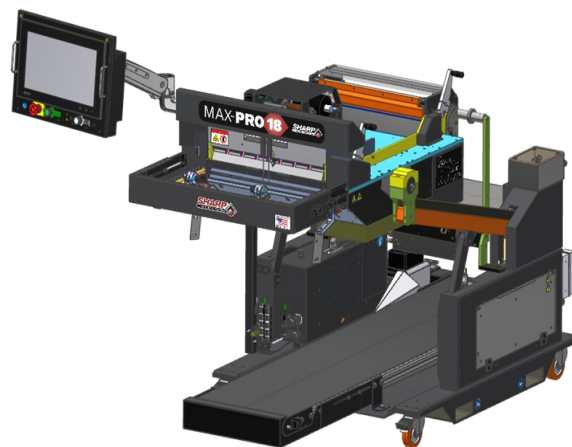
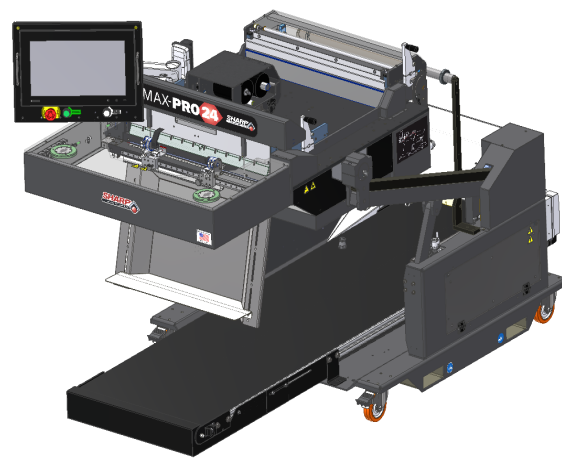


Pregis Sharp™ MaxPro Series Bagging Equipment Operator Manual

Models 1182-02 & 1183 & 1196

REV 4 v5 – Original Instructions



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www.pregis.com



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Languages Of Operation Disclaimer

It is illegal to operate this machine in an EU member state if this (or any other related) manual is not written in that State's language. If a translated version is needed, contact Pregis to order the manual.

The original version of this manual is in English and denoted "Original Instructions" in the top right corner. All translated versions are denoted "Translation of Original Instructions" in the same location.

CE Certification

EC DECLARATION OF CONFORMITY EU DECLARATION OF CONFORMITY

SHARP PACKAGING BY PREGIS
N59W22387 Silver Spring Drive
Sussex, WI 53089
USA

Name and address of the company authorized to compile the Technical File:

ACC – Services Contact
78 Allée Primavera
Centre Ubidoca 2402
74370 Annecy
FRANCE

SHARP PACKAGING BY PREGIS declares under our sole responsibility that the product described as:

Equipment Name: Continuous Bagging System
Model /Type: MAX-PRO 18 and MAX-PRO 24

Complies with the requirements of the following European Union Directives:

Machinery Directive 2006/42/EC
Electromagnetic Compatibility Directive 2014/30/EU

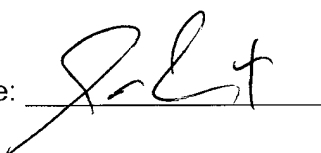
Main standards considered:

EN ISO 12100:2010,
EN 415-3:1999 + A1:2009
EN 60204-1:2018, EN ISO 13849-1:2015
EN 61000-6-2:2019, EN 61000-6-4:2019

Date: 04 FEB 2021

At: Sussex, Wisconsin USA

Name of authorized company representative: Mr. Jon Ubert
Director of Engineering

Signature: 

UK DECLARATION OF CONFORMITY

SHARP PACKAGING BY PREGIS
N59W22387 Silver Spring Drive
Sussex, WI 53089
USA

Name and address of the company authorized to compile the Technical File:

ACC – Services Contact
International House
10 Churchill Way
Cardiff CF10 2HE
UNITED KINGDOM

SHARP PACKAGING BY PREGIS declares under our sole responsibility that the product described as:

Equipment Name: Continuous Bagging System
Model /Type: MAX-PRO 18 and MAX-PRO 24

Complies with the requirements of the following UK Regulations:

Supply of Machinery (Safety) Regulations 2008
Electromagnetic Compatibility Regulations 2016

Main standards considered:

BS EN ISO 12100:2010,
BS EN 60204-1:2018, BS EN ISO 13849-1:2015
BS EN 61000-6-2:2019, BS EN 61000-6-4:2019

Date: 04 FEB 2021

At: Sussex, Wisconsin USA

Name of authorized company representative: Mr. Jon Ubert
Director of Engineering

Signature: 

The **MaxPro Series continuous bagger**, redesigned from the ground up for increased productivity and easier operation. The **MaxPro Series bagger** is an effective solution for manually bagging product, dramatically reducing packaging costs and improving package quality. The **MaxPro Series bagger** platform features an integrated ZT610 Zebra pivoting print-head.

Print Method	Thermal Transfer, directly onto surface of bag
Print Speeds	14 ips at 203 dpi 12 ips at 300 dpi
Print Resolution	203, 300 dpi
Print Width (max.)	4.09" (104 mm)

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

- Advanced diagnostics monitor individual machine components, notifying technicians of any potential problems and allowing replacement parts to be ordered before a failure occurs.
- Networkable HMI responds like a smartphone: faster and more intuitive, with easy to understand icons.
- Pass-through size now adjustable via the HMI, with not tools required.
- Simplified bag threading system allows even novice operators to load new bags easily.
- **Pregis Sharp™ MaxPro 24** accommodates 24" wide bags with an 12" pass-through depth.
- **Pregis Sharp™ MaxPro 18** accommodates 18" wide bags with an 8" pass-through depth.
- Save job settings and label designs in HMI for easy access.
- Incorporating Zebra thermal printers permits direct printing onto the package for bar codes, graphics, and alphanumeric fonts.
- Movable printing head sets to precise positions, eliminating queuing and reducing material cost and scrap.
- Decrease thermal ribbon usage as much as 90% with reduced spacing between impressions, printing with alternative registrations, and adjusting impression placement to maximize ribbon usage.
- HMI, printer, and PLC can be networked, so they can be accessed at any time from almost anywhere.
- Use remote label printing, production reporting, and SCADA (supervisory control and data acquisition) control.
- New design utilizes fewer components, decreasing downtime and increasing ease of maintenance.
- Improved error reporting pinpoints problems for hassle free troubleshooting.
- The color touchscreen display provides troubleshooting guidance with exploded view drawings, manufacturer and part numbers, and .html help files with hyper links to explain any term.
- Off-the-shelf, nonproprietary parts can be purchased at most MRO stores.

Introduction

General Information

About this manual

This manual has been prepared for your use in operating model 1182-02 & 1183-01 models of the **MaxPro Series** Continuous Bagging System. Images and instructions may differ slightly for older models, but basic function is the same. 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 Series bagger**.

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



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 & Procedures

- 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.
- Follow all company and industry standards with the use and wearing of Personal Protective Equipment. **“PPE”**

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.

It is illegal to operate the equipment in an EU member state if the manual(s) is not written in that State's language. Contact your company if a translation is needed.

If the machine or parts of the machine have to be permanently put out of service, laws and Directives in force at the time of the dismantling have to be strictly observed and complied with. In any case, check which materials can be recycled. These must be sent to an appropriate waste collecting company.

The sound pressure level measured at the operator station does not exceeds 70 dB(A).



Emergency Stop (E-Stop) Button

An Emergency Stop (Red) Button is part of HMI/PC Box. 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.

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

Equipment Safety Features

Machine Guards

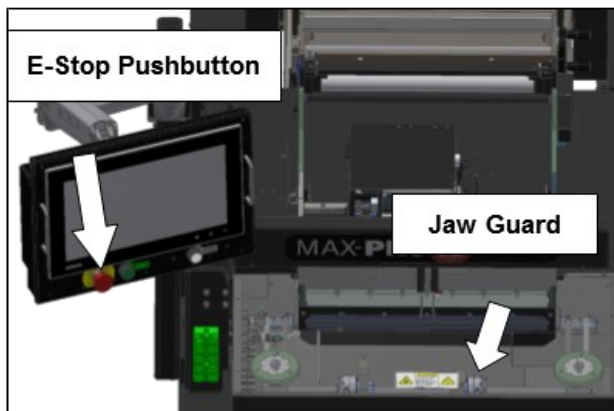
The **MaxPro Series bagger** is equipped with guards covering the heated sealing area and the underside of the Head Assembly. DO NOT operate the **MaxPro Series bagger** with these or any other guards removed.

The Top Lexan® Guard sits on top of the Jaw Guard. The shape allows for loading of product into the bags. Pregis recommends the **MaxPro Series bagger** be equipped with the optional Dual Palm Buttons to start the cycle to ensure the operator's hands are clear of the Sealing and Pressure Bars when the machine is cycled.

DO NOT operate the unit with this feature removed.

Emergency Stop Button

An Emergency-Stop Button is located on the Control Panel, which immediately stops the machine when pressed by de-energizing power to the Master Control Relay, PLC outputs, motor, motor drive and air valves.



OBSTRUCTION SENSING JAW

The Sealing Assembly is equipped with an Obstruction Sensing Actuator, which can detect an obstruction in the Sealing Area. If the Pressure Bar Actuator detects an object preventing the Pressure Bar from closing, the Actuator de-energizes and places the machine into a fault condition. A message appears in the display informing the Operator of the Pressure Bar Fault, allowing the Operator to clear the Sealing Area and reset the bagging cycle. A high pressure pneumatic clamping mechanism engages the Pressure Bar only once the Pressure Bar is <4mm from the faceplate. (ANSI B11.19-2019 7.6, ISO 13857) The design of the clamping mechanism is such that even if it were to actuate

early that it cannot provide any force to the Pressure Bar until it reaches that 4mm distance from the faceplate. The low torque Pressure Bar Actuator cannot provide more than 150N (<30lbs) of force between the Pressure Bar and faceplate and is considered intrinsically safe (EN 415-3 5.4.1, 5.11.1, 5.2.1.2, 5.2.2.4).

Safety Labels

General Danger Label



This label is located on the **MaxPro Series bagger** wherever a removable shield or panel guards electrical components to warn of potential danger behind shield or panel. Always disconnect electrical power from machine prior to removing any guards and/or panels with this label.

Electric Shock/Electrocution Label



This label is located on the **MaxPro Series bagger** wherever a removable shield or panel guards electrical components to warn of potential danger behind shield or panel. Always disconnect electrical power from machine prior to removing any guards and/or panels with this label.

Side Crush



This label is placed onto removable shields, panels, or guards near the Sealing Jaw of the **MaxPro Series bagger** to warn of potential crush danger. Always disconnect electrical power from the machine prior to removing any guards and/or panels.

Burn Hazard Label



This label is placed onto removable shields, panels, or guards near the Heated Sealing Area of the **MaxPro Series bagger** to warn of potential burn danger. Always disconnect electrical power from the machine prior to removing any guards and/or panels.

Entanglement Hazard, Rotating Parts



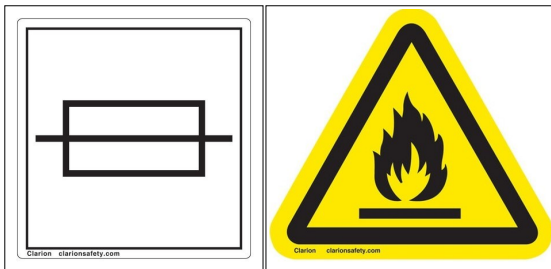
This label is placed where there is the potential of your hands, long hair, jewelry, etc., becoming entangled between two rotating parts. Be sure to secure loose items before approaching and operating the machine.

Moving Parts Can Crush And Cut (Pinch Point)



This label on the **MaxPro Series bagger** is placed where there is potential of injury due to pinch points or moving parts. Make certain electrical power is disconnected before removing any guards and/or panels.

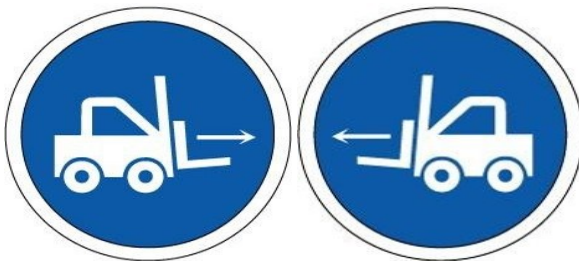
Risk Of Fire - Correct Fuse Replacement



The following labels are located in the proximity of a fused circuit. Be certain to replace blown fuses **ONLY** with fuses with the same electrical rating. Always disconnect electrical power before removing any guards and/or panels and servicing the **MaxPro Series bagger**.

Fork Lift Use Label

These labels are placed next to the lifting points for the **MaxPro Series bagger**. Only lift this bagger with a Fork Lift at these



points.



Caution Properly Grounded Outlet Label

This label is placed on UL Certified Machines by the main Power Entry Module of Electrical Assembly. Always connect Power Cord to correctly grounded outlet.



Caution Hot Surface Avoid Contact Label

This label is placed on UL Certified Machines near the Seal Bar. The area near the Heated Seal Bar will be hot during operation, do not touch.

Lifting Procedure

The only approved lifting of this bagger is with a Forklift through the Base of Frame Assembly. Forklift Use Labels are on sides of Base to indicate the lift points.

Specifications

Packaging Specifications

	BAG WIDTH	BAG LENGTH	FILM GAUGE
MINIMUM	10" (25.4 cm)	10" (25.4 cm)	1 mil (25 microns)
MAXIMUM	24" (60.96 cm)	36" (91.44 cm)	4 mil (100 microns)

Machine Specifications

	WIDTH	HEIGHT	DEPTH	WEIGHT	POWER	OPERATING TEMP	HUMIDITY RANGE
MaxPro 24	42.0" (106.68 cm)	41.52-48.02" (105.45-121.97 cm)	85.71" (217.7 cm)	955 lbs. (433.18 kg)	110VAC, 15A	32° - 140° F	10% - 90% RH, Non-Condensing
MaxPro 18	35.88" (91.14 cm)	41.51-48.01" (105.44-121.95 cm)	81.19" (206.22 cm)	710 lbs. (322.05 kg)	120VAC, 15A	32° - 140° F	10% - 90% RH, Non-Condensing

Technical Assistance

Assistance with your **MaxPro Series 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.

Phone: +1 866-904-6979

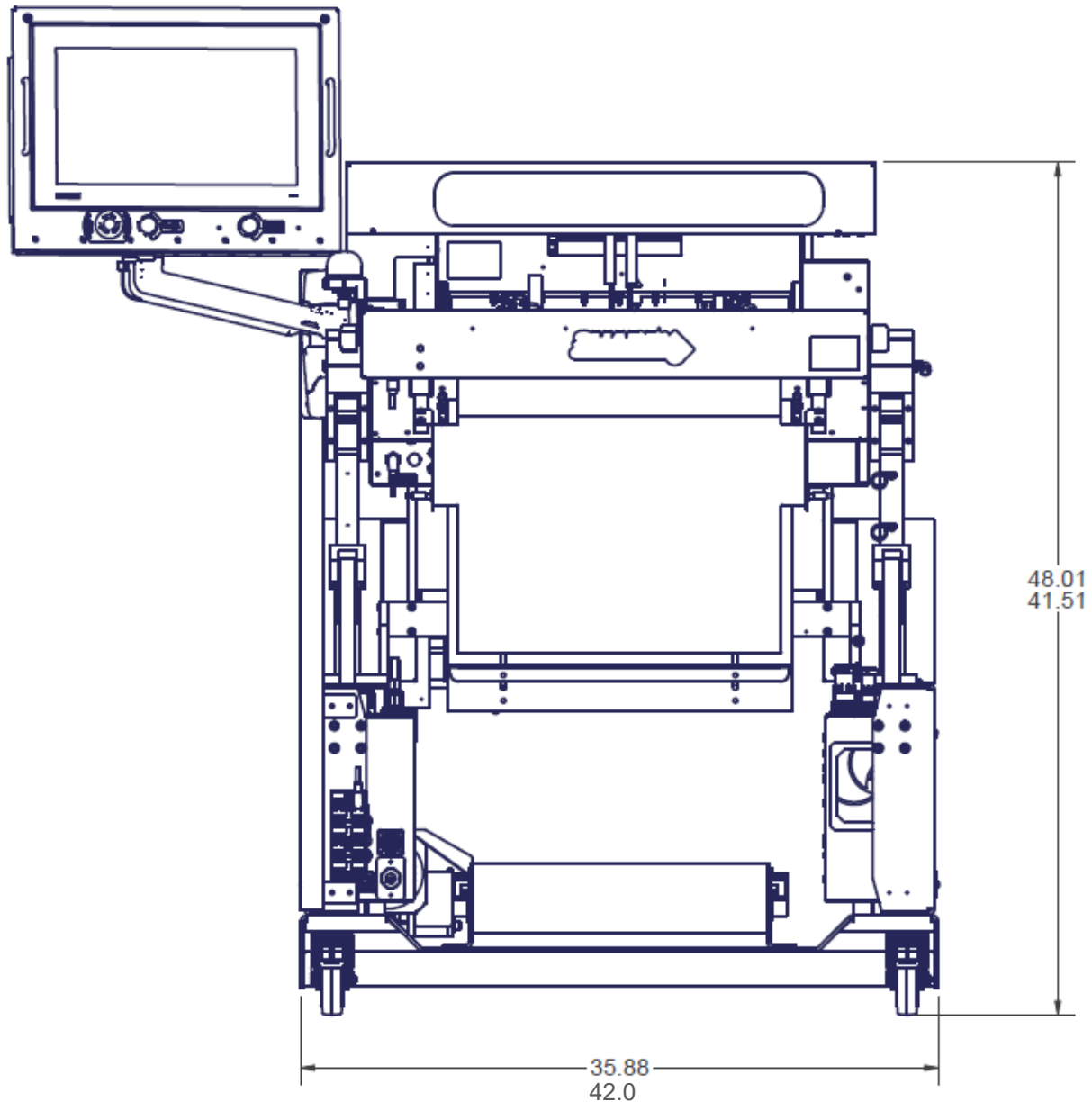
E-mail: sharpservice@pregis.com

Machine Dimensions

Front View

Bagger dimensions viewed from front.

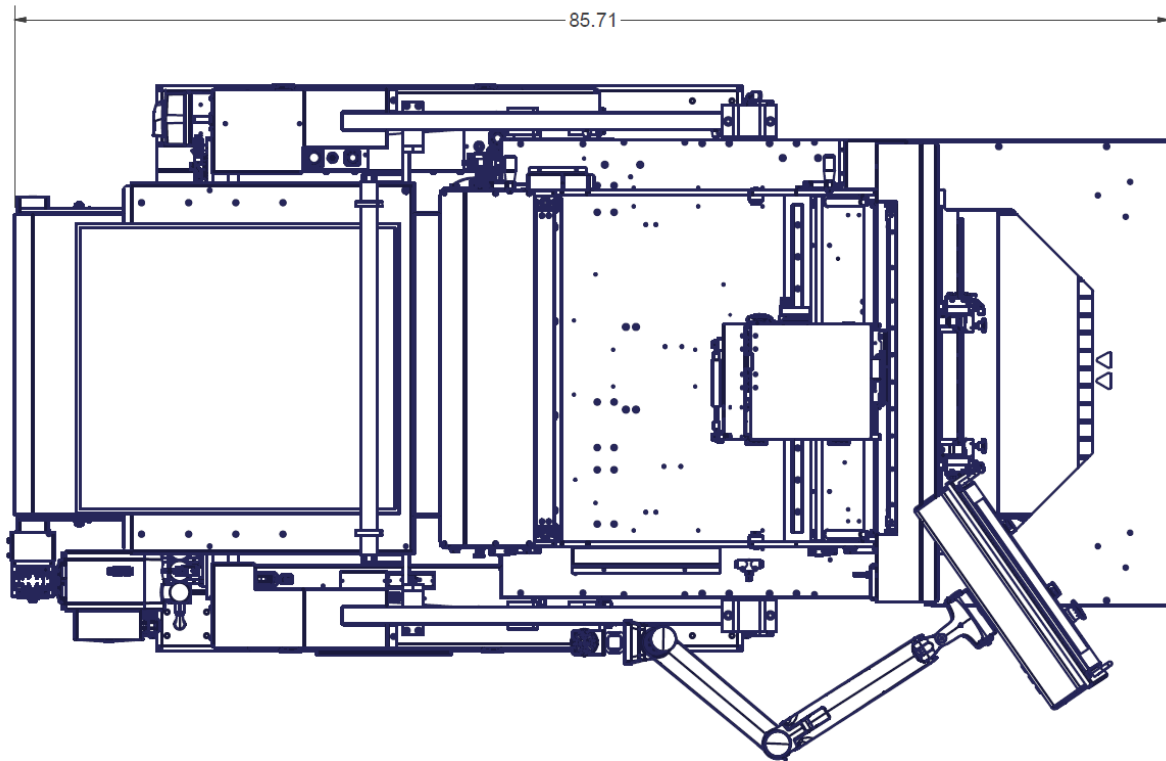
Measurements are in inches.



Top View

Bagger dimensions viewed from top.

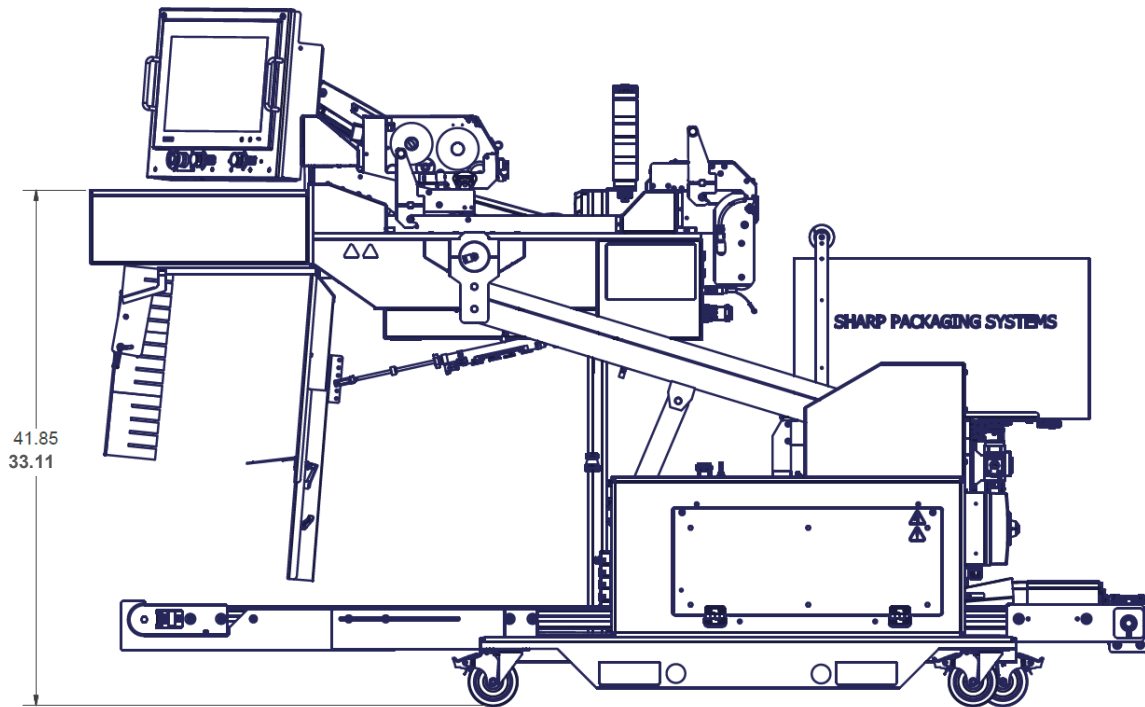
Measurements are in inches.



Side View

Bagger dimensions viewed from side.

Measurements are in inches.



Poly Lite® Mailers and Bags and Ribbon

The **MaxPro Series bagger** designed to use a wide variety of bag sized and materials. Poly Lite® Mailers are recommended for optimum operating performance, efficiency and safety. System performance specifications are base on utilizing consistent, high quality, pre-opened bags. Any bag used must meet Pregis manufacturing tolerances. The following list shows so me of the films available.:

Poly Lite® Mailers and Bags

- General Purpose
- HD Mailer
- Military Specification Film
- Gamma Patient
- Anti-Static
- Vapor Corrosive Inhibitor (VCI)

Contact Pregis Customer Service at +1 800-634-6359 to order consumables and for information regarding film and bag specifications.

THERMAL TRANSFER RIBBON

The **MaxPro Series bagger** uses thermal transfer ribbon to print various information onto the bags as they pass through the machine. The following is a list of ribbon that is available:

- Standard Direct Wax Ribbon
- Premium Wax Resin Ribbon.

Contact Pregis Customer Service at +1 800-634-6359 to order ribbon.

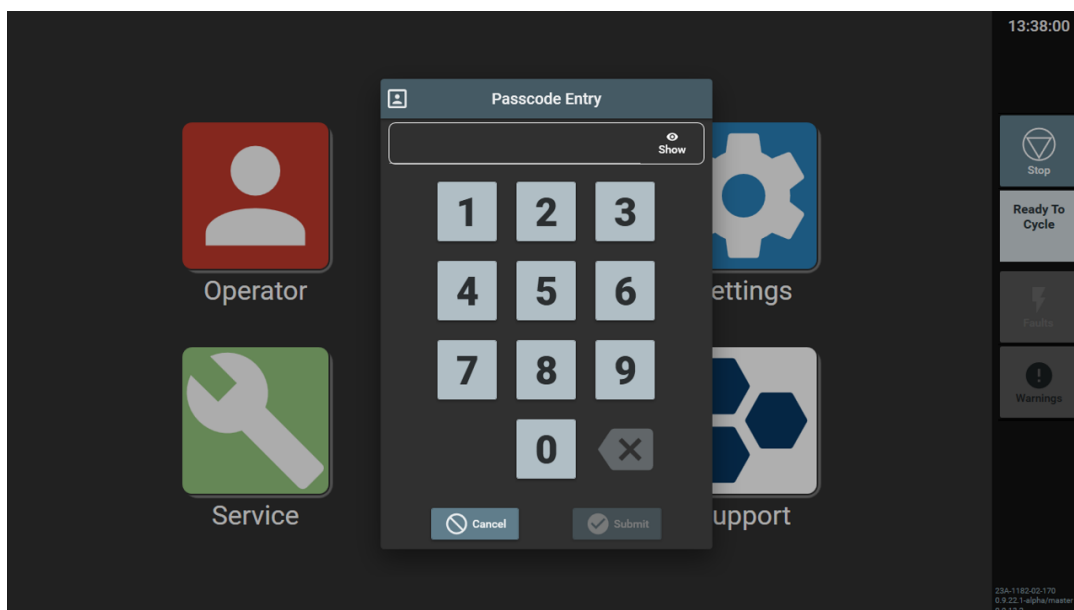
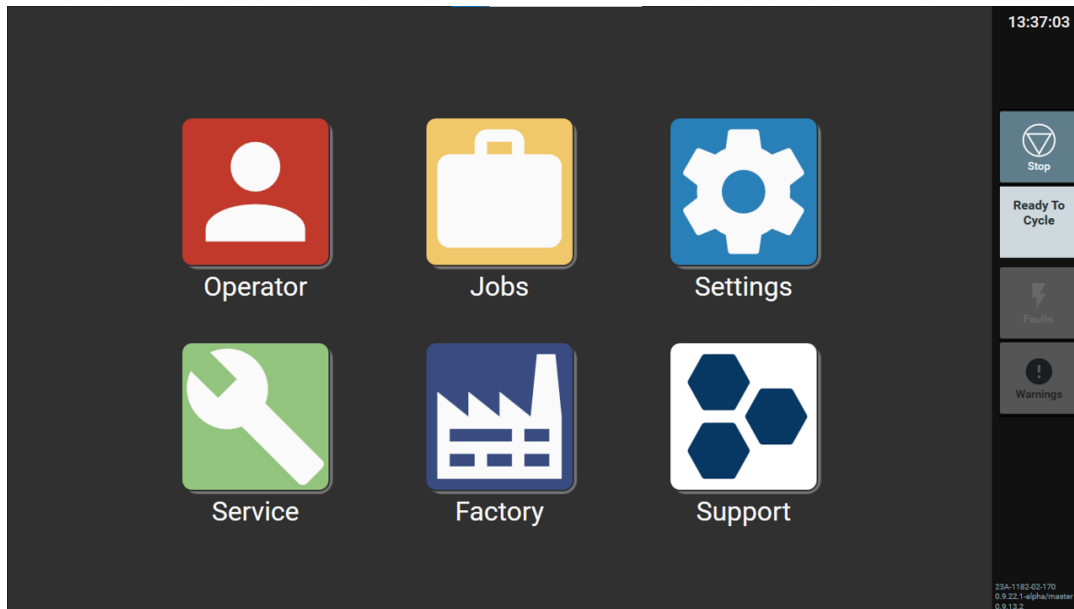
Controls

Security

The 'Technician', 'Field Service', and 'Manufacturing' icons are password protected. Pressing any of these icons will prompt user to type in a password.

The 'Operator' and 'Support' icons are not password protected.

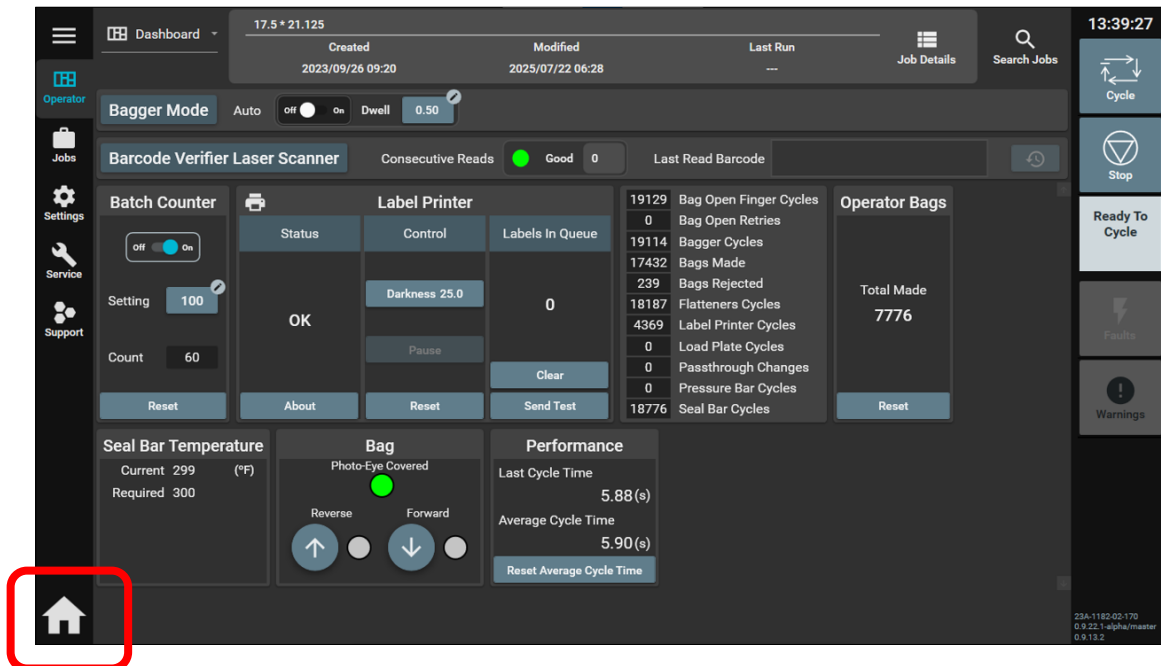
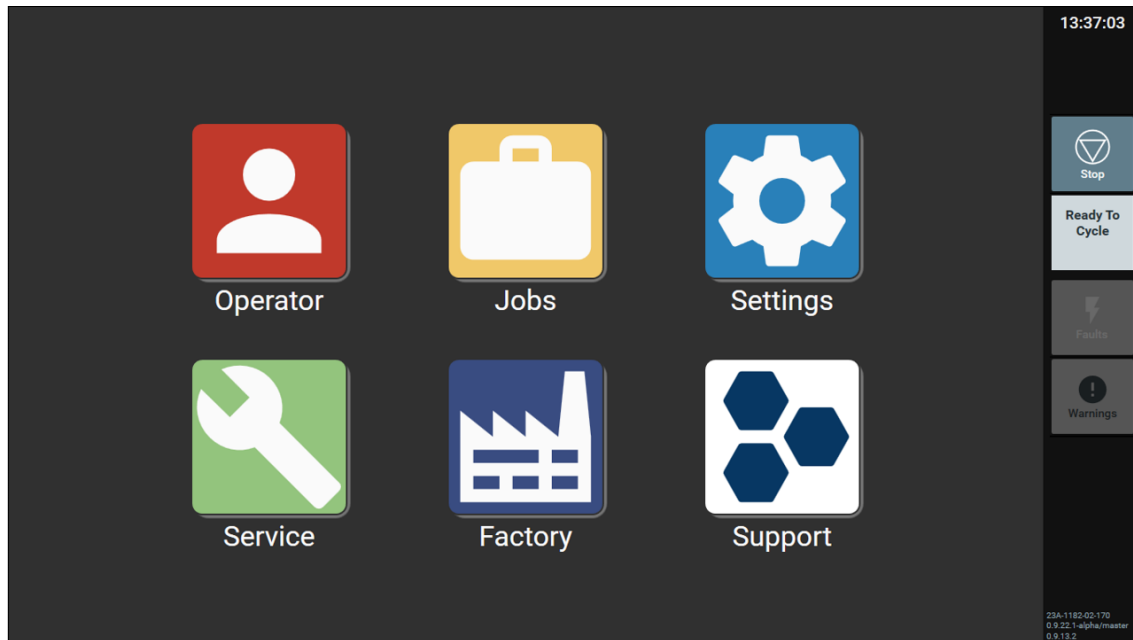
NOTE: See Supervisor or Manager for correct password for each icon.



Screen Navigation

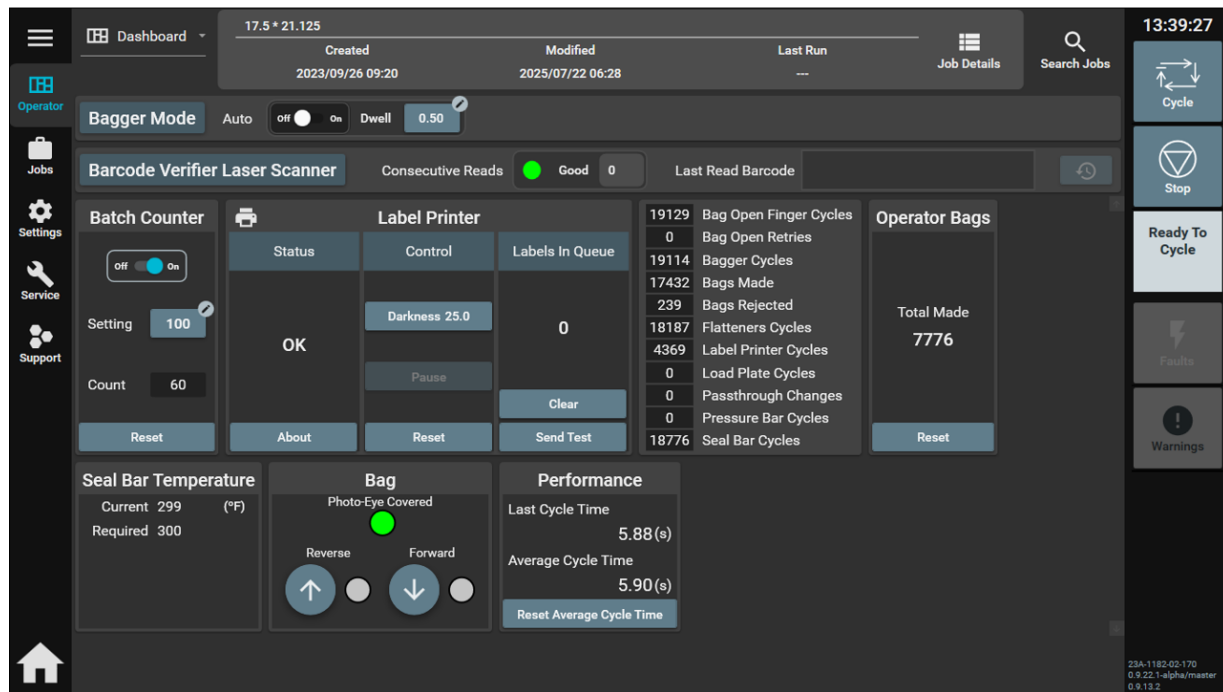
Home Screen

This screen appears at machine start-up and by pressing the home button on bottom left corner of screen. Pressing any of the large buttons on this screen, opens new screen.



Operator Button

Pressing the **Operator Button** from the Home Screen opens the **Operator Dashboard** Screen. This screen allows Operator to monitor bagger function. Access to this screen is not password protected.



Job Details

Pressing the Job Detail button opens a pop-up window with bag dimensions and bag feed speed.

Search Jobs

Opens a window that lists all jobs saved in bagger. Green light indicates which job is currently loaded.

Label Printer

Status: Reported status from Zebra Label Printer. Pressing About button shows details of the printer.

Control: Pause button pauses printer. Only works if you are Service/Factory User.

Darkness: Allows user to change darkness of print. Only works if you are a Service/Factory User.

Reset: Resets internal printer faults (e.g. Printhead errors)

Labels in Queue: Clear button clears out all labels from printer.

Send Test: Sends 1 test label to printer.

Machine Counters

Informational display of counters and cycles of bagger.

Operator Dashboard

Dashboard

Operator

Jobs

Settings

Service

Support

Home

17.5 * 21.125

Created
2023/09/26 09:20

Modified
2025/07/22 06:28

Last Run

Job Details

Search Jobs

13:39:27

Bagger Mode

Auto

Off On

Dwell 0.50

Barcode Verifier Laser Scanner

Consecutive Reads

Good 0

Last Read Barcode

Batch Counter

OK

Setting 100

Count 60

Reset

Label Printer

Status

Control

Labels In Queue

Darkness 25.0

Pause

Clear

About

Reset

Send Test

19129 Bag Open Finger Cycles

0 Bag Open Retries

19114 Bagger Cycles

17432 Bags Made

239 Bags Rejected

18187 Flatteners Cycles

4369 Label Printer Cycles

0 Load Plate Cycles

0 Passthrough Changes

0 Pressure Bar Cycles

18776 Seal Bar Cycles

Operator Bags

Total Made 7776

Reset

Seal Bar Temperature

Current 299 (°F)

Required 300

Bag

Photo-Eye Covered

Reverse Forward

↑ ↓

Performance

Last Cycle Time 5.88(s)

Average Cycle Time 5.90(s)

Reset Average Cycle Time

Cycle

Stop

Ready To Cycle

Faults

Warnings

23A-1182-02-170

0.9.22.1-alpha/master

0.9.19.2

Seal Bar Temperature

Current: The current temperature of Seal Bar.

Required: The temperature of Seal Bar per settings in loaded job.

Operator Bags

Operator Resettable bag counter.

Bag

Photo-eye Covered: When Lit bag is over Photo-eye.

Reverse and Forward: Buttons jog film.

Performance

Last Cycle Time: Displays the actual time of last completed cycle, in seconds.

Average Cycle Time: The average cycle time all cycles, in seconds.

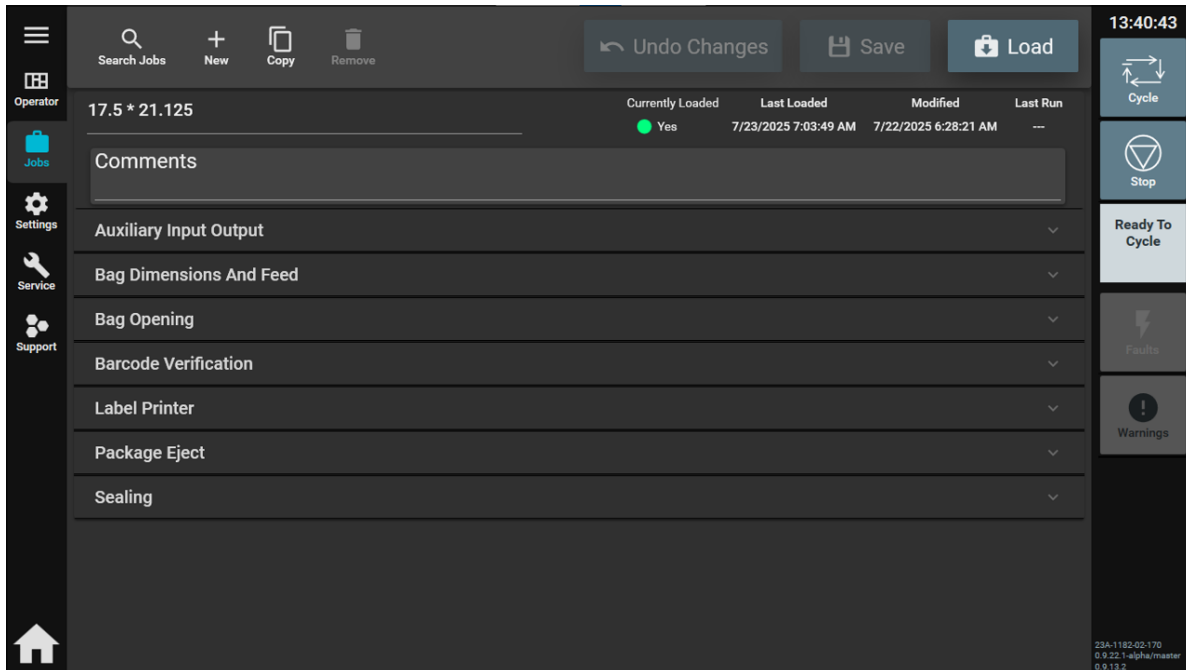
Reset Average Cycle Time: Reset or clears the average cycle time.

Filler

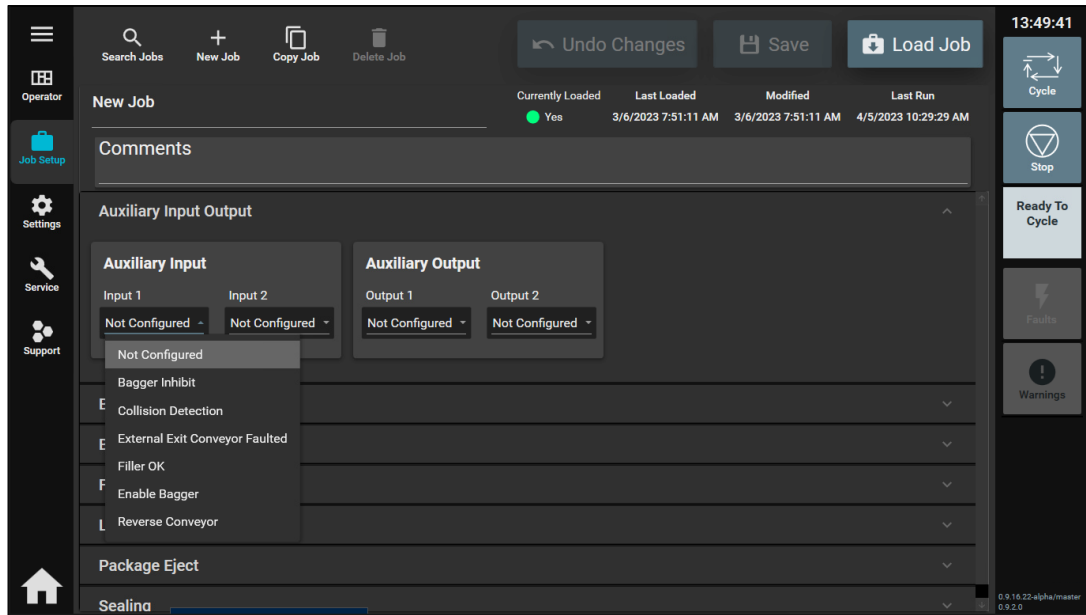
Toggles Filler ON or OFF.

Job Setup Button

Pressing the **Job Setup** from the Home Screen opens the **Job Setup** Screen. This screen allows a User to configure Bag Dimensions and Feed Speed, Bag Opening, Package Eject, Pressure Bar and Seal Bar, Auxiliary Input/output and Printer. Access to this screen is password protected.



Job Setup Screen - Auxiliary Input/Output



Any changes made to this screen requires operator to press '**Load Job**' or '**Save & Load**' button.

Auxiliary Input

Input 1 And Input 2

Not Configured: No configuration.

Bagger Inhibit: While the Input is ON, the bagger will not initiate a new cycle. A yellow warning banner appears on the HMI while this condition is active.

Collision Detection: If traffic control option is equipped, while this input is on the bagger will not allow a package to leave the machine via conveyance.

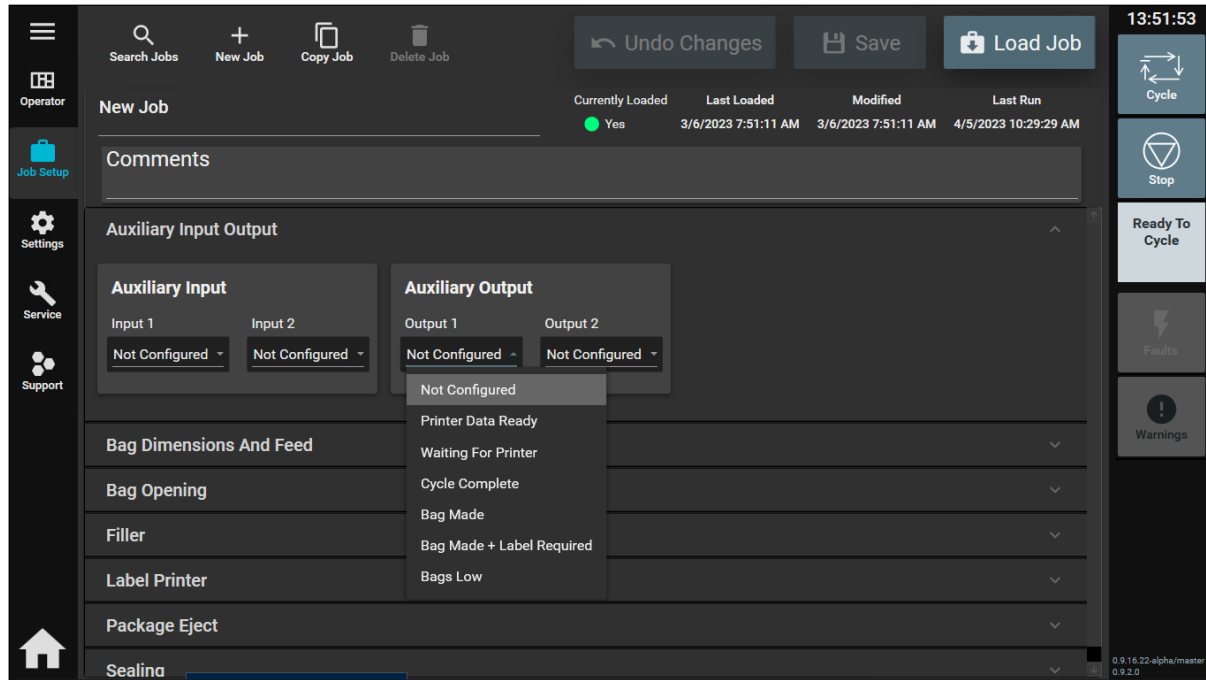
External Exit Conveyor Faulted: Wired to the fault output of an external conveyor drive. While on, this will fault the bagger.

Filler OK: When selected, the input must remain on while the Filler is active and ready. The bagger will fault if this input turns off.

Enable Bagger: When selected, the input must remain on to enable the bagger. The bagger will fault if this input turns off.

Reverse Conveyor: On baggers equipped with the reversable conveyor option, turning this input on will reverse the motion of the integrated exit conveyor while active.

Auxiliary Output



Output 1 And Output 2

Not Configured: No Configuration.

Printer Data Ready: Output active when Printer is ready for a new label.

Waiting For Printer: Machine is cycling and film is backed up and ready to print but printer needs label

Cycle Complete: Cycle done.

Bag Made: Bag is dropping.

Bag Made + Label Required: Bag is dropping AND printer needs a label.

Bags Low: Bags low sensor is active.

Bag Made + Label Required: Bag is dropping AND printer needs a label.

Bags Low: Bags low sensor is active.

Job Setup Screen - Bag Dimensions and Feed Speed

The screenshot shows the 'Job Setup Screen - Bag Dimensions and Feed Speed'. The interface includes a top navigation bar with 'Search Jobs', 'New', 'Copy', and 'Remove' buttons, along with 'Undo Changes', 'Save', and 'Load' buttons. The main content area is divided into several sections:

- Operator:** 17.5 * 21.125
- Comments:** A text input field.
- Auxiliary Input Output:** A dropdown menu.
- Bag Dimensions And Feed:** A section containing:
 - Low-Pressure Air:** A toggle switch labeled 'LPA During Bag Feed' with 'Off' and 'On' positions.
 - Bag Dimensions:** Four input fields: Width (20 in), Length (25 in), Thickness (2.5 mil), and Skirt Length (0.2 in).
 - Bag Feed Speed:** Two input fields: Forward Speed (30 in) and Reverse Speed (10 in).
- Bag Opening:** A dropdown menu.
- Barcode Verification:** A dropdown menu.
- Label Printer:** A dropdown menu.
- Package Eject:** A dropdown menu.
- Sealing:** A dropdown menu.

The right sidebar contains a vertical stack of buttons: 'Cycle', 'Stop', 'Ready To Cycle', 'Faults', and 'Warnings'. The top right corner shows the time '13:41:58'.

Any changes made to this screen requires operator to press '**Load Job**' button.

Low-Pressure Air

LPA During Bag Feed: Toggle switch to have LPA ON or OFF while bag feeding out. This helps open the bag.

Bag Dimensions and Feed

Width: The width of the loaded 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 .5 to 1.5 inches less than the measured overall bag length.

Thickness: The thickness of bag material.

Skirt Length: The distance from the bottom of the bag to the start of the seal.

Bag Feed Speed

Forward: Adjusts the forward web speed in inches per second.

Reverse: Adjusts the reverse web speed in inches per second.

Job Setup Screen - Bag Opening

The screenshot displays the 'Job Setup Screen - Bag Opening' interface. The top bar includes a search bar and buttons for 'New', 'Copy', 'Remove', 'Undo Changes', 'Save', and 'Load'. The left sidebar contains icons for 'Operator', 'Jobs', 'Settings', 'Service', and 'Support'. The main area shows the following settings:

- Operator:** 17.5 * 21.125
- Comments:** (Text input field)
- Bag Dimensions And Feed:** (Dropdown menu)
- Bag Opening:**
 - Jaw Passthrough:** Passthrough 7 in
 - Vacuum:** Vacuum Dwell 0.25 s
 - Low-Pressure Air:** Always Off, On For 2 s, Always On
 - High-Pressure Air:** HP Air Dwell 0 s
- Bag Open Assist:**
 - In Use:** Off (toggle)
 - Open Bag Retry Setting:** 3 Unknown
 - Feed New Bag Setting:** 0 Unknown
- Barcode Verification:** (Dropdown menu)

The right sidebar contains buttons for 'Cycle', 'Stop', 'Ready To Cycle', 'Faults', and 'Warnings'. The bottom right corner shows the version number 23A-1182-02-170 and the date 09.22.1-alpha/master.

Any changes made to this screen requires operator to press '**Load Job**' button.

Jaw Passthrough: Sets Passthrough, will change (move) once job is loaded.

Vacuum

Vacuum Dwell: Sets the length of time, in seconds, that Vacuum creates suction.

Low Pressure Air: Press box in middle to set timeout for LPA at end of cycle to hold bag open.

Always OFF: Always OFF

Always ON: Always ON

High Pressure Air

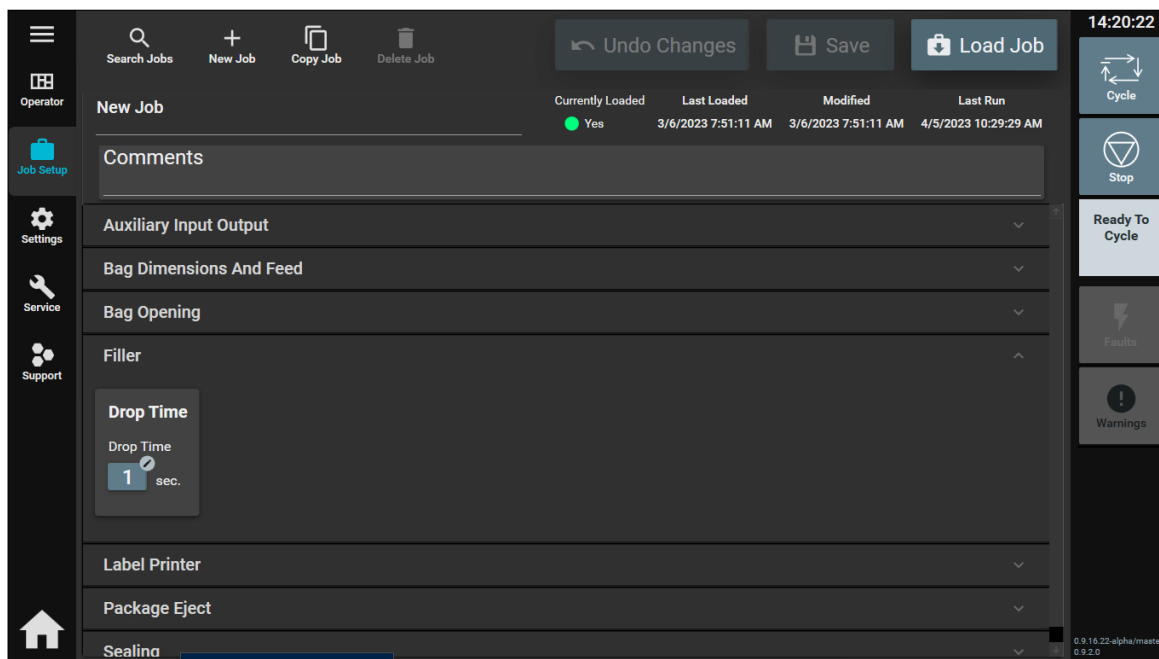
HP Air Dwell: Sets the length of time, in seconds, the High Pressure Air blasts.

Bag Open Assist

Open Bag Retry Setting: Display the number of attempts Bag Opening Fingers try open bag before feeding new bag out.

Feed New Bag Setting: Display the number of new bags to feed after Open Bag Retry Setting is reached.

Job Setup Screen - Filler



Any changes made to this screen requires operator to press '**Load Job**' button.

Drop time

Drop Time: Time for bag to drop before feeding new bag out.

Job Setup Screen - Label Printer

Any changes made to this screen requires operator to press '**Load Job**' or '**Save & Load**' button.

Printer Settings

In Use: Printer is active in this job. If set to OFF, printer will not print.

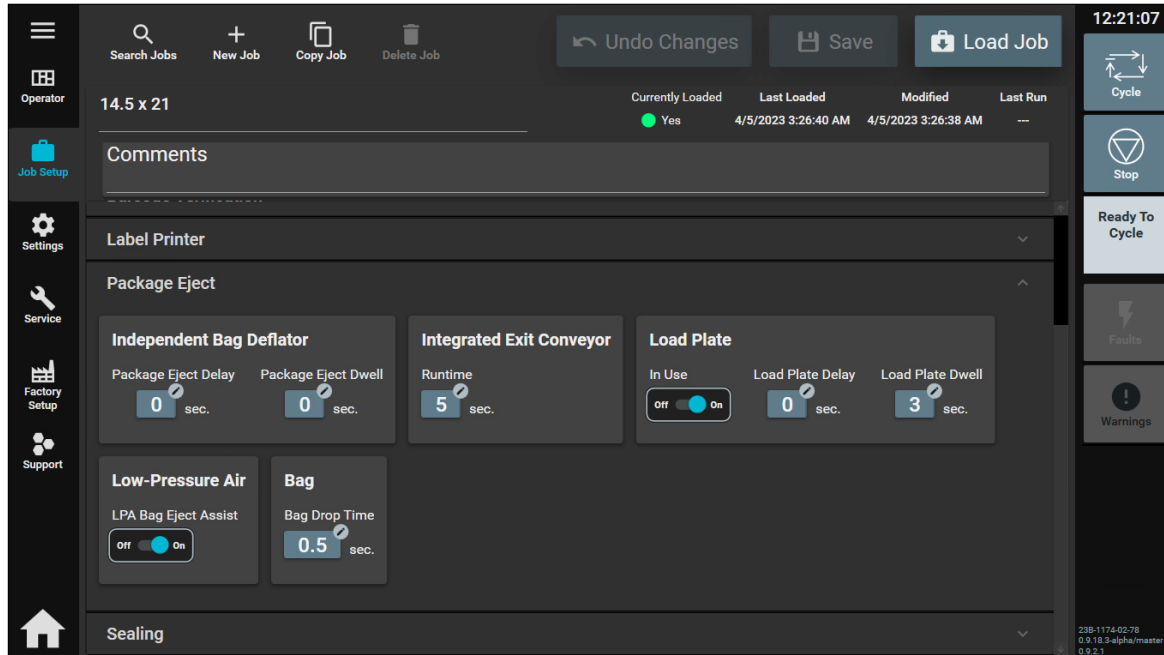
Speed: This numeric setting determines the web feed speed during the print cycle. It is adjustable from 2.00 to 12.00 Inches/Sec. This setting should be set to the same value that resides in the Printer.

Length: This numeric setting determines the distance the web will feed during the print cycle. This should be set to smallest value that will produce the desired label. This setting is approximately $\frac{3}{4}$ of inch longer than the length of the label.

Offset: This numeric setting determines the starting position of the printed label. This can be used to adjust the label position on the bag. It is adjustable from 0 to 10.00.

Clear Label On Job Load: If ON, loading this job will clear out the label queue on the printer.

Job Setup Screen - Package Eject



Any changes made to this screen requires operator to press '**Load Job**' button.

Independent Bag Deflator

Delay: Delays the start of Package Eject from normal firing time of the cycle.

Dwell: Time for Package Eject in discharge position.

Integrated Exit Conveyor

Runtime: Timeout for Integrated Exit Conveyor, starts when package starts to fall.

Load Plate

Load Plate Dwell: Timeout for load plate in discharge position.

Load Plate Delay: Starts when bag starts to fall.

Low Pressure Air

LPA Bag Eject Assist: Toggle switch turns LPA ON or OFF to assist the ejection of sealed bag.

Bag

Bag Drop Time: Time for bag to drop before feeding new bag out.

Job Setup Screen - Sealing

The screenshot shows the 'Job Setup Screen - Sealing' interface. At the top, there are buttons for 'Search Jobs', 'New', 'Copy', 'Remove', 'Undo Changes', 'Save', and 'Load'. Below these, a status bar shows 'Currently Loaded' as 'Yes' with a green dot, and 'Last Loaded' as '7/23/2025 7:03:49 AM'. The 'Modified' date is '7/22/2025 6:28:21 AM', and 'Last Run' is blank. The main area is divided into sections: 'Comments', 'Label Printer', 'Package Eject', and 'Sealing'. The 'Sealing' section contains four sub-sections: 'Independent Bag Deflator' with 'Offset' (3 in), 'Dwell' (0.5 s), and 'Close Position' (1 in); 'Seal Option' with 'Seal Flatteners Enabled' (Off/On toggle); 'Seal Bar' with 'Dwell' (0.35 s), 'Temperature' (300 °F), and 'Separate Before Seal' (Off/On toggle); and 'Pressure Bar' with 'Open Delay' (0 s) and 'Close Delay' (0 s). The right sidebar has buttons for 'Cycle', 'Stop', 'Ready To Cycle', 'Faults', and 'Warnings'. The bottom right corner shows the date and time: 13:44:52.

Any changes made to this screen requires operator to press '**Load Job**' button.

Independent Bag Deflator

Offset: IBD position relative to the pressure jaw. This can be used to adjust how far the IBD sticks out (or not) in front of the pressure jaw; as to not stick out too far and impede loading of bags.

Dwell: Time for Package Eject in discharge position.

Close Position: This defines how far the IBD comes in before stopping. This can adjust how much it tries to compress the bag during sealing.

Seal Option

In use: Toggle switch turns Seal Flatteners ON or OFF.

Seal Bar

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 vary with the film gauge and material.

Temperature: Sets the desired temperature of seal bar.

Separate Before Seal Toggle switch that turns ON/OFF 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.

Pressure Bar

Open Delay: Adjusts the delay, in seconds, that occurs prior to opening the Pressure Bar.

Close Delay: Adjusts the delay, in seconds, that occurs prior to closing the Pressure Bar.

Settings Screen

The screenshot shows the 'Machine Settings' screen. At the top, there's a header with 'Machine' and a dropdown arrow, 'Auto Save Changes' with a toggle switch (currently 'On'), 'Undo Changes', and 'Save'. Below this, there are three toggle switches: 'Activate Demo Mode' (Off), 'Activate Dry Cycle' (Off), and 'Activate Batch Counter' (On). The main area is divided into sections: 'Aux IO TCP/IP' with fields for Client Host (127.0.0.1), Client Port (1377), Bagger ID (5556), Output 1 Event (Not Configured), Output 1 Format (<STX>BAGMADE|<TIMESTAMP>|<BAGGERID>|<ETX>), Output 2 Event (Not Configured), Output 2 Format (<STX>WAITINGONPRINTER|<TIMESTAMP>|<BAGGERID>|<ETX>), Timestamp Time Zone (UTC / Zulu Time), and Timestamp Format (yyyyMMddHHmmss). Below this is 'Bag Delivery' with 'Bags in a Box' set to 800 (Unknown). Then 'Label Printer' with 'Labels Queued Up Fault' set to Off. The bottom right corner shows the date and time '23A-11B2-02:170' and the version '0.9.12.2'.

Pressing the **Settings Button** icon on Left Menu Bar (When in password protected screen) opens the **Machine Settings** page.

Any changes made to this screen requires operator to press '**Save**'.

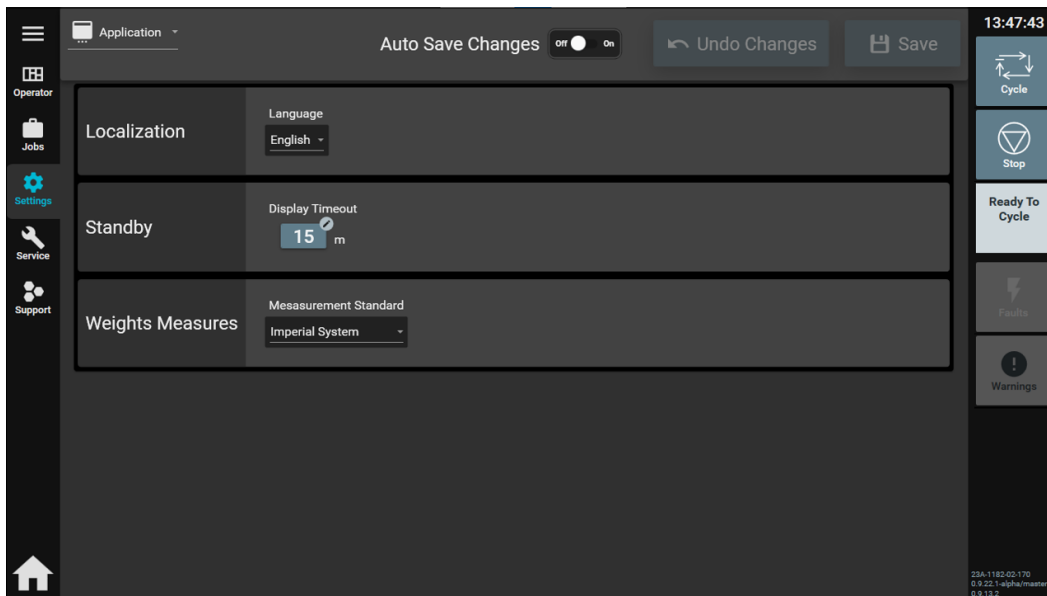
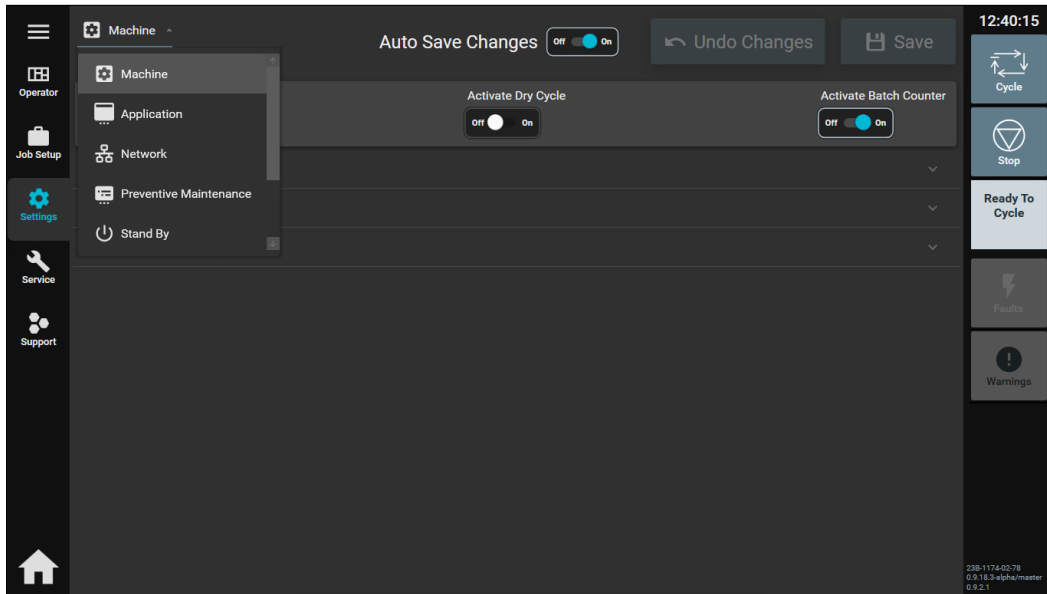
Demo Mode When demo mode is active, the controller automatically sends a test label to the printer on every cycle.

Activate Dry Cycle: The enables the bagger to cycle without bag loaded. This is used for testing purposes. It will inhibit the printer and ignore the photo eye. Remove bags before running Dry Cycle.

Activate Batch Counter: Batch counter enables the bagger to count to a pre-determined number of bags then stop. This is used to easily run a certain number of bags then stop.

Application Screen

Pressing the drop down arrow next to Machine allow user to change Machine Settings page to **Application Settings** page.



Any changes made to this screen requires operator to press '**Load Job**' or '**Save & Load**' button.

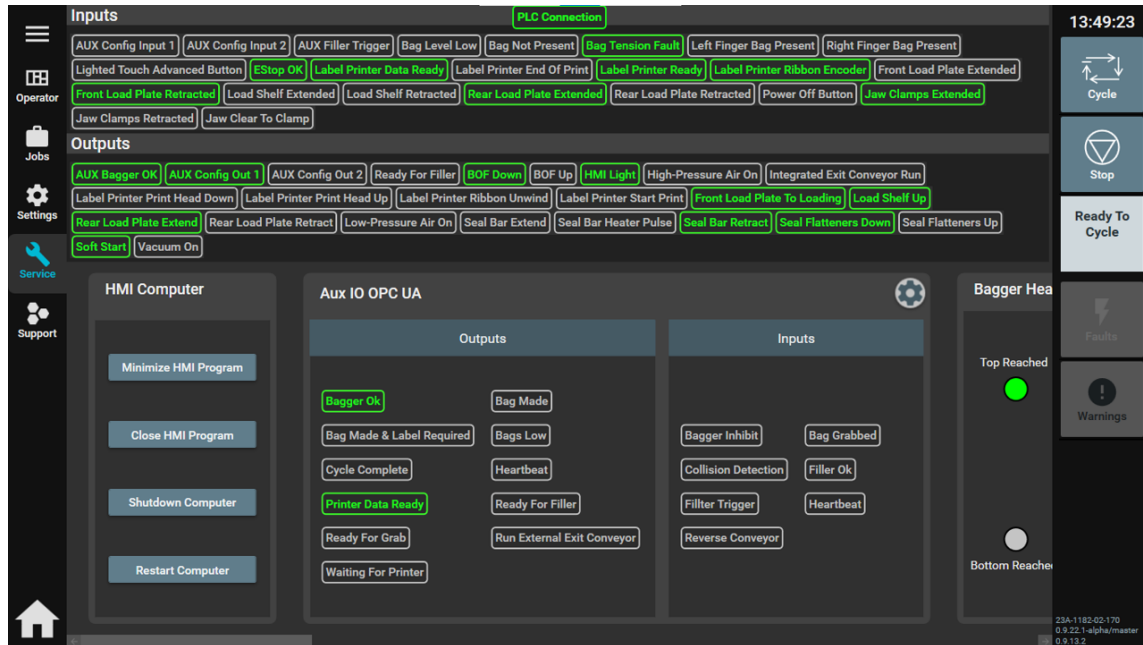
Localization: This allows a User to select HMI Language..

Standby: The amount of time the display will timeout due to inactivity.

Weights Measures: This allows a User to change Measurement Standard to Imperial or Metric.

Service Button

Pressing the **SERVICE** button from the Home Screen opens the **Service** Screen. This screen displays the **Inputs** and **Outputs** that are active (Highlighted Green) on PLC. This screen allows a User to manually trigger Bag Position, Bag Open Fingers, Integrated Exit Conveyor, Load Plate, Low-Pressure Air, High-Pressure Air, Passthrough, Pressure Bar, Printer, Seal Bar, Seal Flatteners and Vacuum. Access to this screen is password protected.



HMI Computer

Minimize HMI Program: This button will minimize the HMI program, but leaves Operating System open.

Close HMI Program: This button will close the HMI program, but leaves Operations System open.

Shutdown Computer: This button will close the HMI program and the Computer.

Restart Computer: This button will close HMI program restart the Computer and restart HMI Program. The Bagger Enabled Button will need to be pressed to home Jaw and Seal Flatteners.

Aux IO OPC UA (Open Platform Communications Unified Architecture)

Outputs: Highlighted tags are currently active and will change during a cycle.

Inputs: Input tags will change state during a cycle.

Service Screen - Aux IO OPC UA - Bagger Head



Control

Bagger Inhibit: While the Input is ON, the bagger will not initiate a new cycle. A yellow warning banner appears on the HMI while this condition is active.

Bag Grabbed: Used to indicate the bag has been grabbed by automation.

Collision Detection: If traffic control option is equipped, while this input is on the bagger will not allow a package to leave the machine via conveyance.

Filler OK: When selected, the input must remain on while the Filler is active and ready. The bagger will fault if this input turns off.

Filler Trigger: This is a signal to the bagger which says that product has been delivered and that the bagger should initiate its cycle.

Heartbeat: Set and reset by the bagger and external system to verify that communication is working.

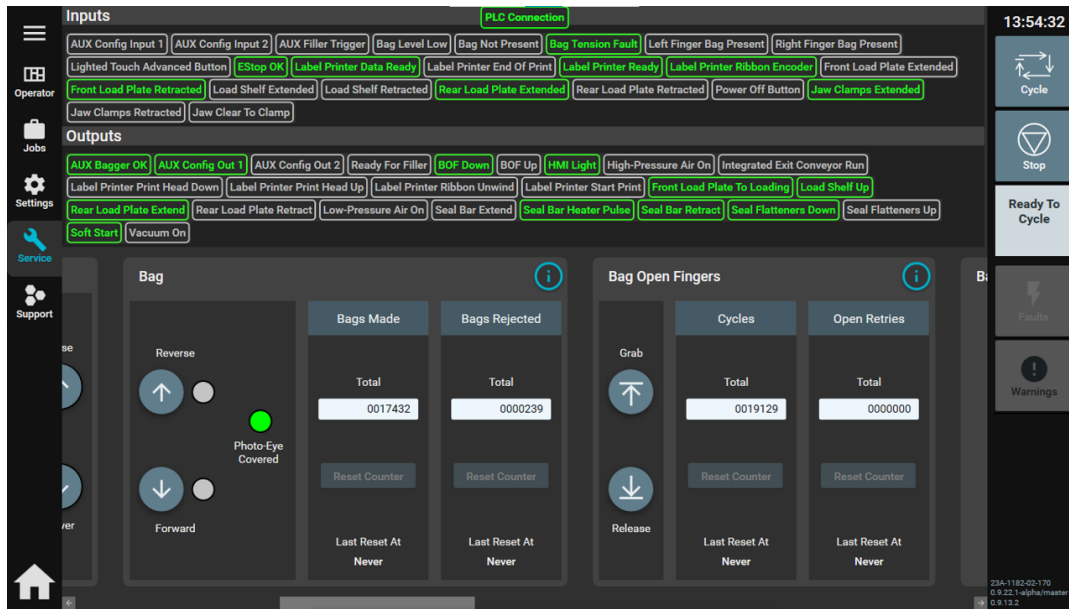
Reverse Conveyor: On baggers equipped with the reversible conveyor option, turning this input on will reverse the motion of the integrated exit conveyor while active.

Bagger Head

Raise: Pressing button will raise the head of bagger.

Lower: Pressing button will lower the head of bagger.

Service Screen - Bag & Bag Open Fingers



Bag

Reverse: Pressing Reverse button will reverse the web as long as button is pressed.

Forward: Pressing Forward button will advance the web as long as button is pressed.

Photo-Eye Covered: Green light indicates the Photo-eye detects bag.

Bags Made

Total: Displays the total number of completed bags since last reset.

Reset Counters: Pressing Reset will clear the Total Bags Made.

Bags Rejected

Total: The total number of bags that have been rejected since last reset.

Reset Counters: Pressing Reset will clear the Bags Rejected totals.

Fingers

Grab: Activates the Bag Open Fingers. Fingers will Rotate down.

Release: Fingers will Rotate up to release the bag.

Cycles

Total: The total number of cycle the Bag Open Fingers have completed since last reset.

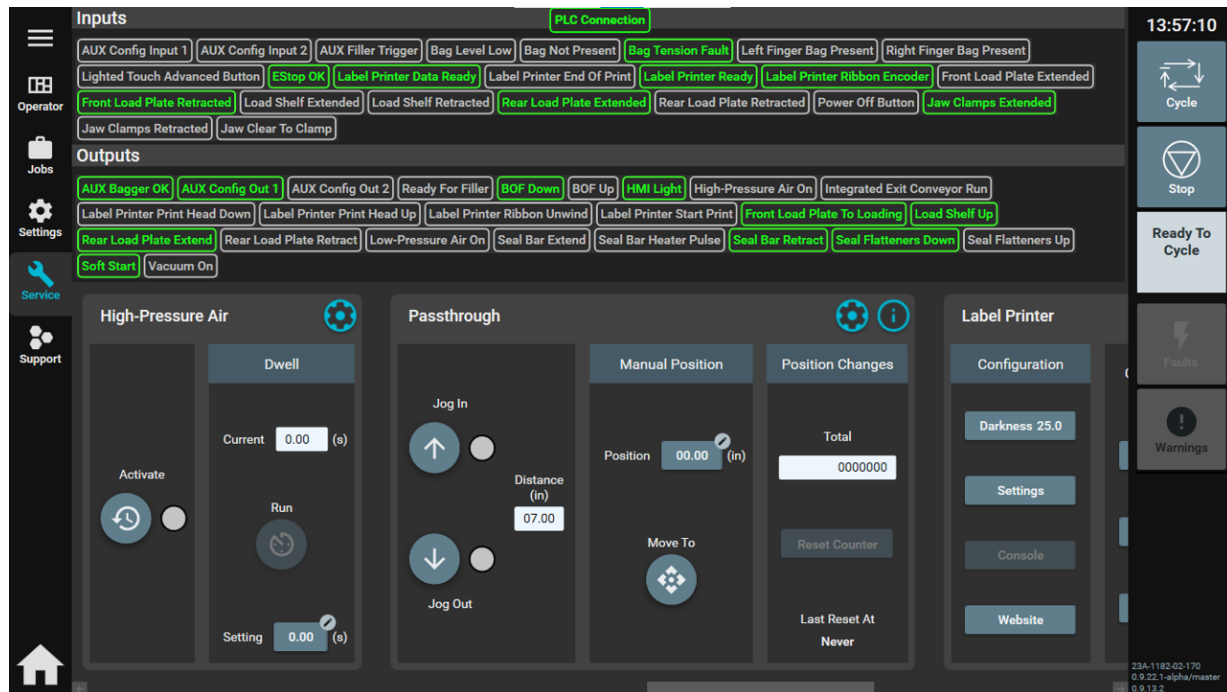
Reset Counters: Pressing Reset will clear the Cycles Count.

Open Retries

Total: The total number of times the Bag Open Fingers have attempted to open fed bag.

Reset Counters: Pressing Reset will clear the Open Retries Count.

Service Screen - High Pressure Air and Passthrough



High Pressure Air

Activate: Turn on the High Pressure Air as long as button is pushed.

Current: The amount of time the High Pressure Air will be ON according to setting in loaded job.

Setting: The actual setting of High Pressure Air blast.

Passthrough

Distance: The current Passthrough location.

Jog IN: Moves Jaw inward as long as button is pushed or until it reaches Face Plate.

Jog OUT: Moves Jaw outward as long as button is pushed or until it reaches end of travel.

Manual Position

Position: The actual position of Jaw.

Move To: Moves Jaw to width set in job settings.

Position Changes

Total: Displays the total number of changes to Passthrough since last reset.

Reset Counters: Resets the total Position changes

Service Screen - Label Printer



Configuration

Darkness: Allows user to change darkness setting.

Settings: Exposes all available printer settings - expert use only!

Console: Expert use only! Console to printer to type in JSON and SGD commands manually.

Website: Minimizes HMI and opens browser to local Zebra printer website.

Online: When lit, printer is on and ready for label.

About: Pop-up window with Serial Number, Model Number, Firmware Version, Uptime, DPI, Print Speed, Printhead Odometer and Printer Odometer is displayed.

Pause: The Pause key temporarily suspends printing. Pressing the key again will return the printer to normal operation.

Reset: Resets internal printer faults (e.g. Print Head errors)

Print Head

Raise: Press to raise Printhead.

Lower: Lowers the Printhead against film.

Labels

Total in Queue: The number of labels loaded into printer.

Clear Queue: Clears the Queue of loaded labels.

Send Test: Sends one Test Label to printer for a test print.

Send File: Opens a Select Label File Dialog Box. User can navigate to stored labels on computer to load into Job.

Cycles

Total: Displays total cycles of printer since last reset.

Reset Counter: Resets Total Counter.

Service Screen - Pressure Bar



Move IN: Pressing this button will retract or close the Pressure Bar. Pressure Bar will remain closed until Move OUT is pushed.

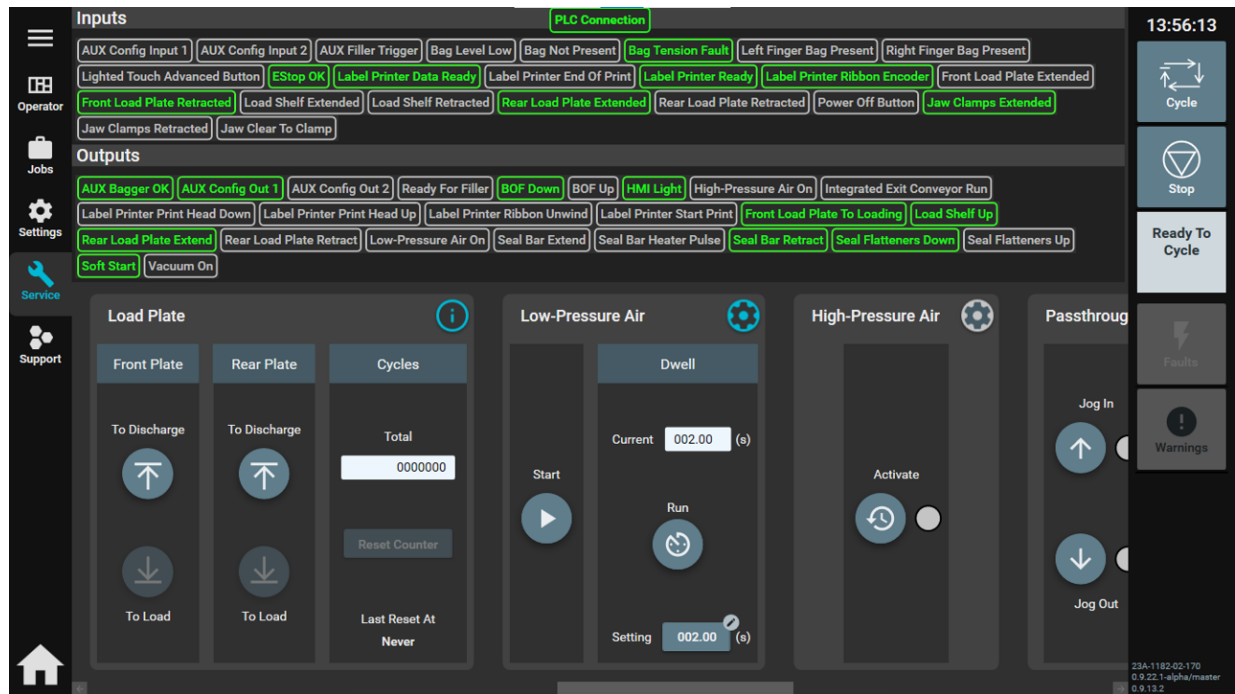
Move OUT: Pressing this button will extend or open the Pressure Bar.

Cycles

Total: Total number of Cycles the Pressure Jaw has completed since last reset.

Reset Counter: Resets the Total Cycles Counter.

Service Screen - Load Plate and Low Pressure Air



Load Plate

Front Plate

To Discharge: Moves the Front Plate to the 'Discharge' position.

To Load: Moves the Front Plate to the 'Load' Position.

Rear Plate

To Discharge: Moves the Rear Plate to the 'Discharge' position.

To Load: Moves the Rear Plate to the 'Load' Position.

Cycles

Total: Displays the total number of complete Load Plate cycles since last reset.

Reset Counter: Reset the Cycle Total Counter.

Low Pressure Air

Start: Pressing this button turns Low Pressure Air ON. Press again to turn OFF.

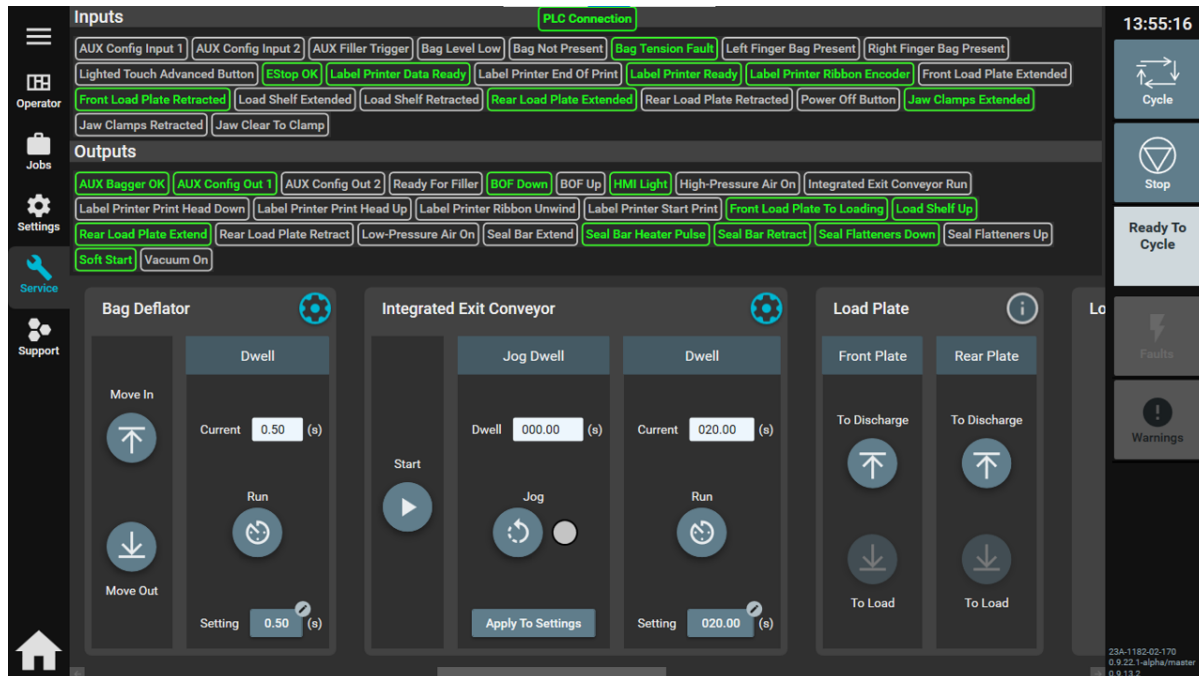
Dwell: The amount of time the Low Pressure Air will be ON according to setting in loaded job.

Current: The actual setting of Low Pressure Air blast.

Run: Turns on Low Pressure Air Blast. Press again to turn blast OFF.

Setting: The actual setting of High Pressure Air blast.

Service Screen - Integrated Exit Conveyor



Start: Pressing this button will turn the Conveyor ON. Press button again to stop.

Jog Dwell

Dwell: Time that conveyor will run when Jog button is pushed.

Jog: Press to run exit conveyor until released.

Apply To Settings: Time that jog was pressed can be set to job dwell setting. Job saves automatically, but is not loaded.

Dwell

Current: Press to run conveyor at job setting.

Pulse Sec: Press to run conveyor at job setting.

Setting: Time for conveyor to run when Pulse Sec. is pushed. Changing this setting will save to job, but not load the job.

Service Screen - Seal Bar



Move IN: Pressing button will retract Seal Bar.

Move OUT: Pressing button will extend Seal Bar. Seal Bar will remain out until Move IN button is pressed.

Dwell

Current: Displays the length of time Seal Bar is active.

Run: Cycles the Seal Bar. There must be a time set in Job Settings, Current or Seal Bar will not move.

Setting: Displays the time the Seal Bar will seal film.

Temperature

Current: The current temperature of Seal Bar.

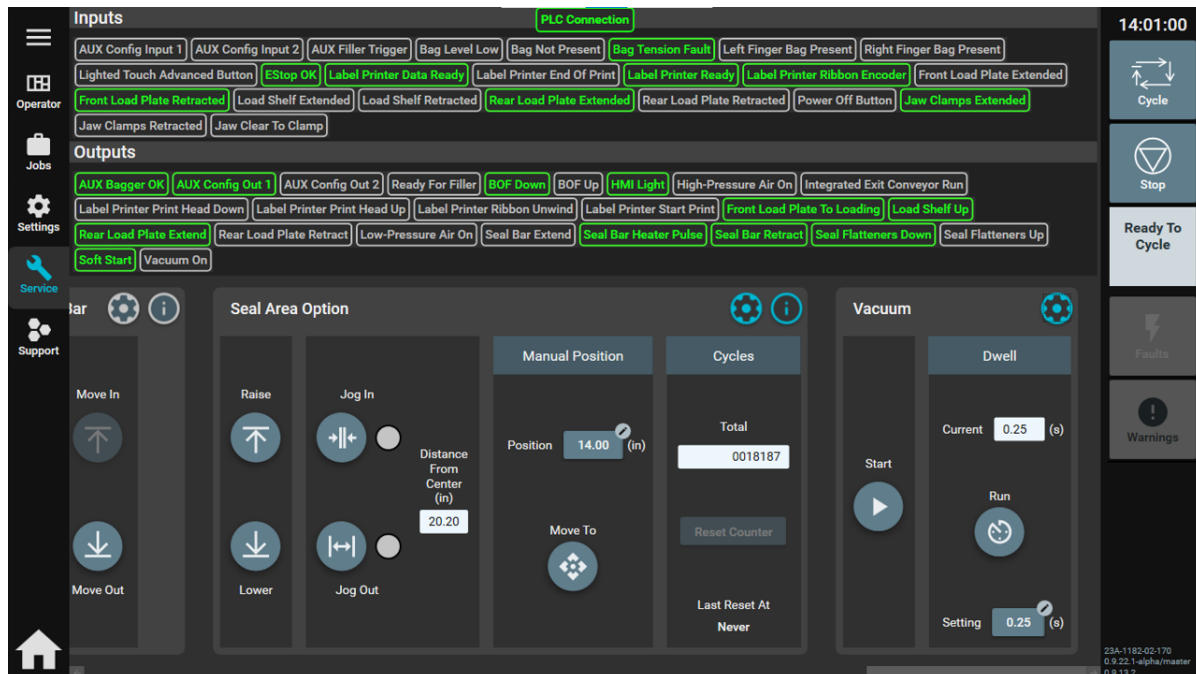
Setting: The temperature setting of Seal Bar in Job Settings.

Seal Bar Cycles

Total: Number of completed Seal Bar Cycles since last reset.

Reset Counter: Resets the Seal Bar Cycles Counter.

Service Screen - Seal Area Option



Raise: Pressing button raises the Seal Flattener Fingers.

Lower: Pressing button lowers the Seal Flattener Fingers.

Jog IN: Moves fingers IN as long as button is pressed or until fingers reach center.

Jog OUT: Moves fingers OUT as long as button is pressed or until fingers are completely out.

Distance From Center: The distance that fingers are from the center of sealing area.

Manual Position

Current: This setting determines the IN setting for the fingers.

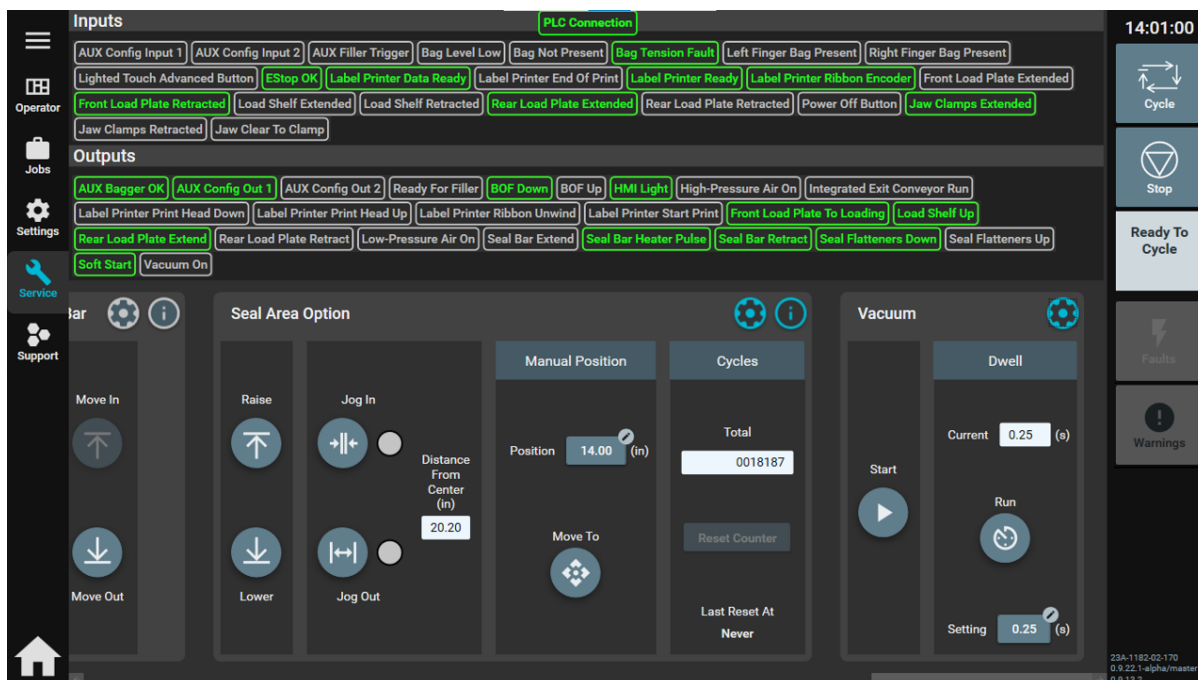
Move To In.: This button moves the fingers to the Current Setting. If Current Setting is zero, fingers will move to center of sealing area.

Cycles

Totals: The number of completed Seal Flattener Cycles since the last reset.

Reset Counter: Resets the total cycles counter.

Service Screen - Vacuum



Start: Turns on Vacuum. Vacuum will stay on until button is pressed again.

Dwell

Current: The actual setting of the Vacuum ON.

Pulse Sec.: Pressing the button will turn Vacuum ON for length of Dwell Setting.

Setting: The actual length of Vacuum on when button is pushed.

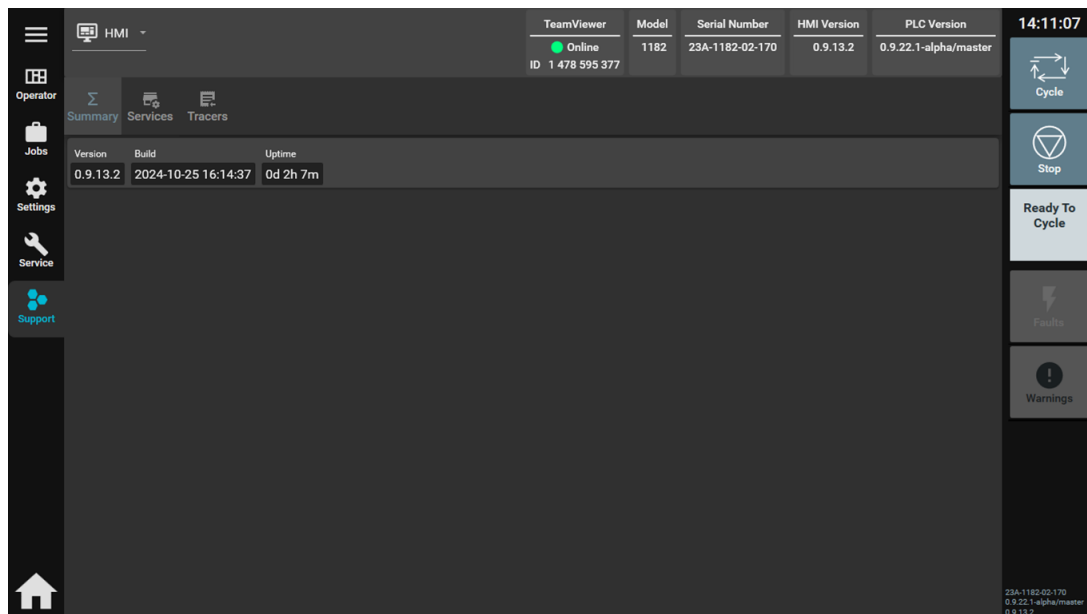
Support Screen

Support Contact Provides the contact information for Service and Parts. Also provides mailing address.



Software Versions Displays current Software.

Upgrade From File: Allows for mapping to saved HMI program file used to upgrade program.



Set-Up & Operation

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

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

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.

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 ac-

cordance 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.

Machine Placement

Your **MaxPro Series 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 Series 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 Series bagger** should be placed in a dedicated space for operation on a smooth level surface with access to 100 PSI of clean, dry compressed air, and 110 VAC, 50/60 Hz, 15 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 47).

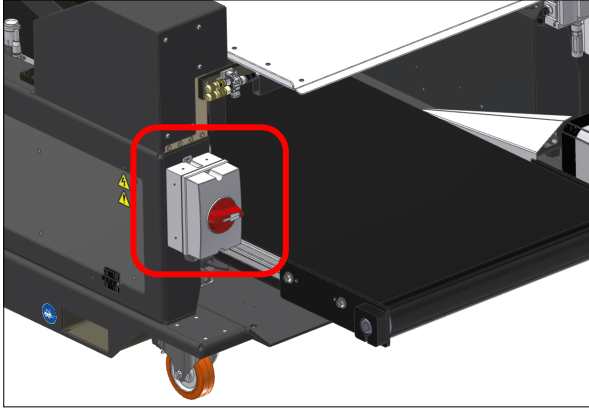
The unit is equipped with two swivel locking casters for easy maneuverability. Lock the casters after placing machine in desired location.

Power Connection

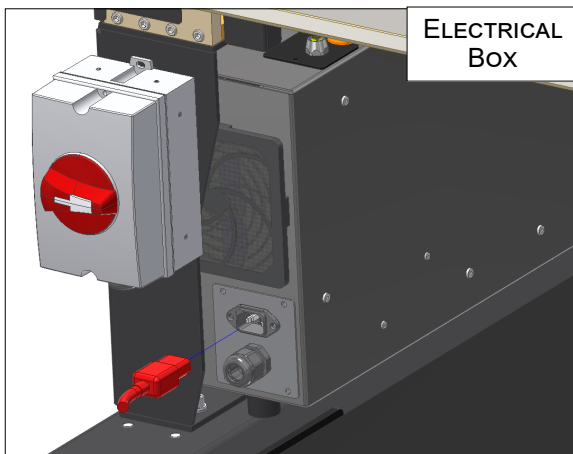
The **MaxPro Series bagger** is equipped with a 3-prong electrical cord for standard, properly grounded, 115 VAC, 50/60 Hz, 10 Amp (minimum) service.

The **MaxPro Series bagger** requires two power cords. One is for the bagger and the other is for the Printer.

1. Before plugging the cord into the back of the machine, ensure that Main Power Switch is in the OFF position.

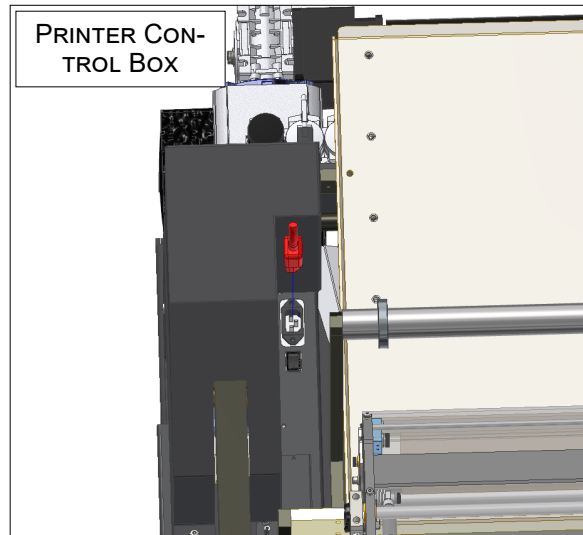


2. Plug Male End of Power Cord into properly grounded wall outlet or electrical drop.
3. Insert Female End of Power Cord into the Power Entry Module on back of Electrical Box. The box is in the Frame Assembly.
4. Turn the switch on the Power Entry Module to ON position.



5. Plug the Male End of second Power Cord into a properly grounded wall outlet or electrical drop.

6. Insert the Female end into Power Entry Module on top of the Printer Control Box. The box is in the Frame Assembly, opposite the Electrical Box.
7. Turn the switch to the ON position.

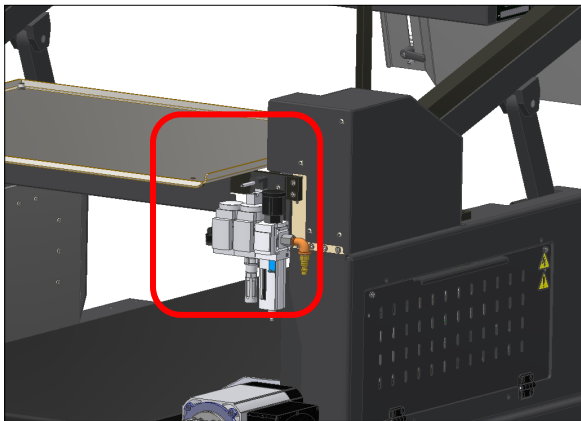


Air Supply

The **MaxPro Series bagger** has a filter/regulator equipped with a male end 1/4" nominal flow NPT air quick disconnect plug. 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.

1. Connect Air Hose to Regulator.

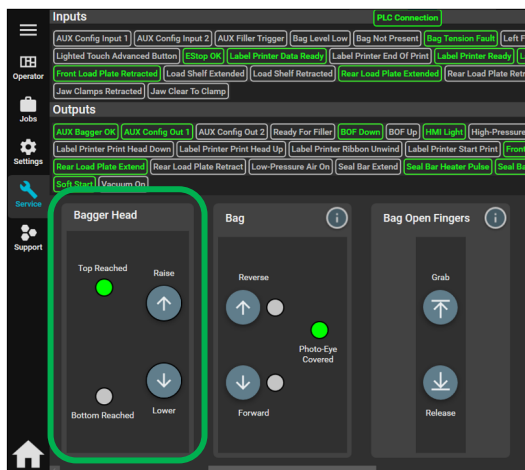


2. Unlock Cap on Regulator
3. Adjust to 80 PSI.
4. Lock Cap on Regulator.

Height Adjustment

Machine height can be adjusted to allow manual loading at a convenient height.

1. Navigate to Service Screen.
2. Locate the 'Bagger Head' window.



3. Adjust height to desired position. Head will remain level.

Head Rotation

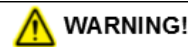
Rotating the Head Assembly allows for easier access the bottom of bagger.



Always remove air and electrical power from the MAX Pro 18™ prior to performing any service on the machine.



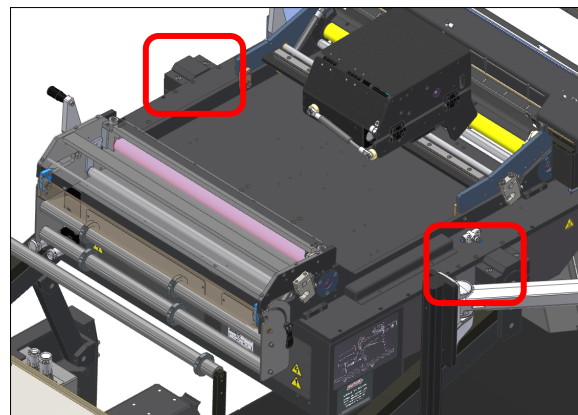
Never make adjustments while machine is ON or operating as this may cause damage to the machine and could result in severe bodily injury or even death.



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.

NOTE: Make sure the cables and hoses are not binding and are free from obstructions when Head Assembly is being rotated.

1. Loosen the Rotating Clamp Screws.

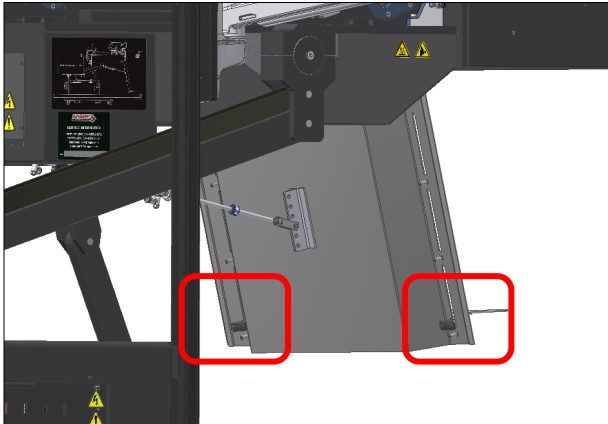


2. Pivot the machine to the desired angle.
3. Tighten the Rotating Clamp Screws.

LOAD SHELF

The Load Shelf can be moved up or down to accommodate different sized bags.

1. Loosen the Locking Handles on back of Load Plate.

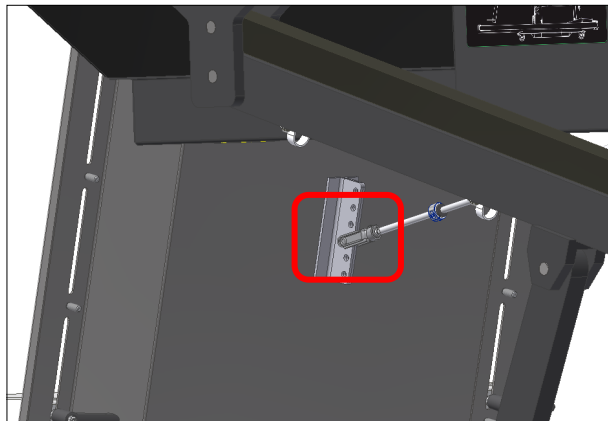


2. Move Load Shelf to desired location.
3. Tighten the Locking Handles.

LOAD PLATE

The Load Plate angle can be changed to provide better support of bag.

1. Remove the Ring Pin from back of Load Plate, move plate to desired location and replace pin.



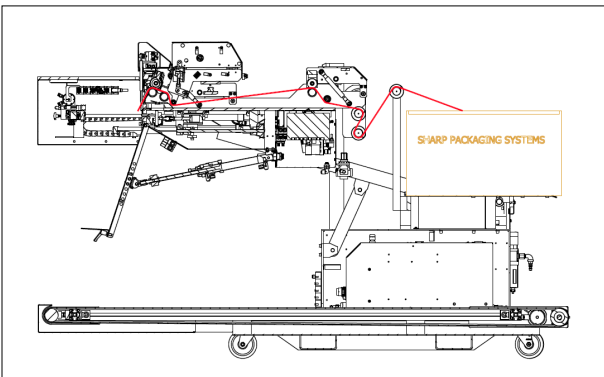
Loading Bag Film

A decal showing the film threading path through the machine is located on the Frame Cover.



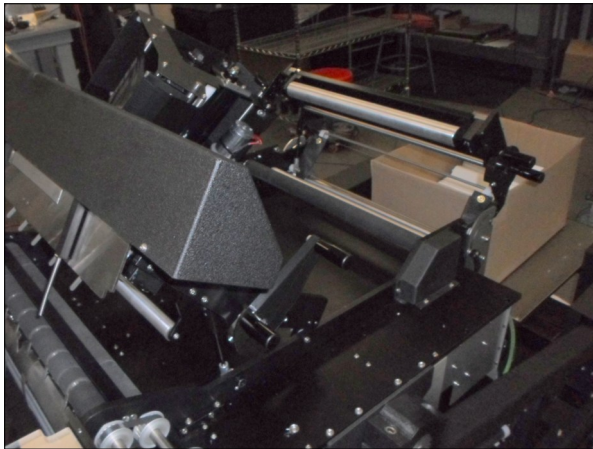
WARNING!

Use extreme caution when feeding bags into machine; electrical voltage and possible pinch points are present.

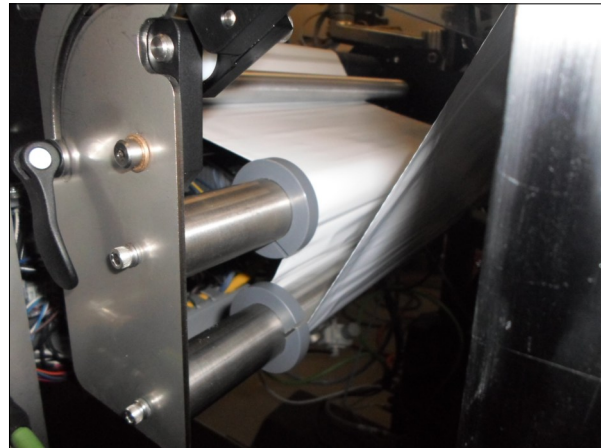


Note: Center the bags to the Drive Roller. Place box of bags behind the bagger so the perforation of the first bag opens toward you when standing behind box.

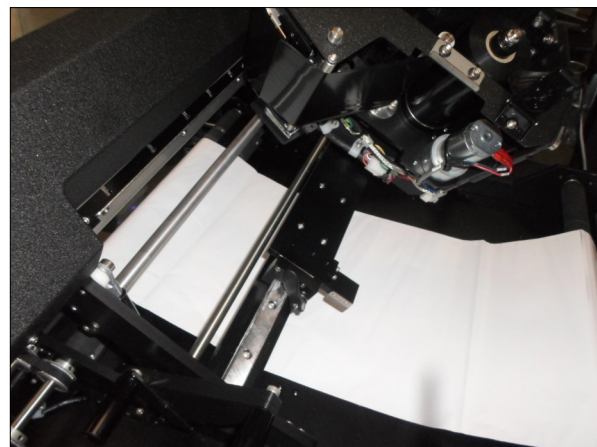
1. Raise the Cradle, Printhead Cradle, and Unwind Cradle by rotating the Latches and open the Cradles.

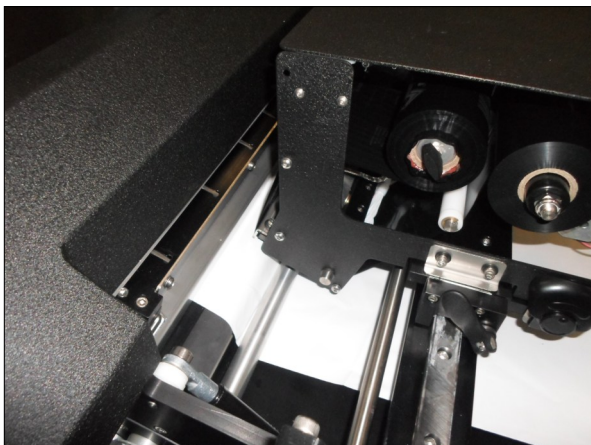


2. While standing at the right side of the machine, feed film over Drag Tube of Box Tray.
3. Then under-over Unwind Drag Tubes, then under Idler Roller, finally over the Unwind Drive Roller. Close Unwind Cradle Latch. Position Weight Straps over Box Tray Drag Tube.



4. Pull the film Under the Printer Carriage until edge drapes over the Platen and Drive Rollers and down past the Front Finger Plate.



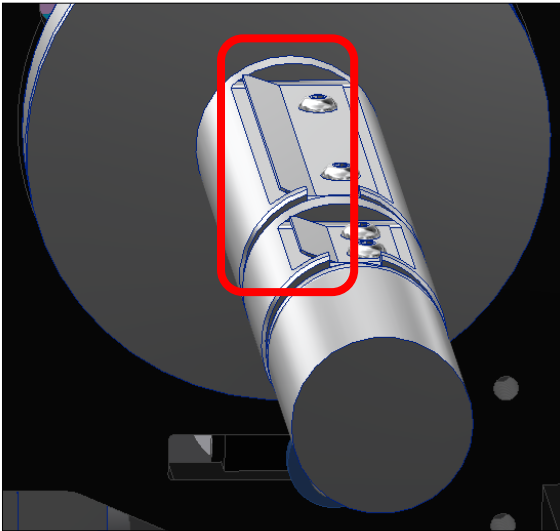


5. Lower and lock the Drive Roller Cradle Latch.

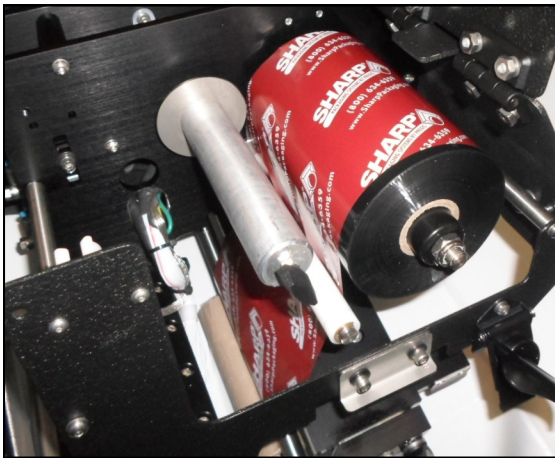
Loading Ribbon

A decal showing the ribbon threading path is located on the inside of Carriage Cover.

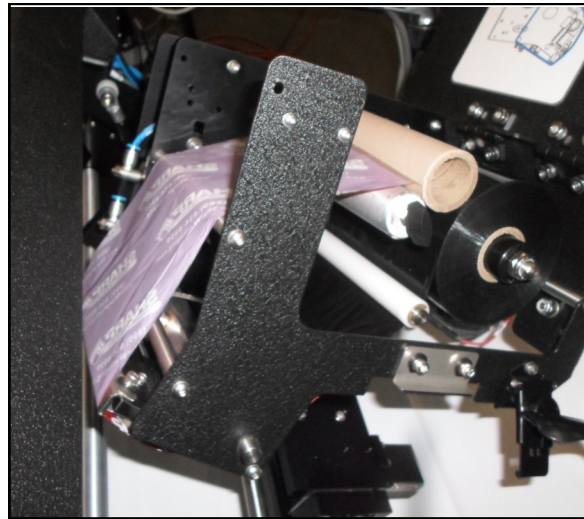
1. Raise the Carriage Cradle and Open Carriage Cover.
2. Slide empty spool and used ribbon off of hubs.
3. Align the Inner Ribbon Blades on Spindle.



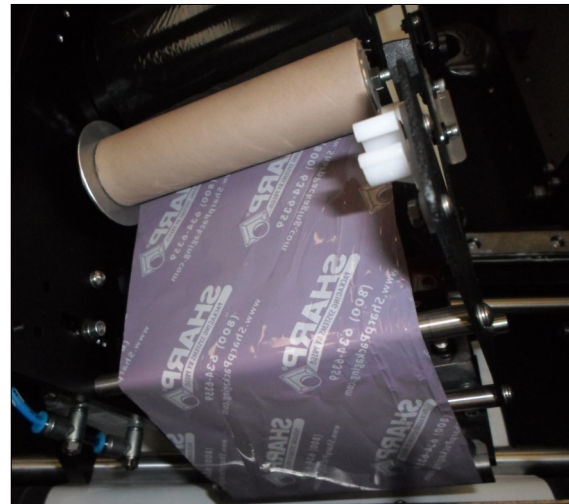
4. Place a new roll of ribbon onto the Ribbon Unwind Hub.



5. Thread the ribbon under Ribbon Roller Sleeve, under Return Ribbon Shaft, around Printhead, then up and over Ribbon Return Shaft to Ribbon Rewind Hub.



6. Place empty cardboard roll onto Ribbon Rewind Hub.
7. Turn knob on Take-Up Spool counter-clockwise to ensure ribbon is tight.



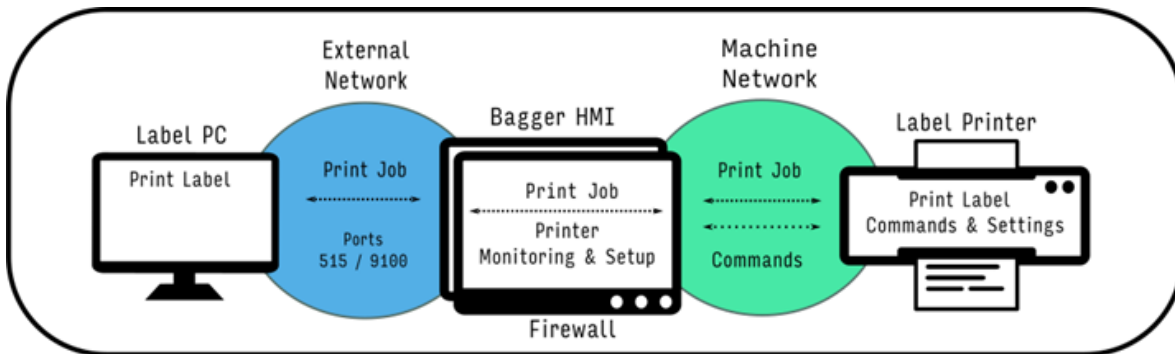
8. Close the Printhead Cradle Cover.
9. Lower and lock the Carriage Cradle.

Bagger & Printer IP Setup

Overview

The printer and bagger share the same IP. Bagger uses TCP/IP Port Forwarding to send network communication on port 515 (LPD/LPR) or 9100 (PDL/PLC) from the bagger's HMI external network interface to the printer located on the bagger's internal network.

The bagger's firewall is used to protect the label printer network communication. Bagger components must communicate with the printer via TCP/IP for sending commands, job settings, and monitoring reliability. This helps limit the possibility of down time from mis-aligned configuration.

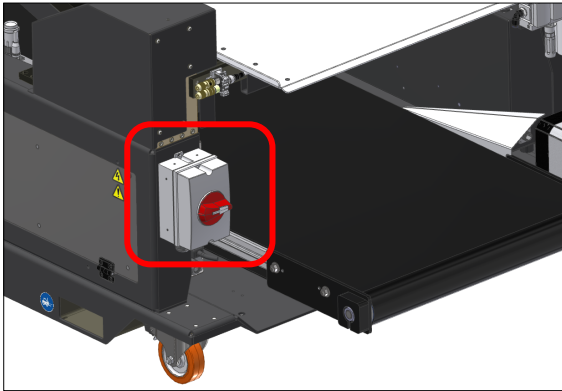


Operation

Before attempting to operate the machine, read all information under [Equipment Safety Features](#), page 9 and [Controls](#), page 17.

Load film material as illustrated in Web Threading Diagram on machine. See [Loading Bag Film](#), page 49.

1. Make sure machine is plugged into the properly grounded outlet. See [Power Connection](#), page 46. and connected to clean dry air regulated to 80 psi. See [Air Pressure Regulator Adjustment](#), page 47.
2. Release the E-Stop Button on bagger. Release E-Stop Buttons on any connected conveyors, if applicable.
3. Turn Main Power Switch to ON position.

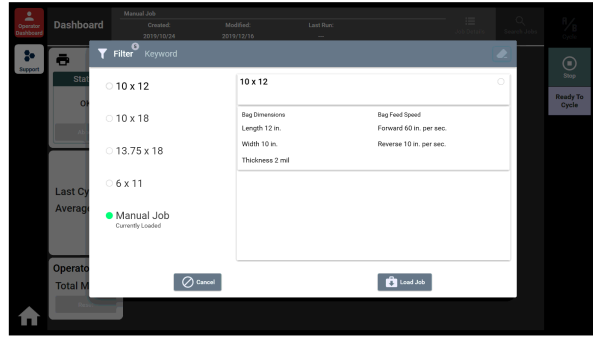


4. Components on the Un-switched circuit will turn ON.
5. The PC will start to boot automatically. The HMI program will auto-load.
6. Push the green Power Pushbutton, this will turn on the entire bagger.

NOTE: The machine will display several faults and warnings when HMI program and Power Button have been pressed.

7. Press the Enable Bagger Button. This will establish communication and clear faults of Home Pressure Bar, Seal Flattener and Bag Feed.
8. The 'Seal Bar Not At Temperature' warning will remain until Seal Bar reaches loaded job temperature setting.
9. Press the 'Operator' button to open Operator Screen.
10. Press the 'Job Search' and select job to be loaded.

11. Press Load Job.



12. Press Dual Palm Buttons or press Cycle on HMI Screen to feed bag.
13. Load product into bag.
14. Press Dual Palm Buttons or press Cycle on HMI Screen to seal bag and feed next one out.

NOTE: When HMI program is closed and Main Power Switch is turned OFF, the bagger cannot be turned back on until the UPS (Uninterruptible Power Supply) has cleared. This may take several minutes. This is completed when the red indicator light on HMI turns off.

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

Cleaning

General Cleaning Guidelines

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 electrical power cord AND air supply from the machine prior to performing any maintenance on machine. Unexpected machine startup can cause serious injury.



WARNING

Do not spray the electrical components of the machine with any liquid at any time. Liquids on electrical components can cause shorts, damaging the components and causing personal injury or death.



WARNING

Avoid hot surfaces. Do not service the machine until the heated surfaces have cooled after disconnecting power. Allow a minimum of one hour for the unit to cool down after electrical power has been disconnected.



WARNING

Do not attempt to clean the machine while it is running. Cleaning the machine while it is running can damage the machine and cause severe personal injury or death.

- 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 surfaces. 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 Application

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. Preigs 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 Pregis Operator Manual before removing any guards or servicing the machine.

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

Cleaning / Maintenance Intervals

Daily Cleaning / Maintenance

- Inspect the Bag Edge Present Sensor. Clean as needed. See [Bag Edge Present Sensor Cleaning Procedure](#), page 57.
- Inspect the Teflon® Tape on the Obstruction Sensing Jaw. Tape should be free from residue of film or ribbon. Replace as needed.
- Inspect all air lines and electrical wires for any sign of damage. Replace worn or damaged lines or wires.
- Clean Print & Apply Tamp Head
- Clean Web Tension and Film Feed rollers

Weekly Cleaning / Maintenance

- Inspect the rubber Drive and Platen Rollers. Clean as needed. See [Drive and Platen Rollers Cleaning Procedure](#), page 58.
- Verify the Driver Roller Assembly moves freely with power removed.
- Inspect the aluminum Pinch Roller. Clean as needed. See [Pinch Roller Cleaning Procedure](#), page 58.
- Verify the Pinch Roller spins freely when latch is opened.
- Inspect the Seal Bar. Clean as needed. See [Seal Bar Cleaning Procedure](#), page 59.
- Inspect the rubber Unwind Drive Roller. Clean as needed. See [Unwind Drive Roller Cleaning Procedure](#), page 60.
- Verify the Unwind Driver Roller Assembly moves freely with power removed.
- Inspect the Unwind Pinch Roller. Clean as needed. See [Unwind Pinch Roller Cleaning Procedure](#), page 60.
- Verify the Pinch Roller spins freely when latch is opened.
- Inspect, Clean, Repair Seal Flattener Assembly
 - * Seal Flattener Fingers to be re-

moved and cleaned

- * Seal Flattener Finger block bushings to be cleaned (cotton swab or equivalent)
- * Drylin Rail to be cleaned along with carriage blocks
- * Drylin Rail mounting should be inspected for free movement, loose hardware tightened
- * Entire Assembly to be cleaned and free of dust, dirt, debris
- Pressure Bar Inspected for damaged or worn items, replace as needed
 - * Finger rubbers
 - * Vacuum assist suction cups
 - * Pressure bar rubber and Teflon tape
 - * Jaw rubber on face plate
- Print & Apply brass roller cleaned
- Inspect conveyor for excessive wear damage
 - * Conveyor drive to be operating smoothing without excessive vibration or noise
- Pressure Bar and IBD guide shafts inspected for wear.
- Inspect all external Airlines, Cables, Wires for damage and/or loose connections
- All Daily Tasks

Monthly Cleaning / 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.
- Inspect Sealing Head
 - * Rotate Sealing head, covers removed
 - * Inspect all belts, locking cylinder, Hiwin rail, bearing blocks
 - * Inspect movement of seal bar

- * Inspect Pressure Bar locking assemblies
 - ◇ Shoulder bolts secure and present
 - ◇ Spring return assist secure and present
 - ◇ Free movement of shoulder bolts through bushings
- * Inspect all wires, cables, air lines.
 - ◇ Check for wear and/or damage
 - ◇ Ensure lines are not interfering with moving components
 - ◇ Inspect pulleys for loose set screws (unintended rotation on shaft)
- Inspect Load Plate/Load Shelf
 - * Damaged fittings replaced
 - * Movement of cylinder
 - * Bearings/Bushings are present and working properly
 - * Locking handles present, functioning, appropriate washers in use.
- All Weekly tasks
- All Daily Tasks

Bi-Monthly Cleaning / Maintenance

- All Bearing Blocks inspected and greased with white lithium grease
 - * Pressure Bar bearing blocks
 - * Independent Bag Deflator bearing blocks
 - * Seal Flattener bearing blocks
- All Monthly Tasks
- All Weekly Tasks
- All Daily Tasks

Annual Cleaning / Maintenance

- All of Daily, Weekly, Monthly, Bi-Monthly and Annual Maintenance.
- Inspect entire machine for loose hardware.

Bag Edge Present Sensor

1. Remove Power from bagger.



WARNING

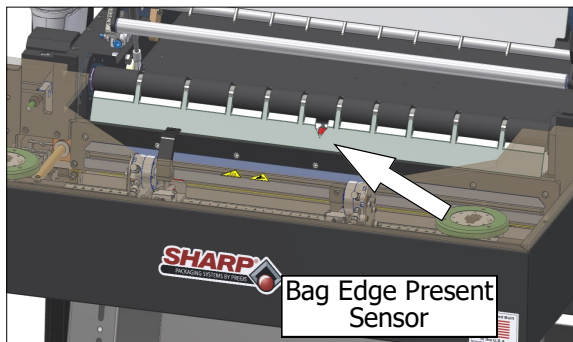
DO NOT ATTEMPT TO CLEAN THE MACHINE WHILE IT IS RUNNING. CLEANING THE MACHINE WHILE IT IS RUNNING CAN DAMAGE THE MACHINE AND CAUSE SEVERE PERSONAL INJURY OR DEATH.



WARNING!

FOLLOW INDUSTRY STANDARDS FOR THE HANDLING AND USE OF CHEMICALS. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

2. Clean with a cotton swab if dirty. Do not use any solvents or cleaning solutions on the sensing portions of eye.



Printhead



WARNING

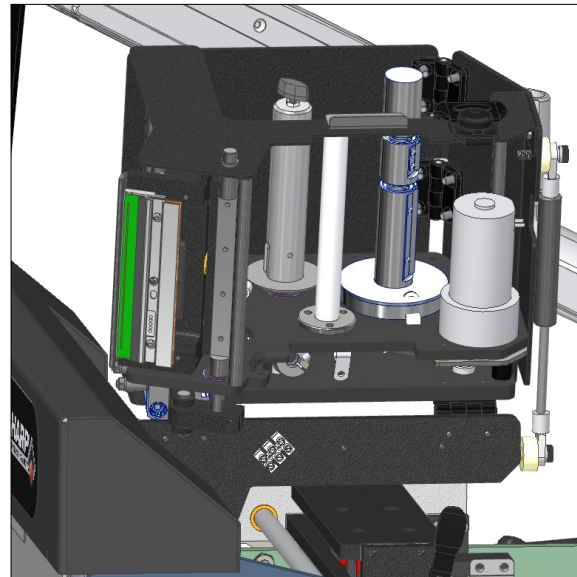
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WARNING!

FOLLOW INDUSTRY STANDARDS FOR THE HANDLING AND USE OF CHEMICALS. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

1. Turn the Printer Control Box OFF.
2. Open the Printer Carriage by releasing the Draw Latch on side of Printer Carriage.
3. Clean the Printhead thoroughly using a soft, lint-free cloth and 99.7% isopropyl alcohol.



4. Allow the solvent to evaporate.
5. Return power.

Drive & Platen Rollers

Regular cleaning of the Drive & Platen Rollers will keep the **MaxPro Series bagger** running at optimum performance.



WARNING

DISCONNECT ELECTRICAL POWER CORD AND AIR SUPPLY FROM THE MACHINE PRIOR TO PERFORMING ANY MAINTENANCE ON MACHINE. UNEXPECTED MACHINE STARTUP CAN CAUSE SERIOUS INJURY.



WARNING

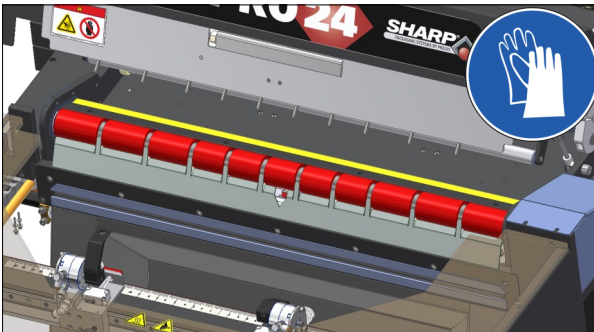
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WARNING!

FOLLOW INDUSTRY STANDARDS FOR THE HANDLING AND USE OF CHEMICALS. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

1. Remove power and air from bagger.
2. Release the Cradle Latch.
3. Wear PPE - Heat Resistant Gloves.
4. Moisten a lint-free cloth with Isopropyl Alcohol and rub back and forth along Drive Roller (Shown in red).



5. Rotate roller and repeat until roller is clean.
6. Repeat for Platen Roller (Shown in yellow).
7. When rollers are clean, close the Cradle Latch.
8. Return power and air to bagger.

Pinch Roller

After Cleaning the Drive Roller, clean the Pinch Roller in the Cradle Latch Assembly.

1. Open the Cradle Latch.
2. Pinch Roller (Shown in green) is behind Front Air Knife Cover but can be accessed from below cover when Cradle is opened.



3. Moisten a lint-free cloth with Isopropyl Alcohol and rub back and forth on the Pinch Roller.
4. Rotate roller and repeat until roller is clean.
5. When roller is clean, close the Cradle Latch.

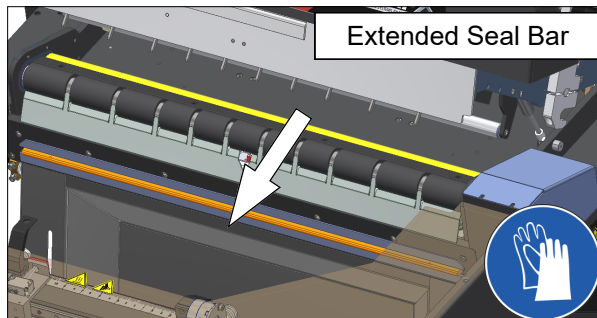
Seal Bar

The Seal Bar needs to be extended to complete this procedure. In order to do this, the machine needs power and air. This will cause the Seal Bar to heat up.

- **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.**

 CAUTION!
USE EXTREME CAUTION WHILE SERVICING THE MACHINE WHILE THE POWER IS APPLIED. UNEXPECTED MACHINE STARTUP CAN CAUSE SERIOUS INJURY!
 WARNING!
NEVER USE ANY METALLIC MATERIALS ON COATED SURFACES! THE SEAL BAR HAS A COATED SURFACE WHICH CAN ONLY BE CLEANED USING APPROVED MATERIALS.

1. Power up the machine according and apply air to regulator.
2. Release the E-Stop Button and press the Green Power Button.
3. Allow Seal Bar (Shown in orange) to reach set temperature.
4. Access the Service Screen from the Main Screen. The Service Screen is passcode protected. See Supervisor to gain access.
5. Press the Extend Seal Bar Button to change the state of the Seal Bar.



6. Wear PPE - Heat Resistant Gloves.
7. NEVER use any metallic utensils on the surface of Seal Bar. Use the Cleaning Wand (Sharp P/N 704173-01) to remove any residue accumulated on the Seal Bar.

8. Press the Seal Bar Retracted Button to retract the Seal Bar.
9. Return to Main Menu.

Unwind Drive Roller

Regular cleaning of the Unwind Drive & Pinch Rollers will keep the **MaxPro Series bagger** running at optimum performance.



WARNING

DISCONNECT ELECTRICAL POWER CORD AND AIR SUPPLY FROM THE MACHINE PRIOR TO PERFORMING ANY MAINTENANCE ON MACHINE. UNEXPECTED MACHINE STARTUP CAN CAUSE SERIOUS INJURY.



WARNING

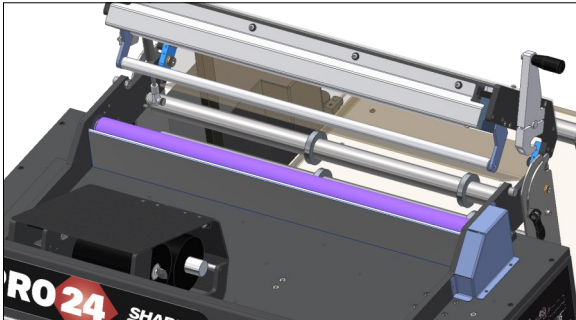
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WARNING!

FOLLOW INDUSTRY STANDARDS FOR THE HANDLING AND USE OF CHEMICALS. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

1. Remove power and air from bagger.
2. Release the Unwind Cradle Latch.
3. Moisten a lint-free cloth with Isopropyl Alcohol and rub back and forth along Unwind Drive Roller (Shown in purple).

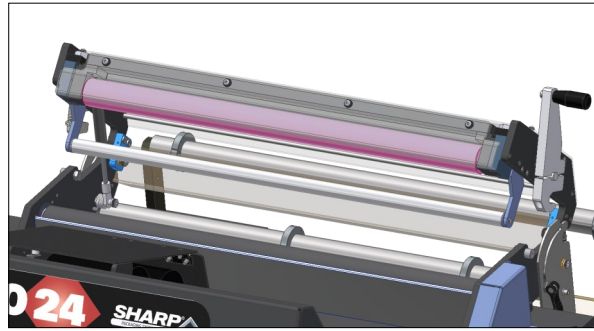


4. Rotate roller and repeat until roller is clean.

Pinch Roller

After Cleaning the Unwind Drive Roller, clean the Unwind Pinch Roller in the Latch Assembly.

1. Open the Cradle Latch.
2. Moisten a lint-free cloth with Isopropyl Alcohol and rub back and forth on the Pinch Roller (Shown in pink).



3. Rotate roller and repeat until roller is clean.
4. When roller is clean, close the Cradle Latch.
5. Return Power to machine.

Fault & Alert Management

Bagger Faults

Faults are defined as an error condition that will stop the bagger and prevent subsequent cycles from occurring as long as the fault persists. All faults must be cleared before resetting bagger.

Fault	Cause	Possible Solution (S)
Pressure Bar Obstruction	The Pressure Bar attempted to close, but was blocked by an obstruction.	This is usually a part that did not drop past the Pressure Bar. Increase the Filler Drop Timer setting.
Reverse Fault	The bag film did not separate during reversing.	Check bag length in job
No Bag Covering The Eye	There is no film in the machine or the film is not being detected by the Bag Edge Photo-Eye.	Press the Job Button once and the bagger will jog the web for 10 seconds until the Photo-Eye is covered by film.
Pressure Bar Failed to Open	The commanded motion did not complete before the fault time expired.	See Cylinder Motion Fault.
Pressure Bar Failed to Close	The commanded motion did not complete before the fault time expired.	See Cylinder Motion Fault.
Seal Bar Temperature Sensor Failure	Seal Bar temperature sensor is reporting as missing or broken wire	A qualified service person should test the Thermocouple and its associated circuits.
Safe Power Off	E-Stop Button was pressed or E-Stop is released but the Green Power Button has not been pressed.	Release the E-Stop, press the Green Power Button, and the Bagger Enabled button.
E-Stop tripped or Power not Reset	E-Stop Button was pressed or E-Stop is released but the Green Power Button has not been pressed.	Release the E-Stop, press the Green Power Button, and the Bagger Enabled button.
Seal Bar Thermal Runaway - Not Heating	Seal Bar not heating up at all, or not as quickly as expected.	A qualified service person should test the Thermocouple and its associated circuits.
Seal Bar Thermal Runaway - Overshoot	Seal Bar not cooling as quickly as expected, or temperature is much higher than expected	A qualified service person should test the Thermocouple and its associated circuits.
Out Of Bags	The bagger detected that the web is broken or the bagger is out of bags.	Splice the broken web or replace the empty roll/box.
Opened Bag Was Removed	A bag was opened and verified as open by the Bag Open Sensor. The opened bag was physically removed or came off the Bag Opened Sensor before the Filler could finish delivering its product.	Check that the Funnel door is pinning the opened bag to the Pressure Bar. Verify that the bag is properly supported by the Load Shelf as it is being filled. It may be that as the bag is being filled, it shifts or slips off the shelf and pulls the bag away from the Funnel.

Fault	Cause	Possible Solution (S)
Bag Failed To Open	The Bag Opened Sensor failed to make as the Bag Open Fingers were attempting to open the bag.	This fault is usually the result of a problem with the Pressure Bar Passthrough Adjustment or Bag Open Fingers Adjustment. Also check that the Sensor operates correctly.
Communication Fail - I/O Master to Controller	Communications between Controller and I/O master have been interrupted.	Verify cables are connected and tightened properly.
Communication Fail - I/O Master to I/O Node	Communications between I/O Master and expected I/O node have been interrupted	Verify cables are connected and tightened properly.
Master I/O Communication Failure		
Controller Disconnected	The controller is disconnected.	Connect the controller.
Palm Button Configuration Error	Machine is configured for a single palm button, but second palm button seen active.	Select Dual Palm Buttons in the Factory Setup\Cycle Button.
Package Eject Guard Removed	Package Eject Sensor failed to read guard.	1. Mount the Package Eject Guard. 2. Adjust Sensor.

Bagger / Printer Warnings

Fault	Cause	Possible Solution (S)
Seal Bar not at Temperature - Bagger inhibited from cycling	Seal Bar is not at the required temperature for sealing.	Bagger will not cycle until required temperature has been reached.
Low Pressure Air Timed Out	Low Pressure Air Timed Out	No intervention required by operator.
Recovery Mode Active	Attempting to open the bag again.	No action is required.
Recovery Mode Feeding New Bag	The bagger is feeding out a replacement bag. It could not open the original bag.	No action is required.
Bag Is Filled	A bag has been filled and sealed in Filler Mode.	No action is required.
Bag Level Low	Bag are getting low in box.	Prepare to replace bags soon.
Demo Mode Is Active	Bagger's demo mode is active.	Disable demo mode in Settings\Demo to turn off this warning.
Factory Test Mode Is Active	Bagger is running in Test Mode.	Turn Factory Test OFF in Factory Setup\Factory Test.
Machine Not Tested	Bagger life cycle count is not over 1,000 cycles .	Bagger has to run continuously for 1,000 cycles without a fault to clear.
Printer Not Ready	Waiting for printer to begin bagging.	Load label into printer.
Printer Ribbon Low	Printer ribbon is nearly at minimum usage.	Prepare to replace ribbon.
Waiting For Printer	Waiting for the printer to print before finishing the bagging cycle.	Load label into printer.
Printer Ribbon	Ribbon not moving during print	Verify ribbon is installed correctly.

Printer Faults

All printer functions are internally monitored. When a problem (Fault) or a potential problem (Warning) is detected, a corresponding message will appear in the display. Fault messages receive the highest display priority. If more than one fault is detected the display will cycle between messages.

Note : To return to normal operation following a fault, the fault must be corrected and then press the 'Reset' key from Service Screen\Printer must be pressed to clear the condition.

Display Message	Description	Possible Solution (s)
Ribbon Out	In thermal transfer mode: • Ribbon is not loaded • Ribbon is loaded incorrectly • The ribbon sensor is not detecting ribbon.	Load ribbon correctly. See Load Printer Ribbon on page 51.
Head Identification Failed	Printhead is not a Zebra™ Certified Product.	Install a genuine Zebra™ printhead.
Head Element Out	A printhead element is no longer working.	If the location of the failed element affects printing, replace the printhead.
Replace Printhead	The printhead is nearing the end of its life and should be replaced.	Replace the printhead.
Head Maintenance Needed	The printhead needs to be cleaned.	Clean the printhead. See Cleaning the Printhead on page 57.
Head Under Temp / Head Thermistor Fault The printer shows one of these messages or cycles between them.	The printhead Data or Power Cable are not properly connected. The printhead has a faulty Thermistor.	Connect cables. Replace the printhead.
Out of Memory Storing XXX	There is not enough memory to perform the function specified.	Free up some of the printer's memory by adjusting the label format or Printer parameters. One way to free up memory is to adjust the print width to the actual width of the label instead of leaving the print width set to the default. Ensure that the data is not directed to a device that is not installed or is unavailable.

Printer Faults

Barcode Does Not Scan		
Issue	Possible Cause	Possible Solution (s)
The barcode printed on label does not scan.	The barcode is not within specifications because the printer is set at an incorrect darkness level.	1. Print a test label. 2. If necessary, manually adjust the darkness or print speed settings.
	There is not enough blank space around the barcode.	Leave at least 1/8 in. (3.2mm) between the barcode and other printed areas on the label and between the barcode and the edge of the label.
Poor Print Quality		
Issue	Possible Cause	Possible Solution (s)
Smudge marks on labels	The Media or ribbon is not designed for high-speed operation	Replace supplies with those recommended for high-speed operation.
Poor results with thick labels	The print line is not at an optimal position for your media.	Adjust the print line for thick media.
Print Consistently Too Light or Too Dark		
Issue	Possible Cause	Possible Solution (s)
Printing is too light or too dark over the entire label	The Printer is set at an incorrect darkness level.	For optimal print quality, set the darkness to the lowest possible setting for your application.
	Incorrect printhead pressure	Set the printhead pressure to the minimum needed for good print quality.
Printing is too light or too dark on one side of the label	Uneven printhead pressure	Set the printhead pressure to the minimum needed for good print quality.
General print quality issues	The printer is set at an incorrect print speed or darkness level. Keep in mind that the printer settings may be affected by the driver or software being used.	1. Clean the printhead and platen roller. 2. For optimal print quality, set the darkness to the lowest possible setting for your application. 3. Set the printhead pressure to the minimum needed for good print quality.

Printer Troubleshooting

Angled Gray Lines on Blank Labels		
Issue	Possible Cause	Possible Solution (s)
Fine, angular gray lines on blank labels	Wrinkled ribbon	Verify the ribbon is loaded properly, smooth out ribbon
Missing Print		
Issue	Possible Cause	Possible Solution (s)
Long tracks of missing print on several labels	Print element damaged	Call for service
	Wrinkled ribbon	Verify the ribbon is loaded properly, smooth out ribbon

APPENDIX

Terms & Condition

Pregis®

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 Pre-paid, 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.