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Sentry HP & LP
STRETCHWRAPPER MANUAL

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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:

- Model: Sentry HP/ LP Flex Stretchwrapper
- Serial #: Shown on machine ID sticker

Distributed by Orion Packaging: Alexandria Minnesota, USA

Copyright Notice

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. A Machine Layout Drawing is found at the end of this section.
- Section 3 is the System Operation section. This section describes the operator control panels, the Human Machine Interface, 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. Assembly drawings conclude this section.

Sentry Series Warranty

SENTRY SERIES

- Sentry LP Low-Profile turntable style of machine.
- Sentry HP High-Profile turntable style of machine.

WARRANTY

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

EFFECTIVE JANUARY 1, 2020

The Sentry LP or Sentry HP series by Orion is covered by a 3-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 Sentry brand by Orion are warranted to be free from defects in material and workmanship for a period of 3-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 Sentry brand 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 Sentry by Orion models carry a 2-year 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, 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 Sentry 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 Sentry HP/ LP 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.
- 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 on the system.
- 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 Denotes the possibility of serious injury or death to personnel.

WARNING Denotes the possibility of potential injury or damage to equipment.

CAUTION Denotes the possibility of damage to product or an interruption of production.

Operation Safety

The following safety precautions are recommended for all personnel who will operate this Sentry HP/ LP 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 working area of the machine 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 Sentry HP/ LP 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, while performing maintenance.
- Personnel should pay careful attention to all devices that may be powered or capable of motion.
- Release or block all stored energy devices that may present a danger when working with the system.
- 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.

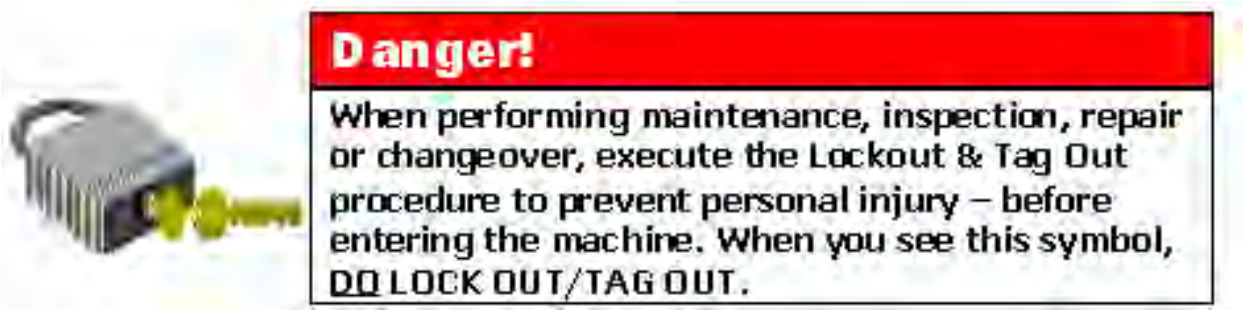
To accomplish this, set the Main Power Disconnect operating handle to the "OFF" position and install a personal locking device through the padlock hole on the operating handle. Attach a Danger tag to the handle containing a statement prohibiting unauthorized operation of the disconnect and removal of 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.



Installation and First Time Power Up

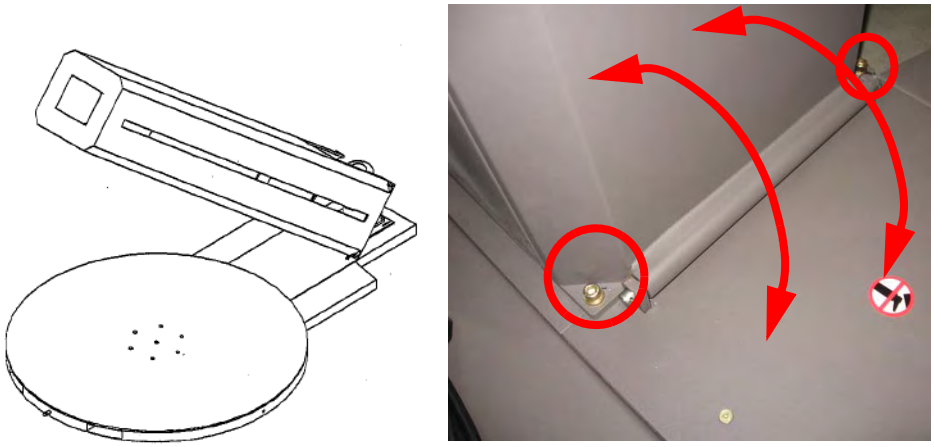
Unloading

Machine can be easily unloaded and transported by a forklift with a minimum capacity of 2500 lbs.

WARNING Use caution when uprighting the tower. Injury could occur.

1. If your model is a high tower, it may have the tower pivoted downward.

Figure 1 - 1
Tower Pivot Point



2. Use a secured strap to pivot the tower upright, securely hold the tower upright. Bolt the tower to the base using the four provided 10mm bolts. Make sure not to pinch any electrical connectors.

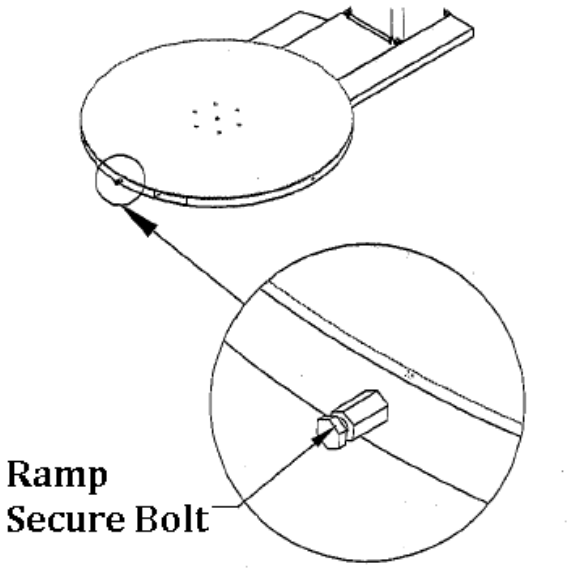
Figure 1 - 2
Tower to Base Bolts
(1 of 4 shown)

3. Carefully insert the forks into the lifting tubes to the maximum possible depth. The forktruck tine width may have to be adjusted.

Figure 1 - 3
Machine Lifting Fork Tubes

4. Lift the machine only to the necessary height to move it with no bouncing or friction on the floor.
5. Sit the machine down assuring uniform contact with the floor, which is necessary to ensure correct and smooth operation.
6. If your machine came with the optional ramp, attach the ramp secure bolt. Next, using a forklift lower the ramp slot over the ramp secure bolt.

Figure 1 - 4
Ramp Secure Bolt



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 stretchwrap film 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 all there is no damage to the HMI and all buttons are in tact.
- Use the panel access keys to open the panel or motor access doors. The Panel Access Key part # is 735586.

Figure 1 - 5
Panel Access Key

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.

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

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.

Any wiring that has been disconnected to facilitate transport is marked with a number located on the junction box to which the wiring must be reconnected. Any wire run that appears too short or long may indicate that the position of the mechanical components is incorrect. Verify the status of all assemblies before proceeding.

In the case of the free standing panel (console) place it adjacent to the system and anchor firmly to the floor. Connect the liquid tight (rigid conduit) to the main junction box located on the wrapper main frame next to the tower.

Before Starting Machine Operation

Verify that the machine is properly connected to the electrical source. The electrical requirements depend on the machine type and features. For this information, please see the machine electrical diagram provided with this machine operation manual. The control panel layout for the machine is shown on the drawing.

CAUTION Before preceding the machine operation familiarize yourself with the EMERGENCY-STOP button and all functions, switches and pushbuttons.

System Description Contents

2. System Description

Machine Specifications

Utilities

- 115 / 1ph / 60hz / 10 Amp Service

Standard Speed

- 12 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
- IntelleVue™ User Friendly Interface
- IP Address is Modifiable for Networking
- Easy to Use Icon Based Interface
- Web-based Production Data Dashboard
- Optional Wireless Connection to the PLC/ HMI
- Downloadable VFD Parameters
- 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
- On-Screen Interactive Troubleshooting Guide

Film Delivery

- Powered Pre-stretch Film Carriage
- 200% Film Prestretch with optional 260% Prestretch Carriage
- 20" Film Width Capacity up to 95 Gauge Film Thickness
- High Strength Chain Lift
- Variable Frequency Drive Motor

Structural Features

- Machine Weight- 1,650 lbs.
- Wraps Loads 52”x52”x80” up to 4,000 lbs. with Optional Tall Tower Available
- Structural Steel Construction Throughout
- Easy Access to all Components
- Limited Proprietary Parts for Ease of Maintenance

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Figure 2 - 1
Sentry LP with
Optional Ramp

Shown with optional ramp and standard Sentry carriage

Figure 2 - 2
Sentry HP

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

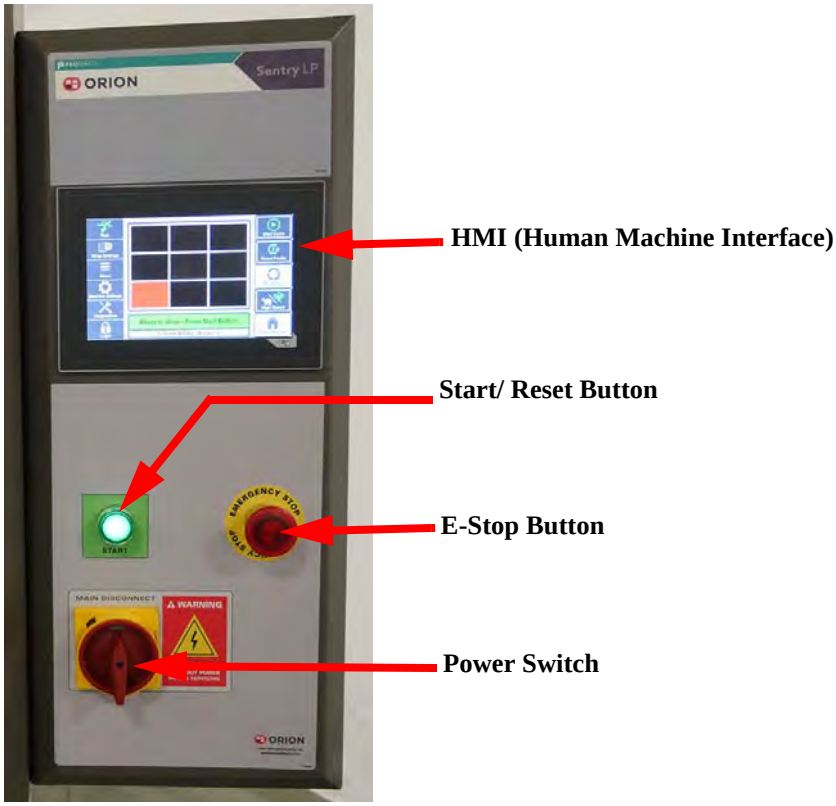
Located on the panel door, the lockable power switch has two settings:

- 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.

Figure 3 - 1
Sentry LP HMI



Operating Procedures

Loading The Film (Sentry Carriage)

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

1. Remove the top mandrel spool.

Figure 3 - 2
Top Mandrel

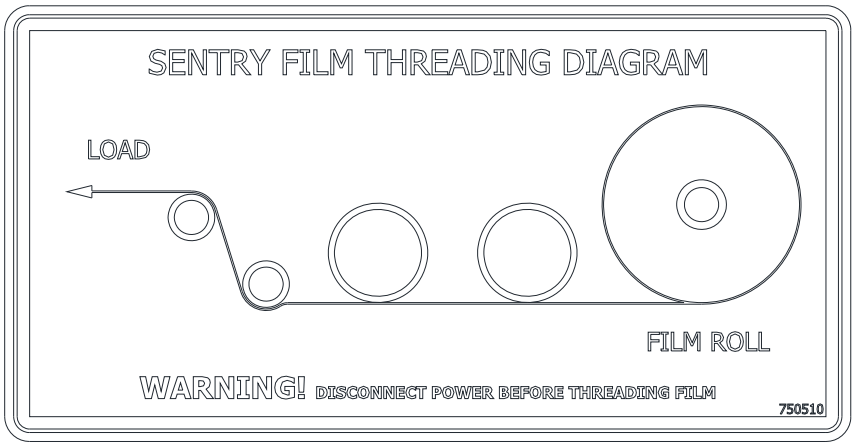
2. Put the roll of film on the bottom mandrel.
3. Install the top mandrel on top of the roll to prevent upward movement.
4. Pull down the carriage open lever and pivot the carriage door open.
5. Pass the roped tail of the film through opening.

Figure 3 - 3
Film Threading

(Continued on Next Page)

6. Thread the film around the spools, as shown.

Figure 3 - 4
Film Threading Diagram



7. Create some slack where the center roller pushes in on the film. Close the carriage door.
8. Fix the film end onto the load. The system is now ready to begin the first wrapping cycle.
9. Once the cycle is complete, the operator must then sever the wrap between the carriage and the load and remove the load with a forklift or pallet jack (with optional ramp.)

Figure 3 - 5
Film Properly Threaded

The film carriage is equipped with a switch that detects when the carriage threading door is open. When opened, it will prevent the carriage from moving. It will also prevent a wrap cycle from starting, however it will allow the film feed motor to still operate.

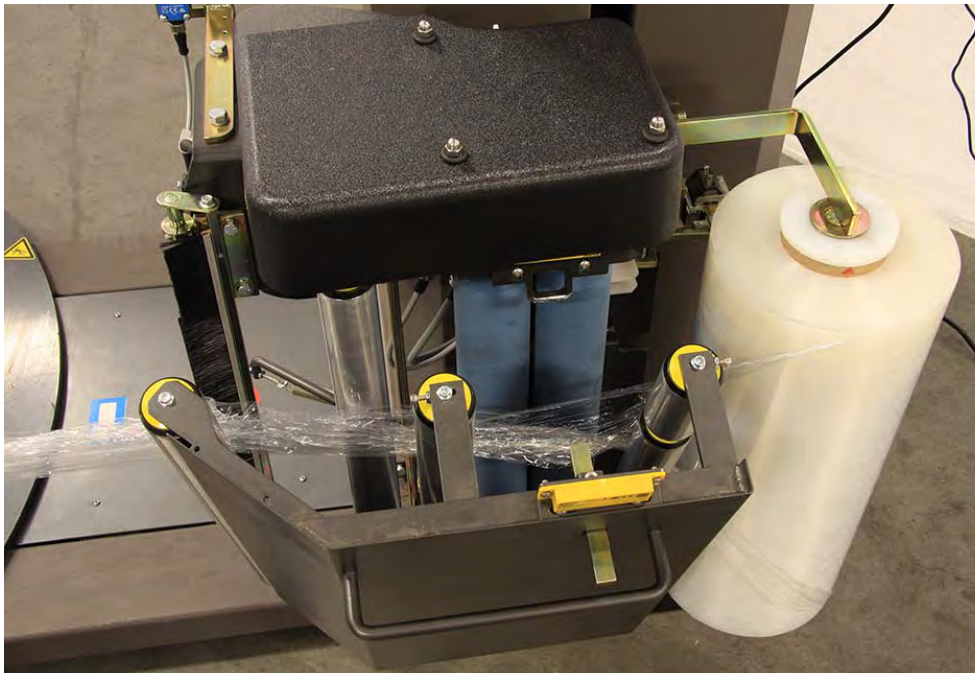
WARNING You must turn off the power switch to properly prevent the possibility of the film motor running accidentally.

Loading The Film (Orion Carriage)

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. Press the latch down and pull out on the carriage door to open the carriage. 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 opening.
7. Close the carriage door. Ensure the latch clicks shut properly.
8. When the film feeding is completed, release the E-stop.
9. Press the Start button once to reset control power.
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.
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.

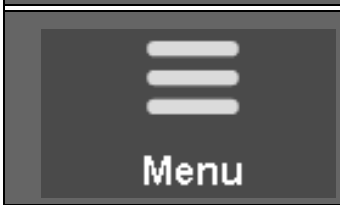
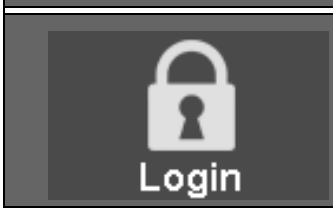
Figure 3 - 6
Threading the Film (Orion Carriage)



Universal Go-To Buttons

The buttons in the chart below are found throughout most HMI screens. The buttons allow the user to easily navigate back to any of the screens.

Table 3-1. The Universal Go-To Button Descriptions

STATE 1	DESCRIPTION
	The Info icon displays information about each button on the HMI screen that you are currently viewing.
	Press this button to go to the Run Screen. The icon will illuminate in green when the screen is currently active.
	Press this button to go to the Wrap Settings Screen. The icon will illuminate in green when the screen is currently active.
	Press this button to go to the Menu Screen. The icon will illuminate in green when the screen is currently active.
	Press this button to go to the Machine Settings Screen. The icon will illuminate in green when the screen is currently active.
	Press this button to go to the Diagnostics Screen. The icon will illuminate in green when the screen is currently active.
	Press this button to go to the Security Settings Screen.

Run Screens

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.

Run Screen

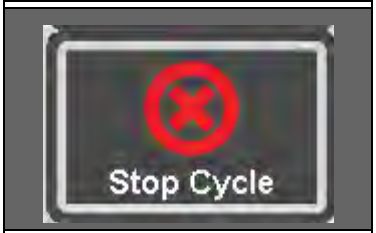
This is the Run screen used for primary functions of the machine. The red block in the Orion block logo will travel the perimeter of the logo showing the position of the turntable in relation to the home proximity sensor.

Figure 3 - 7
The Run Screen

Table 3-2. The Run Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	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 pause the wrap cycle. When paused, the Carriage and Main Drive will stop, and will wait for the Resume Cycle button to be pressed before resuming the wrap cycle.	

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

STATE 1	DESCRIPTION	STATE 2
	Press this button to resume the wrap cycle, if the cycle is currently paused.	
	Press this button to either stop the current wrap cycle or reset any displayed faults.	
	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.	**REINFORCING**
	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 predefined Low Speed value during the wrap cycle.	
	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.	

Maintenance Prompt

This is the Maintenance Prompt Screen. When preventative maintenance is required the prompt and picture of the maintenance is displayed. Press Acknowledge to confirm that the procedure was completed and reset the counter. Press Snooze to delay the counter for 100 cycles before the prompt re-displays.

Figure 3 - 8
The Maintenance Prompt Screen

Table 3-3. The Maintenance Prompt Screen Button Descriptions

STATE 1	DESCRIPTION
ACKNOWLEDGE	Press this button to acknowledge the required maintenance prompt as completed.
SNOOZE	Press this button to snooze the required maintenance prompt. The prompt will remain in the alarm list and redisplay after 100 cycles and re-display until it is acknowledged.

Table 3-4. The Maintenance Prompts

PREVENTATIVE MAINTENANCE REQUIRED	FREQUENCY (LOADS)
INSPECT RUBBER MULTISTRETCH ROLLERS. CLEAN AS NEEDED.	5,760
INSPECT BENEATH TURNTABLE. CLEAN DEBRIS AS NEEDED.	17,280
INSPECT TURNTABLE SUPPORT CASTERS FOR GOOD CONDITION.	17,280
INSPECT TURNTABLE CHAIN. APPLY LUBRICATION AS NEEDED.	17,280
INSPECT MULTISTRETCH CHAIN AND BELT. TENSION AND/OR LUBRICATE AS NEEDED.	17,280
INSPECT CARRIAGE LIFT CHAIN TENSION AND/OR LUBRICATE AS NEEDED.	34,560

Security Settings Screen

This is the Security Settings screen. This screen allows you to choose the default security setting used after the login expires.

Figure 3 - 9
The Security Settings Screen

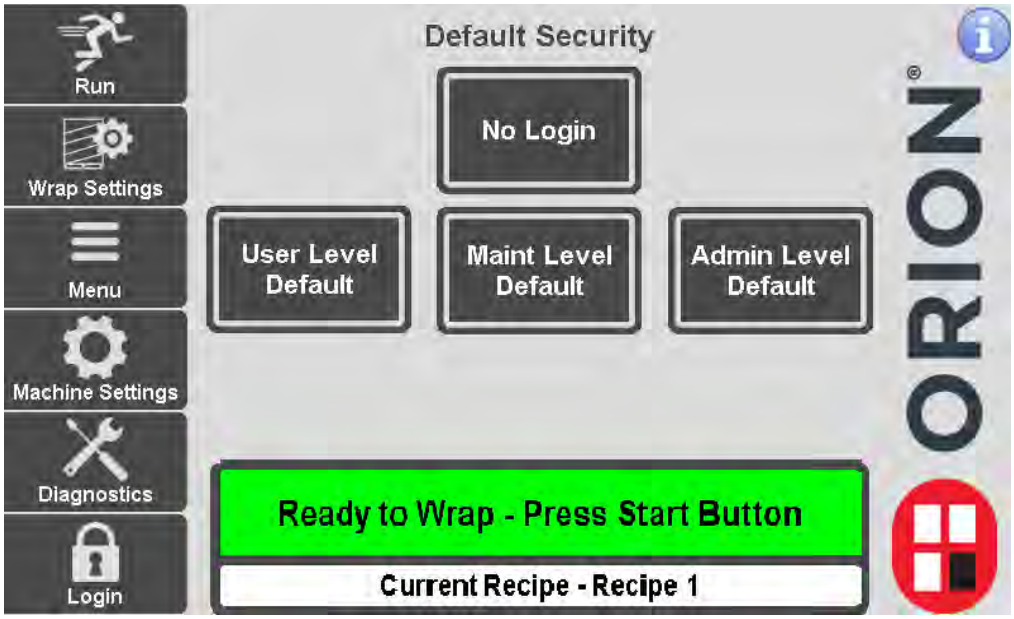


Table 3-5. The Security Settings Screen Button Descriptions

STATE 1	DESCRIPTION
NO LOGIN	Press this button to set the Default Security level to 'No Login'. When selected, the machine will automatically log out on powerup, or after the logout timer has expired.
USER LEVEL	Press this button to set the Default Security level to 'User'. When selected, the machine will automatically log in to the User security level on powerup, or after the logout timer has expired.
MAINTENANCE LEVEL	Press this button to set the Default Security level to 'Maintenance'. When selected, the machine will automatically log in to the Maintenance security level on powerup, or after the logout timer has expired.
ADMIN LEVEL	Press this button to set the Default Security level to 'Administrator'. When selected, the machine will automatically log in to the Administrator security level on powerup, or after the logout timer has expired.

Wrap Setting Screens

Wrap Settings Screen

Note: To adjust the wrap settings, you must be logged in. Press the login button in the bottom left corner of the screen. Enter ADMIN then press the checkmark, then X to close the keypad.

This is the Wrap Settings screen. This screen allows you to set the number of top and bottom wraps and the speed percentage of the carriage up and down travel. You may also choose wrap pattern options such as, Wrap Bottom First, Wrap Top First, Low Speed/ High Speed, Unstable Load Enabled or Disabled, Autoheight Enabled or Disabled, or Film Fault Enabled or Disabled. You can view each pattern settings on the Recipe Viewing Screen, see “Sentry Carriage Recipe Viewing Screen” on page 3 - 17.

Figure 3 - 10
The Wrap Settings Screen

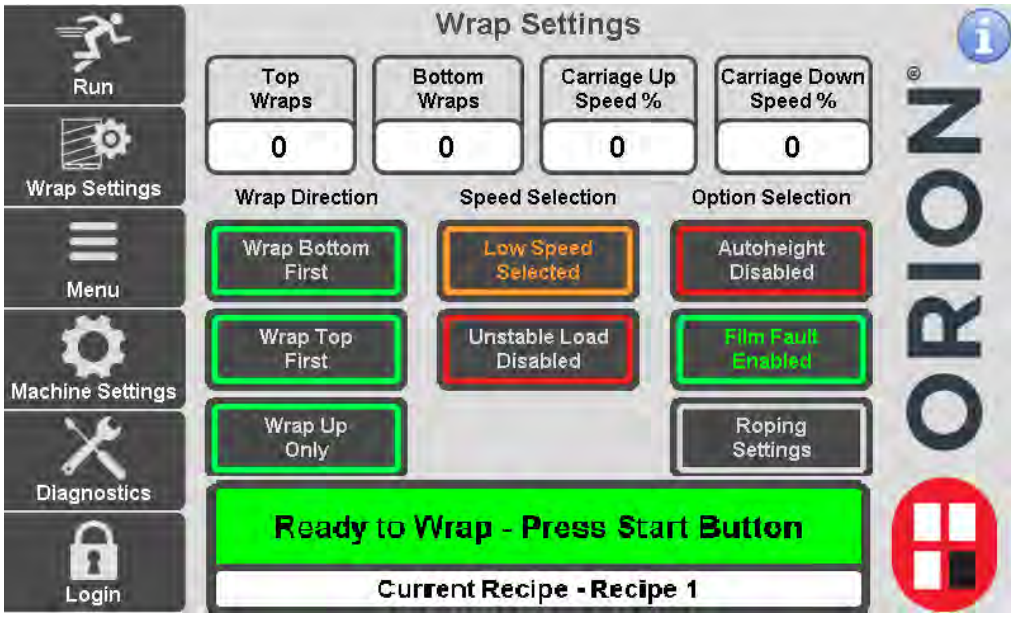


Table 3-6. The Wrap Settings Screen Button Descriptions

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 3-6. The Wrap Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
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%	
WRAP BOTTOM FIRST	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.	
WRAP TOP FIRST	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.	
WRAP UP ONLY	Press this button to wrap up only. The machine will wrap to the top, then stop the cycle.	
LOW SPEED SELECTED	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 predefined Low Speed value during the wrap cycle.	HIGH SPEED SELECTED
UNSTABLE LOAD DISABLED	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.	UNSTABLE LOAD ENABLED
AUTOHEIGHT DISABLED	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.	AUTOHEIGHT ENABLED
FILM FAULT DISABLED	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.	FILM FAULT ENABLED
ROPING SETTINGS	Press this button to go to the Roping Settings screen.	

Menu Screens

Menu Screen

This is the Menu screen. This screen allows you to navigate the HMI screens.

Figure 3 - 11
The Menu Screen

Table 3-7. The Menu Screen Button Descriptions

STATE 1	DESCRIPTION
JOGGING	Press this button to go to the Jogging Screen. See “Jogging Screen” on page 3 - 14.
RECIPES	Press this button to go to the Recipes Screen. See “Recipe Screen” on page 3 - 16.
PRODUCTION DATA	Press this button to go to the Production Data Screen. See “Sentry Carriage Recipe Viewing Screen” on page 3 - 17.
FILM USAGE	Press this button to go tot he Film Usage Screen. See “Film Usage Screen” on page 3 - 20.
FAULT TRACKING	Press this button to go to the Fault Tracking Screen. See “Fault Tracking Screen” on page 3 - 23.

Jogging Screen

This is the Jogging Screen. This screen allows jogging of each component of the machine.

Figure 3 - 12
The Jogging Screen

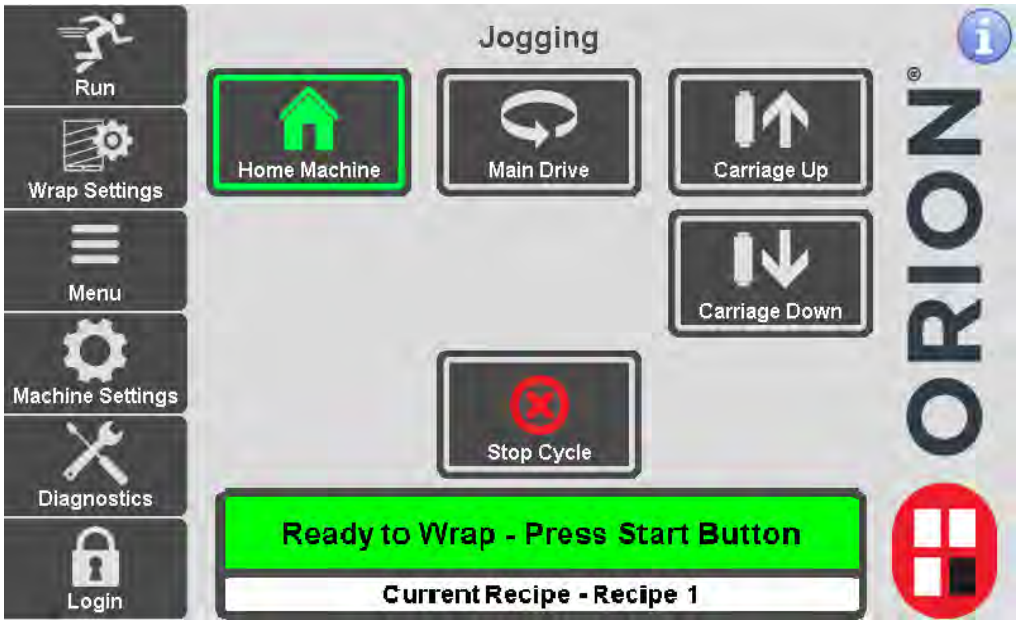


Table 3-8. The Jogging Screen Button Descriptions

STATE 1	DESCRIPTION
	Press this button to move the machine to the home position.
	Press this button to jog the main drive (turntable) 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 3-8. The Jogging Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION
	Press this button to jog the carriage downwards. The carriage move slowly downwards until the operator releases the jog button.
	Press this button while the machine is running to stop the current wrap cycle. When not running, press this button to reset the current fault condition.

Recipe Screen

This is the Recipe screen. This screens allows the user to select different wrap recipes quickly. Changes made to a recipe are saved to the active recipe.

Figure 3 - 13
The Recipe Screen

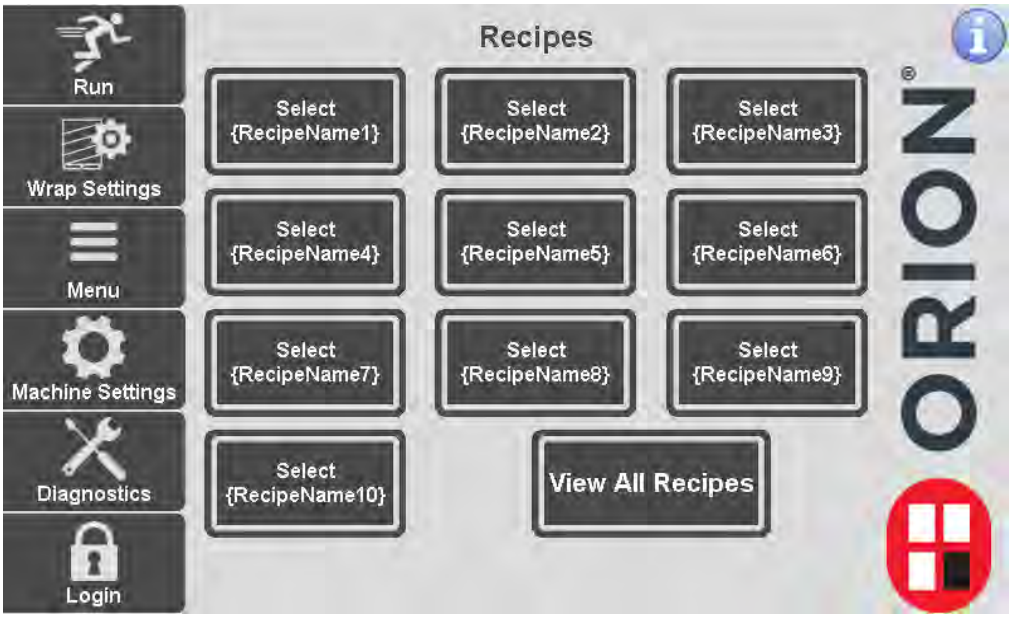


Table 3-9. The Recipe Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
SELECT RECIPE #	Press a recipe button to choose between the different recipe wrap settings. Changes made to a recipe are saved to the active recipe. If you attempt to change to a different recipe while the wrapper is loading, then the new recipe you select will display as loading and will only change once the current wrap cycle is complete.	RUNNING RECIPE 1 LOADING RECIPE 1
VIEW ALL RECIPES	Press this button to go to the Recipe Viewing screen. See “Sentry Carriage Recipe Viewing Screen” on page 3 - 17.	

Sentry Carriage Recipe Viewing Screen

This is the Recipe Viewing screen. This screen allows you to view each recipe settings. This is helpful for a quick glance at each recipe's parameters.

Figure 3 - 14
The Sentry Carriage Recipe Viewing Screen

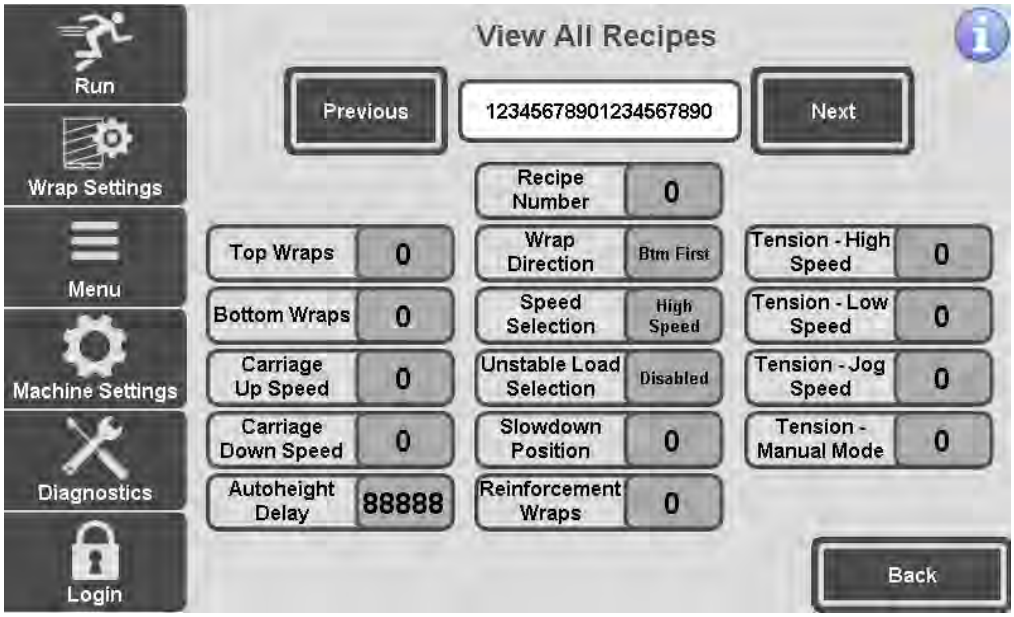


Table 3-10. The Sentry Carriage Recipe Viewing Screen Button Descriptions

STATE 1	DESCRIPTION
RECIPE	Press the recipe name to edit the name of the recipe.
PREVIOUS	Press this button to go to the previous Recipe View screen.
NEXT	Press this button to go to the next Recipe View screen.
BACK	Press this button to go back to the Recipe screen.

Orion Carriage Recipe Viewing Screen

This is the Recipe Viewing screen. This screen allows you to view each recipe settings. This is helpful for a quick glance at each recipe's parameters.

Figure 3 - 15
The Orion Carriage Recipe Viewing Screen

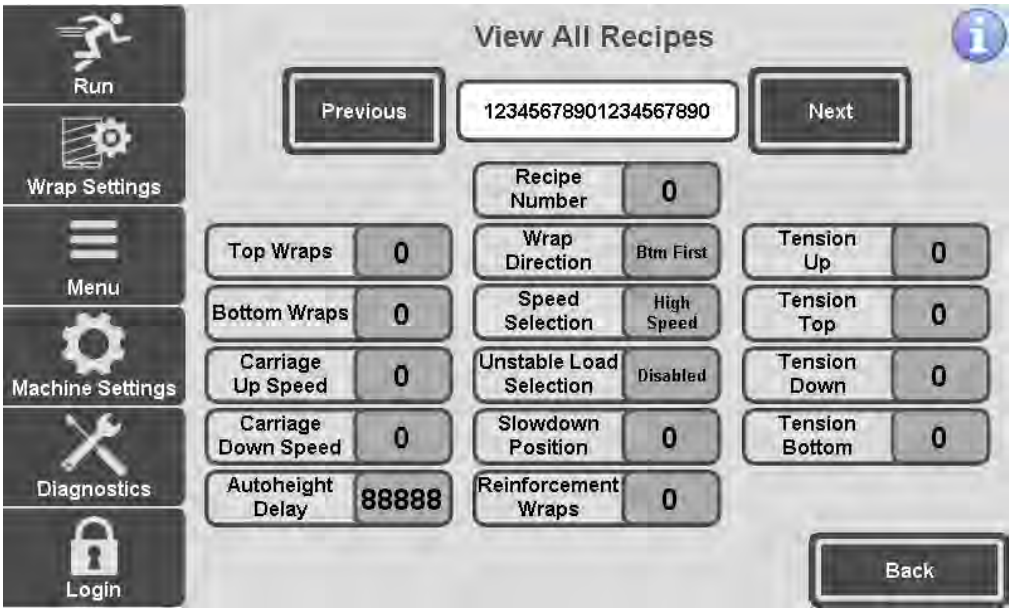


Table 3-11. The Orion Carriage Recipe Viewing Screen Button Descriptions

STATE 1	DESCRIPTION
RECIPE	Press the recipe name to edit the name of the recipe.
PREVIOUS	Press this button to go to the previous Recipe View screen.
NEXT	Press this button to go to the next Recipe View screen.
BACK	Press this button to go back to the Recipe screen.

Production Data Screen

This is the Production Data screen. This screen displays the lifetime cycles and shift cycles. You may also reset the shift cycle counter.

Figure 3 - 16
The Production Data Screen

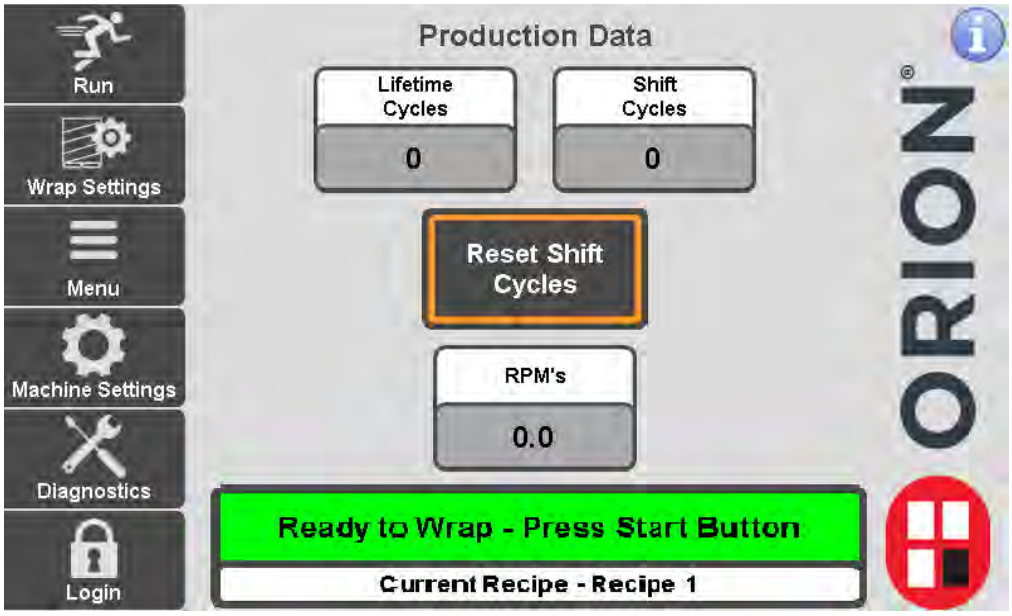


Table 3-12. The Production Data Screen Button Descriptions

STATE 1	DESCRIPTION
LIFETIME CYCLES	This display shows the number of cycles the machine has run, in total.
SHIFT CYCLES	This display shows the number of cycles the machine has run since the last shift cycle reset.
RESET SHIFT CYCLES	Press this button to reset the shift cycle counter to zero.
RPM'S	This display shows the current turntable RPM's.

Film Usage Screen

This is the Film Usage screen. This screen allows you to view the film usage weight based on the load dimensions, film gauge, and prestretch setting.

Figure 3 - 17
The Film Usage Screen

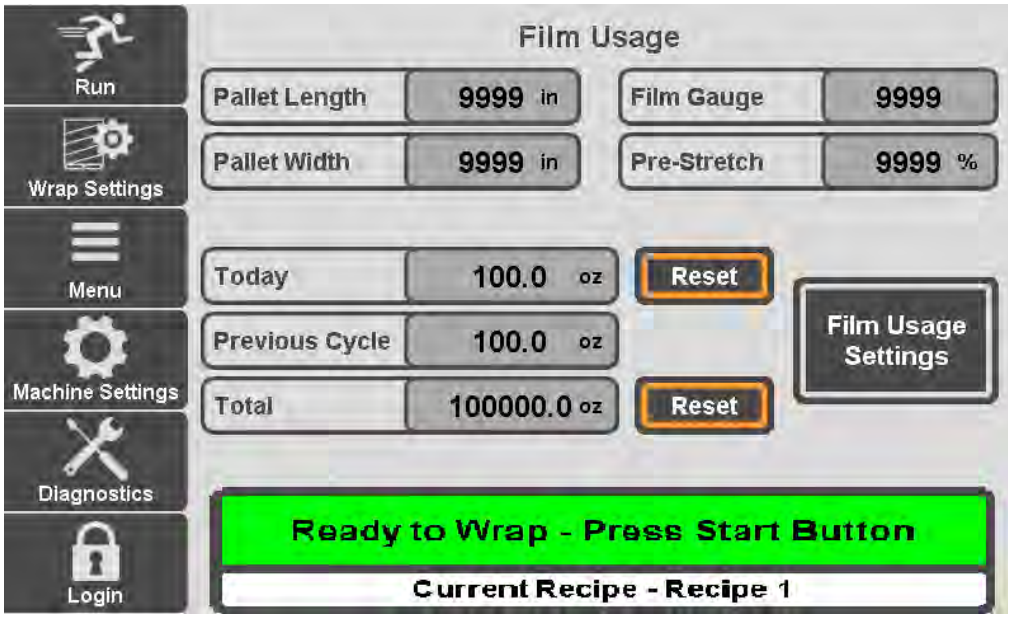


Table 3-13. The Film Usage Screen Button Descriptions

STATE 1	DESCRIPTION
PALLET LENGTH	Press the numeric display to enter the pallet length, in inches, used to calculate the film usage.
PALLET WIDTH	Press the numeric display to enter the pallet width, in inches, used to calculate the film usage.
FILM GAUGE	Press the numeric display to enter the film gauge used to calculate the film usage.
PRE-STRETCH	Press the numeric display to enter the prestretch percentage used to calculate the film usage.
TODAY	This numeric display shows how many ounces of film were used today since the last counter reset.
RESET	Press this button to reset the Today counter to zero.
PREVIOUS CYCLE	This numeric display shows how many ounces of film were used in the previous wrap cycle.
TOTAL	This numeric display shows how many ounces of film were used since the last counter reset.
RESET	Press this button to reset the Total Cycle counter to zero.
FILM USAGE SETTINGS	Press this button to go to the Film Usage Settings Screen.

Film Usage Settings Screen

This is the Film Usage Settings screen. This screen allows you to view the film usage weight based on the load dimensions, film gauge, and prestretch setting.

Figure 3 - 18
The Film Usage Settings Screen

Table 3-14. The Film Usage Settings Screen Button Descriptions

STATE 1	DESCRIPTION
FILM USAGE GOAL	Press the numeric display to enter the film usage goal, in ounces.
LOWER SPEC LIMIT	Press the numeric display to enter the film lower spec limit, in percentage.
UPPER SPEC LIMIT	Press the numeric display to enter the film upper spec limit, in percentage.
PALLET LENGTH	Press the numeric display to enter the pallet length, in percentage.
PALLET WIDTH	Press the numeric display to enter the pallet width, in percentage.
FILM GAUGE	Press the numeric display to enter the film gauge used to calculate the film usage.
PRE-STRETCH	Press the numeric display to enter the prestretch percentage used to calculate the film usage.
FILM WIDTH	Press the numeric display to enter the film width to calculate the film usage.
HOURLY GOAL	Press the numeric display to enter the hourly film usage goal, in ounces.
WORKING HOURS	Press the numeric display to enter the working hours for film usage calculations.
STANDARD RECIPE TOP WRAPS	Press the numeric display to set the standard recipe top wrap count for film usage calculations.
STANDARD RECIPE BOTTOM WRAPS	Press the numeric display to set the standard recipe bottom wrap count for film usage calculations.

Table 3-14. The Film Usage Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION
CALCULATION MODE THEORETICAL	Press this button to toggle to theoretical film usage mode. Theoretical mode is the standard mode. The Sentinel mode is only available on machines equipped with the Orion carriage with the Sentinel film scale option.
CALCULATION MODE SENTINEL	Press this button to toggle to Sentinel film usage mode. The Sentinel mode is only available on machines equipped with the Orion carriage with the Sentinel film scale option.
BACK	Press this button to go back to the Film Usage Screen. See “Film Usage Screen” on page 3 - 20.

Fault Tracking Screen

This is the Fault Tracking screen. This screen allows you to track the history of faults and reset each counter.

Figure 3 - 19
The Fault Tracking Screen

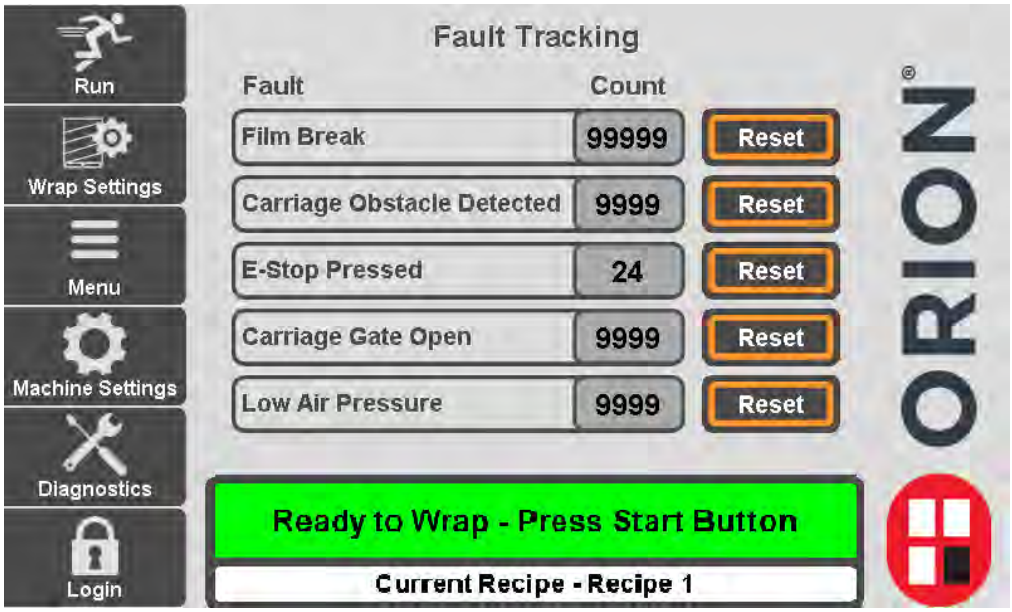


Table 3-15. The Fault Tracking Screen Button Descriptions

STATE 1	DESCRIPTION
FILM BREAK	This display shows the number of film breaks detected since the last counter reset.
CARRIAGE OBSTACLE DETECTED	This display shows the number of carriage obstacle detections (switch on the bottom of the carriage) since the last counter reset.
E-STOP PRESSED	This display shows the number of E-stops detected since the last counter reset.
CARRIAGE GATE OPEN	This display shows the number of times the carriage gate open was detected since the last counter reset.
LOW AIR PRESSURE	This display shows the number of times the pneumatic pressure was low (if pneumatic pressure is used) since the last counter reset.
RESET	Press the reset button adjacent to the indicated counter to reset that counter to zero.

Machine Settings Screens

Machine Settings Screen

This is the Machine Settings Screen. This screen allows access to each of the machine setting adjustments.

Figure 3 - 20
The Machine Settings Screen

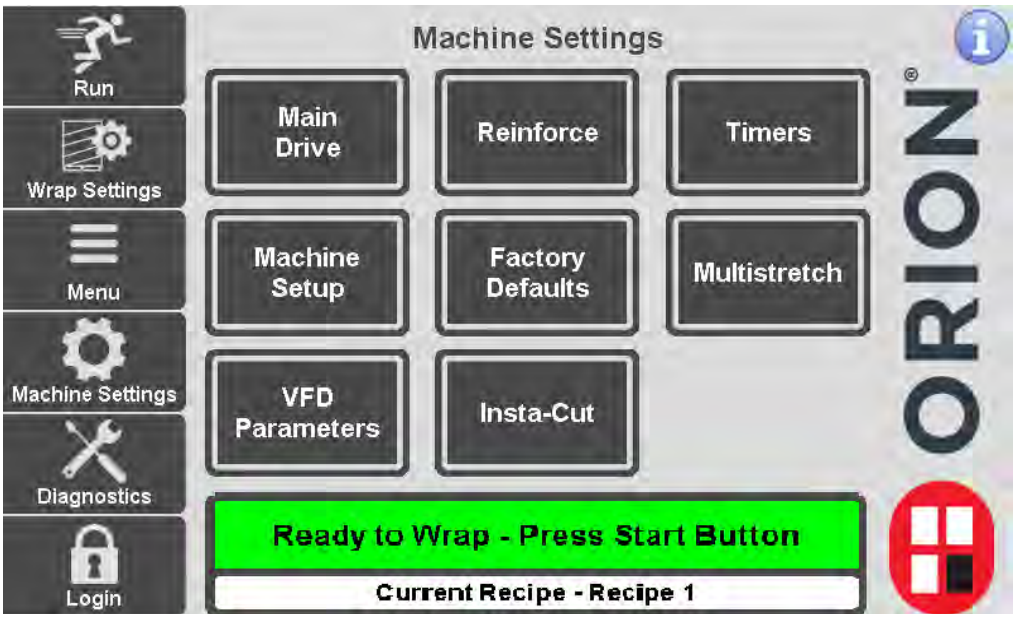


Table 3-16. The Machine Settings Screen Button Descriptions

STATE 1	DESCRIPTION
MAIN DRIVE	Press this button to go to the Main Drive Screen. See “Main Drive Screen” on page 3 - 26.
REINFORCE	Press this button to go to the Reinforce Screen. See “Reinforce Wrap Setup” on page 3 - 27.
TIMERS	Press this button to go to the Timers Screen. See “Sentry Carriage Timers Screen” on page 3 - 28.
MACHINE SETUP	Press this button to go to the Machine Setup Screen. See “Orion Carriage Timers Screen” on page 3 - 29.
FACTORY DEFAULTS	Press this button to go to the Factory Defaults Screen. See “Factory Defaults Screen” on page 3 - 32.
MULTISTRETCH	Press this button to go to the Multistretch Screen. See “Sentry Carriage Multistretch Settings Screen” on page 3 - 34.
VFD PARAMETERS	Press this button to go to the VFD Parameters Screen. See “Orion Carriage Multistretch Settings Screen” on page 3 - 35.

Table 3-16. The Machine Settings Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION
INSTA-CUT	Press this button to go to the Insta-Cut Screen. See “Insta-Cut Screen” on page 3 - 38.

Main Drive Screen

This is the Main Drive screen. This screen allows adjustment of the Main Drive (turntable.)

Figure 3 - 21
The Main Drive Screen

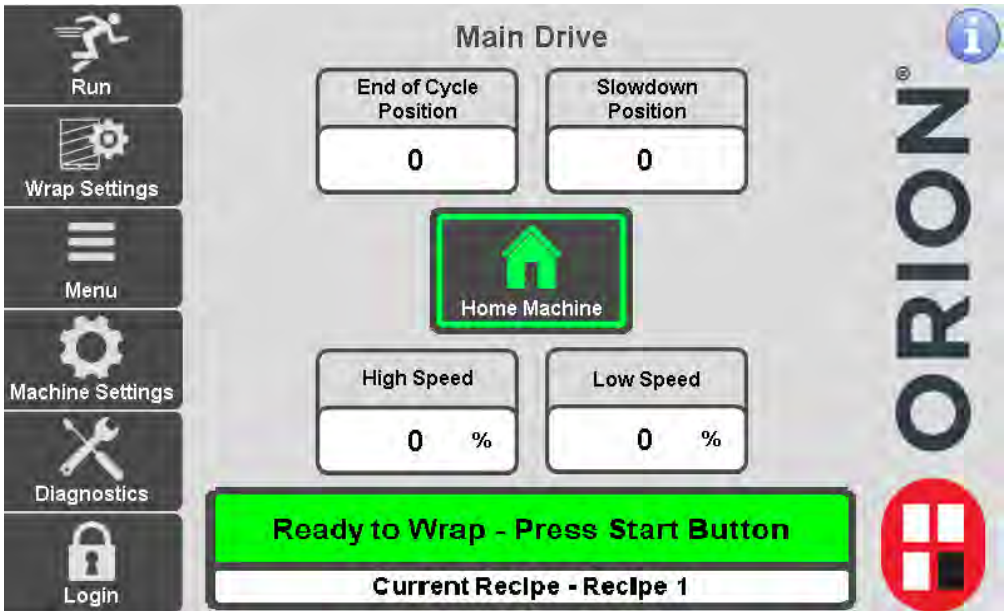


Table 3-17. The Main Drive Screen Button Descriptions

STATE 1	DESCRIPTION
END OF CYCLE POSITION	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
SLOWDOWN POSITION	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 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.
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. Min - 1% Max - 100%.
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. Min - 1% Max - 100%.

Reinforce Wrap Setup

This is the Reinforce Wraps Setting Screen. This screen allows the user to set the number of reinforce wraps that are applied when the reinforce button on the Run Screen is pressed.

Figure 3 - 22
The Reinforce Setup Screen

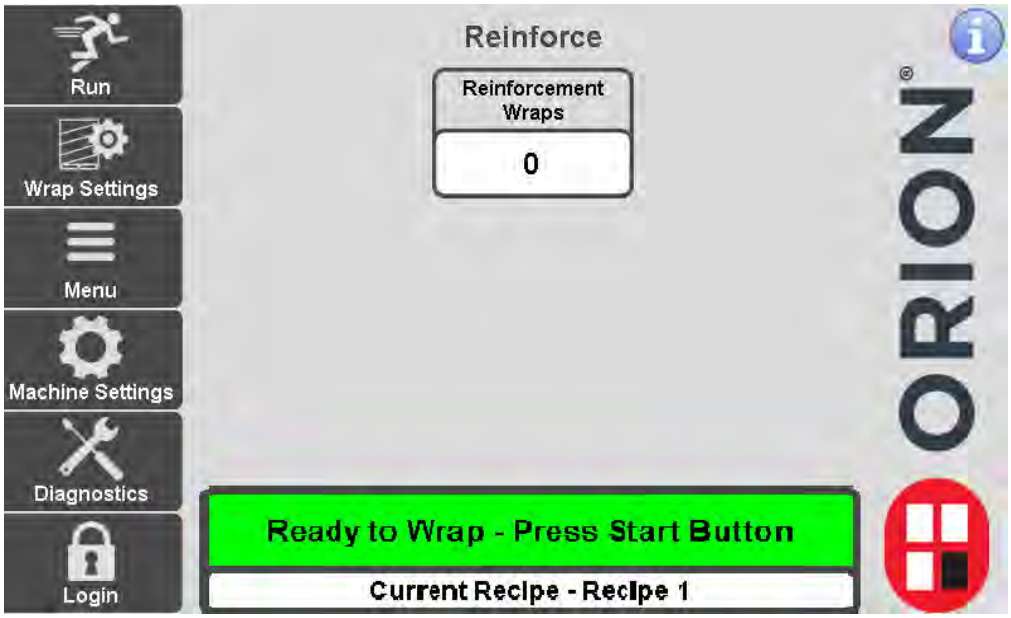


Table 3-18. The Reinforce Wraps Screen Button Descriptions

STATE 1	DESCRIPTION
REINFORCE WRAPS	Press this button to set the number of reinforce wraps that are applied when the enable reinforce wraps button is pressed on the Run screen.

Sentry Carriage Timers Screen

This is the Timers Screen. This screen allows adjustment of the timers involved in the machine cycle. See the Table below for descriptions and parameters of each setting.

Figure 3 - 23
The Sentry Carriage Timers Screen

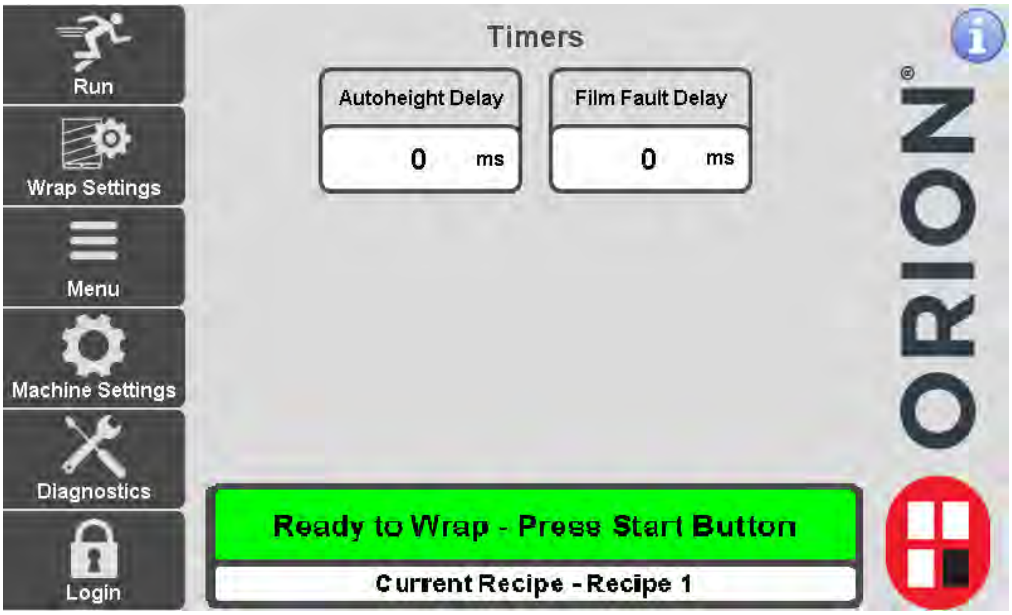


Table 3-19. The Sentry Carriage Timers Screen Button Descriptions

STATE 1	DESCRIPTION
AUTOHEIGHT DELAY	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 - 10000 ms
FILM FAULT DELAY	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 - 10000 ms

Orion Carriage Timers Screen

This is the Timers Screen. This screen allows adjustment of the timers involved in the machine cycle. See the Table below for descriptions and parameters of each setting.

Figure 3 - 24
The Orion Carriage Timers Screen

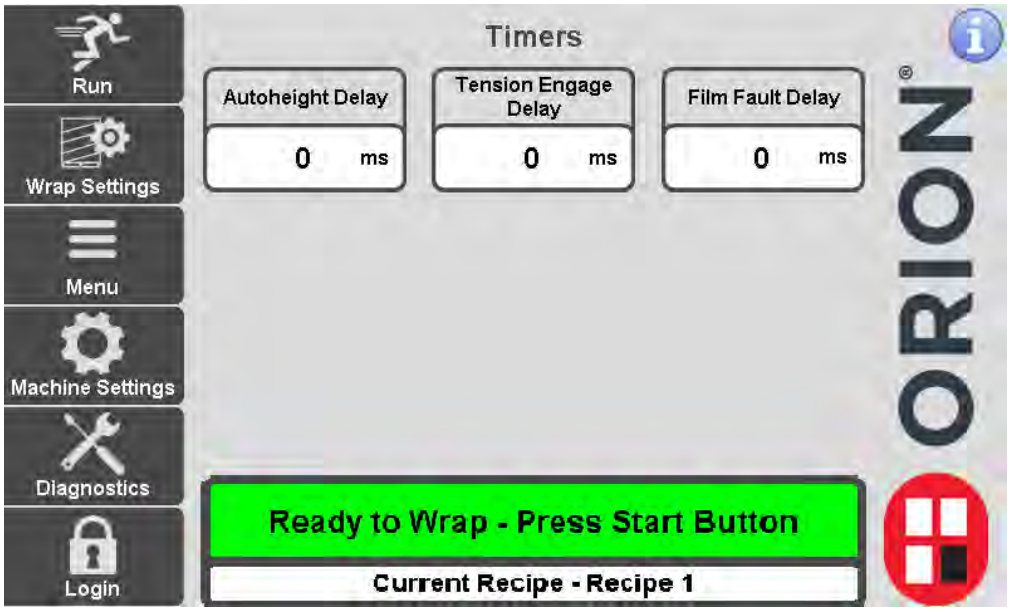


Table 3-20. The Orion Carriage Timers Screen Button Descriptions

STATE 1	DESCRIPTION
AUTOHEIGHT DELAY	Press the numeric display to modify the Autoheight Delay value, in terms of milli-seconds. 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 - 10000 ms
TENSION ENGAGE DELAY	Press the numeric display to set the tension engage delay. This is the amount of time, in milliseconds, that the tension waits after the start of the cycle to engage the tension on the film multistretch. This is done to prevent pulling the film tail off of the load upon starting up. Min - 0 ms Max - 10000 ms
FILM FAULT DELAY	Press the numeric display to modify the Film Fault Delay value, in terms of milli-seconds. 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 - 10000 ms

Machine Setup Screen

This screen is used when setting up the initial machine configuration. The technicians who assembled you machine already set the type of machine you have on this screen. You will not need to make any changes on this screen in day-to-day use.

Figure 3 - 25
The Machine Setup Screen

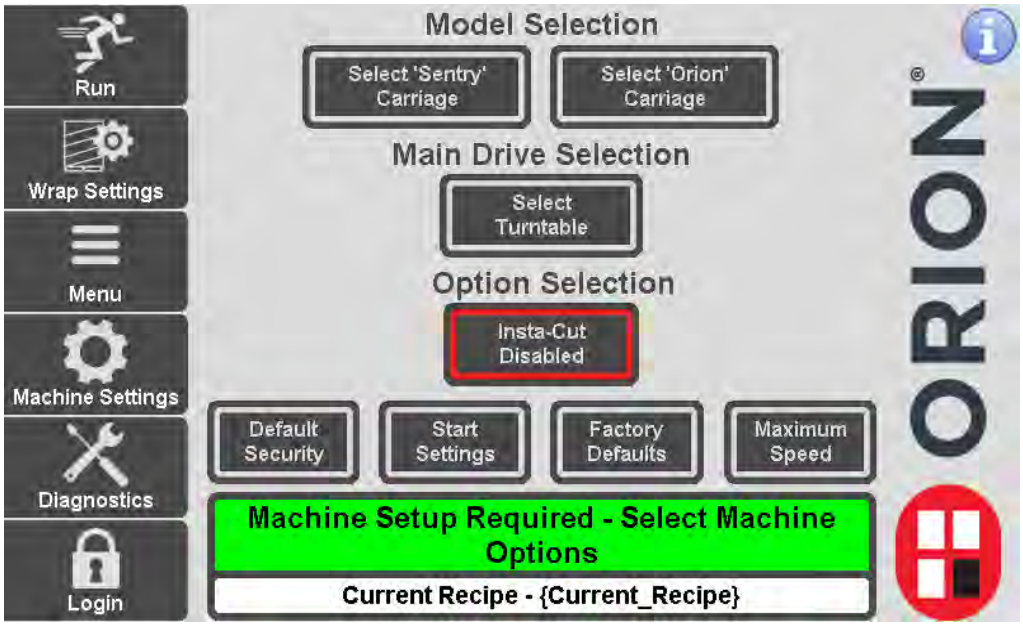


Table 3-21. The Machine Setup Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
SELECT SENTRY CARRIAGE	Press this button to select the Sentry Carriage.	SELECT SENTRY CARRIAGE
SELECT ORION CARRIAGE	Press this button to select the Orion Carriage.	SELECT ORION CARRIAGE
SELECT TURNTABLE	Press this button to select that the machine is a turn-table machine.	TURNTABLE SELECTED
INSTA-CUT DISABLED	Press this button to activate or de-activate Insta-Cut.	INSTA-CUT ENABLED
DEFAULT SECURITY	Press this button to go to the Security Settings Screen. See “Maintenance Prompt” on page 3 - 8.	
START SETTINGS	Press this button to go to the Start Settings Screen. See “Start Settings Screen” on page 3 - 31.	
FACTORY DEFAULTS	Press this button to go to the Factory Defaults Screen. See “Factory Defaults Screen” on page 3 - 32.	
MAXIMUM SPEED	Press this button to go to the Maximum Speed Screen. See “Maximum Speed Screen” on page 3 - 33.	

Start Settings Screen

This is the Start Settings screen. On this screen, you may set the amount of time, in milli-seconds that the start button must be pressed before the machine starts. You can also set the automatic restart parameters.

Figure 3 - 26
The Start Settings Screen

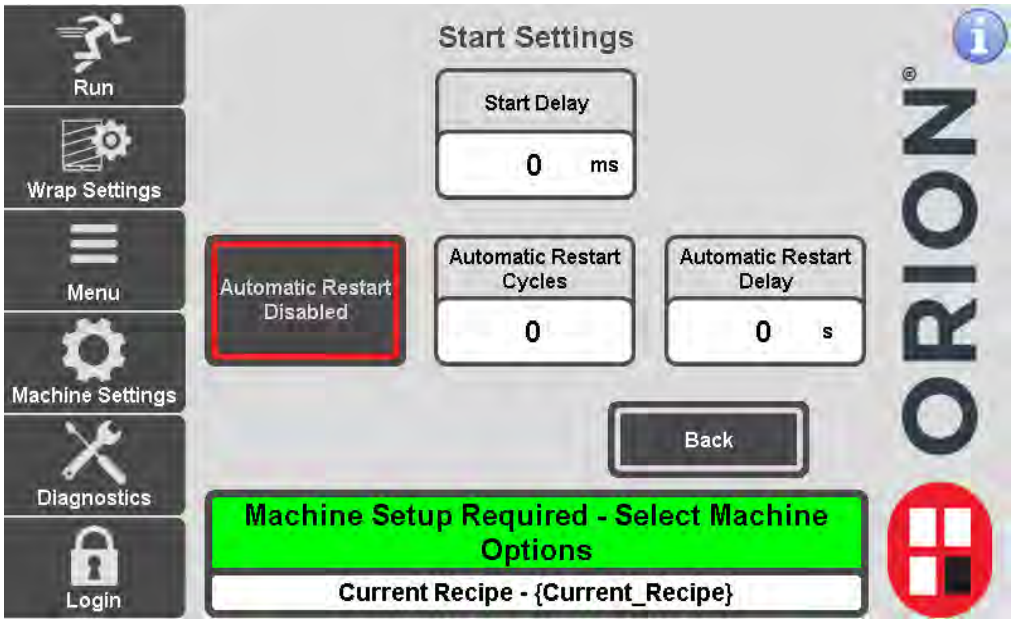


Table 3-22. The Start Delay Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
START DELAY	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.	AUTOMATIC RESTART ENABLED
AUTOMATIC RESTART CYCLES	Press this button to set the number of automatic restart cycles.	
AUTOMATIC RESTART DELAY	Press this button to modify the Automatic Restart Delay value, in seconds. This value determines the amount of time that the machine waits between automatic restart cycles.	
BACK	Press this button to go to the Machine Setup screen.	

Factory Defaults Screen

This is the Factory Defaults Screen. This screen allows authorized users to go back to the factory default settings.

Figure 3 - 27
The Factory Defaults Screen

Table 3-23. The Factory Defaults Screen Button Descriptions

STATE 1	DESCRIPTION
RESTORE FACTORY DEFAULTS	Press this button to delete the currently entered factory settings and replace them with the original factory default settings. This will replace all Wrap Settings, Machine Settings, and Recipes with the factory default parameters.
RESTORE DEFAULT NETWORK SETTINGS	Press this button to restore default network settings to the machine.

Maximum Speed Screen

This is the Maximum Speed Screen. This screen allows authorized users to change the maximum speed of the multistretch or main turntable motors.

Figure 3 - 28
The Maximum Speed Screen

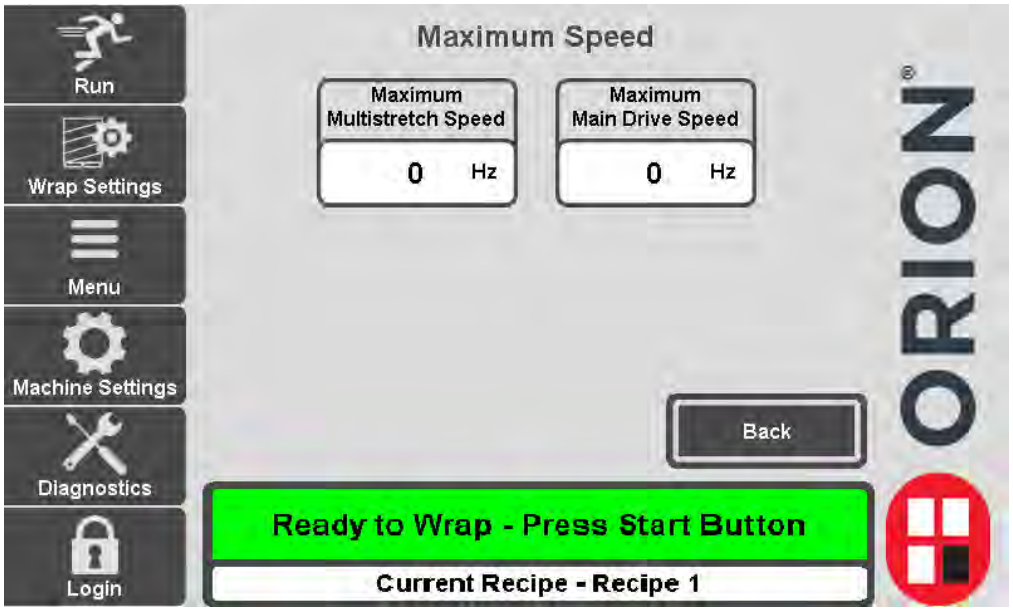


Table 3-24. The Maximum Speed Screen Button Descriptions

STATE 1	DESCRIPTION
MAXIMUM MULTISTRETCH SPEED HZ	Press the numeric display to set the Maximum Multistretch speed, in hertz. This limits the top speed for the multistretch motor.
MAXIMUM MAIN DRIVE SPEED HZ	Press the numeric display to set the Maximum Main Drive speed, in hertz. This limits the top speed for the turntable motor.
BACK	Press this button to go back to the Machine Setup Screen. See “Machine Setup Screen” on page 3 - 30.

Sentry Carriage Multistretch Settings Screen

This is the Multistretch Settings screen. This screen allows technicians to adjust the stretch tension for the various modes of operation.

Figure 3 - 29
The Sentry Carriage Multistretch Screen

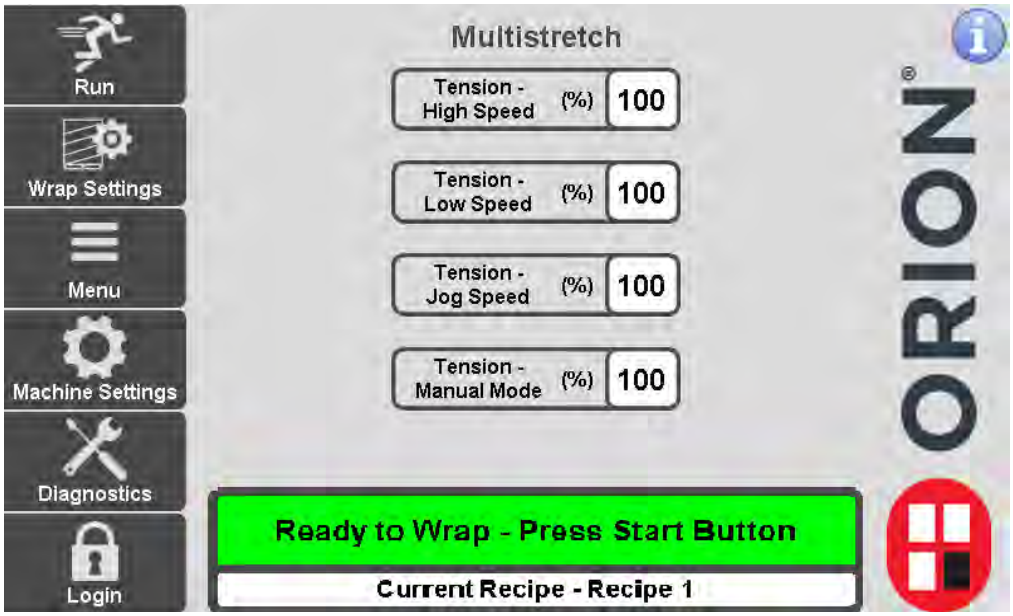


Table 3-25. The Sentry Carriage Multistretch Screen Button Descriptions

STATE 1	DESCRIPTION
TENSION HIGH SPEED %	Press this numeric display to set the tension percentage applied while the machine is running in high speed mode.
TENSION LOW SPEED %	Press this numeric display to set the tension percentage applied while the machine is running in low speed mode.
TENSION JOG SPEED %	Press this numeric display to set the tension percentage applied while the machine is jogging.
TENSION MANUAL MODE %	Press this numeric display to set the tension percentage applied while the machine is in manual mode.

Orion Carriage Multistretch Settings Screen

This is the Multistretch Settings screen. This page is useful primarily to repair personnel when troubleshooting the machine.

Figure 3 - 30
The Orion Carriage Multistretch Screen

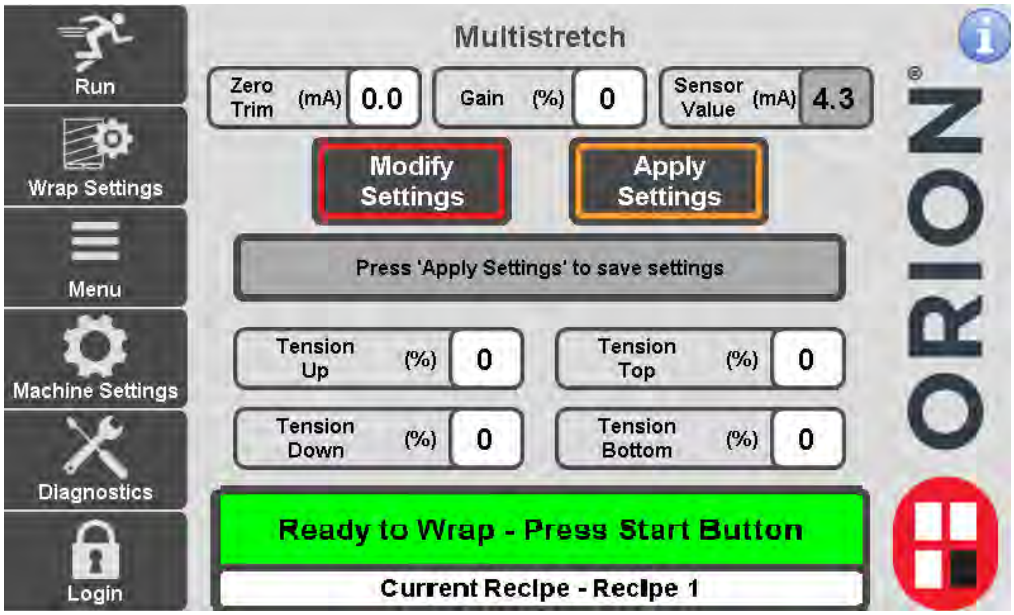


Table 3-26. The Orion Carriage Multistretch Screen Button Descriptions

STATE 1	DESCRIPTION
ZERO TRIM	Press this button to modify the Zero Trim datapoint, in terms of milliamps. This value determines at which point the Multistretch will begin paying out film as the dancer bar is deflected. This value should be .5 mA higher than the Hall Effect Sensor reading with the dancer bar at rest. Min - 3.mA Max - 8 mA
GAIN	Press this button to modify the Gain datapoint, in terms of percentage. This value sets percentage of deflection of the dancer bar that is required for the Multistretch to pay out film at maximum speed. Min - 10% Max - 100%
SENSOR (MA) VALUE	This displays the current dancer bar Hall Effect Sensor reading, in terms of milliamps.
MODIFY SETTINGS	Press this button for access to modify the Zero Trim or Gain datapoints. The Multistretch is disabled while modifying the datapoints.
APPLY SETTINGS	Press this button to accept the current Zero Trim and Gain datapoints and apply them to the Multistretch. When complete, the drive will be enabled again.
TENSION UP %	Press this button to enter the film tension percentage from 0-100% while the carriage is traveling up.
TENSION DOWN %	Press this button to enter the film tension percentage from 0-100% while the carriage is traveling down.

Table 3-26. The Orion Carriage Multistretch Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION
TENSION TOP %	Press this button to enter the film tension percentage from 0-100% while the carriage is wrapping the top.
TENSION BOTTOM %	Press this button to enter the film tension percentage from 0-100% while the carriage is wrapping the bottom.

The VFD Parameters Screen

This is the VFD Parameters screen. On this screen, you can identify the horsepower for each drive or transfer VFD parameters from the PLC to the VFD's.

Figure 3 - 31
The VFD Parameters Screen

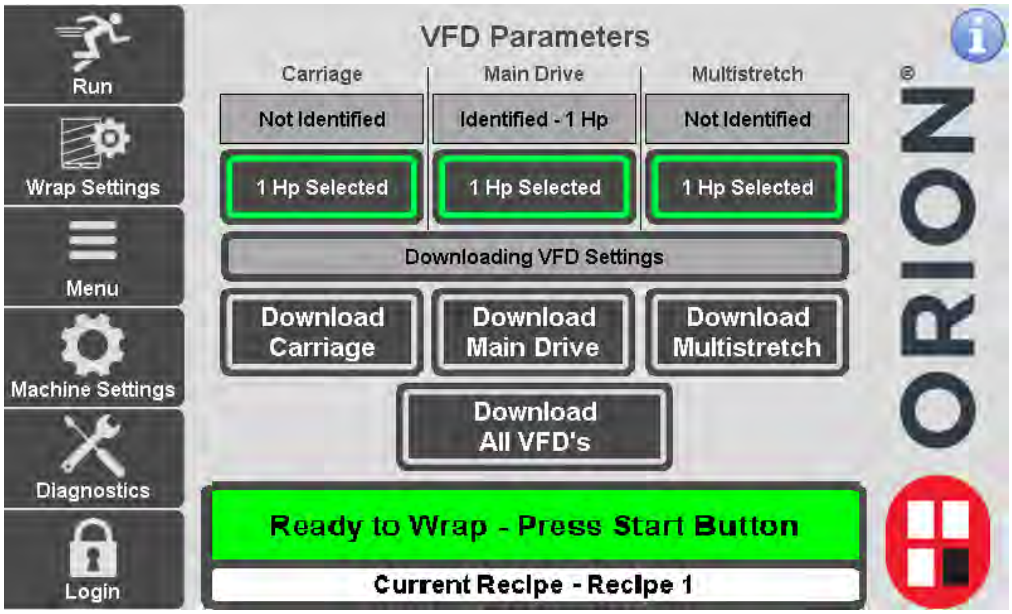


Table 3-27. The VFD Parameters Screen Button Descriptions

STATE 1	DESCRIPTION
NOT IDENTIFIED	Displayed if the machine cannot automatically identify the size of VFD currently installed. In this case, the VFD size must be manually selected before downloading.
1/2 HP IDENTIFIED	Displayed if the machine identifies the current VFD as half horsepower drive.
1 HP IDENTIFIED	Displayed if the machine identifies the current VFD as a one horsepower drive.
SELECT VFD SIZE	If the machine cannot automatically identify the size of the VFD, press this button to manually select the size of VFD currently installed.
1/2 HP SELECTED	Displayed if the current VFD is manually selected as a half horsepower drive.
1 HP SELECTED	Displayed if the current VFD is manually selected as a one horsepower drive.
DOWNLOAD MAIN DRIVE	Downloads the default Main Drive VFD parameters from the PLC to the VFD.
DOWNLOAD CARRIAGE	Downloads the default Carriage VFD parameters from the PLC to the VFD.
DOWNLOAD MULTISTRETCH	Downloads the default Multistretch VFD parameters from the PLC to the VFD.
DOWNLOAD ALL VFD'S	Downloads the default VFD parameters from the PLC to the VFD.

Insta-Cut Screen

This is the Insta-Cut screen. This screen allows adjustments to the timing and speed setting associated with the Insta-Cut on machines with the Orion carriage, if so equipped.

Figure 3 - 32
The Insta-Cut Screen

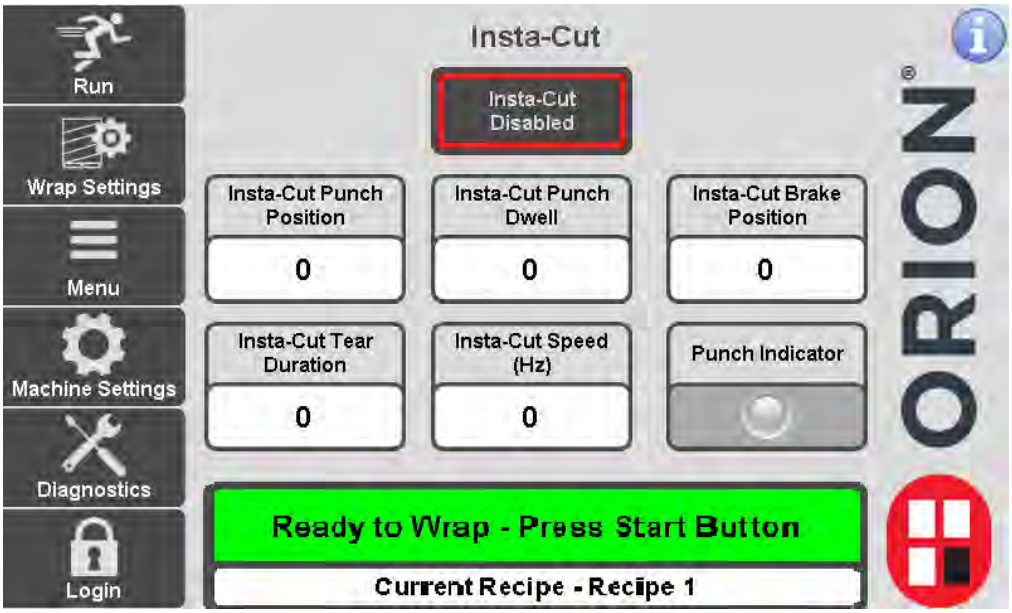
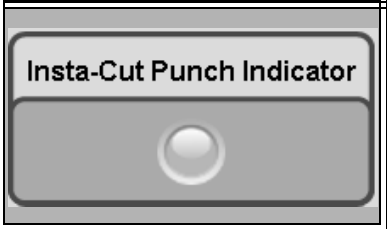


Table 3-28. The Insta-Cut Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
INSTA- CUT ENABLED	Press this button to toggle between Insta-Cut On or Insta-Cut Off. This allows the operator to disable the Insta-Cut function.	INSTA-CUT DISABLED
INSTA-CUT PUNCH POSITION	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.	
INSTA-CUT PUNCH DWELL	Press this button to modify the Insta-Cut Punch Dwell. This is the amount of teeth that the Insta-Cut puncher will stay activated to create a hole in the film.	
INSTA-CUT BRAKE POSITION	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)	
INSTA-CUT TEAR DURATION	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.	
INSTA-CUT SPEED HZ	Press this button to modify the Insta-Cut Speed. This is the speed at which the Main Drive will travel during the Insta-Cut sequence.	

Table 3-28. The Insta-Cut Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
	This indicator will glow green when the Insta-Cut puncher is active.	

Diagnostics Screens

Diagnostics Screen

This is the Diagnostics screen. This screen allows navigation to each of the Diagnostic Screens.

Figure 3 - 33
The Diagnostics Screen

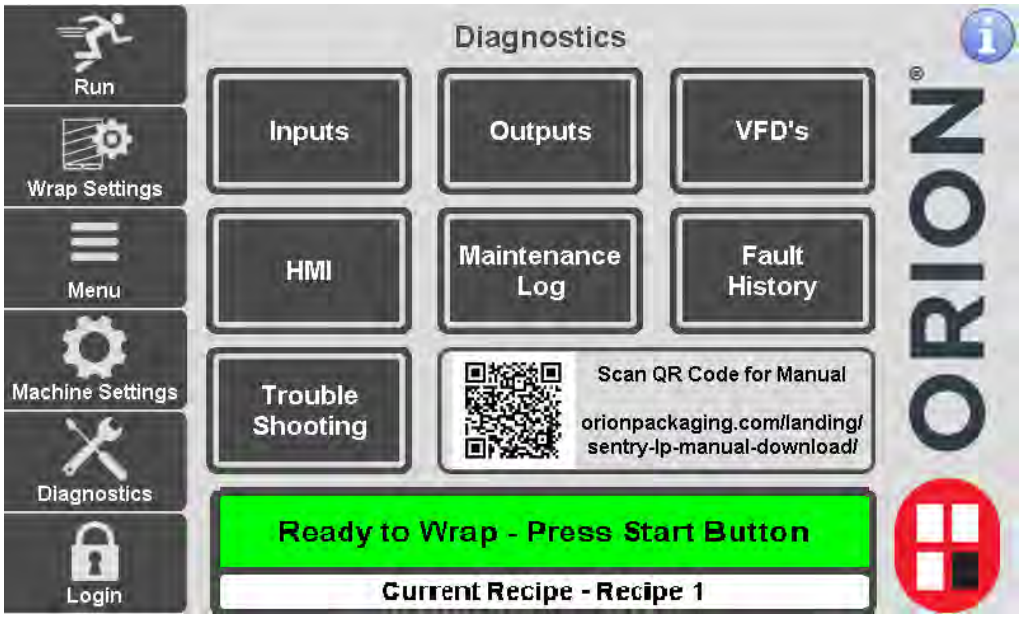


Table 3-29. The Diagnostics Screen Button Descriptions

STATE 1	DESCRIPTION
INPUTS	Press this button to go to the Inputs Screen. See “The Inputs Screens” on page 3 - 41.
OUTPUTS	Press this button to go to the Outputs Screen. See “The Outputs Screens” on page 3 - 42.
VFD’S	Press this button to go to the VFD’s Screen. See “The VFD Diagnostics Screen” on page 3 - 43.
HMI	Press this button to go to the HMI Screen. See “HMI Setup” on page 3 - 44.
MAINTENANCE LOG	Press this button to go to the Maintenance Log Screen. See “Maintenance Log Screen” on page 3 - 45.
FAULT HISTORY	Press this button to go to the Fault History Screen. See “Fault History Screen” on page 3 - 46.
TROUBLESHOOTING	Press this button to display the interactive troubleshooting guide. You can press links on the first page to view the help topic needed. Maintenance information is also included at the end of the guide.

The Inputs Screens

This is the Inputs screen. This screen shows the status of the machine inputs. There is another screen similar to this for displaying output status.

Figure 3 - 34
The Inputs Screen

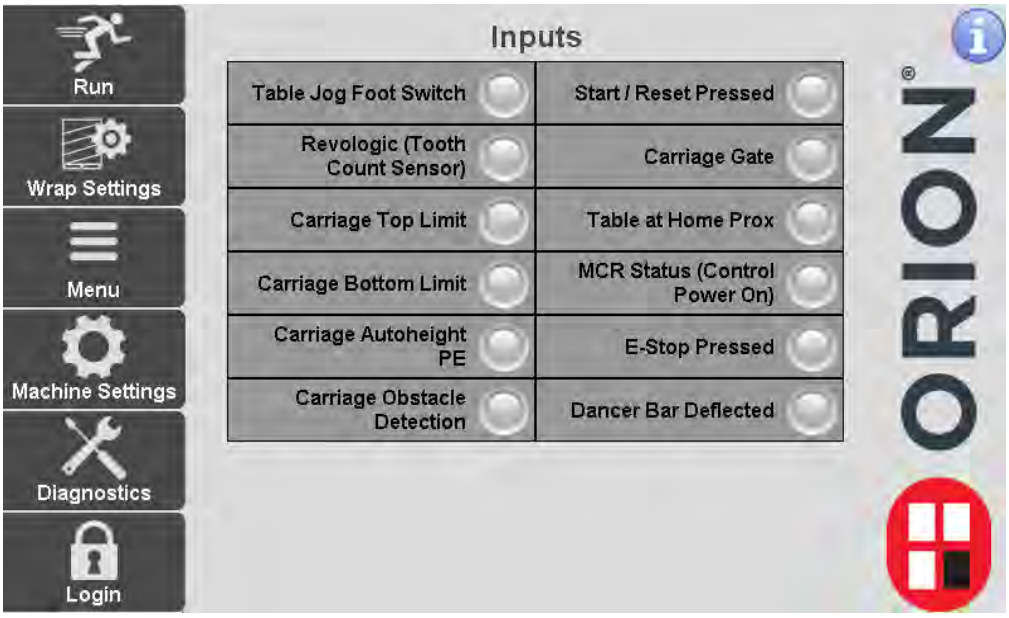
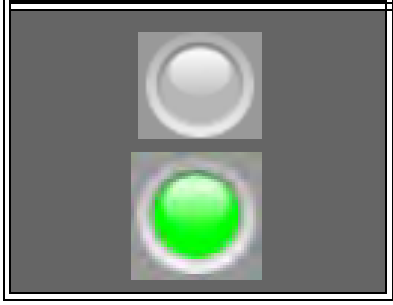


Table 3-30. The Input Screen Button Descriptions

STATE 1	DESCRIPTION
	Grey represents an inactive input. Green represents an active input.

The Outputs Screens

This is the Outputs screen. This screen shows the status of the machine outputs. There is another screen similar to this for displaying input status.

Figure 3 - 35
The Outputs Screen

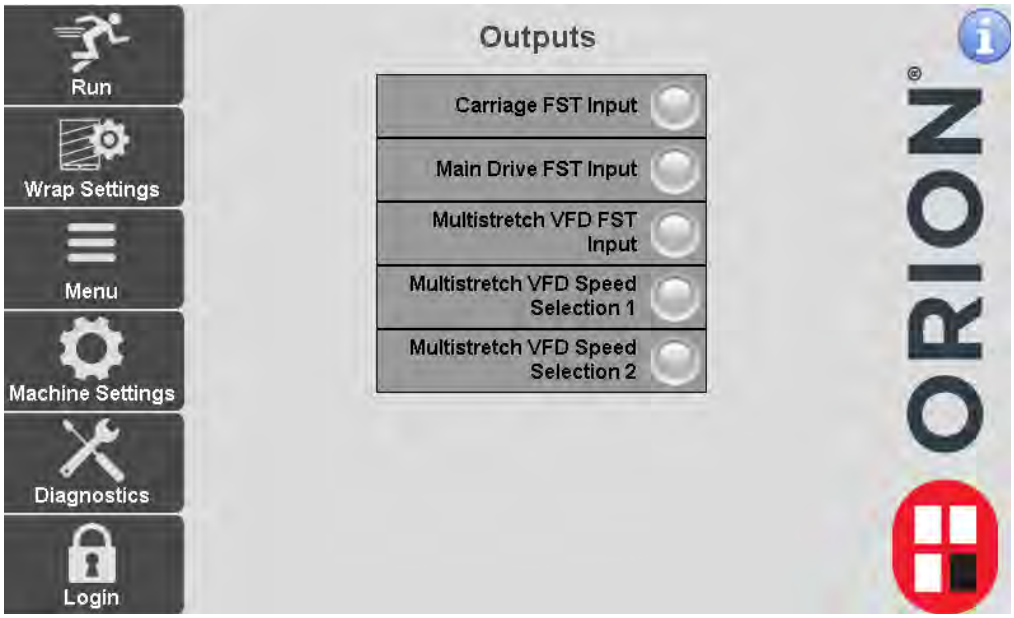
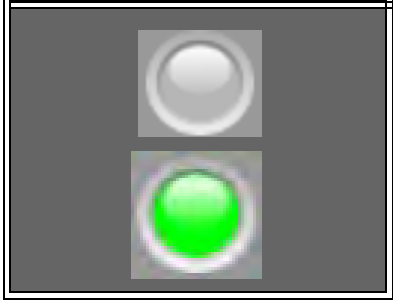


Table 3-31. The Output Screen Button Descriptions

STATE 1	DESCRIPTION
	Grey represents an inactive output. Green represents an active output.

The VFD Diagnostics Screen

This is the VFD Diagnostics screen.This screen allows you to view the diagnostics information about each VFD.

Figure 3 - 36
The VFD Diagnostics Screen

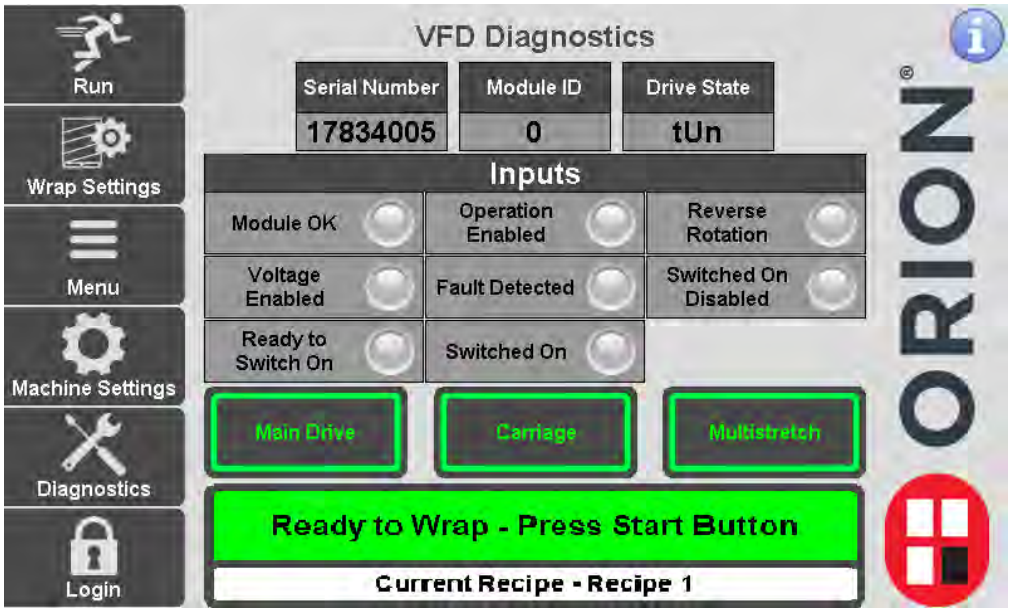


Table 3-32. The VFD Diagnostics Screen Button Descriptions

STATE 1	DESCRIPTION
SERIAL NUMBER	This displays the serial number of the selected VFD.
MODULE ID	This displays the Module ID of the selected VFD.
DRIVE STATE	This displays the current Drive State of the selected VFD.
CARRIAGE	Press this button to select the Carriage input view.
TURNTABLE	Press this button to select the Turntable input view.
MULTISTRETCH	Press this button to select the Multistretch input view.
	Gray represents an inactive input. Green represents an active input.

HMI Setup

This is the HMI Setup Screen. This screen allows you to choose the HMI language, set the screen brightness, adjust the network settings, calibrate the touchscreen touch points, and set the date and time.

Figure 3 - 37
The HMI Setup Screen

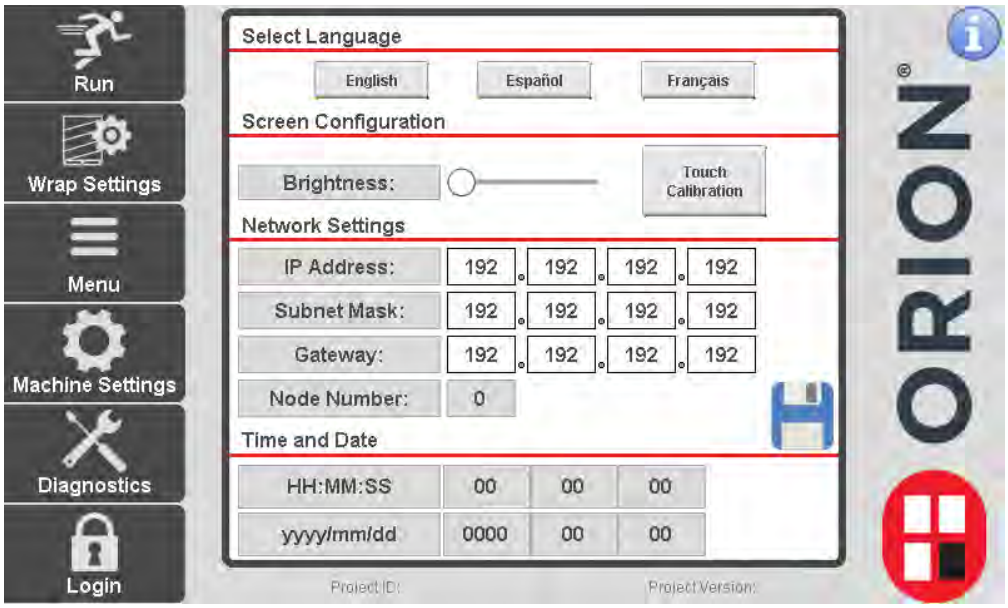


Table 3-33. The HMI Setup Screen Button Descriptions

STATE 1	DESCRIPTION
ENGLISH	Press this button to switch the HMI text to English.
ESPANOL	Press this button to switch the HMI text to Spanish.
BRIGHTNESS	Use the slider to adjust the brightness of the HMI screen. Slide to the right to increase the brightness. Slide to the left to decrease the brightness.
TOUCH CALIBRATION	Press this button to go to the touch calibration screen. This is used to set the alignment of the touch screen. There are multiple targets to press to align the screen.
NETWORK SETTINGS	When logged in as an Administrator, you can edit the IP Address, Subnet Mask, Gateway, or Node number. Press save, when done editing. If you are not logged in with the correct credentials, these settings are read-only.
	Press this button to save the Network Settings. If you navigate away from the screen without saving, the entered network settings will not take effect.
TIME AND DATE	Press the numbers to edit the time and date. The format is hours (01-24), minutes (0-59), seconds (0-59). The date is set by year (####), month (1-12), and day (1-31).

Maintenance Log Screen

This is the Maintenance Log screen. This screen allows you to look back at the maintenance alarms and whether they were Acknowledged or Snoozed.

Figure 3 - 38
The Maintenance Log Screen

Table 3-34. The Maintenance Log Screen Button Descriptions

STATE 1	DESCRIPTION
ANY DISPLAY	The displays on this screen cannot be altered on this screen. These displays show the Maintenance Log for the indicated maintenance notifications.

Fault History Screen

This is the Fault History screen. The screen displays the faults and the time they occurred.

Figure 3 - 39
The Fault History Screen

Table 3-35. The Fault History Screen Button Descriptions

STATE 1	DESCRIPTION
ANY DISPLAY	The displays on this screen cannot be altered on this screen. These displays show the Fault History Log.

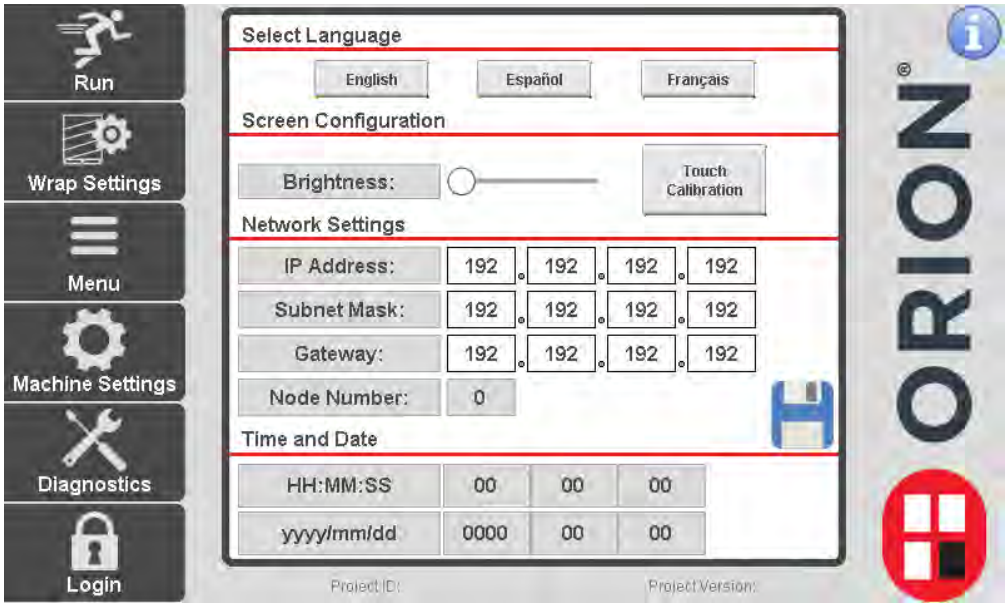
Flex Dashboard Remote Viewing

Setting up Dashboard Remote Viewing

Your new flex machine has the capability of remotely viewing the status from your computer browser on the same network. You will need your network administrator to advise what IP address should be used for your flex machine.

1. Press Login to log into Admin level security.
2. Enter the user password. Press Enter.
3. Press Diagnostics.
4. Press HMI.
5. Enter the IP network settings approved by your system administrator.
6. Press Save (Disk Icon.)

Figure 3 - 40
Setting the IP Address

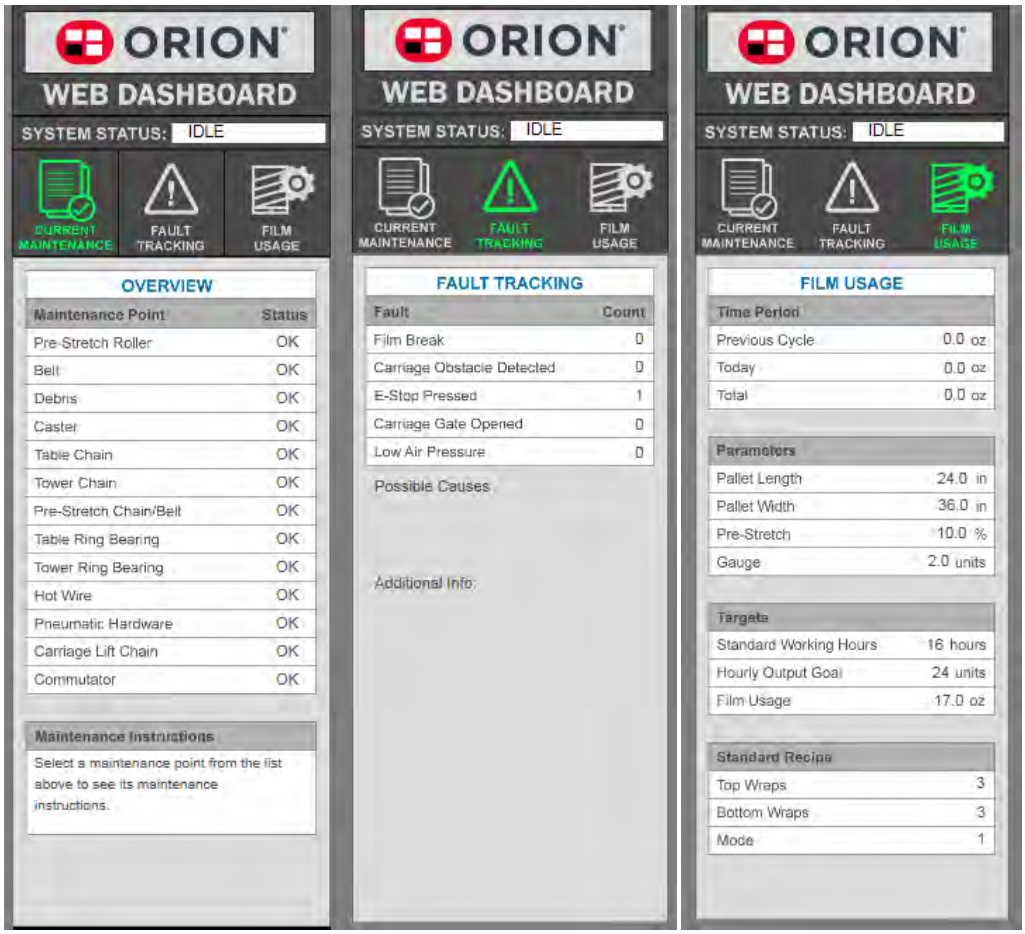


7. On the back of the HMI, connect an ethernet cord to the Eth IF2 connector. Route to your network router.
8. On your computer bowser connected to the same network, enter the IP address you assigned to the flex machine then /dashboard.asp.
9. Example: **192.168.1.2/dashboard.asp**

(Continued on Next Page)

10. Once the correct address is entered followed by /dashboard.asp, the dashboard will display.
11. This screen allows you to view the Status of your machine, the Production data, Recent Faults, and Current Recipe running.

Figure 3 - 41
Flex Dashboard



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 - 53.

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 3-36. The Information and Alarm Displays

MESSAGE	DESCRIPTION	CORRECTION
MACHINE SETUP REQUIRED - SELECT MACHINE OPTIONS	The machine setup parameters are not set.	See “Orion Carriage Timers Screen” on page 3 - 29.
APPLYING TOP WRAPS	The machine is currently applying the top wraps.	This is for informational purposes only. No correction necessary.
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.
CYCLE ENDING	The cycle is ending.	This is for informational purposes only. No correction necessary.
CYCLE PAUSED	The cycle is paused.	Resume, when ready. Press the resume button on the Run screen.
E-STOP PRESSED	The E-stop button is currently pressed.	Release the E-stop button to allow operation. Press Start to reset control power, then press and hold start for the amount of time set up in the parameters.

Table 3-36. The Information and Alarm Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
CARRIAGE GATE OPEN	The carriage gate is currently open.	Close the carriage to allow operation. Check the interlock switch.
HOMING MACHINE	The machine is homing.	Allow the machine to home prior to starting.
PRESS START BUTTON TO RESET CONTROL POWER	The machine is not reset.	Press Start to reset control power prior to starting.
MOVING TO BOTTOM OF LOAD	The carriage is moving to the bottom of the load.	This is for informational purposes only. No correction necessary.
MOVING TO TOP OF LOAD	The carriage is moving to the top of the load.	This is for informational purposes only. No correction necessary.
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.
APPLYING REINFORCEMENT WRAPS	Reinforce wraps are currently being applied.	Once the reinforce wraps are completed, the machine will continue its cycle.
TOWER OBSTACLE DETECTED	The tower has an obstruction.	Check for a mechanical bind. Clear the cause of the fault. Reset and restart, when ready.
APPLYING BOTTOM WRAPS	The bottom wraps are currently being applied.	This is for informational purposes only. No correction necessary.
WRAP CYCLE IS COMPLETE	The wrap cycle is now complete.	Remove the load, when ready.
INITIALIZING	The machine is initializing.	There is a brief initialization sequence once the machine is reset. Allow the machine to initialize prior to starting.
SAFETY SYSTEM NOT READY	The safety controller is not ready to run.	Allow the safety system to initialize prior to running.

Table 3-36. The Information and Alarm Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
FAULTS EXIST	Faults currently exist.	Correct the cause of the fault. Press reset to reset the fault condition once the cause is corrected.
CARRIAGE MOVING UP TOO SLOWLY	The carriage is moving upward too slowly.	Check for the cause of the carriage not moving correctly. Check the belt drive behind the back panel. Check for a jam or obstruction on the track.
CARRIAGE MOVING DOWN TOO SLOWLY	The carriage is moving downward too slowly.	Check for the cause of the carriage not moving correctly. Check the belt drive behind the back panel. Check for a jam or obstruction on the track.
MULTISTRETCH VFD 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.
MAIN DRIVE VFD NOT READY		
CARRIAGE VFD NOT READY		
DOWNLOADING VFD PARAMETERS - PLEASE WAIT	The VFD parameters are transferring to the VFD's from the PLC.	Wait until the process is completed.
X2X COMMUNICATION FAULT - PRESS E-STOP TO CLEAR FAULT	There is an X2X communication fault, press and release the E-stop button to clear the fault.	Contact Orion Packaging if problem persists.
RS485 COMMUNICATION FAULT - PRESS E-STOP TO CLEAR FAULT	There is an RS485 communication fault, press and release the E-stop button to clear the fault.	Contact Orion Packaging if problem persists.

Table 3-36. The Information and Alarm Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
MODIFYING MULTISTRETCH SETTINGS	The stretch settings modification is in progress.	Allow the settings to complete prior to start-up.

Alarm Displays

The messages in this section are the various critical status messages. For non-critical alarms, see “Message Displays” on page 3 - 49.

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 3-37. The Information and Alarm Displays

MESSAGE	DESCRIPTION	CORRECTION
NO CONTROL POWER	Control Power is not present.	Press the Control Power reset button prior to starting the machine.
CARRIAGE GATE OPEN DURING CYCLE	The carriage gate opened during the cycle.	Check for the cause of the unlatch. Re-latch and restart, when ready.
END OF 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.
CARRIAGE MOVING UP TOO SLOWLY	The carriage is moving upward too slowly.	Check for the cause of the carriage not moving correctly. Check the belt drive behind the back panel. Check for a jam or obstruction on the track.
CARRIAGE MOVING DOWN TOO SLOWLY	The carriage is moving downward too slowly.	Check for the cause of the carriage not moving correctly. Check the belt drive behind the back panel. Check for a jam or obstruction on the track.
CARRIAGE DOOR OPEN	The carriage door is currently open.	Close the carriage door to allow operation.
OBSTACLE DETECTED	The tower has an obstruction.	Check for something under the film carriage. Check for a mechanical bind. Reset and restart, when ready.

Table 3-37. The Information and Alarm Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
MULTISTRETCH VFD 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.
MAIN DRIVE VFD NOT READY		
CARRIAGE VFD NOT READY		
X2X COMMUNICATION ERROR	There is an X2X communication fault, press and release the E-stop button to clear the fault.	Contact Orion Packaging if problem persists.
RS485 COMMUNICATION ERROR	There is an RS485 communication fault, press and release the E-stop button to clear the fault.	Contact Orion Packaging if problem persists.

Troubleshooting Contents

4. Troubleshooting

Troubleshooting

Problems are listed in the left column, and causes in the middle column. Solutions, along with further manual references, are listed in the right column. 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 Charts

PROBLEM	POSSIBLE CAUSE	SOLUTION
The Machine Will Not Start	• The E-stop button is pressed. • The carriage obstacle detect switch/ carriage door open switch located on the bottom of the carriage is pressed. • Check that the Power On/ Off Switch in the On position and power is properly plugged in.	• Release the E-stop button. • Ensure the bottom of the carriage is NOT pressing on any obstructions. Ensure the carriage door is closed. • Plug in the machine. Turn the Power On/ Off Switch to the On Position to allow operation.
Turntable Will Not Turn	• The turntable speed is set too low. • The carriage obstacle detect switch/ carriage door open switch located on the bottom of the carriage is pressed.	• Adjust the turntable speed on the HMI. • Ensure the bottom of the carriage is NOT pressing on any obstructions. Ensure the carriage door is closed.
Carriage Will Not Raise or Lower	• The carriage speed is set too low. • The carriage obstacle detect switch/ carriage door open switch located on the bottom of the carriage is pressed.	• Adjust the carriage speed on the HMI. • Ensure the bottom of the carriage is NOT pressing on any obstructions. Ensure the carriage door is closed.
The Machine Cycle Stops	• The obstruction switch on the bottom of the film carriage was tripped.	• Remove the obstruction and Restart the program.
The Carriage Stops Prior to the Top of the Load	• The photocell delay setting found on the Top Wraps Modification Screen is set too low.	• Increase the photocell delay.
The Carriage Continues Too Far Past the Top of the Load	• The photocell delay setting found on the Top Wraps Modification Screen is set too high.	• Decrease the photocell delay.

Table 4-1. Troubleshooting Charts (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Continual Film Breakage	• Film tension is set too high. • Bad or old film.	• Decrease the film tension on the HMI. • Replace the film spool.

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 12 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.

Reducer Oil Change

All external cap screws and plugs on the reducing transmission should be checked for tightness after the first week. It is recommended to change the oil every six months or at least 1800 hours of operation, whichever comes first. When adding or changing oil, the transmission should never be filled above the oil level mark indicated, because leakage and overheating may occur. Below is the list of the type of lubricant that should be used. List of recommended reducer oils:

Table 5-1. Recommended Reducer Lubricants

MANUFACTURER	LUBRICANT
American Oil Co.	American Cyl Oil no: 196-L
Cities Service Oil Co.	Citgo Cyl Oil 100-5
Gulf Oil Corp.	Gulf Senate 155
Mobil Oil Corp.	Mobil 600 W Suer-r Cyl. Oil
Philips Oil Corp.	Andes S 180
Texaco Inc.	624 + 650T Cyl.Oil
Shell Oil Co.	Velvata Oil J82
Union Oil of Cal.	Red Line Worm Gear Lube 140

Note: For most applications, Mobil One Synthetic 75/90 gear lube is a preferred lubricant.

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.

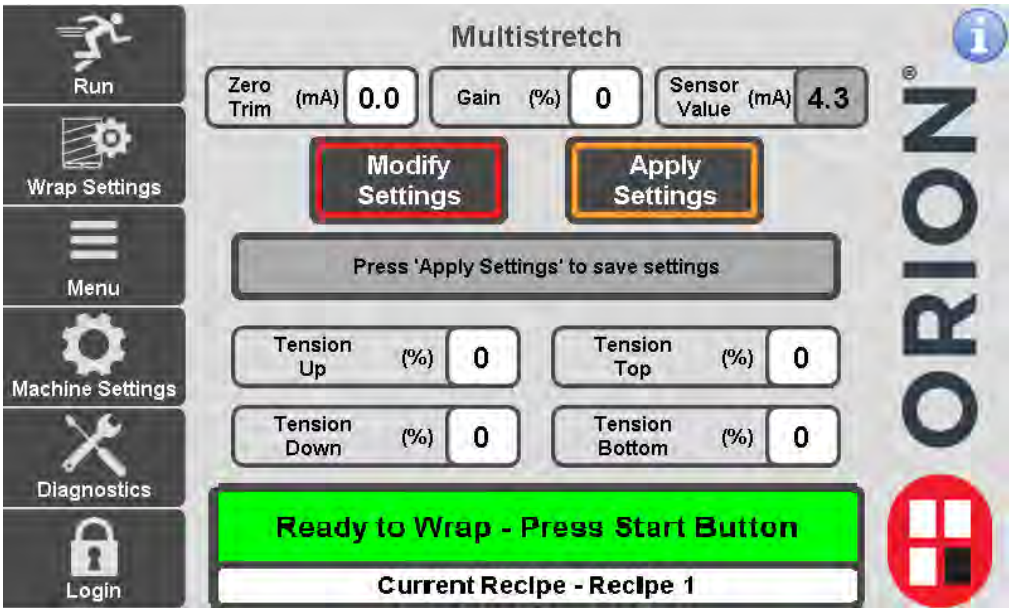
Proximity Sensor Adjustment

Note: The procedure applies only to the upgraded Orion carriage, not to the standard Sentry carriage.

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. Unbolt the two nuts holding the proximity switch.
4. Turn the Proximity sensor to create the gap between the cam and the front side of proximity sensor about 1/8."
5. Tighten on the nuts securing the Proximity Sensor.
6. Put the cover back on.
7. Power up machine.
8. To adjust the multistretch settings, you must be logged in. Press the login button in the bottom left corner of the screen
9. Enter the password then press the X to close the keypad.
10. Press the Machine Settings button.
11. Press the Multistretch button to go to the Multistretch Screen.
12. Press the Modify Settings button.
13. Adjust the Zero Trim to .5 mA over the current Hall Effect Sensor reading shown on the screen.

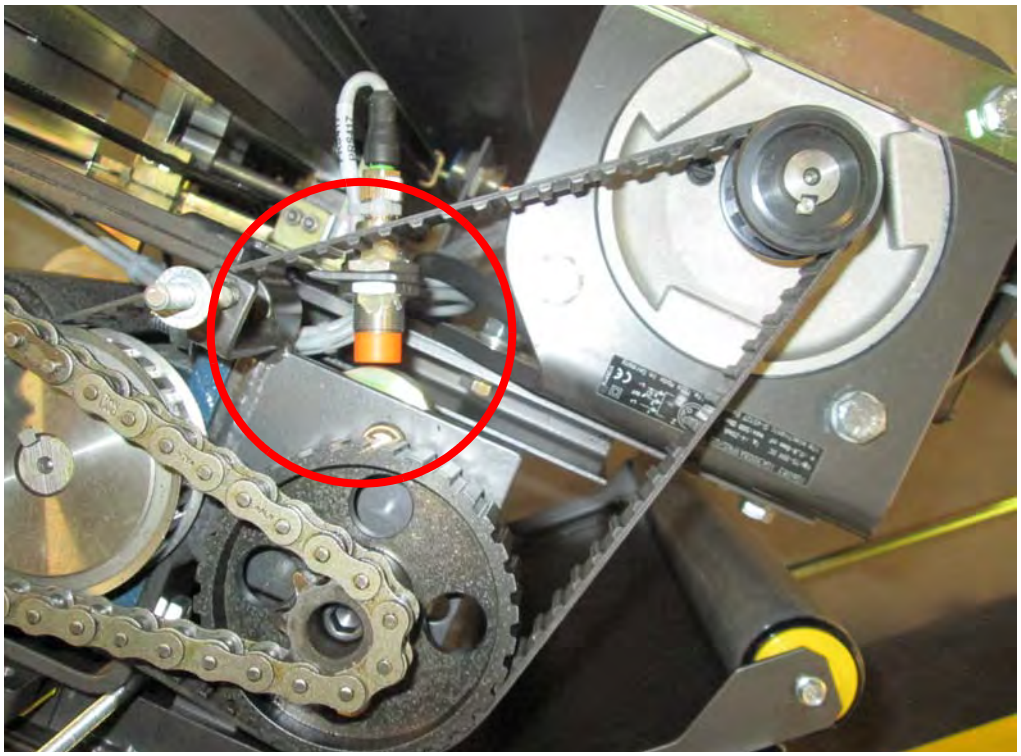
Figure 5 - 1
The Multistretch Screen



(Continued on Next Page)

14. If not satisfied repeat the procedure.

Figure 5 - 2
Proximity Sensor Adjustment



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 5-2. 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 Sentry Standard Series

Daily

- Prior to switching the film roll, inspect that there is no excess film wrapped around any of the carriage rollers.
- Use compressed air to blow out any loose debris in the carriage.
- Monitor the machine during operation for any abnormal noises or vibrations.

5,760 Loads or one month

- Inspect rubber stretch rollers. Clean as needed per instructions in manual. Replace worn rollers, as needed.

17,280 Loads or three months

- Inspect under turntable. Check the chain tensioner. Use compressed air to clean debris as needed.
- Inspect turntable support casters for good condition.
- Inspect carriage lift chain condition. Tension as needed. Apply a light coating of lubricant.
- Inspect prestretch chain. Tension as needed. Apply a light coating of lubricant.
- Inspect turntable chain. Tension as needed. Apply a light coating of lubricant.

34,560 Loads or 6 months.

- Check all hardware. Tighten screws and bolts, as needed.

Electrical Prints and Mechanical Drawings