SHCS, #10-32 x 5/8" LG.         NONE           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	ñ	2	STR. TEE, 1/8" WALE NPT x (2) FEWALE 1/8" NPT	PM-PF1205							
19         2         FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SMIVEL         PM—PF1030         .           20         2         1/4" O.D. SMC TUBING x 7" LONG         PM—PF1070         .           20         4         3/16 Ø DOWEL PIN x 1/2" Lg.         PM—FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS DRAWING AND DESIGN IS THE PROPERTY	18	4	FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW	PM-PF1050	1.						
2         1/4" O.D. SMC TUBING x 7" LONG         PMF11070         .           (2)         4         3/16 Ø DOWEL PIN x 1/2" Lg.         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT         ASS-211-0108-2         S           THIS         DRAWING AND DESIGN IS THE PROPERTY	Õ	2	FTG, 1/8" NPT TO 1/4 TUBE 90" ELBOW SWIVEL	PM-PF1030	1.						
(2)         4         3/16 Ø DOWEL PIN x 1/2" Lg.         PM-FADP0930         .           6         SHCS, #10-32 x 5/8" LG.         NONE         .           1         STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT THIS DRAWING AND DESIGN IS THE PROPERTY         S	ø	2	1/4" O.D. SMC TUBING x 7" LONG	PM-PT1070							
6         SHCS, #10-32 x 5/8" LG.         NONE           1         STANDARD FIBER OPTIC LABEL SENSOR         ASS-211-0108-2         S           w/ 2" LG. MTG. SHAFT         THIS DRAWING AND DESIGN IS THE PROPERTY         THE	ð	4	3/16 ø DOWEL PIN x 1/2" Lg.	PM-FADP0930							
1 STANDARD FIBER OPTIC LABEL SENSOR ASS-211-0108-2 S w/ 2" LG. MTG. SHAFT THIS DRAWING AND DESIGN IS THE PROPERTY	-	6	SHCS, #10-32 x 5/8" LG.	NONE							
THIS DRAWING AND DESIGN IS THE PROPERTY		1	STANDARD FIBER OPTIC LABEL SENSOR w/ 2" LG. MTG. SHAFT	ASS-211-0108-2	s						
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TEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	PM-VA2361M	4 STATION MAC VALVE BANK
2	1	PE-200-0405	VALVE CABLE
3	1	PE-C02000	CORD GRIP
4	1	PM-REG1500	REGULATOR
5	1	PM-VA2384	0-160 PSI PRESSURE GUAGE
6	5	PM-PF1180	NPT 90° STREET ELBOW 1/8" FEMALE TO 1/8" MALE
$\bigcirc$	1	PM-PUMP1010	VACUUM PUMP, 55 PSI FEED PRESSURE, MUFFLED EXHAUST
8	2	PM-MU1027	3/8" NPT MALE BRONZE EXHAUST MUFFLER
9	1	PM-PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE
10	3	PM-FT1200	1/4" NPT SOCKET HEAD PLUG
1	1	PM-PF1200	TEE 1/4" NPT FEMALE 3 ENDS
12	1	PM-PF1143	NIPPLE, 1/4" NPT X 1 1/2" LG.
13	1	PM-PF1055	FTG, 1/4 TUBE to 1/4 NPT 90° ELBOW
14	1	PM-PF1220	ADAPTOR, 3/8" NPT FEMALE TO 1/4" NPT MALE
(15)	1	PM-PF1157	REDUCER, 3/8" NPT TO 1/8" NPT
16	1	PM-PF1159	FITTING, 3/8" NPT MALE BOTH ENDS
$\bigcirc$	1	PE-EN9125	1 1/4" BLACK PLASTIC THREADED PLUG
18	1	PE-COND1084	STEEL REDUCER
19	1	PM-PF1167	3/8" NPT SOCKET HEAD PLUG
0	2	PM-PF1010	FITTING, 1/4" TUBE w/ 1/4" NPT STRT
2	1	PM-PF1020	FITTING, 3/8" TUBE w/ 1/4" NPT STRT
22	10.5"	PM-PT1070	1/4" OD TUBING
23	1	PM-PF1085	FTG, 1/4 NPT COUPLING
24	2	PM-PF2070	FLOW CONTROL, 1/4 TUBE x 1/4 NPT
25	1	PM-PF1035	FTG, 1/4 TUBE to 1/4 NPT 90° SWVL.
26	1	PM-PF1120	1/8 NPT CLOSE NIPPLE (3/4" Lg.)
Ø	1	PM-PF1170	FTG, 1/8 NPT to 1/8 NPT 90° FEMALE ELB.
<u>0</u>	4	PM-FASH429088	10-32 X 2 1/2" LG. SS SHCS
<u>O</u>	4	PM-FAW30265	#10 SS FLAT WASHER

MOUNTING PLATES NOT INCLUDED IN ASSEMBLY

VALVE BANK SPARE PARTS:

SOLENOID: #PM-VA2395M AIR ASSIST REGULATOR W/GUAGE: #PM-VA2396M BLOW/TAMP/IMPRINTER REGULATORS W/GUAGE: #PM-VA2397M AIR ASSIST REGULATOR GUAGE: #PM-VA2382M BLOW/TAMP/IMPRINTER REGULATOR GUAGES: #PM-VA2380M







	BILL OF MATERIAL SO				
ASSEMBLY		ASS-238-0142		S	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		
1	1	4 STATION VALVE BANK	PM-VA2361	S	
2	1	VALVE CABLE	PE-200-0405		
3	1	CORD GRIP	PE-C02000		
4	1	REGULATOR / GAUGE	PM-REG1500		
5	1	VACUUM PUMP	PM-PUMP1000		
6	1	EXHAUST MUFFLER	PM-MU1021		
$\bigcirc$	2	1/4" BRONZE EXHAUST MUFFLER	PM-MU1025		
8	1	3/4" NPT PLUG	PM-EN9110		
9	4	1/4" NPT PLUG	PM-FT1200		
10	1	1/4" NPT STREET ELBOW	PM-PF1185		
(11)	4	STREET ELBOW, #10-32 THREAD	PM-PF2050		
12	2	PIPE NIPPLE, 1/4" NPT x 1-1/2" Lg.	PM-PF1143		
13	1	PIPE NIPPLE, 1/4" NPT x 3-1/2" Lg.	PM-PF1141		
14	1	BUSHING, 3/4" NPT to 1/2" NPT	PE-COND1080		
(15)	1	1/4" NPT TEE, FEMALE 3-ENDS	PM-PF1200		
16	2	FTG, 1/4 TUBE to 1/4 NPT STRAIGHT	PM-PF1010		
$\bigcirc$	1	FTG, 3/8 TUBE to 1/4 NPT STRAIGHT	PM-PF1020		
(18)	1	FTG, 1/4 TUBE to 1/8 NPT STRAIGHT	PM-PF1005		
(19)	1	FTG, 1/4 TUBE to 1/4 NPT 90° ELBOW	PM-PF1055		
20	1	1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)	PM-PT1070	.	
21	2	FLOW CONTROL, 1/4 TUBE x 1/4 NPT	PM-PF2070		
2	1	FTG, 1/4 NPT COUPLING	PM-PF1085		
23	1	1/4 NPT CLOSE NIPPLE	PM-PF1125		
24	1	FTG, 1/4 TUBE to 1/4 NPT 90° SWVL.	PM-PF1035		
25	1	1/8 NPT CLOSE NIPPLE (3/4" Lg.)	PM-PF1120		
26	1	FTG, 1/8 NPT to 1/8 NPT 90° FEMALE ELB.	PM-PF1170		

ASSEMBLY NOTE: TURN GAUGES TO 90°, ADD FLOW CONTROLS @ VALVE BANK, PUT 90° SWIVEL ELBOW @ ASSIST ON VALVE BANK

VALVE BANK SPARE PARTS: <u>SOLENOID</u>: #PM-VA2395 <u>AIR ASSIST REGULATOR</u>: #PM-VA2396 <u>BLOW/TAMP/ROTARY ACTUATOR REGULATORS</u>: #PM-VA2397











		BILL OF MATERIAL				
			CTM-215-	-0105R/L-16PXX		
	ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION		
		1	CTM-200-0151R	5.00" WIDE R.H. 360 CORE UNIT		
	$ \Psi $	1	CTM-200-0151L	5.00" WIDE L.H. 360 CORE UNIT		
	6	1	MOD-215-0105R	5.00" WIDE R.H. MERGE NOSE MODULE		
	$\square$	1	MOD-215-0105L	5.00" WIDE L.H. MERGE NOSE MODULE		
		1	MOD-200-3157R-5	5.0" WIDE R.H. 16" Pwr REWIND, Std MAND		
		1	MOD-200-3157L-5	5.0" WIDE L.H. 16" Pwr REWIND, Std MAND		
		1	MOD-200-3158R-5	5.0" WIDE RH 16" Pwr COLLAPSIBLE REWINI		
	6	1	MOD-200-3158L-5	5.0" WIDE LH 16" Pwr COLLAPSIBLE REWINE		
	9	1	MOD-200-3157R-5-RU	5.0" Wide, RH 16" Pwr Rewind, Std Mandrel,		
		1	MOD-200-3157L-5-RU	5.0" Wide, LH 16" Pwr Rewind, Std Mandrel,		
		1	MOD-200-3158R-5-RU	5.0" Wide, RH 16" Pwr Rewind, Collap. Mandrel,		
		1	MOD-200-3158L-5-RU	5.0" Wide, LH 16" Pwr Rewind, Collap. Mandrel,		
	4	1	ASS-200-3107	HI/LO REGULATOR Assy, (w/FILTER)		
	5	1	ASS-200-3161	ALARM LIGHT ASSEMBLY		
		1	ORDER SEPARATELY	PRODUCT DETECT SENSOR & CABLE		





			BILL C	F MATERIAL
			CTM-215-	-2105R/L-16PXX
	ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	6	1	CTM-200-2151R	7.50" WIDE R.H. 360 CORE UNIT
	$\odot$	1	CTM-200-2151L	7.50" WIDE L.H. 360 CORE UNIT
	୍	1	MOD-215-2105R	7.50" WIDE R.H. MERGE NOSE MODULE
		1	MOD-215-2105L	7.50" WIDE L.H. MERGE NOSE MODULE
		1	MOD-200-3157R-7	7.5" WIDE R.H. 16" Pwr REWIND, Std MAND
		1	MOD-200-3157L-7	7.5" WIDE L.H. 16" Pwr REWIND, Std MAND
		1	MOD-200-3158R-7	7.5" WIDE RH 16" Pwr COLLAPSIBLE REWINI
	0	1	MOD-200-3158L-7	7.5" WIDE LH 16" Pwr COLLAPSIBLE REWINE
	9	1	MOD-200-3157R-7-RU	7.5" Wide, RH 16" Pwr Rewind, Std Mandrel,
		1	MOD-200-3157L-7-RU	7.5" Wide, LH 16" Pwr Rewind, Std Mandrel,
		1	MOD-200-3158R-7-RU	7.5" Wide, RH 16" Pwr Rewind, Collap. Mandrel,
		1	MOD-200-3158L-7-RU	7.5" Wide, LH 16" Pwr Rewind, Collap. Mandrel,
	€	1	ASS-200-3107	HI/LO REGULATOR Assy, (w/FILTER)
	5	1	ASS-200-3161	ALARM LIGHT ASSEMBLY
		1	ORDER SEPARATELY	PRODUCT DETECT SENSOR & CABLE





		BILL C	F MATERIAL		
		CTM-215-	-0105R/L-20PXX		
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION		
	1	CTM-200-0151R	5.00" WIDE R.H. 360 CORE UNIT		
$ $ $\cup$	1	CTM-200-0151L	5.00" WIDE L.H. 360 CORE UNIT		
	1	MOD-215-0105R	5.00" WIDE R.H. MERGE NOSE MODULE		
	1	MOD-215-0105L	5.00" WIDE L.H. MERGE NOSE MODULE		
	1	MOD-200-3156R-5	5.0" WIDE R.H. 20" Pwr REWIND, Std MAND		
	1	MOD-200-3156L-5	5.0" WIDE L.H. 20" Pwr REWIND, Std MAND		
	1	MOD-200-3159R-5	5.0" WIDE RH 20" Pwr COLLAPSIBLE REWIN		
6	1	MOD-200-3159L-5	5.0" WIDE LH 20" Pwr COLLAPSIBLE REWINI		
0	1	MOD-200-3156R-5-RU	5.0" Wide, RH 20" Pwr Rewind, Std Mandrel		
	1	MOD-200-3156L-5-RU	5.0" Wide, LH 20" Pwr Rewind, Std Mandrel,		
	1	MOD-200-3159R-5-RU	5.0" Wide, RH 20" Pwr Rewind, Collap. Mandrel		
	1	MOD-200-3159L-5-RU	5.0" Wide, LH 20" Pwr Rewind, Collap. Mandrel,		
4	1	ASS-200-3107	HI/LO REGULATOR Assy, (w/FILTER)		
5	1	ASS-200-3161	ALARM LIGHT ASSEMBLY		
	1	ORDER SEPARATELY	PRODUCT DETECT SENSOR & CABLE		
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		BILL C	F MATERIAL	
		CTM-215-	-2105R/L-20PXX	
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
	1	CTM-200-2151R	7.50" WIDE R.H. 360 CORE UNIT	
$ $ $\cup$	1	CTM-200-2151L	7.50" WIDE L.H. 360 CORE UNIT	
6	1	MOD-215-2105R	7.50" WIDE R.H. MERGE NOSE MODULE	
	1	MOD-215-2105L	7.50" WIDE L.H. MERGE NOSE MODULE	
	1	MOD-200-3156R-7	7.5" WIDE R.H. 20" Pwr REWIND, Std MAND	
	1	MOD-200-3156L-7	7.5" WIDE L.H. 20" Pwr REWIND, Std MAND	
	1	MOD-200-3159R-7	7.5" WIDE RH 20" Pwr COLLAPSIBLE REWINI	
6	1	MOD-200-3159L-7	7.5" WIDE LH 20" Pwr COLLAPSIBLE REWINI	
0	1	MOD-200-3156R-7-RU	7.5" Wide, RH 20" Pwr Rewind, Std Mandrel,	
	1	MOD-200-3156L-7-RU	7.5" Wide, LH 20" Pwr Rewind, Std Mandrel,	
	1	MOD-200-3159R-7-RU	7.5" Wide, RH 20" Pwr Rewind, Collap. Mandrel,	
	1	MOD-200-3159L-7-RU	7.5" Wide, LH 20" Pwr Rewind, Collap. Mandrel,	
4	1	ASS-200-3107	HI/LO REGULATOR Assy, (w/FILTER)	
5	1	ASS-200-3161	ALARM LIGHT ASSEMBLY	
	1	ORDER SEPARATELY	PRODUCT DETECT SENSOR & CABLE	





		BILL OF MATER	RIAL				
		ASS-215-X106R	:/L				RH & LH ASSEMBL
ITEM	QTY	CTM PART NUMBER PART DESCRIPTI	ON				-RH ASSEMBLY
1	1	ASS-215-X115 MERGE PRIMARY	' ROLLER ASSEMBLY				
2	1	MP-215-X209 5/7.5/10 PRIMA	ARY ROLLER SHAFT				
0	2	MP-211-0210 GUIDE COLLAR					
	1	PM-BEB11028 BRONZE WASHE					
		ASS-213-X103AR/L MERGE NUSE A	SSEMBLT ENSOR ASSEMBLY with 2" MOUNTING ROD				
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			ADDITIONAL (	1) ROLLER (MP-215-X210)			
			(2) R	DLLER CAPS (PM-ROL1990)			
			AND (1) ROL	_ER_SHAFT (MP-215-X207			
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		(SHOWING SECON	IDARY MERGE ROLLERS)				







			BILL OF MATERIA	L	SOLD	-
CTM-215-3101R/L-5-12X 27.50	ASSE	MBLY	CTM-215-3101RL-X-12	2X	s	
CTM-215-3101R/L-7-12X 30.00	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		
CTM-215-3101R/L-10-12S 32.50	(1)	1	5/7.5/10 WIDE; CORE UNIT	ASS-200-X150R/L		
	$\tilde{2}$	1	5/7.5/10 CLEAR LABEL MERGE NOSE MODULE	MOD-215-3101R/L-X	s	
	$\overline{3}$	1	U-ARM ASSEMBLY	WAS-200-0247	_	
	(4)	1	5/7.5/10 WIDE: 12" UNWIND w/ DISKS MOD.	MOD-200-X121R/I	· S	
$(1) \qquad (3)$		1	STD REWIND BLOCK & SHAFT (SHOWN)	ASS-200-0145R/L	s -	-
	(5)	1	COLLAPSIBLE REWIND BLK & SHAFT	ASS-200-3167R/L	s -	-
		1	STANDARD MANDREL (SHOWN)	ASS-200-X147	s -	-
	6	1	FILM REWIND MANDREL	ASS-200-X137	s -	-
		1	COLLAPSIBLE MANDREL	ASS-200-3140-X	s -	-
		1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	s	
		1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	s	
APPROX.		1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-X138		
		1	PRODUCT DETECT SENSOR	ASS-200-0427	s	
		4	ONDER CLEAR LABEL SENSOR S			
		(*	$\frac{1}{2}$ #ASS-200-0430-A ~ FOR			
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BILL OF MATERIAL				
ASSE	MBLY	CTM-215-4101R/L-X->	(S	S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
1	1	5"/7.5" WIDE; CORE UNIT	ASS-200-X150R/L-IMP	S
2	1	5"/7.5" WIDE; MERGE NOSE MODULE	MOD-215-X105R/L	S
3	1	U-ARM ASSEMBLY	WAS-200-0247	•
a	1	5"/7.5"; STD REWIND BLOCK & SHAFT	ASS-200-0145R/L	S
G		5"/7.5"; COLLAPSE RWD BLOCK & SHAFT	ASS-200-3167R/L	S
	1	5"/7.5"; STD REWIND MANDREL	ASS-200-X147	S
5	1	5"/7.5"; FILM REWIND MANDREL	ASS-200-X137	S
	1	5"/7.5"; COLLAPSIBLE REWIND MANDREL	ASS-200-3140-X	S
6	1	5"/7.5" GOTTSCHO w/ 12" UNWIND ASS'Y	ASS-200-4101R/L-X-12	S
$\odot$	1	5"/7.5" GOTTSCHO w/ 16" UNWIND ASS'Y	ASS-200-4101R/L-X-16	S
$\bigcirc$	1	VALVE BANK FOR IMPRINTER	ASS-215-0109	
8	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S
9	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S
10	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138	
11	1	PRODUCT DETECT SENSOR	ASS-200-0427	s







BILL OF MATERIAL				
ASSE	ASSEMBLY CTM-215-4102R/L-X-12X 5			
ITEM	ITEM QTY ITEM DESCRIPTION		CTM PART NUMBER	
1	1	5"/7.5 WIDE; CORE UNIT	ASS-200-X150R/L-IMP	S
2	2 1 5"/7.5" WIDE; MERGE NOSE MODULE		MOD-215-X105R/L	S
3	1	U-ARM ASSEMBLY	WAS-200-0247	
A	1	5"/7.5"; STD REWIND BLOCK & SHAFT	ASS-200-0145R/L	S
G		5"/7.5"; COLLAPSE RWD BLOCK & SHAFT	ASS-200-3167R/L	S
	1	STANDARD MANDREL (SHOWN)	ASS-200-X147	S
5	1	FILM REWIND MANDREL	ASS-200-X137	S
	1	COLLAPSIBLE MANDREL	ASS-200-3140-X	S
6	1	5"/7.5" NORWOOD IMPRINTER ASSEMBLY	ASS-200-4102R/L-X-12	S
$\bigcirc$	1	VALVE BANK FOR IMPRINTER	ASS-215-0109	
	1	DISPLAY UNIT ASSEMBLY	ASS-200-0125	S
	1	APPLICATOR TO DISPLAY UNIT-5' CABLE	PE-200-0407-5	S
	1	DISPLAY UNIT MOUNT ASSEMBLY	ASS-200-0138	
	1	PRODUCT DETECT SENSOR	ASS-200-0427	S







BILL (	OF MATERIAL		ASS-215-0109M
ASS-	-215-0109M	$\frac{\text{MOUNTING FASTENERS}}{1}$	7.05 210 01001
ITEM QTY CTM PART NUMBER	PART DESCRIPTION	$1/4-20 \times 7/8$ LG. SHCS	
① 1 MP-214-0202	VALVE FASTENING PLATE	w/ F.W. (2 PLACES)	
② 1 MP-214-0206	VALVE MOUNTING PLATE		ا ا
3 1 PE-200-0405	VALVE CABLE		
(4) 1 PM-VA2300M	SINGLE STATION MAC VALVE BANK		
5 1 PE-C02000	CORD GRIP		_
6 1 PE-COND1084	STEEL REDUCER		
⑦ 2 PM-MU1027	3/8" NPT MALE BRONZE EXHAUST MUFFLER		(2)
8 1 PM-PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE		<u> </u>
③ 3 PM-PF1167	3/8" NPT SOCKET HEAD PLUG		
10 2 PM-PF1010	FITTING, 1/4" TUBE w/ 1/4" NPT STRT		
1 2 PM-PA1800	FLOW CONTROLS	(5) /	
1 PE-EN9125	1 1/4" BLACK PLASTIC THREADED PLUG		
O 2 PM-FASH430079	1/4"-20 UNC x 7/8" LG. SS SHCS		TELE ADHESIVE LABEL
O 2 PM-FAW30275	1/4" SS FLAT WASHER		
0 2 PM-FASH430078	1/4"-20 UNC x 3/4" LG. SS SHCS		
0 4 PM-FASH429088	10-32 X 2 1/2" LG. SS SHCS	$W/ #10 - 52 \times 2 - 1/2 LG. SHUS - 0 W/ #10 - 52 \times 2 - 1/2 LG. SHUS - 0 W/ #10 - 52 X = 0 H = 0 $	
<u> </u>	#10 SS FLAT WASHER		
BLOW/TAMP/IMPRINTER REGULAT	ORS W/GUAGE: #PM-VA2397M OR GUAGES: #PM-VA2380M		
1/4-20 x 3/4 LG. SHCS - 2 PLACES (VA	END VIEW "A" ALVE BANK & MTG. ONLY)		
	DESIGN IS THE PROPERTY OF CTM INTEGRATION INC.	AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF CTM INTEGRA	ATION INC.
360 5"/7.5"/10	"" VALVE BANKS	MERGE/ IMPRINTER VALVE BANK ASSEMBLY	70
$\begin{vmatrix} REV & REV & DESCRIPTION \\ 0 & - \end{vmatrix}$		- XXX 1=4 04/02/07 E. SANOR F: Engineering Standard 360	ASS-215-0109M

	BILL OF MATERIAL 50					
ASSEMBLY		ASS-215-0109		S		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER			
1	1	VALVE FASTENING PLATE	MP-214-0202			
2	1	VALVE MOUNTING PLATE	MP-214-0206			
3	1	VALVE CABLE	PE-200-0405			
4	1	VALVE BANK	PM-VA2300			
5	1	CORD GRIP	PE-C02000			
6	1	BUSHING, 3/4" NPT to 1/ NPT"	PE-COND1080			
$\bigcirc$	2	1/4" BRONZE EXHAUST MUFFLER	PM-MU1025			
8	1	3/4" NPT PLUG	PE-EN9110			
9	3	1/4" NPT PLUG	PM-FT1200			
1	2	FITTING, 1/4" TUBE to 1/4" NPT STR.	PM-PF1010	.		
1	2	1/4"-20 UNC x 7/8" LG. SHCS	NONE			
$\textcircled{1}{2}$	2	1/4" FLAT WASHER	NONE			



<u>VALVE BANK SPARE PARTS:</u> <u>SOLENOID</u>: #PM-VA2395 <u>AIR ASSIST REGULATOR</u>: #PM-VA2396 <u>BLOW/TAMP/IMPRINTER REGULATORS</u>: #PM-VA2397



	THIS DRAWING AND DESIGN	IS THE PROPERTY OF CTM INTE	EGRATION INC. AND MAY NOT BE RE	PRODUCED IN	WHOLE	OR IN PART V	VITHOUT THE WRITTEN PERM	ISSION OF CTM INTEGRATION INC.	
<sup>™™</sup> 360	SERIES APPLICATOR:	MERGE ASSEMBLY		PART:	ERGE/	' Imprinte	R VALVE BANK AS	SEMBLY	Dept. Code 70
rev. rev. 1 ADDE	DESCRIPTION D SPARE PARTS LIST NO	TE	rev. date 02/16/05	rev. by: TDR	Scale: 1=4	Date: 10-15-01	drawn by: BOB S.	F:\Engineering\Standard Parts\Applicator\ 215\ASS-215-01	<sup>,360</sup> 09



	BILL OF MATERIAL					
	CTM-215-4110R/L-X-X					
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION			
1	1	CTM-200-2150R/L	360 CORE UNIT, 7.5" WIDE			
2	1	WAS-200-4247	U-ARM WELDMENT FOR LOOS			
3	1	ASS-200-0145R/L	REWIND BEARING BLOCK w/TF			
4	1	ASS-200-2147	7.5" REWIND MANDREL			
5	1	MOD-200-4130R/L-X	INTEGRATED LOOSE LOOP BRAC			
6	1	MOD-215-2105R/L	7.5" WIDE MERGE NOSE ASSEM			

ORDER THE FOLLOWING SEPARATELY: 1.) PRINT ENGINE





		BILL C	DF MATERIAL				
		MOD-20	00-3156R/L-	X		NOTE.	
TEM	QTY	CTM PART NUMBER	PART DESCRIPTION			NUTE:	POWERED
$\underline{0}$	1	ASS-200-X155R/L	5/7.5" WIDE PWR'D F	EWIND, R/L. STD REWIND			ADD EITH
	1	MP-200-3305	SPLICE PLATE				WITH VAL
	6	MP-215-0202	20 UNWIND W/PWF. I	ALWIND, RH/LH, 5/7.5			OR ASS-
	32	PM-FASH429075	SHCS. #10-32 UNF >	5/8" LG.			WITH OUT
	6 32 0TE:	MP-215-0202 PM-FASH429075 FOR REELS-UP OI ASS-200-3160 W COLLAR PM-C010 WITH ASS-200-37 1/4-20	GUIDE COLLAR FOR 1 SHCS, #10-32 UNF × RIENTATION, REPL ITH ASS-200-31 25. REPLACE RE 162A x 2 LG. SHCS (2) PLCS.	.00" DIA. ROLLERS 5/8" LG. ACE UNWIND DISC 60A & ADD LOCK WIND ASS-200-316 UNUD ASS-200-316 UNUD ASS-200-316 UNUD ASS-200-316			WITH OUT TO THE C

TE:	POWERED REWIND REQUIRES A HI/LO PRESSURE REGULATOR	RH & LH AS
	WITH VALVE BANKS) OR ASS-200-3107 (FOR APPLICATORS	5.00" & 7.50"
	WITH OUT VALVE BANKS) TO THE CTM BOM ALONG WITH MOD-200X-3156R/L-X	-5.00 A



BILL C	F MATERIAL	
MOD-20		
ITEM QTY CTM PART NUMBER	PART DESCRIPTION	
1 ASS-200-X155R/L	5/7.5" WIDE PWR'D REWIND, R/L. STD REWIND	
② 1 MP-200-3305	SPLICE PLATE	
3 1 ASS-200-3170R/L-X	16" UNWIND w/Pwr. REWIND, RH/LH, 5/7.5"	
(4) 6 MP-215-0202	GUIDE COLLAR FOR 1.00" DIA. ROLLERS	
32  PM-FASH429075	SHCS, #10-32 UNF x 5/8" LG.	
NOTE: FOR REELS-UP ORI ASS-200-3132 WIT COLLAR PM-C0102 WITH ASS-200-316	ENTATION, REPLACE UNWIND DISC H ASS-200-3132A & ADD LOCK 5. REPLACE REWIND ASS-200-3162 2A	:
1/4-20	x 2 LG. SHCS (2) PLCS.	

NOTE:	POWERED REWIND REQUIRES A HI/LO PRESSURE REGULATOR	
	ADD EITHER ASS-200-3106 (FOR APPLICATORS	RH & LH AS
	WITH VALVE BANKS)	
	OR ASS–200–3107 (FOR APPLICATORS	5.00"& 7.50"
	WITH OUT VALVE BANKS)	-5.00" A
	TO THE CTM BOM ALONG WITH MOD-200-3157R/L-S-XX	





IOTE:	POWERED REWIND REQUIRES A HI/LO PRESSURE REGULATOR	
	ADD EITHER ASS-200-3106 (FOR APPLICATORS	
	WITH VALVE BANKS)	
	OR ASS-200-3107 (FOR APPLICATORS	5.00"& 7.50
	WITH OUT VALVE BANKS)	-5.00"
	TO THE CTM BOM ALONG WITH MOD-200-3157R/L-S-XX	



BILL OF MATERIAL					
MOD-200-3159R/L-X					
ITEM	ITEM QTY CTM PART NUMBER PART DESCRIPTION				
1	1	1 ASS-200-X158R/L 5/7.5 WDE, PWR'D REWIND, R/L., COLLAPSIBLE REWIND			
2	1	MP-200-3305	SPLICE PLATE		
3	1	ASS-200-3169R/L-X	20" UNWIND w/Pwr. REWIND, RH/LH, 5/7.5"		
4	6	MP-215-0202	GUIDE COLLAR FOR 1.00" DIA. ROLLERS		
	32	PM-FASH429075	SHCS, #10-32 UNF x 5/8" LG.		

NOTE: FOR REELS-UP ORIENTATION, REPLACE UNWIND DISC ASS-200-3160 WITH ASS-200-3160A & ADD LOCK COLLAR PM-C01025. REPLACE REWIND ASS-200-3162C WITH ASS-200-3162CA

NOTE: POWERED REWIND REQUIRES A HI/LO PRESSURE REGULATOR ADD EITHER ASS-200-3106 (FOR APPLICATORS WITH VALVE BANKS) OR ASS-200-3107 (FOR APPLICATORS WITH OUT VALVE BANKS) TO THE CTM BOM ALONG WITH MOD-200X-3156R/L-X











	В.	O.M. (SINGLE LIGHT	STACK)	SOLD	
ASSEMBLY ASS-200-4105-XX		S	NOTE:		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		PRIOR TO PROGRAM VERSION 360-2c.10.0
1	1	LABELER TO LIGHT STACK CABLE	PE-200-0409		THE PURCHASED LIGHTS (ITEM (1)) WERE
2	1	ALARM LIGHT ENCLOSURE ASS'Y.	ASS-200-4221		PART NOS. WERE
3	1	LIGHT STACK BASE	PE-LI2001		#PE-LI2058 FOR RED FLASHING LIGH
4	1	RELAY	PE-RE1001		#PE-LIZU39 FOR AMBER FLASHING LI
5	1	RELAY SOCKET	PE-RE1050		
6	1	DIN RAIL	CP-200-0271		(REV 3
$\bigcirc$	1	1/2" GASKET	PE-COND1150		_
8	1	CORD GRIP	PE-C02005		
9	1	1/2" CLOSED NIPPLE	PE-COND1167		
1	2	1/2" LOCKNUT	PE-COND1005		(REV 2)
൘	1	RED STEADY LIGHT (SEE NOTE)	PE-LI2032		
	1	AMBER STEADY LIGHT (SEE NOTE)	PE-LI2034		CHOOSE EIGHT COLOR
$\textcircled{1}{2}$	1	ALARM LIGHT MOUNTING ASSEMBLY	ASS-200-4106		ASSY w/MTG. BRACKET
	1	22 AWG WHT/RED WIRE x 10" LONG	PE-W104101B		

## FOR WIRING





# **CHANGING TO OPPOSITE HAND DISPENSE**

When performing an applicator changeover, the nose assembly, unwind assembly, rewind, and wiring are first changed to the opposite hand dispense. Then each component assembly is remounted on the opposite side of the applicator. The symmetry of the applicator main module and the individual parts facilitate the changeover process but it can be confusing if care is not exercised. The explanation and diagrams to follow will hopefully guide you through this process.

## **APPLICATOR CHANGEOVER**

- 1) Remove the nose assembly (See: NOSE ASSEMBLY REMOVAL).
- 2) Change the applicator nose assembly to the opposite hand dispense (See: NOSE ASSEMBLY CHANGEOVER).
- 3) Remove the rewind assembly from the applicator (See: REWIND REMOVAL).
- 4) Change the rewind assembly to the opposite hand dispense (See: REWIND CHANGEOVER).
- 5) Change the wiring to the opposite side of the applicator (See: WIRING CHANGEOVER).
- 6) Change the unwind assembly to the opposite hand dispense.
- 7) If the applicator is a Tamp or Air Blow, move the valve assembly to the opposite side of the machine.
- 8) Install the rewind assembly on the opposite side of the machine (See: REWIND INSTALLATION).
- Install the nose assembly on the opposite side of the machine (See: NOSE ASSEMBLY INSTALLATION).



## NOSE ASSEMBLY REMOVAL AND INSTALLATION INSTRUCTIONS

## NOTE: DISCONNECT THE POWER CORD AND AIR SUPPLY FROM THE MACHINE BEFORE ATTEMPTING ANY OF THE FOLLOWING PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN INJURIES FROM MOVING PARTS OR ELECTRICAL SHOCK!

## BLOW BOX NOSE ASSEMBLY REMOVAL

- 1) Remove the stainless steel cover from the bottom of the applicator.
- 2) Remove the air tubes interconnecting the two sides of the applicator.
- 3) Disconnect the fiber optic cables from the label sensor mounted on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
- 4) Cut the tie wraps securing the fibers to the adhesive mounting pads and gently pull the fiber optic cable out of the wiring clamps and through the holes in the fiber optic mounting plate.
- 5) Unplug the blow box fan connector located on the underside of the electronic shelf.
- 6) Disconnect the hoses for the air assist tube and the air blast manifold at the applicator housing.
- 7) Remove the peel edge assembly to gain access to the #10 mounting screws.
- 8) Remove the six #10 mounting screws holding the nose assembly to the housing.



## **BLOW BOX NOSE ASSEMBLY INSTALLATION**

- 1) Make sure that the peel edge assembly is removed from the blow box nose assembly.
- 2) Install the blow box nose assembly using the six #10 mounting screws making sure that the fan harness is tucked inside the applicator housing.
- 3) Plug the blow box fan harness into its connector on the underside of the electronic shelf.
- 4) Install the peel edge assembly using the two  $\frac{1}{4}$  screws and the peel edge nut.
- 5) Make sure the label sensor is installed in the peel edge with the optical fibers running through the two holes in the peel edge side frame. Run the optical fibers through the two holes in the mounting plate.
- 6) Re-connect the fiber optic cable to the label sensor located on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Plug the emitter fiber (from the lower fork in the label sensor) into the out going arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection. Slide the cinching mechanism downward and close the top cover on the sensor.
- 7) Neatly tie wrap any excess fiber optic cable to the adhesive pads located near the fiber mounting plate. Note: The excess fiber should be formed into a loop greater than 3" in diameter to avoid kinking the fiber.
- 8) Install the air tubes interconnecting the two sides of the applicator.
- 9) Replace the stainless steel housing cover.

### NOTE: DISCONNECT THE POWER CORD AND AIR SUPPLY FROM THE MACHINE BEFORE ATTEMPTING ANY OF THE FOLLOWING PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN INJURIES FROM MOVING PARTS OR ELECTRICAL SHOCK!

#### MERGE NOSE ASSEMBLY REMOVAL

- 1) Remove the stainless steel cover on the bottom of the applicator.
- 2) Remove the air tubes interconnecting the two sides of the applicator.
- 3) Disconnect the fiber optic cables from the label sensor mounted on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
- 4) Cut the tie wraps securing the fibers to the adhesive mounting pads and gently pull the fiber optic cable out of the wiring clamps and through the holes in the mounting plate.
- 5) Remove the fiber optic mounting plate from the side of the applicator housing.
- 6) Rotate the first stage of the merge nose downward to gain access to the #10 mounting screws.
- 7) Remove the six #10 mounting screws holding the nose assembly to the housing.



## MERGE NOSE ASSEMBLY INSTALLATION

- 1) Rotate the first stage of the merge nose downward to gain access to the #10 mounting screws.
- 2) Install the merge nose assembly using the six #10 mounting screws.
- 3) Re-position the first stage of the merge nose.
- 4) Make sure the label sensor is installed in the peel edge. Run the optical fibers through the two holes in the mounting plate on the applicator housing.
- 5) Re-connect the fiber optic cable to the label sensor located on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Plug the emitter fiber (from the lower fork in the label sensor) into the out going arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection. Slide the cinching mechanism downward and close the top cover on the sensor housing.
- 6) Neatly tie wrap any excess fiber optic cable to the adhesive pads located near the fiber mounting plate. Note: The excess fiber should be formed into a loop greater than 3" in diameter to avoid kinking the fiber.
- 7) Install the air tubes interconnecting the two sides of the applicator.
- 8) Replace the stainless steel housing cover.

### NOTE: DISCONNECT THE POWER CORD AND AIR SUPPLY FROM THE MACHINE BEFORE ATTEMPTING ANY OF THE FOLLOWING PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN INJURIES FROM MOVING PARTS OR ELECTRICAL SHOCK!

#### TAMP NOSE ASSEMBLY REMOVAL

- 1) Remove the stainless steel cover from the bottom of the applicator.
- 2) Remove the air tubes interconnecting the two sides of the applicator.
- 3) Disconnect the fiber optic cables from the label sensor mounted on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Gently remove the two fiber cables from the sensor.
- 4) Cut the tie wraps securing the fibers to the adhesive mounting pads. Pull the fiber optic cable out of the wiring clamps.
- 5) Disconnect the hoses for the tamp cylinder, air assist tube, and air blast at the applicator housing.
- 6) Remove the peel edge assembly to gain access to the #10 mounting screws.
- 7) Remove the six #10 mounting screws holding the nose assembly to the housing.



#### TAMP NOSE ASSEMBLY INSTALLATION

- 1) Make sure that the peel edge assembly is removed from the tamp nose assembly.
- 2) Install the tamp nose assembly using the six #10 mounting screws.
- 3) Install the peel edge assembly using the two  $\frac{1}{4}$  screws and the peel edge nut.
- 4) Make sure the label sensor is installed in the peel edge. Run the optical fibers through the two holes in the mounting plate.
- 5) Re-connect the fiber optic cable to the label sensor located on top of the power supply. Open the top cover on the sensor and slide the cinching mechanism located on the right side of the sensor housing upward. Plug the emitter fiber (from the lower fork in the label sensor) into the out going arrow connection on the sensor housing and the detector (from the upper fork in the sensor) to the incoming arrow connection. Slide the cinching mechanism downward and close the top cover on the sensor housing.
- 6) Neatly tie wrap any excess fiber optic cable to the adhesive pads located near the fiber mounting plate. Note: The excess fiber should be formed into a loop greater than 3" in diameter to avoid kinking the fiber.
- 7) Install the air tubes interconnecting the two sides of the applicator.
- 8) Replace the stainless steel housing cover.

## NOSE ASSEMBLY CHANGEOVER

When changing the nose assembly to the opposite hand dispense, all parts are first transferred to the opposite side of the mounting plate. Then the entire nose assembly is rotated 180 degrees and remounted to the opposite side of the applicator.

- 1) Remove the peel edge assembly from the nose assembly mounting plate. On a merge applicator, note the position of the bronze washers between the mounting plate and the peel edge assembly.
- 2) Change the applicator peel edge assembly to the opposite hand dispense (See: "APPLICATOR" **PEEL EDGE CHANGEOVER**).
- 3) Re-mount the peel edge assembly to the opposite side of the nose assembly mounting plate. On a merge applicator, re-install the bronze washers between the peel edge assembly and the mounting plate.
- 4) If the applicator is an air blow, change the blow box grid/fan to the opposite hand dispense (See: **BLOW BOX GRID/FAN ASSEMBLY CHANGEOVER**).
- 4) If the applicator is a tamp, change the tamp assembly to the opposite hand dispense (See: TAMP ASSEMBLY CHANGEOVER).
- 5) Remove the tension brush assembly and reassemble on the opposite side of the nose mounting plate.

## MERGE PEEL EDGE CHANGEOVER

1) Remove the label sensor from the peel edge and remount on the opposite side rail. The open end of the U-shaped sensor should face towards the inside.

MERGE APPLICATOR NOSE



LEFT HAND CONFIGURATION



RIGHT HAND CONFIGURATION





## **BLOW BOX PEEL EDGE CHANGEOVER**

- 1) Remove the label sensor from the peel edge assembly and remount on the opposite side making sure that the fiber cables are threaded through from the opposite side. The open end of the U-shaped sensor should face towards the inside.
- 2) Remove the guide rollers and remount to the opposite side of the peel edge mounting plate.
- 3) Remove the peel edge and remount to the opposite side of the mounting plate using the tapped holes on the other end of the peel edge. Make sure the beveled edge is down and facing the same direction as it was originally.
- 4) Remove the label tension spring mounting bar and remount on the opposite side. The tension spring and the adjustment stop must be reversed on the mounting bar as well.
- 5) Remove the air assist tube and insert through the opposite side of the mounting plate and re-attach.

## BLOW BOX GRID/FAN ASSEMBLY CHANGEOVER

- 1) Remove the air blast fitting from the back of the nose assembly mounting plate and set aside.
- 2) Loosen the two knurled knobs on the back of the fan box and lock it in the upright position.
- 3) Remove the air blast manifold, label grid, and the air jet storage block. Remount on the opposite side of the nose assembly mounting plate.
- 4) Pull the fan wiring harness through the slotted opening in the nose mounting plate.
- 5) Remove the four screws holding the fan box hinge to the mounting plate and remount the fan box on the opposite side of the nose mounting plate.
- 6) Push the fan wiring harness through the slotted opening from the opposite side.
- 7) Re-install the air blast fitting in the nose assembly mounting plate.

## BLOW BOX APPLICATOR NOSE

LEFT HAND CONFIGURATION

RIGHT HAND CONFIGURATION









## TAMP PEEL EDGE CHANGEOVER

- 1) Remove the label sensor from the peel edge assembly and remount on the opposite side making sure that the fiber cables are threaded through the holes from the opposite side. The open end of the U-shaped sensor should face towards the inside.
- 2) Remove the guide rollers and remount to the opposite side of the peel edge mounting plate.
- 3) Remove the peel edge and remount to the opposite side of the mounting plate using the tapped holes on the other end of the peel edge. Make sure the beveled edge is down and facing the same direction as it was originally.
- 4) Remove the label tension spring mounting bar and remount on the opposite side. The tension spring and the adjustment stop must be reversed on the mounting bar as well.
- 5) Remove the air assist tube and insert through the opposite side of the mounting plate and re-attach.

## TAMP ASSEMBLY CHANGEOVER

- 1) Disconnect the air hoses for the tamp assembly at the applicator housing.
- 2) Remove the tamp assembly mounting plate from the nose assembly mounting plate.
- 3) Remove the two screws holding the tamp air cylinder to its mounting plate.
- 4) Mount the tamp air cylinder to the opposite side of the tamp assembly mounting plate.
- 5) Re-attach the tamp assembly mounting plate to the opposite side of the nose assembly mounting plate.

# TAMP APPLICATOR NOSE

LEFT HAND CONFIGURATION





RIGHT HAND CONFIGURATION




## **REWIND REMOVAL**

- 1) Remove the belt connecting the rewind clutch to the motor.
- 2) Remove the rewind mandrel from its drive shaft.
- 3) Remove the six #10 screws that hold the rewind mounting plate to the housing.

# **REWIND INSTALLATION**

- 1) Attach the rewind mounting plate to the housing using the six #10 screws.
- 2) Install the rewind mandrel on the mandrel drive shaft.
- 3) Install the belt connecting the rewind clutch to the motor.

### **REWIND CHANGEOVER**

- 1) Remove the bearing block that is mounted to the rewind transition plate.
- 2) Remove the pulley from the shaft making sure to note its position relative to the end of the shaft.
- 3) Remove the snap ring from the pulley side of the assembly and push the rewind shaft out through the mandrel side. Note: The shaft diameter on the mandrel side is larger than it is on the pulley side. Do not attempt to force the shaft out through the pulley side!
- 4) Re-install the shaft in the opposite side of the bearing block and replace the snap ring. Note: The shaft can only rotate in one direction due to a directional bearing in the bearing block.
- 5) Install the pulley on the shaft in the same position as it was previously.
- 6) Re-mount bearing block to the opposite side of the transition plate.



### WIRING CHANGEOVER

- 1) Remove the tie wraps holding the AC power wiring and the label sensor fiber optic cable to the adhesive pads near the wiring entry points.
- 2) Remove the faston terminal connections at the fuse holder and the AC power entry module.
- 3) Cut the tie-wraps securing the blow box fan connector to the adhesive mounting pad and move the connector to the opposite side of the machine. Secure the connector in place with the open end towards the side frame.
- 4) Move wiring to the opposite side of the applicator and neatly tie wrap in place.
- 5) Swap the AC power entry module and the fuse holder with the fiber optic plate and the fuse holder plug.
- 6) Re-connect the terminals for the fuse holder and the AC power entry module (see drawing on the next page ).

### Note: All wiring comes from the factory long enough to be wired either left or right hand.





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