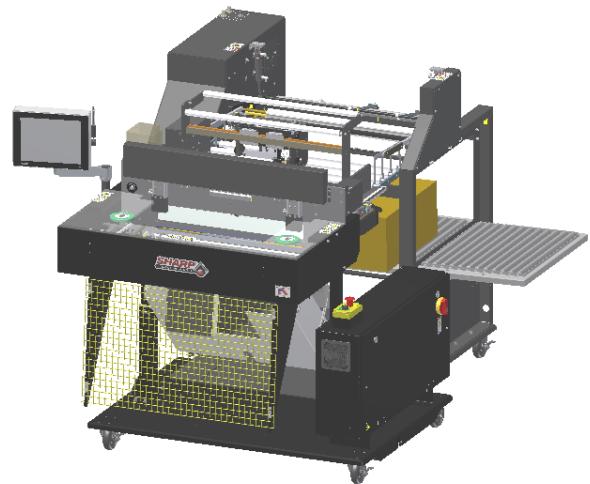


Pregis Sharp™ MaxPro 24 Bagging Machine Operator Manual Model 1170

REV 1 – Original Instructions



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Prefix

Thank you for purchasing the **MaxPro** Bagging System. The **MaxPro bagger** is the low cost solution for manually bagging product, dramatically reducing packaging costs and improving package quality. The **MaxPro bagger** has an integrated high-performance, low-cost ribbon printer for printing barcodes, text, or graphics on the packaging material.

Your **MaxPro bagger** is a product of extensive research and field testing with the following features:

- State of the art *Step Logic Programming* technique that logically controls each machine action (step) in sequence and verifies that the correct action occurred with sensor feedback.
- Simplified layout of digital outputs in PLC program for ease of troubleshooting.
- Improved fault handling that can display multiple fault conditions simultaneously.
- Simplified operator set-up.
- Displays all PLC I/O status, including Expansion I/O.
- Manual motion pushbuttons on Options Screen that provide both text and color cues as to the state of the device.
- Help Screens show setting range and default values.
- Speed settings in inches/second instead of raw numbers.

The materials used were selected for maximum durability and optimum performance. Every unit is thoroughly inspected and tested prior to shipment.

General Information

ABOUT THIS MANUAL

This manual has been prepared for your use in operating the **MaxPro bagger**. Included in the manual are helpful facts on operating and basic troubleshooting information.

It is important that you familiarize yourself with the product as much as possible before operating or troubleshooting.

Make sure you read through the *EQUIPMENT SAFETY FEATURES* and *INTRODUCTION* sections of this manual before operating this machine.

- Upon receipt, unpack and inspect the unit for damages that may have occurred during shipment. Pregis is not in any way responsible for any damages that occur during transport. If you receive damaged equipment, it is your responsibility to make a claim with the transporter.
- Read instructions carefully. Be familiar with the controls and proper use of the unit. Do not operate the machine when tired, ill, or under the influence of alcohol, drugs or medication.
- The instructions and data in this manual are vital to the proper installation and operation of this equipment. In order to avoid delays due to faulty installation and operation of the machine, please see that these instructions are read by the persons who will install or operate or maintain the machine.
- The WARNING instructions issued on this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors that cannot be built into all machines. These factors must be supplied by the persons installing, maintaining, or operating the machine. Failure to install, maintain, and/or operate the equipment according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage. Contact Pregis about any problems or conditions you do not fully understand.

DEFINITION OF TERMS

Throughout this manual, you will find the following safety notices with this accompanying symbol.

 This symbol signifies important safety issues regarding the operation and maintenance of the **MaxPro bagger**.



CAUTION

GENERAL CAUTION: Indicates information important to the proper operation of the equipment, failure to observe may result in damage to the equipment and minor bodily injury.



WARNING

GENERAL WARNING: Indicates information important to the proper operation of the equipment. Failure to observe warning may result in damage to the equipment and severe bodily injury or death.

Safety Rules and Procedures

The machine requires regular, periodic maintenance to ensure reliable service. No maintenance should be performed unless the safety precautions for maintenance are thoroughly understood.

- Follow all instructions in this manual for safe operation.
- Follow all company and industry standard safety policies regarding this kind of machinery that may exceed those listed in this manual.
- Keep all safety features, guards, interlocks and sensors in good working order.
- Always ensure that all mechanical motion has stopped and allow any heated components to cool down before removing any machine parts.
- Keep the area surrounding the machine free from debris. Spent film/bags should not be allowed to accumulate around bagger.

The safety information presented in this manual are guidelines that should be followed by all personnel. Anyone operating or maintaining the equipment should read and follow all safety information in this manual, without exception.

All Operators should be familiar with their own Labor Protection Guidelines. Hands, arms, hair and clothing should not be near any moving or heating parts of the machine. Do not turn the machine ON if any of the machine's components have been removed or modified.

EMERGENCY STOP (E-STOP) BUTTON

An Emergency Stop (Red) Button is part of Power Button Box. This Box can be moved wherever an Operator can have quick access. The E-Stop immediately stops the machine when pressed by de-energizing power to the PLC outputs, motors, and motor drives.

FIRE PREVENTION

Keep a fire extinguisher near the machine. Keep machine away from any sparks, flames and flammable materials. Unplug the machine before maintaining or cleaning. All electrical components must be in good condition and clean.

Electrical fires can occur if any wires are scratched, corroded, color-faded, lost their insulation or have damaged wire ends. These should be changed immediately.

Any exposed electrical components should never come into contact with the ground-connector and any other electrically conductive objects such as tools.

Equipment Safety Features

MACHINE GUARDS

The **MaxPro bagger** is equipped with guards covering the heated sealing area and the underside of the Head Assembly. DO NOT operate the **MaxPro bagger** with these or any other guards removed.

The Top Lexan® Guard sits on top of the Jaw Guard. The shape allows for loading of product into the bags. The Dual Optical Palm Buttons insure Operator's hands are clear of the Sealing Area and Pressure Jaw movement when the machine is cycled.

An Emergency-Stop Button is part of a portable E-Stop Box. This Box can be moved wherever an Operator can have quick access. The E-Stop immediately stops the machine when pressed by de-energizing power to the Master Control Relay, PLC outputs, motor, motor drive and air valves. Figure 1-2A.

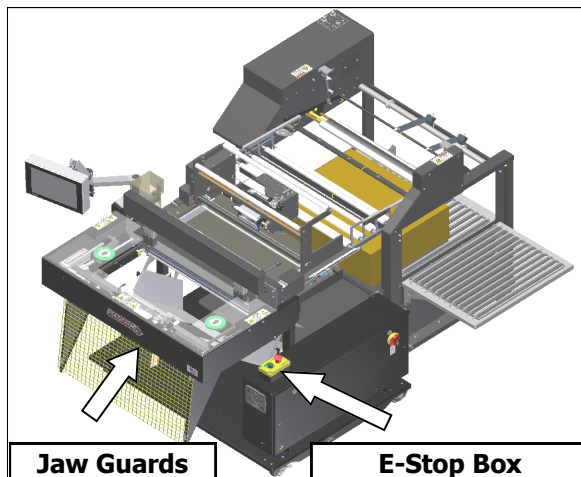


Figure 1-2A. Safety Features

SAFETY LABELS

Figure 1-2B shows a label that is placed on the **MaxPro bagger** wherever a removable guard or panel is attached. Always disconnect electrical power from the machine prior to removing any guards and/or panels.



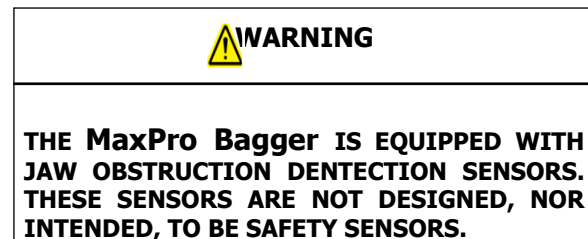
Figure 1-2B. Safety Label

The Risk of Electric Shock decal is located on removable guard or panel when electrical components are present behind guard or panel. Figure 1-2C.



Figure 1-2C. Safety Label

OBSTRUCTION SENSING JAW



The Sealing Assembly is equipped with an Obstruction Sensing Jaw, which can detect an obstruction in the sealing area. If the jaw sensors detect an object preventing the jaw from closing, the jaw solenoid will de-energize and place the machine into a fault condition.

A message appears in the display window informing the operator of the jaw fault, allowing the operator to clear the seal area and reset the bagging cycle.

Specifications

PACKAGING SPECIFICATIONS

	BAG WIDTH	BAG LENGTH	FILM GAUGE
MINIMUM	14" (35.5 cm)	15.0" (38.1 cm)	.001" (1 mil) 25 Microns
MAXIMUM	24" (61.0 cm)	30" (76.2 cm)	.004" (4 mil) 100 Microns

Table 1-3A. 1170 Packaging Specifications.

MACHINE SPECIFICATIONS

POWER REQUIRE- MENT (SOURCE)	WEIGHT	AIR REQUIRE- MENT	SPEED	OPERAT- ING TEMP	HUMIDITY RANGE
120VAC 50/60 Hz, 20 Amps	Est. 1150lbs.^ (521.63 kg)	80 PSI (5 SCFM) (5.5 Bar)	50 Bags per Mi- nute*	32° - 140° F 0° - 40° C	10% - 90% RH Non-Condensing

Table 1-3B. 1170 Machine Specifications

^ Weight depends on installed options and model of bagger.

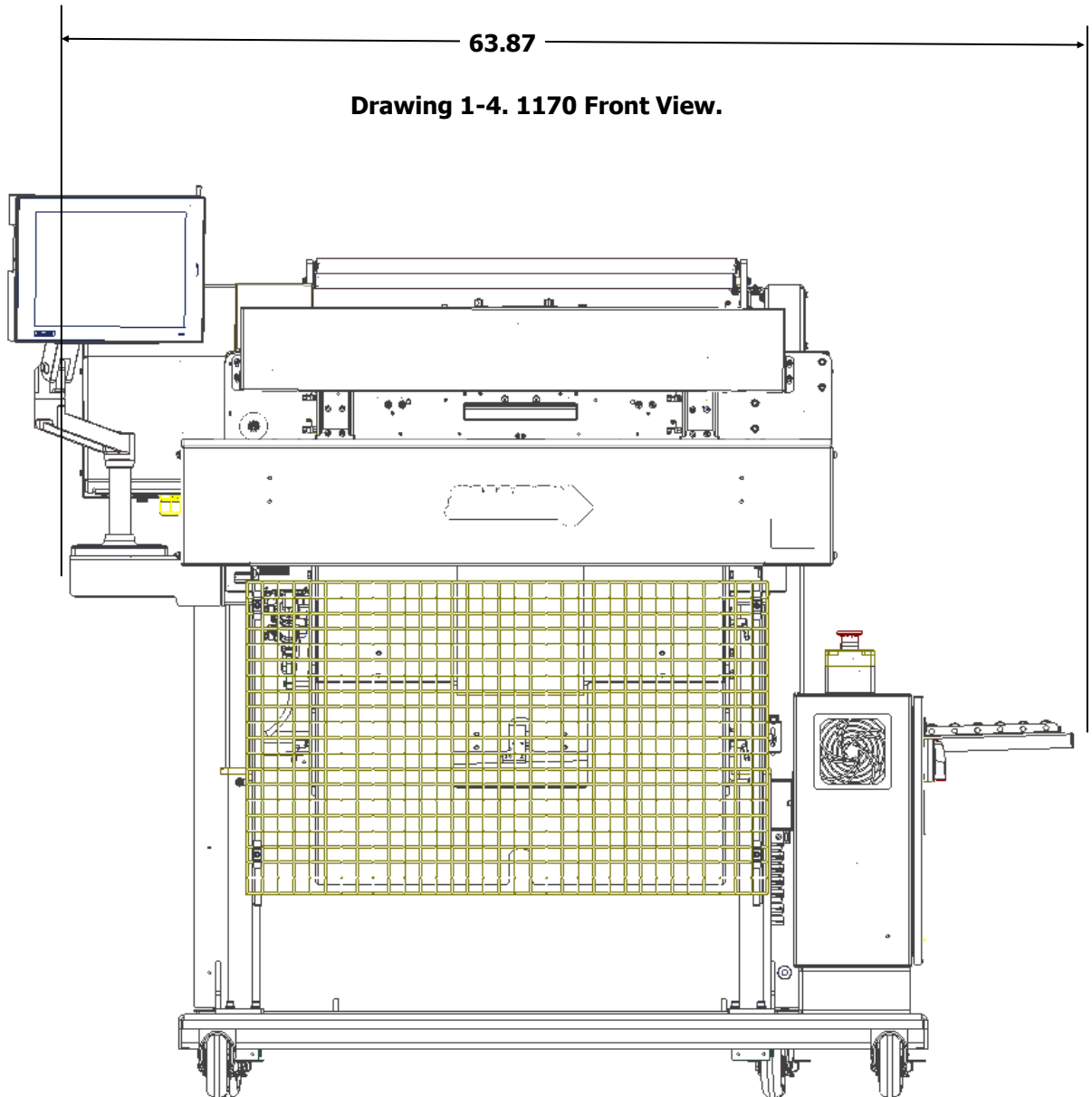
* Sealing options, size of package, along with weight and size of product will cause rate to vary.

Machine Dimensions

FRONT VIEW

Bagger dimensions viewed from front.

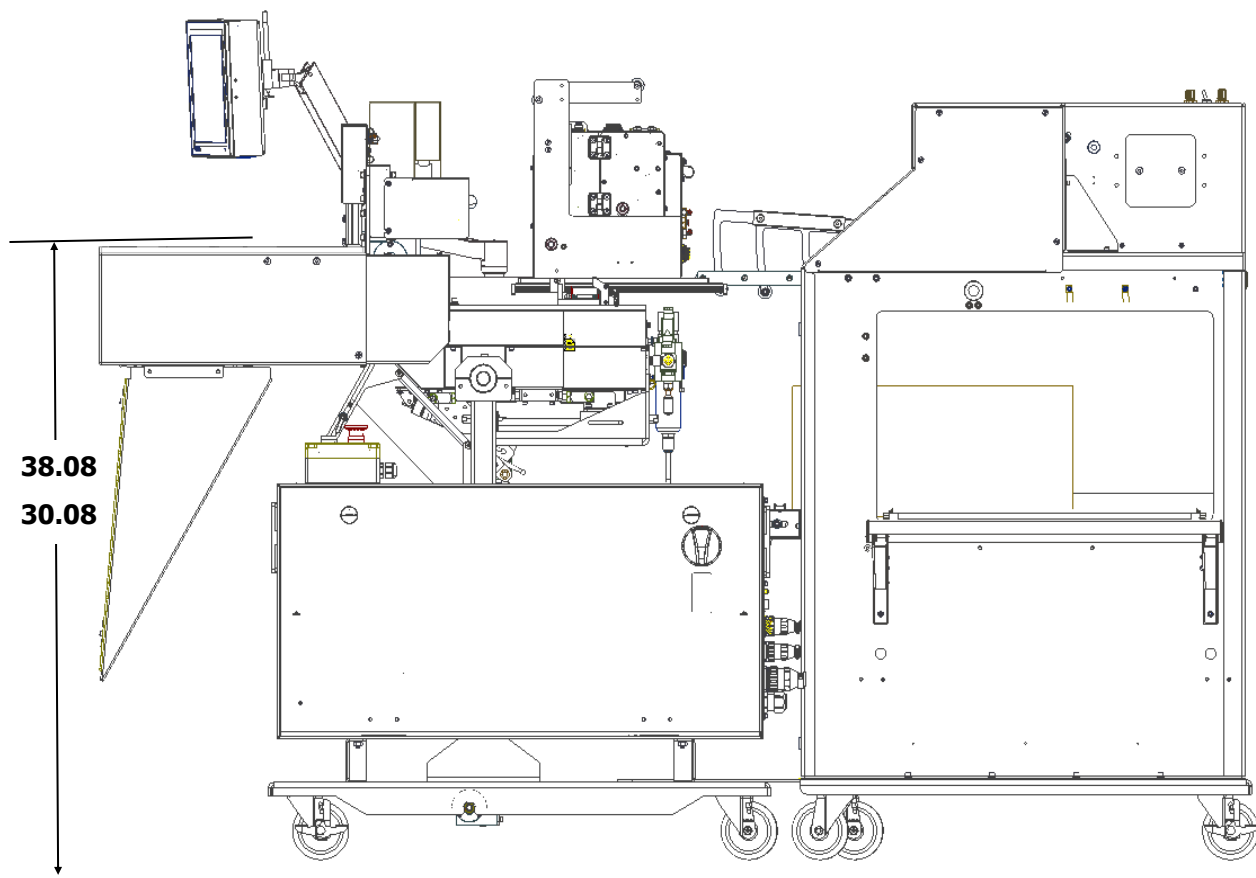
Measurements are in inches.



SIDE VIEW

Bagger dimensions viewed from side.

Measurements are in inches.

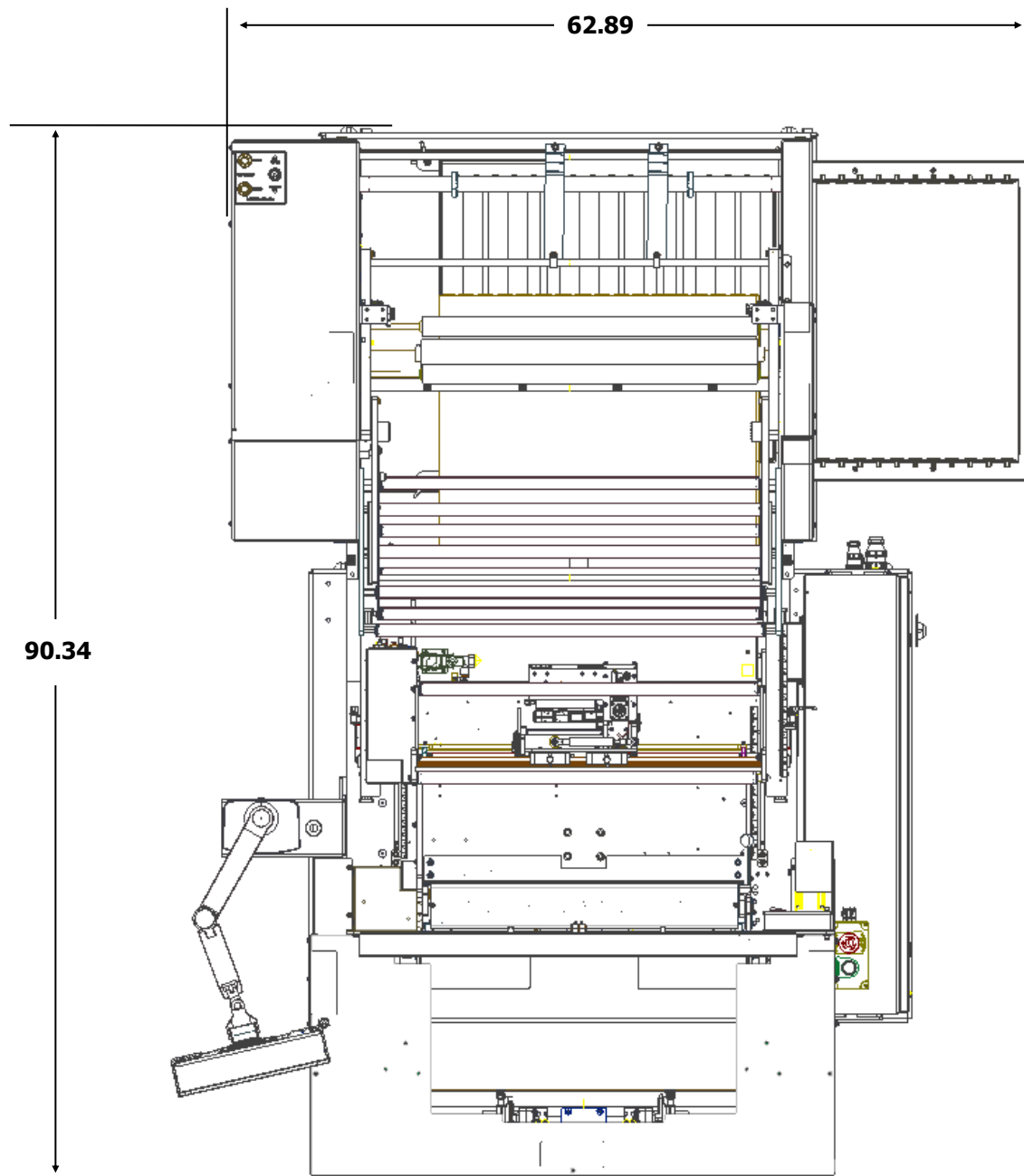


Drawing 1-5. 1170 Side View

TOP VIEW

Bagger dimensions viewed from top.

Measurements are in inches.



Drawing 1-6. 1170 Top View

Poly Lite® Mailers and Bags Materials

Call Pregis Customer Service (800-634-6359) to order **Poly Lite® Mailers and Bags** and for information regarding film and bag specifications.

The **MaxPro bagger** is designed to use a wide variety of bag sizes and materials. **Poly Lite® Mailers and Bags** are recommended for optimum operating performance, efficiency and safety. System performance specifications are based on utilizing consistent, high quality, pre-opened bags. Any bag used must meet Pregis tolerances. The following list shows some of the **Poly Lite® Mailers and Bags** films available through Pregis

- General Purpose LDPE
- Xtreme Poly (XP)
- Ultra
- HD Mailer
- SPHD High Density Polyethylene
- Polypropylene
- Pregis Military Specification Film
- Gamma Patient
- Metalized Barrier Film
- Electric Static Discharge (ESD)
- Modified Atmospheric Packaging (MAP)
- Non-Scratch Film
- E-Z Stat™ (Anti-Static)
- Vapor Corrosive Inhibitor (VCI)

THERMAL TRANSFER RIBBONS

Pregis thermal transfer ribbons are selected specifically for use with our printer. Use of ribbons other than those supplied by Pregis, may result in a poor quality printing, especially barcodes and their ability to be successfully scanned.

- Recommended Pregis ribbons are:
- Black ink, scratch and smudge resistant
- 2000' (609.6 meters), 3.5 to 4.5 microns thick.
- 1" core, no notch required
- Ink side in
- Back coated ribbons only

Special purpose thermal transfer ribbons, sizes other than those listed above, such as colored ribbons, or low temperature release ribbons are also available.

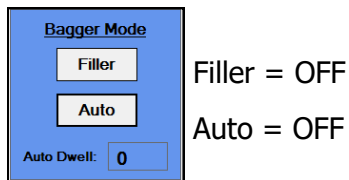
Theory of Operation

The **MaxPro Bagger** machine has two distinct operating modes: Manual and Auto. Manual and Auto modes are built into the machine and require no optional equipment or changes to the Factory Configuration.

If each bagger cycle requires the operator to manually press Dual Optical Palm Buttons, then the machine is said to be cycling in Manual Mode.

The term **Auto** refers to how the bagger cycles. If the machine cycles bags continuously without the operator manually initiating each cycle start, not including the first bag out, then the machine is cycling automatically (Auto). **MANUAL MODE**

The Bagger Mode viewed from [Dashboard](#) Screen.



Both the Filler and Auto buttons are OFF at the HMI. In manual mode the operator hand loads or fills each opened bag and then cycles the bagger. The operator initiates a cycle by one of these methods:

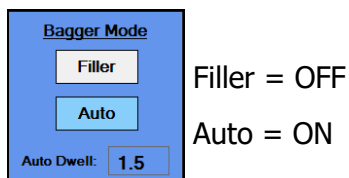
1. Pressing the Cycle pushbutton on the HMI.
2. Pressing the Dual Optical Palm Buttons.

In manual mode, the machine cycles one bag at a time. Cycle rates in this mode are largely dependent upon the loading speed of the operator.

- The funnel is opened
- The sensor detects that the bag is positively opened.

Once the above condition (s) is (are) met the PLC program turns on O:3/00, essentially telling the Filler device that a bag is present and ready to be filled. The filling device releases its product into the open bag.

AUTO MODE



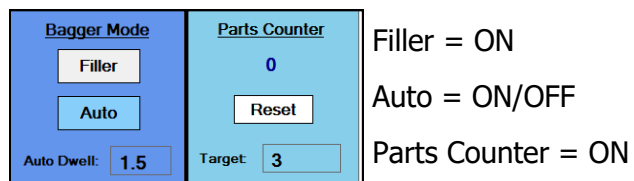
With Filler OFF and Auto ON, the bagger will run in "Auto Mode". In Auto Mode the machine operator manually fills the opened bag, while the machine cycles automatically. The cycle is started by means of a time delay called the "Auto Dwell Timer". This allows the bagger machine to be self paced, when production rates are critical. The Auto Dwell timer allows the operator time to manually drop product into the open bag. When the time delay is ended the bag is sealed and the next bag is fed out. The Load Dwell time is adjustable at the HMI.

The operator initiates the first bag out and Auto Mode is immediately activated. When the bag is opened, the operator loads the bag (Load Dwell Timer is timing). When the timer finishes, the bagger automatically starts the bagger sealing cycle and feeds out the next bag. To cancel Auto Mode, the operator can press the Stop Button on the HMI.

PARTS COUNTING

The Batch Counter is turned on from the [Bagger Settings](#) Screen and is viewed from [Dashboard](#) Screen.

The bagger has a setting for counting parts. Parts Counting mode is used in conjunction with the Filler mode. When the parts counter is turned on, the bagger counts each part as it is being loaded into the opened bag. When the terminal count is reached, the Filler Trigger signal is turned on to start the Filler Drop Timer.



Actual Count – The number below “Parts Counter” displays how many parts have been counted. This number resets to 0 once the bagger cycle is initiated or if Part Counter is turned off. The Target is determined in the Job that has been loaded from Job Setting Screen.

Parts can be loaded and counted in the following ways:

1. Filling Machine

- An automatic filling Machine that can deliver one part at a time and signal the bagger using the “Filler Product Delivery Complete input I:0/01. The bagger will count each rising edge of I:0/01 as a single part. When the parts counted equals the target value, the filling cycling is completed and the bagger will automatically cycle after the drop timer has expired.
- When the Parts Counting is done by a filler, it must only deliver parts or attempt to count when the O:3/00 output is On. Output O:3/00 remains on until the terminal count is reached. The parts counting must handshake in accordance with “Pregis Filler Handshaking Specification”

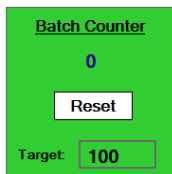
BATCH COUNTER

The Batch Counter is turned on from the [Bagger Settings](#) Screen and is viewed from [Dashboard](#) Screen.

The bagger has a setting for Batch Counting. Batch Counting allows a customer to make a run of products to a particular quantity and then stop the machine. To use this feature, the operator should cycle the first bag out into the loading position and then reset the counter to 0.

Parts Counter = ON

Target Count - This is the Target Count and can be adjusted by the machine operator in a range of 1-32767. When the actual count equals this value, the bagger stops, and cannot be cycled again until this counter is Reset.



Actual Count - The number below “Batch Counter” displays how many bags have been filled and sealed. The count will be incremented each time the Seal Bar has retracted.

This counter works in all modes and is not tied to the Parts Counter function.

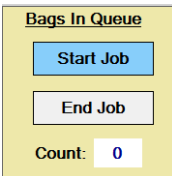
BAGS IN QUEUE

The Bags in Queue is turned on from the [Bagger Settings](#) Screen and is viewed from [Dashboard](#) Screen.

The Bags In Queue Setting is useful when changing over printed labels when running a different job. When used as designed, the Start Job and End Job cycles will make a queue which represents the number of bags between the printer and the bag loading position. Start Job gets the first new label into loading position. End Job purges the bagger of the previous label. The length of the queue is set in the Job database.

Bags In Queue = ON

Start Job - When this maintained button is turned on and the machine is cycled, the bagger will automatically feed out a queue of printed bags until the first printed bag is in the loading position. It will not seal any of the bags in the queue and will not open the last one. If using **Filler/Auto** modes, these should be turned **ON** first before pressing the CYCLE button. This button turns off automatically when the Start Job is finished.



End Job - When this maintained button is turned on and the machine is cycled, the bagger will automatically purge the bagger of all printed bags. It will not print on, seal, open, or attempt to scan barcodes for any of the bags in the queue. If using **Filler/Auto** modes, these should be turned **OFF** first before pressing the CYCLE button. The button turns off automatically when the End Job is done.

Count - This displays the queue counter as each bag is feed out. When the queue is finished it resets to 0.

EVENT LOG

The bagger has an Event Log that records all Faults, Events, and changes to settings to a flat file stored on the PC. This is a useful diagnostic tool for looking at all the faults or changes that occurred during a single day.

The user can search for a particular event or fault by typing in a text string into the find box. Files are saved as a flat text file on the PC and can be extracted to a USB flash drive for diagnostic purposes.

Permissive & Special Conditions

This section describes and lists Permissive and Special Conditions. In general terms, a Permissive is a condition that must be TRUE in order to permit or allow a particular operation to take place.

1. **All options must be configured.**
 - All optional features must be selected or configured before they can be turned on. By default, if an option is not selected, its function is off.
2. **Ready to Cycle Permissive** - All of the following conditions must be true before the machine can cycle:
 - The Master Control Relay or MCR must be energized for 3 seconds. The MCR is energized when the Green Pushbutton is illuminated.
 - The Bagger cannot be faulted.
 - Printer not in cycle.
 - Model Selection Test is not active.
 - Batch Counter NOT done.
 - All Bagger motions must be in their home positions as indicated by Position Sensor Feedback.
 - Pressure Bar Opened.
 - Seal Bar Retracted.

If the Batch Counter function is ON and the counter has reached its terminal count, then the counter must be reset before the bagger can cycle again.

3. **Complete Power Up Sequence** - Machine must be connected to 120V power source and have an adequate supply of clean, dry compressed air.
 - Make sure the 120V Power Entry Module Switch is in the ON position.
 - Release the E-Stop Button.
 - Press the Green Power Button. The green light should illuminate and energized the MCR.
 - The HMI will automatically start up when Power Entry Module Switch is turned ON.
4. **Complete Power Down Sequence** - The bagger must be properly power down in the correct sequence.
 - Press the E-Stop Button to cut power to Switched 24V DC power.
 - From the Main Menu screen, press and hold the "Shutdown HMI" button for 3 seconds.
 - **ALLOW THE HMI/PC TO POWER DOWN COMPLETELY BEFORE CONTINUING TO NEXT STEP.** The HMI program is shutdown and Windows also need to shutdown. When completed, the HMI screen will be black.
 - Switch Power Entry Module Switch to OFF. The machine is now electrically shut down.

Security

SECURITY LEVELS

Security is screen based and defined as three levels: High, Medium, and No Security.

High Security - The user can access the Main Menu, Dashboard, PLC Settings, Job Download screens.

Medium Security - The user has all permissions of High Security level but cannot access Service, Language, and I/O screens.

No Security - The user has access to all screens and functions except Factory Configuration screen.

When security level is in High, the screen displays a locked padlock icon in lower right corner of screen. **Figure 1-12A.**



An “Access Denied” message will be displayed when user attempts to access protected screens. **Figure 1-12B.**

To Change Security Levels

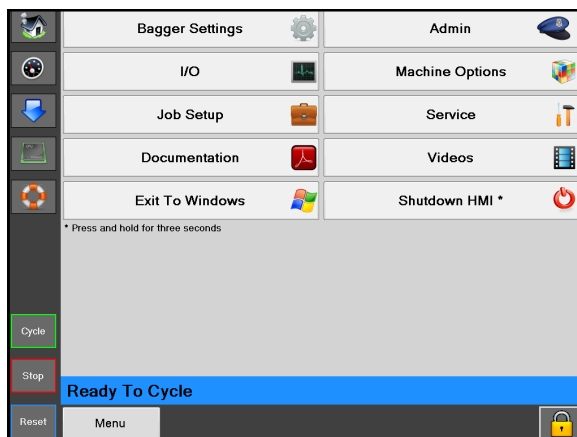


Figure 1-12A. High Security Screen.

1. Touch the padlock Icon and enter the designated password. **Figure 1-12C.**

NOTE: See supervisor or manager to change or determine the proper security level for your application.

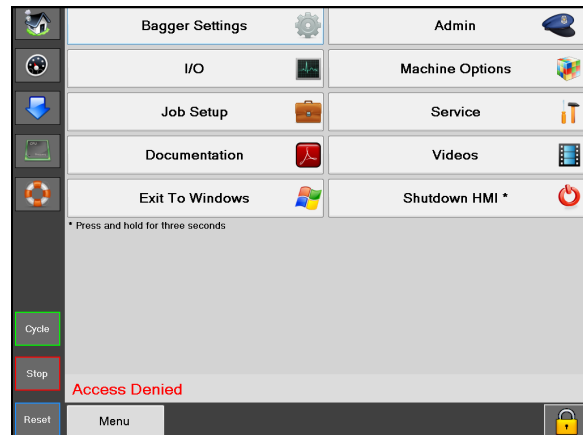


Figure 1-12B. High Security - Access Denied Screen.

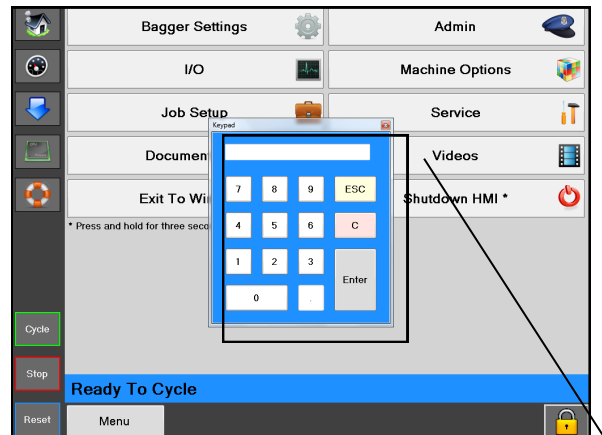


Figure 1-12C. Keypad

Controls

TOUCHSCREEN

The Touchscreen displays all adjustment information along with machine diagnostic and error messages.

- Manual motion pushbuttons on Service Screens provide both text and color cues as to the state of the device or motion.
- Help screens show setting range and default settings.
- Critical error messages have a red background and require the operator to manually correct the problem and press reset.
- Notice messages have a yellow background and do not require the operator to take any action.

LEFT MENU BAR

The Left Menu Bar is always displayed on the left side of the Touchscreen when HMI program is running. Figure 2-1A.

House Button: Press to display the Home Screen.

Speedometer Button: Press to display the Dashboard Screen.

Down Arrow: Press to display the Job Details screen.

CPU Chip: Press to display the PLC Settings screen.

Life Preserver: Press to display the Help Screen.

Cycle: Press to cycle the bagger.

Stop: Press to stop bagger when in Filler or Auto modes.

Reset Faults: Press to reset faults.



Figure 2-1A. Left Menu Bar.

FAULT MESSAGE BANNER

Faults are defined as an error condition that will stop the bagger and prevent subsequent cycles from occurring as long as the fault persists. Faults must be corrected and then reset from the HMI using the Reset Button. Faults are first indicated by a red banner at the bottom of all screens. Figure 2-2A. The number in parenthesis indicates the number of active faults.

Touching the banner will load the fault screen. Touch the individual fault to get a more detailed description of fault.

For a complete list of faults, see [Faults Management](#), page 6-1.

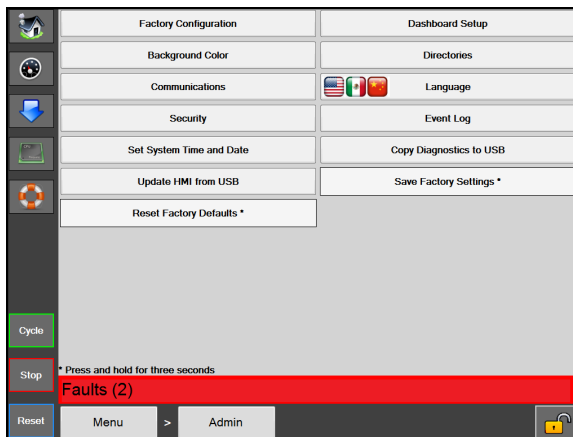


Figure 2-2A. Fault Banner

ALERT MESSAGE BANNER

Alert messages are displayed in yellow and will not generally stop a bagger cycle. Figure 2-2B. Alerts are intended to inform the operator of an event or status of the machine. Alerts can be considered minor faults in some cases and may require the operator to intervene.

Touching the banner will load the fault screen. Touch the individual event to get a more detailed description of event.

For a complete list of alerts, see [Alert Management](#), page 6-6.

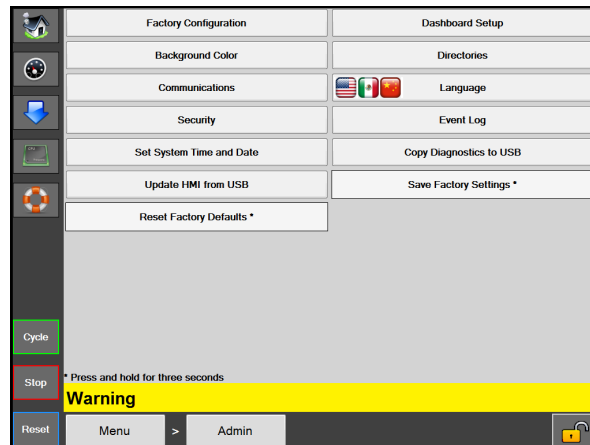


Figure 2-2B. Warning Banner

HELP SCREENS

A Help Screen provides detailed information of the screen that is displayed on the HMI.

From any screen, press the Life Preserver button on the Left Menu Bar (Figure 2-3A) and the Help Screen for that screen will appear. Figure 2-3B.

The PLC Settings Help Screen is a sub-screen of the PLC Setting Screen. The user can navigate back to the higher level screen by touching the “PLC Settings” button.



Figure 2-3A. PLC Settings Screen

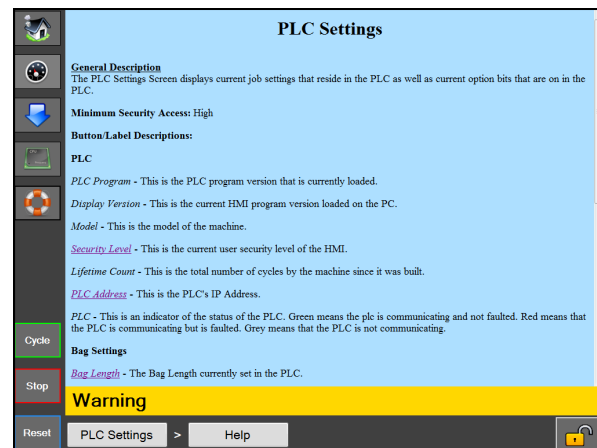


Figure 2-3B. PLC Settings Help Screen

HMI Screens

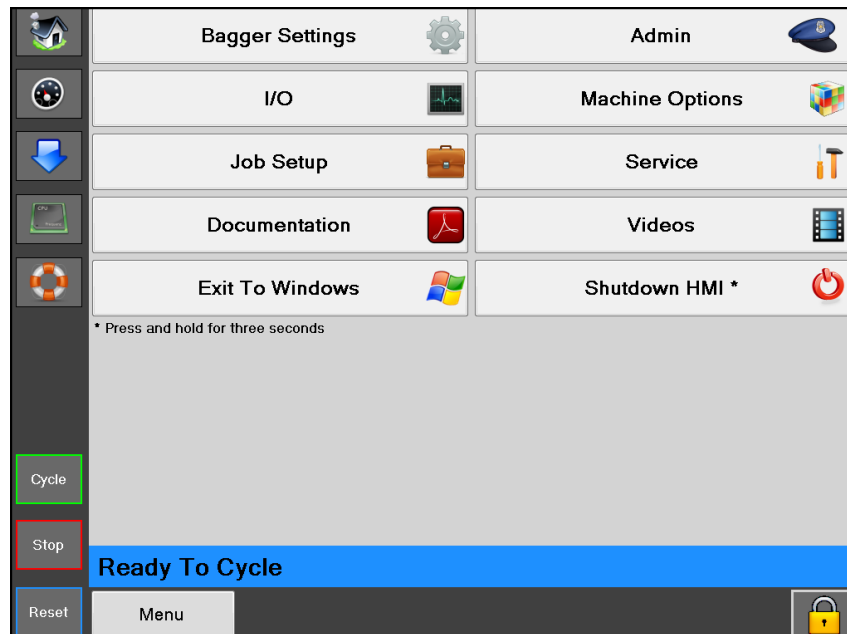


Figure 3-1A. Home Screen

HOME SCREEN

General Description

The Main Screen is accessed by pressing the Home Button on the Left Menu Bar. This screen gives access to all of the screens not accessible through the left menu bar.

Minimum Security Access: High

Button/Label Descriptions:

Bagger Settings - This will open the Bagger Settings screen that contains bagger setup settings such as Batch Counter, Parts Counter, and the Separate Before Sealing Toggle.

Admin - This will open the Admin screen that contains all of the HMI admin options such as communication settings, directories, dashboard setup, background color, security options, and the Event Log.

I/O - This will open the I/O screen that will display current input and output readings from the PLC.

Machine Options - This will open the Machine Options Screen that allows machine option configuration.

Job Setup - This will open the Job Setup screen that allows the creation and loading of jobs.

Service - This will open the Service screen that contains machine service related actions.

Exit To Windows - This will safely shut down the HMI program and return to Windows.

Shutdown HMI - This will safely shutdown the HMI computer. This would be the correct way to shutdown the HMI during a system power down. This procedure will safely close the HMI program and then safely shut down windows.

Documentation & Videos - Lists documents or videos loaded for operator viewing.

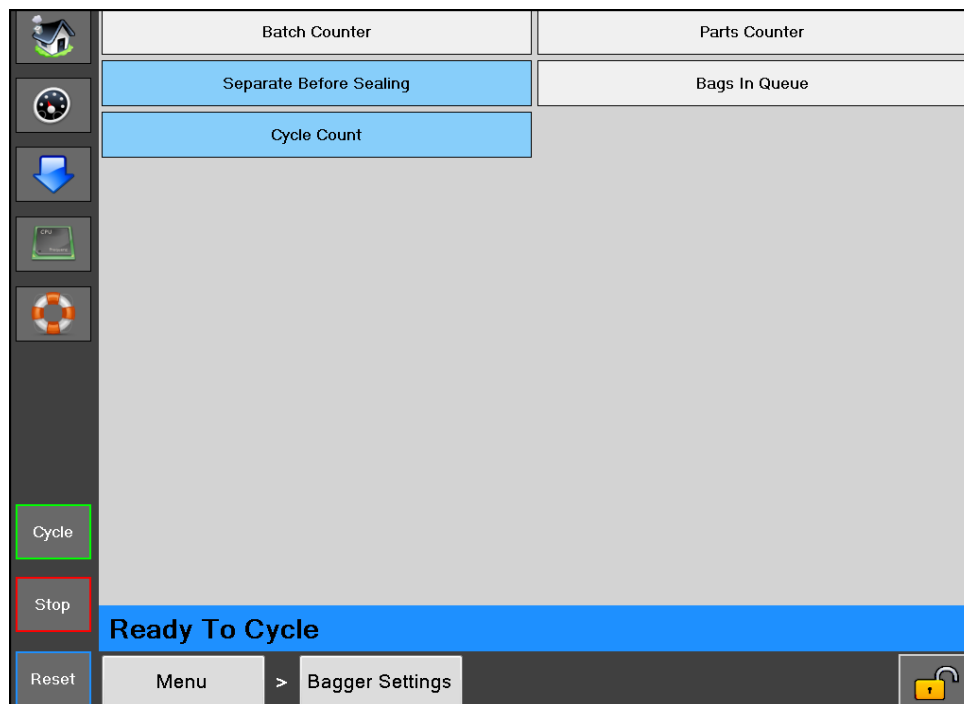


Figure 3-2A. Bagger Settings Screen.

BAGGER SETTINGS SCREEN

General Description

The Bagger Settings screen manages all of the global bagger settings/functions.

Button/Label Descriptions:

Batch Counter - This will turn on/off the Batch Counter on the Dashboard Screen. When this is enabled, the batch counter will increment with every good bag. The reset button will reset the count to zero. A target can be set by the operator.

Parts Counter - This will turn on/off the Parts Counter on the Dashboard. When this is enabled, the parts counter will count the number of parts that enter the open bag until it reaches its target count. Parts Counter is a sub function of Filler Mode.

Separate Before Sealing - This button turns on a feature that, prior to sealing the bag, will reverse the web when the pressure bar is closed in order to disconnect the bag from the next bag.

Bags in Queue - This button turns on a feature that allows the user to establish a Queue of Printed Bags from the Dashboard. This allows the user to clear out a previously printed label before starting a new print label. The user must set-up the Queue length in the job. The *Start Job* feature will feed out the correct number of bags before opening the first printed bag. The *End Job* button will clear out the printed bags, so that there are no printed bags in the bagger.

Cycle Count - This turns On/Off the Cycle Counter on the Dashboard. When enabled, the Cycle Counter will increment every time the bagger cycles. The Reset Button resets the count to zero.

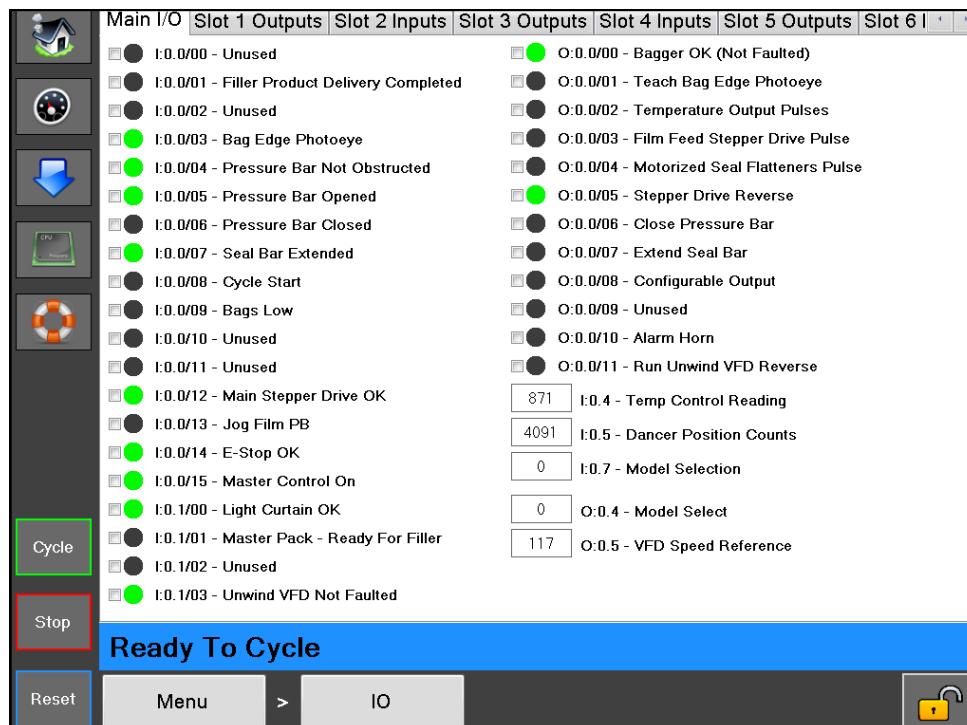


Figure 3-3A. Input/output Screen.

INPUT/OUTPUT SCREEN

General Description

The I/O screen displays the status of all physical I/O (inputs and outputs) in the PLC.

Minimum Security Access: Medium

Button/Label Descriptions:

This page is divided by tabs for each slot on the PLC. The physical I/O for each slot is displayed on the corresponding tab. The HMI is capable of reading from the PLC every 400 Ms, which is much slower than the scan rate of the PLC; therefore, some readings may not show up due to the HMI's latency.

A checked item indicates the I/O point is also displayed on the Custom Tab.

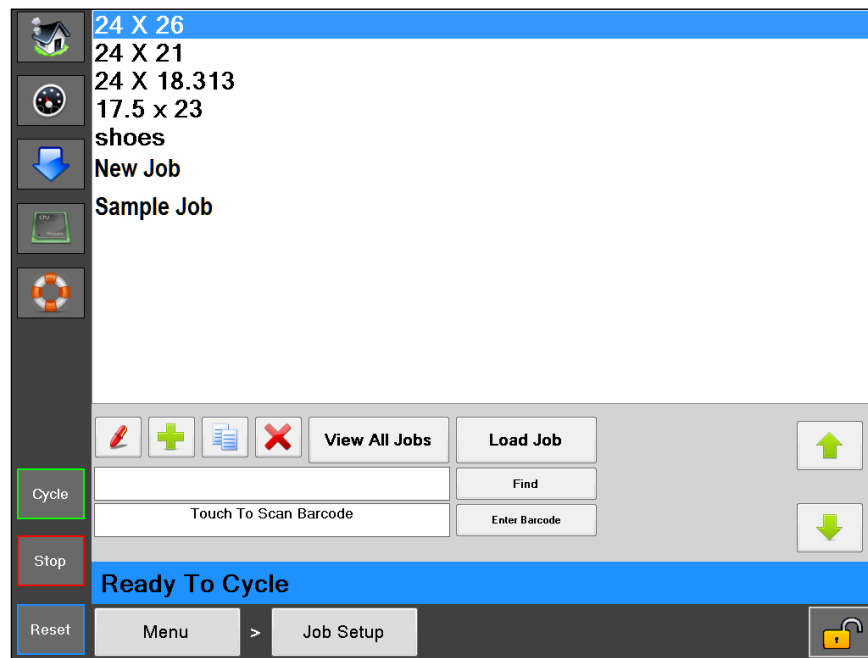


Figure 3-4A. Job Setup Screen.

JOB SETUP SCREEN

General Description

The Job Setup screen manages the machines predefined jobs.

Minimum Security Access: Medium

Button/Label Descriptions:

Pen Button - This button will display the details of the selected job in the list.

Plus Button - This will add a new job with default settings.

X Button - This will delete the selected job in the list.

Two pieces of paper button - This will make a copy of the selected job in the list.

Load Job - This will send all of the settings for the job to the PLC and send the label assigned to the job to the printer if the printer option is on.

Find - This will find all jobs that start with the text specified in the search box.

View All Jobs - This will display all of the stored jobs on the machine.

Touch To Scan Barcode - This will activate the box and allow the operator to scan a barcode. The system will check all of the saved jobs for an EZ Recall value that matches the scanned barcode value. If a match is found the matching job will be loaded.

Enter Barcode - This will allow manual entry of a barcode to search for a job with an EZ Recall value that matches. The system will then load the matching job.

Figure 3-5A. Job Detail Screen.

JOB DETAILS SCREEN

General Description

The Job Details screen displays the details of a job and allows them to be edited.

Minimum Security Access: Medium

Button/Label Descriptions:

Job Name - The name given to a job. This name will be used for job recall.

Label - This is the name of the label that is assigned to the job and will be sent to the printer when the printer option is on and a job is loaded.

Label Magnifying Glass Button - If the label that is chosen was created using Codesoft, then pressing this button can be pressed to show a preview of the label.

Verification - An image assigned to a Job for purposes of job verification. This Image will be presented to the operator when loading that job.

Verification Magnifying Glass Button - If a verification image has been selected, this button will display a preview of the selected image.

EZ Recall - This barcode value can be used to recall the job. On the Job Setup screen, a user can scan a barcode to find and load a job. The barcode scanned is matched up with the value in this EZ Recall box, and if a match is found then the job with that EZ Recall value will automatically be loaded.

Scan Barcode - An EZ recall value can be entered automatically by pressing this box to activate it and then scanning the barcode that should be assigned to this job.

Job Name: New Job

Label:

Verification:

E7 Recall:

Scan Barcode

Job Parameters | Advanced Motorized Seal Flatteners Parameters

15	Bag Length	280	Seal Temp	28	Feed Speed
14	Bag Width	0.25	Seal Dwell	0.00	Feed Delay
0.5	Seal Offset	0.05	HP Air Dwell	12	Reverse Speed
0.00	Open P-Bar Delay	0.00	Close P-Bar Delay	2.00	Print Length
3	Parts Count	6.00	Print Speed	0.00	Print Offset
3	Bags In Queue	0.00	Pass Through	2	Mil Thickness
12	Seal Flatteners at Bag Filling Position				

Comments:

Load Job

Back

Ready To Cycle

Reset

Menu > Job Setup > Job Details

Figure 3-6A. Job Detail Screen.

JOB PARAMETERS TAB

Bag Length - This refers to the usable area inside the bag. This is measured from the bottom of the bag to the seal. The typical setting is 0.5" less than the measured overall bag length. Limits are 2.5 to 32 inches.

Seal Temperature - The set temperature of the seal bar when sealing as bag. Limits are 0 to 475 degrees Fahrenheit.

Feed Speed - Adjusts the forward web speed in inches per second. Limits are 10 to 74 inches/second.

Bag Width - This also refers to the usable area inside the bag. This is measured from side to side. Limits are 1 to 20 inches.

Seal Dwell - The amount of time the heated seal bar will remain in contact with the film. High quality seals are accomplished through proper seal time settings. These settings will vary with the film gauge and material. Limits are 0 to 5 seconds.

Feed Delay - Adjusts the delay (in seconds) that occurs before the web feeds forward to present the next bag. Limits are 0 to 3 seconds.

Seal Offset - The offset distance added to the minimum amount of material above the seal (approximately 0.5" below the bag perforation). Thus a seal offset setting of 1.00" would produce a seal that is approximately 1.50" below the bag perforation. Limits are 0 to 2 inches.

HP Air Dwell - The amount of time the HP Air Blast remains on. The HP Air Blast is used to begin to open the bag and is then taken over by the LP Air to hold the bag open during loading. Allowed limits are 0 to 1 second.

Reverse Speed - Adjusts the reverse web speed in inches per second. Limits are from 6 to 16 inches/second.

Job Name: New Job

Label:

Verification:

EZ Recall:

Scan Barcode

Job Parameters Advanced Motorized Seal Flatteners Parameters

15	Bag Length	280	Seal Temp	28	Feed Speed
14	Bag Width	0.25	Seal Dwell	0.00	Feed Delay
0.5	Seal Offset	0.05	HP Air Dwell	12	Reverse Speed
0.00	Open P-Bar Delay	0.00	Close P-Bar Delay	2.00	Print Length
3	Parts Count	6.00	Print Speed	0.00	Print Offset
3	Bags In Queue	0.00	Pass Through	2	Mil Thickness
12	Seal Flatteners at Bag Filling Position				

Comments:

Load Job

Back

Ready to Cycle

Reset Menu > Job Setup > Job Details

Figure 3-7A. Job Detail Screen.

Open P-Bar Delay - Adjusts the delay (in seconds) that occurs prior to opening the pressure bar. Limits are 0 to 3 seconds.

Close P-Bar Delay - Adjusts the delay (in seconds) that occurs prior to closing the pressure bar. Limits are 0 to 3 seconds.

Print Length - This setting is only used when the "Print While Feeding" option is on. Set this to slightly longer than the actual label length. This setting must be greater than 0 and less than the Bag Length setting.

Parts Count - When the parts counter is turned on, the bagger counts each part as it is being loaded into the opened bag. When the terminal count is reached, the Filler Trigger signal is turned on to start the Filler Drop Timer. Limits are 0 to 999 parts..

Print Speed - This setting is only used when the "Print While Feeding" option is on. This setting must match the setting in the Printer. Limits are 4 to 31.5 inches/second.

Print Offset - This setting is used to adjust the position of a printed label on the bag. Max 24 bagging machines, this setting + 6.5 inches must not exceed the Bag Length setting..

Bags In Queue - This setting is used to determine the length of the Print Bags Queue and represents the number of printed bags between the printer and the bag loading position. When set correctly, the Start Job function will open the first printed bag and the End Job function will clear out only enough bags to eliminated the last printed bag. Setting Range is from 2 to 10 bags..

Pass-Thru - This setting is the size of the opening through which products are placed in bags. Limits are 0 to 12 inches.

MIL Thickness - The thickness of the bag material.

Seal Flatteners At Bag Filling Position - Used to view and change the Seal Flatteners position for bag filling.

Load Job - Job settings are sent to the PLC. Also sends the assigned label to the printer.

Back - Returns control to the Job Setup Screen.

The screenshot shows the 'Job Detail Screen' with the 'Advanced Motorized Seal Flatteners Parameters' tab selected. The interface includes a sidebar with icons for home, settings, and other functions. The main content area has a top section for job information (Job Name: 24 X 26, Label: UPS Datamax.lab, Verification, EZ Recall) and a 'Scan Barcode' button. Below this is the 'Job Parameters' section, which is highlighted with a red box. This section contains a 'Current Position' display showing '16.993' and buttons for 'Move Up', 'Move In', 'Move Out', and 'Move Down'. There are also radio buttons for step sizes: 1/16 inch, 1/8 inch, 1/4 inch (selected), 1/2 inch, and 1 inch. To the right of the 'Move Up' button is a section titled 'Save Current Position Into Job As...' with buttons for 'Filling Position', 'IN Offset', and 'OUT Offset'. Below this is another section titled 'Move Seal Flatteners To Positions Saved in Job...' with similar buttons. At the bottom of the 'Job Parameters' section are 'Load Job' and 'Back' buttons. A blue status bar at the bottom of the 'Job Parameters' section says 'Ready To Cycle'. The bottom of the screen has a navigation bar with 'Reset', 'Menu', '>', 'Job Setup', '>', 'Job Details', and a lock icon.

Figure 3-8A. Job Detail Screen.

ADVANCED MOTORIZED SEAL FLATTENERS PARAMETERS TAB

Current Position - Displays the position of the Seal Flatteners in inches.

Move Up - Raises the Seal Flatteners.

Move In - Moves the Seal Flatteners towards the center, using the selected width as the step.

Move Out - Moves the Seal Flatteners away from the center, using the selected width as the step.

Move Down - Lowers the Seal Flatteners.

Save Current Position Into Job As...

- **Filling Position** - Saves the current Seal Flatteners position to the Filling Position in the job.
- **IN Offset** - Saves the current Seal Flatteners position to the In Offset in the job.
- **OUT Offset** - Saves the current Seal Flatteners position to the Out Offset in the job.

Move Seal Flatteners To Positions Saved in Job...

- **Filling Position** - Moves the Seal Flatteners to the Filling Position in the job.
- **IN Offset** - Moves the Seal Flatteners to the In Offset in the job.
- **OUT Offset** - Moves the Seal Flatteners position to the Out Offset in the job.

Comments - These are comments that can be used to provide more information about the job. A maximum of 255 characters are allowed.

Load Job - Job settings are sent to the PLC. Also sends the assigned label to the printer.

Back - Returns control to the Job Setup screen.



Figure 3-9A. Admin Screen.

ADMIN SCREEN

General Description

The Admin screen is a collection of administrative functions used to setup the HMI and monitor bagger performance.

Minimum Security Access: No Security

Button/Label Descriptions:

Factory Configuration - This screen is used by the factory to configure purchased options.

Dashboard Setup - This will open the Dashboard Setup screen that is used to setup the custom dashboard.

Background Color - This will change the background color of the HMI.

Directories - This will open the Directories screen to setup file locations and Database connection settings.

Communications - This will open the Communications screen used to setup the IP communication settings for the PLC and the Printer.

Language - This will open the Language screen to set the Language used for the HMI.

Security - This will open the Security screen used to set security level passwords.

Event Log - This will open the Event Log screen that allows users to view system events.

Copy Diagnostics to USB - This will copy the Event Log, and the Machine Settings xml file to a "Diagnostics" folder on a connected USB flash drive. This is a way to export diagnostic information from the machine.

Update HMI from USB - This will look for a connected USB flash drive with a folder named "Max" and, if found, will copy all of the contents of the folder to the "Max" folder located on C:/Programs Files. This is the common way to do HMI software updates.

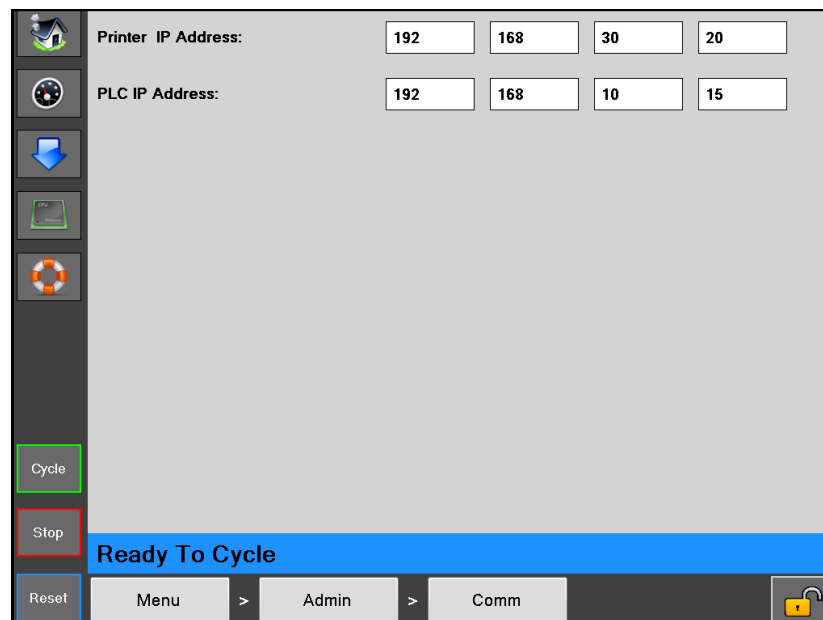


Figure 3-10A. Communications Screen

COMMUNICATIONS SCREEN

General Description

The Communications screen displays the IP Address settings needed for the HMI to communicate with various devices.

Minimum Security Access: High

Button/Label Descriptions:

Printer IP Address - This is the IP Address currently assigned to the Printer

PLC IP Address - This is the IP Address currently assigned to the PLC

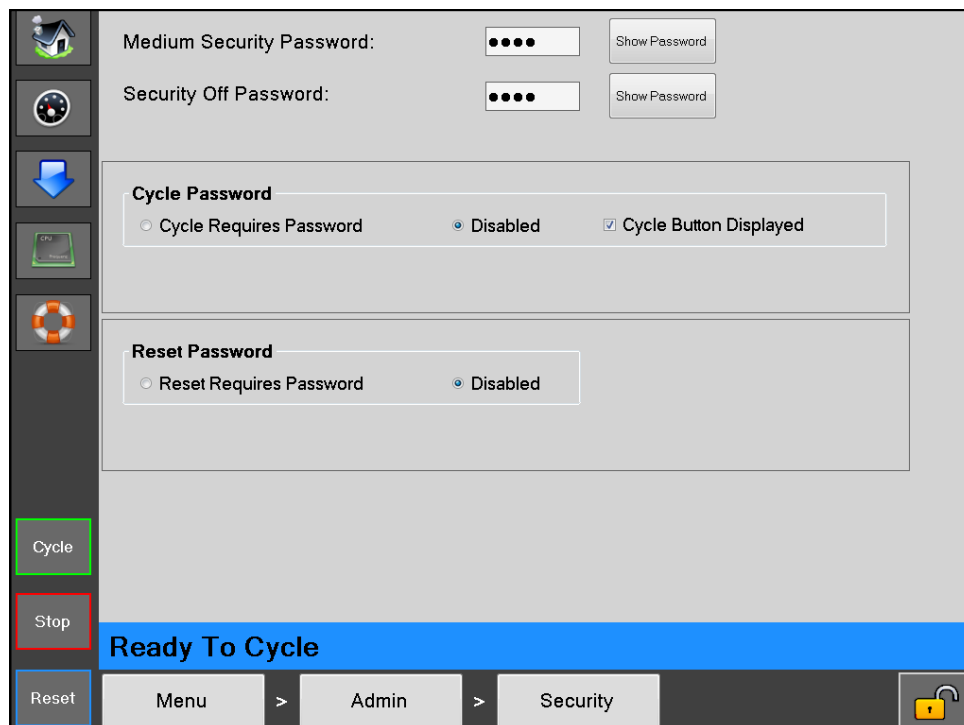


Figure 3-11A. Security Screen

SECURITY SCREEN

General Description

The Security screen allows an admin to set custom passwords for each security level. These passwords are entered when a user clicks the Lock icon on the bottom right of the screen.

Minimum Security Access: Medium

Button/Label Descriptions:

Medium Security Password - This will set the Medium security level password. The password must 1 to 5 numbers in length. The current password will be shown.

Security Off Password - This will set the Security to OFF. This password allows access to all HMI screens. The password must 1 to 5 numbers in length. The current password will be shown.

The security levels are defined as follows:

High - The user allowed access to the Dashboard, PLC Settings, Job Download, Main, and Communications screens

Medium - The user has all permissions of the High security level and access to all screens except Service, Language, and I/O.

No Security - The user has access to all screens and functions except Factory Configuration that is for factory access only.

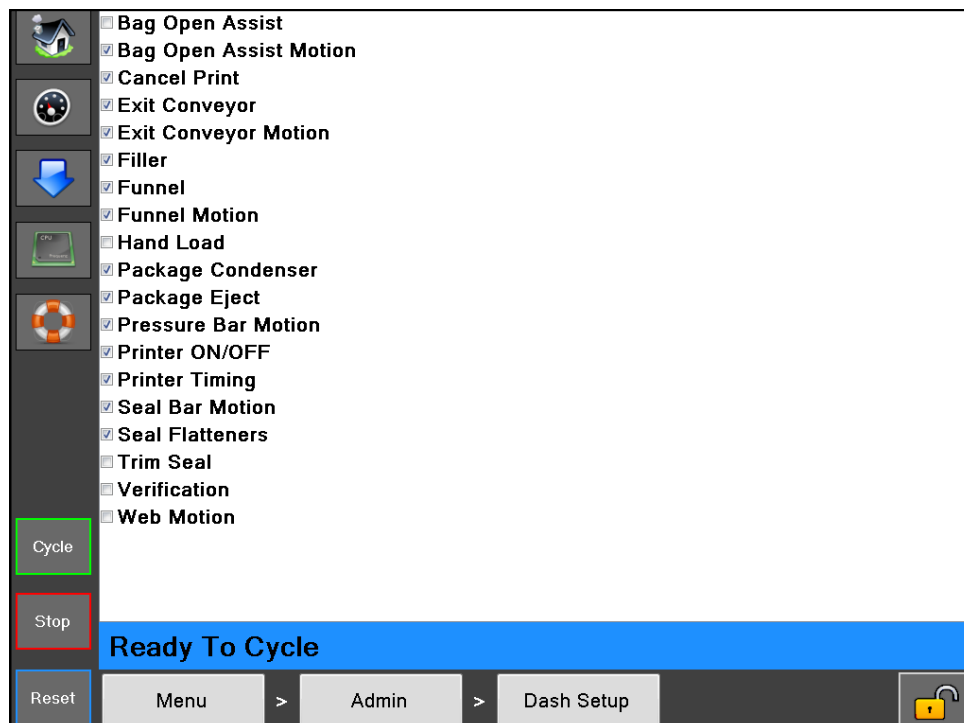


Figure 3-12A. Dashboard Setup Screen.

DASHBOARD SETUP SCREEN

General Description

The dashboard setup screen displays a list of available options/functions to be displayed on the Dashboard.

Minimum Security Access: Medium

Button/Label Descriptions:

A checked item in the list indicates the option/function is displayed and can be controlled on the Dashboard Screen.

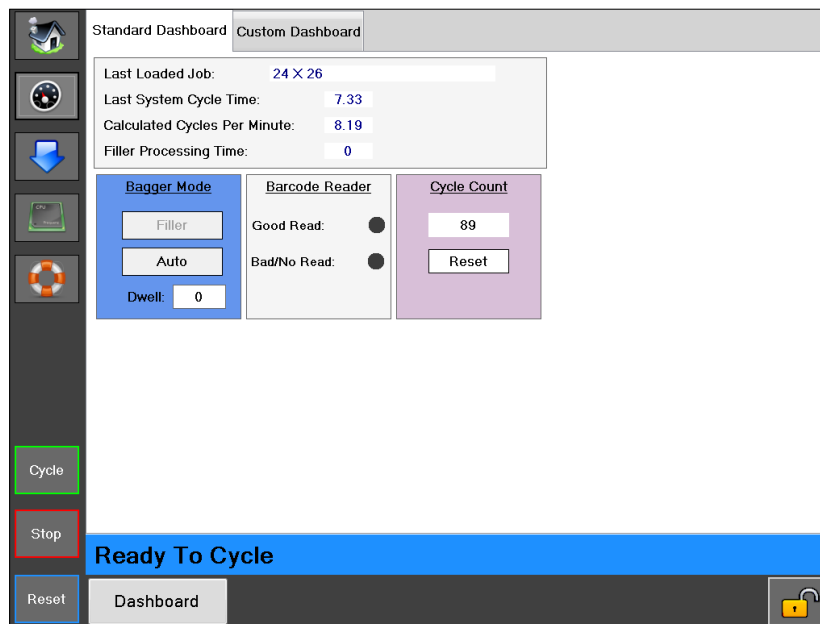


Figure 3-13A. Dashboard Setup Screen.

DASHBOARD SCREEN

General Description

The dashboard is a customizable screen that can be setup to display the most common operator interfaces. Options can be switched on or off from this screen, and many of the individual machine motions can be setup on this screen for operator ease of use. There is also a built in batch counter that is accessible on the bottom of the screen. This dashboard was designed to be the main screen that the operator uses during machine operation.

Minimum Security Access: High

Button/Label Descriptions:

Auto Mode - This will put the bagger in an auto cycle mode

Parts Counter - The Parts Counter can be enabled from the Bagger Settings screen.

Batch Counter - The Batch Counter can be enabled from the Bagger Settings screen.

Last Loaded Job - The name of the last job that was successfully loaded

Last System Cycle Time - The amount of time, in seconds, the previous successful machine cycle took to complete. Note: This includes filler drop time

Calculated Cycles Per Minute - This is the number of cycles per minute calculated using 60 divided by the last system cycle time.

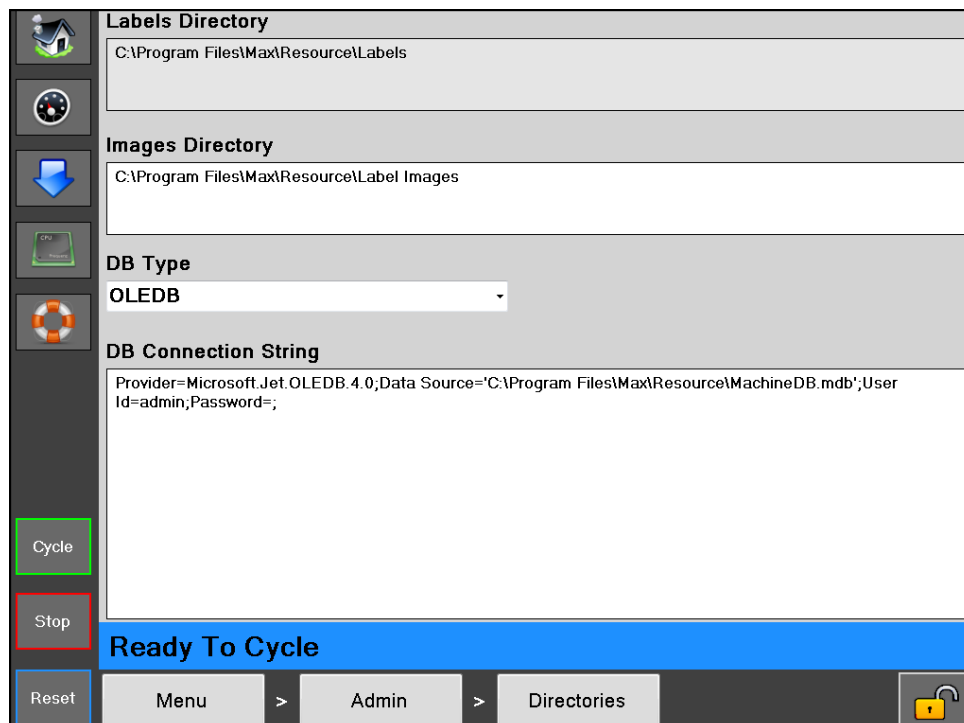


Figure 3-14A. Directories Setup Screen.

DIRECTORIES SCREEN

General Description

The Directories screen displays the file locations of certain files needed by the HMI.

Minimum Security Access: No Security

Button/Label Descriptions:

Labels Directory - This is the location on the HMI where the label formats are stored for jobs

Images Directory - This is the location on the HMI where images are stored for Job Verification

DB Type - This sets the database driver type used for the database storing saved jobs. (This should not be changed unless Job data is being stored in a different database than the one provided.)

DB Connection String - This is the connection string used to connect to the Jobs database. (This should not be changed unless moving the Jobs database to a different location.)

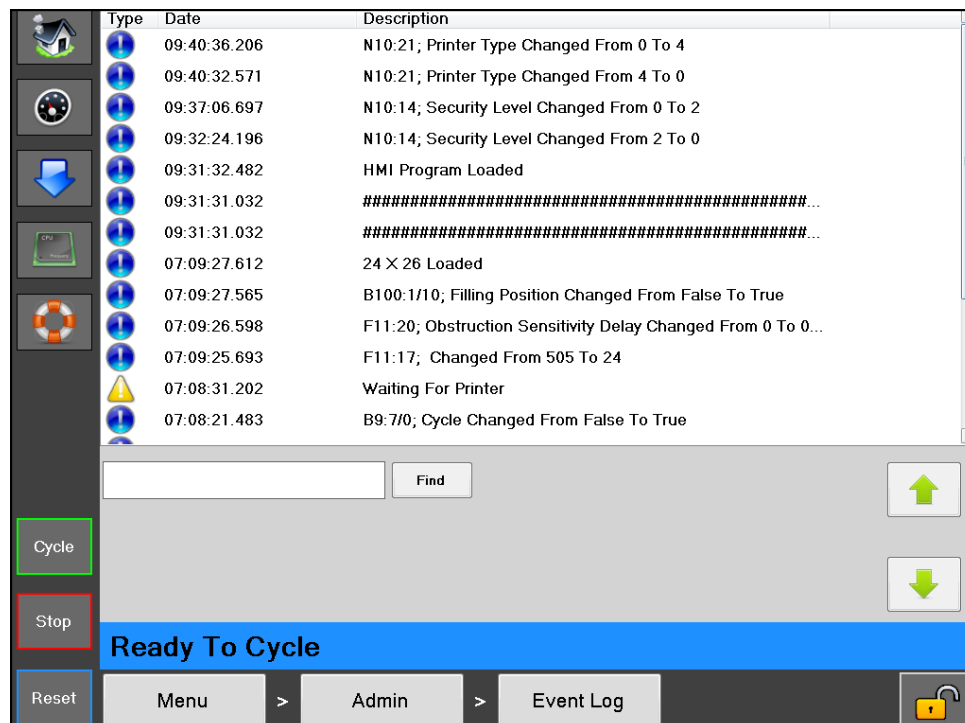


Figure 3-15A. Event Log Setup Screen.

EVENT LOG

General Description

The Event Log screen displays a list of events that have occurred on the machine for the current day. This includes faults, warnings and user initiated events.

Minimum Security Access: Medium

Button/Label Descriptions:

The event log displays an indicator, timestamp, and short description of the event. A red indicator means a fault occurred, a yellow means a warning and a blue indicator means a general event. A search box is included that can be used to search specific events according to their description.

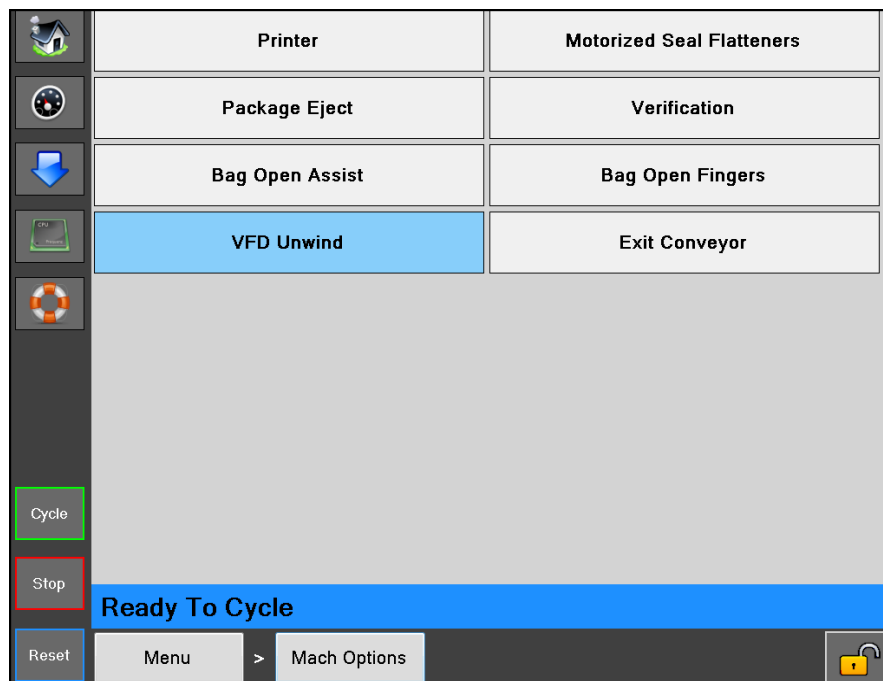


Figure 3-16A. Machine Options Screen.

MACHINE OPTIONS

General Description

The Machine Options screen displays the many options that can be installed and selected on the bagger. (Not all of these options will be available on every machine. It depends on what has been purchased.) The buttons of the options that are currently selected will be highlighted.

Minimum Security Access: Medium

Button/Label Descriptions:

Printer - This will open the Printer configuration screen.

Motorized Seal Flatteners - This will open the Seal Flatteners configuration screen. Seal Flatteners are used to create an aesthetic seal.

Package Eject - This will open the Package Eject configuration screen. This option is used to support the bag during loading and then drop the finished package from the bagger.

Verification - This will open the Verification configuration screen. This option will automatically verify a taught barcode that is printed on a bag.

Bag Open Assist - This will open the Bag Open Assist configuration screen. Bag Open Assist includes high/low pressure air, and vacuum assist.

Bag Open Fingers - This will open the Bag Open Fingers configuration screen. This option is found on the Max 20 with 10" pass-thru equipped with Pressure Bar mounted vacuum open.

VFD Unwind - This will open the VFD Unwind configuration screen.

Exit Conveyor - This will open the Exit Conveyor screen.

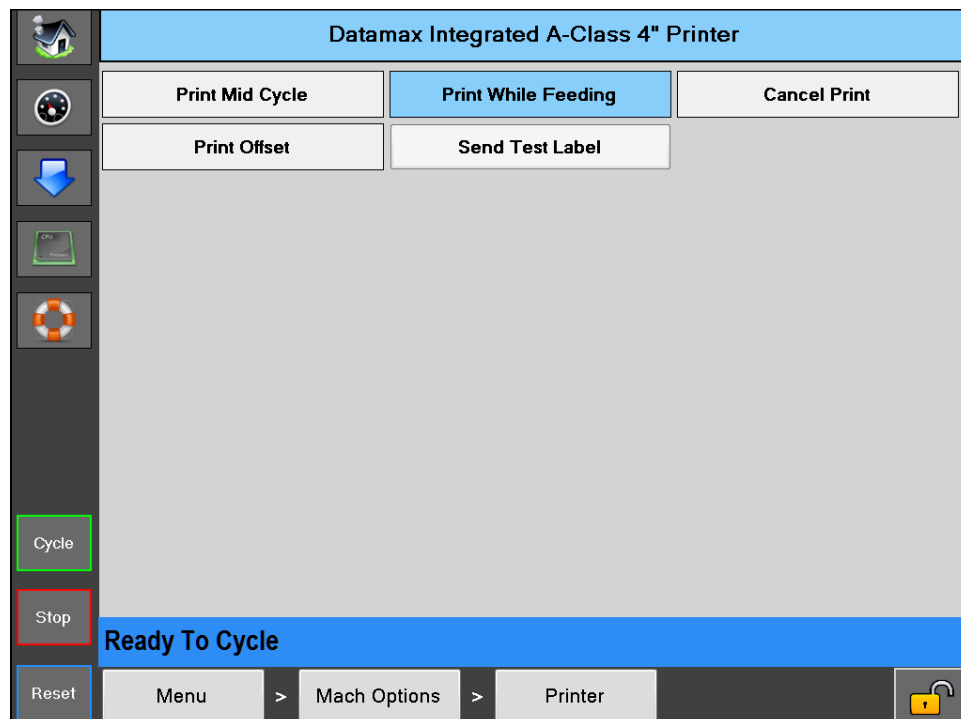


Figure 3-17A. Printer Screen.

PRINTER SCREEN

General Description

There are four types of printers that can be installed on the bagger; Intermittent or Continuous Videojet printer and A-Class 4" or 8" Stand Behind Datamax Printer.

Button/Label Descriptions:

Printer - This will toggle on/off the Printer option.

Print Mid Cycle - This option is not valid for the Videojet Continuous printer. In this mode, the print cycle will occur when the web has backed up and stopped at the bag edge eye. When the printer cycle has completed the bag will feed out into load position.

Print While Feeding - When this is on, the Datamax printer will print while the bag is feeding out. The bag feeds at the print speed for the print length, as determined in the Job Settings. When the printing is done, the bag feeds the remaining bag length at the feed speed setting. This option is mutually exclusive from the Print Mid Cycle.

Cancel Print - This button allows a print request to be canceled. The function occurs when the printer option is turned on and the bagger cycles, but not print jog was loaded into the printer. The bagger will display a yellow alert message "Waiting for Printer" is displayed. Pressing this button will cancel the print request and allows the bagger cycle to finish.

Print Offset - When this is on, the printed label will be offset as determined in the Job Settings. The offset setting is limited by the physical position of the printer and the size of the bag.

Send Test Label - Sends a test label to the printer.

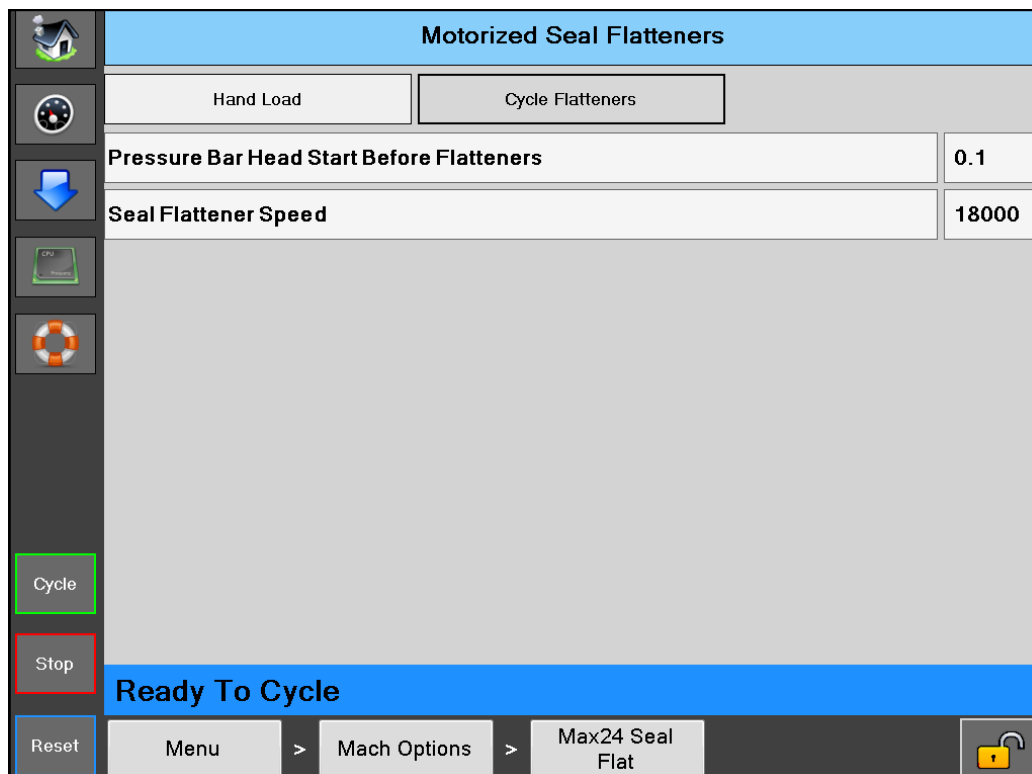


Figure 3-18A. Seal Flatteners Screen.

SEAL FLATTENERS SCREEN

General Description

Seal Flatteners are designed to flatten out the opening of the bag prior to sealing. This has the effect of removing wrinkles from film in the seal area and creates an anasthetically pleasing seal.

Button/Label Descriptions:

Motorized Seal Flatteners - This will toggle on/off the Seal Flatteners option.

Hand Load - This feature changes the sequence of the seal flattener operation. With Hand Load active, the seal flatteners do not enter the bag until the product is loaded and the cycle is initiated. With Hand Load inactive, the seal flatteners will enter the bag directly following the opening of the bag.

Cycle Flatteners - Each press of this button will advance the flatteners through another step in the loading sequence.

Pressure Bar Head Start Before Seal Flatteners - This is a secondary delay after the Close Pressure Bar Delay before the Seal Flatteners move to allow the Pressure Bar a head start. The allowed values are from 0.00 to 1.00 seconds.

Seal Flattener Speed - This is the "Slow" speed of the Seal Flatteners (the movement from the Loading Position to the Out Position). The allowed values are from 9000 to 30000 Hz. Default is 18000 Hz.

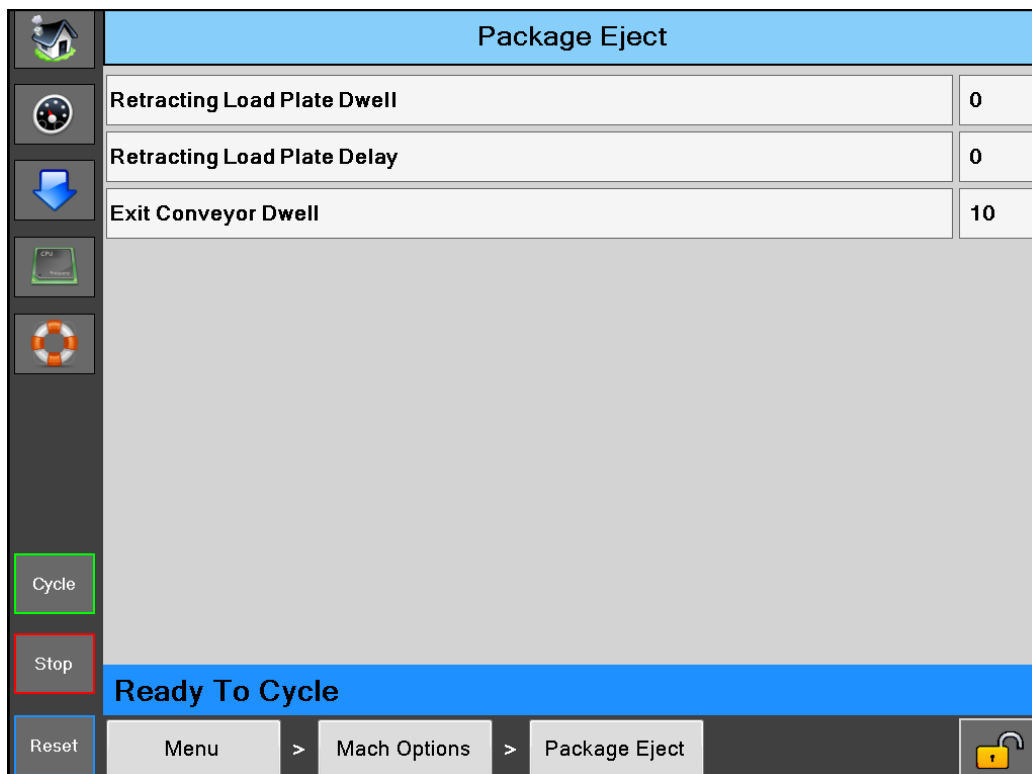


Figure 3-19A. Package Eject Screen.

PACKAGE EJECT SCREEN

General Description

The Package Eject option helps remove the sealed bag from the loading area. There are several versions of this option. A Retracting Load Plate, Retracting Load Shelf, Side Retracting Load Shelf, and 2-Axis Package Eject.

Button/Label Descriptions:

Package Eject - This will toggle on/off the Package Eject Option.

Retracting Load Plate Dwell - The amount of time the Load Plate is retracted.

Retracting Load Plate Delay - The amount of time (0 to 3 seconds) before the load plate retracts.

Exit Conveyor Dwell - The amount of time in seconds that the Exit Conveyor runs after a cycle.

Figure 3-20A. Verification Screen.

VERIFICATION SCREEN

General Description

The Verification Option screen displays available Verification settings.

Minimum Security Access: Medium

Button/Label Descriptions:

Verification - This will toggle on/off the Verification option.

Bad Read Fault Count - This setting determines how many consecutive bad reads are required before the machine is faulted.

Consecutive Bad Read Count - A numeric display of how many *Consecutive* bad reads attempts have occurred.

Consecutive Good Read Count - A numeric display of how many *Consecutive* good reads attempts have occurred.

Start Scan Offset - A numeric setting to start the barcode scan some distance from where the web starts to either print or feed forward.

Scanning Distance - A numeric setting which determines the scanning distance or length in inches. This value gets added to the Scan Offset and determines when the scanner stops.

Scan Barcode At Offset - This button selects the Scan Offset feature.

Scan Barcode - This is a test button that allows the user to scan a barcode when the bagger is not cycling.

Good Read Indicator - This will light up when a good read occurs. It stays on until the next scan

Bad/NG Indicator - This will light up when a either bad read or no read occurs. It stays on until the next scan.

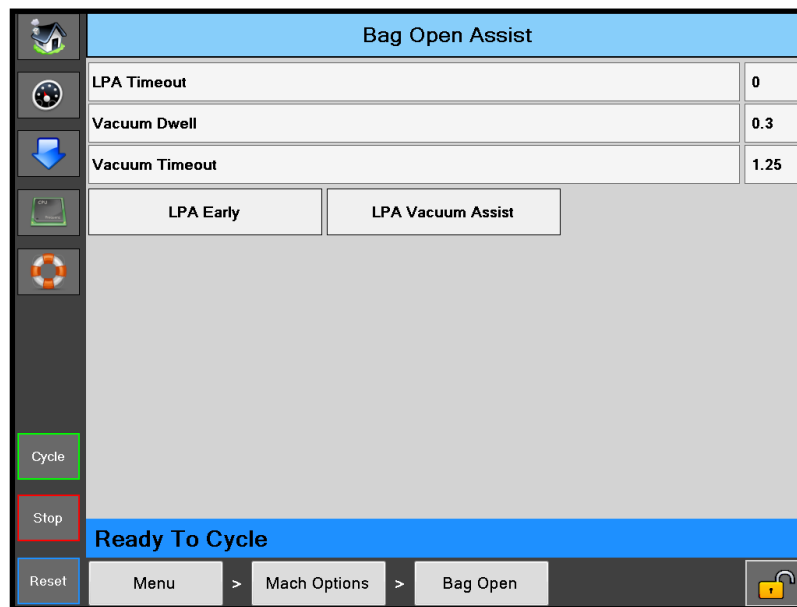


Figure 3-21A. Bag Open Assist Screen.

BAG OPEN ASSIST

General Description

The Bag Open Assist Option screen displays available Bag Open settings

Minimum Security Access: Medium

Button/Label Descriptions:

Bag Open Assist - This will toggle on/off the Bag Open Assist option. When OFF, the High/Low pressure air opens the bag.

LPA Timeout - This setting determines the LPA timeout. Valid range is 0 –300 seconds. A setting of 300 disables the timeout feature and leaves the LPA on in-between cycles.

Vacuum Dwell - The amount of time the vacuum cups are in contact with the bag and applying vacuum. When the dwell timer expires, the Pressure Bar retracts. The timer values ranged from 0.10-3.00 seconds.

Vacuum Timeout - This setting determines the vacuum timeout. Timer values range from 0-9.99 seconds.

LPA Early - This feature turns on the LPA at the beginning of the bag feed instead of the end of feed.

LPA Vacuum Assist - This option uses Low Pressure Air to inflate the bag once it is opened. When this is ON LPA turns on when vacuum switches Off. When this is OFF, LPA turns on at the end of the bagger cycle. If no LPA is desired, set the LPA timeout to 0.

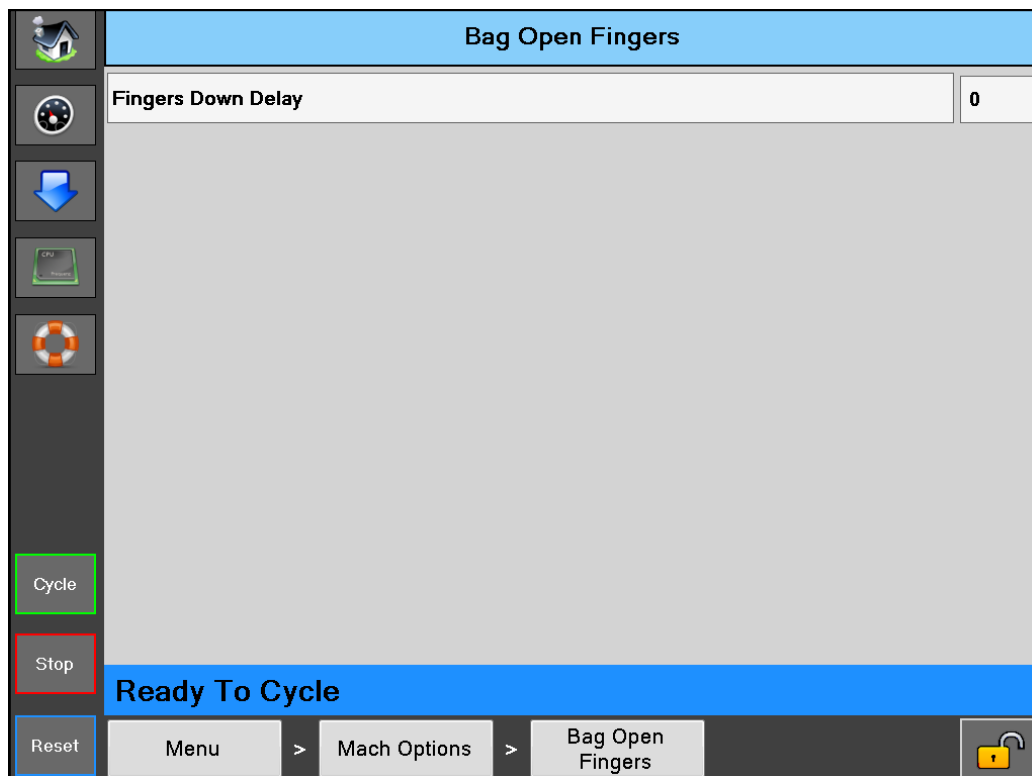


Figure 3-22A. Bag Open Fingers

BAG OPEN FINGERS SCREEN

General Description

This option consists of two mechanical fingers operated by rotary air actuators. The fingers are mounted outside the Finger Funnel. The fingers rotate into the bag as the Pressure Bar begins to open the bag. When the fingers are down, they pin the bag to the Pressure Bar and held to open or form the bag into a 10" x 10" square opening.

Button/Label Descriptions:

Bag Open Fingers - This toggles on/off the Bag Open Fingers.

Fingers Down Delay - The fingers Down Delay will delay the rotation of the fingers. It is recommended to keep this setting to a minimum. Start with 0 and add time only if necessary.



Figure 3-23A. VFD Unwind Screen

VFD UNWIND SCREEN

General Description

The VFD Unwind Option screen is used to setup the Dancer Feedback positions.

Minimum Security Access: Medium

Button/Label Descriptions:

VFD Unwind - This button is automatically turned on by the PLC and can not be turned off whenever a VFD Unwind is enabled in the Factory Configuration

Current Dancer Position - This is a live numeric reading of the raw analog counts from the dancer position sensor.

Low Dancer Position - This is the numeric value that was captured when the Set Low Position button is pressed.

Dancer Upper Limit Position - This is the numeric value that was captured when the Set High Limit Position button is pressed.

Set Low Dancer Position - Pressing this button during the Setup Mode will capture and store the Low Position.

Set High Dancer Limit - Pressing this button during the Setup Mode will capture and store the High Operating Limit Position.

Setup Dancer Positions - Press and Hold This Button for 3 seconds to activate the Dancer Setup mode.

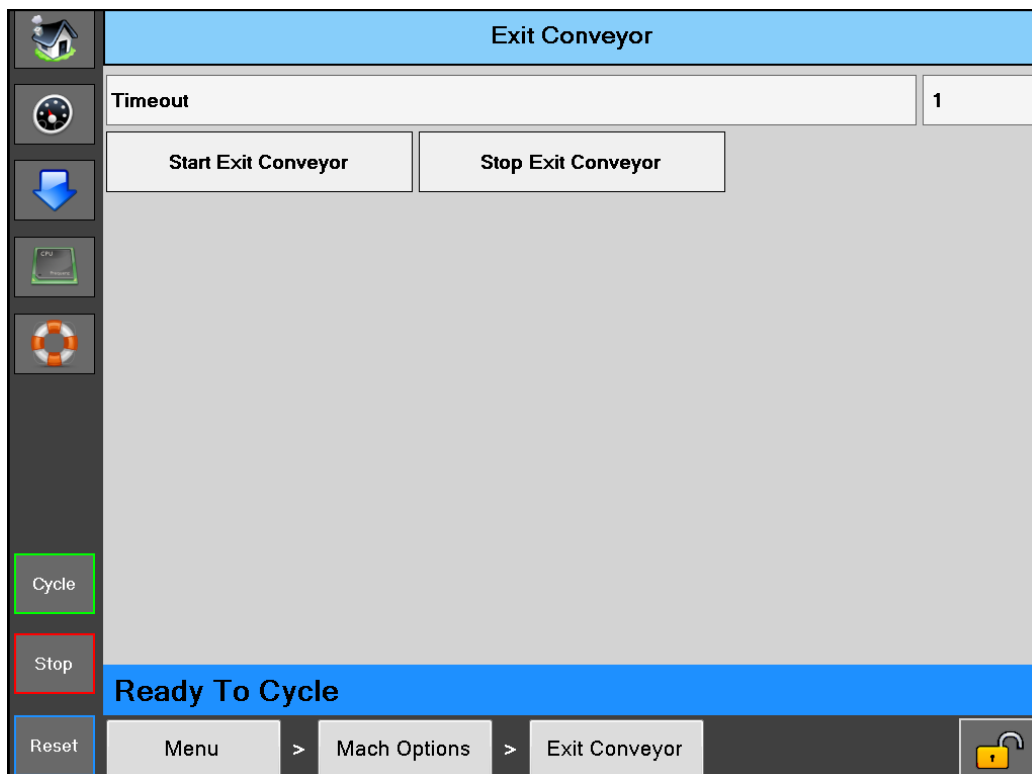


Figure 3-24A. Package Eject Screen.

EXIT CONVEYOR SCREEN

General Description

The Exit Conveyor Option Screen displays available Exit Conveyor settings.

Minimum Security Access: Medium

Button/Label Descriptions:

Exit Conveyor - This will toggle on/off the Exit Conveyor option. The Exit Conveyor plugs into a switched 120V outlet.

Time Out - Setting this value 0 to 999 seconds will enable a timeout feature to automatically switch off the conveyor if no bagger cycles occur during the timer cycle.

Start Exit Conveyor - This will start the Exit Conveyor.

Stop Exit Conveyor - This will stop the Exit Conveyor.

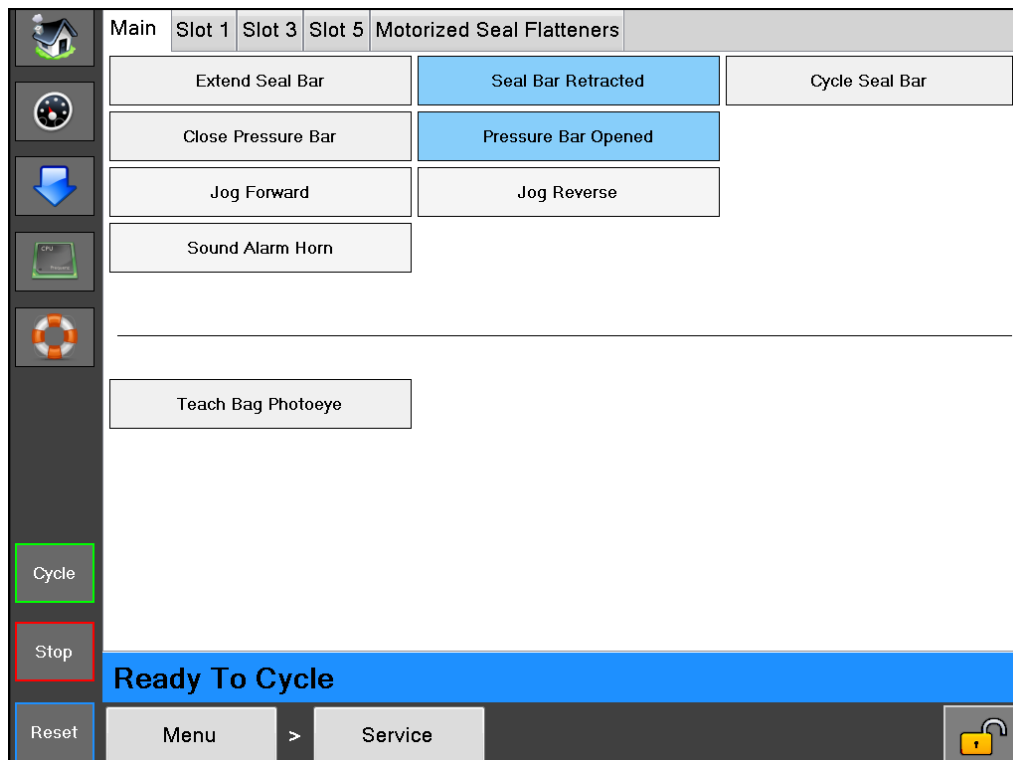


Figure 3-25A. Service Screen.

SERVICE SCREEN

General Description

The Service Screen provides manual control over the major components of the machine. Use this screen when troubleshooting options on the machine.

Minimum Security Access: No Security

Button/Label Descriptions:

Main

Extend Seal Bar - This will extend the seal bar. The button will display *Seal Bar Extended* when the Seal Bar Extended Sensor is made.

Retract Seal Bar - This will retract the seal bar. The button will display *Seal Bar Retracted* when the Seal Bar Retracted Sensor is made.

Cycle Seal Bar - This will extend the Seal Bar and then retract the Seal Bar.

Close Pressure Bar - This will close the pressure bar. The button will display *Pressure Bar Closed* when the Pressure Bar Closed Sensor is made.

Open Pressure Bar - This will open the pressure bar. The button will display *Pressure Bar Opened* when the Pressure Bar Opened Sensor is made.

Jog Web Forward - This will move the web forward.

Jog Web Reverse - This will back the web up.

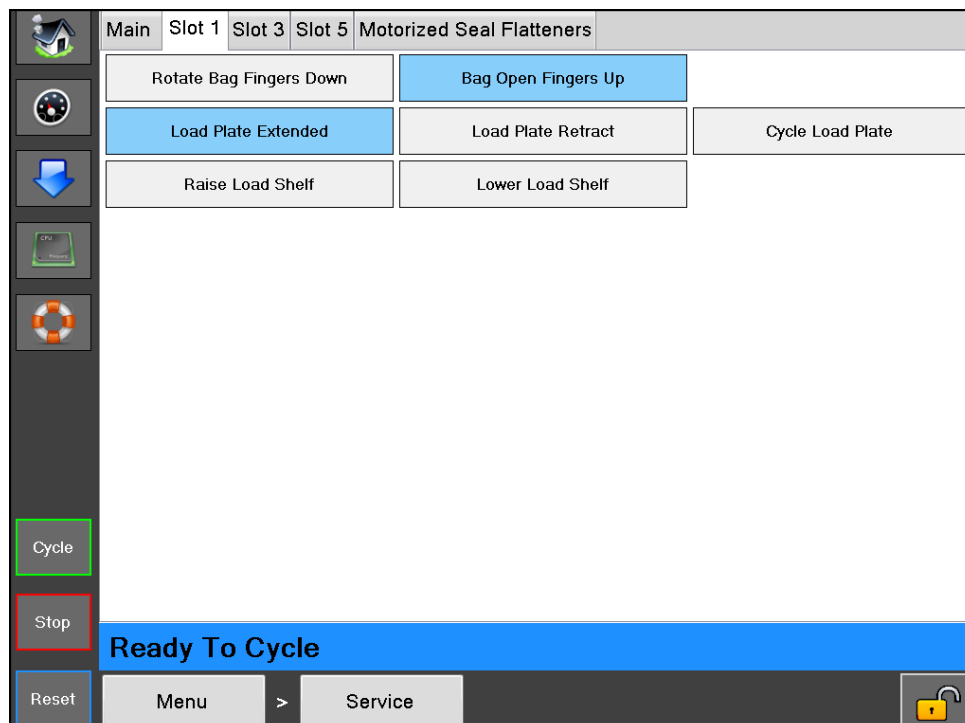


Figure 3-26A. Service Screen - Slot 1.

Sound Alarm Horn - Sounds the Alarm Horn for as long as the button is pressed.

Teach Bag Photoeye - Film should not be in between eye and reflector. Pressing this button will teach the eye. The button will display *Teaching Bag Photoeye* for 3 seconds.

SLOT 1

Rotate Fingers Down - This will rotate the Bag Fingers to the bag holding position. The button will display *Bag Open Fingers Down* when the Rotate Fingers Down proximity switch is made.

Rotate Fingers Up - This will rotate the Bag Fingers to the up position. The button will display *Bag Open Fingers Up* when the Rotate Fingers Up proximity switch is made.

Extend Load Plate - This will extend the Load Plate and leave it in that position. The button will display *Load Plate Extended* when the Load Plate Extended proximity switch is made.

Retract Load Plate - This will retract the Load Plate and leave it in that position. The button will display *Load Plate Retracted* when Load Plate Retracted proximity switch is made.

Cycle Load Plate - This will retract and then extend the Load Plate.

Raise Load Shelf - This will extend the Load Shelf and leave it in that position. Press button again to return to original position.

Lower Load Shelf - This will lower the Load Shelf and leave it in that position. Press button again to return to original position.

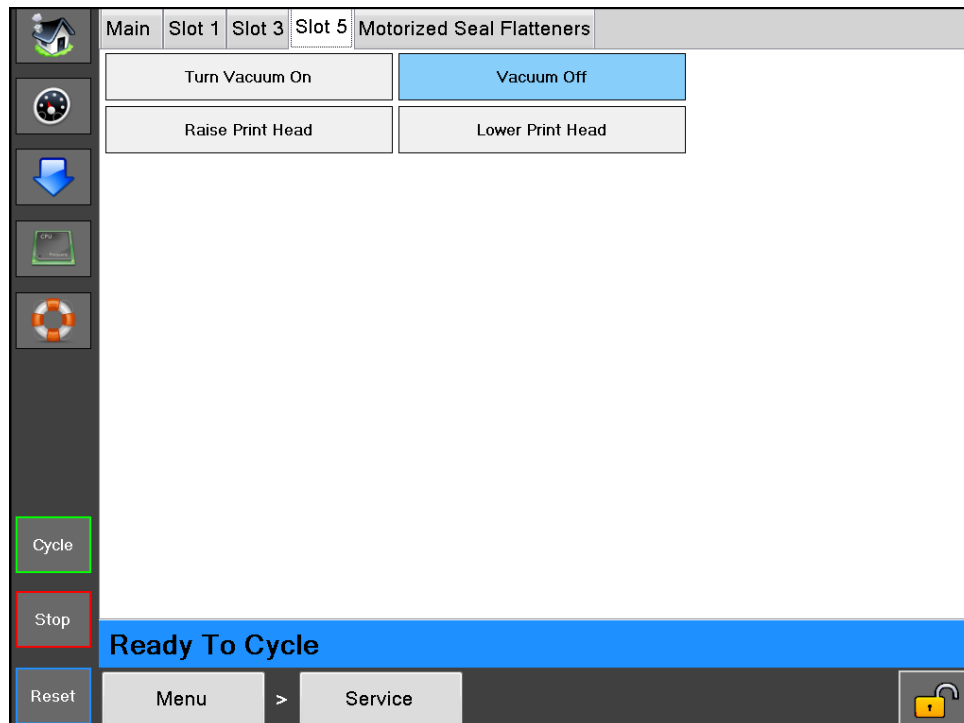


Figure 3-27A. Service Screen - Slot 5.

SLOT 5

Turn Vacuum On - This will turn the vacuum on. The button will display *Vacuum On* when the vacuum is ON.

Turn Vacuum Off - This will turn off the vacuum. The button will display *Vacuum Off* when the vacuum is OFF.

Raise Print Head - This will raise the attached printer's print head.

Lower Print Head - This will lower the attached printer's print head.

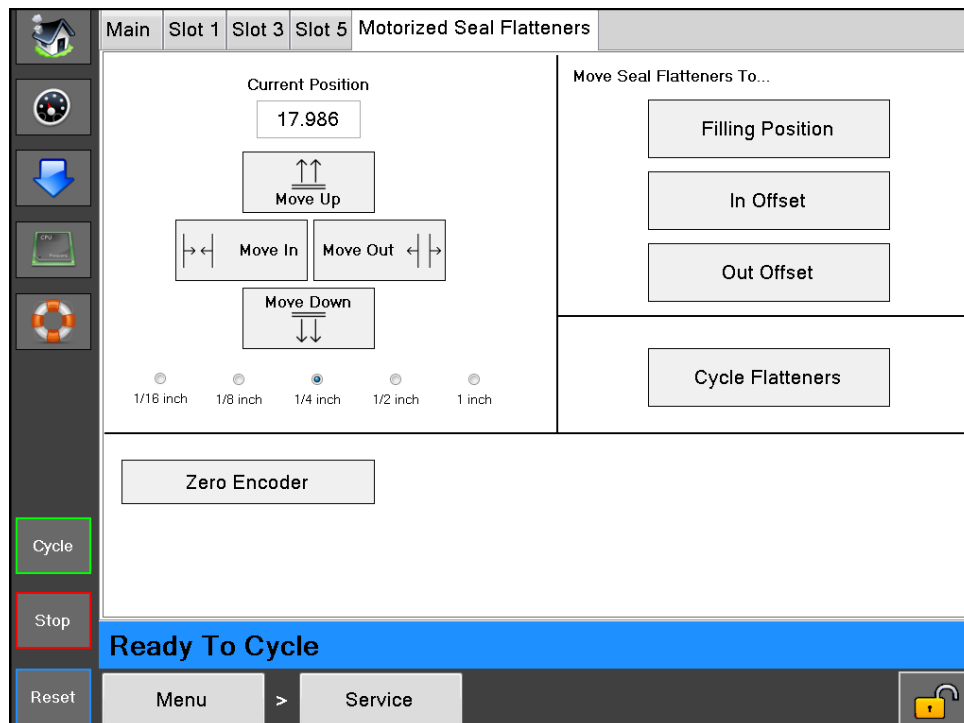


Figure 3-28A. Service Screen - Motorized Seal Flatteners.

MOTORIZED SEAL FLATTENERS

Minimum Security Access: Medium

Button/Label Descriptions:

Current Position - Displays the position of Seal Flatteners in inches.

Move UP - Raises the Seal Flatteners.

Move IN - Moves the Seal Flatteners towards the center, using the selected width as the step.

Move OUT - Moves the Seal Flatteners away from the center, using the selected width as the step.

Move DOWN - Lowers the Seal Flatteners.

Move Seal Flatteners to...

Filling Position - Immediately repositions the Seal Flatteners to the Filling Position

In Offset - Immediately repositions the Seal Flatteners to the interior offset.

Out Offset - Immediately repositions the Seal Flatteners to the exterior offset.

Cycle Flatteners - This button causes the Seal Flatteners to do one motion at a time with each press. This is helpful for adjusting the Seal Flatteners.

Zero Encoder - Sets the Seal Flatteners Encoder value to 0. The Seal Flatteners do not move, but the Encoder is set as if the flatteners are fully in. Zeroing the Encoder at the fully out position may prevent the HMI controls from working. Manual adjustment of the Seal Flatteners may then be necessary.

Setup & Adjustments

Machine Placement

ELECTRICAL PRECAUTIONS



WARNING

Do not operate the machine in or around standing water. Failure to observe the warning may result in damage to the equipment and/or severe bodily injury.

Ensure no liquids are near the machine to eliminate the possibility of spilling onto any electrical components and creating a short circuit.

Should a liquid spill onto the machine, turn off the power immediately, unplug the power cable and once having cleaned the liquid, have a qualified technician inspect and test all the electrical components to ensure they are functioning properly. To avoid short-circuiting, keep all wires and connections clean and keep your body, hand-held tools and any other electrically conductive objects away from any exposed electrical components.

Ensure the electrical cabinet is always closed, unless needed for maintenance. Always ensure that the ground wire is firmly connected with the ground before starting the machine. Use double grounding for added protections. After installation, check electrical connections before starting the machine.

GROUNDING INSTRUCTIONS

Improper connection of the equipment grounding conductor can result in a risk of electrical shock. Check with a qualified electrician or service person if you are in doubt as to whether your machine outlets are properly grounded.



WARNING

Failure to have properly grounded outlet may cause damage to equipment or severe bodily injury.

This machine must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electrical shock by providing a path of least resistance for electrical current. This machine is equipped with a cord having an equipment-grounding conductor for a 3 prong grounding plug. The plug must be connected into an outlet that is properly installed and grounded in the accordance with all local codes and ordinances. Do not modify the plug provided with the machine.

If your electrical supply does not meet the above specifications, or if you are unsure your building has an effective ground, have a qualified electrician or your local electrical utility company check the ground and correct any problems.

STORAGE

If the machine will not be used for a considerable amount of time, it should be stored in the original shipping crate, in a temperature controlled environment to protect it from damage.

Your Bagger has been shipped to you well crated in order to prevent any damage to the machine. It is important that you follow the Uncrating Instructions attached to crate.

After being uncrated, place the **MaxPro Bagger** in well ventilated area, on a rigid and vibration free surface. Before continuing with the installation of the machine, ensure all nuts, bolts and screws are tightened as they can come loose during shipping.

The **MaxPro Bagger** should be placed on a smooth level surface with access to 100 PSI of clean, dry compressed air, and 115 VAC, 50/60 Hz, 20 Amp properly grounded electrical outlet.

Locate the machine so there is adequate access to the side for loading bag film.

Make sure unit is located at a comfortable height for operation and product loading. See [Height Adjustment](#) (page 4-3).

The unit is equipped with two swivel locking casters for easy maneuverability. Lock the casters after placing machine in desired location.

POWER CONNECTION

The **MaxPro Bagger** is equipped with a 3-prong electrical plug for standard, properly grounded, 120 VAC, 50/60 Hz, 20 Amp service.

1. Before plugging the cord into an outlet, depress the Emergency Stop Button on Power Button Box. See [Figure 1-2A](#).
2. Make sure wall outlet or electrical drop is rated for proper voltage and that the outlet is grounded.
3. Plug provided power cord into wall outlet or electrical drop.
4. Turn the Main Power Switch to ON position. Figure 4-2A.

Note: Power is only supplied to PLC, HMI/PC, and Sensors. HMI/PC will boot automatically.

6. Release the E-Stop Button and press the Green Power Button.

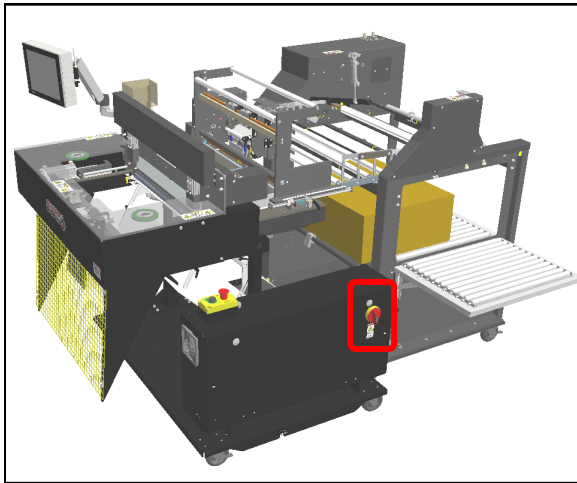


Figure 4-2A. Main Power Switch.

7. The machine now has full power.

AIR SUPPLY

The **MaxPro Bagger** has a filter/regulator equipped with a male end 1/4" nominal flow NPT air quick disconnect plug (Figure 4-2A). The machine requires 100 PSI (regulated to 80 PSI) of non-lubricated clean dry air at 5

SCFM. Connect the air supply line to the machine using a MIL-C-4109E or equivalent disconnect coupling.

NOTE: Do not use a lubricator or lubricated air on the machine. Damage to valves and cylinders will occur.



WARNING

Before connecting air supply, make sure all machine guards are in place and that there are no obstructions in seal/pressure bar area. Keep clear of all moving parts. When pressurized, machine parts may move.

1. Connect air hose to regulator.
2. Lift the cap on regulator
3. Adjust to 80 PSI.
4. Snap cap down on regulator.

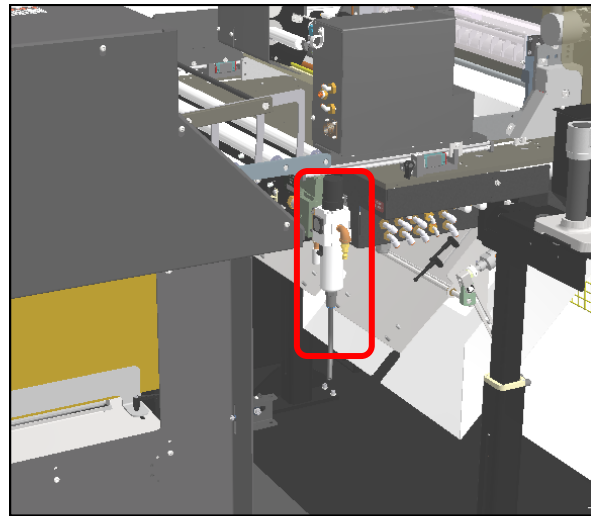


Figure 4-2A. Air Connections

Machine Adjustments

HEIGHT ADJUSTMENT

Machine height can be adjusted to allow



WARNING!

Always remove air and electrical power from the MaxPro Bagger prior to performing any service on the machine.



WARNING!

Never make adjustments while machine is ON or operating as this may cause damage to the machine and could result in severe bodily injury or even death.

manual loading at a convenient height.

1. Loosen the two Lockdown Levers on each Leg Upright. Figure 4-3A.

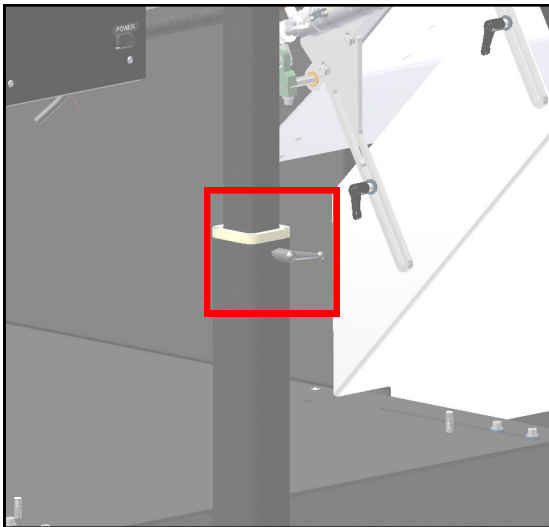


Figure 4-3A. Height Lockdown Levers.

2. Rotate the Adjustment Shaft on the side of the Base Frame using a standard 5/16" Socket Wrench until desired height is achieved. Figure 4-3B.

Note: If turning the Adjustment Shaft is hard while raising the height of machine, have a second person lift up on the Head Assembly.

3. Tighten the Lockdown Levers on each Leg Upright.

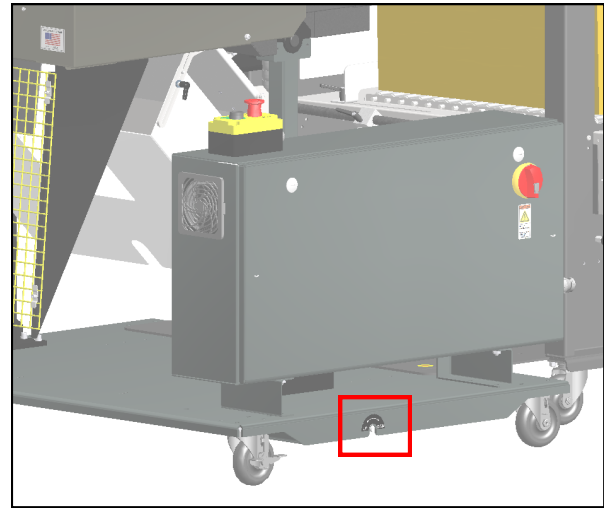


Figure 4-3B. Height Adjustment Shaft.

Note: Each Leg Upright has a Stop Screw. Do not adjust height after the Stop Screw has reached end of Adjustment Slot in leg. Figure 4-3C.

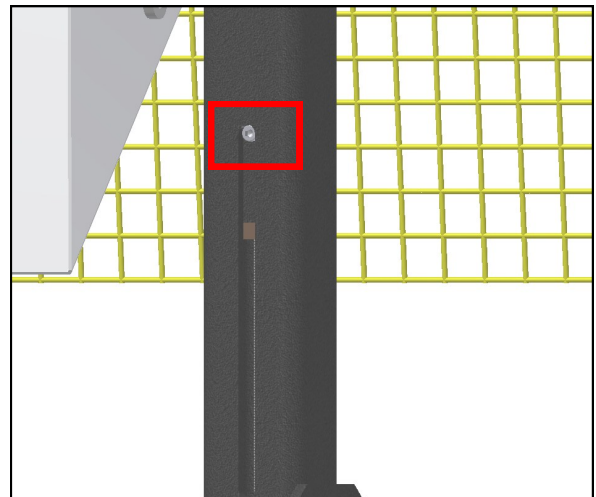


Figure 4-3C. Height Stop Screw.

HEAD ROTATION

Rotating the Head Assembly allows for easier access to the bottom of Head Assembly.



WARNING!

Always remove air and electrical power from the MaxPro Bagger prior to performing any service on the machine.



WARNING!

Never make adjustments while machine is ON or operating as this may cause damage to the machine and could result in severe bodily injury or even death.

NOTE: Make sure the air and electrical leads are not binding and are free from obstructions when the machine is rotated.

1. Disconnect air and power from the unit.
2. Verify the Printer I-Frame Locking Clamps are tight and the frame does not slide in or out. Figure 4-4A.

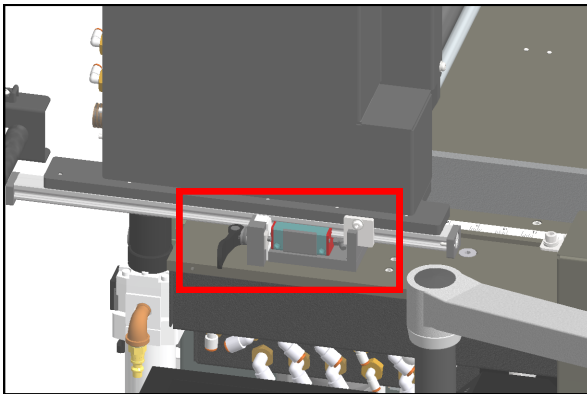


Figure 4-4A. Printer I-Frame Locking Clamp.



WARNING!

Machine Head must be held in place when loosening rotations adjustment bolts. Head may rotate when bolts are loosened and could cause damage to the machine and/or bodily injury.

3. There are (2) Locking Screws on the each Leg. Figure 4-4B.
4. Loosen the screws.
5. Pivot the machine to the desired angle.
6. Tighten rotation bolts to 15 ft-lbs torque.

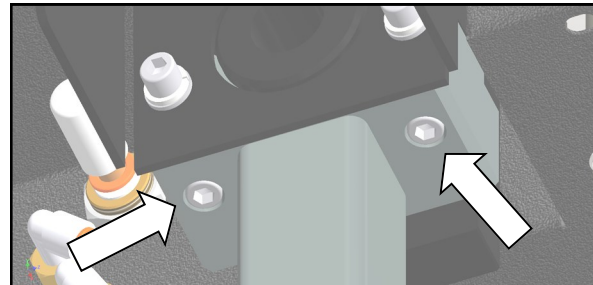
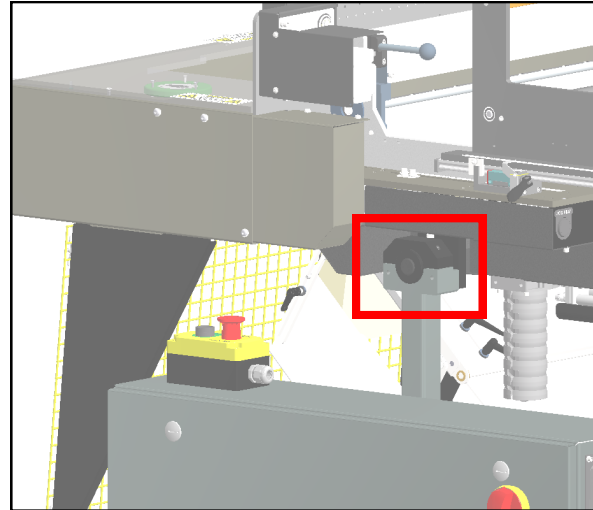


Figure 4-4B. Head Rotation Bolts.

RECTANGULAR PRODUCT GUIDE ADJUSTMENT

The Rectangular Product Guide can be adjusted to accommodate different product sizes.

1. Loosen the four handles, two on each side of the Rectangular Product Guide. Figure 4-5A.
2. Move to desired location and tighten the handles.

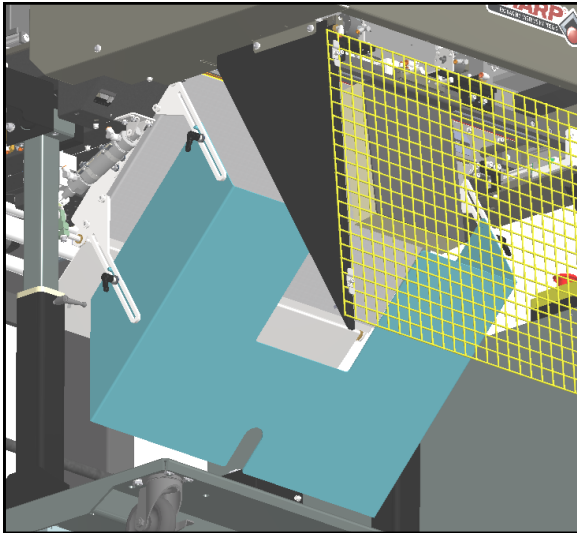


Figure 4-5A. Product Guide Adjustment.

LOAD PLATE ADJUSTMENT

The Load Plate can be moved up and down to accommodate different sized bags.

1. Loosen the four Handles on the back of the Load Plate. Figure 4-5B.
2. Move the Load Plate to desired location and tighten the handles.

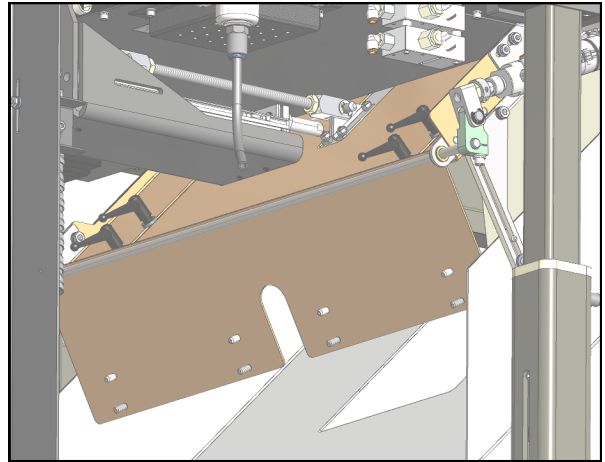


Figure 4-5B. Load Plate Adjustment.

AIR PRESSURE - VFD UNWIND

This adjustment reduces pressure between the Unwind Pinch Roller and Drive Roller.

1. Attach air to the machine.
2. Lift the cap on the OPEN Pressure Regulator on the unwind. Figure 4-6A.



Figure 4-6A. Unwind Air Pressure Regulators.

3. Rotate cap to desired pressure. The pressure is set at 50psi at the factory.
4. Push cap down to lock in place.
5. Repeat for the CLOSE Pressure Regulator.

PINCH ROLLER CLOSING SPEED - VFD UNWIND

1. Attach air to the machine.
2. Move the Toggle Switch from OPEN to CLOSE while adjusting the Flow Controls on Pinch Roller Cylinders until desired speed is achieved. Figure 4-6B.

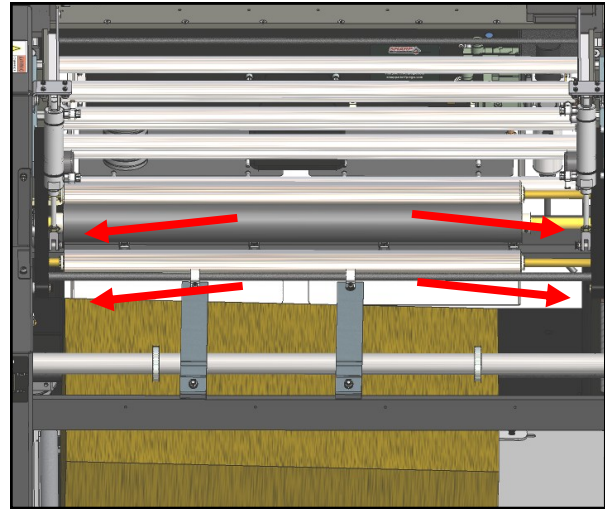


Figure 4-6B. Unwind Pinch Roller Flow Controls.

Machine Setup

LOADING BAG FILM - VFD UNWIND

A diagram showing the film threading path through the machine is located on the side of the Power Unwind. Figure 4-7A.

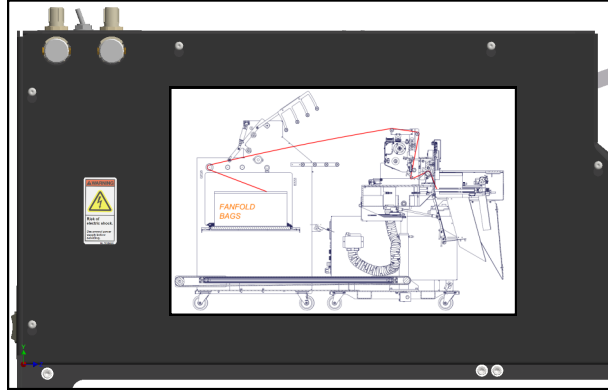


Figure 4-7A. Web Threading Diagram.

1. To begin threading the bags through the **MaxPro Bagger**, push the Toggle Switch to the OPEN position. Figure 4-7B.
2. Open the box of fan fold bags.

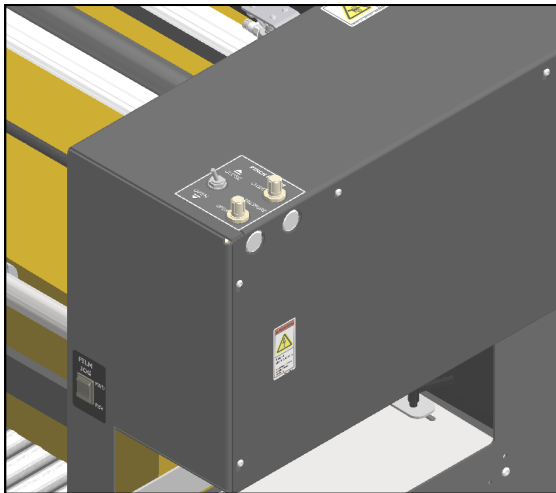


Figure 4-7B. Toggle Switch.

3. Place open box of bags onto rollers. Guide box into unwind. Figure 4-7C.

NOTE: Position the box in tray so the perforation of first bag opens toward you when standing behind the box.

4. Slide the box against the Box Guide.
5. Thread the web according to the web threading diagram.

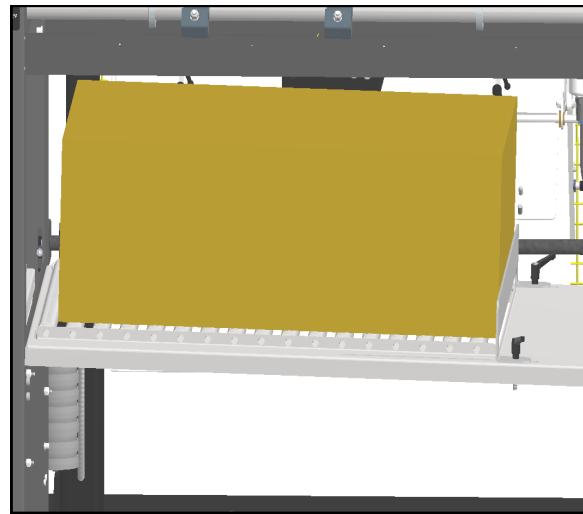


Figure 4-7C. Box In Place.

6. Flip the Spool Valve Switch to the CLOSE position. This will "pinch" the web between the Pinch Rollers and Drive Roller.
7. If needed, adjust the Box Guide so the film is centered as it feeds through Drive Roller.
8. Tighten both knobs.

DANCER ARM SETUP - VFD UNWIND

Clear existing settings

1. From the Home Screen, Press "Machine Options" pushbutton. Figure 4-8A.

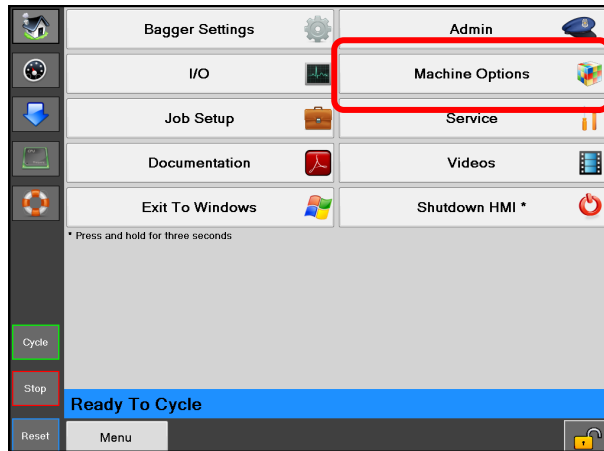


Figure 4-8A. Home Screen.

2. Press the "VFD Unwind" pushbutton to open the Unwind Screen. Figure 4-8B.
3. Press and hold "Dancer Position Setup Is Done" pushbutton until state changes.
4. This will clear settings and place bagger into a fault. Figure 4-8D

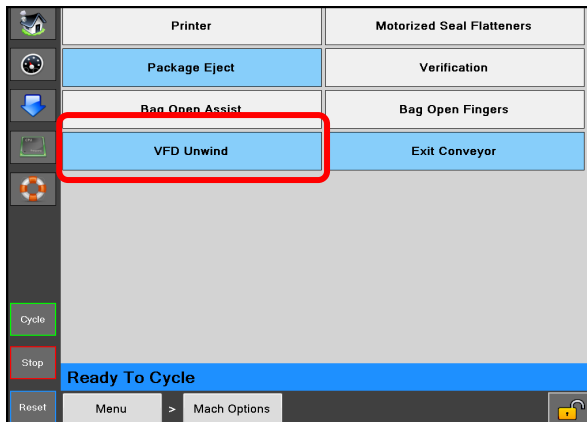


Figure 4-8B. Machine Options Screen.

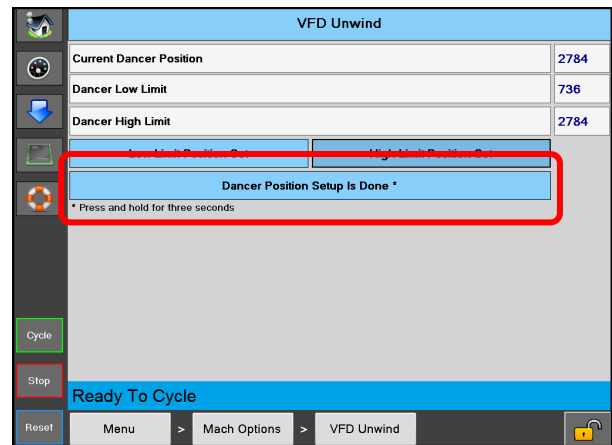


Figure 4-8C. VFD Unwind Screen.

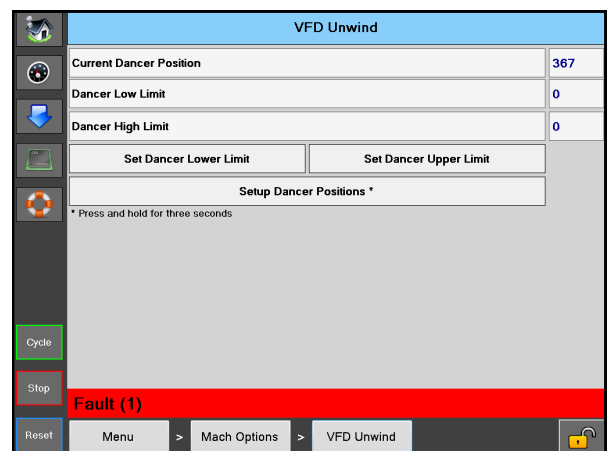


Figure 4-8D. Dancer Settings Cleared.

LOWER LIMIT SETUP

1. Place a 2.25" spacer between the Stationary Rollers and the Black Tie Bar of the Dancer. Allow the Dancer to rest on spacer. Figure 4-9A.

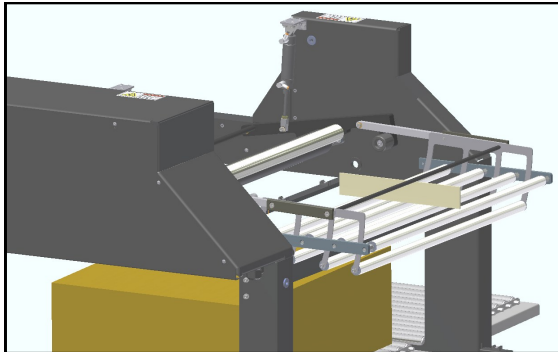


Figure 4-9A. Spacer Placement.

2. Press the "Set Dancer Lower Limit" pushbutton on HMI Screen. The pushbutton will change state. Remove the 2.0" spacer.

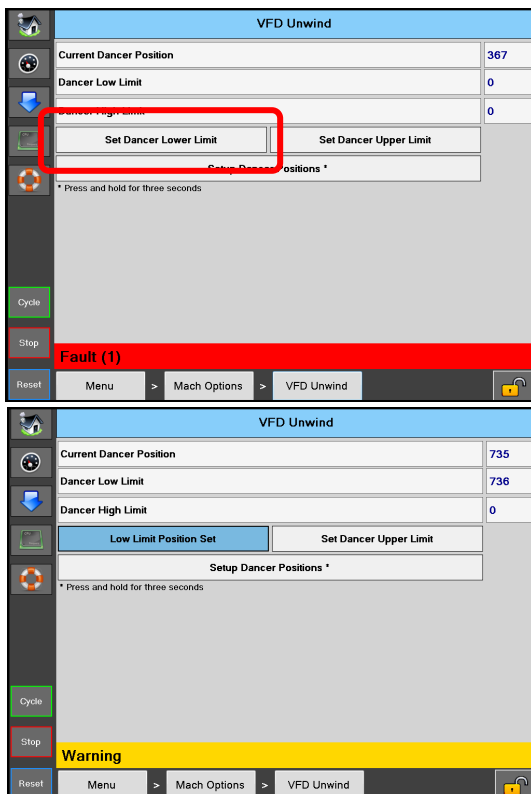


Figure 4-9B. Lower Limit Screens.

UPPER LIMIT SETUP

1. Lift the Dancer UP and place a 0.125" spacer on top of the two outside Stationary Rollers. Let Dancer rest on spacer. Figure 4-9C.

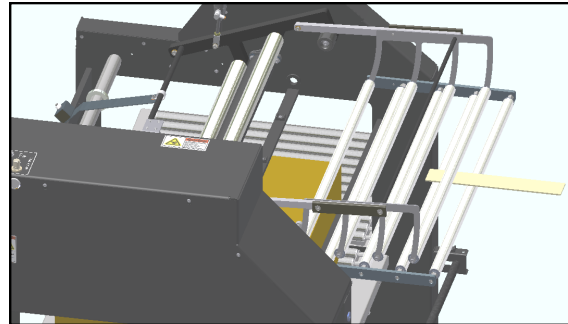


Figure 4-9C. Spacer Placement.

2. Press "Set Dancer Upper Limit" Pushbutton. The pushbutton will change state. Remove spacer. Figure 4-9D.

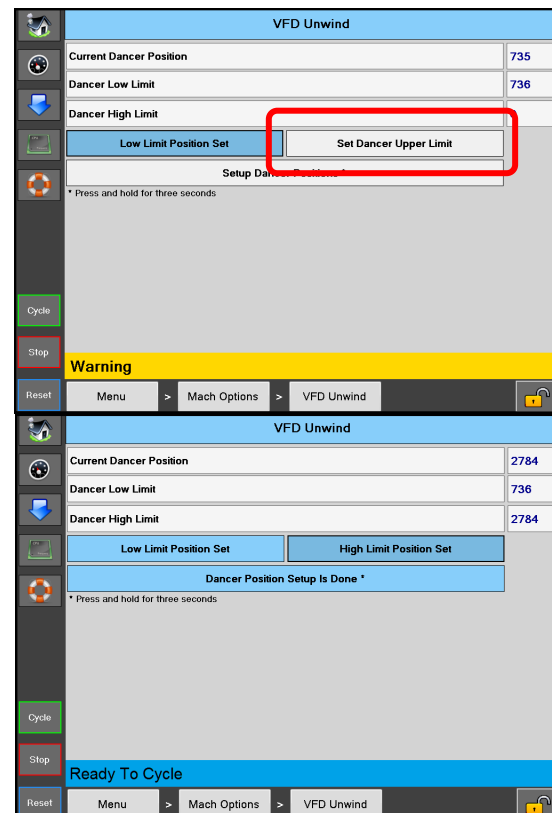


Figure 4-9D. Upper Limit Screens.

LOADING DATAMAX RIBBON

Removal of Used Printer Ribbon

1. Lift the Cover of the Printer, turn the Release Clamp to open cradle. Figure 4-10A.
2. Remove the cardboard Roll and discard.
3. Remove Ribbon and discard.

Installation of New Ribbon

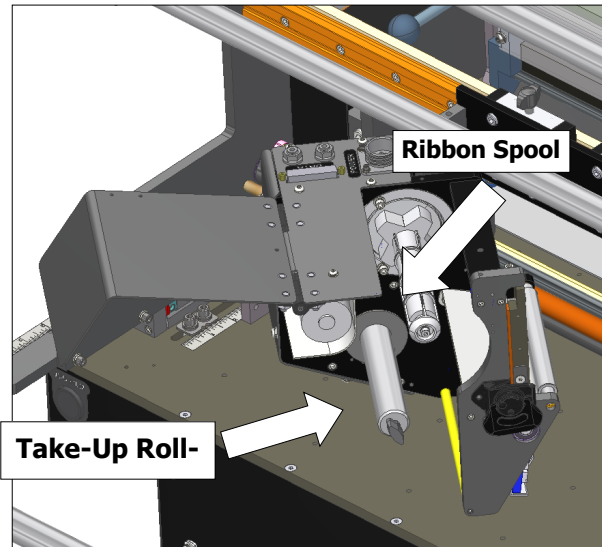


Figure 4-10. Printer Carriage Open.

1. Slide new ribbon on the Ribbon Spool.
2. Slide empty cardboard tube onto Take-Up roller.
3. Thread Printer Ribbon per the Web Threading Diagram. Figure 4-10B.
4. Return Printer and lock in place. Turn knob until ribbon is smooth.
5. Close Cover.

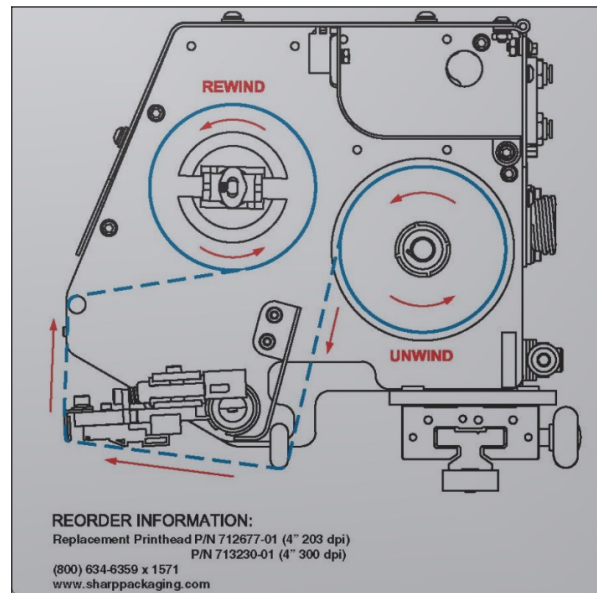


Figure 4-10B. Ribbon Threading Diagram.

Machine Operation

Operation

Before attempting to operate the machine, read all information under [Equipment Safety Features](#), page 1-2 and [Controls](#), page 2-1.

1. Make sure machine is plugged into the properly grounded outlet and connected to clean dry air regulated to 80 psi. See [Air Pressure Regulator Adjustment](#), page 4-1.
2. Release the E-Stop Button on bagger. Release E-Stop Buttons on any connected conveyors, if applicable. Figure 5-1A

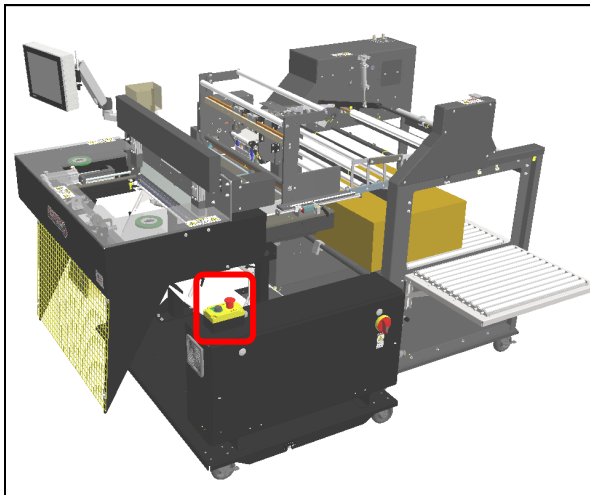


Figure 5-1A. E-Stop & Power Pushbutton.

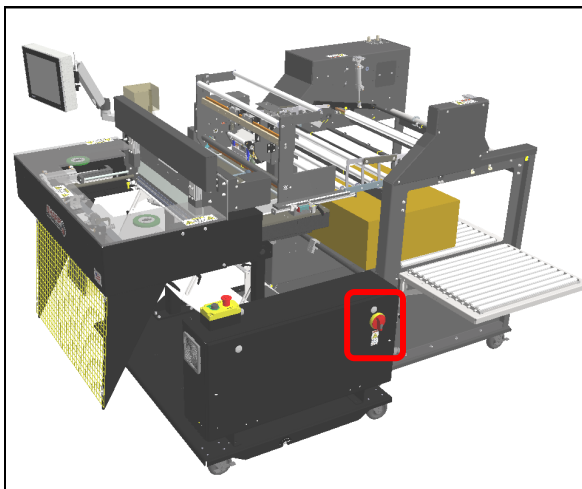


Figure 5-1B. Power Entry Module Switch.

3. Turn Main Power Switch to ON position. Figure 5-1B.
4. Push the green Power Pushbutton. Figure 5-1A.

NOTE: The machine will be in fault status until set temperature is achieved.

1. Load film material as illustrated in Web Threading Diagram on machine. See [Loading Bag Film](#), page 4-7.
2. Press Dual Palm Buttons or press Cycle on HMI Screen to feed bag.
3. Load product into bag.
4. Press Dual Palm Buttons or press Cycle on HMI Screen to seal bag and feed next one out.

NOTE: To stop the machine for any reason, press the Emergency Stop Button.

TECHNICAL ASSISTANCE

Assistance with your **MaxPro Bagger** can be obtained by contacting Pregis Technical Service Hotline by phone or e-mail. To help serve you better, Pregis requests that you provide the serial number of bagger and a brief description of the problem.

Pregis US

Service: **+1 800-634-6359**

E-Mail: sharpsservice@pregis.com

Parts:

+1 800-634-6359

E-Mail: sharpsservice@pregis.com

Pregis International BV

Service: 00800 888 888 44

Before calling Service or Parts be sure to have the serial number of the bagger. This information can be obtained from the Serial Tag located under the Unwind Shaft. An example of the tag is below.

Creating a Job

The following steps will create a job. The security level is medium for this procedure. To change security, See [Security Levels](#), page 1-12.

1. From the Main Menu, press the Job Setup button.
2. From the Job Setup Screen, press the Green Plus (+) button. Figure 5-2A.
3. Highlight the **New Job** in the Job Details Screen. Figure 5-2B.
4. Press the Red Pen button. Figure 5-2B.
5. Rename job in Job Details Screen, then enter the appropriate information in each box. Figure 5-2B.
6. Press the back button.
7. Press the Load Job Button. This will send the highlighted job to the PLC and send the label, if applicable, to the printer. Figure 5-2D.

NOTE: If temperature settings are +/- 10° from previously loaded job, a fault message will appear. The message will automatically resolve when temperature setting is reached.

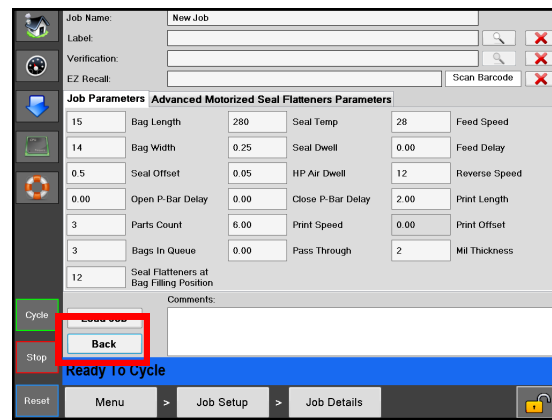


Figure 5-2C. Job Details Screen.

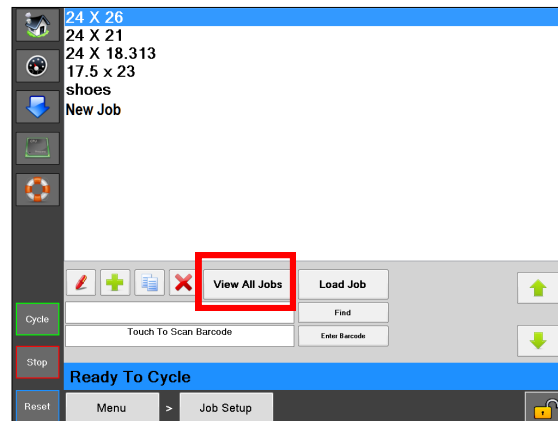


Figure 5-2D. Load Job Button.

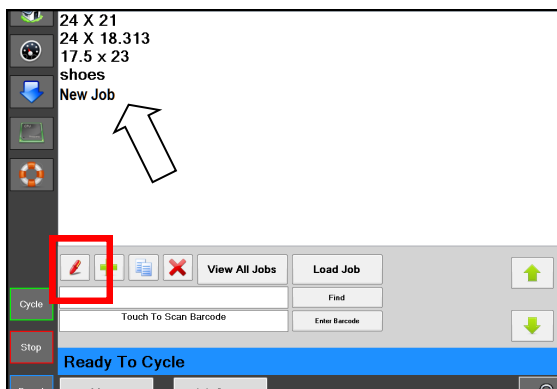


Figure 5-2B. New Job Listed.

Editing a Job

The following steps will edit a saved job. The security level is medium for this procedure. To changes security, See [Security Levels](#), page 1-12.

1. From the Main Menu, press the Job Setup button.
2. From the Job Setup Screen, highlight the job to be edited and press the Red Pencil button. Figure 5-3A.

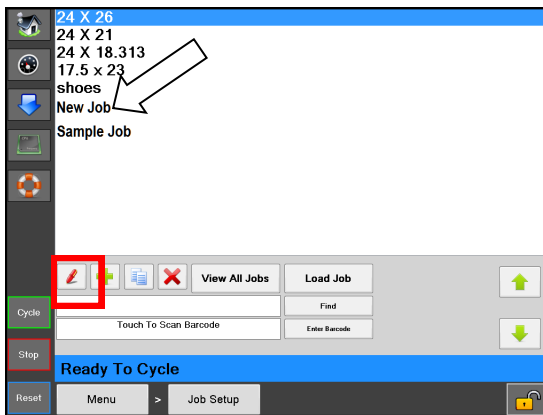


Figure 5-3A. Editing Job.

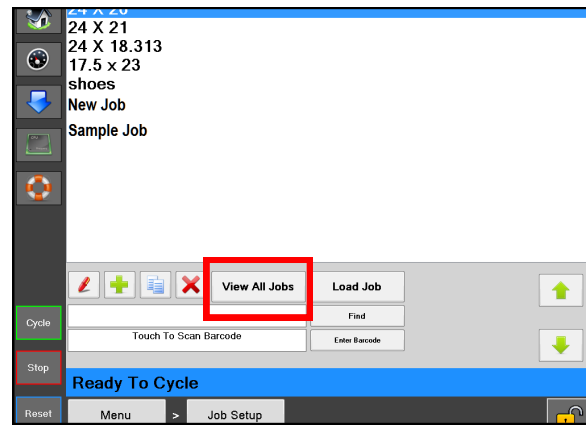


Figure 5-3C. Load Job Button.

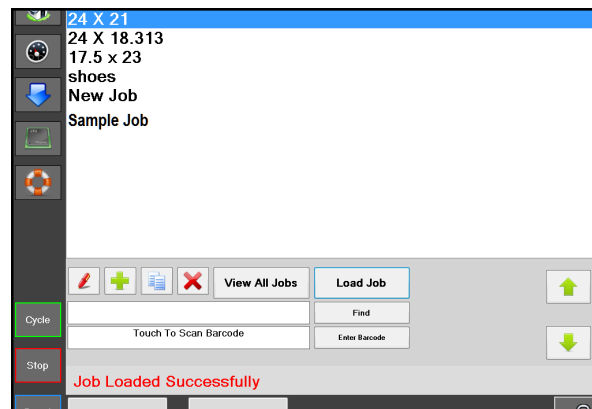


Figure 5-3D. Job Loaded Successfully Message.

NOTE: If temperature settings are $\pm 10^\circ$ from previously loaded job, a fault message will appear. The message will automatically resolve when temperature setting is reached.

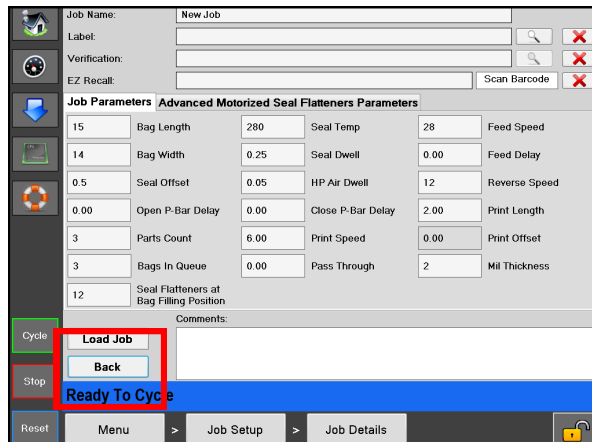


Figure 5-3B. Job Details Screen.

3. Edit the appropriate information in each box. Figure 5-3B.
4. Press the back button. Figure 5-3B.
5. Press the Load Job Button. This will send the highlighted job to the PLC and send the label, if applicable, to the printer. Figure 5-3C.

Deleting a Job

The following steps will delete a saved job. The security level is medium for this procedure. To change security, See [Security Levels](#), page 1-12.

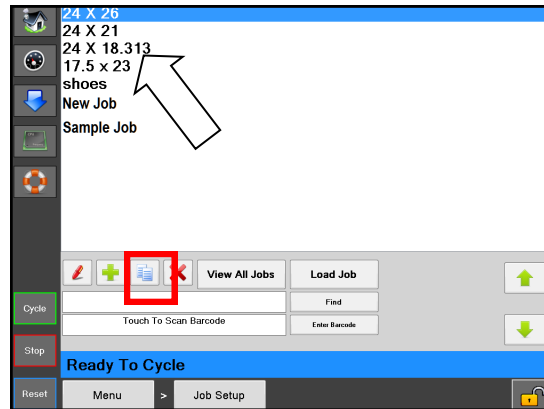


Figure 5-4A. Deleting Job.

1. From the Main Menu, press the Job Setup button.
2. From the Job Setup Screen, highlight the job to be deleted.
3. Press the Red "X" button. Figure 5-4A.
4. A pop-up window will appear asking if you are sure you want to delete job. If you are, press yes. If not, press no.

Cleaning

This machine requires regular, periodic cleaning to ensure reliable service. The Operator with a minimum of training can perform daily cleaning.

Regular cleaning is important for the proper operation and performance of the machine. During operation, there will be a normal build up of dirt, dust, and film residue on various parts of the machine.

Keep the areas directly adjacent to machine clean of debris as these can create safety hazards for the Operator and/or damage the machine.

No cleaning should be performed unless these safety precautions are thoroughly understood and are adhered to without exception.

	WARNING
DISCONNECT THE MAX™ 20 FROM ALL ELECTRICAL POWER SOURCE AND AIR HOSES FROM THE MACHINE PRIOR TO PERFORMING ANY MAINTENANCE ON MACHINE. UNEXPECTED START-UP CAN RESULT IN PERSONAL INJURY AND DAMAGE TO THE MACHINE.	
	WARNING
DO NOT SPRAY ANY ELECTRICAL COMPONENTS OF THIS MACHINE WITH ANY LIQUID AT ANY TIME. LIQUIDS CAN CAUSE ELECTRICAL SHORT CIRCUITS, DAMAGE COMPONENTS, AND PERSONAL INJURY.	
	WARNING
DO NOT ATTEMPT TO CLEAN THE MACHINE WHILE IT IS RUNNING. SPONGES AND CLEANING RAGS CAN BECOME FOULED IN THE CYCLING MOTION OF THE MACHINE AND CAUSE SERIOUS INJURY AS WELL AS DAMAGE THE MACHINE.	

Inspect the machine to determine if there has been an accumulation of dust or other contaminations. Clean if necessary.

- ALWAYS SHUT-OFF & UNPLUG machine power cord AND dump air supply before cleaning or removing any guards.
- Never defeat any safety device or interlock on the machine.
- DO NOT use steel wool on machine sur-

faces. Particles of steel wool may break off and cause rusting or contaminate lubricated surfaces.

- DO NOT allow wrenches, fittings or other metallic objects to lie on machine surfaces during operation.
- DO NOT use chlorine, ammonia, alkalis, acids, or cleaning solutions that will damage metallic machine surfaces, cause corrosion, or contaminate containers.

SEVERE DUTY APPLICATIONS

Some applications may require a more comprehensive maintenance procedure performed by a qualified Service Technician.

The applications, which may require the extra-ordinary maintenance, include, but are not limited to, extremely dusty or corrosive environments. Pregis recommends the use of a vacuum, compressed air or both to remove all foreign substances that may have accumulated on or inside the packaging machine.

It may be necessary to remove some or all of the guards and covers protecting the machine to access the areas in need of cleaning. Some disassembly of the sealer and film feed assemblies may also be necessary.

It is extremely important to follow all of the safety guidelines and warning detailed inside the Sharp Operator Manual before removing any guards or servicing the machine.

Maintenance

WEEKLY MAINTENANCE

	WARNING! Read and understand the entire Operator Manual before attempting any advanced maintenance procedures on this machine. Failure to follow these maintenance instructions can result in serious injury or death.
WARNING! THIS MACHINE IS EQUIPPED WITH A COATED SEALER BAR. DO NOT SCRUB OR SCRAPE WITH METALLIC OBJECTS OR WIRE BRUSHES. THE COATING WILL BE DAMAGED AND THE BAGS WILL STICK TO THE HEATER BAR.	
WARNING! AVOID HOT SURFACES. DO NOT SERVICE THE MACHINE UNTIL THE HEATED SURFACES HAVE COOLED AFTER DISCONNECTING POWER.	

- Inspect the rubber Driver Roller. Clean as needed. Use a lint free cloth and isopropyl alcohol to scrub all debris from the surface of roller.
- Inspect the aluminum Pinch Roller. Clean as needed. Clean with a lint free cloth and isopropyl alcohol to scrub all debris from the surface of the roller.
- Verify the Driver Roller Assembly moves freely with power removed.
- Inspect and clean the Seal Bar. Extend the Seal Bar by using the **Extend Seal Bar** button located on the [Service Screen](#), page 3-25.
 - **NOTE: The machine must be at normal operating temperature for best results. Care must be taken to avoid scratching the surface of the Seal Bar. Use the supplied cleaning tool for best results. Remember to retract the Seal Bar when finished.**
- Inspect the Electric Eye. Clean with a cotton swab if dirty. Do not use any solvents or cleaning solutions on the sensing portions of the Electric Eye.
- Inspect the Teflon® Tape that covers the Pressure Bar Anvil Rubber and replace is worn or damaged.

MONTHLY MAINTENANCE

- All of Weekly maintenance.
- Inspect the Air Filter for debris and replace as necessary.
- Inspect all external wiring for loose connections and wear. Tighten any loose connections and replace any worn cables.

SEMI - ANNUAL MAINTENANCE

- All of Weekly and Monthly maintenance.
- Inspect the Linear Guide Bearings located on the Pressure Bar Guide Shafts for wear and replace.
- Inspect the Linear Guide Bearings located on the Sealer Assembly Guide Shafts for wear. Replace as necessary.

ANNUAL MAINTENANCE

- All of Weekly, Monthly, and Semi-Annual maintenance.
- Inspect entire machine for loose hardware.
- Inspect all air lines for any sign of wear or damage. Replace any lines that appear worn or damaged.
- Inspect all wires and cables for any sign of wear, damage, or loose connections. Tighten any loose connections and replace anything that appears worn or damaged.
- Inspect all Drive Belts for wear and proper tension. Replace any belts that appear to be worn or damage.

Fault & Alert Management

FAULT	CAUSE	SOLUTION
Barcode Fault	The number of consecutive bad reads equals the fault counter setting.	There is a problem with the Barcode Scanner. The taught label is not the same as the printed label or the print quality of the label is poor and cannot be read.
Master Control Relay Failed to Open	Master Control Relay contact is welded in the closed position after the E-Stop button was pressed.	Master Control Relay should be inspected and/or replaced by a qualified service technician.
Datamax Ribbon Fault	Broken or missing printer ribbon on printer. The Ribbon Motion Sensor did not register any rotation of the Rewind Roll during a print cycle.	Replace or repair ribbon.
Model Select R1 Missing	There is a problem with the R1 Model Select Resistor.	Power down the system and power back up. Contact Pregis Service Department .
Model Selection Failed	The model selection cycle did not function on power-up. The bagger does not know what model is selected.	Power down the system and power back up. Contact Pregis Service Department .
Excessive Parts Counted	The actual parts counted exceeds the target value.	Reset the counter.
Print Length Too Long	The Print Length setting must be less than the Bag Length Setting	Adjust the Print Length to be less than the Bag Length.
Master Control Relay is Off	E-Stop Button was pressed or E-Stop is released but the green Power Button has not been pressed.	Release the E-Stop and press the green Power Button.
Pressure Bar Failed to Open	Close Pressure Bar output was de-energized, but the Pressure bar Opened proximity sensor did not make within 2 second of output switching off.	Reset the fault and try again. If fault reoccurs, check corrective action. See Cylinder Motion Fault.
Pressure Bar Failed to Close	Close Pressure Bar output was energized, but the Pressure bar Closed proximity sensor did not make within 2 second of the output turning on	Reset the fault and try again. If fault reoccurs, check corrective action. See Cylinder Motion Fault.
Pressure Bar Sensor Conflict	The Pressure Bar Opened proximity switch and either of the two Pressure Bar Closed proximity switches are on at the same time.	Reset the fault and try again.

FAULT	CAUSE	SOLUTION
Reverse Fault	The Bag Edge Photoeye did not detect the trailing edge of the film as the web was backing up.	1. Make sure the Cradle is locked in position. 2. Check that the Photoeye is not sensing something in the background. It should only turn on when it sees the film in front of it. It should turn off just as the trailing edge of the film unblocks the eye. 3. Clean the Photoeye lens with a soft cloth.
No Bag Covering Eye	There is no film or web covering the Bag Edge Photoeye.	Press the Job Button once and the bagger will jog the web for 10 seconds until the Photo-Eye is covered by film.
Seal Bar Over Temp.	The actual Seal Bar temperature is 10 or more degrees below the Set Point.	If the temperature Set Point was just lowered, wait for Seal Bar Temperature to cool down. If the Over Temp. Fault occurred when no change was made to the Set Point, there may be a failure in the Temperature Control System. Press the E-Stop button if the temperature continues to rise. A qualified service technician must troubleshoot the circuits.
Seal Bar Under Temp.	The actual Seal Bar temperature is more than 10 degrees below the Set Point.	If the temperature Set Point was just raised, wait for Seal Bar Temperature to heat up. If the Under Temp. Fault occurred when no change was made to the Set Point, there may be a failure in the Temperature Control System. Press the E-Stop button if the temperature continues to fall. A qualified service technician must troubleshoot the circuits.
Thermocouple Failed - Open Circuit	The Seal Bar actual temperature display reads 32 degrees. The Thermocouple circuit is open and is not being read by the Thermocouple/Voltage Transducer or the PLC Analog input.	A qualified service person should test the Thermocouple and its associated circuits.
Dancer at Upper Limit	The Unwind Dancer made the Upper Limit Switch during the Film Feed.	The Unwind Speed Setting is too low for the Film Feed Speed Setting. Lower the Film Speed Setting or increase the Unwind Speed.

FAULT	CAUSE	SOLUTION
Unwind Out Of Bags	The bagger detected that the web is broken or the bagger is out of	Splice the broken web or replace the empty roll/box.
Pressure Bar Obstruction	The Pressure Bar attempted to close, but was blocked by an obstruction.	Clear the pressure bar area and reset the fault.
Stepper Drive Faulted	The Film Stepper Drive is reporting a fault condition.	Reset the fault. If it does not clear, power down the bagger for 2 minutes and power back up. If fault does not clear, a qualified service person must diagnose the problem.
Label Failed To Load	A label was sent to printer but did not load correctly.	1. Check that the printer is on. 2. If a label has been loaded into the printer, Then verify that PLC Input I:2/4 "Data Ready" is on.
Temp. Transducer Failed	The Seal Bar actual temperature display reads 616 degrees or higher.	A qualified service person should check the thermocouple for an open circuit.
Batch Count Is Completed	The Batch Counter actual value has reached the Target Count. This alert will not interrupt the bagger cycle, but subsequent cycles are not possible until the Alert has been reset.	Batch is done. Reset and bagger is free to cycle again.
VFD Dancer Setup	The VFD Unwind Dancer Limits have not been programmed.	Go To the VFD Unwind Screen and Perform the Dancer Setup Procedure.
VFD Dancer Under Range	The VFD Unwind Dancer Output reading is Too Low or close to zero.	A qualified service person should inspect and adjust the unwind as needed.
VFD Dancer Over Range	The VFD Unwind Dancer Output reading is Too High - 10V at Analog Input I:0.5.	A qualified service person should inspect and adjust the unwind as needed.
VFD Faulted	The VFD Unwind Dancer has faulted or is not communicating.	1. Verify the VFD is powered up. 2. A qualified service person should test the circuit using the electrical schematics and a Digital Multi-meter. 3. Drive Faulted or sending errors. Check for drive faults on the controller on the unwind.
Load Shelf Open Switch Fault	The Load Shelf Open Sensor did not turn on.	A qualified service person should test the Load Shelf air and electrical circuitry.

FAULT	CAUSE	SOLUTION
Load Shelf Close Switch Fault	The Load Shelf Close Sensor did not turn on.	A qualified service person should test the Load Shelf air and electrical circuitry.
Motorized Seal Flatteners Position Fault	Motorized Seal Flatteners are not in the expected position.	Check Seal Flatteners Position settings in Job Setup.
Motorized Seal Flatteners Motor Fault	The Motorized Seal flattener Stepper Motor is reporting a fault to the PLC.	1. Remove power from the machine for 2-3 minutes. 2. Reset E-Stops and press green power button. 3. Motorized Seal Flatteners are
Load Plate Rear Switch Fault	Load Plate to Rear output was energized, but the Load Plate To Rear proximity sensor did not make within 1 second of output turning on.	1. Reset the fault and try again. 2. If fault reoccurs, a qualified service person should test the Load Plate air and electrical circuitry.
Load Plate Front Switch Fault	Load Plate to Front output was energized, but the Load Plate To Front proximity sensor did not make within 1 second of output turning on.	1. Reset the fault and try again. 2. If fault reoccurs, a qualified service person should test the Load Plate air and electrical circuitry.
Load Shelf Sensor Mismatch	The Load Shelf Open proximity switch and the Load Shelf Closed proximity switch are on at the same time.	1. Reset the fault and try again. 2. If fault reoccurs, a qualified service person should test the Load Plate air and electrical circuitry.
VFD Conveyor Drive Faulted	The VFD Exit Conveyor Drive is Not On, Not Responding, or Sending Errors.	A qualified service person should test the Conveyor Drive.
Load Plate Switch Conflict	The Load Plate Rear proximity switch and the Load Plate Front proximity switch are on at the same time.	1. Reset the fault and try again. 2. If fault reoccurs, a qualified service person should test the Load Plate air and electrical circuitry.
Exit Conveyor Not Clear	Object is blocking the Exit Conveyor Photoeye. Exit Conveyor Photoeye is misaligned.	1. Remove any exit conveyor obstructions. 2. Check the exit conveyor Photoeye for malfunction or misalignment.

FAULT	CAUSE	SOLUTION
Seal Flattener Not At Out	The Seal Flattener Is Not At The Out Position.	Press Cycle.
Seal Flattener Not At 4 Corners	The Seal Flattener Is Not At The Filling Position.	Press Cycle.
Inboard Pressure Bar Not Open	The Bagger is Not Ready to Cycle for the reason noted.	Press Reset button
Outboard Pressure Bar Not Open	The Bagger is Not Ready to Cycle for the reason noted.	Press Reset button.
Printer Not Ready	The Bagger is Not Ready to Cycle for the reason noted.	1. Check that the printer is on. 2. Check that the printer's Ethernet cable is connected. 3. Make sure the ip address of the printer is properly configured on the communications screen. 4. Make sure that the network settings of printer and com-
Load Plate Not At Front	Load Plate to Front output was energized, but the Load Plate To Front proximity sensor did not make within 1 second of output turning on.	Reset the fault and try again. If fault reoccurs, check corrective action.

ALERT	CAUSE	SOLUTION
Factory Setting Saved	The current bagger settings and options have been backed up to the PLC Data Table.	This is simply an alert to let the user know that the settings have been successfully saved. The message can be cleared by pressing the Reset button, or it will automatically clear on the next bagger cycle.
E-Stop Button Pressed	The E-Stop button is pressed.	Twist to release the E-Stop.
Service Mode Testing Model Selection	Service Personnel are testing the Model Selection Circuits. No cycle is possible.	Service person should cancel this function when finished with testing.
Low Pressure Air Timed Out	Low Pressure Air Timed Out	No intervention required by operator.
Machine Not Tested	The bagger has not passed the QA test of 1000 cycles without a fault.	Bagger should be run for 1000 continuous cycles without a fault to clear alert.
Waiting For Printer	The bagger requested a print form the printer, but the printer has not responded with "Printer Busy".	Check to make sure there is a label loaded in the printer. If not, send a label to the printer and the bagger should finish it's cycle.
Factory Settings Loaded	The settings stored in the PLC have been recalled by the user.	This is simply an alert to let the user know that the setting have been successfully reloaded.

APPENDIX A

Warranty



1. ACCEPTANCE AND TERMS AND CONDITIONS:

Seller may accept this Order and any amendments by signing the acceptance copy of the Order and returning it to Purchaser promptly. Even without such written acknowledgment, Seller's full or partial performance under this Order will constitute acceptance of these Terms. By acceptance of this Order, Seller agrees to be bound by, and to comply with all these Terms, which include any supplements to it, and all specifications and other documents referred to in this Order. These Terms apply to everything listed in this Order and constitute Purchaser's offer to Seller, which Purchaser may revoke at any time prior to Seller's acceptance. This Order is not an acceptance by Purchaser of any offer to sell, any quotation, or any proposal. Reference in this Order to any such offer to sell, quotation, or proposal will not constitute a modification of any of these Terms. Terms and conditions different from or in addition to these Terms, whether contained in any acknowledgment of this Order, or with delivery of any goods or services under this Order, or otherwise, will not be binding on Purchaser, whether or not they would materially alter this Order, and Purchaser hereby rejects them. These Terms may be modified only by a written document signed by duly authorized representatives of Purchaser and Seller.

2. DEFAULT:

Time is of the essence of this Order. Purchaser may by written notice of default to Seller (a) terminate all or any part of this Order if Seller fails to perform, or so fails to make progress as to endanger performance of this Order in accordance with its terms, and does not cure such failure within a period of ten (10) days (or such longer period as Purchaser may authorize in writing) after receipt of notice from Purchaser specifying such failure; and (b) procure, on such terms as it will deem appropriate, goods or services similar to those so terminated. Seller will continue performance of this Order to the extent not terminated and will be liable to Purchaser for any excess costs for such similar goods or services. As an alternate remedy, and in lieu of termination for default, Purchaser, at its sole discretion, may elect to extend the delivery schedule and/or waive other deficiencies in Seller's performance, in which case an equitable reduction in the Order price will be negotiated. If Seller for any reason anticipates difficulty in complying with the required delivery date, or in meeting any of the other requirements of this Order, Seller will promptly notify Purchaser in writing. If Seller does not comply with Purchaser's delivery schedule, Purchaser may require delivery by fastest way and charges resulting from the premium transportation must be fully prepaid and absorbed by Seller. The rights and remedies of Purchaser provided in this Section 2 will not be exclusive and are in addition to any other rights and remedies provided by the Uniform Commercial Code, by law, at equity or under this Order.

3. PRICE:

This Order must not be filled at a price higher than shown on the face of the Order. If no price is set forth on the front of the Order, the goods or services will be billed at the price last quoted or at the prevailing market price, whichever is lower, and, in any event, goods and services ordered under this Order will not be billed at a higher price than last quoted or charged without Purchaser's specific written authorization. Purchaser will be entitled at all times to set off any amount owed at any time by Seller or any of its affiliates to Purchaser or any of its affiliates against any amount payable at any time by Purchaser in connection with this Order. No extra charges of any kind will be allowed unless specifically agreed to in writing by the Purchaser. All applicable taxes arising out of transactions contemplated by the Order will be borne by Seller except as otherwise specified by the parties in writing. If Seller reduces its prices for such goods and/or services during the term of this Order, Seller shall correspondingly reduce the prices of goods and/or services sold thereafter to Purchaser under this Order.

4. INVOICES, PAYMENT, AND TAXES:

- (a) Invoices shall be rendered on completion of services or delivery of goods and shall contain the Purchase Order Number, item number, description of goods or services, quantities, unit prices, date(s) rendered and total purchase price. Each invoice must refer to one, and only one, purchase order.
- (b) Invoices for contingent workers must contain all of the above where applicable and include a copy of the AAMC's time tracking document for each contingent worker for the time period being billed.
- (c) Payment shall be made on the terms of 2% 10 days, net 60 days from the date of invoice. Cash discount periods shall be computed from either the date of actual delivery of the goods or the date an acceptable invoice is received, whichever is later. All claims for money due or to become due from Purchaser shall be subject to deduction by Purchaser for any setoff or counterclaim arising out of this or any other of Purchaser's Orders with Seller.

5. PACKAGING:

All goods must be packaged in the manner specified by Purchaser and shipped in the manner and by the route and carrier designated by Purchaser. If Purchaser does not specify the manner in which the goods must be packaged, Seller shall package the goods so as to avoid any damage in transit. If Purchaser does not specify the manner of shipment, route, or carrier, Seller shall ship the goods at the lowest possible transportation rates, consistent with Seller's obligation to meet the delivery schedule set forth in this Order.

6. INSPECTION:

All goods and services will be subject to inspection and test by Purchaser at all times and places, including the period of manufacture and in any event prior to final acceptance. Final acceptance or rejection of the goods or services will be made as promptly as practical after delivery except as otherwise provided in this Order, but failure to inspect and accept or reject goods or services or failure to detect defects by inspection, will neither relieve Seller from responsibility for such goods or services as are not in accordance with this Order nor impose liabilities on Purchaser for them. Purchaser's payment for the goods shall not constitute its acceptance of the goods. Goods rejected and goods supplied in excess of quantities ordered may be returned to the Seller at Seller's expense. Payment, if any, made for any goods rejected hereunder shall be promptly refunded by Seller. Seller will provide and maintain an inspection and process control system acceptable to Purchaser covering the goods and services ordered. Records of all inspection work by Seller will be kept complete and available to Purchaser during the performance of this Order and for seven (7) years after Seller's completion of this Order. If any of the goods or services are found at any time to be defective in material or workmanship, or otherwise not in conformity with the requirements of this Order, including any applicable drawings and specifications, then Purchaser, in addition to such other rights and remedies it may have by contract or by law or equity, at its sole discretion may reject and return such goods at Seller's expense, require Seller to inspect the goods and remove nonconforming goods and/or require Seller to replace nonconforming goods or services with conforming goods or services. If Seller fails to make the necessary inspection, removal, and replacement in a time and manner satisfactory to Purchaser, Purchaser may at its option inspect and sort the goods; Seller will pay any related costs.

7. WARRANTIES:

Seller represents and warrants that (a) all goods and services are free of any claim of any nature by any third person and that Seller will convey clear title to Purchaser, (b) all services are performed in a manner acceptable in the industry and in accordance with generally accepted standards, are free from all defects, are fit for the particular purposes for which they are acquired, and are provided in strict accordance with the specifications or other requirements (including performance specifications) approved or adopted by Purchaser, (c) all goods sold will be of merchantable quality, free from all defects in design, workmanship and materials, and fit for the particular purposes for which they are purchased and that

the goods and services are provided in strict accordance with the specifications, samples, drawings, designs or other requirements (including performance specifications) approved or adopted by Purchaser, (d) the prices for the goods or services sold to Purchaser under this Order are not less favorable than those currently extended to any other customer for the same or similar goods and/or services in equal or lesser quantities, and (e) Seller shall not act in any fashion or take any action that will render Purchaser liable for a violation of any applicable anti-bribery legislation (including without limitation, the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act 2010), which prohibits the offering, giving, or promising to offer or give or receiving, directly or indirectly, money or anything of value to any third party to assist it, them or Purchaser in retaining or obtaining business or in procuring the goods or services. Purchaser's inspection, test, acceptance, or use of the goods shall not affect Seller's obligations under these warranties. Seller shall replace or correct, at Purchaser's option and at Seller's cost, defects of any goods not conforming to these warranties. If Seller fails to correct defects in or replace nonconforming goods within ten (10) days from the date the Purchaser notifies Seller of the defect or defects, Purchaser may, on ten (10) days prior written notice to Seller, either (i) make such corrections or replace such goods and charge Seller for all costs incurred by Purchaser, or (ii) revoke its acceptance of the goods in which event Seller shall be obligated to refund the purchase price and make all necessary arrangements, at Seller's cost, for the return of the goods to Seller. All warranties of Seller herein or that are implied by law shall survive any inspection, delivery, acceptance, or payment by Purchaser. Any attempt by Seller to limit, disclaim, or restrict these warranties or any remedies of Purchaser, by acknowledgment or otherwise, in accepting or performing this Order, will be null, void, and ineffective without Purchaser's written consent.

8. INDEMNIFICATION:

Seller shall indemnify and hold Purchaser and its affiliates harmless and, on Purchaser's request, shall defend each of them from and against any or all third party claims, demands, litigation, or proceedings of whatever kind, whether based upon negligence, breach of express or implied warranty, strict liability, infringement of intellectual property rights, or any other theory, and from and against all direct, indirect, special, exemplary, incidental or consequential damages of every kind whatsoever, arising out of, by reason of, or in any way connected with the goods and/or services, the design, manner of preparation, manufacture, construction, completion, or delivery or non-delivery of any goods and/or services by Seller, any breach by Seller of any of its obligations hereunder, or any other act, omission or negligence of Seller or any of Seller's employees, workers, servants, agents, subcontractors, or suppliers. Seller shall, on request, pay or reimburse Purchaser or any other party entitled to indemnification hereunder for all costs and expenses, including attorneys' fees, as incurred by Purchaser or such other party in connection with any such claim, demand, litigation, proceeding, loss, or damage. In addition, for infringement claims, Seller will, at its own expense and at Purchaser's option, either procure for Purchaser the right to continue using the allegedly infringing item, replace it with a non-infringing equivalent, or remove it and refund the purchase price and the transportation and installation costs thereof.

9. LIMITATION OF LIABILITY:

PURCHASER'S AGGREGATE LIABILITY ARISING FROM OR RELATING TO THIS ORDER IS LIMITED TO THE AMOUNT PAID BY PURCHASER FOR THE GOODS AND/OR SERVICES. TO THE MAXIMUM EXTENT ALLOWABLE UNDER APPLICABLE LAW, PURCHASER SHALL NOT BE LIABLE UNDER THIS ORDER FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, INDIRECT, OR PUNITIVE DAMAGES INCLUDING, WITHOUT LIMITATION, LOST REVENUES EVEN IF PURCHASER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

10. PURCHASER'S PROPERTY:

Tangible or intangible property of any nature furnished to Seller by Purchaser or specifically paid for in whole or in part by Purchaser, and any replacements or attachments, are the property of Purchaser and,

unless otherwise agreed in writing by Purchaser, will be used by Seller solely to render services or provide goods to Purchaser. Seller will not substitute any property or take any action inconsistent with Purchaser's ownership of such property. While in Seller's custody or control such property will be held at Seller's risk, will be kept insured by Seller at its expense for its replacement cost with loss payable to Purchaser, and will be subject to removal at Purchaser's written request, in which event Seller will prepare such property for shipment and redelivery to Purchaser in the same condition as originally received by Seller, reasonable wear and tear excepted, all at Seller's expense.

11. CHANGES:

At all times Purchaser will have the right to make changes to this Order, including changes to drawings, designs, configurations, specifications, quantities, methods of shipment or packing and delivery schedules or location of delivery. If any such changes cause an increase or decrease in the cost of or the time required for the performance of any work under this Order, an equitable adjustment will be made in the contract price or delivery schedule, or both, and this Order will be modified in writing accordingly. Nothing in this Section, including any disagreement with Purchaser as to any claimed adjustment, will excuse Seller from proceeding with this Order as changed. Any claim by the Seller for adjustment under this Section 11 must be in a detailed writing and delivered to Purchaser within five (5) days after the date Seller receives notification of change. Any change will be authorized only by a duly executed amendment to this Order. Information, such as technical information or guidance provided to Seller by representatives of Purchaser, will not be construed as a change within the meaning of this Section. If Seller considers that the conduct of any of Purchaser's employees has constituted a change under this Order, Seller will immediately notify Purchaser in writing, as to the nature of the change and any proposed adjustment, which will then be subject to this Section 11.

12. COMPLIANCE WITH LAWS:

Seller represents and warrants that it is in compliance with and all goods and/or services supplied hereunder have been produced or provided in compliance with the applicable provisions of all federal, state, or local laws or ordinances and all related lawful orders, rules and regulations. Seller shall comply with any provisions, representations, or agreements or contractual clauses required to be included or incorporated by reference or operation of law in any Order. Seller shall be required to obtain and pay for any license, permit, inspection or listing by any public body or certification organization required in connection with the manufacture, performance, completion or delivery of any good and/or service.

13. CONFIDENTIAL OR PROPRIETARY INFORMATION:

Notwithstanding any document marking to the contrary, any knowledge or information that the Seller has disclosed or may later disclose to Purchaser, and which in any way relates to the goods or services covered by this Order will not, unless otherwise specifically agreed to in writing by Purchaser, be deemed to be confidential or proprietary information, and will be acquired by Purchaser, free from any restrictions. Seller will not transmit to Purchaser any sensitive personal information, including, but not limited to, identified health information, financial information, social security numbers, biometrics or other personally identified or identifiable information of like sensitivity. Seller will keep confidential any technical, process, economic, or other information derived from drawings, specifications and other data furnished by Purchaser in connection with this Order (in whatever form or format) and will not divulge, export, or use, directly or indirectly, such information for the benefit of any other party without obtaining Purchaser's prior written consent. Except as required for the efficient performance of this Order, Seller will not use such information or make copies or permit copies to be made of such drawings, specifications, or other data without the prior written consent of Purchaser. If any reproduction is made with prior consent, this notice will be provided. Upon completion or termination of this Order, Seller will promptly return to Purchaser all materials incorporating any such information and any copies, except for one record copy. Seller agrees that no acknowledgment or other information concerning this Order and the goods or services provided will be made public by Seller without the prior written agreement of Purchaser.

14. WORK ON PURCHASER'S PREMISES:

If Seller's work under this Order requires Seller to be on the premises of Purchaser or at Purchaser's direction, Seller will take all necessary precautions to prevent any injury to persons or damage to property, including following any rules, procedures or other requirements of Purchaser.

15. INSURANCE:

Seller will maintain Comprehensive General Liability (including Contractual Liability coverage insuring the liabilities assumed in these Terms), Automobile Liability and Employers' Liability insurance with limits as reasonably required by Purchaser, as well as appropriate Workers' Compensation insurance as will protect Seller from all claims under any applicable workers' compensation and occupational disease acts. At Purchaser's request, Seller will furnish to Purchaser a Certificate of Insurance completed by its insurance carrier(s) certifying that the required insurance coverage is in effect, with waiver of subrogation, naming Purchaser as an additional insured, and containing a covenant that such coverage and will not be canceled or materially changed until ten (10) days after prior written notice has been delivered to the Purchaser.

16. TERMINATION:

Purchaser may terminate all or any part of this Order for convenience at any time by written notice to Seller. Upon such termination, Purchaser's liability will be limited to reasonable termination charges mutually agreed by Seller and Purchaser, provided that Seller must specify any proposed charges in writing within fifteen (15) days after termination. This Order shall terminate automatically, without notice, if Seller becomes insolvent or the subject of any proceeding under the laws relating to bankruptcy or the relief of debtors.

17. GOVERNMENT CONTRACTS:

If this Order bears a government contract number on the face of this Order, Seller shall comply with all pertinent provisions of said government contract and pertinent executive orders and directives to the extent that they apply to the subject matter of this Order and all such pertinent contract provisions, orders and directives are hereby incorporated by reference into this Order. A copy of the government contract's pertinent terms and conditions will be given to Seller on request.

18. MISCELLANEOUS:

(a) NON-ASSIGNMENT: Assignment of this Order or any interest in it or any payment due or to become due under it, without the written consent of the Purchaser, will be void. An assignment will be deemed to include not only a transfer of this Order or such interest or payment to another party but also a change in control of Seller, whether by transfer of stock or assets, merger, consolidation, or otherwise.

(b) TRANSPORTATION: All the prices are established as F.O.B. Seller and/or Origin Dock, Freight Prepaid, unless otherwise specifically provided on the front of this Order. Title and risk of loss shall not pass to Purchaser until delivery of the goods to the location designated on the face of this Order and acceptance by Purchaser. If Purchaser rightfully rejects the goods, receives a non-conforming tender, or revokes its acceptance, risk of loss and title shall be deemed to have remained with Seller. The responsibility for freight damaged merchandise will be assumed by Seller. No charges for unauthorized transportation will be allowed. Any unauthorized shipment, which will result in excess transportation charges, must be fully prepaid by the Seller. Seller will not declare any value on such materials shipped via United Parcel Service, Rail Express, Air Express, Air Freight or Parcel Post. Seller will release rail or truck shipments at the lowest released valuation permitted in the governing tariff or classification.

(c) ANTICIPATION OF DELIVERY SCHEDULE: Unless otherwise agreed in writing, Seller will not make

material commitments or production arrangements in excess of the amount or in advance of the time necessary to meet Purchaser's delivery schedule. Goods shipped to Purchaser in advance of schedule may be returned to Seller at Seller's expense.

(d) **SELLER'S INVENTORY:** Purchaser will have no obligation to request quotations or place Orders with Seller, both of which will be in Purchaser's sole discretion. Purchaser acting in its sole discretion will determine the actual quantity of goods or services to be purchased. The quantity of goods or services, if any, specified in forecasts supplied by Purchaser from time to time, or otherwise, is an estimate only. Seller bears sole responsibility for managing Seller's raw material, work in process, and inventory, and Purchaser will have no liability with respect thereto (whether upon termination of this Order or otherwise) other than in connection with termination as provided in Section 16.

(e) **FORCE MAJEURE:** Purchaser may delay delivery and/or acceptance occasioned by causes beyond its control.

(f) **REMEDIES:** Each of the rights and remedies reserved to Purchaser in this Order shall be cumulative and additional to any other remedies provided in law or equity. No delay or failure by Purchaser in the exercise of any right or remedy shall affect any such right or remedy and no action taken or omitted by Purchaser shall be deemed to be a waiver of any such right or remedy.

(g) **PUBLICITY:** Seller will not use Purchaser's name or logo in publicity, advertising, or similar activity, except with Purchaser's prior written consent. Seller will not disclose the existence of this Order or any of its respective terms to any third party without Purchaser's prior written consent.

(h) **DOCUMENTATION:** It is agreed that all technical documentation and other literature necessary for the proper use of the goods or services will be provided to Purchaser with the goods or services, unless otherwise directed by Purchaser, and its cost is included in the price.

(i) **GOVERNING LAW:** This Order, these Terms, and all related transactions, will be interpreted under and governed by the laws of the United States of America.

(j) **DISPUTE RESOLUTION:** Disputes arising under this Agreement will be resolved by the parties through good faith negotiations in the ordinary course of business. Any dispute not so resolved will be submitted for binding arbitration, at the written request of either party, before an arbitrator. Selection of the arbitrator will be by mutual agreement of the parties. The amount and responsibility for payment of arbitration costs will be one of the issues decided by the arbitrator, whose decision will be in accordance with the terms and conditions of this Agreement. No damages excluded by or in excess of the damage limitations set forth in this Agreement shall be awarded. During any such arbitration, the parties will continue diligent performance of this Agreement. The arbitrator will render a written decision stating reasons therefore in reasonable detail within ninety (90) days after the respondent receives the Commencement Letter. The provisions of this section, and any award issued by an arbitrator, may be enforced by either party in any court of competent jurisdiction. Arbitration is the exclusive remedy for disputes arising under this Agreement; the parties hereby waive their rights to bring a lawsuit to resolve a dispute arising under this Agreement.

(k) **SURVIVAL:** Seller's obligations under Sections 6, 7, 8, 9, 10, 12, 13, and 18 (f), (i), (j), (k), (l), (o), and (q) will survive any termination of this Order.

(l) **WAIVER; MODIFICATION:** No claim or right arising out of a breach of this Order can be discharged in whole or in part by a waiver or renunciation of the claim or right unless supported by consideration and in a writing signed by the aggrieved party. The failure of Purchaser to enforce at any time or for any period of time any of the provisions hereof will not be construed to be a waiver of such provisions or of the right of Purchaser thereafter to enforce each and every such provision. This Order can be modified or rescinded only by a writing signed by authorized representatives from both parties.

(m) **NOTICES:** All notices, consents, waivers, and other communications required or permitted to be given pursuant to this Order, shall be in writing and shall be deemed to have been delivered either (i) on the delivery date, if personally delivered, or if delivered by confirmed facsimile or e-mail, (ii) one (1) business day after delivery to any national overnight courier directing delivery on the next business day, receipt requested, or (iii) three (3) business days after deposit in the United States mail, registered or

certified mail, return receipt requested, with adequate postage affixed thereto.

(n) SEVERABILITY: If any provision of this Order shall be held or deemed to be or shall, in fact, be illegal, inoperative or unenforceable, this provision shall not affect any other provision or provisions contained in this Order.

(o) PARAGRAPH TITLES: The paragraph titles are solely for convenience of reference and shall not affect the meaning or construction of any provision of this Order.

(p) ENTIRE AGREEMENT: Provided that there is no written agreement, duly executed by both parties, applying to the transaction, this Order, with such documents as are expressly incorporated by reference, is intended by the parties as a final expression of their agreement with respect to such terms as are included in it, and is intended also as a complete and exclusive statement of the terms of their agreement. No course of prior dealings between the parties and no usage of the trade will be relevant to determine the meaning of this agreement even though the accepting or acquiescing party has knowledge of the nature of the performance and opportunity for objection.