PROMACH

ORION

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RTA, RTD, HPA, HPD, LPA, LPD
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FLEX

STRETCHWRAPPER MANUAL

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Liability Waiver

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Introduction and Safety Contents

1. Introduction and Safety

Introduction

Thank you for choosing Orion stretch-wrapping equipment. It is a wise choice, which will benefit your company now and in the future.

Orion uses a unique combination of functional, rugged steel structure and sophisticated control systems to offer equipment high in durability and low in maintenance requirements. Our advance control systems mean that Orion equipment can be operated safely and efficiently without the need for special operator expertise.

Please read this manual carefully and keep it handy. Following these simple operating instructions will insure the safe and efficient performance of this machine while simple maintenance procedures will guarantee a long and productive life of the equipment.

Note: This manual covers standard features of the machine. Certain options may not be fully covered due to their unique application. Every effort has been made to ensure document accuracy however, Orion Packaging retains the right to change specifications without notice.

In order to acquire more information about custom made features of your machine and to provide quicker service, the following information is required when making an inquiry:

1. Model: Flex Stretchwrapper
2. Serial Number (See sticker on electrical cabinet)
3. Built in Alexandria Minnesota, USA

About this Manual

Orion is committed to helping you maximize the productivity of your system. This manual is specifically designed for your packaging system, to assist you in the operation and maintenance of your new equipment. Please take the time to familiarize yourself with the contents of this manual.

- Section 1 is the Introduction and Safety section. This section discusses safety, lock out/ tag out, hazard messages, and installation information.
- Section 2 is the System Description section. This section discusses machine specifications.
- Section 3 is the System Operation section. This section describes the operator control panels, the Human Machine Interface (HMI), and operational procedures.
- Section 4 is the Troubleshooting section. A Troubleshooting chart is found in this section.
- Section 5 is the Maintenance section. In this section you will also find a suggested maintenance schedule including a maintenance log.

Copyright Notice

Flex Series Warranty

- Flex Low-Profile and High-Profile turntable style of machines include the LPD, LPA, HPD and HPA
- Flex Rotary tower style of machines include the RTD and RTA.

WARRANTY

5-years on all Structural Components without limitation on cycles.

EFFECTIVE JANUARY 1, 2020

The Flex series by Orion is covered by a 5-year warranty from the delivery date of its products to be free from defects in materials and workmanship as described below. This warranty assumes that normal maintenance as outlined in your machine operation manual, will be performed by the user.

STRUCTURAL COMPONENTS

All Structural Components on the Flex series by Orion are warranted to be free from defects in material and workmanship for a period of 5-years. During the warranty period Orion will, at its option, either repair or replace any failed component. Structural components are defined as the Base weldment, Tower weldment and Carriage backplate. Components bolted to these items fall under the Mechanical and Electrical components listed below.

MECHANICAL & ELECTRICAL COMPONENTS

All Mechanical and Electrical Components on the Flex series by Orion are warranted to be free from defects in material and workmanship for a period of 1-year or Manufacturer's Warranty whichever is greater. During the warranty period Orion will, at its option, either repair or replace any failed component. This warranty does not include any labor, travel, or equipment downtime cost for part replacement.

POLYURETHANE PRE-STRETCH ROLLERS

The polyurethane pre-stretch rollers on the Flex series by Orion models carry a Limited Lifetime warranty and are guaranteed to be free from defects in material and workmanship. Rollers are not warranted against physical damage, corrosion, abuse, or negligence.

Wear parts including, but not limited to belts, fuses, light bulbs, circuit breakers, brakes, motor brushes, slip ring, brushes, casters, chains, sprockets, etc. are excluded from this warranty.

DAMAGE IN TRANSPORT

Damage in transport is the responsibility of the carrier and is not covered under our warranty.

FREIGHT CHARGES

There will be no freight charges for warranty parts that are ordered for shipment via FedEx regular ground service from Orion. Any other method of shipment, (FedEx next day /second day, etc., UPS, common carrier, etc.) will be at the expense of the customer/distributor.

PARTS RETURN POLICY

Most components valued at under $300 list price, Orion does not require that the defective component be returned. All defective components valued at $300 or more list price must be returned to Orion in Alexandria, MN. It is at Orion's sole discretion as to whether any given component must be returned, regardless of its value, for the purpose of determination of warranty status and the nature of the defect. Furthermore, confirmation that the part does not need to be returned must be provided by Orion at the time of order placement. Please contact Orion Parts to learn more about the RMA (Returned Materials Authorization) procedure.

IMPORTANT EXCLUSIONS

Except as stated herein, Orion makes no other warranty, expressed or implied and in no event shall be liable for incidental or consequential damages. Orion makes no warranty as to fitness of equipment for particular purpose. Orion neither assumes nor authorizes anyone else to assume for it, any other obligation or liability relating to its equipment. This warranty does not apply to damage to equipment which, in the judgment of Orion, has been subject to incorrect voltage supply, normal wear and tear, to misuse, neglect, or has been repaired or altered by unauthorized personnel. Defective parts must be returned to Orion, freight prepaid, within 30 days of shipment of the replacement part, except for components valued at under $300 list price under the conditions stated above. Defective parts must be returned in their original state along with the RMA documentation. Defective parts that have been disassembled, damaged during removal, or otherwise tampered with, will not be covered under warranty, unless otherwise stated in writing. Orion's sole obligation under this warranty will be to provide repairs to components or replacement parts, F.O.B. Orion's point of shipment except as stated above. All aspects of the above stated warranty and procedures related to ordering parts under warranty will be upheld with no exceptions.

Orion recommends that the purchase of an Orion Essential Spare Parts Kit be considered to maximize system uptime. See your Orion parts representative for details.

This document supersedes all **Flex** warranty documents created prior to January 1, 2020.

Safety

Orion's stretch wrappers should be operated with caution and common sense as any other industrial equipment. To prevent injury and/or electrical shocks, careful operation of the machine and awareness of its many automatic functions is required.

Note: All electrical power and compressed air must be disconnected prior to all inspection, maintenance or repair work.

At Orion, we are committed to building quality packaging and material handling equipment. To achieve this, our machines must be efficient, easy to maintain, and safe to operate.

Before attempting to operate the equipment, become familiar with the safety recommendations and operational components of your Flex Stretchwrapper. You should also become familiar with the technical information pertaining to components used within the system, including their operating and safety features. This information is located in the Vendor Data Manual and in other literature supplied with the equipment. To maximize machine safety and efficiency you must operate the machine correctly and comply with the safety features described.

Stay alert and remember: Safety is the responsibility of everyone who operates or services your BEC system.

System Safety Recommendations

Safeguarding personnel that operate and/or maintain automated equipment is the primary consideration. Because it is very dangerous to enter the operating space (work envelope) of a machine during operation, adequate safeguards must be in place and safety precautions must be observed.

The following general precautions are recommended for all personnel who perform system operation or maintenance.

- Do lockout-tagout procedures whenever you do maintenance and repair work.
- All personnel who repair, maintain, or operate the equipment need to know the location of all EMERGENCY STOP buttons.
- Do not operate the equipment with any of the safety guards removed.
- Do not wear neckties, loose clothing, or long loose-hanging hair around any equipment.
- Observe and follow the DANGER, WARNING, and CAUTION messages throughout this manual, in vendor manuals, and displayed on the equipment.
- DO NOT use steps or stands that allow anyone to reach over guards.
- Personnel should attend all available safety and operational training courses.
- Personnel should know and follow the recommended safety procedures whenever they must enter the packaging systems motion area.
- Personnel should not enter the packaging system while control power is "ON".
- Personnel should not power up the system if someone is in the working path of the machine
- The system should be powered down when not in use.
- Personnel should pay special attention to all the posted warnings and cautions located on any devices. Observe all safety and/or precautionary steps and procedures when working with the system.
- Personnel should keep the system clean to make it easier to spot hazards.

Hazard Messages

Notations appear on pages of this manual to alert the reader to important messages regarding a significant hazard for personnel or equipment. These messages convey three levels of risk as defined below. Failure to observe these instructions can result in death, serious injury, damaged equipment, or loss of product or production.

DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Operation Safety

The following safety precautions are recommended for all personnel who will operate this Flex Stretchwrapper.

- Operators should immediately report unsafe working conditions to a supervisor.
- The operator should understand the function of the entire system including all external devices and equipment that interact with the system.
- Before starting operation, the operator should understand the complete task that the system is designed to accomplish.
- The operator should know the location and functional status of all devices (switches, sensors, control signals) that can cause the system to move.
- The operator should know where each EMERGENCY STOP button is located for both main and external control devices. Do not hesitate to use them in an emergency.
- The operator should make sure all safety devices are functioning and periodically checked for proper operation.
- The operator should ensure that all personnel are outside the system before starting operation.
- The operator should never enter, or allow others to enter the system during automatic operation.

Maintenance Safety

The following safety precautions are recommended for all personnel who are responsible for the maintenance or service this Flex Stretchwrapper.

- Personnel should ensure that all safety devices are functioning and periodically checked for proper operation before performing maintenance.
- Before performing any maintenance, service, or inspection inside the main control panel, the power source should be turned off and locked out.
- Maintenance should be performed on the system with the power OFF. Lockout and tag out procedures should be followed to protect personnel from injury and to indicate the equipment is being serviced.
- Place a lock on the main electrical disconnect, as shown below, while performing maintenance.
- Personnel should pay careful attention to all devices that may be powered or capable of motion, such as conveyors and pneumatic devices.
- Release or block all stored energy devices (hydraulic or pneumatic) that may present a danger when working with the system. Before working with pneumatic devices, shut off the air supply and purge the air lines.
- Be aware when removing a servomotor or brake that the associated mechanical part will fall unless supported in some manner.
- Use only specified replacement parts. Never use non-specific fuses that have not been specified. Potential fire and/or damage may result.
- Before restarting the system, ensure personnel are not in the system and that the system and external devices are operating properly.

Lockout and Tagout Recommendations

Electrical System

(See OSHA 1910.147 & OSHA 1910.333 (b)(2) for exception to procedures)

To avoid hazards of electrical shock or other personal injuries, the main power disconnect for the system and any other separate sources of power for the system shall be locked out & tagged as a safety precaution during entry and maintenance to the system.

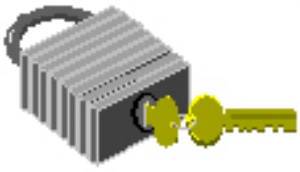
To accomplish this, set the Main Power Disconnect operating handle to the "OFF" position and install a personal locking device through the padlock hole on the operating handle. Attach a Danger tag to the handle containing a statement prohibiting unauthorized operation of the disconnect and removal of the tag signed by the individual responsible for locking out the system. If several personnel are performing maintenance, each individual shall install a lockout device and tag.

A qualified person shall verify that the equipment is de-energized by:

1. Operating controls to verify equipment cannot be restarted.
2. Using test equipment to test circuits and electrical parts that will be exposed to personnel.

Stored electric energy that might endanger personnel shall be released by discharging the circuits. Check appropriate equipment manuals on exact procedures.

To re-energize equipment, a qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that equipment can be safely energized. Personnel exposed to the hazards associated with re-energizing equipment shall be warned to stay clear of equipment. Each lock and tag shall be removed by the person who applied it or under their direct supervision. A visual determination that all personnel are clear of the equipment shall be accomplished before the operating handle on each Main Power Disconnect is placed to the "ON" position.



Danger!

When performing maintenance, inspection, repair or changeover, execute the Lockout & Tag Out procedure to prevent personal injury – before entering the machine. When you see this symbol, DO LOCK OUT/TAG OUT.

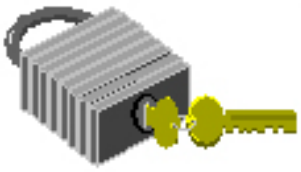
Pneumatic and Vacuum Systems

To avoid hazards of moving mechanisms, pinch points and other personal injuries, the main compressed air supply valve for the system shall be locked out & tagged as a safety precaution during entry and maintenance to the system.

1. To accomplish this, turn the Main Air Supply valve to the “OFF” position and install a personal locking device through the padlock hole on the valve handle.
2. Also attach a Danger tag to the handle containing a statement prohibiting unauthorized operation of the disconnect and removal of the tag signed by the individual responsible for locking out the system.

If several personnel are performing maintenance, each individual shall install a lockout device and tag. Qualified personnel shall vent any stored or accumulated air in pneumatic/vacuum devices before working on them. Check appropriate equipment manuals on exact procedures.

To re-supply compressed air to the equipment, a qualified person shall conduct visual inspections, as necessary, to verify that mechanisms are properly connected, as well as all tools and other objects have been removed so that equipment can safely operate. Personnel exposed to pneumatic/vacuum hazard areas shall be warned to stay clear of equipment. Each lock and tag shall be removed by the person who applied it, or, under their direct supervision. A visual determination that all personnel are clear of the equipment shall be accomplished before the main air supply valve is turned to the “ON" position.



Danger!

When performing maintenance, inspection, repair or changeover, execute the Lockout & Tag Out procedure to prevent personal injury – before entering the machine. When you see this symbol, DO LOCK OUT/TAG OUT.

Installation and First Time Power Up

Unloading

Machine can be easily unloaded and transported by a forklift with a minimum capacity of 2,500 lb.

1. Carefully insert the forks into the lifting tubes to the maximum possible depth. Depending on the model, a forklift access may be either at the tower end of the machine frame, the tower end or both. Look for the forklift tube access stickers shown below.

Figure 1 - 1
Fork Tube Access Sticker

2. Lift the machine (or other part of system) only to the necessary height to move it with no bouncing or friction on the floor.
3. Sit the machine down assuring uniform contact with the floor, which is necessary to ensure correct and smooth operation.

Inspection

1. Remove all packing and supporting additions - these may include the blocks under the carriage and the restraining bar over the table.

Note: When removing the packing materials covering the machine, care must be taken not to cut any of the electrical wires and/ or polyurethane covering on the film carriage rollers.

2. Perform a visual inspection of the electrical and mechanical parts for loosened joints and / or broken connections. Any suspected shipping damage must be reported immediately to the freight carrier. Any transport damage cannot be claimed to Orion Packaging Inc.

Items that are vulnerable to damage and must be inspected are as follows:

- Motors and transmissions
- Junction boxes
- Electrical conduits
- Proximity and limit switches
- Photocells

3. Check around the tower to ensure that there is no crippling of the movable parts i.e. casters, center axle or drive assembly.
4. Verify the following:

- Check wires and conduits for crushed sections or loose fittings.
- Verify the film carriage to be sure that it is correctly aligned with the tower
- Verify the tension on the lift belt.
- Verify all the dials and knobs on the control panel for smooth action.

Machine Installation

- After the visual inspection has been completed, the electrical power and the compressed air (Optional) shall be connected as specified on the diagrams supplied with the machine.
- An electrical diagram is provided with each machine in the envelope attached to the panel box.
- Make sure the machine is on a level surface.
- Orion Packaging insist on a dedicated circuit be used for this wrapper. Extension cords are not allowed and can void your warranty.

Assembly Procedure

Note: The structural frames of the machine have to be installed on a leveled floor. The base deviation from vertical must not exceed 1/4" on the distance of 10 feet (angle: 0 degrees 6').

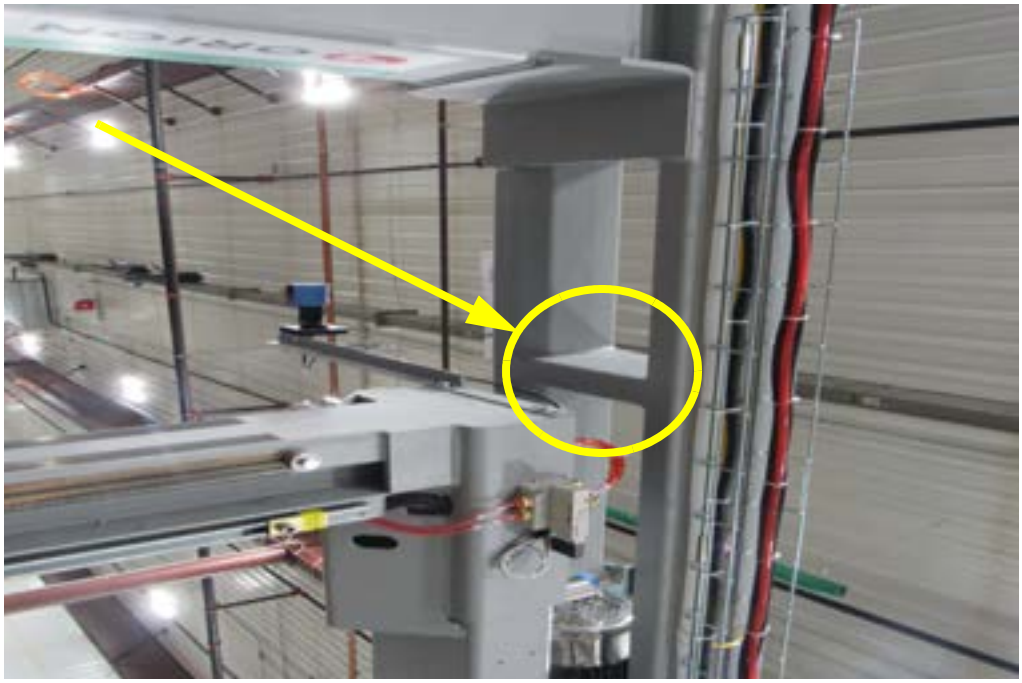
Move the wrapper into its final position. If the wrapper is to be secured to the floor, we recommend that the wrapper base section be bolted to the floor by the 1/2" concrete floor anchors (leg & shield or expandable type-Red Heads).

How to Erect an RTA or RTD Flex Orion

WARNING Observe safety precautions in the user manual. Always follow OSHA and plant regulations when placing machinery.

1. Attach a strap around the center crossmember. Secure to properly rated lifting device.

Figure 1 - 2
Attaching Strap



2. Raise the tower while moving forward. Use a spotter to ensure the raising and lifting balance is correct.

Figure 1 - 3
Raising Tower

3. Your spotter can position the machine precisely while the lift is holding the tower vertically.

Figure 1 - 4
Positioning Wrapper

4. Remove the shipping feet while the machine is still held by the lift.

Figure 1 - 5
Remove Shipping Feet

5. Using a hammer drill, drill the mounting holes in the floor with the correct drill bit to match the mounting hardware.

Figure 1 - 6
Drill Mounting Holes

6. Pound in the 10 Red Head Anchors. The length of the anchors depends on the thickness of the concrete.

Figure 1 - 7
Installing Anchors

7. Once the machine is properly bolted down, loosen the tension to the crossmember.

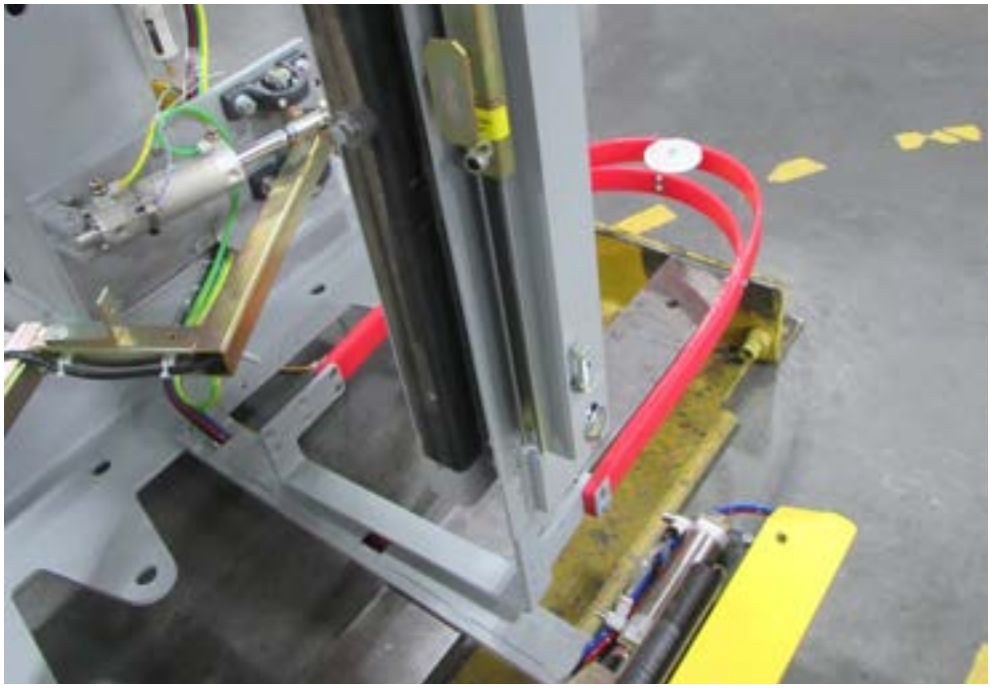
Figure 1 - 8
Loosen Tension Once Bolted Down

8. Climb the ladder and remove the strap.

Figure 1 - 9
Remove Attachment

9. Bolt the safety hoop to the bottom of the rotary arm.

Figure 1 - 10
Attach Safety Hoop



10. Verify the machine is properly secured and test the machine operation.

System Description Contents

2. System Description

Machine Specifications

Utilities

- 120 / 1ph / 60hz 20 Amp Service

Standard Speed

- 15 Rpm Variable Tower Speed VFD Controlled Motor**

Drive

- Heavy Duty Chain Drive
- Electronically Adjustable Acceleration/ Deceleration And Running Speeds (At VFD)
- Positive Alignment Feature (True Home Position)

Control Features

- NEMA 12 Control Panel
- Easy to Use Icon Based Interface
- Variable Speed Film Carriage Up/Down Control
- Film Carriage Manual Jog Functionality
- Photocell For Automatic Load Height Detection
- Main Drive Jogging
- Variable Speed Main Drive
- Semi-automatic Reinforce Wrap Feature

Film Delivery

- Instathread Full Corner Compensating Powered Film Drive.
- 260% Stretch From The Factory. 20” Film Tension Delivery System. **optional 30”
- Full Authority, Corner Compensating, VFD Powered Prestretch
- Electronic Film Tension Control Adjustment On The Panel < Or = 90 Ga Film Capacity. Higher Gauge Film Requires A Heavy Film Upgrade.
- Film Carriage Elevator Drive
- High Strength Belt Lift, Optional Chain Lift
- Variable Frequency Drive Motor
- Multi-point UHMW Precision Carriage Guidance System

Structural Features

- Structural Steel Construction Throughout
- Easy Access To All Components
- Limited Proprietary Parts For Ease Of Maintenance

Visit our Website At www.orionpackaging.com

System Operation Contents

3. System Operation

Operating Procedures

How to Start and Shut Down Your Wrapping System

Note: Do not use extension cords. Plug your Flex Stretch-wrapper directly into an outlet.

POWER SWITCH

Located on the panel door, the lockable power switch has two settings:

- ON - connects a power source to the machine.
- OFF - disconnects the power source.

START AND EMERGENCY STOP SWITCHES

- Press the **START** button to gain Control Power prior to starting.
- The **START** switch is used to start the cycle once the load is available.
- The cycle may be stopped at anytime by pressing the **E-STOP** button.

The FLEX series machines are engineered to give the operator different levels of operation, the front panel or USER settings, and MENU DRIVEN parameters. The menu driven parameters offer even more flexibility and security.

Carriage Obstacle Detect Error Recovery

Note: This procedure only applies to turntable models HPA, HPD, LPA, & LPD.

1. When the obstacle detect error occurs, the brake must be released.
2. To release the brake, pull outward on the carriage strap on the front side of the tower until the brake releases.

Figure 3 - 1
Pulling Strap to Release Brake

3. Align the limit switch on the inside of the tower with the center of the strap.

Figure 3 - 2
Limit Switch Alignment

4. Reset and restart, when ready.

Loading The Film

The film roll can be loaded on the carriage mandrel from either end of the roll. When using tacky film, please verify that the tacky surface of the film is inward on the load.

1. Press in the E-stop.
2. Swing up the top mandrel spool.
3. Put the roll of film on the bottom mandrel.
4. Install the top mandrel on top of the roll to prevent upward movement.
5. Turn the two knobs to unlatch the carriage door, then pull out on the carriage door to open it. The film carriage is equipped with a magnetic switch that detects when the carriage threading door is open. When opened, it will set off an alarm on the HMI and prevent the carriage from moving.
6. Pass the roped tail of the film through the opening.
7. Push the carriage door closed. Turn the two knobs to latch the carriage door.
8. When the film feeding is completed, release the E-stop.
9. For machines without a fence, press the Start button once to reset control power. If your machine has a fence, the multistretch will reset as soon as the E-stop is released.
10. Peel off the first few winds of the film (multistretch will run due to displacement of the dancer roller) and fix the film end onto the load-or film clamp if so equipped.
11. The system is now ready to begin the first wrapping cycle.
12. Press and hold the Start button for the amount of time set in the machine settings to start the machine.

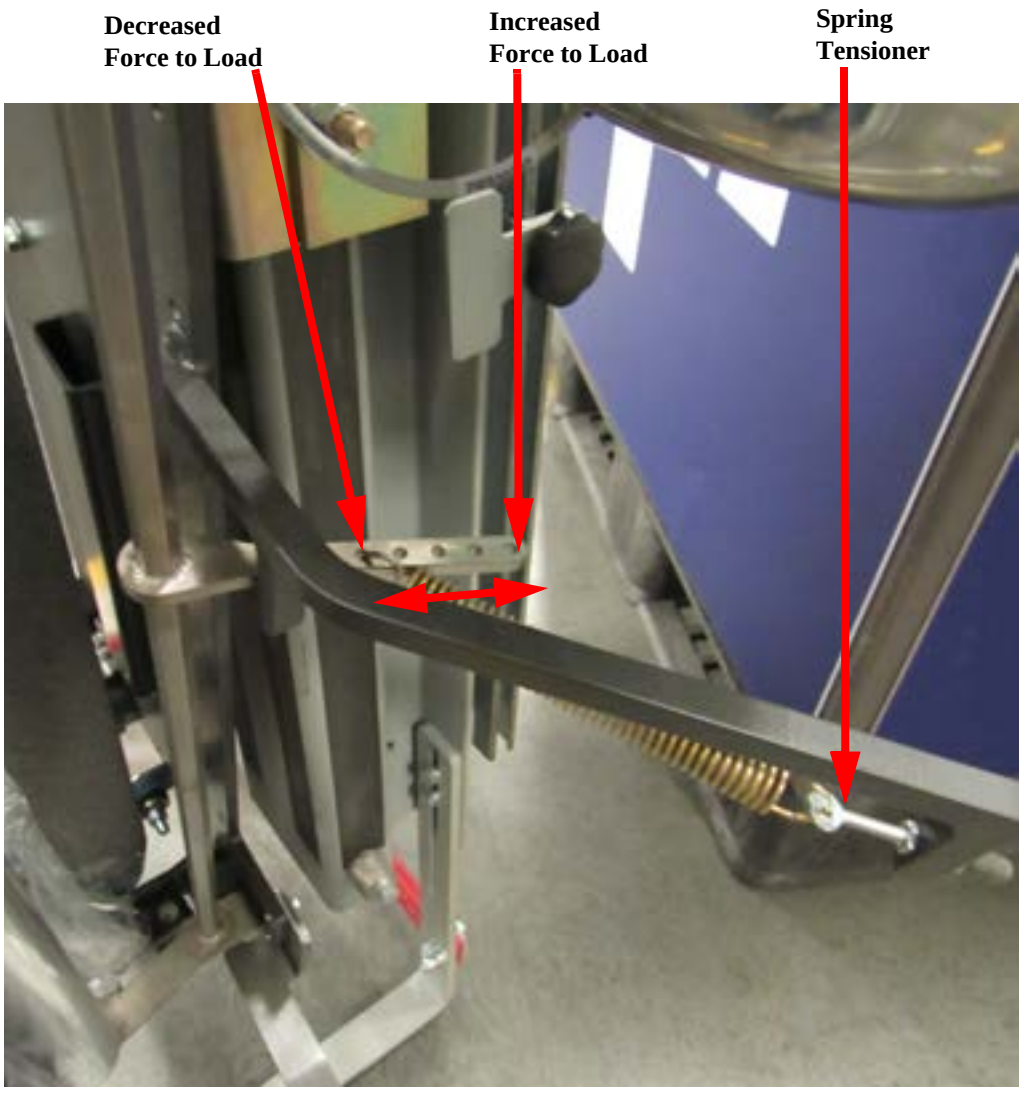
Figure 3 - 3
Loading the Film

Dancer Bar Tension Adjustment

The S-Carriage has a tension adjustment that allows the user to change the tension on the dancer bar. The standard tension is at the furthest inward position, as shown below.

- Adjust the spring to another position to increase the force to the load. Take into account that the film tension setting may need to be adjusted on the HMI if changes are made to the dancer bar tension adjustment.
- For additional adjust-ability use the spring tensioner, shown below. The further the spring is pulled, more tension is added to the dancer bar.
- The light and heavy gauge springs are provided with your machine. Use the light spring to for less tension and the heavy spring for more tension.

Figure 3 - 4
Dancer Bar Tension Adjustment



The Human Machine Interface

The Navigation Bar

The Navigation Bar at the top of the screen allows easy access to the various functions of the HMI. Not every screen has a tab, but within two screen touches, most every function should be available on the HMI.

Figure 3 - 5
The Navigation Bar

The Flex Panel

Flex Panel for the system utilizes a Allen Bradley Panel View color Human Machine Interface. The Human Machine Interface (HMI) is in direct link with the Programmable Logic Controller (PLC) that directs control of the packaging system. The operator control scheme for the system is based on a simple, menu driven design.

Figure 3 - 6
The Flex Panel

Table 3-1. The Flex Panel Button Descriptions

STATE 1	DESCRIPTION	STATE 2
START	Press the button once to reset control power prior to starting or jogging the machine. Press and hold this button again for three counts to start the wrapper.	
EMERGENCY STOP	This button is an E-Stop for the wrapper. Use this button to stop the machine in an emergency situation.	
ROTARY DISCONNECT	This is the main disconnect for the electrical enclosure. This allows the panel to be turned on or off and can also be locked out for maintenance.	

Log In Permissions

No Login

1. Machine Operation via the Main screen
   - **A.** Start Machine
   - **B.** Stop Machine
   - **C.** Fault Reset
   - **D.** Reinforcement Wrap activation
   - **E.** High/Low rotational speed selection
   - **F.** Home Machine
2. Menu Screen
   - **A.** Manual jogging
   - **B.** Wrap Recipe Selection
   - **C.** Production Data
3. Diagnostics Screen

User Login

- Everything above, plus:

1. Wrap Settings
   - **A.** Top/Bottom Wraps
   - **B.** Carriage Up/Down Speed
   - **C.** Wrap Direction
   - **D.** Additional wrap options

Maintenance Login

- Everything above, plus:

1. Maintenance Settings
   - **A.** Main Drive settings
   - **B.** Reinforcement settings
   - **C.** Timers
   - **D.** Machine Setup
   - **E.** Multistretch Settings
   - **F.** VFD Parameters
   - **G.** Additional machine settings

Admin Login

- Everything above, plus:

1. Maintenance Settings
   - **A.** Factory Defaults

The Main Tab

The Main Screen

This is the Main screen used for primary functions of the machine. To access this screen, select the Main tab on the green navigation bar.

Figure 3 - 7
The Main Screen

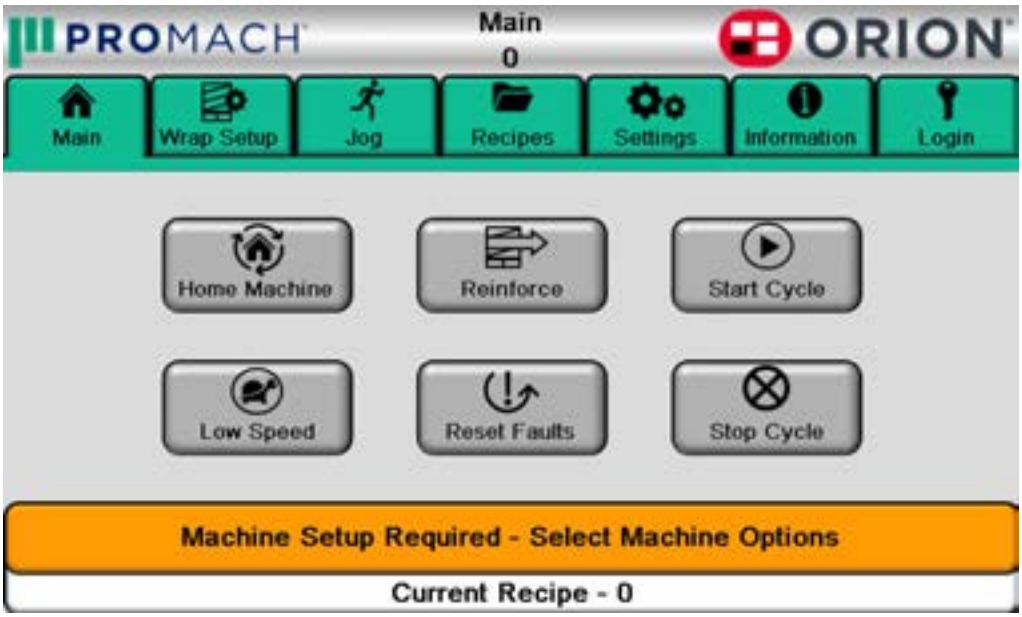
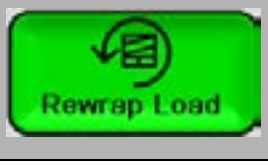


Table 3-2. The Main Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Press this button to send the machine to its Home Position. When pressed, the Carriage will travel to its bottom limit, and the Main Drive will travel to its predefined End of Cycle Position.	
	Press this button to toggle between low and high speed modes.	
	Press this button to apply the predefined reinforcement wraps to the load. If the Reinforcement Wraps value is set to zero, reinforcement wraps will be applied as long as the Reinforce button is pressed.	

Table 3-2. The Main Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to reset the current fault condition.	
	Press this button to rewrap the load.	
	Press and hold this button to start the machine. This must be held until the Start Delay timer is complete to start the machine.	
	Press this button to cycle stop the current wrap cycle.	

The Wrap Setup Tab

The Wrap Setup Screen

On the Wrap Setup Screen, you can navigate to any of the indicated screens to adjust the wrap settings. To access this screen, select the Wrap Setup tab on the green navigaton bar.

Figure 3 - 8
The Wrap Setup Screen

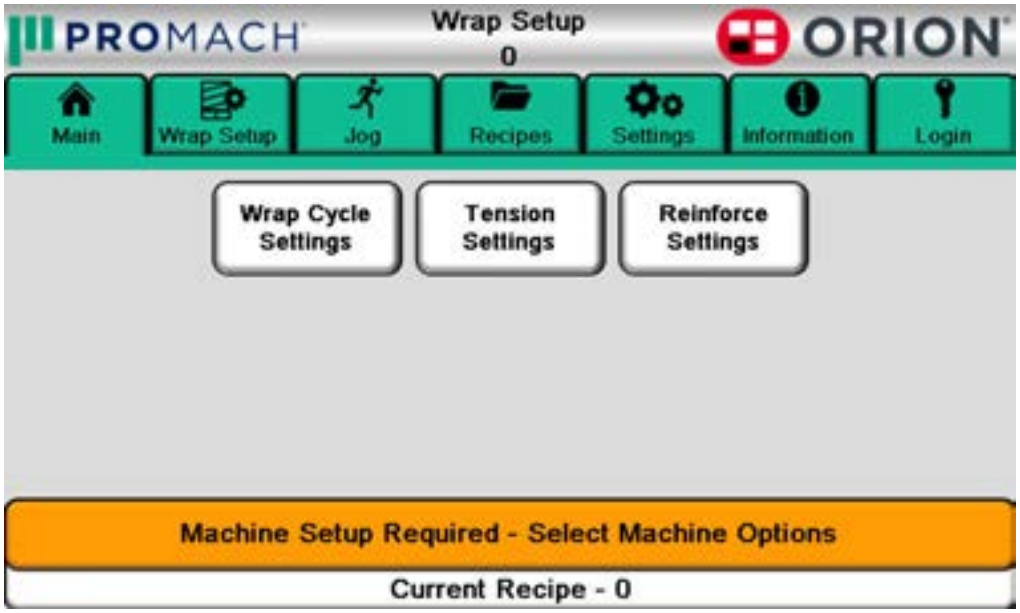


Table 3-3. The Wrap Setup Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Wrap Cycle Settings	Press this button to got the wrap cycle settings screen. See “The Wrap Cycle Settings Screen” on page 3 - 11.	
Tension Settings	Press this button to go to the tension settings screen. See “The Tension Settings Screen” on page 3 - 15.	
Reinforce Settings	Press this button to go to the reinforce settings screen. See “The Reinforce Settings Screen” on page 3 - 17.	

The Wrap Cycle Settings Screen

On the Wrap Cycle Settings Screen, you can adjust the wrap settings, select the wrapping sequence, select low or high speed, enabled or disable stable load, enabled or disable auto-height, or enable or disable the film fault. To access this screen, select the Wrap Setup tab on the green navigation bar, then press the Wrap Cycle Settings button.

Figure 3 - 9
The Wrap Cycle Settings Screen

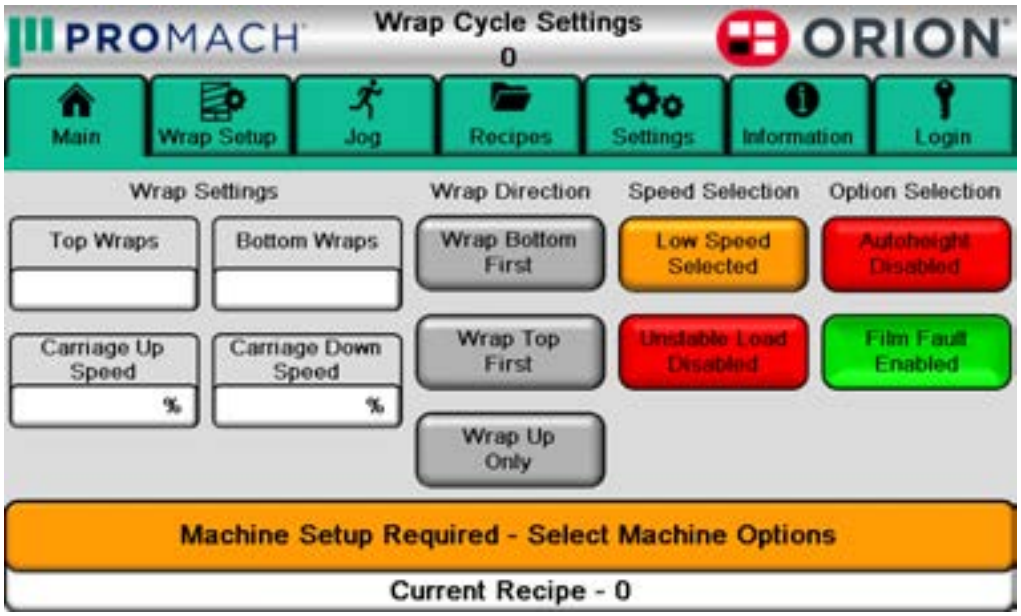


Table 3-4. The Wrap Cycle Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Top Wraps	Press this button to set the number of top wraps applied to the load. Parameters are 1-20.	
Bottom Wraps	Press this button to set the number of bottom wraps applied to the load. Parameters are 1-20.	
Carriage Up Speed %	Press this button to change the speed of the carriage on the upward move, in terms of percentage. Min - 5%, Max - 100%.	

Table 3-4. The Wrap Cycle Settings Screen Button Descriptions (Continued)

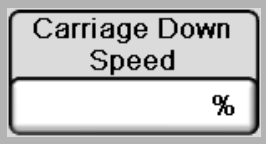
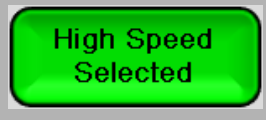
STATE 1	DESCRIPTION	STATE 2
	Press this button to change the speed of the carriage on the downward move, in terms of percentage. Min - 5%, Max - 100%.	
	Press this button to select the Wrap Bottom First wrap sequence. When selected, the wrapper will apply the bottom wraps first. When complete, the Carriage will travel to the top of the load and apply the top wraps. When complete, the Carriage will travel to the bottom and complete the cycle.	
	Press this button to select the Wrap Top First wrap sequence. When selected, the Carriage will immediately travel to the top of the load and apply the top wraps. When complete, the Carriage will travel to the bottom, apply the bottom wraps, and complete the cycle.	
	Press this button to wrap up only. The machine will wrap to the top, then stop the cycle.	
	Press this button to toggle between high speed and low speed operation. when high speed is selected, the main drive will travel at the predefined high speed value during the wrap cycle. when low speed is selected, the main drive will travel at the pre-defined low speed value during the wrap cycle.	
	Press this button to enable or disable the unstable load wrap cycle. when enabled, the main drive will travel at low speed until the wrapper has completed one top wrap. after one top wrap is completed, the main drive will travel at high speed for the remainder of the cycle. if low speed is selected, the main drive will travel at low speed for the entire cycle.	
	Press this button to enable or disable the autoheight photoeye. when enabled, the carriage will travel up, during the wrap cycle, until the autoheight photo-eye no longer sees a load. it will continue to travel until the autoheight delay time is complete. when disabled, the carriage will travel up, during the wrap cycle, until it reaches the top limit sensor.	

Table 3-4. The Wrap Cycle Settings Screen Button Descriptions (Continued)

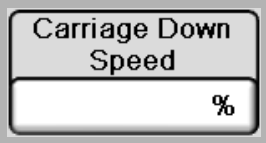
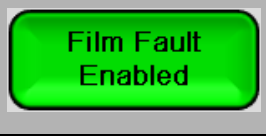
STATE 1	DESCRIPTION	STATE 2
	Press this button to change the speed of the carriage on the downward move, in terms of percentage. Min - 5%, Max - 100%.	
	Press this button to select the Wrap Bottom First wrap sequence. When selected, the wrapper will apply the bottom wraps first. When complete, the Carriage will travel to the top of the load and apply the top wraps. When complete, the Carriage will travel to the bottom and complete the cycle.	
	Press this button to select the Wrap Top First wrap sequence. When selected, the Carriage will immediately travel to the top of the load and apply the top wraps. When complete, the Carriage will travel to the bottom, apply the bottom wraps, and complete the cycle.	
	Press this button to wrap up only. The machine will wrap to the top, then stop the cycle.	
	Press this button to toggle between high speed and low speed operation. when high speed is selected, the main drive will travel at the predefined high speed value during the wrap cycle. when low speed is selected, the main drive will travel at the pre-defined low speed value during the wrap cycle.	
	Press this button to enable or disable the unstable load wrap cycle. when enabled, the main drive will travel at low speed until the wrapper has completed one top wrap. after one top wrap is completed, the main drive will travel at high speed for the remainder of the cycle. if low speed is selected, the main drive will travel at low speed for the entire cycle.	
	Press this button to enable or disable the autoheight photoeye. when enabled, the carriage will travel up, during the wrap cycle, until the autoheight photo-eye no longer sees a load. it will continue to travel until the autoheight delay time is complete. when disabled, the carriage will travel up, during the wrap cycle, until it reaches the top limit sensor.	

Table 3-4. The Wrap Cycle Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to enable or disable the end of roll or broken film fault. when disabled, the wrap cycle will continue even if the film has broken or there is no film left on the roll.	

The Tension Settings Screen

On the Tension Settings Screen, you can adjust the tension settings. To access this screen, select the Wrap Setup tab on the green navigation bar, then press the Tension Settings button.

Figure 3 - 10
The Tension Settings Screen

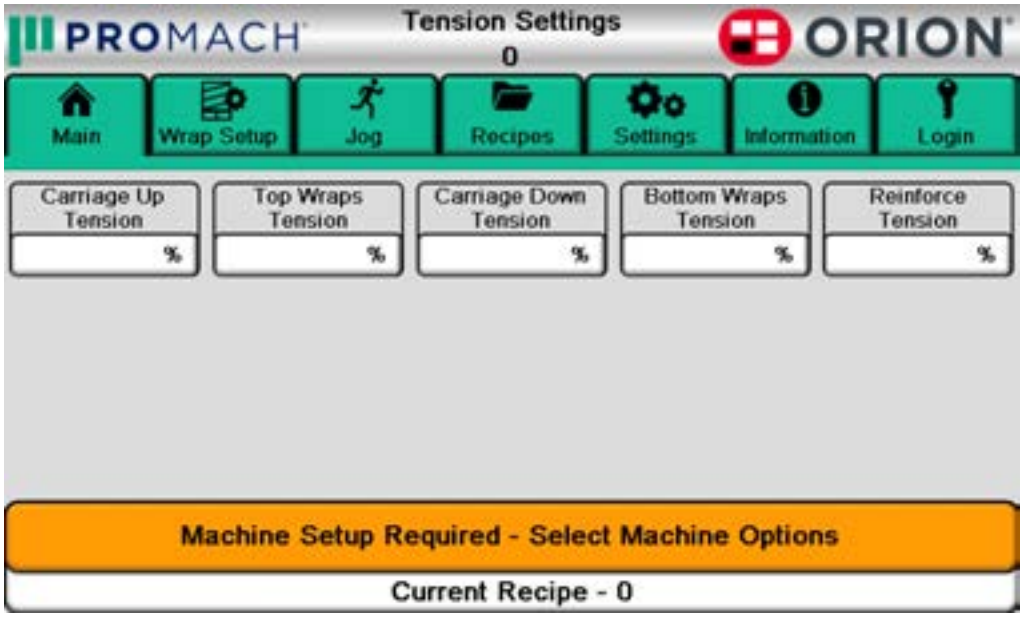
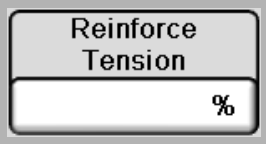


Table 3-5. The Tension Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Carriage Up Tension %	Press this button to modify the Film Tension as the carriage is traveling up, in terms of percentage. This value limits the maximum speed at which the Multistretch will pay out film, which creates tension. Min - 0%, Max - 100%.	
Top Wraps Tension %	Press this button to modify the Film Tension as the carriage is wrapping the top of the load, in terms of percentage. This value limits the maximum speed at which the Multistretch will pay out film, which creates tension. Min - 0%, Max - 100%.	
Carriage Down Tension %	Press this button to modify the Film Tension as the carriage is traveling down, in terms of percentage. This value limits the maximum speed at which the Multistretch will pay out film, which creates tension. Min - 0%, Max - 100%.	

Table 3-5. The Tension Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Film Tension as the carriage is wrapping the bottom of the load, in terms of percentage. This value limits the maximum speed at which the Multistretch will pay out film, which creates tension. Min - 0%, Max - 100%.	
	Press this button to modify the Film Tension as the carriage is applying the reinforcement wraps to the load, in terms of percentage. This value limits the maximum speed at which the Multistretch will pay out film, which creates tension. Min - 0%, Max - 100%.	

The Reinforce Settings Screen

On the Reinforce Settings Screen, you can set the number of reinforcement wraps applied to the load. To access this screen, select the Wrap Setup tab from the green navigation bar, then press the Reinforce Settings button.

Figure 3 - 11
The Reinforce Settings Screen

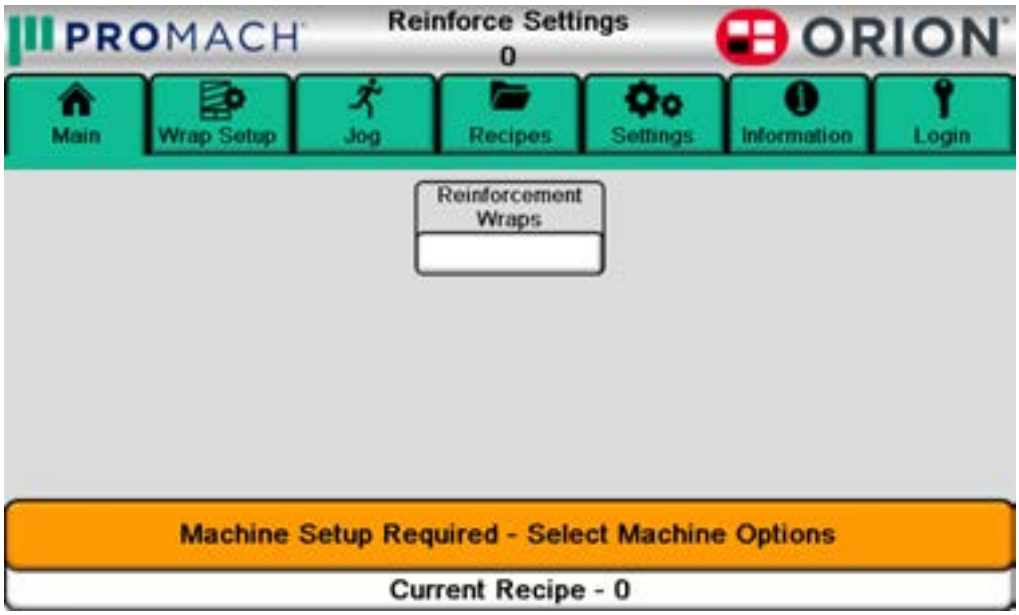


Table 3-6. The Reinforce Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Reinforcement Wraps	Press this button to set the number of reinforce wraps that are applied when the enable reinforce wraps button is pressed on the Main screen.	

The Jog Tab

The Jog Screen

On the Jog Screen, you can jog the main drive or carriage, home the machine, reset any faults, manually trigger the brush and cutter feature, open the clamp, or cycle through the clamp stages. To access this screen, select the Jog tab on the green navigation bar.

Figure 3 - 12
The Jog Screen

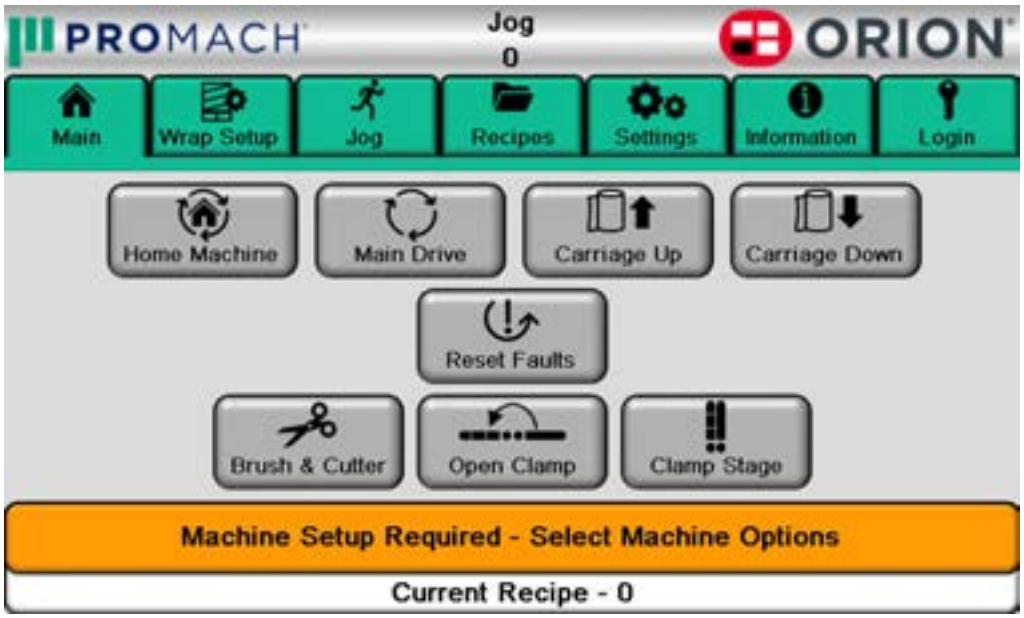
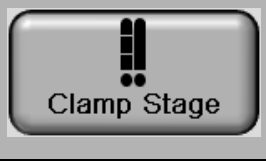


Table 3-7. The Jog Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Press this button to move the machine to the home position.	
	Press this button to jog the main drive (turntable/ tower) in the direction of normal operation. The main drive moves until the operator releases the jog button.	
	Press this button to jog the carriage upwards. The carriage move slowly upwards until the operator releases the jog button.	

Table 3-7. The Jog Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to jog the carriage downwards. The carriage move slowly downwards until the operator releases the jog button.	
	Press this button to reset faults. If you press this button while the machine is running, the machine will abort the current wrap cycle.	
	Press this button to manually trigger the brush and cut sequence.	
	Press this button to open or close the clamp.	
	Press this button to toggle through the film clamp stages.	

The Jog with Top Platen Screen

On the Jog with Top Platen Screen, you can jog the main drive, carriage, or top platen, home the machine, reset any faults, manually trigger the brush and cutter feature, open the clamp, or cycle through the clamp stages. If your machine does not feature a top platen, see “The Jog Screen” on page 3 - 18. To access this screen, select the Jog tab on the green navigation bar.

Figure 3 - 13
The Jog with Top Platen Screen

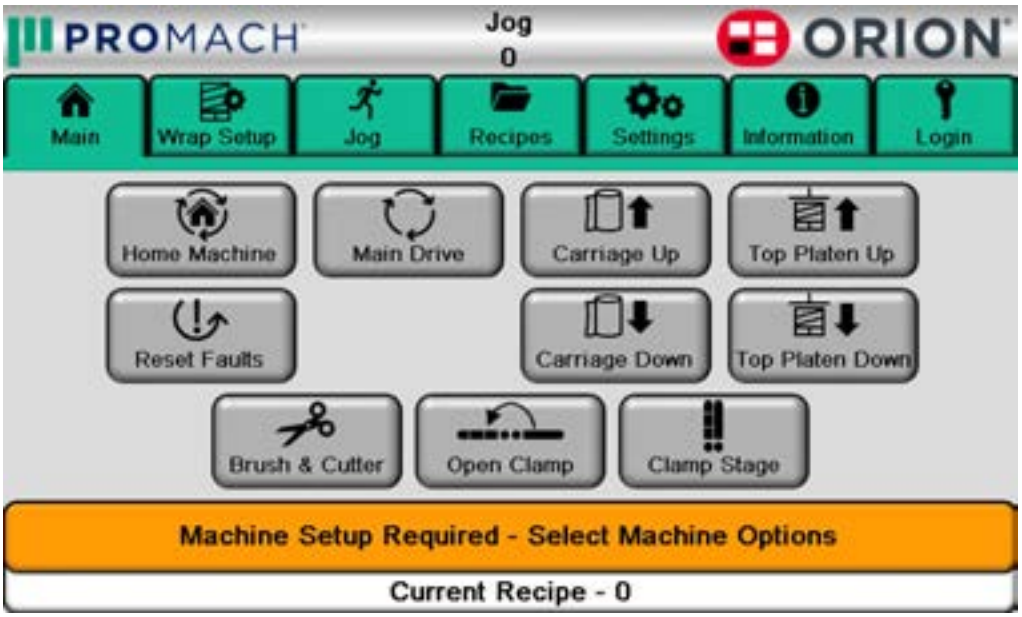


Table 3-8. The Jog with Top Platen Screen Button Descriptions

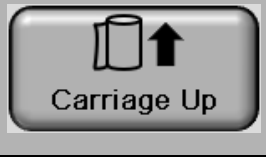
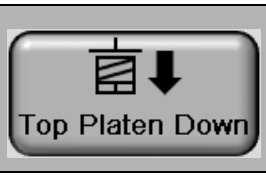
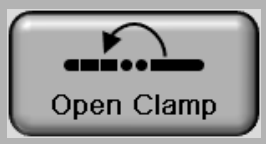
STATE 1	DESCRIPTION	STATE 2
	Press this button to move the machine to the home position.	
	Press this button to jog the main drive (turntable/ tower) in the direction of normal operation. The main drive moves until the operator releases the jog button.	
	Press this button to jog the carriage upwards. The carriage moves slowly upwards until the operator releases the jog button.	

Table 3-8. The Jog with Top Platen Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to jog the carriage downwards. The carriage moves slowly downwards until the operator releases the jog button.	
	Press this button to jog the top platen upwards. The top platen moves slowly upwards until the operator releases the button.	
	Press this button to jog the top platen downwards. The top platen moves slowly downwards until the operator releases the button.	
	Press this button to reset faults. If you press this button while the machine is running, the machine will abort the current wrap cycle.	
	Press this button to manually trigger the brush and cut sequence.	
	Press this button to open or close the clamp.	
	Press this button to toggle through the film clamp stages.	

The Recipes Tab

The Recipes Screen

On the Recipes Screen, you may select a new pattern assignment or go to the View/Modify Recipes screen. To access this screen, select the Recipes tab on the green navigation bar.

Figure 3 - 14
The Recipes Screen

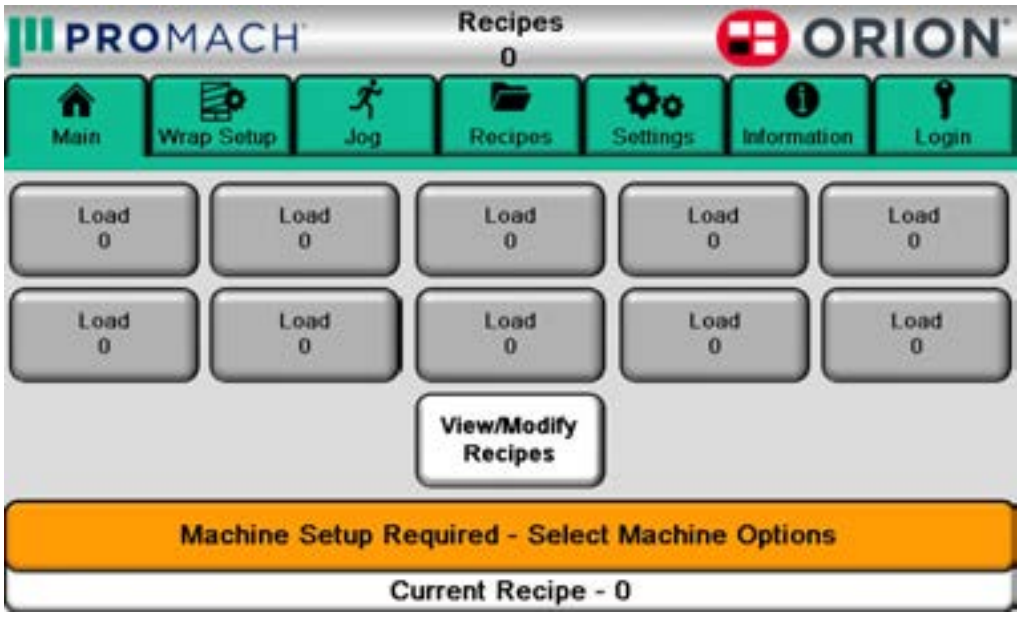


Table 3-9. The Recipes Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Load 0	Press the desired recipe button for the new pack pattern assignment.	Running 0
View/Modify Recipes	Press this button to go to the view/modify recipes screen. See “The View/Modify Recipes Screen” on page 3 - 23.	

The View/Modify Recipes Screen

On the View/Modify Recipes Screen, you view and modify the pack pattern assignment. To access this screen, select the Recipes tab on the green navigation bar, and then press the View/Modify Recipes button.

Figure 3 - 15
The View/Modify Recipes Screen

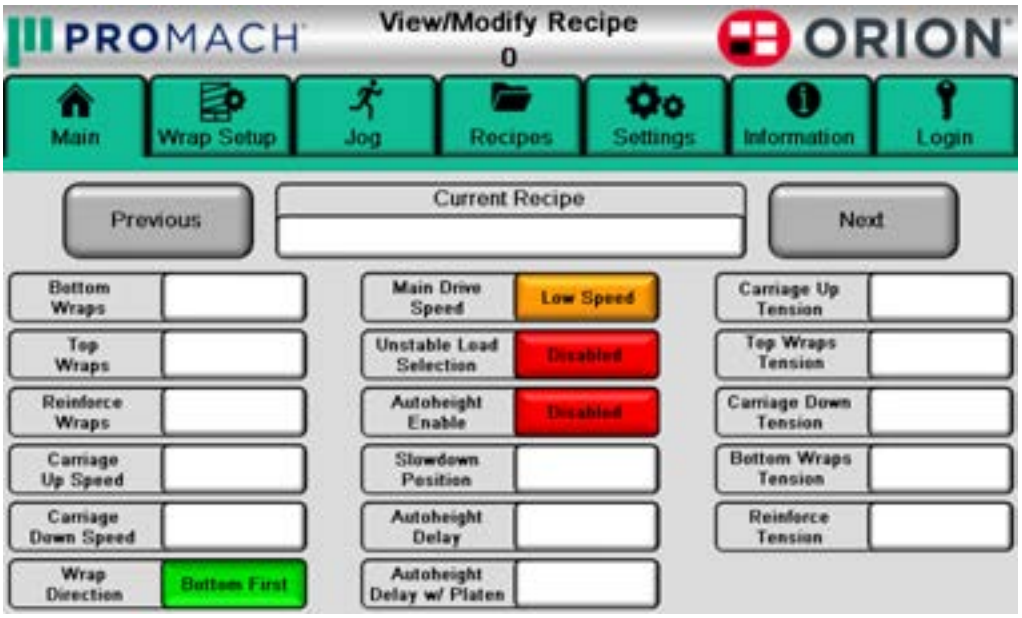


Table 3-10. The View/Modify Recipes Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Previous	Press the previous button to go to the recipe before the currently displayed recipe.	Previous
CURRENT RECIPE	Press this button to update the recipe name for the currently displayed recipe.	
Next	Press this button to go to the next recipe after the currently displayed recipe.	Next
BOTTOM WRAPS	Press this button and enter in the new number of bottom wraps for this recipe into the keypad. Parameters are 1-20.	
TOP WRAPS	Press this button and enter in the new number of top wraps for this recipe into the keypad. Parameters are 1-20.	
REINFORCE WRAPS	Press this button and enter in the new number of reinforcement wraps applied to the load for this recipe into the keypad. Parameters are 1-20.	

Table 3-10. The View/Modify Recipes Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
CARRIAGE UP SPEED	Press this button to change the speed of the carriage on the upward move, in terms of percentage. Min - 5% Max - 100%	
CARRIAGE DOWN SPEED	Press this button to change the speed of the carriage on the downward move, in terms of percentage. Min - 5% Max - 100%	
	Press this button to toggle between the wrap sequences. When selecting bottom first, the carriage will travel to the bottom of the load and apply the bottom wraps. When complete, the carriage will travel to the top and complete the cycle. When selecting top first, the carriage will immediately travel to the top of the load and apply the top wraps, then complete the cycle. When selecting up only, the carriage will travel to the bottom, wrap to the top, then stop the cycle.	 
	Press this button to toggle between High Speed and Low Speed operation. When Low Speed is selected, the Main Drive will travel at the predefined Low Speed value during the wrap cycle. To update these settings, see “The Main Drive Screen” on page 3 - 28.	
	Press this button to enable or disable the Unstable Load wrap cycle. When enabled, the Main Drive will travel at Low Speed until the wrapper has completed one top wrap. After one top wrap is completed, the Main Drive will travel at High Speed for the remainder of the cycle. If Low Speed is selected, the Main Drive will travel at Low Speed for the entire cycle.	
	Press this button to enable or disable the Autoheight photoeye. When enabled, the Carriage will travel up, during the wrap cycle, until the Autoheight photoeye no longer sees a load. It will continue to travel until the Autoheight Delay time is complete. When disabled, the Carriage will travel up, during the wrap cycle, until it reaches the Top Limit sensor.	
	Press this button to enter the slow down delay timer. This is the amount of time, in milliseconds that the slowdown cycle is delayed past it’s default position.	

Table 3-10. The View/Modify Recipes Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
Autoheight Delay	This is the autoheight delay setting. Increasing this value will increase the delay, which is useful to create overlap at top.	
Autoheight Delay w/ Platen	This is the autoheight delay setting for machines with a top platen. If your machine has an enabled top platen, increasing this value will increase the delay, which is useful to create overlap at top. If the top platen is disabled, increasing this value will increase the delay, which is useful for wrapping below the lowered top platen. If your machine does not have a top platen, you may disregard this button.	
Carriage Up Tension	Press this button to enter the film tension percentage from 0-100% while the carriage is traveling up.	
Top Wraps Tension	Press this button to enter the film tension percentage from 0-100% while the carriage is wrapping the top.	
Carriage Down Tension	Press this button to enter the film tension percentage from 0-100% while the carriage is traveling down.	
Bottom Wraps Tension	Press this button to enter the film tension percentage from 0-100% while the carriage is wrapping the bottom.	
Reinforce Tension	Press this button to enter the film tension percentage from 0-100% while the carriage is applying the reinforcement wraps.	

The Settings Tab

The Settings Screen

On the Settings Screen, you can go to any of the tabbed or indicated screens. To access this screen select the Settings tab on the green navigation bar.

Figure 3 - 16
The Settings Screen

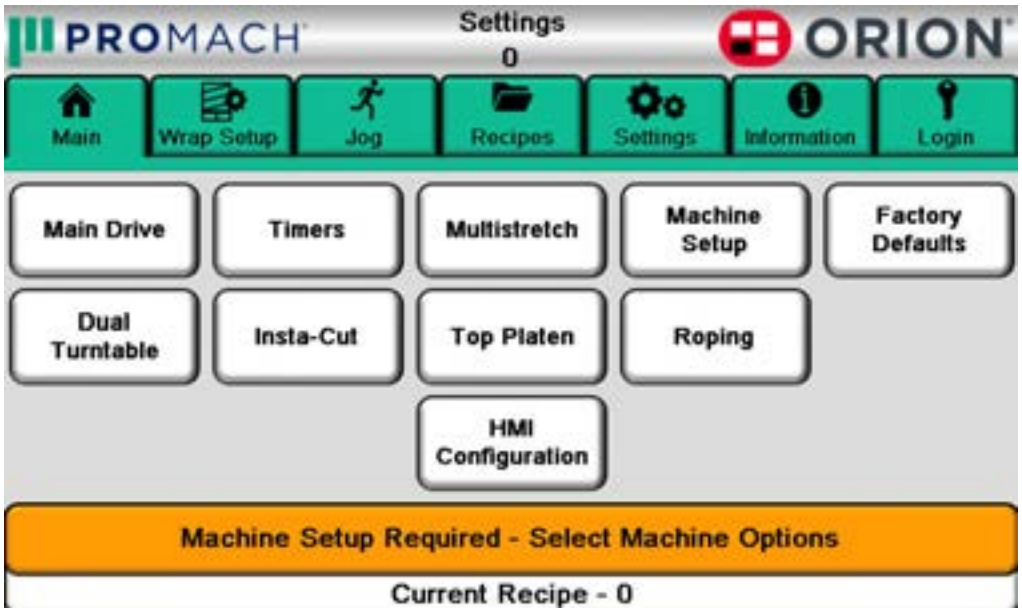


Table 3-11. The Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Main Drive	Press this button to go to the Main Drive Settings Screen. See “The Main Drive Screen” on page 3 - 28.	
Dual Turntable	Press this button to go to the Dual Turntable Screen. See “The Dual Turntable Screen” on page 3 - 30.	
Timers	Press this button to go to the Timers Screen. See “The Timers (Standard) Screen” on page 3 - 31.	

Table 3-11. The Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to go to the Insta-Cut Screen. See “The Insta-Cut Screen” on page 3 - 39.	
	Press this button to go to the Multistretch Settings Screen. See “The Multistretch Screen” on page 3 - 43.	
	Press this button to go to the Top Platen Screen. see “The Top Platen Screen” on page 3 - 44.	
	Press this button to go to the HMI Configuration Screen. See “The HMI Configuration Screen” on page 3 - 46.	
	Press this button to go to the Machine Setup Settings Screen. See “The Machine Setup Screen” on page 3 - 47.	
	Press this button to go to the Roping Settings Screen (if applicable). See “The Roping Screen” on page 3 - 50.	
	Press this button to go to the Factory Defaults Settings Screen. See “The Factory Defaults Screen” on page 3 - 59.	

The Main Drive Screen

On the Main Drive Screen, you may set the high, low, and jog speed percentages, adjust the slowdown or end of cycle positions, home the machine, or jog the main drive. To access this screen, select the Settings tab on the green navigation bar, and then press the Main Drive button.

Figure 3 - 17
The Main Drive Screen

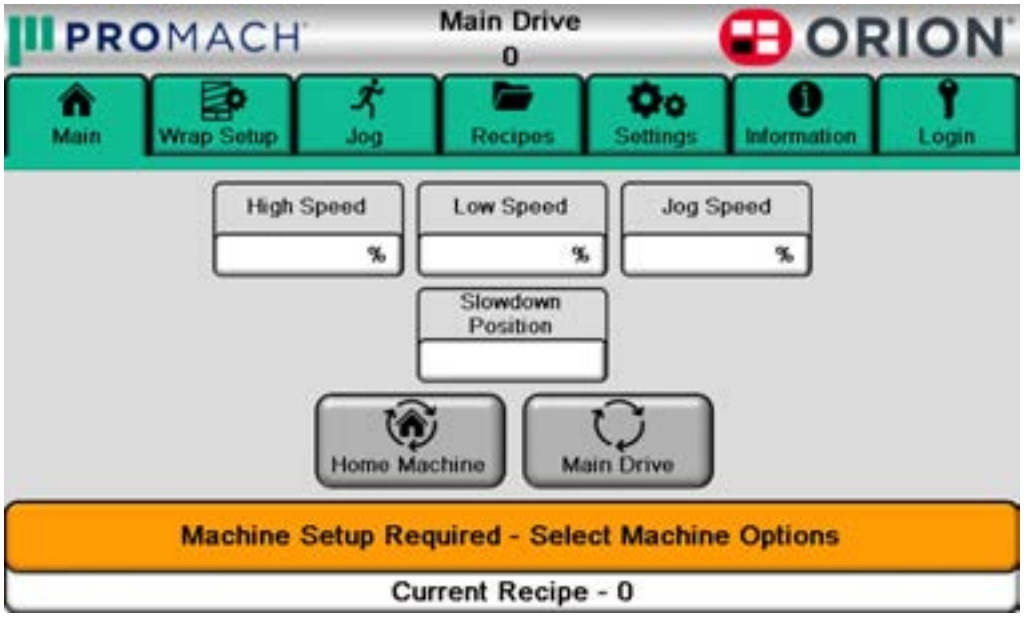
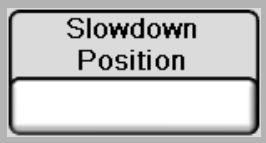
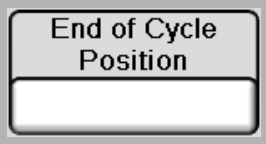
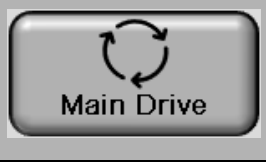


Table 3-12. The Main Drive Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
High Speed %	Press this button to modify the High Speed value, in terms of percentage. This value determines the speed at which the Main Drive will travel during the wrap cycle when High Speed is selected.	
Low Speed %	Press this button to modify the Low Speed value, in terms of percentage. This value determines the speed at which the Main Drive will travel during the wrap cycle when Low Speed is selected.	
Jog Speed %	Press this button to modify the Jog Speed value, in terms of percentage. This value determines the speed at which the Main Drive will travel when jogging enabled conveyors or components.	

Table 3-12. The Main Drive Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	The slow down position is when the Turntable starts to decel before stopping at home. An earlier slow down position might be needed for heavier loads and a later slowdown position for lighter loads. The value is the tooth count in which the machine will start to decelerate.	
	Press this button to modify the End of Cycle Position value. This value determines the tooth count position at which the Main Drive will stop at the end of a wrap cycle, or when the Home Machine button is pressed. Min - 0, Max - 50.	
	Press this button to move the machine to the home position.	
	Press this button to jog the main drive (turntable/ tower) in the direction of normal operation. The main drive moves until the operator releases the jog button.	

The Dual Turntable Screen

For machines with dual turntables, the Dual Turntable Screen allows you to select individual turntables or both. To access this screen, select the Settings tab on the green navigation bar, then press the Dual Turntable button.

Figure 3 - 18
The Dual Turntable Screen

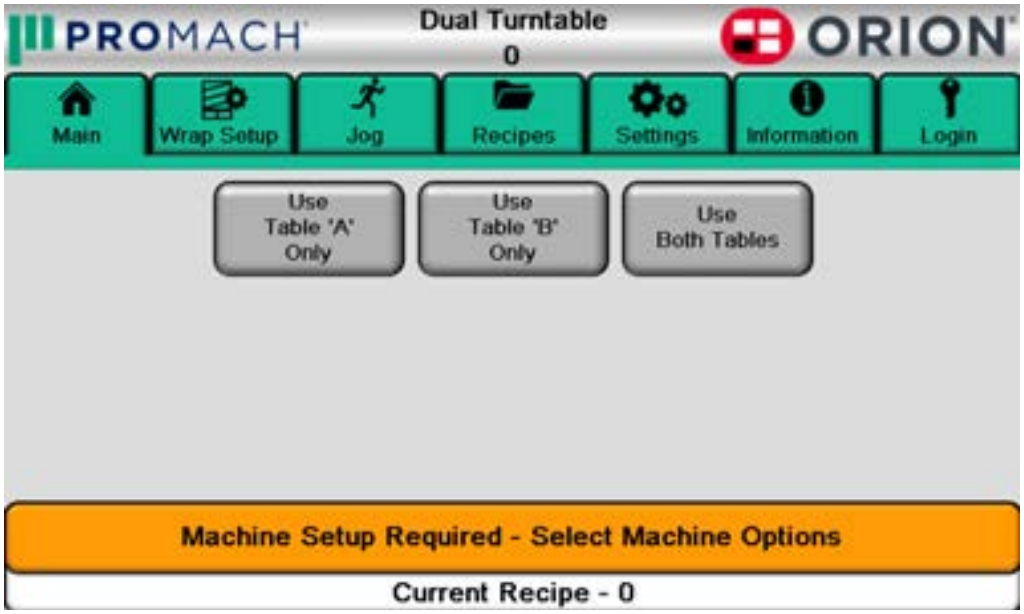


Table 3-13. The Dual Turntable Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Use Table 'A' Only	Press this button to enable turntable A only.	Only Table 'A' Used
Use Table 'B' Only	Press this button to enable turntable B only.	Only Table 'B' Used
Use Both Tables	Press this button to enable both turntable A and B.	Both Tables Used

The Timers (Standard) Screen

On the Timers (Standard) Screen, you may adjust the delay and duration timer settings for the machine. If your machine has additional programming options, see “The Timers (Options) Screen” on page 3 - 37. To access this screen, select the Settings tab on the green navigation bar, then press the Timers Screen button.

Figure 3 - 19
The Timers (Standard) Screen

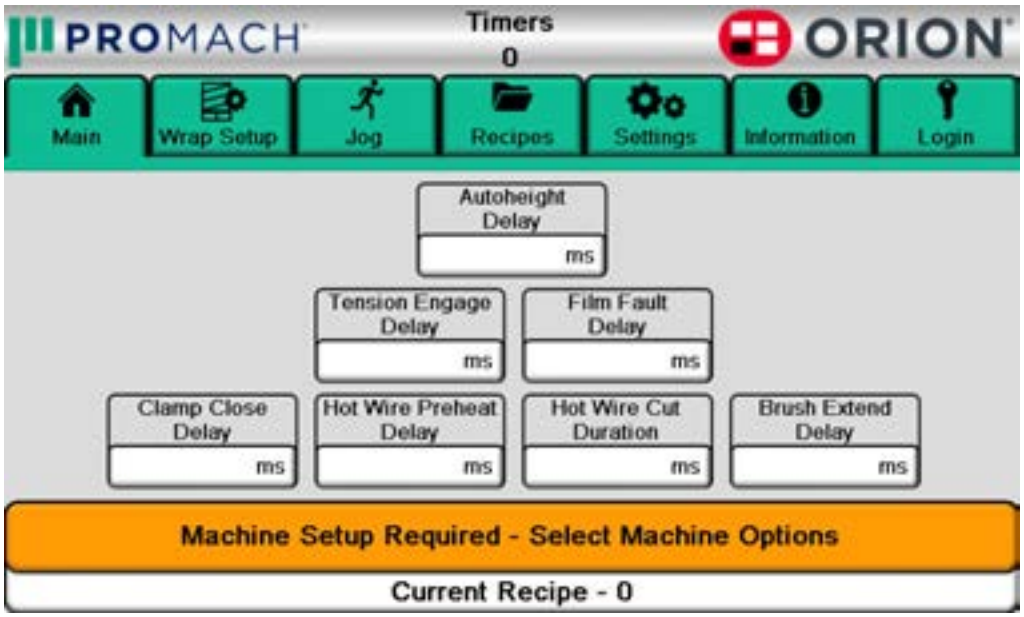
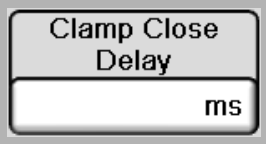
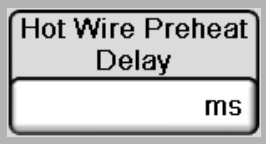
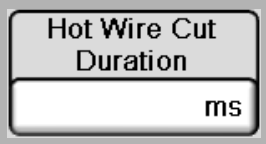


Table 3-14. The Timers (Standard) Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Autoheight Delay ms	Press this button to modify the Autoheight Delay value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load. This is used to adjust the amount of overlap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Tension Engage Delay ms	Press this button to modify the Tension Engage Delay value, in terms of milliseconds. This value determines the amount of time, at the beginning of the wrap cycle, that the Multistretch will pay out film at normal speed before applying tension. This is to keep film from pulling out of the clamp or away from the load. Min - 0 ms, Max - 10,000 ms.	
Film Fault Delay ms	Press this button to modify the Film Fault Delay value, in terms of milliseconds. This value determines the amount of time, during a wrap cycle, that the Multistretch must be inactive before triggering an End of Film Roll or Broken Film fault. Min - 0 ms, Max - 10,000 ms.	

Table 3-14. The Timers (Standard) Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Clamp Close Delay value, in terms of milliseconds. This value determines the amount of time, after the Main Drive has reached the End of Cycle position, that the machine will delay before initiating the Clamp and Cut sequence. Min - 0 sec, Max - 3 sec.	
	Press this button to modify the Hot Wire Preheat Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Hot Wire will delay before turning on to cut the film. Min - 0 ms, Max - 5,000 ms.	
	Press this button to modify the Hot Wire Cut Duration value, in terms of milliseconds. This value determines the amount of time, after the Hot Wire has turned on, that it will remain on to cut the film. **Warning**: Too high of a value may destroy the hot wire. Min - 1,000 ms, Max - 7,000 ms.	
	Press this button to modify the Brush Extend Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Brush will delay before extending to wipe the film tail against the load. Min - 0 ms, Max - 5,000 ms.	

The Timers (Top Platen) Screen

On the Timers (Top Platen) Screen, you may adjust the delay and duration timer settings for the machine. If your machine does not have a top platen, see “The Timers (Standard) Screen” on page 3 - 31. To access this screen, select the Settings tab on the green navigation bar, then press the Timers Screen button.

Figure 3 - 20
The Timers (Top Platen) Screen

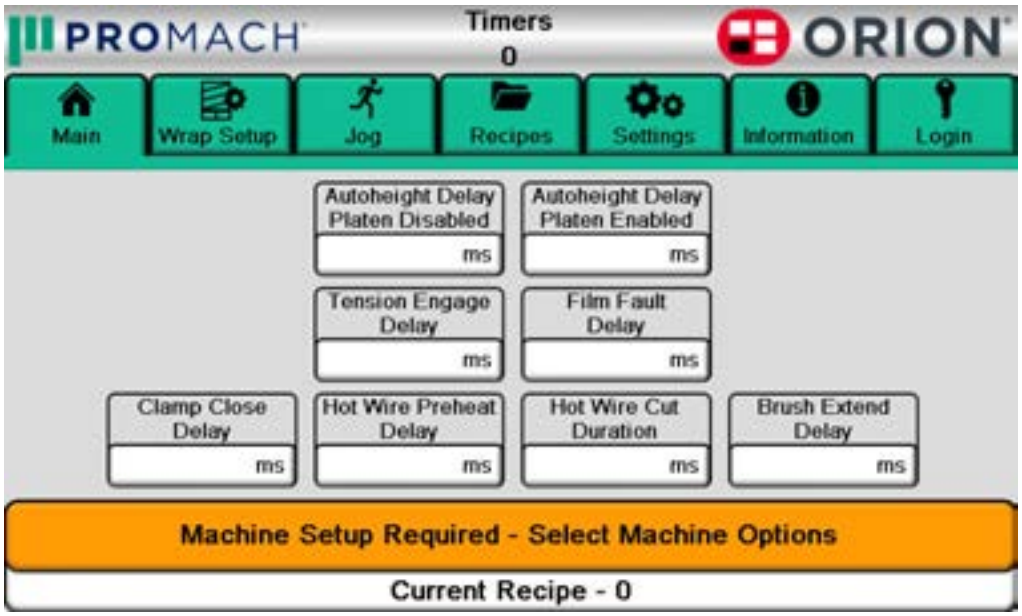
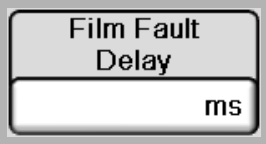
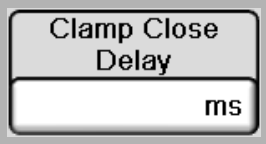
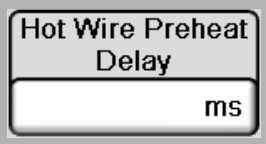
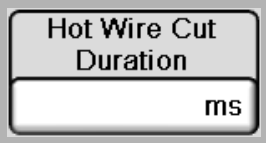


Table 3-15. The Timers (Top Platen) Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Autoheight Delay Platen Disabled ms	Press this button to modify the Autoheight Delay Platen Disabled value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load when the Top Platen is disabled. This is used to adjust the amount of overlap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Autoheight Delay Platen Enabled ms	Press this button to modify the Autoheight Delay Platen Enabled value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load when the Top Platen is enabled. This is used to adjust the amount of overlap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Tension Engage Delay ms	Press this button to modify the Tension Engage Delay value, in terms of milliseconds. This value determines the amount of time, at the beginning of the wrap cycle, that the Multistretch will pay out film at normal speed before applying tension. This is to keep film from pulling out of the clamp or away from the load. Min - 0 ms, Max - 10,000 ms.	

Table 3-15. The Timers (Top Platen) Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Film Fault Delay value, in terms of milliseconds. This value determines the amount of time, during a wrap cycle, that the Multistretch must be inactive before triggering an End of Film Roll or Broken Film fault. Min - 0 ms, Max - 10,000 ms.	
	Press this button to modify the Clamp Close Delay value, in terms of milliseconds. This value determines the amount of time, after the Main Drive has reached the End of Cycle position, that the machine will delay before initiating the Clamp and Cut sequence. Min - 0 sec, Max - 3 sec.	
	Press this button to modify the Hot Wire Preheat Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Hot Wire will delay before turning on to cut the film. Min - 0 ms, Max - 5,000 ms.	
	Press this button to modify the Hot Wire Cut Duration value, in terms of milliseconds. This value determines the amount of time, after the Hot Wire has turned on, that it will remain on to cut the film. **Warning**: Too high of a value may destroy the hot wire. Min - 1,000 ms, Max - 7,000 ms.	
	Press this button to modify the Brush Extend Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Brush will delay before extending to wipe the film tail against the load. Min - 0 ms, Max - 5,000 ms.	

The Timers (Top Platen Options) Screen

On the Timers (Top Platen Options) Screen, you may adjust the delay and duration timer settings for the machine. If your machine does not have a top platen, see “The Timers (Standard) Screen” on page 3 - 31. If your machine has a top platen but does not have options, see “The Timers (Top Platen) Screen” on page 3 - 33. To access this screen, select the Settings tab on the green navigation bar, then press the Timers Screen button.

Figure 3 - 21
The Timers (Top Platen Options) Screen

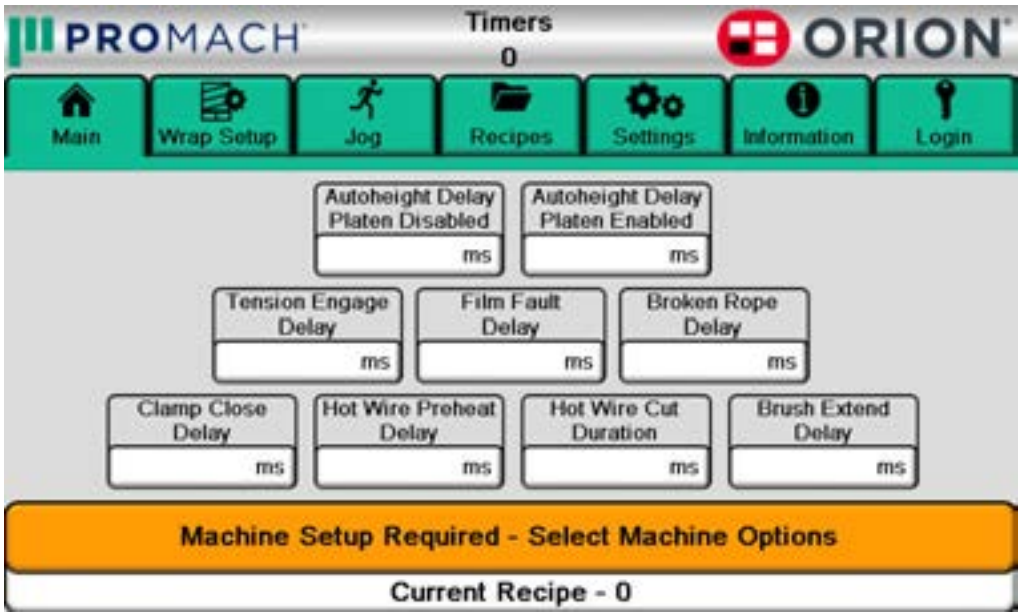
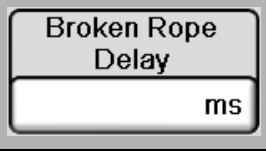
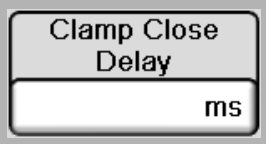
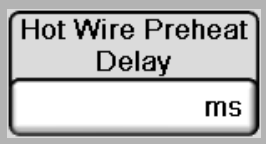
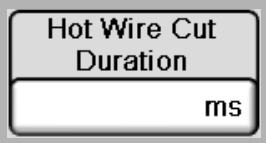


Table 3-16. The Timers (Top Platen Options) Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Autoheight Delay ms	Press this button to modify the Autoheight Delay value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load. This is used to adjust the amount of overlap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Tension Engage Delay ms	Press this button to modify the Tension Engage Delay value, in terms of milliseconds. This value determines the amount of time, at the beginning of the wrap cycle, that the Multistretch will pay out film at normal speed before applying tension. This is to keep film from pulling out of the clamp or away from the load. Min - 0 ms, Max - 10,000 ms.	
Film Fault Delay ms	Press this button to modify the Film Fault Delay value, in terms of milliseconds. This value determines the amount of time, during a wrap cycle, that the Multistretch must be inactive before triggering an End of Film Roll or Broken Film fault. Min - 0 ms, Max - 10,000 ms.	

Table 3-16. The Timers (Top Platen Options) Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Broken Rope Delay value, in terms of milliseconds. This value determines the amount of time, during a roping cycle, that the Multistretch must be inactive before triggering an Broken Rope fault. Min - 0 ms, Max - 10,000 ms.	
	Press this button to modify the Clamp Close Delay value, in terms of milliseconds. This value determines the amount of time, after the Main Drive has reached the End of Cycle position, that the machine will delay before initiating the Clamp and Cut sequence. Min - 0 sec, Max - 3 sec.	
	Press this button to modify the Hot Wire Preheat Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Hot Wire will delay before turning on to cut the film. Min - 0 ms, Max - 5,000 ms.	
	Press this button to modify the Hot Wire Cut Duration value, in terms of milliseconds. This value determines the amount of time, after the Hot Wire has turned on, that it will remain on to cut the film. **Warning**: Too high of a value may destroy the hot wire. Min - 1,000 ms, Max - 7,000 ms.	
	Press this button to modify the Brush Extend Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Brush will delay before extending to wipe the film tail against the load. Min - 0 ms, Max - 5,000 ms.	

The Timers (Options) Screen

On the Timers (Options) Screen, you may adjust the delay and duration timer settings for the machine. If your machine does not have additional options, see “The Timers (Standard) Screen” on page 3 - 31. To access this screen, select the Settings tab on the green navigation bar, then press the Timers Screen button.

Figure 3 - 22
The Timers (Options) Screen

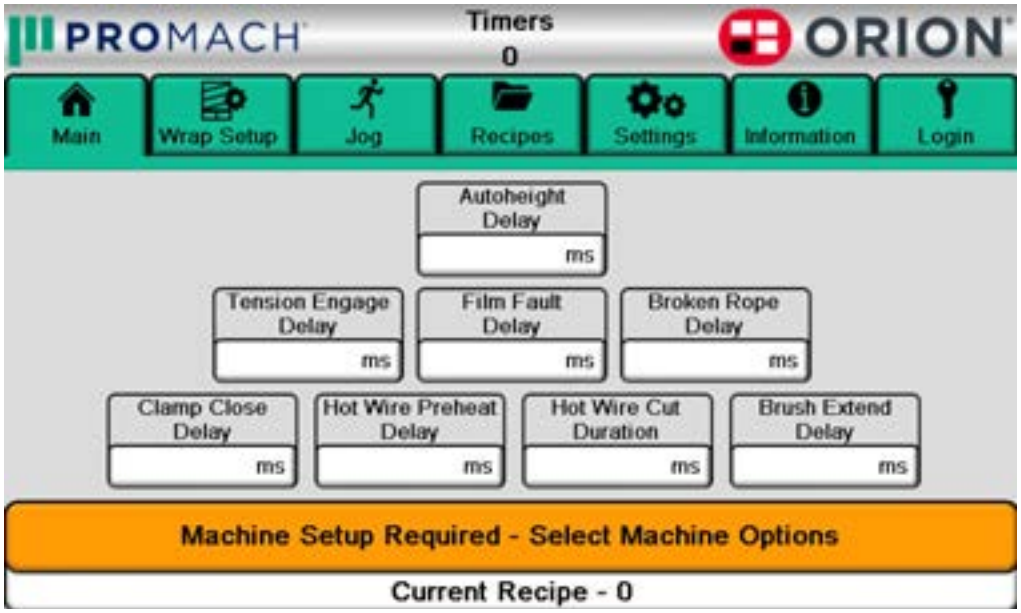
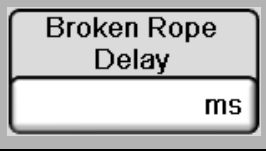
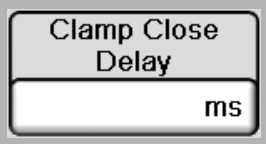
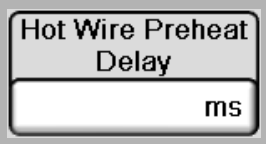
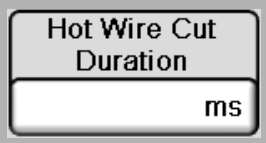


Table 3-17. The Timers (Options) Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Autoheight Delay ms	Press this button to modify the Autoheight Delay value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load. This is used to adjust the amount of overlap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Tension Engage Delay ms	Press this button to modify the Tension Engage Delay value, in terms of milliseconds. This value determines the amount of time, at the beginning of the wrap cycle, that the Multistretch will pay out film at normal speed before applying tension. This is to keep film from pulling out of the clamp or away from the load. Min - 0 ms, Max - 10000 ms	
Film Fault Delay ms	Press this button to modify the Film Fault Delay value, in terms of milliseconds. This value determines the amount of time, during a wrap cycle, that the Multistretch must be inactive before triggering an End of Film Roll or Broken Film fault. Min - 0 ms, Max - 10,000 ms.	

Table 3-17. The Timers (Options) Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Broken Rope Delay value, in terms of milliseconds. This value determines the amount of time, during a roping cycle, that the Multistretch must be inactive before triggering an Broken Rope fault. Min - 0 ms, Max - 10,000 ms.	
	Press this button to modify the Clamp Close Delay value, in terms of milliseconds. This value determines the amount of time, after the Main Drive has reached the End of Cycle position, that the machine will delay before initiating the Clamp and Cut sequence. Min - 0 sec, Max - 3 sec.	
	Press this button to modify the Hot Wire Preheat Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Hot Wire will delay before turning on to cut the film. Min - 0 ms, Max - 5,000 ms.	
	Press this button to modify the Hot Wire Cut Duration value, in terms of milliseconds. This value determines the amount of time, after the Hot Wire has turned on, that it will remain on to cut the film. **Warning**: Too high of a value may destroy the hot wire. Min - 1000 ms, Max - 7,000 ms.	
	Press this button to modify the Brush Extend Delay value, in terms of milliseconds. This value determines the amount of time, after the Brush and Cutter arm has begun to extend, that the Brush will delay before extending to wipe the film tail against the load. Min - 0 ms, Max - 5,000 ms.	

The Insta-Cut Screen

On the Insta-Cut Screen, you may enable or disable the Insta-cut, jog the puncher, turn the punch indicator on or off, adjust the position or duration settings, or the main drive speed for the Insta-Cut. If your machine has a Dual Turntable, see “The Dual Insta-Cut Screen” on page 3 - 41. If your machine does not have an Insta-Cut, you may disregard these screens. To access this screen, select the Settings tab on the green navigation bar, then press the Insta-Cut button.

Figure 3 - 23
The Insta-Cut Screen

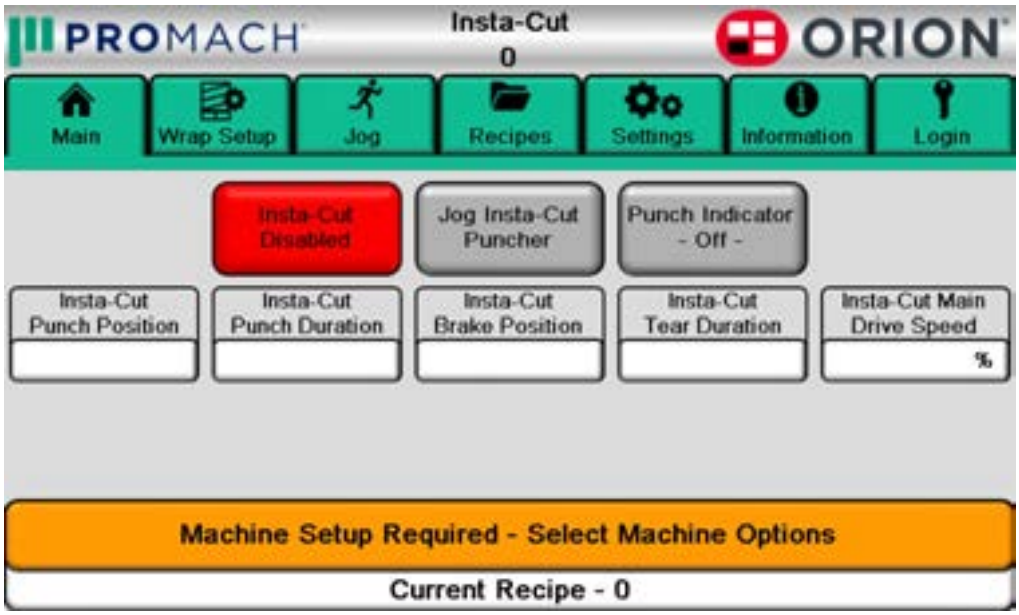
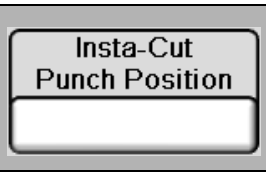
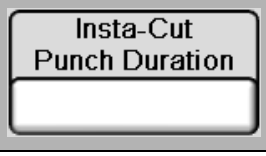
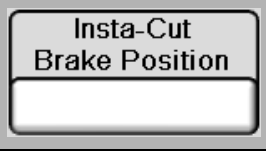
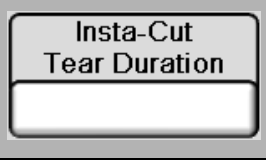
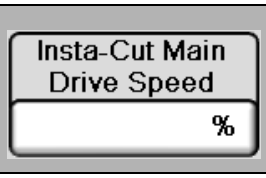


Table 3-18. The Insta-Cut Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Insta-Cut Disabled	Press this button to enable or disable the Insta-Cut.	Insta-Cut Enabled
Jog Insta-Cut Puncher	Press and hold this button to jog the Insta-Cut. Release this button to stop the jog.	Jog Insta-Cut Puncher
Punch Indicator - Off -	This indicator will glow green when the Insta-Cut puncher is active.	Punch Indicator - On -

Table 3-18. The Insta-Cut Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the Insta-Cut Punch Position. This is the tooth count position at which the Insta-Cut puncher activates to punch a hole in the film. Min - 20, Max - 96 or 112, depending on sprocket selection.	
	Press this button to modify the Insta-Cut Punch Duration. This is the amount of teeth that the Insta-Cut puncher will stay activated to create a hole in the film. Min - 2, Max - 15.	
	Press this button to modify the Insta-Cut Brake Position. This is the tooth count position at which the Multistretch will stop paying out film, which causes the film to tear. Min - (Insta-Cut Punch Position + Insta-Cut Punch Dwell) Max - 96 or 112, depending on sprocket selection.	
	Press this button to modify the Insta-Cut Tear Duration. This is the amount of teeth that the Main Drive will continue to travel at the predefined Insta-Cut Speed before slowing down to Jog Speed and stopping at home. Min - 0 Max - 96 or 112, depending on sprocket selection.	
	Press this button to modify the Insta-Cut Main Drive Speed. This is the speed at which the Main Drive will travel during the Insta-Cut sequence. Min - 8 Hz, Max - 27 Hz.	

The Dual Insta-Cut Screen

On the Insta-Cut Screen, you may enable or disable the Insta-cut for the turntables, jog the puncher, turn the punch indicator on or off, adjust the position or duration settings for each turntable, or the main drive speed for the Insta-Cut. If your machine has a Dual Turntable, see “The Dual Insta-Cut Screen” on page 3 - 41. If your machine does not have an Insta-Cut, you may disregard these screens. To access this screen, select the Settings tab on the green navigation bar, then press the Insta-Cut button.

Figure 3 - 24
The Dual Insta-Cut Screen

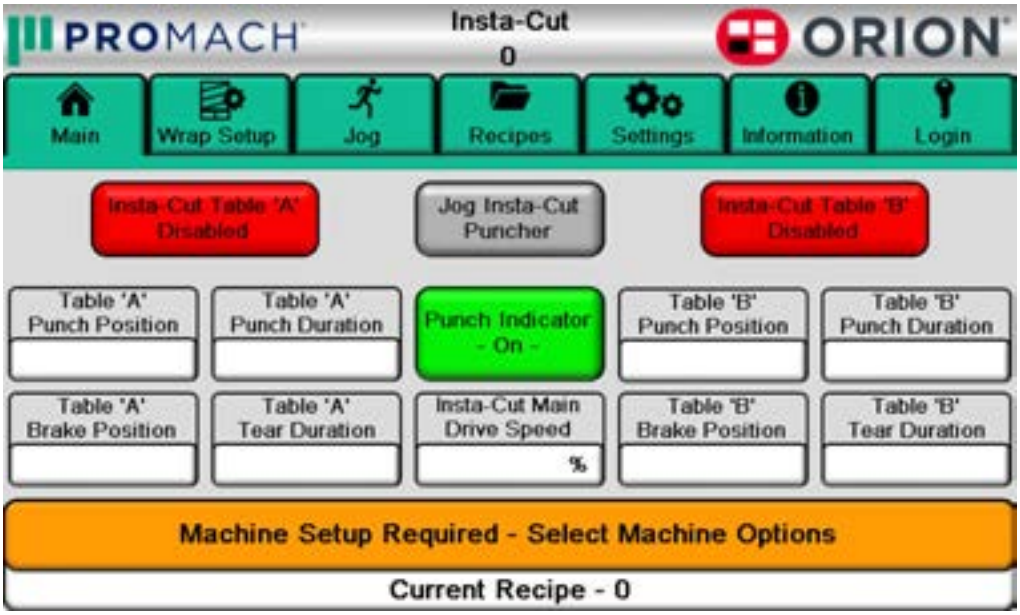
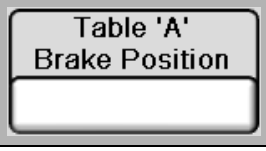
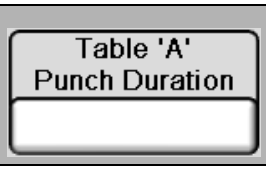
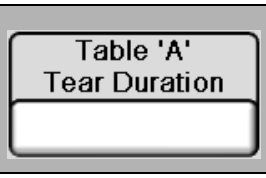
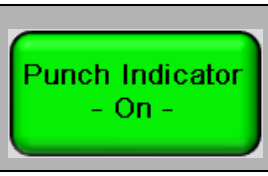
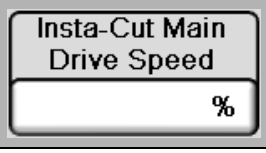


Table 3-19. The Dual Insta-Cut Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Insta-Cut Table 'A' Disabled	Press this button to toggle between Insta-Cut On or Insta-Cut Off for table A. This allows the operator to disable the Insta-Cut function.	Insta-Cut Table 'A' Enabled
Jog Insta-Cut Puncher	Press and hold this button to jog the Insta-Cut Puncher. Release this button to stop the jog.	Jog Insta-Cut Puncher
Insta-Cut Table 'B' Disabled	Press this button to toggle between Insta-Cut On or Insta-Cut Off for table B. This allows the operator to disable the Insta-Cut function.	Insta-Cut Table 'B' Enabled
Table 'A' Punch Position	Press this button to modify the indicated Table’s (A or B) Punch Position. This is the tooth count position at which the Insta-Cut puncher activates to punch a hole in the film. Min - 20 Max - 96 or 112, depending on sprocket selection.	

Table 3-19. The Dual Insta-Cut Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to modify the indicated Table's (A or B) Brake Position. This is the tooth count position at which the Multistretch will stop paying out film, which causes the film to tear. Min - (Insta-Cut Punch Position + Insta-Cut Punch Dwell) Max - 96 or 112, depending on sprocket selection.	
	Press this button to modify the indicated Table's (Aor B) Punch Duration. This is the amount of teeth that the Insta-Cut puncher will stay activated to create a hole in the film. Min - 2, Max - 15.	
	Press this button to modify the indicated Table's (A or B) Tear Duration. This is the amount of teeth that the Main Drive will continue to travel at the predefined Insta-Cut Speed before slowing down to Jog Speed and stopping at home. Min - 0 Max - 96 or 112, depending on sprocket selection.	
	This indicator will glow green when the Insta-Cut puncher is active.	
	Press this button to modify the Insta-Cut Main Drive Speed. This is the speed at which the Main Drive will travel during the Insta-Cut sequence. Min - 8 Hz, Max - 27 Hz.	

The Multistretch Screen

On the Multistretch Screen, you may adjust or view the dancer bar speed settings. To access this screen, select the Settings tab on the green navigation bar, then press the Multistretch button.

Figure 3 - 25
The Multistretch Screen

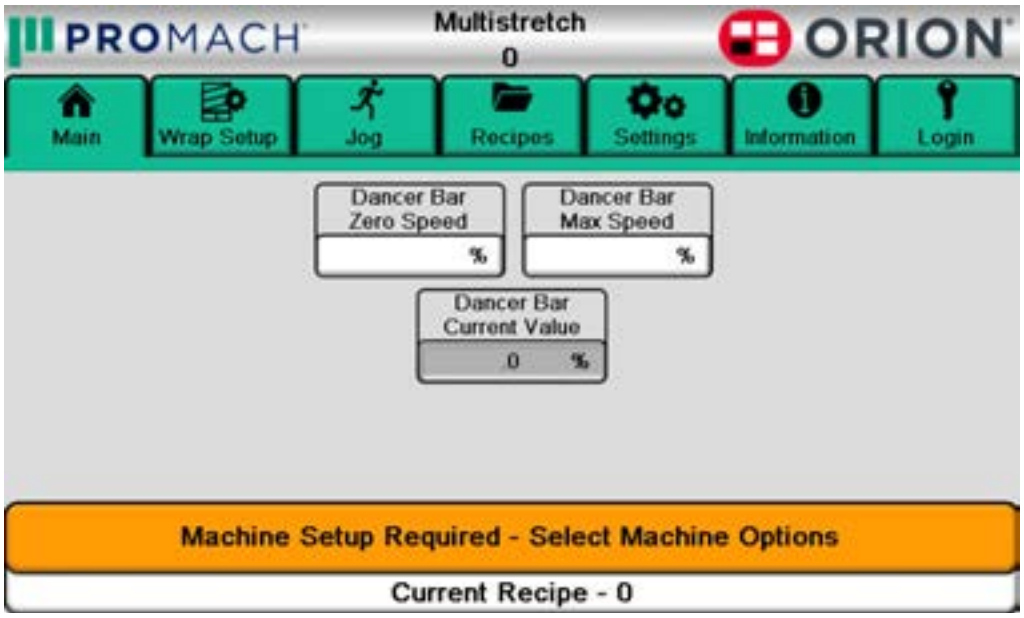


Table 3-20. The Multistretch Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Dancer Bar Zero Speed %	This value should be just high enough that the Multistretch will not run when the Dancer Bar is not actuated.	
Dancer Bar Max Speed %	With machine E-Stopped, hold Dancer Bar to full deflection. Enter value from the dancer bar current value display.	
Dancer Bar Current Value .0 %	This is a feedback of what the sensor is currently reading.	

The Top Platen Screen

On the Top Platen Screen, you may enable, disable, or jog the top platen, home the machine or select manual or automatic mode. To access this screen, select the Settings tab on the green navigation bar, then press the Top Platen button.

Figure 3 - 26
The Top Platen Screen

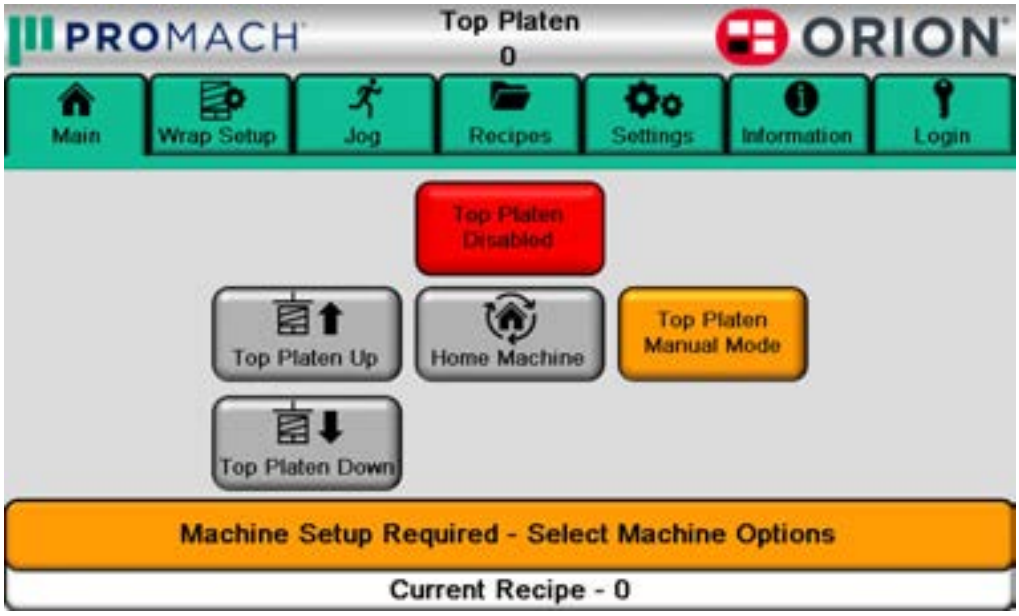


Table 3-21. The Top Platen Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Top Platen Disabled	Press this button to enable or disable the top platen.	Top Platen Enabled
Top Platen Up	Press this button to jog the top platen upwards. The top platen moves slowly upwards until the operator releases the button.	Top Platen Up
Top Platen Down	Press this button to jog the top platen downwards. The top platen moves slowly downwards until the operator releases the button.	Top Platen Down
Home Machine	Press this button to move the machine to the home position.	Home Machine

Table 3-21. The Top Platen Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to toggle between the top platen manual and automatic modes.	

The HMI Configuration Screen

On the HMI Configuration Screen, you can either confirm or cancel the HMI software shutdown. To access this screen, select the Settings tab on the green navigation bar, then press the HMI Configuration button.

Figure 3 - 27
The HMI Configuration Screen

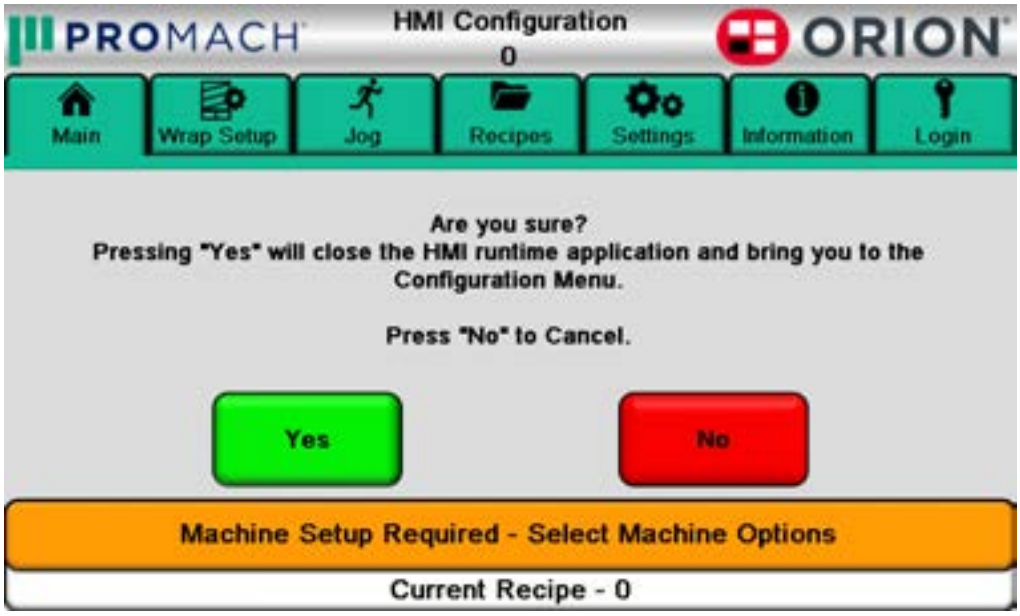


Table 3-22. The HMI Configuration Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Yes	Press this button to close the HMI application and will take you to the Configuration menu.	
No	Press this button to cancel the HMI program shutdown.	

The Machine Setup Screen

On the Machine Setup Screen, you can update the model, main drive, tooth count, or options settings or go to any of the indicated screens. To access this screen, select the Settings tab on the green navigation bar, then press the Machine Setup button.

Figure 3 - 28
The Machine Setup Screen

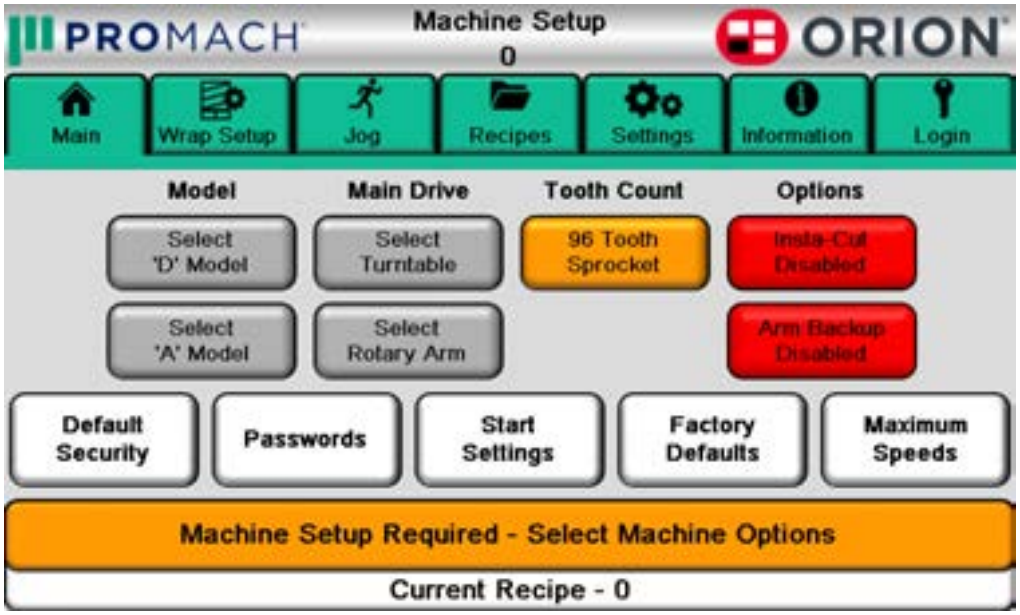


Table 3-23. The Machine Setup Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Select 'D' Model	Press this button to select model D.	'D' Model Selected
Select 'A' Model	Press this button to select model A.	'A' Model Selected
Select Turntable	Press this button to select that the machine is a turntable machine.	Turntable Selected

Table 3-23. The Machine Setup Screen Button Descriptions (Continued)

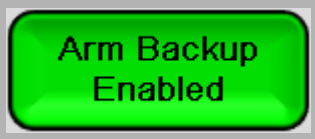
STATE 1	DESCRIPTION	STATE 2
	Press this button to select that the machine is a rotary arm machine.	
	Press this button to select whether the machine has a 96 tooth or a 112 tooth sprocket.	
	Press this button to activate or de-activate Insta-Cut.	
	Press this button to enable or disable the Arm Backup feature (RTA model only). When enabled, the Rotary Arm will reverse to the Home Prox after the film was clamped and cut.	
	Press this button to go to the Default Security Screen. See “The Default Security Screen” on page 3 - 52.	
	Press this button to go to the Passwords Screen. See “The Passwords Screen” on page 3 - 54.	
	Press this button to go to the Start Settings Screen. See “The Start Settings Screen” on page 3 - 56.	
	Press this button to go to the Factory Defaults Settings Screen. See “The Factory Defaults Screen” on page 3 - 59.	

Table 3-23. The Machine Setup Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to go to the Maximum Speeds Screen. See “The Maximum Speed Screen” on page 3 - 58.	

The Roping Screen

If your machine features the option to apply roping to loads, on the Roping Screen, you can enable or disable the roping sequence. If your machine does not feature the option to apply roping to loads, you may disregard this screen. To access this screen, select the Settings tab on the green navigation bar, then press the Roping button.

Figure 3 - 29
The Roping Screen

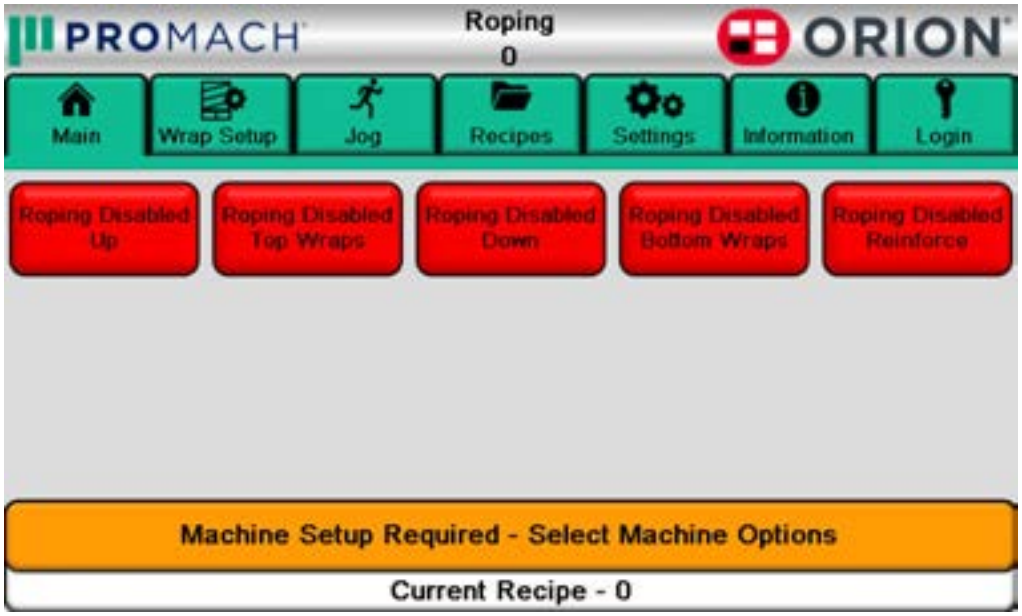
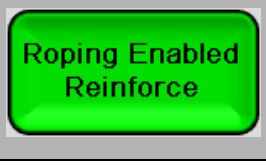


Table 3-24. The Roping Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Roping Disabled Up	Press this button to enable or disable the roping traveling upwards. When enabled, the machine uses roping while traveling up the load instead of full web.	Roping Enabled Up
Roping Disabled Top Wraps	Press this button to enable or disable the top wrap roping. When enabled, the machine uses ropes on the top wraps instead of full web.	Roping Enabled Top Wraps
Roping Disabled Down	Press this button to enable or disable the roping traveling down. When enabled, the machine uses roping while traveling down the load instead of full web.	Roping Enabled Down

Table 3-24. The Roping Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to enable or disable the bottom wrap roping. When enabled, the machine uses ropes on the bottom wraps instead of full web.	
	Press this button to enable or disable the reinforcement roping. When enabled, the machine applies ropes on the load instead of full web.	

The Default Security Screen

On the Default Security Screen, you can select the default security settings for the machine, or go to the previous screen. To access this screen, select the Settings tab on the green navigation bar, press the Machine Setup button, then press the Default Security button.

Figure 3 - 30
The Default Security Screen

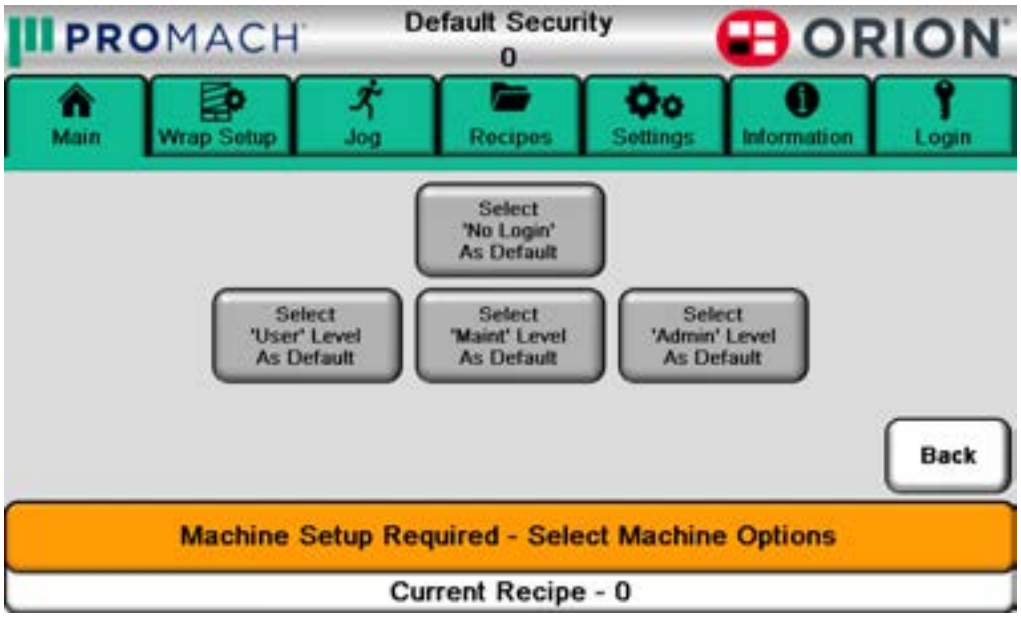


Table 3-25. The Default Security Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Select 'No Login' As Default	Press this button to set the machine security default to allow users to adjust settings and make changes to machine settings without entering login information.	'No Login' Selected As Default
Select 'User' Level As Default	Press this button to set the machine security default to require users to login as ‘User’. The machine will require the operator to enter the appropriate password for this login.	'User' Level Selected As Default
Select 'Maint' Level As Default	Press this button to set the machine security default to require users to login as ‘Maint’. The machine will require the operator to enter the appropriate password for this login.	'Maint' Level Selected As Default

Table 3-25. The Default Security Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to set the machine security default to require users to login as ‘Admin’. The machine will require the operator to enter the appropriate password for this login.	
	Press this button to go to the previous screen.	

The Passwords Screen

On the Passwords Screen, you can input or update passwords by access level, indicate inactive or active passwords, apply or clear passwords, clear inactive passwords, or go to the previous screen. To access this screen, select the Settings tab on the green navigation bar, press the Machine Setup button, then press the Passwords button.

Figure 3 - 31
The Passwords Screen

Table 3-26. The Passwords Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
USER #	This displays the user profile number. The machine will accept 10 different user profiles with separate password and access level combinations.	
CURRENT PASSWORD	This will display the current password and access level for the indicated user number.	CURRENT PASSWORD UPDATED
REQUESTED PASSWORD	Press this button for the indicated user number, enter the new password into the keyboard popup, and press enter. The Requested Password field will turn green.	REQUESTED PASSWORD UPDATED
Inactive	Press this button to toggle between access levels. You may enter a different password for each access level.	User Maint Admin

Table 3-26. The Passwords Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	After entering the requested password, press this button to apply the new password to the indicated user profile number. The new password will appear on the left and the Requested Password field will turn from green to white.	
	After entering in new passwords into the requested passwords fields, press this button to clear new passwords if you would like to clear all new passwords without saving them. The new password(s) in the Requested Password field(s) will be deleted and the field(s) will turn from green to white.	
	After toggling the access level to Inactive, press this button to clear Inactive passwords. This will remove the current password from the user profile.	
	Press this button to go to the previous screen.	

The Start Settings Screen

On the Start Settings Screen, you may adjust the start settings, enable or disable automatic restart, or go to the previous screen. To access this screen, select the Settings tab on the green navigation bar, press the Machine Setup button, then press the Start Settings button.

Figure 3 - 32
The Start Settings Screen

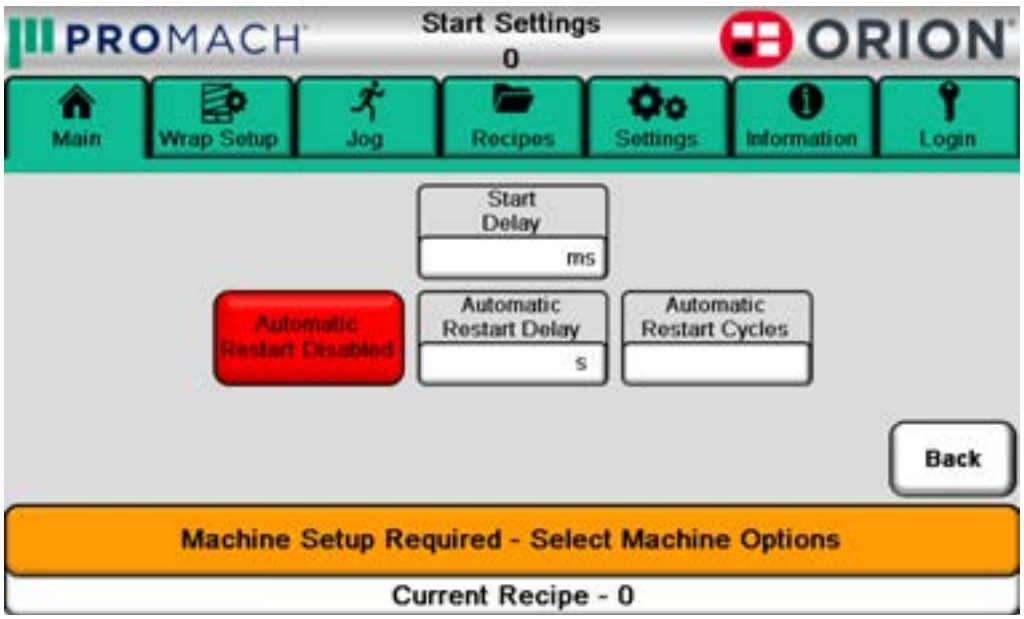
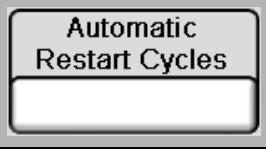


Table 3-27. The Start Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Start Delay ms	Press this button to modify the Start Delay value, in terms of milliseconds. This value determines the amount of time that the Start pushbutton must be pressed before the machine will start. Min - 500 ms, Max - 5000 ms.	
Automatic Restart Disabled	Press this button to enable or disable automatic restart mode. When automatic restart mode is enabled, the machine will automatically restart at the end of its cycle after the time indicated on the automatic restart delay timer elapses.	Automatic Restart Enabled
Automatic Restart Delay s	This modifies the delay time between the machine's automatic restart cycles.	

Table 3-27. The Start Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	This sets the number of cycles that the machine will automatically run.	
	Press this button to go to the previous screen.	

The Maximum Speed Screen

On the Maximum Speed Screen, you can adjust the maximum speeds for the Main Drive and the Multistretch, or go back to the previous screen. To access this screen, select the Settings tab on the green navigation bar, press the Machine Setup button, then press the Maximum Speed button.

Figure 3 - 33
The Maximum Speed Screen

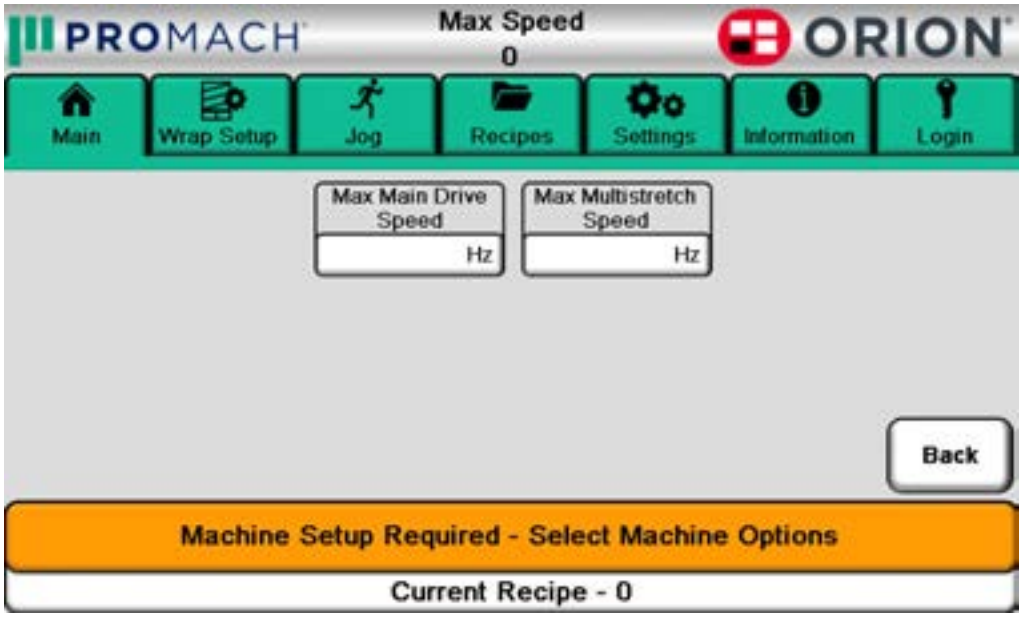


Table 3-28. The Maximum Speed Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Max Main Drive Speed Hz	Press this button to modify the Max Main Drive Speed value, in terms of hertz. This value determines the maximum speed at which the Main Drive will travel during the wrap cycle. Min - 8 Hz, Max - 27 Hz. The High and Low Speed percentages will calculate as a percentage of this speed.	
Max Multistretch Speed Hz	Press this button to modify the Max Multistretch Speed value, in terms of hertz. This value determines the maximum speed at which the dancer bar will travel during the wrap cycle. Min - 8 Hz, Max - 27 Hz. The Dancer Bar Max Speed and Dancer Bar Zero Speed percentages will calculate as a percentage of this speed.	
Back	Press this button to go to the previous screen.	

The Factory Defaults Screen

WARNING Only the manufacturer should use this screen.

The manufacturer uses this screen to restore factory defaults or go to the previous screen. This should only be used by OEM to set and restore factory default settings. This screen is locked out to most users.

Figure 3 - 34
The Factory Defaults Screen

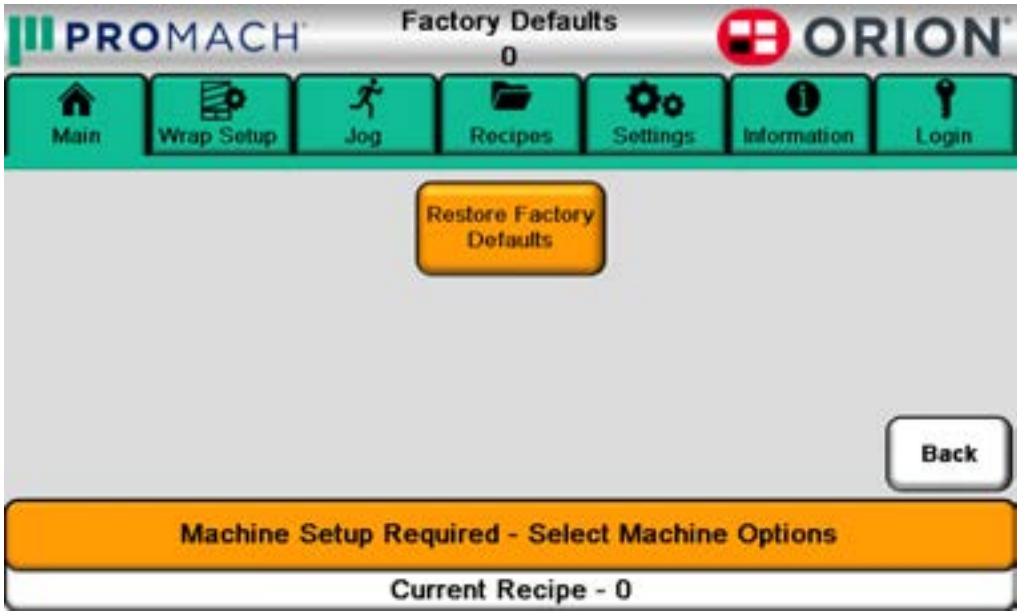


Table 3-29. The Factory Defaults Screen Button Description

STATE 1	DESCRIPTION	STATE 2
Back	Press this button to go to the previous screen.	

The Information Tab

The Information Screen

On the Information Screen, you can go to any of the tabbed or indicated screens. To access this screen, select the Information tab from the green navigation bar.

Figure 3 - 35
The Information Screen

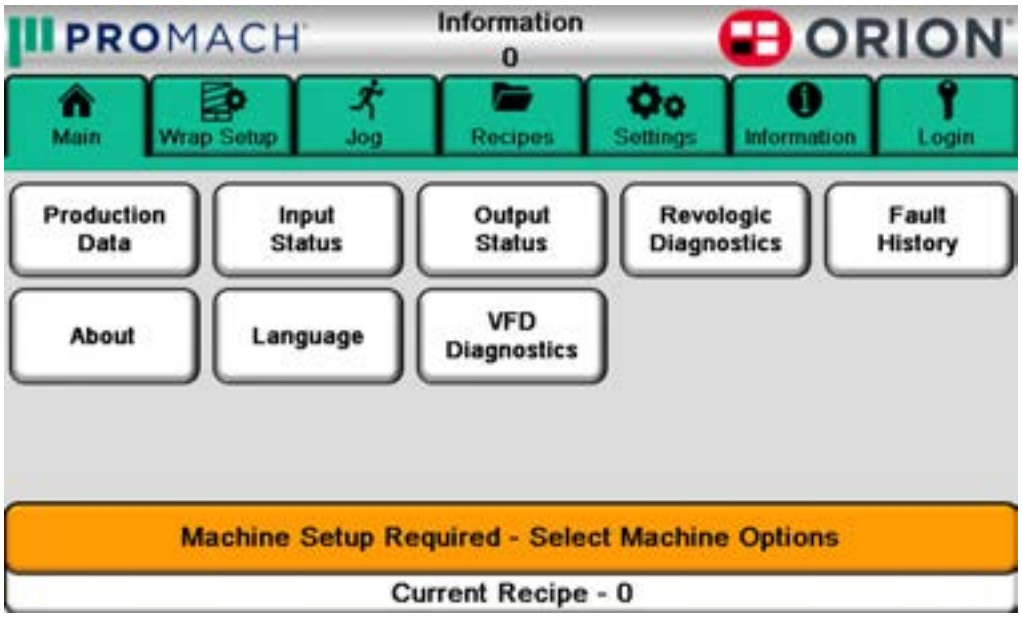
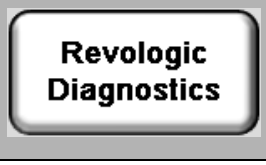
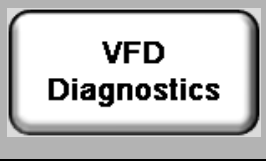


Table 3-30. The Information Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Production Data	Press this button to go to the Production Data Screen. See “The Production Data Screen” on page 3 - 62.	
Input Status	Press this button to go to the Input Status Screen. See “The Input Status 1 Screen” on page 3 - 64.	
Output Status	Press this button to go to the Input/Output Status Screen. See “The Output Status 1 Screen” on page 3 - 67.	

Table 3-30. The Information Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to go to the Revologic Diagnostics Screen. See “The Revologic Diagnostics Screen” on page 3 - 69.	
	Press this button to go to the Fault History Screen. See “The Fault History Screen” on page 3 - 70.	
	Press this button to go to the About Screen. See “The About Screen” on page 3 - 72.	
	Press this button to go to the Language Screen. See “The Language Screen” on page 3 - 73.	
	Press this button to go to the VFD Diagnostics Screen. See “The VFD Diagnostics Screen” on page 3 - 74.	

The Production Data Screen

On the Production Data Screen, you may view the cycles of the machine, the main drive RPM, or reset the shift cycles. To access this screen, select the Information tab on the green navigation bar, then press the Production Data button.

Figure 3 - 36
The Production Data Screen

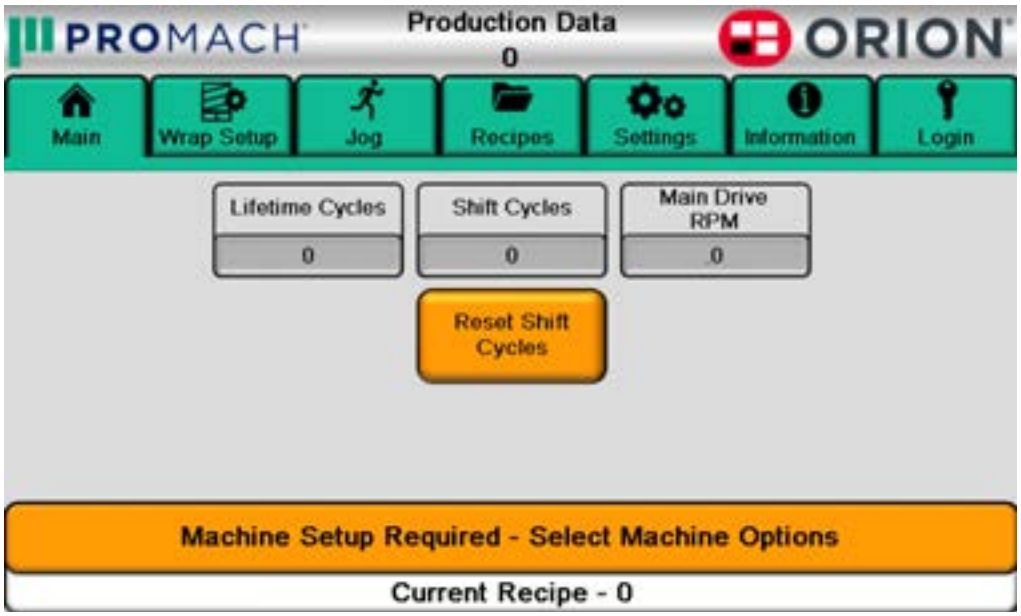
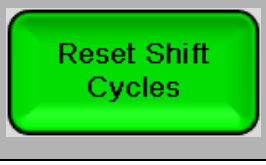


Table 3-31. The Production Data Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Lifetime Cycles 0	This display shows the number of cycles the machine has run, in total.	
Shift Cycles 0	This display shows the number of cycles the machine has run since the last shift cycle reset.	
Main Drive RPM .0	This display shows the actual running speed of the Main Drive, in rotations per minute.	

Table 3-31. The Production Data Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to reset the cycles for the shift.	

The Input Status 1 Screen

On the Input Status 1 Screen, you may view the status of the machine inputs or go to the next screen. To access this screen, select the Information tab on the green navigation bar, then press the Input Status button.

Figure 3 - 37
The Input 1 Status Screen

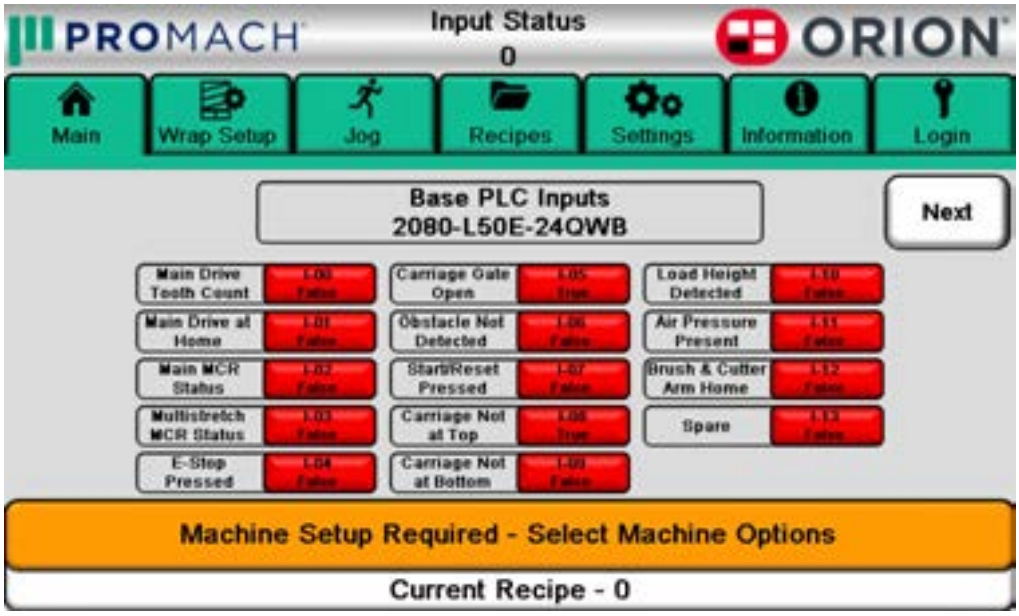


Table 3-32. The Input 1 Status Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
I-00 False	Red indicates and inactive input. Green indicates an active input.	TRUE
Next	Press this button to go to the next screen.	

The Input Status 2 Screen

On the Input Status 2 Screen,you may view the status of the machine inputs, go to the next screen, or go back to the previous screen. To access this screen, select the Information tab on the green navigation bar, press the Input Status button, then press the Next button on the Input Status 1 Screen. See “The Input Status 1 Screen” on page 3 - 64.

Figure 3 - 38
The Input 2 Status Screen

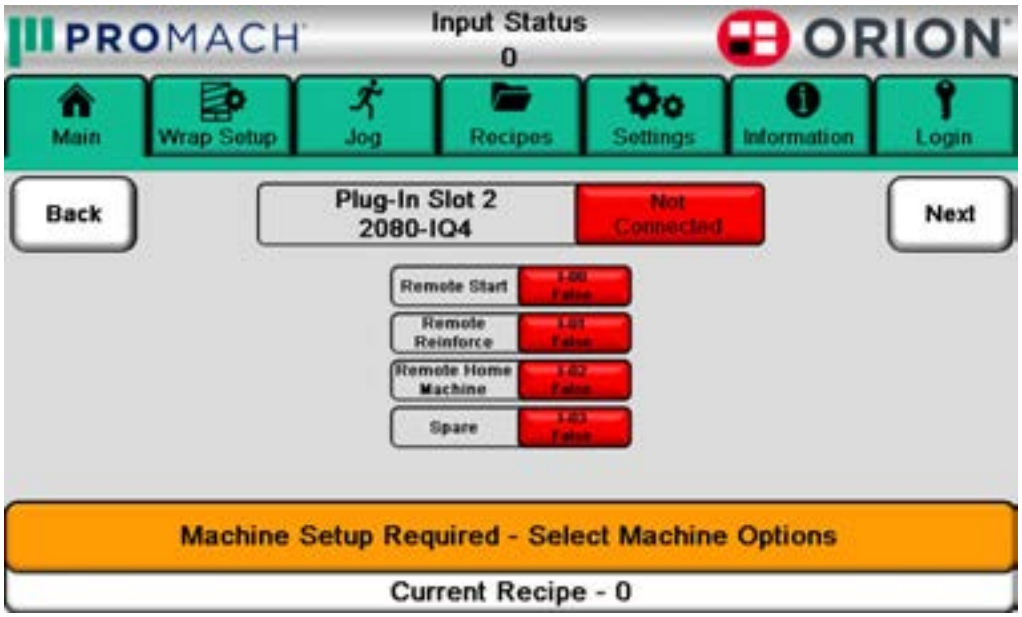


Table 3-33. The Input Status 2 Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
I-00 False	Red indicates and inactive input. Green indicates an active input.	TRUE
Back	Press this button to go to the previous screen.	
Next	Press this button to go to the next screen.	

The Input Status 3 Screen

On the Input Status 3 Screen,you may view the status of the machine inputs, go to the next screen, or go back to the previous screen. To access this screen, select the Information tab on the green navigation bar, press the Input Status button, then press the Next button on the Input Status 1 and 2 Screens. See “The Input Status 1 Screen” on page 3 - 64.

Figure 3 - 39
The Input 3 Status Screen

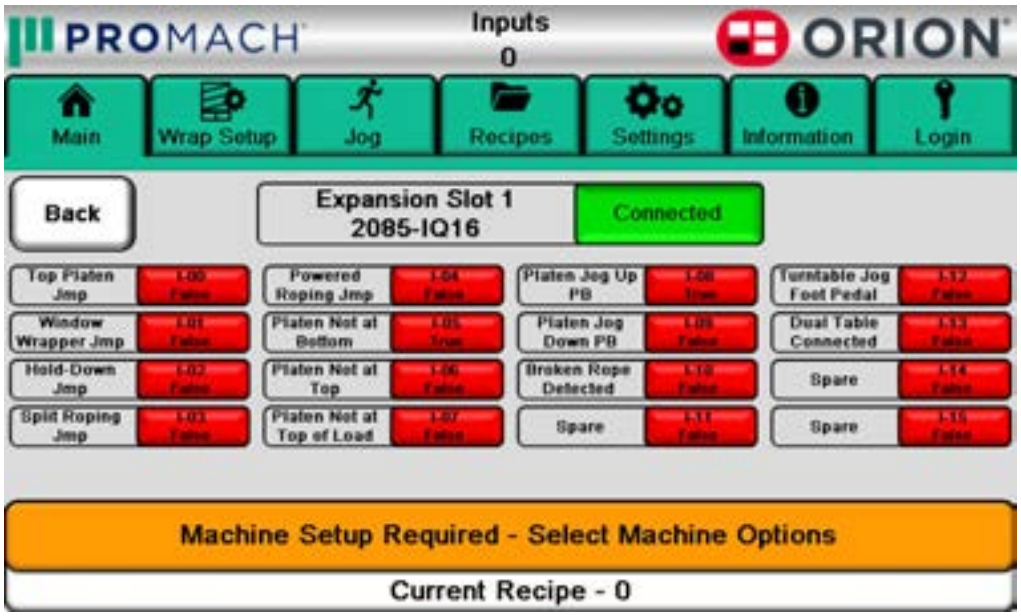


Table 3-34. The Input Status 3 Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
I-00 False	Red indicates and inactive input. Green indicates an active input.	TRUE
Back	Press this button to go to the previous screen.	
Next	Press this button to go to the next screen.	

The Output Status 1 Screen

On the Output Status 1 Screen, you can view the status of the machine outputs, or go to the next screen. To access this screen, select the Information tab on the green navigation bar, then press the Output Status button.

Figure 3 - 40
The Output 1 Status Screen

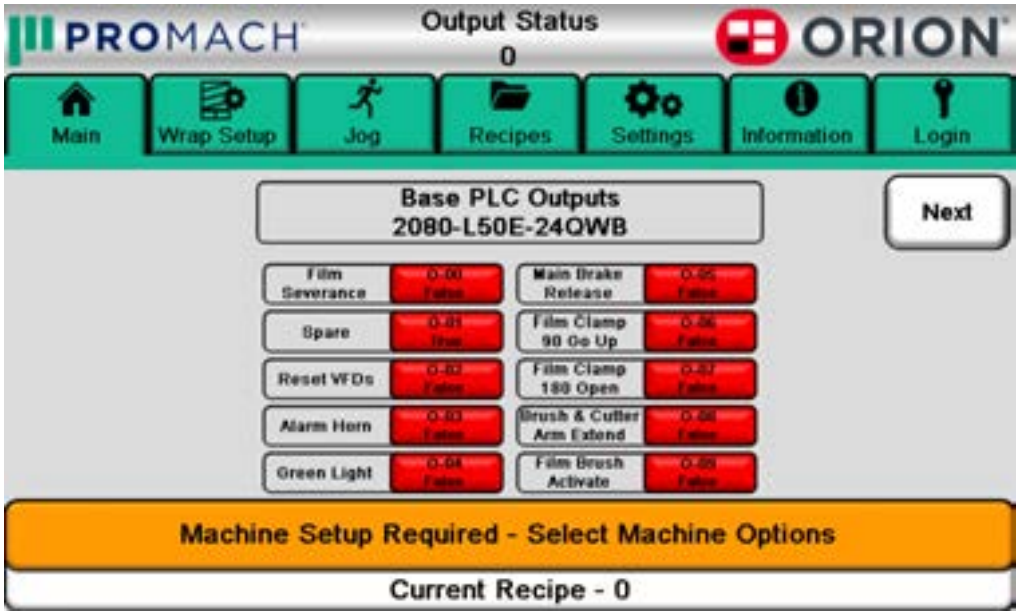


Table 3-35. The Output Status 1 Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
I-00 False	Red indicates and inactive input. Green indicates an active input.	TRUE
Next	Press this button to go to the Outputs 2 Screen. See “The Output Status 2 Screen” on page 3 - 68.	

The Output Status 2 Screen

On the Output Status 2 Screen, you view the machine output status, or go back to the previous screen. To access this screen, select the Information tab from the green navigation bar, press the Output Status button, then press the Next button on the Output Status 1 Screen. See “The Output Status 1 Screen” on page 3 - 67.

Figure 3 - 41
The Output Status 2 Screen

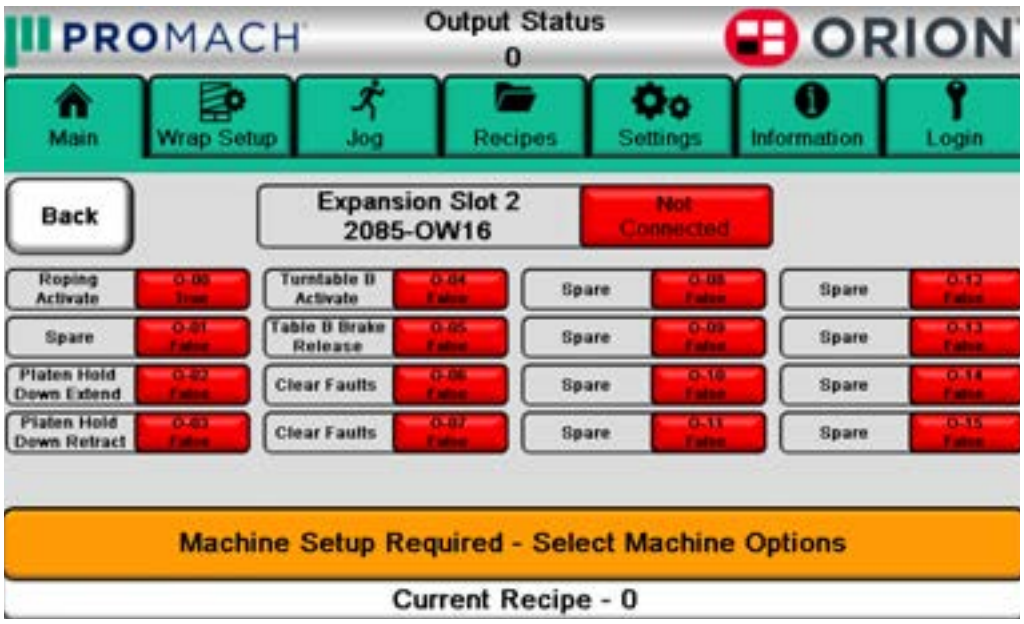


Table 3-36. The Output Status 2 Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Red indicates and inactive input. Green indicates an active input.	TRUE
	Press this button to go to the previous screen.	

The Revologic Diagnostics Screen

On the Revologic Diagnostics Screen, this screen displays the revologic counts for each of the previous cycles. To access this screen, select the Information tab on the green navigation bar, then press the Revologic Diagnostics button.

Figure 3 - 42
The Revologic Diagnostics Screen

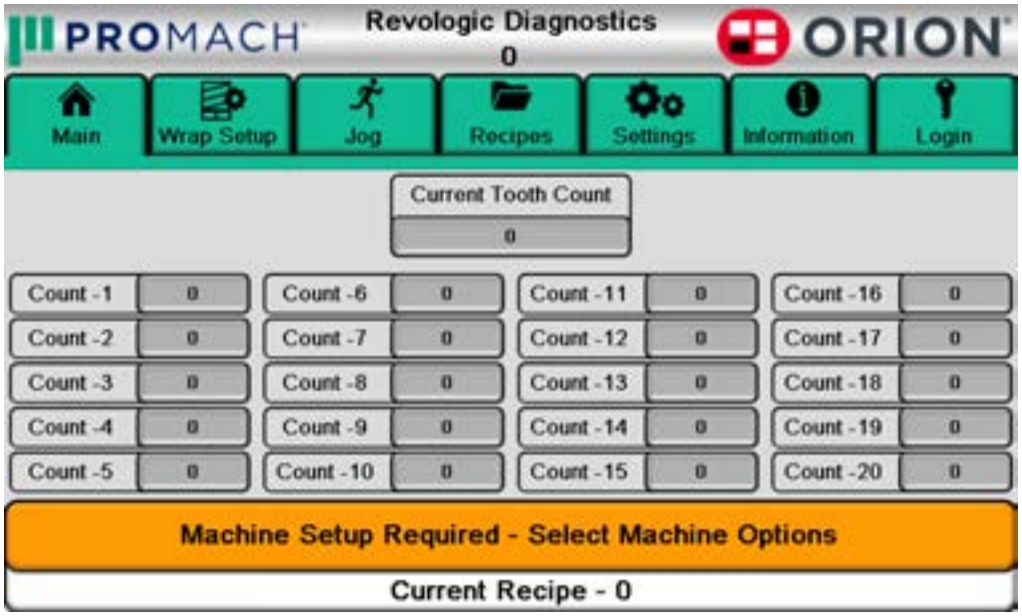


Table 3-37. The Revologic Diagnostics Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Count -1 0	These indicators show the revologic counts for each of the previous cycles displayed.	
Current Tooth Count 0	This displays the infromation for the current tooth count as a reference.	

The Fault History Screen

On the Fault History Screen, you may view the fault alarm messages, scroll by page or by item, or clear the messages. To access this screen, select the Information tab on the green navigation bar, then press the Fault History button.

Figure 3 - 43
The Fault History Screen

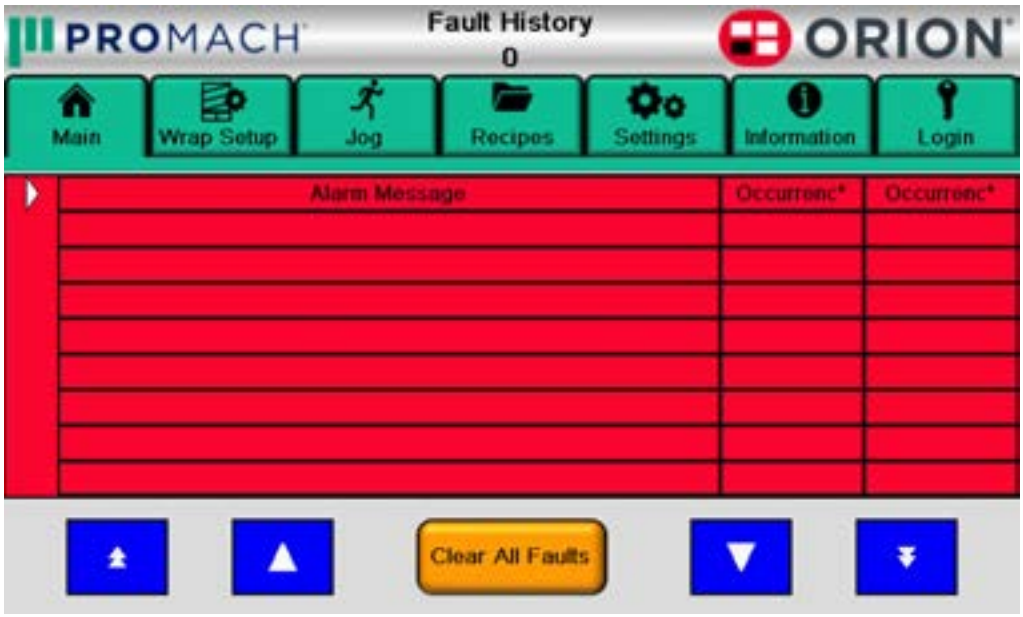


Table 3-38. The Fault History Screen Button Descriptions

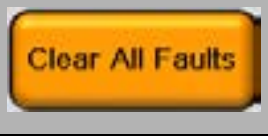
STATE 1	DESCRIPTION	STATE 2
ALARM MESSAGE	This displays the current alarm message.	
OCCURENCE	This displays the location of the alarm message.	
	Press this button to up scroll through the alarm messages by page.	
	Press this button to scroll up through the alarm messages individually.	
	Press this button to clear all current alarm messages.	

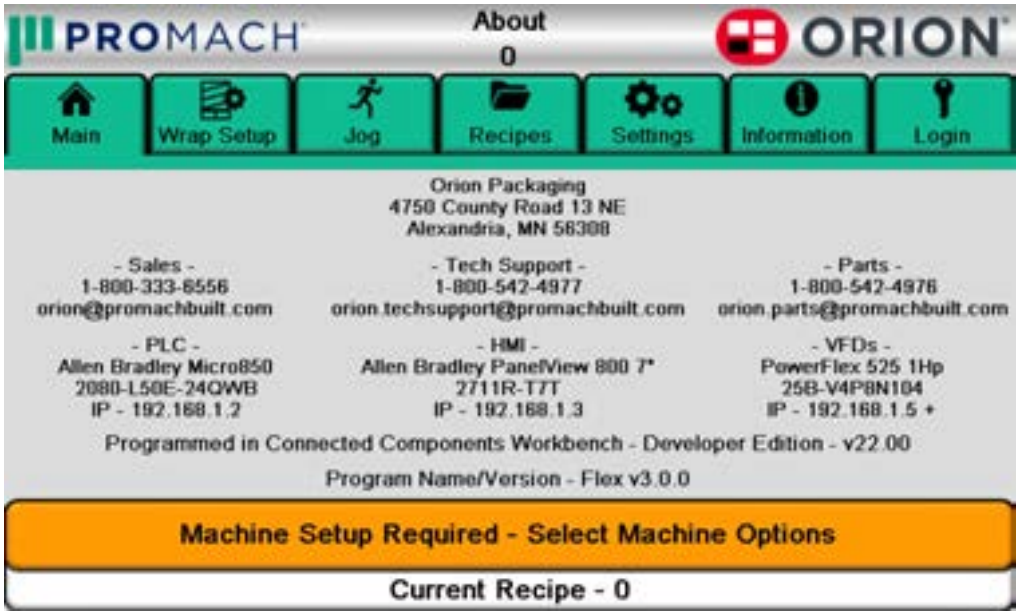
Table 3-38. The Fault History Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	Press this button to scroll down the alarm messages by page.	
	Press this button to scroll down the alarm messages individually.	

The About Screen

On the About Screen, you may view details about the machine and contact information for support. To access this screen, select the Information tab on the green navigation bar, then press the About button.

Figure 3 - 44
The About Screen



The Language Screen

On the Language Screen, you may change the language of the machine. To access this screen, select the Information tab on the green navigaton bar, then press the Language button.

Note: Changing the language may take several minutes to complete.

Figure 3 - 45
The Language Screen

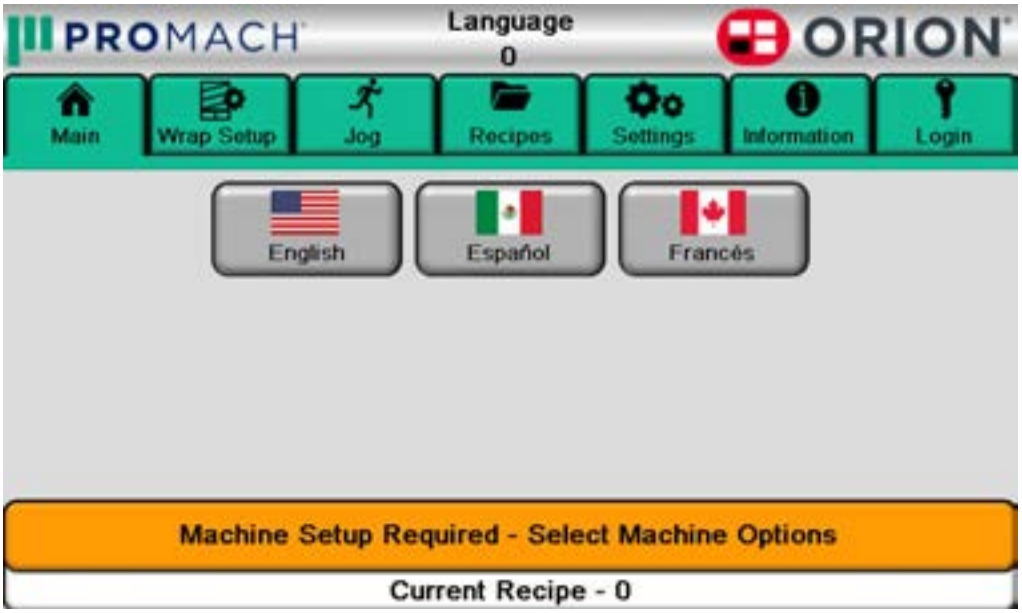


Table 3-39. The Language Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Press this button to change the lanugage to English.	
	Press this button to change the language to Spanish.	
	Press this button to change the language to French.	

The VFD Diagnostics Screen

On the VFD Diagnostics Screen, you can view, scroll, and adjust the VFD parameters. To access this screen, select the Information tab on the green navigation bar, then press the VFD Diagnostics button.

Figure 3 - 46
The VFD Diagnostics Screen

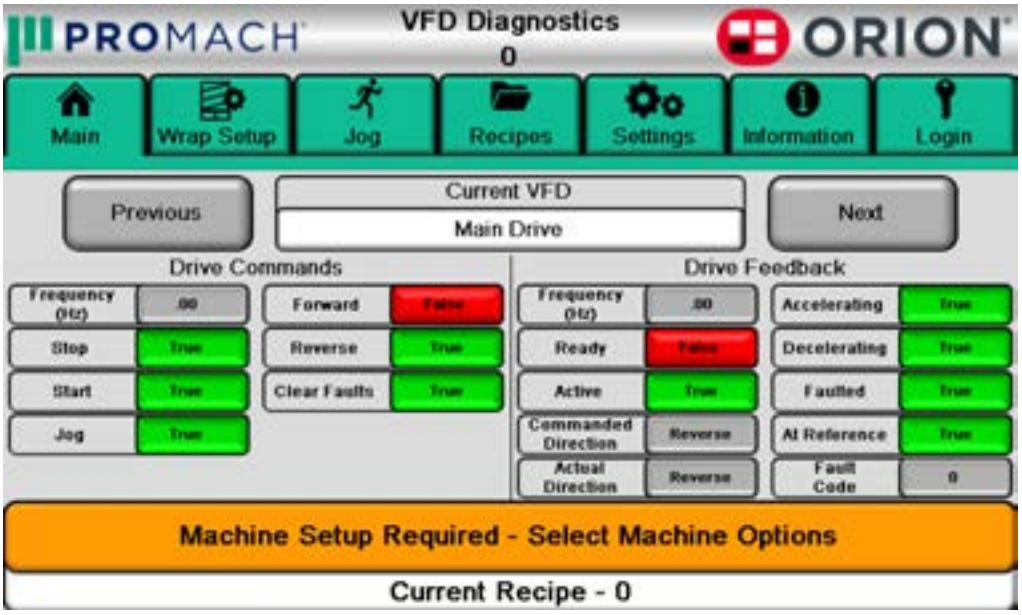


Table 3-40. The VFD Diagnostics Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Previous	Press this button to view the status of the previous VFD.	Previous
Current VFD Main Drive	This displays the Current VFD information.	
Next	Press this button to view the status of the next VFD.	Next
True	Green indicates an active VFD parameter. Red indicates an inactive VFD Parameter.	False

The Login Tab

The Login Screen

On the Login Screen, you can view the current login status, or log in or out of the application. To access this screen, select the Login tab on the green navigation bar.

Figure 3 - 47
The Login Screen

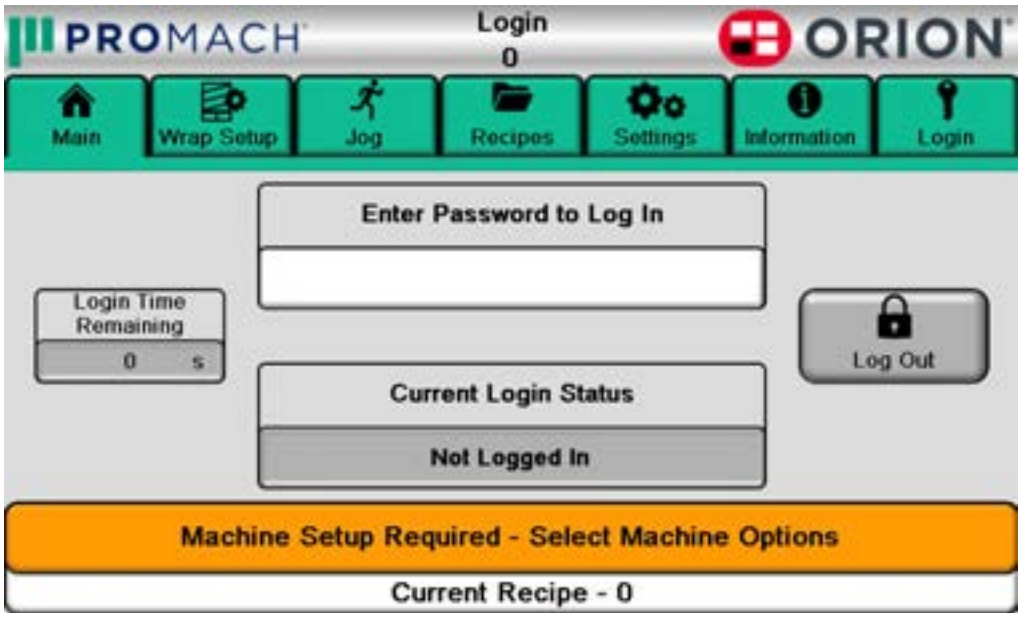


Table 3-41. The Login Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Login Time Remaining 0 s	This displays the current time remaining to log in.	
ENTER PASSWORD TO LOG IN	Press this button and enter a password to log in to the HMI application.	
CURRENT LOGIN STATUS	This displays the current login user information and login status.	
Log Out	Press this button to log out the current user out of the program application.	Log Out

Information & Alarm Messages

The message and alarm displays are divided into two separate charts in this section.

- Message Displays - Various non-critical status messages
- Alarm Displays - Operation critical alarms/faults

Message Displays

The messages in this section are the various non-critical status messages. These messages are for informational purposes. For critical alarms, see “Alarm Displays” on page 3 - 81.

Note: Not all messages in this list are applicable to your machine. The alarm messages on you machine may vary based on machine options.

Table 3-42. Message Displays

MSG #	MESSAGE	DESCRIPTION	CORRECTION
0	**MACHINE SETUP REQUIRED - SELECT MACHINE OPTIONS**	The machine setup parameters are not set.	See “The Machine Setup Screen” on page 3 - 47.
1	**APPLYING TOP WRAPS**	The machine is currently applying the top wraps.	This is for informational purposes only. No correction necessary.
2	**CYCLE ENDING**	The cycle is ending.	This is for informational purposes only. No correction necessary.
3	**CYCLE PAUSED**	The cycle is paused.	Resume, when ready. Press the resume button on the Run screen.
4	**CARRIAGE RETURNING TO HOME POSITION**	The carriage gate is returning to the home position.	Allow the carriage to return to the home position prior to starting.
5	**HOMING MACHINE**	The machine is homing.	Allow the machine to home prior to starting.
6	**PRESS START BUTTON TO RESET CONTROL POWER**	The machine is not reset.	Press Start to reset control power prior to starting.
7	**MOVING TO BOTTOM OF LOAD**	The carriage is moving to the bottom of the load.	This is for informational purposes only. No correction necessary.

Table 3-42. Message Displays (Continued)

MSG #	MESSAGE	DESCRIPTION	CORRECTION
8	**MOVING TO TOP OF LOAD**	The carriage is moving to the top of the load.	This is for informational purposes only. No correction necessary.
9	**READY TO WRAP - PRESS & HOLD START BUTTON**	The machine is reset and ready to run.	Press and hold the start button for the amount of time set in the parameters to start the machine.
10	**APPLYING REINFORCEMENT WRAPS**	Reinforce wraps are currently being applied.	Once the reinforce wraps are completed, the machine will continue its cycle.
11	**APPLYING BOTTOM WRAPS**	The bottom wraps are currently being applied.	This is for informational purposes only. No correction necessary.
12	**CLAMPING & CUTTING FILM**	The machine is now in the clamp and cut cycle.	This is for informational purposes only. No correction necessary.
13	**INITIALIZING... PLEASE WAIT...**	The machine is initializing.	There is a brief initialization sequence once the machine is reset. Allow the machine to initialize prior to starting.
14	**FAULTS EXIST**	Faults currently exist.	Correct the cause of the fault. Press reset to reset the fault condition once the cause is corrected.
15	**JOG PLATEN DOWN TO LOAD BEFORE STARTING MACHINE**	The sensors indicate the top platen is too far above the load.	Check the sensor for proper alignment. Press the indicated button to jog the platen down to the load. Restart when ready.
16	**TOP PLATEN TRAVELING DOWN TO LOAD**	The top platen is currently traveling down to the top of the load.	No action needed.
17	**TOP PLATEN RETURNING TO HOME**	The top platen is currently returning to the home position.	No action needed. Allow the top platen to reach the home position before restarting.
18	**REVOLOGIC ERROR - MISSING TEETH**	The detecting sensor missed teeth and is not counting correctly.	Check the sensor for proper distance to the main drive sprocket.

Table 3-42. Message Displays (Continued)

MSG #	MESSAGE	DESCRIPTION	CORRECTION
19	**MODIFYING MULTISTRETCH PARAMETERS**	The stretch settings modification is in progress.	Allow the settings to complete prior to start-up.
20	**REVERSING ARM TO HOME**	The wrapper arm is reversing to the home position.	No action needed. Allow the arm to reach the home position before restarting.
35	**NO CONTROL POWER**	Control Power is not present.	Press the Control Power reset button prior to starting the machine.
36	**REVOLOGIC FAULT - HOME SENSOR NOT FOUND**	The main drive home sensor is not working correctly.	Check the main drive at home sensor.
37	**CARRIAGE GATE OPENED DURING CYCLE**	The carriage gate opened during the cycle.	Check for the cause of the unlatch. Re-latch and restart, when ready.
38	**CARRIAGE GATE OPEN**	The carriage gate is currently open.	Close the carriage to allow operation. Check the interlock switch.
39	**END OF FILM ROLL OR BROKEN FILM**	The film has broken or the roll ran out.	Re-load a new roll if out. If broken, monitor the film. Replace roll if problem persists. See troubleshooting chart for broken film troubleshooting tips.
40	**LOW AIR PRESSURE**	The machine pneumatic pressure is low.	Check the pneumatic supply. Ensure 80 PSI is available.
41	**BRUSH & CUTTER ARM NOT HOME**	The brush and cutter are not home.	Cycle the brush and cutter. Check why the brush and cutter cannot reach the home position.
42	**CARRIAGE OR TOWER OBSTACLE DETECTED**	The obstacle detection is tripped.	See “Loading The Film” on page 3 - 3.
43	**MAIN DRIVE VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.

Table 3-42. Message Displays (Continued)

MSG #	MESSAGE	DESCRIPTION	CORRECTION
44	**MAIN DRIVE VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
45	**MAIN DRIVE VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
46	**CARRIAGE VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.
47	**CARRIAGE VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
48	**CARRIAGE VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
49	**CARRIAGE UP TIMEOUT**	The indicated component did not make it to the expected position within the allotted time frame.	Check for a jam or mechanical bind at the indicated location. Clear the jam or mechanical bind.
50	**CARRIAGE DOWN TIMEOUT**		
51	**MULTISTRETCH VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.
52	**MULTISTRETCH VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
53	**MULTISTRETCH VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
54	**TOP PLATEN VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.

Table 3-42. Message Displays (Continued)

MSG #	MESSAGE	DESCRIPTION	CORRECTION
55	**TOP PLATEN VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
56	**TOP PLATEN VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
57	**TOP PLATEN UP TIMEOUT**	The indicated component did not make it to the expected position within the allotted time frame.	Check for a jam or mechanical bind at the indicated location. Clear the jam or mechanical bind.
58	**TOP PLATEN DOWN TIMEOUT**		
59	**MACHINE SETUP REQUIRED - SELECT MACHINE OPTIONS**	The machine setup parameters are not set.	See “The Machine Setup Screen” on page 3 - 47.

Alarm Displays

The messages in this section are the various critical status messages. For non-critical alarms, see “Message Displays” on page 3 - 76.

Correct the condition and press the Fault Reset button to clear the message and continue machine operation. A description of these messages appears on the following pages.

Note: Not all messages in this list are applicable to your machine. The alarm messages on you machine may vary based on machine options.

Table 3-43. Alarm Messages

FAULT #	MESSAGE	DESCRIPTION	CORRECTION
0.0	**NO CONTROL POWER**	Control Power is not present.	Press the Control Power reset button prior to starting the machine.
0.1	**REVOLOGIC FAULT - HOME SENSOR NOT FOUND**	The main drive home sensor is not working correctly.	Check the main drive at home sensor.
0.2	**CARRIAGE GATE OPENED DURING CYCLE**	The carriage gate opened during the cycle.	Check for the cause of the unlatch. Re-latch and restart, when ready.
0.3	**CARRIAGE GATE OPEN**	The carriage gate is currently open.	Close the carriage to allow operation. Check the interlock switch.
0.4	**END OF FILM ROLL OR BROKEN FILM**	The film has broken or the roll ran out.	Re-load a new roll if out. If broken, monitor the film. Replace roll if problem persists. See troubleshooting chart for broken film troubleshooting tips.
0.5	**LOW AIR PRESSURE**	The machine pneumatic pressure is low.	Check the pneumatic supply. Ensure 80 PSI is available.
0.6	**BRUSH & CUTTER ARM NOT HOME**	The brush and cutter are not home.	Cycle the brush and cutter. Check why the brush and cutter can’t reach the home position.
0.7	**CARRIAGE OR TOWER OBSTACLE DETECTED**	The tower has an obstruction.	Check for a mechanical bind. Clear the cause of the fault. Reset and restart, when ready.

Table 3-43. Alarm Messages (Continued)

FAULT #	MESSAGE	DESCRIPTION	CORRECTION
0.8	**MAIN DRIVE VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault code on the VFD display in the electrical cabinet. See VFD manual for fault code information.
0.9	**MAIN DRIVE VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
0.10	**MAIN DRIVE VFD COMMUNICATION FAULT**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
0.11	**CARRIAGE VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.
0.12	**CARRIAGE VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
0.13	**CARRIAGE VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
0.14	**CARRIAGE UP TIMEOUT**	The indicated component did not make it to the expected position within the allotted time frame.	Check for a jam or mechanical bind at the indicated location. Clear the jam or mechanical bind.
0.15	**CARRIAGE DOWN TIMEOUT**		
0.16	**MULTISTRETCH VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.
0.17	**MULTISTRETCH VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
0.18	**MULTISTRETCH VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.

Table 3-43. Alarm Messages (Continued)

FAULT #	MESSAGE	DESCRIPTION	CORRECTION
0.19	**TOP PLATEN VFD FAULTED OR NOT READY**	The indicated VFD is not ready to run.	Check the fault indicator on the VFD.
0.20	**TOP PLATEN VFD NOT RUNNING**	The VFD is commanded to run, but is not running, as expected.	Check indicated VFD for code. Press Fault Reset to reset the fault. Check vendor documentation for fault codes. Reset and restart the machine when ready.
0.21	**TOP PLATEN VFD COMMUNICATION FAULT**	The Ethernet connection has faulted.	Check the Ethernet cord connection.
0.22	**TOP PLATEN UP TIMEOUT**	The indicated component did not make it to the expected position within the allotted time frame.	Check for a jam or mechanical bind at the indicated location. Clear the jam or mechanical bind.
0.23	**TOP PLATEN DOWN TIMEOUT**		
0.24	**MACHINE SETUP REQUIRED - SELECT MACHINE OPTIONS**	The machine setup parameters are not set.	See “The Machine Setup Screen” on page 3 - 47.

Troubleshooting Contents

4. Troubleshooting

Troubleshooting

This troubleshooting chart details problems you may encounter with your Flex series stretchwrapper along with the cause and solution. If the problem(s) cannot be solved after consulting this section and/or appropriate sections of this manual, call Orion at (800) 333-6556.

Table 4-1. Troubleshooting Chart

PROBLEM	POSSIBLE CAUSE	SOLUTION
Control Panel / Error Messaging - No Control Power / E-stop Is Flashing	E-Stop circuit is activated. E-stop is depressed.	Perform E-Stop reset sequence. 1. Close the carriage and close guards if they exist on your machine. 2. Pull E-Stop to the OUT position. 3. Press Green Start button once to reset the machine. 4. Press and hold Green Start Button until the machine starts.
	Safety Photocells not aligned. Photocell alignment (RT models and Table machines with safety fencing) Photocell lights should change state when objects block, then unblock photocells.	Re-align photocells with their respective reflectors, then perform an E-Stop Reset.
	Wiring in the E-stop circuit is compromised. Perform continuity Check on all wiring in the e-stop circuit.	Refer to the electrical schematic for wiring layout and wire numbers.
	Components in the E-Stop circuit have failed. Test components individually including contact bodies.	Refer to the electrical schematic for wiring layout and wire numbers.
Stored Values Revert To Zero Or Unusable Settings.	High voltage spike or voltage brownout below 100 VAC has occurred. With a meter, observe voltage at the main power switch on the control panel during a wrap cycle.	1. Remove all household extension cords. 2. Move machine to a different power outlet. 3. Have an electrician verify site power supply.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Turntable / Tower Rotation- Turntable / Tower Will Not Stop In The Correct Position. (Table Does Stop At End Of Cycle-but In Wrong Position	Turntable end of cycle positioning counter value is set incorrectly. Observe the Turntable end of cycle positioning counter value on the HMI.	Refer to the factory default settings value list.
	Slow Down Position for Tower / Turntable Timer is adjusted too high. Observe the Slow Down Position for Tower /Turntable Timer value on the HMI.	Refer to the factory default settings value list.
	Table / Tower preset speeds are set incorrectly. The table / turntable is overhauling and the drive can not stop the load fast enough. Check the value of the SP-2-SP-3 and SP-4 parameters on the Table / Tower VFD. Ensure that they are set within correct values.	Refer to the factory default settings value list.
	Table / Tower deceleration value is set incorrectly. The table / turntable is overhauling and the drive can not stop the load fast enough. Check the value of the DEC parameter on the Table / Tower VFD. Ensure that it is set within the Orion factory default values.	Refer to the factory default settings value list.
	Component failure.	Check error message on the Table / Tower VFD display. Refer to the supplied VFD user manual for error message. Replace if needed.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Turntable / Tower Will Not Stop In The Correct Position. (Table Does Not Stop Until E-stop Is Depressed Or Power Is Removed)	Table Sprocket tooth count in the global setup screen is set incorrectly-for instance; a 96 tooth setting is chosen for a machine shipped with a 112 tooth sprocket or vice-versa.	Verify the machine type against the settings screen. Note: Standard E and D models are shipped with 96 tooth table sprockets, only A and HD (heavy duty) models are shipped with a 112 tooth sprocket. Refer to the Initial machine setup instructions to toggle the table tooth count settings. Reminder-password is required.
	Revo-logic™ sensor is misaligned with the table / tower driven sprocket.	Verify the gap setting between the Revo-logic™ sensor and the driven sprocket. Readjust if needed. Check the pulse count input on the PLC for an LED indication as each tooth passes in front of the Revo-logic™ sensor.
	Revo-logic™ sensor has failed.	Check for 24VDC at the sensor. Check for 24VDC Switching on the return wire to PLC at the sensor. No VDC Switching out? Replace sensor.
	Wiring in the Revo-logic™ sensor circuit has failed.	Run a continuity test on wiring from the sensor to the PLC and 24VDC supply rails. No continuity on any wire? Repair or replace wiring.
	True Home sensor has failed.	Check for 24VDC at the sensor. Check for 24VDC Switching on the return wire to PLC at the sensor. No VDC Switching out? Replace sensor.
	Wiring in the True Home sensor circuit has failed.	Run a continuity test on wiring from the sensor to the PLC and 24VDC supply rails. No continuity on any wire? Repair or replace wiring.
Special Extended Mast, Split-base Or Any Models With The Mast Shipped Disconnected From The Base	Revologic™ and True Home sensor wires crossed during final assembly on-site.	Wire numbers should match at the M12 quick disconnects. The connectors for both the Revologic™ and the True Home sensors can physically interchange. If the wire numbers do not match, Swap the M12 quick disconnect connectors located in the lower part of the tower.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Turntable / Tower Rotates Inconsistently-(Table / Tower Turns With A Jerking Motion)	Current Limiter in the rotation VFD is activating.	Check for a mechanical bind in the rotation mechanicals, such as: worn bearing(s) or casters, incorrectly tensioned chain, worn chain, alignment issues etc. Identify and repair or replace worn parts.
	VFD parameter settings are incorrect.	Review the parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.
	Machine's supply voltage is too low.	Check AC voltage (at the On-Off switch terminals) while the machine is running under load. If voltage drops below 115, the supply is not strong enough to run the machine correctly. Contact plant electrician. Do not use household extension cords with the machine.
	Loose connections in the rotation circuit.	Remove power from machine. Check for loose connections in the rotation circuit such as; Primary supply to the rotation VFD, Secondary supply from the VFD to the drive motor and all connections in between. Re-seat all loose connections. Tighten connections correctly.
	Motor Failure.	Perform motor test per motor manufacturer's recommendations. Replace motor as needed.
	Reducer Failure.	Remove rotation reducer-separate motor from reducer. Rotate input shaft and check for binding. Replace reducer as needed.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Turntable / Tower Will Not Rotate	No control Power / E-Stop Condition.	E-Stop button is Flashing or Green Start button is not illuminated. Perform E-Stop Reset (pull E-Stop button to the out position then press the Green Start button so that it is Illuminated. Press Cycle reset on the Touchscreen.
	Machine is in Cycle Pause.	Observe the Cycle Pause Icon on the Run Screen. If it is illuminated, the machine is in a Pause state. Press Resume to resume wrapping.
	VFD parameter settings are incorrect.	Review the parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.
	Blown Fuse.	Locate Table / Tower rotation control fuse. Remove fuse and check continuity. Bad Fuse? Replace with correct type.
	VFD Error.	Check the status of the table / tower motor controller (VFD) for error message. Refer to the VFD manual supplied with the machine for error messaging solutions.
	Open circuit to the motor.	Check wire continuity from VFD to Motor. Repair or replace open wiring.
	Motor Failure.	Perform motor test per motor manufacturer's recommendations. Replace Motor as needed.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Carriage Lift (Up & Down) Carriage Will Not Move Up Or Down (In Either Manual Mode Or During An Auto Wrap Cycle)	Carriage Speeds set below 5%.	Check the numerical value of the carriage up and down speeds on the touchscreen. Password may be required depending on the Security Settings. Increase the carriage up and down speeds on the touchscreen to above 5%.
	Carriage Travel limit strikers set improperly.	Check the physical positions of the travel limit strikers. 1. Set the Up Travel limit striker to the highest wrapping requirement position within the machine's capability or a jam may occur. 2. Position the Bottom travel striker to the lowest wrapping requirement level within the machine's capability or a false Belt Error may occur.
	Lift Belt Error (Visible obstruction) has occurred.	Check for a physical obstruction in the carriage toward travel path and Lift Belt Error shown on the touchscreen. If there is an actual obstruction, refer to the "Carriage Obstacle Detect Error Recovery" inset in your manual.
	VFD parameter settings are incorrect.	Review the parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Carriage Lift (Up & Down) Carriage Will Not Move Up Or Down (In Either Manual Mode Or During An Auto Wrap Cycle)	A False (No visible obstruction) lift belt error has occurred.	Remove upper-rear access panel on the back of the mast. Observe the position of the lift belt roller switch at the top, inside of the mast. The belt should be between the metal frame and the switch's roller lever. The lever roller should be activated. If the belt is placed incorrectly, re-set belt so that it is between the frame and the switch's lever roller. The switch may need to be re-positioned as to not give a false signal.
	Current Limiter in the carriage lift VFD is activating.	Check for a mechanical bind in the carriage lift mechanicals, such as, worn belt wheel bearings incorrectly aligned belt or carriage safety cam-locks. Identify and repair or replace worn parts.
	Maximum speed setting on the VFD is incorrect.	Review the maximum frequency parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.
	Machine's supply voltage is too low.	Check AC voltage (at the On-Off switch terminals) while the machine is running under load. If voltage drops below 120, the supply is not strong enough to run the machine correctly. Contact plant electrician. Do not use household extension cords with the machine.
	Loose connections in the carriage lift circuit.	Remove power from machine. Check for loose connections in the carriage lift circuit such as; Primary supply to the Lift VFD, Secondary supply from the VFD to the drive motor and all connections in between. Re-seat all loose connections. Tighten connections correctly.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Carriage Lift (Up & Down) Carriage Will Not Move Up Or Down (In Either Manual Mode Or During An Auto Wrap Cycle)	Blown Fuse.	Locate carriage lift control fuse. Remove fuse and check continuity. Bad Fuse? Replace with correct type.
	Motor failure.	Perform motor test per motor manufacturer's recommendation. Replace Motor as needed.
	Reducer failure.	Remove Carriage Lift reducer-separate motor from reducer. Rotate input shaft and check for binding Replace reducer as needed.
Carriage Will Not Move Up Or Down (In Auto Wrap Cycle Only-but Works Fine In Manual Mode).	Auto-height photocell positioned incorrectly.	Check the position of the Auto-height photocell. Make sure it is aimed at the load. If the load is too short for the photocell to see, the carriage will not move up-this is normal. Re-Aim the photocell correctly.
	Auto-height sensor has failed.	Check for 24VDC at the sensor. Check for 24VDC switching on the return wire to PLC at the sensor. No VDC Switching out at the sensor? Replace sensor.
	Wiring in the Auto-height sensor circuit has failed.	Run a continuity test on wiring from the sensor to the PLC and 24VDC supply rails. No continuity on any wire?= repair or replace wiring.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Carriage Is Jammed At The Top Of The Mast. (Carriage Will Not Move Up Or Down)	Carriage top travel switch did not activate correctly, possibly sticking.	Belt is tangled around drum. Belt is wrapped backwards or twisted. Check switch by manually activating (wiggling) the roller tip. If the switch does not activate and release it's input on the PLC correctly, replace the switch. The belt will need to be removed and re-wound correctly. The carriage will need to be brought down manually. Refer to the "Carriage Obstacle Detect Error Recovery" inset in your manual.
	Carriage top travel striker is set too low for switch to activate properly.	Belt is tangled around drum. Belt is wrapped backwards or twisted. Raise the bottom limit striker so that the carriage travel switch activates it's PLC input before the carriage physically hits the machine's framework. The belt will need to be removed and re-wound correctly. The carriage will need to be brought down manually. Refer to the "Carriage Obstacle Detect Error Recovery" inset in your manual.
Film Feed / Stretch Functions No Power Feed	E-Stop circuit is activated. E-stop is depressed.	Perform E-Stop reset sequence. 1. Close the carriage and close guards if they exist on your machine. 2. Pull E-Stop to the OUT position. 3. Press Green Start button once to reset the machine. 4. Press and hold Green Start Button until the machine starts.
	Film is threaded incorrectly.	Compare film with threading diagram on top of carriage. Re-thread film carriage.
	VFD parameter settings are incorrect .	Review the parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Feed / Stretch Functions No Power Feed	Zero or Gain settings for the hall effect (Film Feed Trigger) are incorrect.	Observe the feedback value of the hall effect located on the touchscreen. Re-set the ZERO and GAIN values according to the film feed setup instructions in the manual. ZERO setting should be a value of at least ten above the hall effect feedback value to operate properly.
	Maximum speed setting on the VFD is incorrect.	Review the maximum frequency parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for maximum frequency settings.
	Hall effect device is positioned incorrectly.	Check to make sure hall effect device is not touching the dancer bar cam. Adjust the hall effect-to-cam gap is correct... approx 16th of an inch gap.
	Dancer bar cam is positioned incorrectly.	Make sure the cam rotates in such a way as to create a gap between the hall effect device and the cam itself. Adjust the cam correctly.
	Hall effect sensor has failed.	Check for 24VDC at the sensor. Check for variable 24VDC on the return wire to PLC at the sensor. No variable VDC out? Replace sensor.
	Open circuit from the hall effect device to the analog input card.	Check wire continuity from hall effect device to the analog input card. Repair or replace open wiring.
	Analog I.O. card has failed.	Check the hall effect feedback value on the MIB screen. If the hall effect value increases with dancer movement, but the analog I.O. card toes not fluctuate voltage out, then the analog I.O. card has failed. Replace analog I.O card.
	Open circuit from the PLC analog card to the VFD analog input.	Check wire continuity from the PLC analog card output to the VFD analog input. Repair or replace open wiring.
	Open circuit from the stretch VFD to the film feed motor	Check wire continuity from the stretch VFD outputs to the film feed motor. Repair or replace open wiring.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Feed / Stretch Functions No Power Feed	Motor failure.	Perform motor test per motor manufacturer's recommendations. Replace Motor as needed.
Film Feed Runs Or Creeps Continuously	MIB values at the touchscreen are out of calibration.	Observe the feedback value of the hall effect located on the touchscreen. Re-set the ZERO and GAIN values according to the film feed setup instructions in the manual. ZERO setting should be a value of at least ten above the hall effect feedback value to operate properly.
	Hall effect device is positioned incorrectly.	Check to make sure hall effect device is not touching the dancer bar cam. Adjust the hall effect-to-cam gap is correct… approx 16th of an inch gap.
	Dancer bar cam is positioned incorrectly.	Make sure the cam rotates in such a way as to create a gap between the hall effect device and the cam itself. Adjust the cam correctly.
	Hall effect device has failed	Perform tests mentioned above. If this does not resolve the issue, replace the hall effect device.
	Minimum speed setting on the VFD is incorrect.	Review the minimum frequency parameter settings in the VFD. Refer to the supplied VFD Manual for procedure. Refer to the VFD manual and the Orion parameter settings sheet supplied with the machine for minimum frequency settings.
Film Breakage Issues Film Breaks Inside The Carriage (Usually Between The Rubber Stretch Rollers)	Incorrect gauge / type film is being used for the application.	Review the film's stretch capability. The film used should be able to effectively stretch 280% at ambient temperatures. Remove any film that does not comply with the machine's requirements or, change the stretch sprocket on the machine to stretch below the film's fatigue value.
	Film is damaged.	Observe the edges and sides of the roll for damage from handling. Replace improper film with film in good condition.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Breakage Issues Film Breaks Inside The Carriage (Usually Between The Rubber Stretch Rollers)	Film is wound incorrectly.	Film may be wound incorrectly from the manufacturer. Look for heavy, raised stripes along the feed axis of the film. This is known as "gauge banding". Replace improper film with film in good condition.
	Film core is damaged or incorrectly sized.	The film core should fit the machine's film mandrels. Cores that are too small or damaged can cause the film to not rest in the correct position. Replace improper film with film in good condition.
	Film roll sets too low in relation to the feed rollers.	Look for film traveling under the bottom edge of the trailing rubber roller. Adjust the bottom film mandrel to allow the bottom edge of the film to run correctly on the trailing rubber roller.
	Film mandrel drag or resistance is not allowing the film to unwind properly.	Look for excessive wear under the bottom mandrel. Lubricate the bottom and center of the mandrel. Replace worn parts.
	Film carriage aluminum "pressure" rollers are mis-aligned with the rubber rollers. Film is slipping across the rollers.	With the film removed from the carriage, look for an inconsistent gap between the aluminum and rubber rollers-top and bottom on both sides of the rubber rollers. Using the socket head cap screws, re-align the aluminum rollers to the rubber rollers. Set the gap between the aluminum and rubber rollers so that there is only a slight rotational resistance between the rollers.
	Aluminum pressure rollers are damaged.	Carefully review the aluminum rollers for cuts or nicks. Any raised spots can damage the film and propagate a tear. Polish the affected areas with a purple scotch brite pad or fine abrasive until the protrusions are leveled or replace with a new part.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Breakage Issues Film Breaks Inside The Carriage (Usually Between The Rubber Stretch Rollers)	Rubber rollers are damaged	Carefully review the rubber rollers for cuts or nicks. Any raised spots can damage the film and propagate a tear. Raised spots can be carefully shaved or sanded smooth but if the surface showing craters or holes so that the surface is not level, then the roller needs to be replaced.
Film Is Breaking Between The Last Aluminum Roller And The Load	Film tension is set too high.	Film runs through the carriage properly and there are no sharp corners on the load, but the film still breaks. Lower the film tension value at the touchscreen.
	Zero or Gain settings for the hall effect (Film Feed Trigger) are incorrect.	Observe the feedback value of the hall effect located on the touchscreen. Re-set the ZERO and GAIN values according to the film feed setup instructions in the manual. ZERO setting should be a value of at least ten above the hall effect feedback value to operate properly.
	Tension spring is not correct for the application.	Film carriage appears to be calibrated correctly and film appears to be correct. Film still breaks or damages a light load with the film tension set at values below 10%. Replace the standard tension spring with the light duty tension spring (supplied with the machine).
	Film roll sits too low in relation to the feed rollers.	Look for film traveling under the bottom edge of the trailing rubber roller. Adjust the bottom film mandrel to allow the bottom edge of the film to run correctly on the trailing rubber roller.
	Sharp edges are cutting the film	Observe the load. See if the film break starts at any one sharp edge. Options are: 1. Correct the load if possible. 2. Reduce the film tension at the touchscreen. 3. Change film type used. 4. Reduce the prestretch ratio.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Is Breaking Between The Last Aluminum Roller And The Load	Pallet greatly overhangs the load.	Observe the load. See if the film break starts at the corners of the pallet. Options are: 1. Reduce the film tension at the touch-screen. 2. Reduce the stretch ratio. 3. Do not wrap the pallet with the load. 4. Raise the bottom position striker.
	Film is damaged.	Observe the edges and sides of the roll for damage from handling. Replace improper film with film in good condition.
	Film is wound incorrectly.	Film may be wound incorrectly from the manufacturer. Look for heavy, raised stripes along the feed axis of the film. This is known as "gauge banding". Replace improper film with film in good condition.
	Stretch chain and / or belt geometry is incorrect. Out of alignment components can cause feed drag.	Remove film carriage cover. Look for loose chain and / or belt. Look for the belt pulleys and the chain sprockets to be in correct alignment. Adjust as needed by repositioning the combination sprocket-pulley.
	Intermittent break in the cabling between the carriage and the control panel.	Observe the film feed during a cycle. If the film only breaks when the carriage is in a certain spot in it's travel, then continuity is suspect. Perform a continuity check on all wiring pertaining to the carriage while jogging the carriage up and down. If a break in continuity occurs, repair or replace the cable.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
"A" Model Specific Issues Film Clamp Not Operating Properly. (Opening And Closing Inconsistently)	Clamp close delay timer at the touchscreen is incorrect for the application.	Look for the clamp to close smoothly, but at the wrong time. Observe the factory preset value on the settings screen. Re-adjust the clamp close delay timer as needed.
	Air pressure to the machine is too low.	Observe the pressure gauge at the pressure regulator behind the lower rear access panel. Air supply to the machine should be 80 PSI @ 3CFM.
	Air cylinder flow controls are set incorrectly.	If the regulator shows correct pressure, the flow controls are suspect. Check the flow controls by manually activating the clamp jog function on the touchscreen. Adjust the flow controls on the clamp cylinders so that they operate smoothly.
	Air lines are pinched or obstructed.	Observe all 1/4 inch polyflow tubing. Remove any obstruction. Correct any pinched lines.
	Debris or condensation is in the air lines.	Purge the air filter / regulator. If water appears, then condensation is in the air lines. Correct the water issue, then purge the air lines by manually jogging the clamp until no water remains.
	Break in the wiring to the clamp solenoid.	There is DC voltage at the clamp PLC output, but no voltage at the clamp solenoids. Locate and repair break in the signal wiring between the PLC and solenoids.
	Clamp solenoids are defective	There is DC voltage at the clamp solenoids but the solenoids do not activate. Replace the clamp solenoids.
	Dual air passage is leaking.	Rotate the table manually with a load positioned on the table. Listen for any air leaks as the table rotates. If leakage is suspect, replace dual air passage.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Cutter/ Brush Arm Not Operating Properly	Brush extend timer at the touch-screen is incorrect for the application.	Look for the arm to activate smoothly, but at the wrong time. Observe the factory preset value on the settings screen. Re-adjust the brush extend timer as needed.
	Air pressure to the machine is too low.	Observe the pressure gauge at the pressure regulator behind the lower rear access panel. Air supply to the machine should be 80 PSI @ 3CFM.
	Air cylinder flow controls are set incorrectly.	If the regulator shows correct pressure, the flow controls are suspect. Check the flow controls by manually activation of the cutter jog function on the touchscreen. Adjust the flow controls on the clamp cylinders so that they operate smoothly.
	Air lines are pinched or obstructed.	observe all 1/4 inch polyflow tubing. Remove any obstruction. Correct any pinched lines.
	Debris or condensation is in the air lines.	Purge the air filter / regulator. If water appears, then condensation is in the air lines. Correct the water issue, then purge the air lines by manually jogging the cutter/ brush until no water remains.
	Break in the wiring to the cutter solenoid.	There is DC voltage at the cutter PLC output, but no voltage at the cutter/ brush solenoid. Locate and repair break in the signal wiring between the PLC and solenoids.
	Cutter / brush solenoids are defective	There is DC voltage at the cutter / brush solenoids but the solenoids do not activate. Replace the cutter/ brush solenoids.

Table 4-1. Troubleshooting Chart (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Film Cutter Not Cutting Film	Load not positioned properly.	Look for underhung loads, or loads that are not centered on the table or in the proper wrap zone (RT only). The rear side of the load must be in line with the pallet stop for the clamp, brush and cutter to work properly. Re-center the load to the proper position on the table (or wrap zone on RT machines).
	Brush extend timer at the touch-screen is incorrect for the application.	Look for the arm to activate smoothly, but at the wrong time. Observe the factory preset value on the settings screen. Re-adjust the brush extend timer as needed.
	Cutter wire is loose.	Check for wavy or bent cutter wire. The wire expands as it is heated. If the wire is not straight and under tension, then it will not be in the correct position to cut properly. If wire is loose or bent, repair or replace the wire.
	Blown Fuse.	Locate hot wire control fuse. Remove fuse and check continuity. Bad Fuse? Replace with correct type.

Maintenance Contents

5. Maintenance

Maintenance

All general information about machine maintenance is based on normal machine working conditions: indoor, moderate dust and low moisture environment, and maximum rotation of 15 RPM. They should be regarded as guidelines, reviewed and corrected according to requirements of actual use and conditions.

Motor Maintenance

The drive motors require little maintenance. Simply blow out debris with compressed air on a regular basis.

Tower Raceways Maintenance

The film distributor (carriage) is sliding on the plastic guides attached behind its back plate. The section of the tower on which the plastic guides move (raceways) should be cleaned and re-greased approximately every 600 hours of machine operation.

Note: If the machine works in a dusty and corrosive environment, the raceways should be re-greased more often (at least every 100 hours).

Chain Maintenance

To clean the stretch chain, wipe it with an oily cloth once a service.quarter.

When machine is working in a dusty and damp environment, it may be necessary to repeat the cleaning operation more often.

Regarding chain lubricants please use the most common chain lubricants on the market. With time, the chain will tend to stretch.

The tower is equipped with automatic chain tensioner and does not need any adjustment.

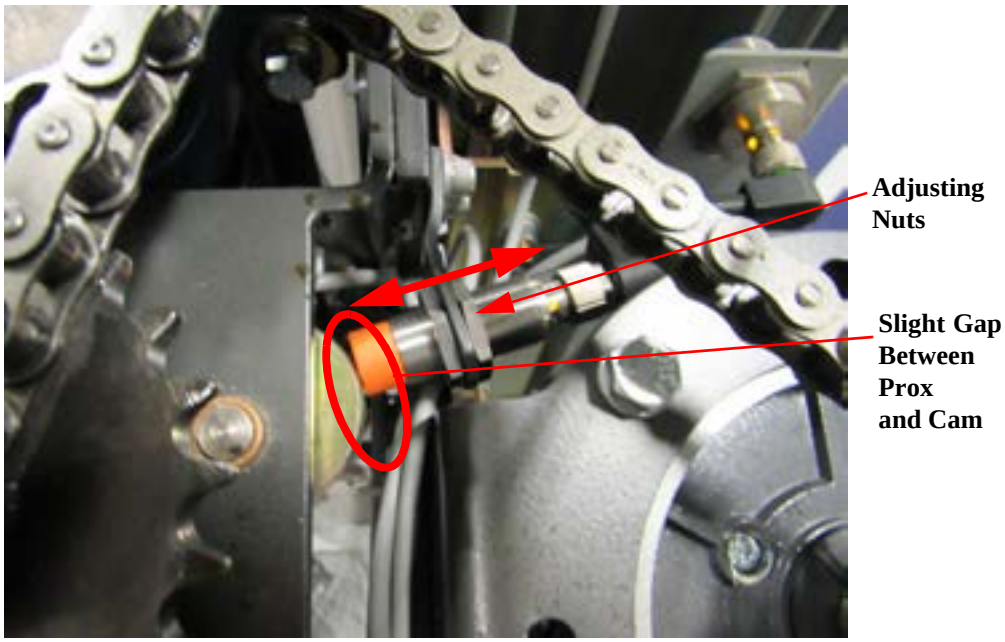
Note: First chain tension inspection must be done after the first two weeks of machine usage.

Proximity Sensor Adjustment

Occasionally the Feed Back Proximity Sensor may need some adjustment. The position of the feed back proximity sensor against the cam is shown in Figure 5 - 1.

1. Power down machine.
2. Remove the carriage cover.
3. Loosen the two nuts holding the proximity switch.
4. Turn the proximity sensor to adjust the gap between the cam and the front side of the proximity sensor to 1/32” or about the thickness of a drivers license.

Figure 5 - 1
Proximity Sensor Adjustment



5. Tighten the nuts securing the Proximity Sensor.
6. Put the cover back on.
7. Power up machine.
8. With the Multistretch screen displayed and the E-Stop button pressed, press the dancer bar to full swing to read the Dancer Bar Current Value.
9. Enter this value into the Max Speed Value numeric input.
10. If the dancer bar is too responsive, increase the entered number. If the dancer bar is not responsive enough, decrease the entered number.
11. If not satisfied repeat the procedure.

Cleaning The Stretch Rollers

The film carriage requires the most attention when cleaning. The film carriage requires regular cleaning even if there are no product spills into the carriage area. Absolutely DO NOT use wash down methods on the film carriage.

- As the film goes though the rollers, a static charge develops from the film and pulls air borne dust and contaminants into the rollers. The glue that is impregnated to the film, called Tackifier, traps these contaminants to the rollers. Finally, the aluminum pressure rollers on the threading gate press the debris into the rollers causing the rubber rollers to glaze.
- If the rollers become glazed, the film may slip, causing film shear, thus causing film payout to be inconsistent or cause the film to tear regularly. This is completely normal under continued use and occurs on every stretch wrapper made-no matter who the manufacturer is.
- The rubber rollers are recommended to be cleaned at every 2000 hours of running. Do not clean the rollers more than once a month unless special circumstances demand. This can cause the rollers to dry out. The cleaning requires only a stiff nylon bristle brush, rubbing alcohol (only)*, and compressed air. The procedure is as follows.

CAUTION This procedure should only be performed by qualified service personnel.

1. Raise carriage to chest height.
2. Disconnect power from the machine.
3. Remove the film from the carriage.
4. Open the threading gate.
5. With the brush wet with rubbing alcohol, lightly scrub both rubber rollers while rotating them. The goal is to just get any debris out of the rollers.

Note: Rubbing alcohol is recommended because it is light enough to penetrate the rubber and it evaporates quickly.

6. After the entire rollers' surface has been cleaned, apply compressed air to the rollers to dry quickly.
7. Re-apply power.
8. Re-load film as discussed earlier.

Preventative Maintenance Schedule

PM Intervals

PM Intervals are based on an average usage of a 16 hour production day.

Table 5-1. PM Frequency

FREQUENCY	PERIOD	DESCRIPTION
12	**LPH**	**(Hour)**
96	**LPS**	**(Shift)**
192	**LPD**	**(Day)**
5760	**LPM**	**(Month)**
17,280	**LP3M**	**(3Months)**
34,560	**LP6M**	**(6Months)**

All general information about machine maintenance is based on normal machine working conditions: indoor, moderate dust and low moisture environment, and maximum rotation of 15 RPM. They should be regarded as guidelines, reviewed and corrected according to requirements of actual use and conditions.

All H&L Standard Series

5,760 Loads or one month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual.
- Inspect belt condition. Adjust as needed.

17,280 Loads or three months.

- Inspect under turntable. Clean debris as needed.
- Inspect turntable support casters for good condition.
- Inspect turntable chain. Apply a light coating of lubricant per instructions in manual.
- Inspect prestretch chain and belt. Tension as needed. Apply a light coating of lubricant per instructions in manual.
- Inspect carriage door spur sprockets.

All H&L Heavy Duty (Ring Bearing) Series

5,760 Loads Or One Month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual.
- Inspect belt condition. Adjust as needed.

17,280 Loads or three months.

- Inspect under turntable. Clean debris as needed.
- Inspect turntable support casters for good condition.
- Inspect turntable chain. Apply a light coating of lubricant per instructions in manual.
- Inspect prestretch chain and belt. Tension as needed. Apply a light coating of lubricant per instructions in this manual.
- Inspect carriage door spur sprockets.

34,560 Loads or 6 months.

- Lubricate ring bearing per instructions below.

Ring Bearing Maintenance (If Applicable)

The ring bearing should be re-lubricated internally and externally.

Internally: Locate the grease zerk located directly on the ring bearing. Pump one full shot of grease into the zerk every six months. This should be plenty of lubrication for most applications. Pumping too much grease into the ring bearing can destroy the ring bearing by dislocating the rubber grease seal.

Externally: by lubricating and wiping the chain drive with oily cloth. The frequency of lubrication depends on entirely upon the usage of the machine and environment in which the machine is placed (dust, moisture etc.). Machines working under extremely dirty conditions should be lubricated every 400 operating hours but at minimum, every 2 months. Longer lubrication intervals may occur only when machine is working under very clean and dry conditions but should be not be longer than 6 months.

List of recommended lubricants for the ring bearing lubrication.

Table 5-2. Recommended Ring Bearing Lubricants

MANUFACTURER	LUBRICANT
BP	**Energrease LS2**
Castrol	**Speeroll AP2**
Esso	**Beacon 2**
Gulf	**Crown Grease 2**
Mobil	**Mobilus 2**
Shell	**Avania Grease R2**
Texaco	**Glissando FT 2**

Table 5-2. Recommended Ring Bearing Lubricants

MANUFACTURER	LUBRICANT
Valvoline	LB-2

HPA LPA Series

5,760 Loads or one month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual.
- Inspect belt condition. Adjust as needed.

17,280 Loads or three months.

- Inspect under turntable. Clean debris as needed.
- Inspect turntable support casters for good condition.
- Inspect turntable chain. Apply a light coating of lubricant per instructions in manual.
- Inspect prestretch chain and belt. Tension as needed. Apply a light coating of lubricant per instructions in manual.
- Check the cutter wire for excessive buildup. Replace if kinked or bent.
- Inspect the pneumatic hardware. Adjust as needed.
- Inspect carriage door spur sprockets.

34,560 Loads or 6 months.

- Lubricate ring bearing
- Inspect carriage lift chain. Tension and lubricate per instructions in manual.
- Inspect commutator assembly. Blow out debris per instructions in the manual.

RTD Series

@ 5760 Loads or one month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual.
- Inspect belt condition. Adjust as needed.

@ 17, 280 Loads or three months.

- Inspect tower drive chain. Apply a light coating of lubricant per instructions in manual.
- Inspect prestretch chain and belt. Tension as needed. Apply a light coating of lubricant per instructions in manual.
- Inspect the pneumatic hardware. Adjust as needed.
- Inspect carriage door spur sprockets.

@ 34, 560 Loads or 6 months.

- Lubricate ring bearing per instructions in manual.
- Inspect carriage lift chain. Tension and lubricate per instructions in manual.
- Inspect commutator assembly. Blow out debris per instructions in the manual.

RTA Series

5760 Loads or one month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual.
- Inspect belt condition. Adjust as needed.

17, 280 Loads or three months.

- Inspect tower drive chain. Apply a light coating of lubricant per instructions in manual.
- Check the cutter wire for excessive buildup. Replace if kinked or bent.
- Inspect prestretch chain and belt. Tension as needed. Apply a light coating of lubricant per Instructions in this manual.
- Inspect the pneumatic hardware. Adjust as needed.
- Inspect carriage door spur sprockets.

34, 560 Loads or 6 months.

- Lubricate ring bearing per instructions in manual.
- Inspect carriage lift chain. Tension and lubricate per instructions in manual.
- Inspect commutator assembly. Blow out debris per instructions in this manual.