

AG360 Flex STRETCHWRAPPER MANUAL

Model
AG 360 RoboWrapper
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Machine Manual
Revision 1.1



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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.

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 AG 360 RoboWrapper
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 AG 360 RoboWrapper, 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 operational procedures, operator control panels, and the Human Machine Interface.
- Section 4 is the Troubleshooting section. Troubleshooting inspections illustrations and a troubleshooting chart are found in this section.
- Section 5 is the Maintenance section. Maintenance illustrations and inspections are found in this section. You will also find required maintenance procedures.

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Flex Series Warranty

AG360 BY ORION WARRANTY EFFECTIVE SEPTEMBER 2016

For the AG360 by Orion stretch wrapper, Orion provides a 1-year (one year) warranty from delivery date of its products to be free from defects in materials and workmanship as described below. This warranty assumes that normal service will be performed by the user.

All Parts, Mechanical and Electrical Components, and Structural Components on the AG360 by Orion are warranted to be free from defects in material and workmanship for a period of one (1) years. During the warranty period Orion will, at its option, either repair or replace any failed component.

The polyurethane pre-stretch rollers on the AG360 by Orion models carry a one (1) 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 such as e.g. belts, fuses, light bulbs, circuit breakers, brakes, motor brushes, slip ring brushes, 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 UPS regular ground service from Orion. Any other method of shipment, (UPS red/blue, Federal Express, common carrier, etc.) will be at the expense of the customer/distributor.

PARTS RETURN POLICY

For 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.

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 14 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 a fully completed Orion warranty parts return form. 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 Production Assurance Kit be considered to maximize system uptime. See your Orion distributor for details.

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. 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 AG 360 RoboWrapper. 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 of the AG 360 RoboWrapper 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 working path of the machine 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.

Operation Safety

The following safety precautions are recommended for all personnel who will operate this AG 360 RoboWrapper.

- 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 cross in front of the machine while in operation.

Maintenance Safety

The following safety precautions are recommended for all personnel who are responsible for the maintenance or service this AG 360 RoboWrapper.

- 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 AG 360 RoboWrapper, 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.
- Personnel should pay careful attention to all devices that may be powered or capable of motion, such as conveyors and pneumatic devices.
- 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 path of the system and that the system and external devices are operating properly.

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. |

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, DQ LOCK OUT/TAG OUT.

Installation and First Time Power Up

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.
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.

Unloading

This machine can be easily unloaded and transported by a forklift with a minimum capacity of 2500 lbs. This is also useful if the battery power is ever completely depleted.

1. Carefully insert the forks into the lifting tubes to the maximum possible depth. Forklift access is located on the side of the machine. Look for the forklift tube access stickers shown below.

Figure 1 - 1
Fork Tube Access
Locations



2. Lift the machine only to the necessary height to move it with no bouncing or friction on the floor.

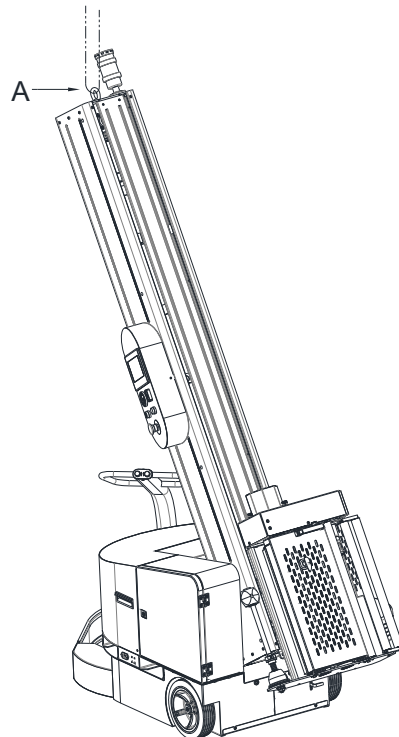
Machine Installation

- After the visual inspection has been completed, the electrical power shall be connected as specified on the diagrams supplied with the machine for charging.
- Make sure the machine is operating on a hard and level surface.

Assembly Procedure

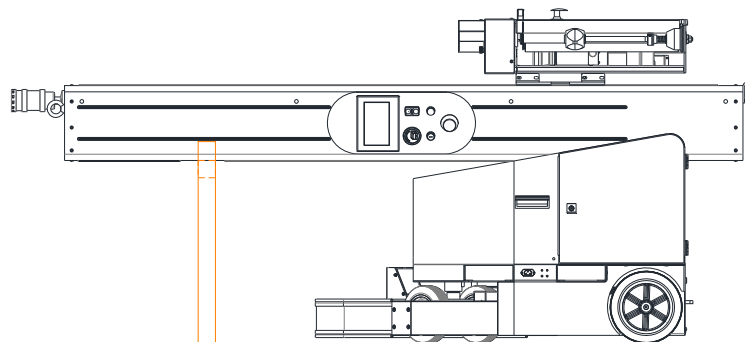
1. Secure the ring "A" above carriage with a chain for lift up purpose.

Figure 1 - 2
Securing the Lifting
Eye Bolt



2. Remove two side's marked fixed bar "B"

Figure 1 - 3
Remove Tower
Horizontal Bracket

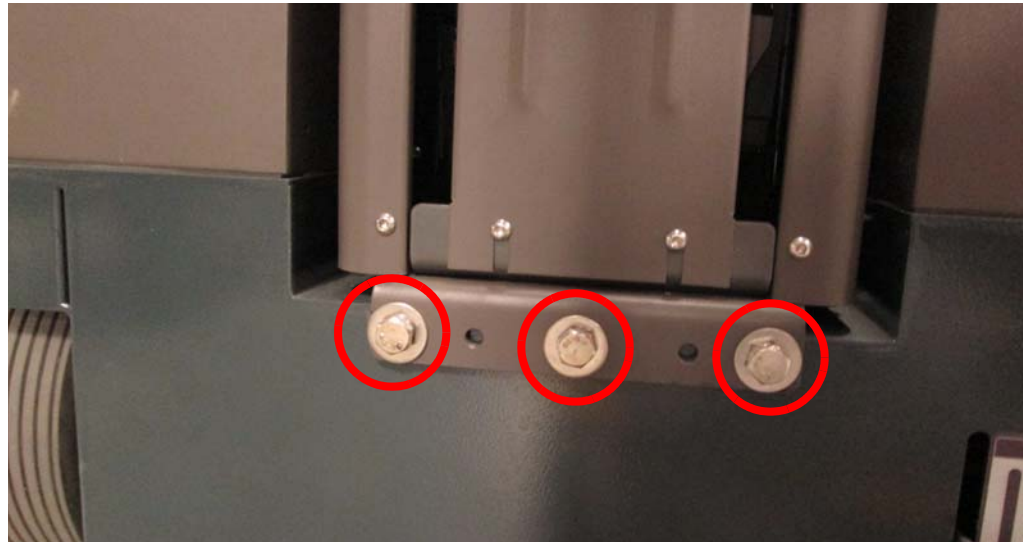


3. Lift up the tower with a lifting strap attached to the eye bolt.

4. Fix and tighten the tower by three M8 bolts.

CAUTION Use Loctite to secure the screws.

Figure 1 - 4
Bolting on the Tower



5. Open the machine cover and check the battery connections..

Figure 1 - 5
Connecting the
Battery Cable



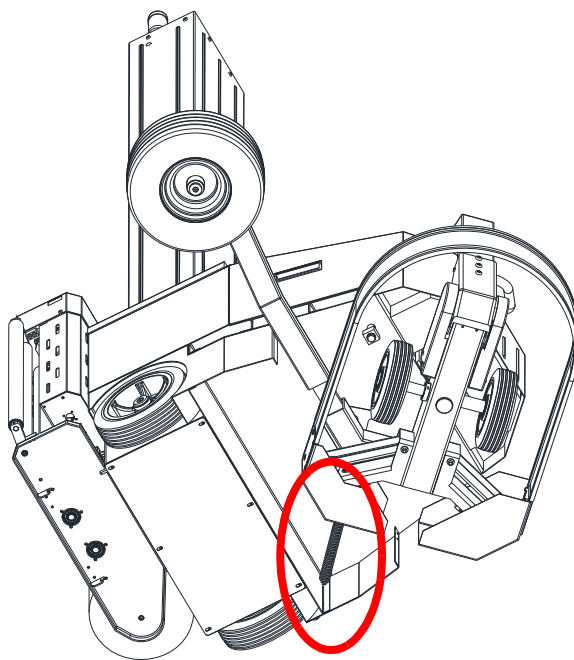
6. Check the battery cable connection.

Figure 1 - 6
Connecting the
Battery Cable



7. Move the steering arm towards right side, and install the tension spring.

Figure 1 - 7
Installing the Tension
Spring



8. Before running the machine for the first time, please charge the battery at least 8 hours.

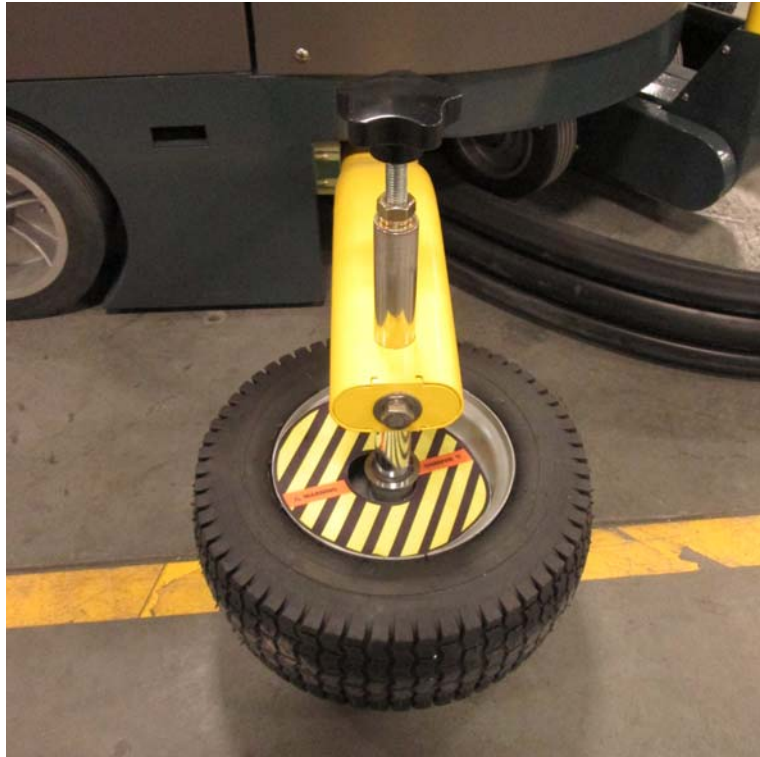
Figure 1 - 8
Connecting the
Battery Charger



Pallet Guide Arm and Sensing Arm Wheel

Ensure the position of steering arm tension spring is in correct position and smooth turning movement, and sensing arm wheel is properly inflated. See “Aligning the AG 360 with the Pallet” on Page 3-5.

Figure 1 - 9
Pallet Guide Arm and
Wheel



Operating Parameters

To ensure safe and reliable operation, please check the below conditions before installing the machine:

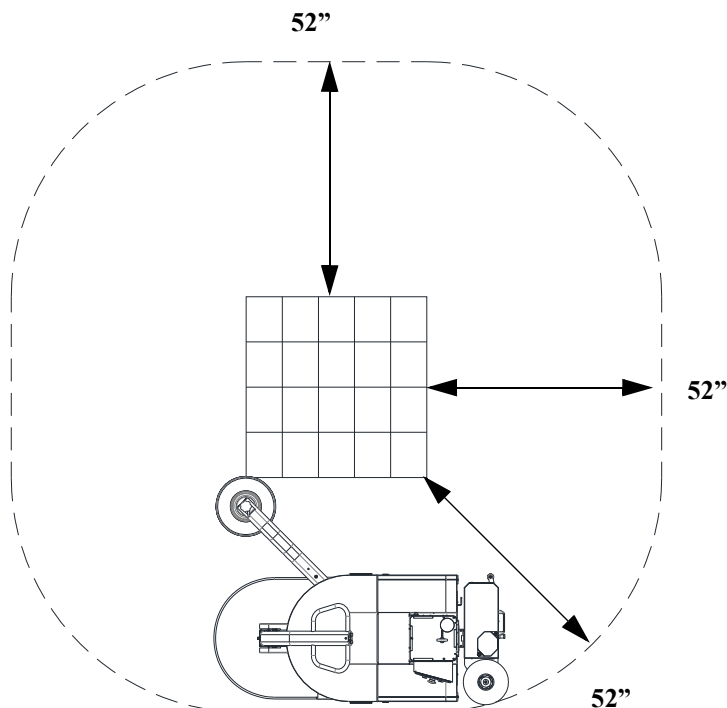
- Power source available for charging
- Battery charge power is 110v/220v (+- 10%)
- Battery charge power Hertz is 50/60 Hz. (+- 2%)
- Machine is workable under the temperature between 32 - 104
- This machine should only operate on flat hard surfaces, not intended for outdoor use

Checks Prior to Running

For the safety of the operator, please ensure the following conditions are met:

- Ensure the battery is charged prior to operation.
- Make sure there are no objects on top of the carriage.
- Avoid any damp objects or water around the electrical components.
- Ensure there is no film remnants in the way of the machine path.
- Do not stand on or across the machine during operation.
- When a problem occurs, please check the troubleshooting chart in chapter 4 of this manual.
- Ensure there is a clear path of 52" around all sides of the load prior to wrapping.

Figure 1 - 10
AG 360 Path of 52"



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2. System Description

Machine Specifications

Table 2-1. Specifications

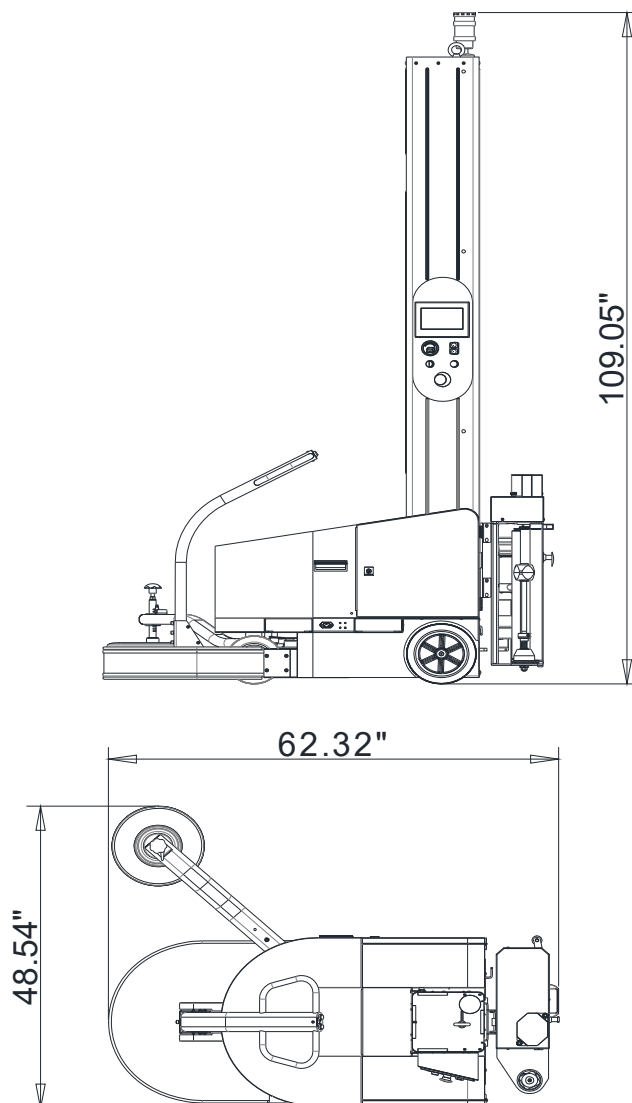
DESCRIPTION	AG 360
Max Load Size	Unlimited
Min. Load Size	24" W x 24" L
Max. Load Weight	Unlimited
Min Load Weight	Approx. 100 lbs. depending on load type
Max. Load Height	95"
Min. Load Height	Approx. 24"
Film Severance	Automatic film cut off at cycle end
Rotation Speed	Adjustable up to 295' per minute
Film Tension	Adjustable on HMI
Powered Prestretch Rate	Adjustable on Carriage 200% or 300%
Corner Compensation	Automatically Prevents Crushing the Corners of the Load
Stretch Film Loading	Fast & Safe
Obstacle Detection Method	Sensor Bumper Immediately Stops Machine
Load Height Sensing	Automatic Load Height Sensing Photoeye
Wrap Count	Separate Top & Bottom (1-9)
Film Carriage Speeds	Separate Up/ Down
Power & E-stop Switches	Industrial
Control Voltage	24V
Battery Life	Approx. 300 Loads per charge Depending on battery condition
Charging Method	Common 120V Plug for charging
Stretch Film	20" roll size up to 110 gauge
Interface	Deluxe color touch screen HMI
Wrap Recipes	Program up to 10
Programming	Password Protected
Warranty	1 Year on all components unlimited cycles

Machine Layout Drawings

Machine Dimensions

The layout drawing below shows the machine dimensions, as sold.

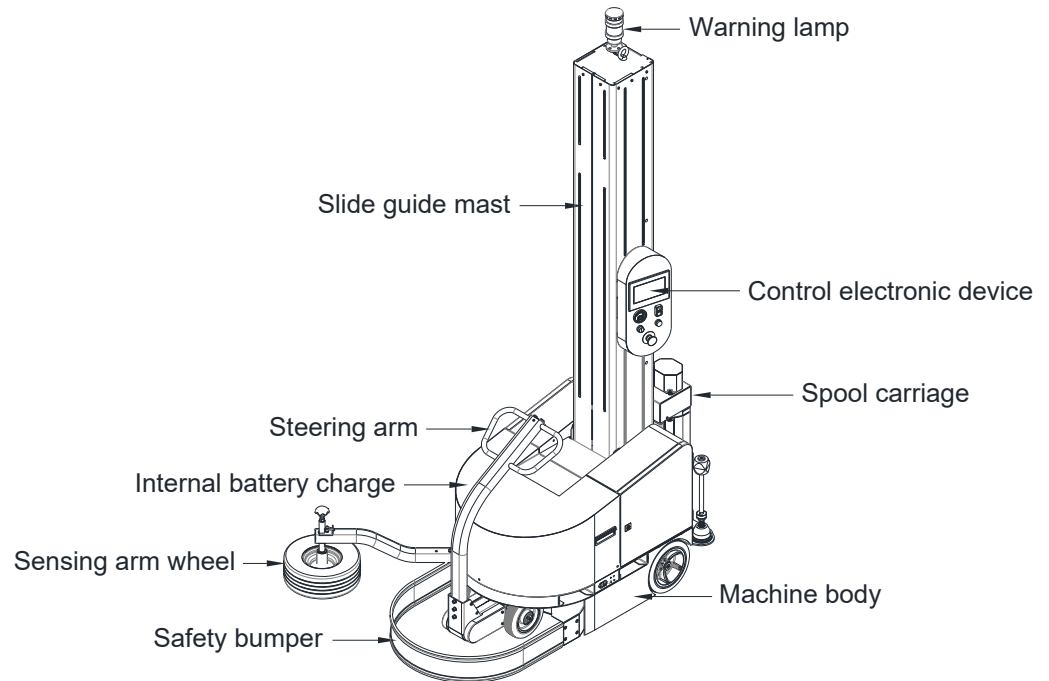
Figure 2 - 1
Machine Layout
Drawing



Machine Component Identification

The layout drawing below shows the machine dimensions, as sold.

Figure 2 - 2
Machine Layout
Drawing



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3. System Operation

Operating Procedures

Charging the AG 360

1. Prior to charging, ensure that the battery connector is attached.
2. Plug the supplied cord to the charging connector.
3. The indicator will show green when unplugged, red when charging, and both green and red when charging is complete.

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

Figure 3 - 1
Charging Port



How to Start and Shut Down Your Wrapping System

On/ Off Key Switch

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

- ON - machine power on.
- OFF - machine power off.

Note: You can remove the key to prevent unauthorized use of the machine.

Figure 3 - 2
The Operator Panel



START AND EMERGENCY STOP SWITCHES

- Press the **RESET** button to gain Control Power prior to starting or moving the machine.
- The **START** button on the run screen 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.

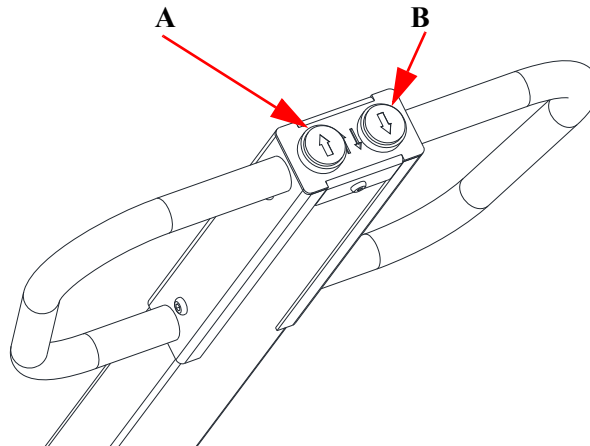
Transporting the AG 360

When Battery Power Is Present:

1. Pivot the handle down and pull it straight outward.
2. Press A for Cart Reverse. Press B for Cart Forward.

Note: To use button A and B, motor clutch brake must be in "Lock" position.

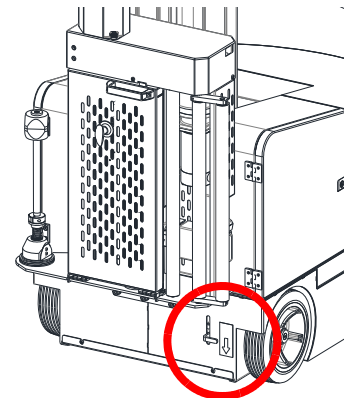
Figure 3 - 3
Forward and Reverse
Transport Buttons



When Battery Power is Not Present or Safety Switch Active:

1. Locate the transmission lock/ unlock located on the back under the carriage on the right side.
2. Move the transmission selector up to unlock the transmission transport brake.
3. The AG 360 will now move without power, by hand.
4. After moving and restoring battery power, re-latch the transmission selector down to allow the AG 360 to drive. During wrapping cycle, motor clutch brake must be in "Lock" position.

Figure 3 - 4
Transmission Engage/
Disengage

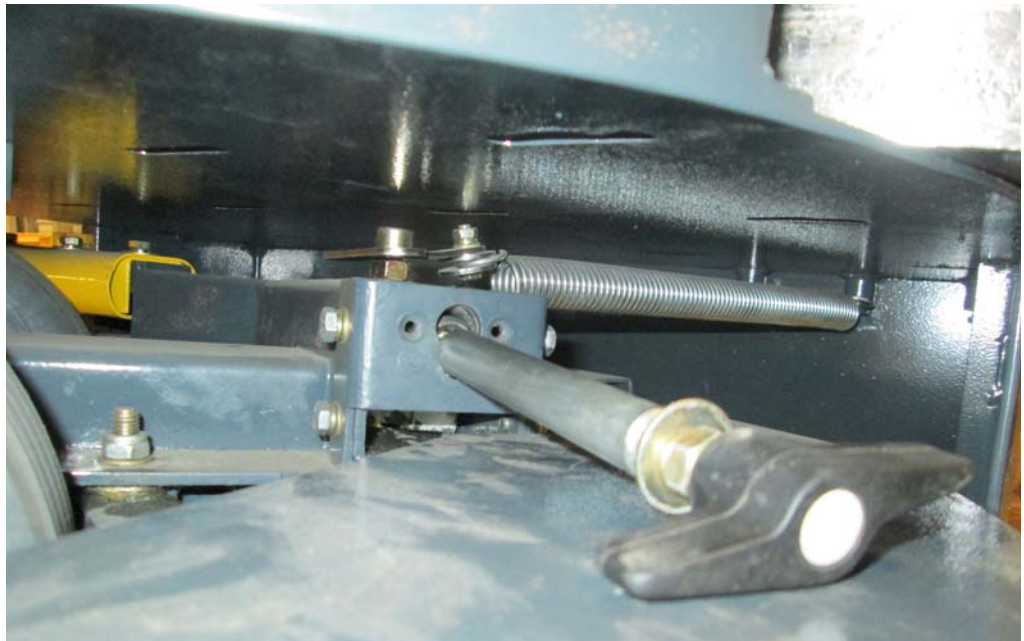


Steering Spring Tension Release

There is a spring tension release handle located under the battery compartment at the front of the machine. The handle is on the opposite side of the direction that the machine steers. This allows the user to have easier control of the machine when moving it manually. To release the tension, pull the handle out, then press it downward to lock the handle in place.

CAUTION Ensure the spring tension handle is in place when running in automatic mode.

Figure 3 - 5
Spring Tension
Release



Aligning the AG 360 with the Pallet

Prior to wrapping a load, the AG 360 must be properly aligned with the pallet.

1. To adjust the guide wheel, loosen the bolt on the end of the guide arm with a 17 mm wrench.
2. Use the hand knob to raise or lower the guide wheel so that it aligns with the top of the pallet (where the top boards of the pallet meet your load.)
3. Tighten the bolt.

Figure 3 - 6
Adjusting the Pallet
Guide



4. Transport the AG 360 to align with the pallet, as shown in step 1 of the diagram below.

Figure 3 - 7
Aligning the AG 360
With a Pallet
Instructions

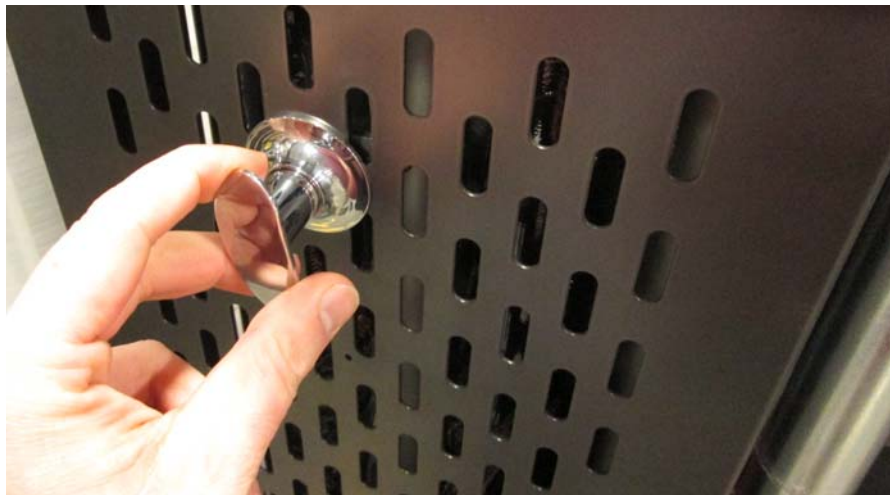


Loading The Film

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. Slide the film spool onto the film mandrel.
3. Install the top mandrel on top of the roll to prevent upward movement.
4. Turn the carriage door latch and pull out on the carriage door handle on the top of the carriage to open the carriage. The film carriage is equipped with a 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.

Figure 3 - 8
Door Latch



5. Pass the roped tail of the film through opening.

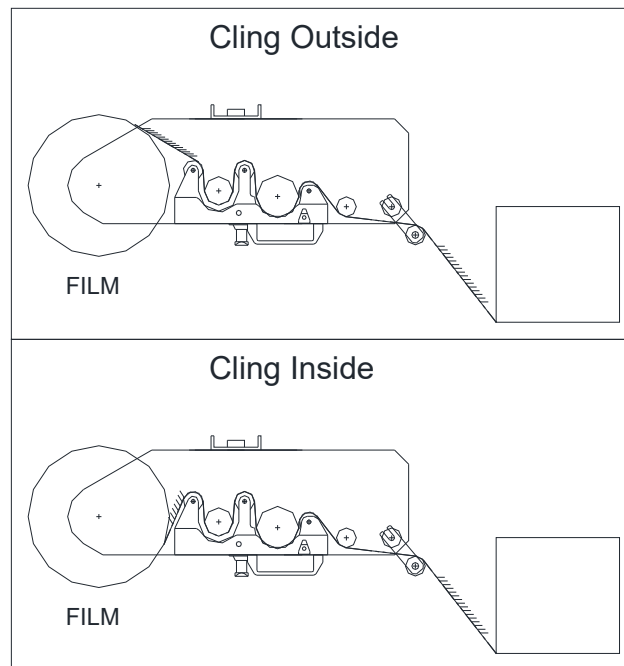
Figure 3 - 9
Loading the Film



6. Close the carriage door. Turn the carriage door latch.

7. Verify the film cling is inward on the load. If not, the film spool will need to be flipped.

Figure 3 - 10
Film Cling Diagram



8. When the film feeding is completed, release the E-stop.

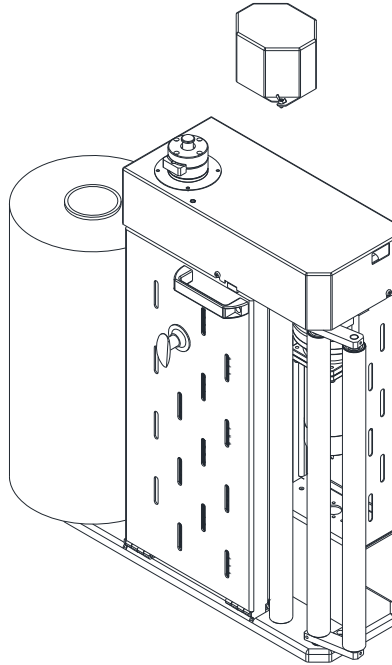
Note: Ensure there is a clear path of 52" around all sides of the load prior to wrapping.

9. Press the Reset button. Film will not feed until control power is present.
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 film tail should be connected to the load around a corner to ensure the wrap stays on the load.
12. The system is now ready to begin the first wrapping cycle.
13. Press the Start button to start wrapping the load.
14. Stand clear of the machine while in operation.

Carriage Prestretch Adjustment

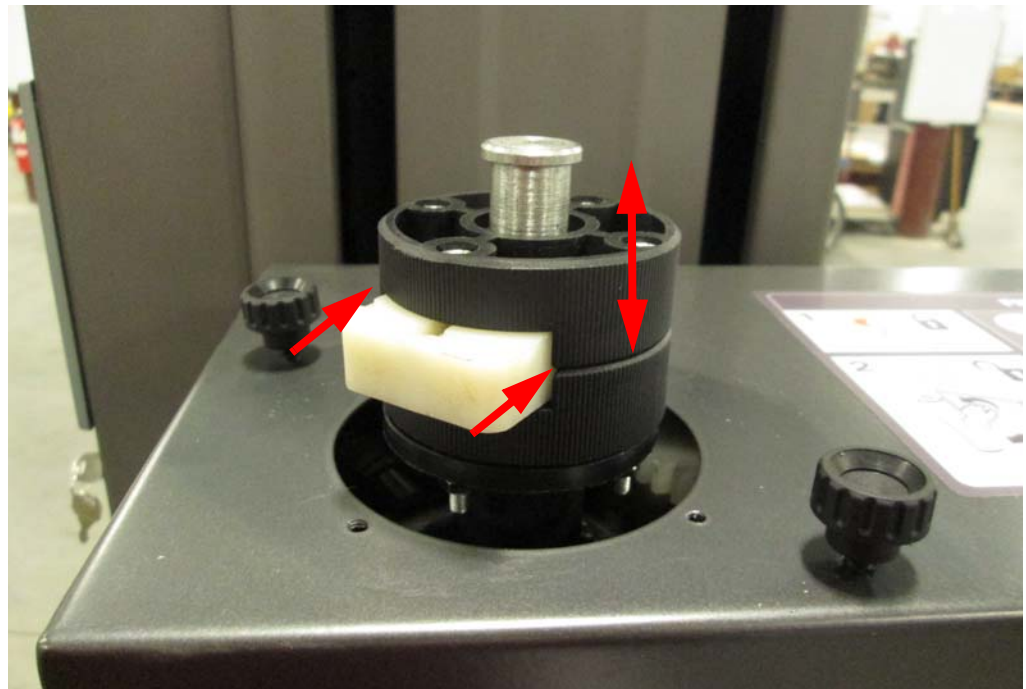
1. Switch the power off and remove the pre-stretch cover.

Figure 3 - 11
Removing the Pre-
Stretch Cover



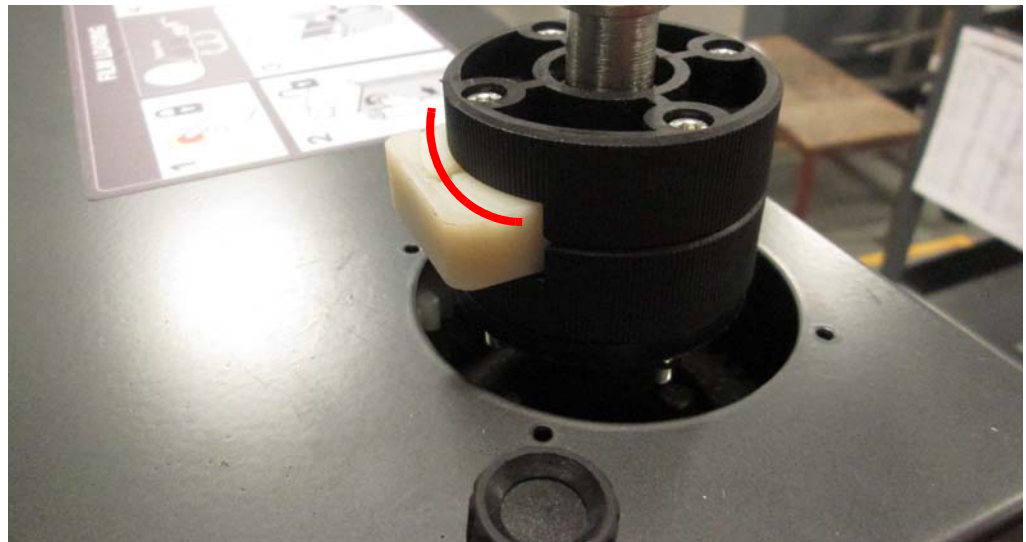
2. Push the safety lock in and then use the handle to adjust the prestretch percentage. Lift up the handle for high prestretch percentage or lower down to for low prestretch percentage.

Figure 3 - 12
High and Low Ratio
Adjustment



3. Check the below items to ensure that the prestretch adjustment is properly locked into place:
 - A. The mark line is back to its home position.

Figure 3 - 13
Safety Line on Safety
Lock



- B. The lamp indicated the correct pre-stretch percentage.

Figure 3 - 14
Pre-Stretch Ratio
Indicator Light


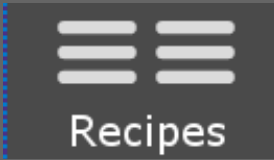




Note: There are two pre- stretch percentage ratios, one is 300%, the other is 200%.

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
 Run	Press this button to go to the Run Screen. The icon will illuminate in green when the screen is currently active.
 Recipes	Press this button to go to the Recipes Screen. The icon will illuminate in green when the screen is currently active.
 Menu	Press this button to go to the Menu Screen. The icon will illuminate in green when the screen is currently active.
 Machine Settings	Press this button to go to the Machine Settings Screen. The icon will illuminate in green when the screen is currently active.

Run Screens

Run Screen

This is the Run screen used for primary functions of the machine. You may start the machine, view the battery power level, and alarm conditions.

Figure 3 - 15
The Run Screen



Table 3-2. The Run Screen Button Descriptions


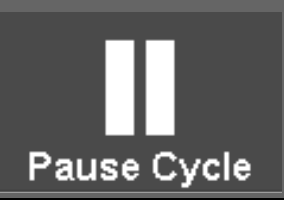
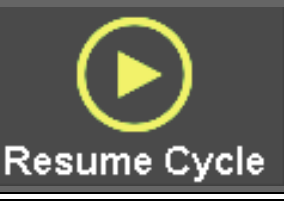
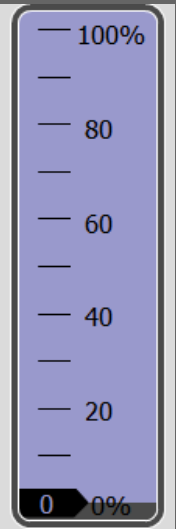
STATE 1	DESCRIPTION
	Press and hold this button to start the machine. This must be held until the Start Delay timer is complete to start the machine.
	Press this button to pause the wrap cycle. When paused, the Carriage and Main Drive will stop, and will wait for the Resume Cycle button to be pressed before resuming the wrap cycle.
	Press this button to resume the wrap cycle, if the cycle is currently paused.

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

STATE 1	DESCRIPTION
	<p>This is the battery indicator. This shows the current percentage of the battery. If the battery is below a certain percentage, a warning will display to warn the operator to move the unit to a charging station.</p>

Recipe Screens

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 - 16
The Recipe Screen

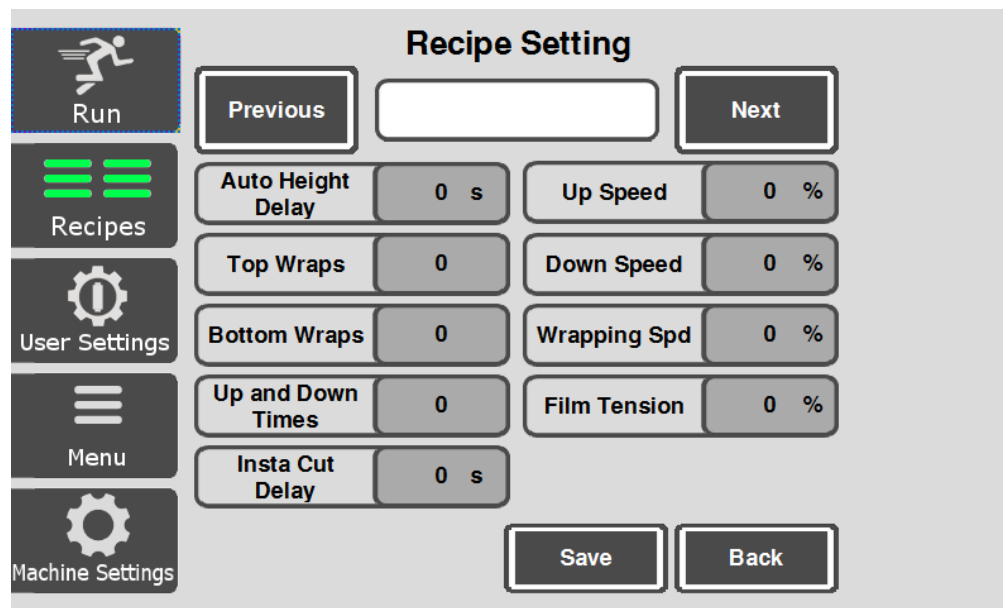


Table 3-3. The Recipe Screen Button Descriptions

STATE 1	DESCRIPTION
PREVIOUS	Press this button to go to the previous recipe. The settings on this screen are applied to the recipe displayed in the box at the top of the screen when the save button is pressed.
NEXT	Press this button to go to the next recipe. The settings on this screen are applied to the recipe displayed in the box at the top of the screen.
AUTO HEIGHT 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.
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.
UP AND DOWN TIMES	Press this button to set the number of times the carriage will travel the up/ down cycle. Parameters are 1-20.

Table 3-3. The Recipe Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION
INSTA CUT DELAY	Press this button to set the delay timer for the insta-cut. This allows the user to delay the timing of the instacut by increasing the timer.
UP SPEED	Press this button to change the speed of the carriage on the upward move, in terms of percentage. Min - 5% Max - 100%
DOWN SPEED	Press this button to change the speed of the carriage on the downward move, in terms of percentage. Min - 5% Max - 100%
WRAPPING SPD	Press this button to set the wrapping speed in terms of percentage.
FILM TENSION	Press this button to modify the Film Tension datapoint, 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%
SAVE	Press this button to save the parameters on this screen to the selected recipe.
BACK	Press this button to go back to the previous screen without saving changes.

Recipe Select 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 - 17
The Recipe Screen



Table 3-4. 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 #
RECIPE SETTINGS	Press this button to go to the Recipe Settings screen.	LOADING RECIPE #

User Setting Screens

Wrap Settings Screen

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.

Figure 3 - 18
The Wrap Settings Screen

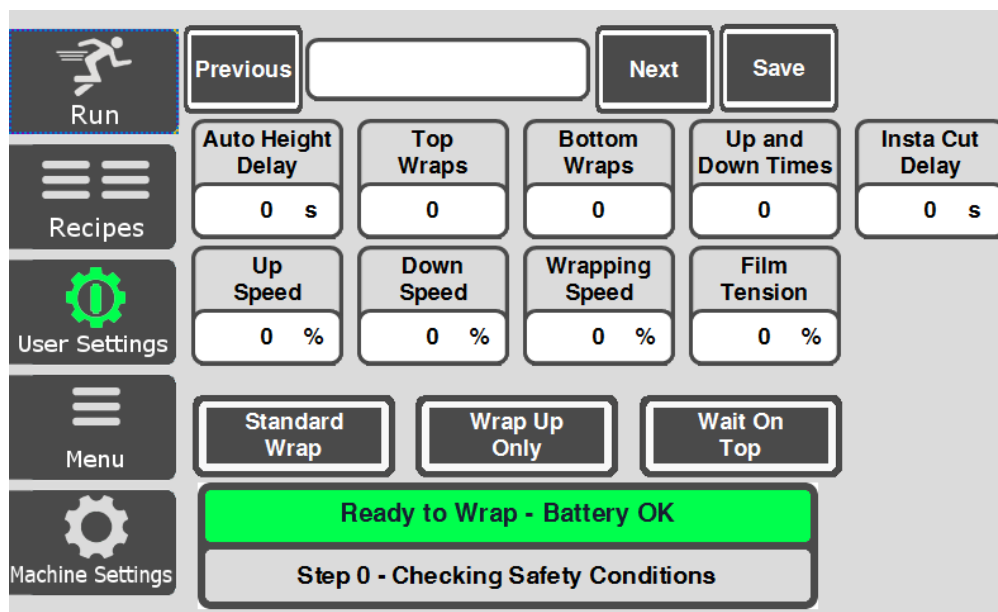


Table 3-5. The Wrap Settings Screen Button Descriptions

STATE 1	DESCRIPTION
PREVIOUS	Press this button to go to the previous recipe. The settings on this screen are applied to the recipe displayed in the box at the top of the screen when the save button is pressed.
NEXT	Press this button to go to the next recipe. The settings on this screen are applied to the recipe displayed in the box at the top of the screen.
SAVE	Press this button to save the parameters on this screen to the selected recipe.
AUTO HEIGHT 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.
TOP WRAPS	Press this button to set the number of top wraps applied to the load. Parameters are 1-20.

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

STATE 1	DESCRIPTION
BOTTOM WRAPS	Press this button to set the number of bottom wraps applied to the load. Parameters are 1-20.
UP SPEED	Press this button to change the speed of the carriage on the upward move, in terms of percentage. Min - 5% Max - 100%
DOWN SPEED	Press this button to change the speed of the carriage on the downward move, in terms of percentage. Min - 5% Max - 100%
WRAPPING SPEED	Press this button to adjust the wrapping speed while in automatic operation, in terms of percentage. Min - 5% Max - 100%
UP AND DOWN TIMES	Press this button to set the number of times the carriage travels up and down during the cycle.
FILM TENSION	Press this button to set the film tension percentage.
INSTA CUT DELAY	Press this button to set the delay timer for the insta-cut. This allows the user to delay the timing of the instacut by increasing the timer.
STANDARD WRAP	Press this button to select the Standard 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 UP ONLY	Press this button to wrap up only. The machine will wrap to the top, then stop the cycle.
WAIT ON TOP	Press this button to wrap up only. The machine will wrap to the top, then stop the cycle.

Menu Screens

Menu Screen

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

Figure 3 - 19
The Menu Screen

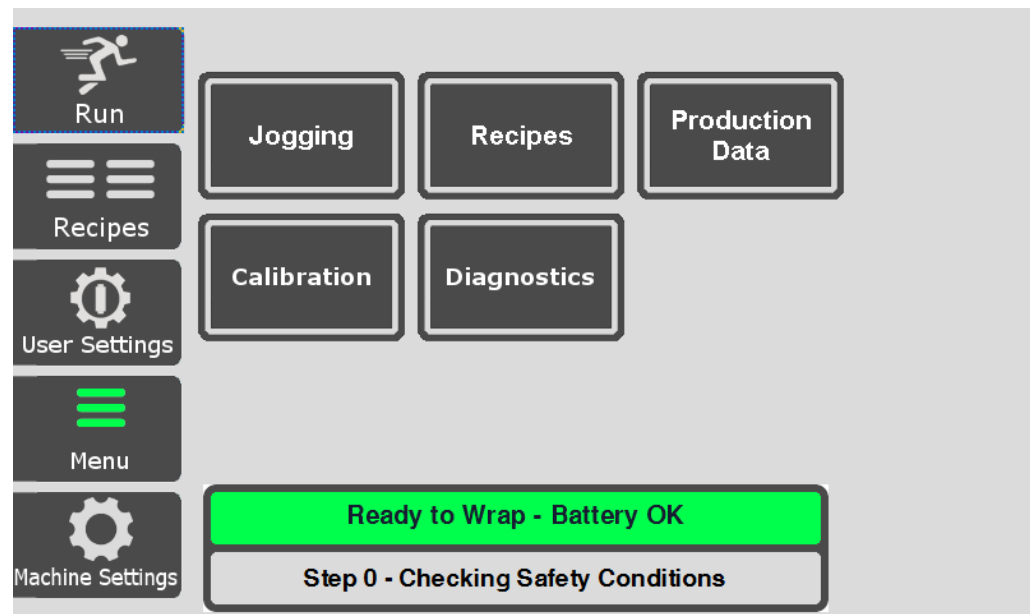


Table 3-6. The Menu Screen Button Descriptions

STATE 1	DESCRIPTION
JOGGING	Press this button to go to the Jogging Screen.
RECIPES	Press this button to go to the Recipes Screen.
PRODUCTION DATA	Press this button to go to the Production Data Screen.
CALIBRATION	Press this button to go to the Calibration Screen.
DIAGNOSTICS	Press this button to go to the Diagnostics Screen.

Jogging Screen

This is the Jogging Screen. This screen allows jogging of the carriage.

Figure 3 - 20
The Jogging Screen

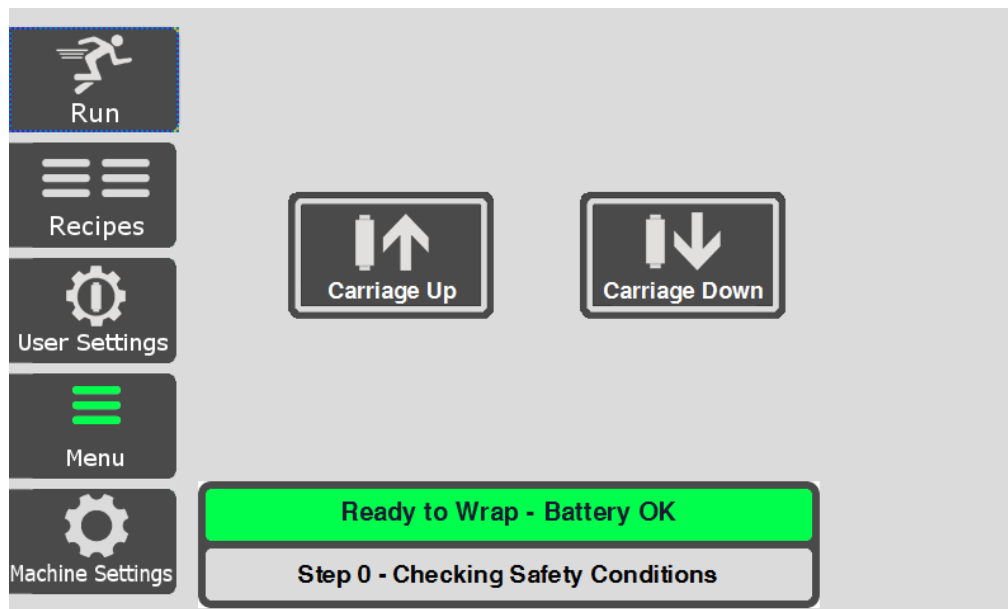




Table 3-7. The Jogging Screen Button Descriptions

STATE 1	DESCRIPTION
 Carriage Up	Press this button to jog the carriage upwards. The carriage move slowly upwards until the operator releases the jog button.
 Carriage Down	Press this button to jog the carriage downwards. The carriage move slowly downwards until the operator releases the jog button.

Production Data Screen

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

Figure 3 - 21
The Production Data
Screen

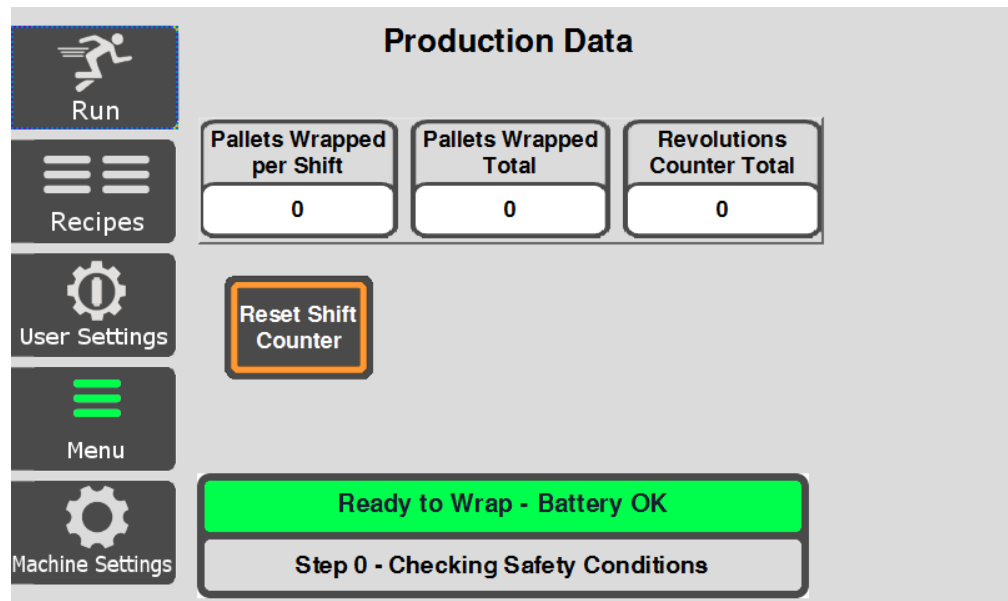


Table 3-8. The Production Data Screen Button Descriptions

STATE 1	DESCRIPTION
PALLETS WRAPPER PER SHIFT	This display shows the number of cycles the machine has run since the last shift cycle reset.
PALLETS WRAPPED TOTAL	This display shows the number of cycles the machine has run, in total.
REVOLUTIONS COUNTER TOTAL	This display shows the number of revolutions the machine has run, in total.
RESET SHIFT CYCLES	Press this button to reset the shift cycle counter to zero.

Tension Sensor Calibration Screen

This is the Tension Sensor Calibration screen. This screen allows the user to calibrate the tension sensor.

Figure 3 - 22
The Tension Sensor
Calibration Screen

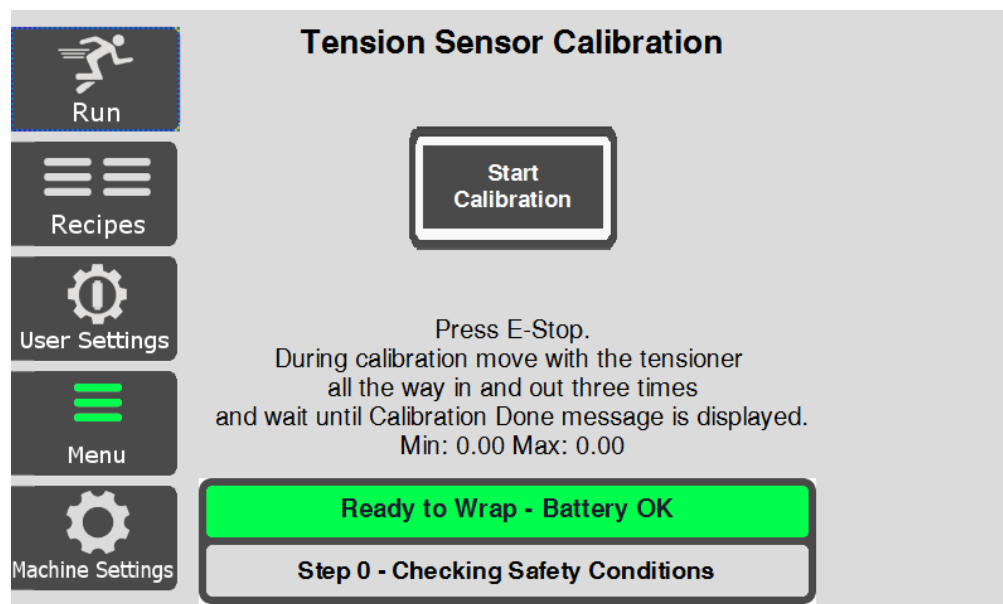


Table 3-9. The Tension Sensor Calibration Screen Button Descriptions

STATE 1	DESCRIPTION
START CALIBRATION	Press this button to calibrate the Tension Sensor. First, press the E-stop button. Next, press the tensioner all the way in and out three times. Wait for the calibration done message to display.

Diagnostics Screen

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

Figure 3 - 23
The Diagnostics
Screen

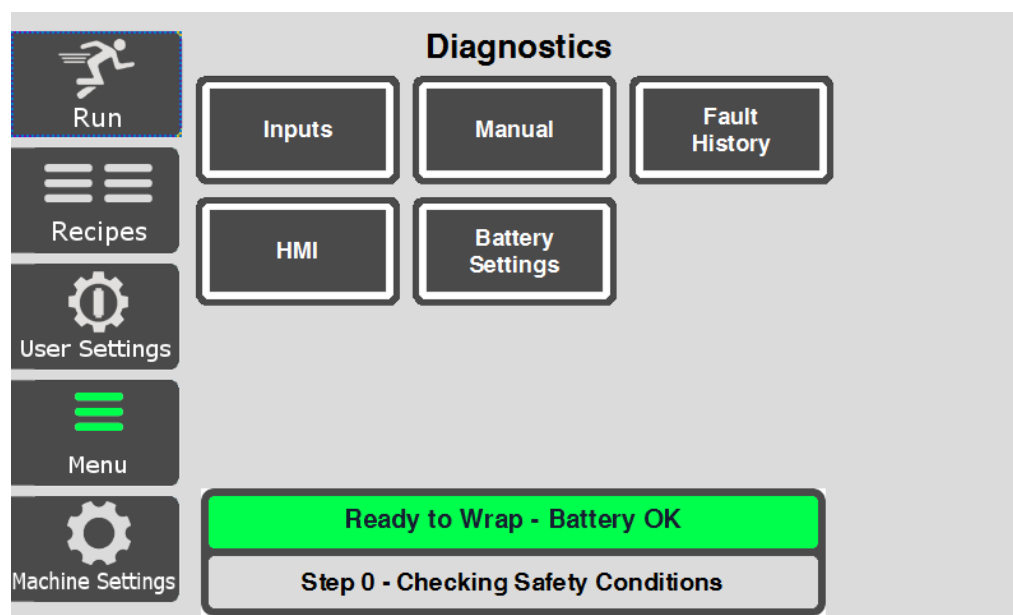


Table 3-10. The Diagnostics Screen Button Descriptions

STATE 1	DESCRIPTION
INPUTS	Press this button to go to the Inputs Screen.
MANUAL	Press this button to display the machine manual.
FAULT HISTORY	Press this button to go to the Fault History Screen.
HMI	Press this button to go to the HMI adjustment Screen.
BATTERY SETTINGS	Press this button to go to the Battery Settings Screen.

The Inputs Status Screen

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

Figure 3 - 24
The Inputs Screen

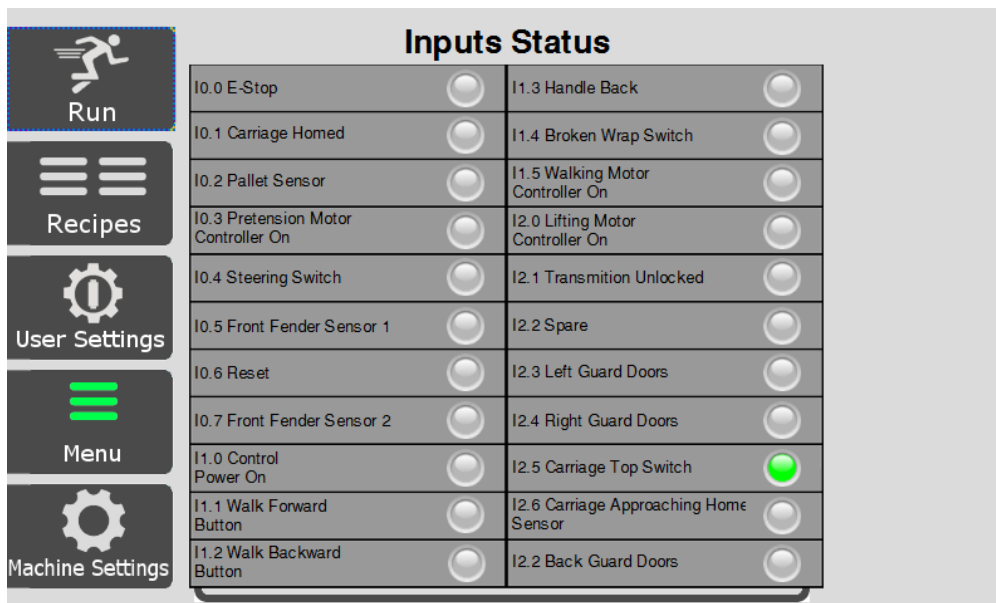




Table 3-11. The Input Screen Button Descriptions

STATE 1	DESCRIPTION
 	<p>Gray represents an inactive input. Green represents an active input.</p>

The Manual Screen

This is the Manual screen. This screen shows allows the user to view the manual.

Figure 3 - 25
The Manual Screen

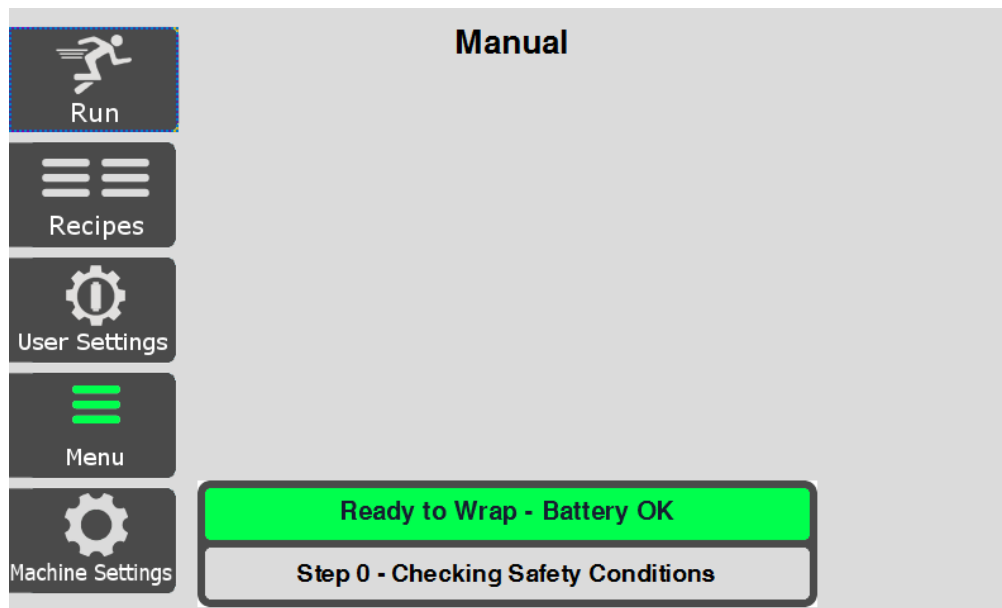


Table 3-12. The Manual Screen Button Descriptions

STATE 1	DESCRIPTION
MANUAL	The manual is displayed on this screen.

Fault History Screen

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

Figure 3 - 26
The Fault History
Screen

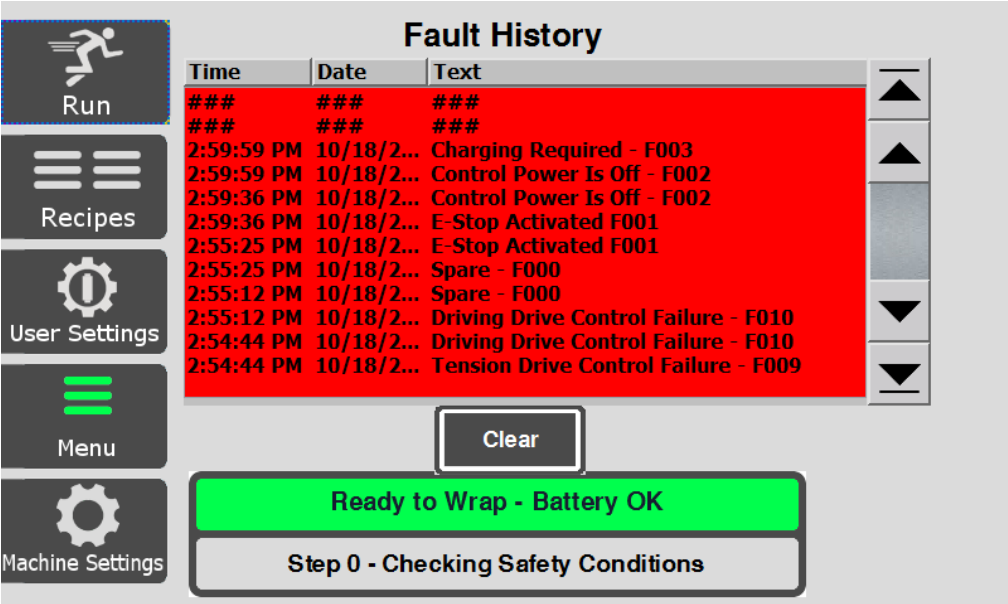


Table 3-13. The Fault History Screen Button Descriptions

STATE 1	DESCRIPTION
ANY DISPLAY	The displays on this screen cannot be altered on this screen. These displays show the Fault History Log.
CLEAR	Press this button to clear the Fault History display.

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 - 27
The HMI Setup
Screen

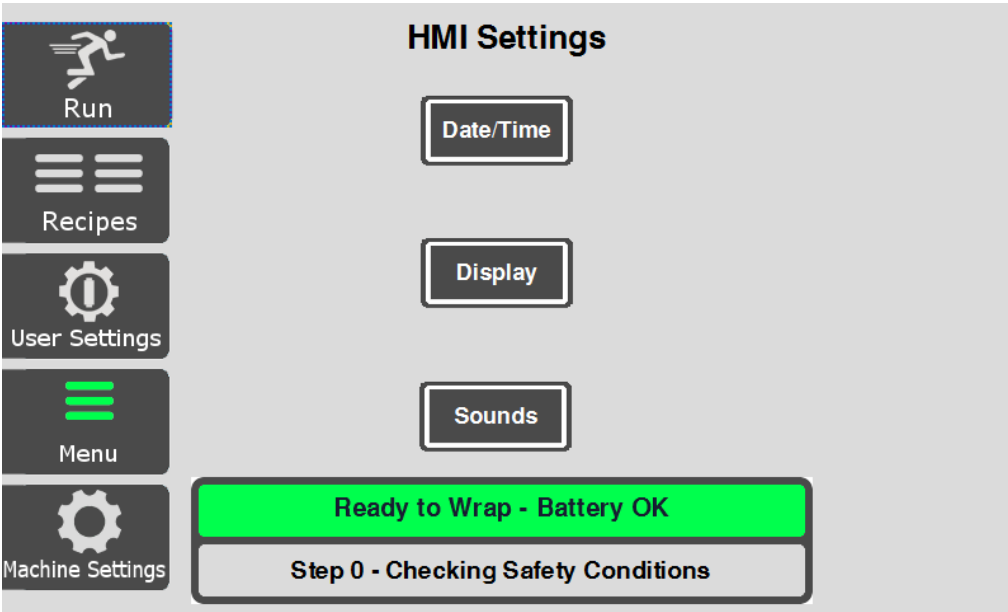


Table 3-14. The HMI Setup Screen Button Descriptions

STATE 1	DESCRIPTION
DATE/ TIME	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).
DISPLAY	Press this button to go to the Display screen.
SOUNDS	Press this button to go to the Sounds adjust screen.

Battery Settings Screen

This is the Battery Settings screen. This allows the user to view the voltage and the voltage limits.

Figure 3 - 28
The Battery Settings
Screen

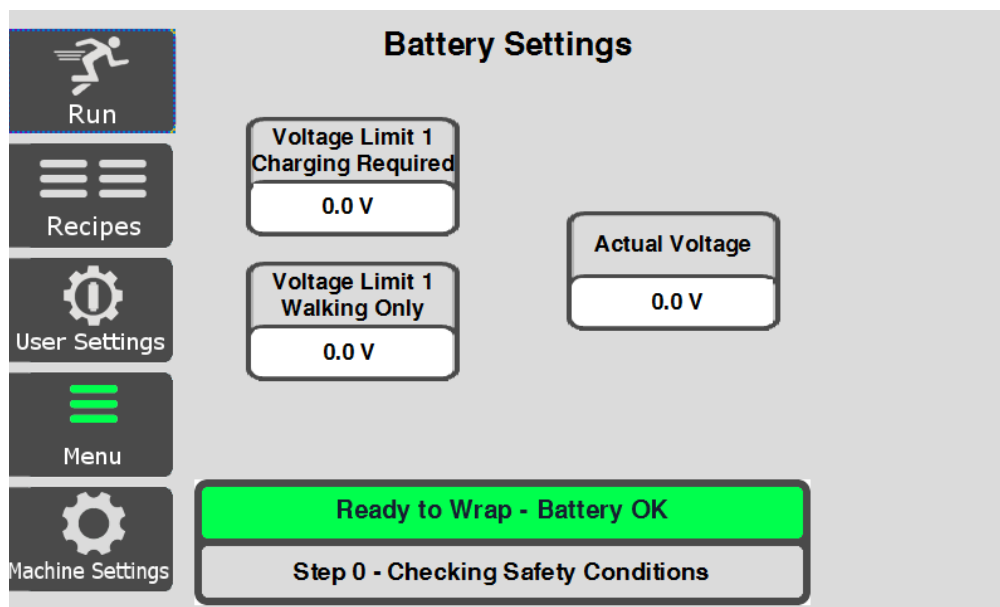


Table 3-15. The Battery Settings Screen Button Descriptions

STATE 1	DESCRIPTION
VOLTAGE LIMIT 1 CHARGING REQUIRED	Press this button to set the voltage limit where charging is required.
VOLTAGE LIMIT 1 WALKING ONLY	Press this button to set the voltage limit for moving the unit to a charging station.
ACTUAL VOLTAGE	This display shows the actual voltage reading from the battery.

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 - 29
The Machine Settings Screen

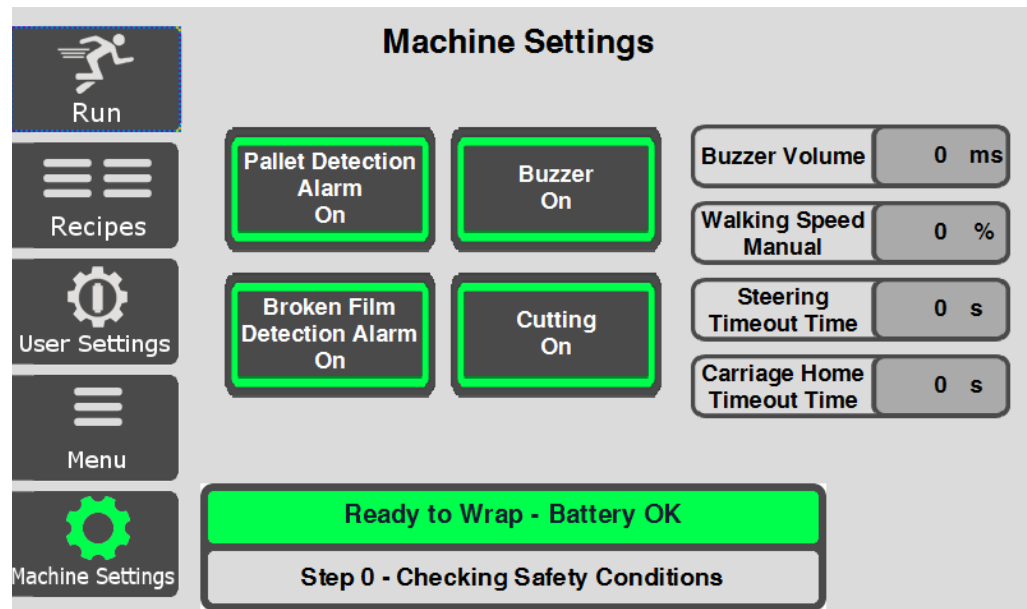


Table 3-16. The Machine Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
PALLET DETECTION ALARM OFF	Press this button to enable or disable the pallet detection alarm.	PALLET DETECTION ALARM ON
BROKEN FILM DETECTION ALARM OFF	Press this button to enable or disable the broken film detection alarm.	BROKEN FILM DETECTION ALARM ON
BUZZER OFF	Press this button to enable or disable the buzzer warning while the machine is running.	BUZZER ON
CUTTING OFF	Press this button to enable or disable auto film severance.	CUTTING ON
BUZZER VOLUME	Press this button to display the numeric keypad to enter a buzzer volume.	
WALKING SPEED MANUAL	Press this button to display the numeric keypad to enter the walking speed.	
STEERING TIMEOUT TIME	Press this button to display the numeric keypad to enter the steering timeout timer.	

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

STATE 1	DESCRIPTION	STATE 2
CARRIAGE HOME TIMEOUT TIME	Press this button to display the numeric keypad to enter the carriage home timeout timer.	

Troubleshooting Contents

Component Inspections	4-1
Battery Connections	4-1
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Side Panel Interlock Switch	4-3
Handle Proximity Switch	4-3
Carriage Obstacle Detect Limit Switch	4-4
Film Carriage Door Switch	4-4
Safety Bumper	4-5
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Alarm Message Chart	4-6

4. Troubleshooting

Component Inspections

This section outlines the most common conditions prohibiting operation. If the machine is powered up, an alarm message will display if there is a sensor prohibiting operation. Check the sensor or component to see if the device is properly connected.

Battery Connections

If the battery will not recharge after 8 hours, check the battery connections. If the batteries still will not recharge, the batteries may need to be replaced. To inspect the battery connections:

1. Remove the three screws holding on the battery compartment cover.
2. Check battery connector and terminal connections.

Figure 4 - 1
Right Side Battery
Connections

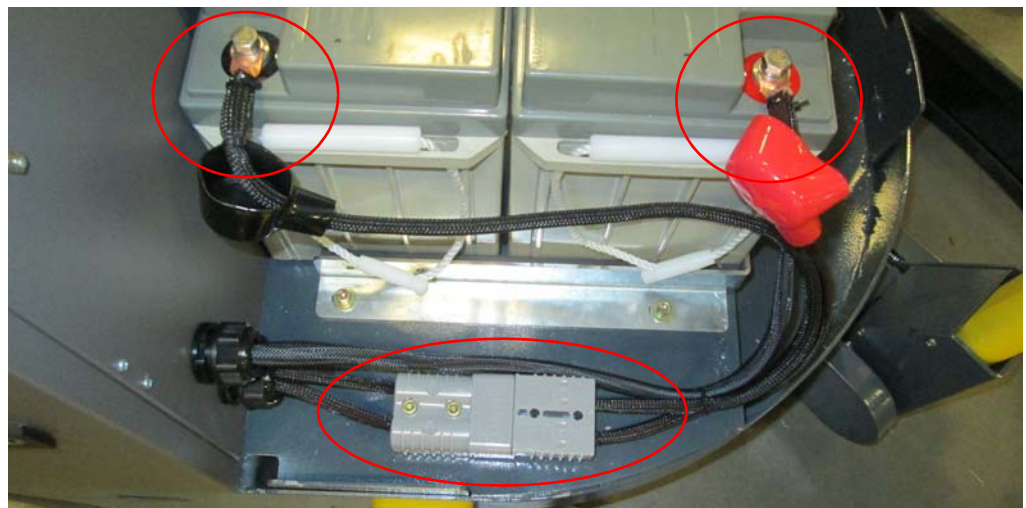


Figure 4 - 2
Left Side Battery
Connections



Main Breaker Electrical Disconnect/ Hard Reset

If the machine is fully charged and all battery connections are OK, but there is no machine power, the main breaker could be off. The main breaker is located behind the right side panel. This switch also serves as a hard reset if there are issues that are not clearing with conventional troubleshooting methods.

1. Use the provided key to unlock the side panel.

Figure 4 - 3
Opening the Panel



2. To allow operation, ensure that the main disconnect is in the on position.
3. To perform a hard reset, turn the main disconnect off, wait 10 seconds, then turn the main disconnect to the on position.

Figure 4 - 4
Main Disconnect



Side Panel Interlock Switch

Each side panel has an interlock switch that prevents operation when either side panel is open. Prior to startup, ensure that each side door is completely closed and the interlock connector is properly engaged into the switch.

Figure 4 - 5
Side Panel Interlock
Switch



Handle Proximity Switch

There is a proximity switch located under the front battery panel that detects for the position of the front handle. The manual drive walking feature will not function unless the handle is straight forward and the proximity sensor is met. There is an indicator light on the proximity switch that shows when the proximity sensor is detecting the handle position. If there is a machine corner proximity switch counter problem, check through all the wiring and connections. Adjust the angle of proximity switch, if necessary.

Figure 4 - 6
Front Handle
Proximity Switch



Carriage Obstacle Detect Limit Switch

There is an obstacle detect switch located on the bottom of the carriage. When the switch is pressed during operation, such as the case of something under the carriage, the machine will stop. The mechanism uses a spring and a contact to a limit switch. Check that the limit switch is operating properly and that the contact is being made when the obstacle detect mechanism is pressed. Also check that the switch is off when the mechanism is down. The contact shown on the right side of the illustration can be adjusted, as needed.

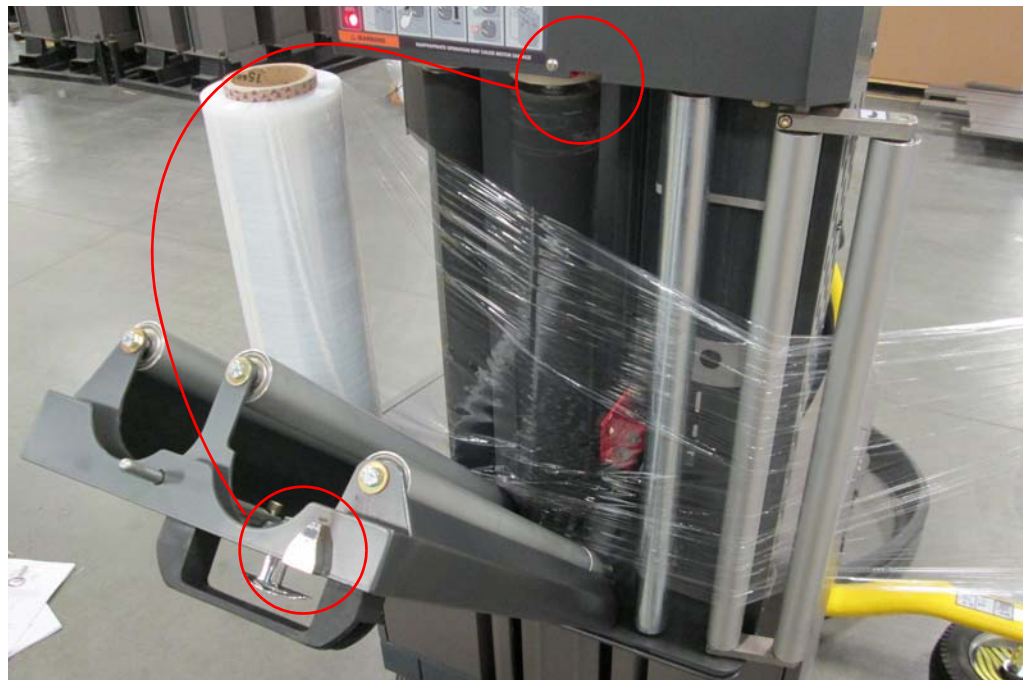
Figure 4 - 7
Obstacle Detect Limit
Switch



Film Carriage Door Switch

The carriage door has an interlock switch that will not allow operation until the carriage door is closed. An alarm message will display on the HMI panel if the door is not properly latched.

Figure 4 - 8
Film Carriage Door
Switch



Safety Bumper

There is a safety bumper on the front of the machine that stops the machine when it hits an obstacle during operation. An alarm message will display on the HMI if the bumper stops the machine. Check that the bumper switch is operating properly prior to running for the day.

Figure 4 - 9
Safety Bumper



Transmission Engage/ Disengage

There is a transmission engage/ disengage lever located at the back right bottom corner of the machine. An alarm message will display on the HMI if the transmission is disengaged. The transmission must be engaged to allow operation. See “Transporting the AG 360” on Page 3-3.

Figure 4 - 10
Transmission Engage/
Disengage Lever



Alarm Message Chart

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. Alarm Message Chart

ALARM NO	FAULT	SOLUTION
E-2	LOW VOLTAGE	<ul style="list-style-type: none"> • Check voltage with meter • Electricity circuit fault
E-3	EMERGENCY STOP FAULT	<ul style="list-style-type: none"> • Check that the Emergency Stop button is not pressed to allow operation • Close the carriage door • Carriage obstacle detect or bumper protection tripped • Carriage Door Open • Pre-stretch gate protection proximity circuit fault • Mid relay fault
E-4	CART MOTOR OR WIRING PROBLEM	<ul style="list-style-type: none"> • Pre-stretch cut off • Pre-stretch proximity no signal or circuit fault
E-5	PRE-STRETCH DRIVEN PLATE FAULT	<ul style="list-style-type: none"> • Voltage is low • Enable signal not on • Emergency stop fault • Check pre-stretch driven plate voltage
E-6	MOVE DRIVEN PLATE FAULT	<ul style="list-style-type: none"> • Check voltage • Voltage is low • Enable signal not on • Emergency stop fault
E-7	UP-DOWN DRIVE FAULT	<ul style="list-style-type: none"> • Check lift driven plate voltage • Voltage is low • Enable signal not on • Emergency stop fault

Table 4-1. Alarm Message Chart (Continued)

ALARM NO	FAULT	SOLUTION
E-8	HEIGHT PHOTOCELL NOT FIND OBJECT	<ul style="list-style-type: none">• Photocell not find object at start• Photocell broken or circuit fault
E-9	LIFT UNIT NOT IN HOME POSI	<ul style="list-style-type: none">• Lift unit not in home position• Lift unit low journey fault or circuit fault
E-13	BRAKE OPEN	<ul style="list-style-type: none">• Brake open• Manual brake mechanism open• Brake protection proximity fault or circuit fault

Maintenance Contents

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 Carriage Lift Chain Adjustment5-4

 Chain Maintenance5-4

 Tower Raceways Maintenance5-4

 Cleaning The Stretch Rollers.5-5

 Steering Handle Tension Adjustment5-6

 Bumper Tension Adjustment5-6

5. Maintenance

Maintenance Recommendations

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

Opening Control Panels and Covers

Remove the three screws holding on the battery cover to take off the front battery cover. The screws are located at the bottom front of the cover. There is a handle on either side of the panel to remove. This can be done with either one or two people. Since the cover is large, this is easier with two people. See “Battery Connections” on page 4 - 1.

Figure 5 - 1
Battery Cover
Handles



Use the provided key to unlock side panel. The panels swing open. An interlock switch prevents operation when the panels are open.

Figure 5 - 2
Opening the Panel



Left Side Enclosure

The left enclosure contains the PLC and drives along with terminal blocks.

Figure 5 - 3
Left Side Electrical
Enclosure



Right Side Enclosure

The right enclosure contains the power supply, VFD, and terminal blocks.

Figure 5 - 4
Right Side Electrical
Enclosure



Charging and Indicator Connectors on Door

If the batteries are not charging, an additional check would be the connector on the back of the door panel. Ensure the connections are properly plugged in and not loose.

Figure 5 - 5
Charging Connector
and Indicator
Connections



HMI Back Panel

Check the connections on the back of the HMI if the screen won't power up.

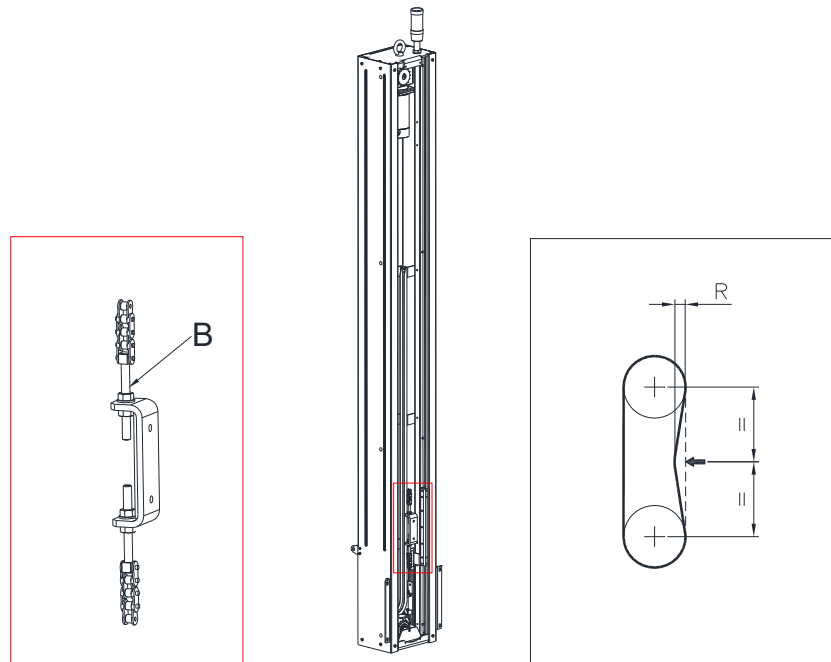
Figure 5 - 6
Back of HMI



Carriage Lift Chain Adjustment

Remove the tower cover (A) adjust the screw, and (B) adjust the chain deflection (R) within these parameters: 10 - 15mm (3/8" - 5/8").

Figure 5 - 7
Carriage Lift Chain
Adjustment



Chain Maintenance

To clean the stretch chain, wipe it with an oily cloth once per 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.

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).

Cleaning The Stretch Rollers

Inspect rubber stretch rollers every 5,760 Loads or once per month. Clean as needed per instructions below.

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 through 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.

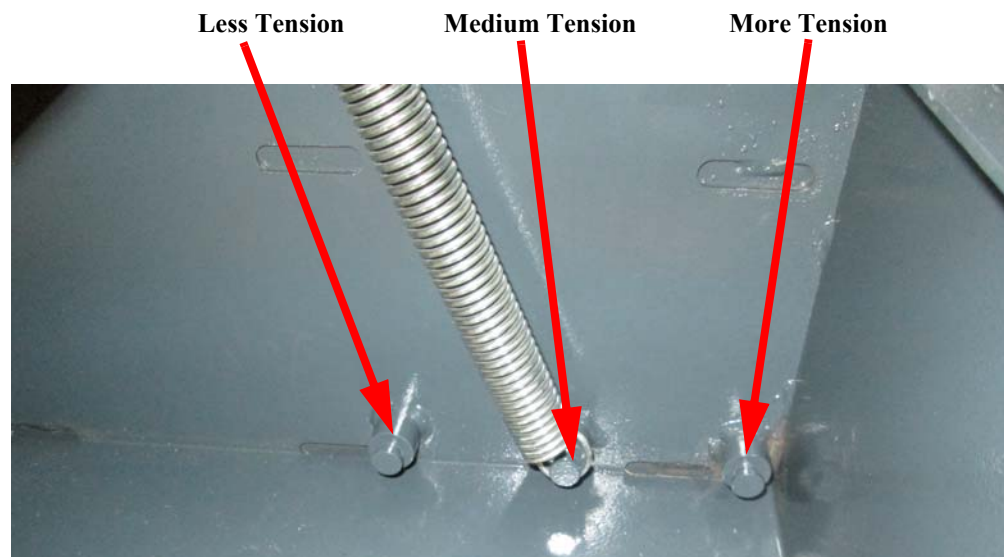
Note: Rubbing alcohol is recommended because it is light enough to penetrate the rubber and it evaporates quickly.

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.

Steering Handle Tension Adjustment

The steering handle tension can be adjusted by changing the position of the spring. To adjust, removed the spring position and change to one of the three positions. The tighter the tension, the harder it will steer during operation. The lighter the tension the easier it will steer, but will be more prone to steering bounce.

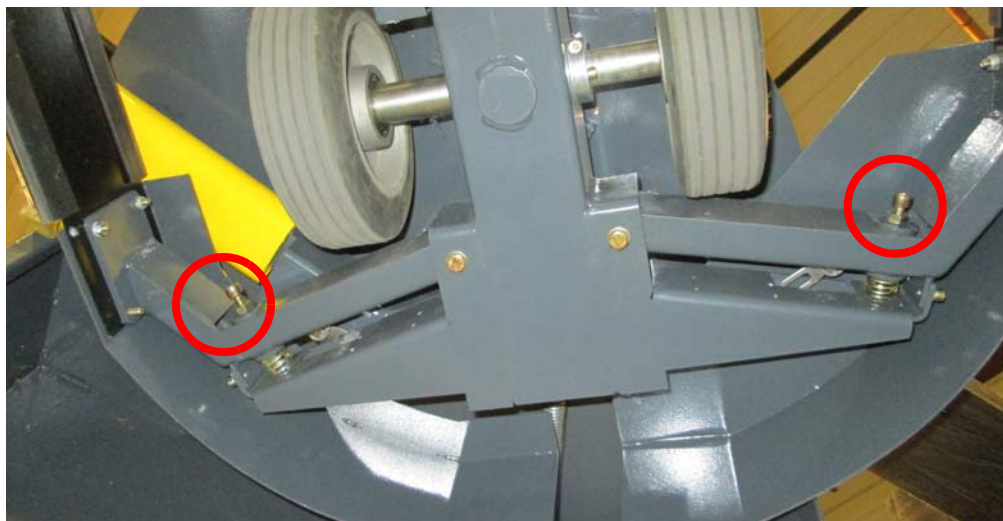
Figure 5 - 8
Steering Handle
Tension Adjustment



Bumper Tension Adjustment

The steering bumper tension can be adjusted to prevent the safety bumper from tripping when not necessary. Tighten the bolts to increase the bumper tension. Increased tension will make the safety bumper harder to trip. Loosen the bolts to decrease the tension. Decreased tension will make the safety bumper trip more easily. If the tension is too loose, it may trip inadvertently when the machine is running at higher speeds.

Figure 5 - 9
Bumper Tension
Adjustment

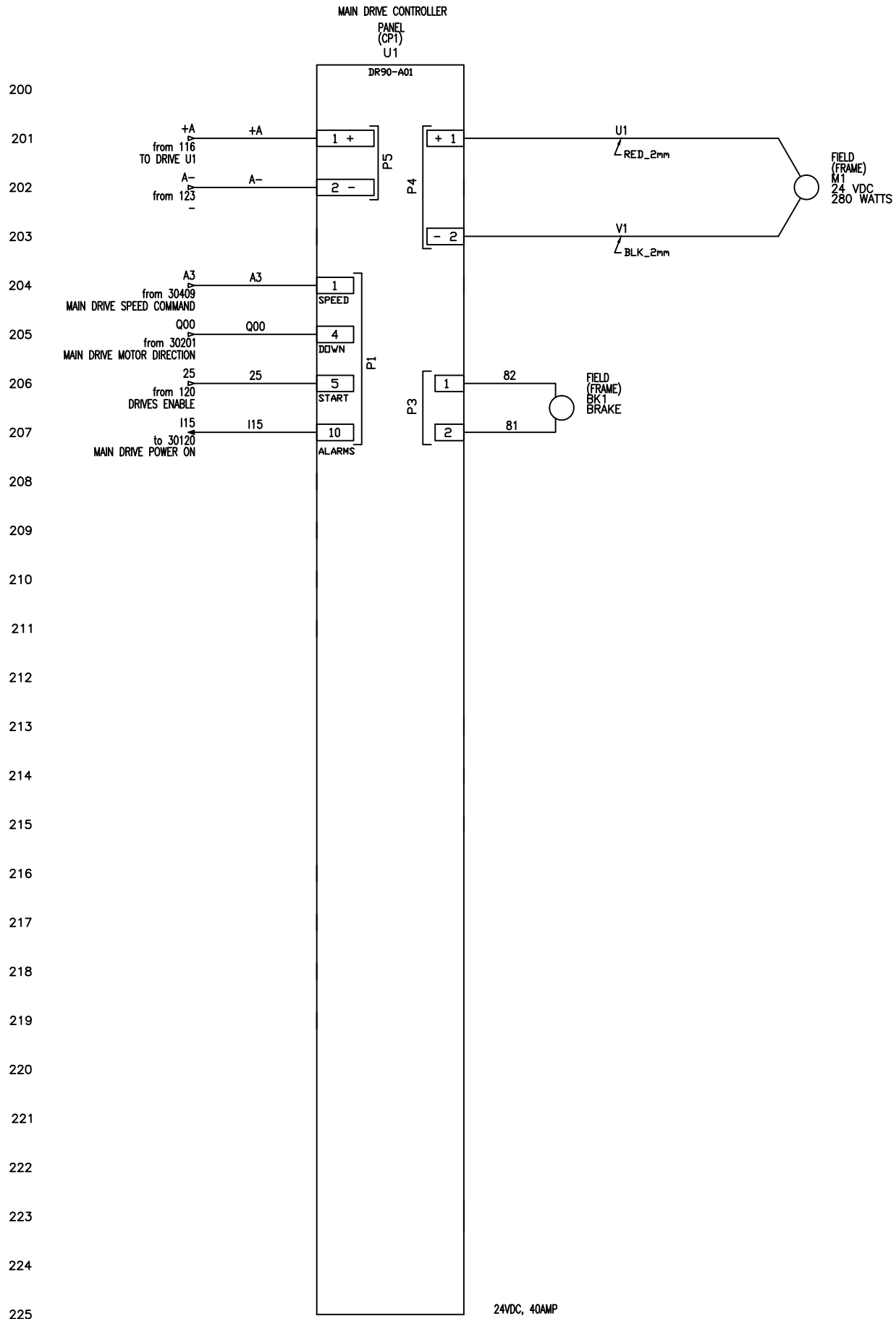
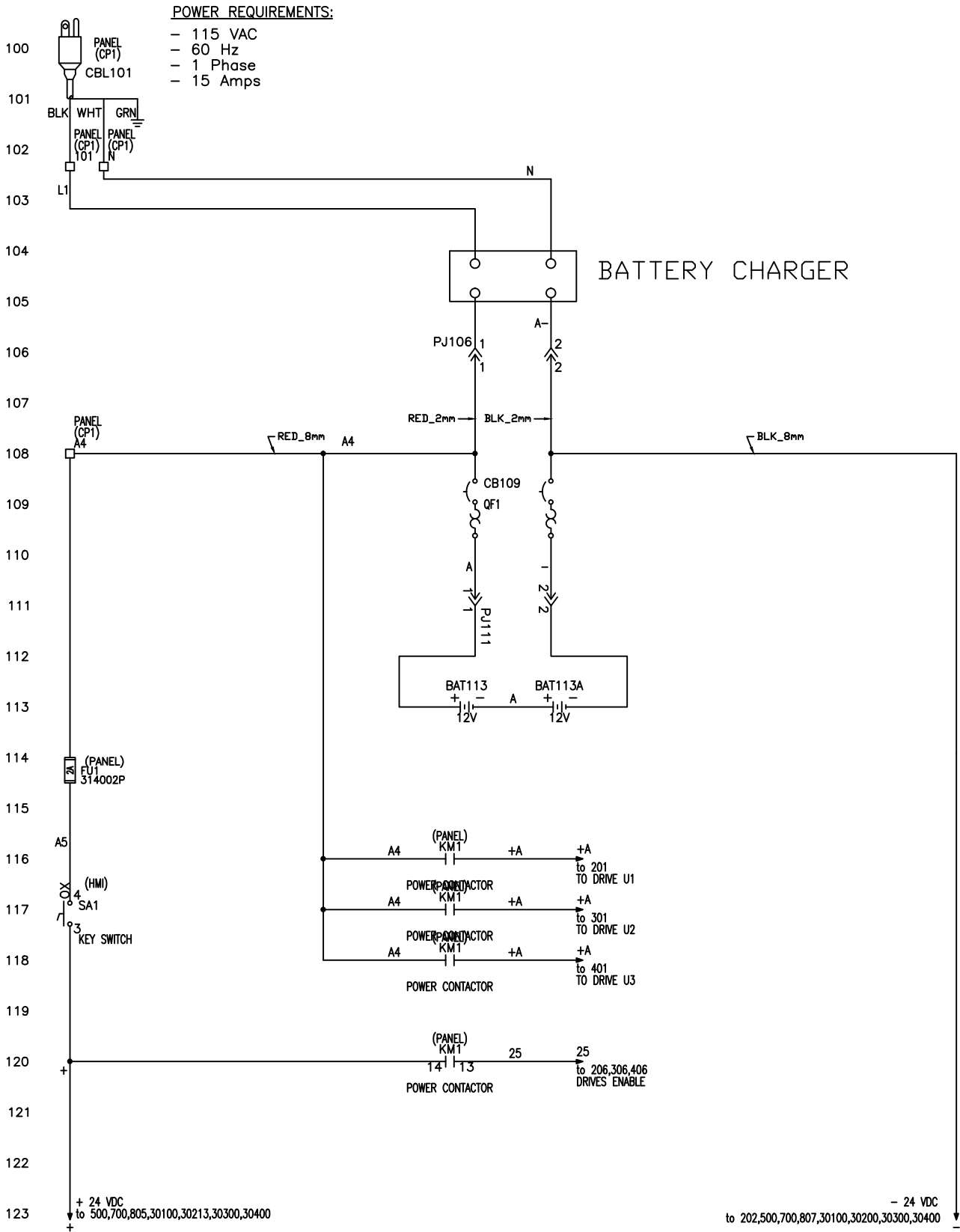


Electrical Prints and Mechanical Drawings

Electrical Prints6-1
Mechanical Drawings6-2

6. Electrical Prints and Mechanical Drawings

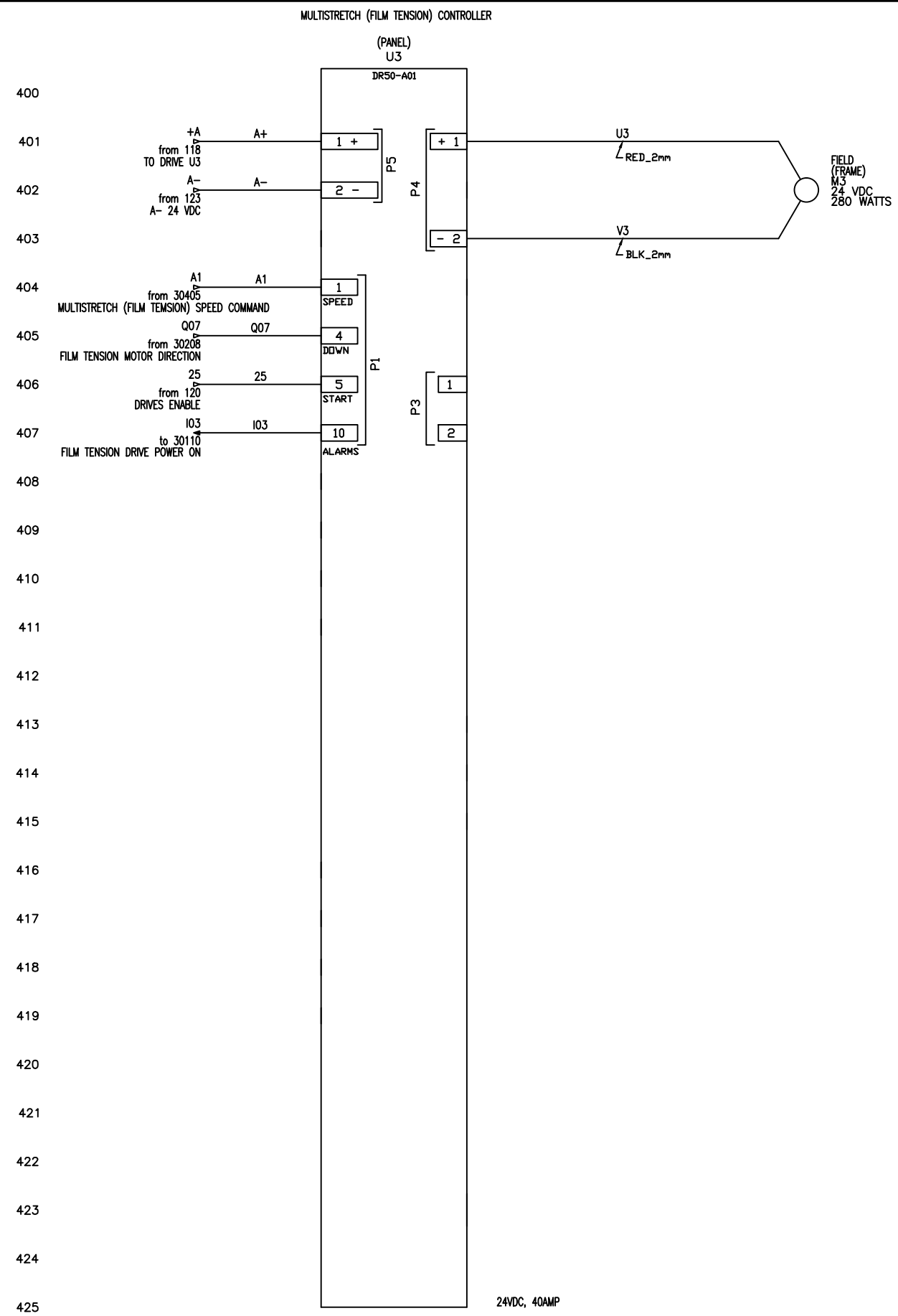
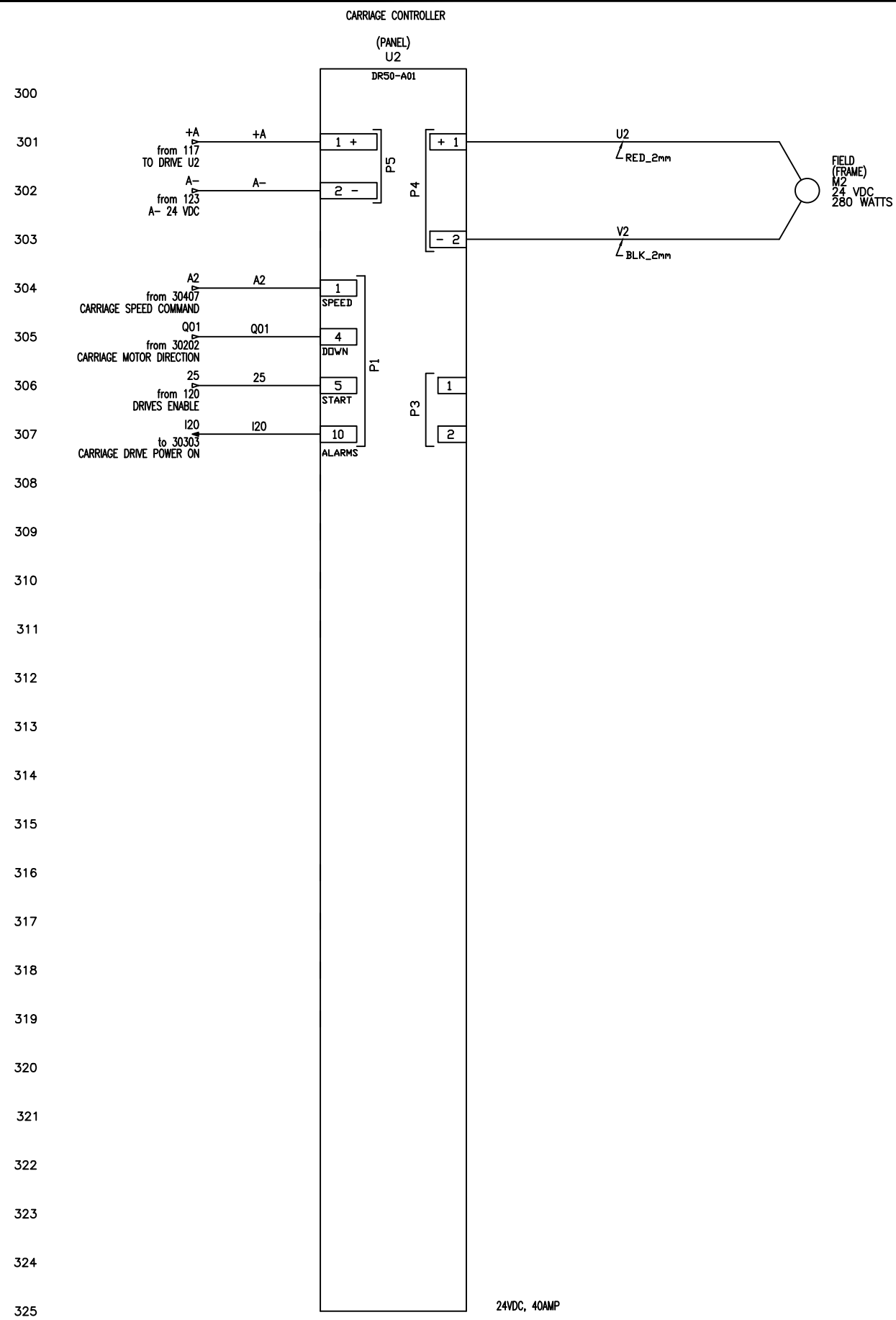
Electrical Prints

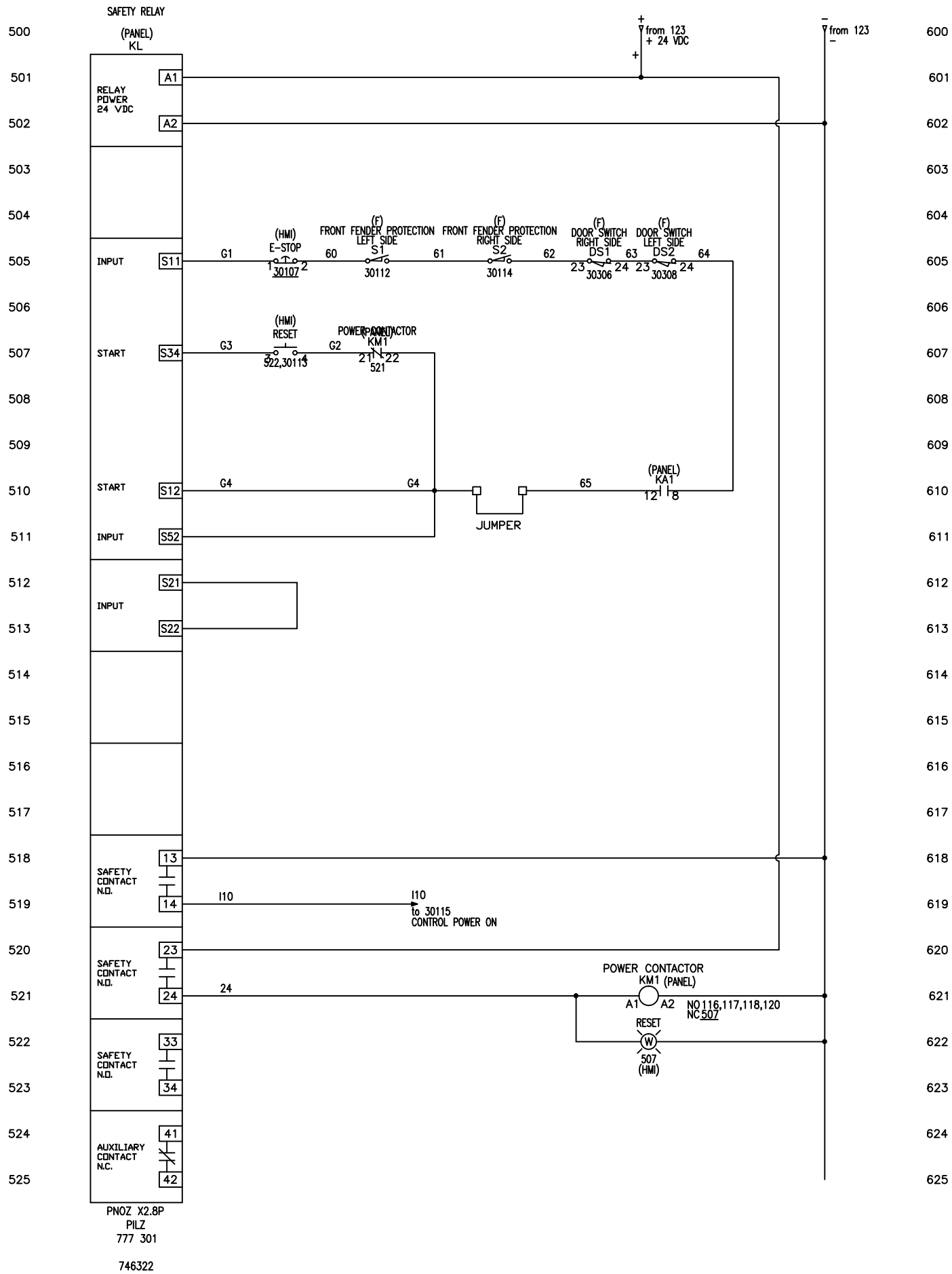


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NO.	DATE	REVISION	BY
DWG TITLE			
ROBO WRAPPER AG360			
24VDC DISTRIBUTION MOTOR DRIVE			
ENGINEER	CHECKED BY		
JOB NO	DRAWN BY		
SCALE	NO SCALE	DATE	05/2018
DWG NO	AG360(V2.0)		
SHEET NO	2 OF 9		

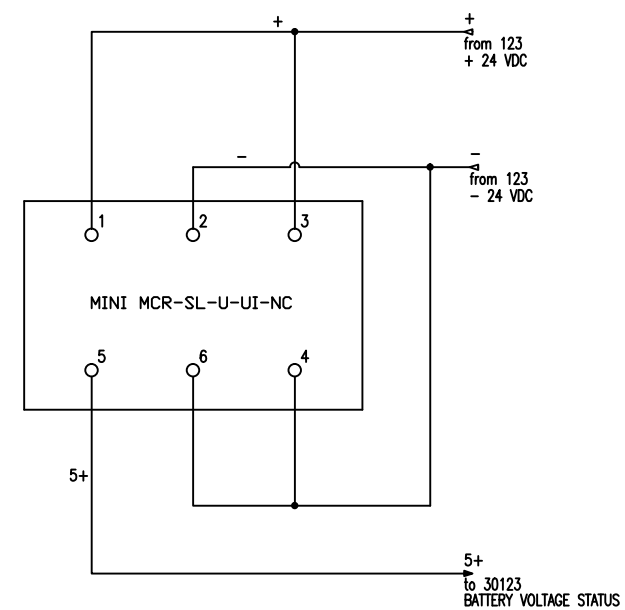
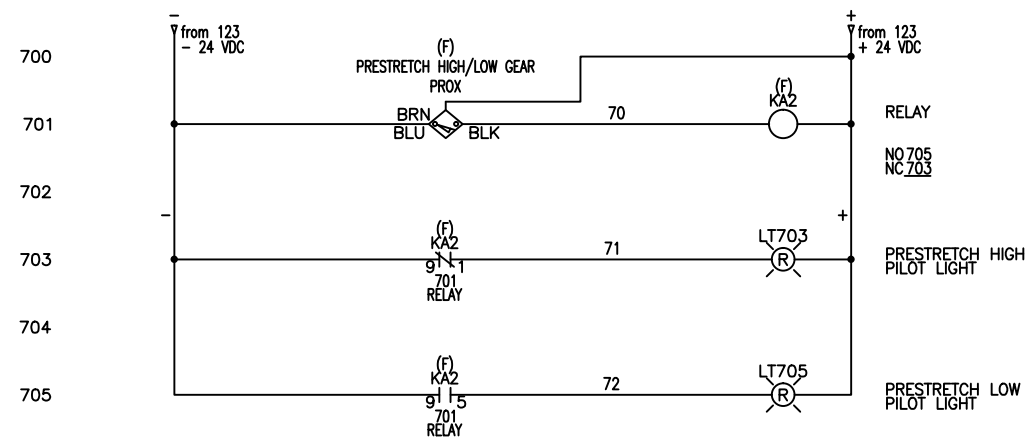




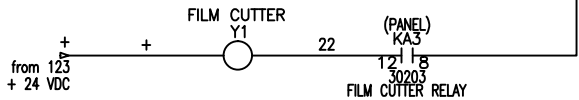
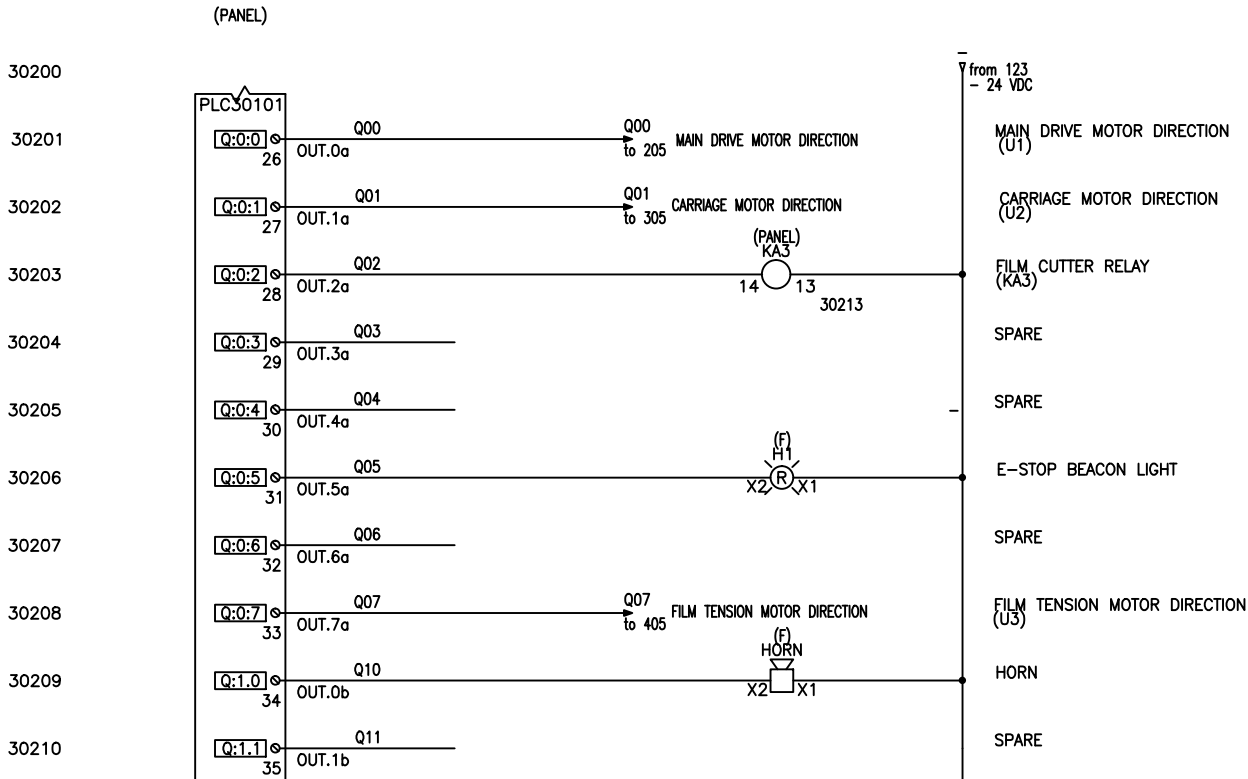
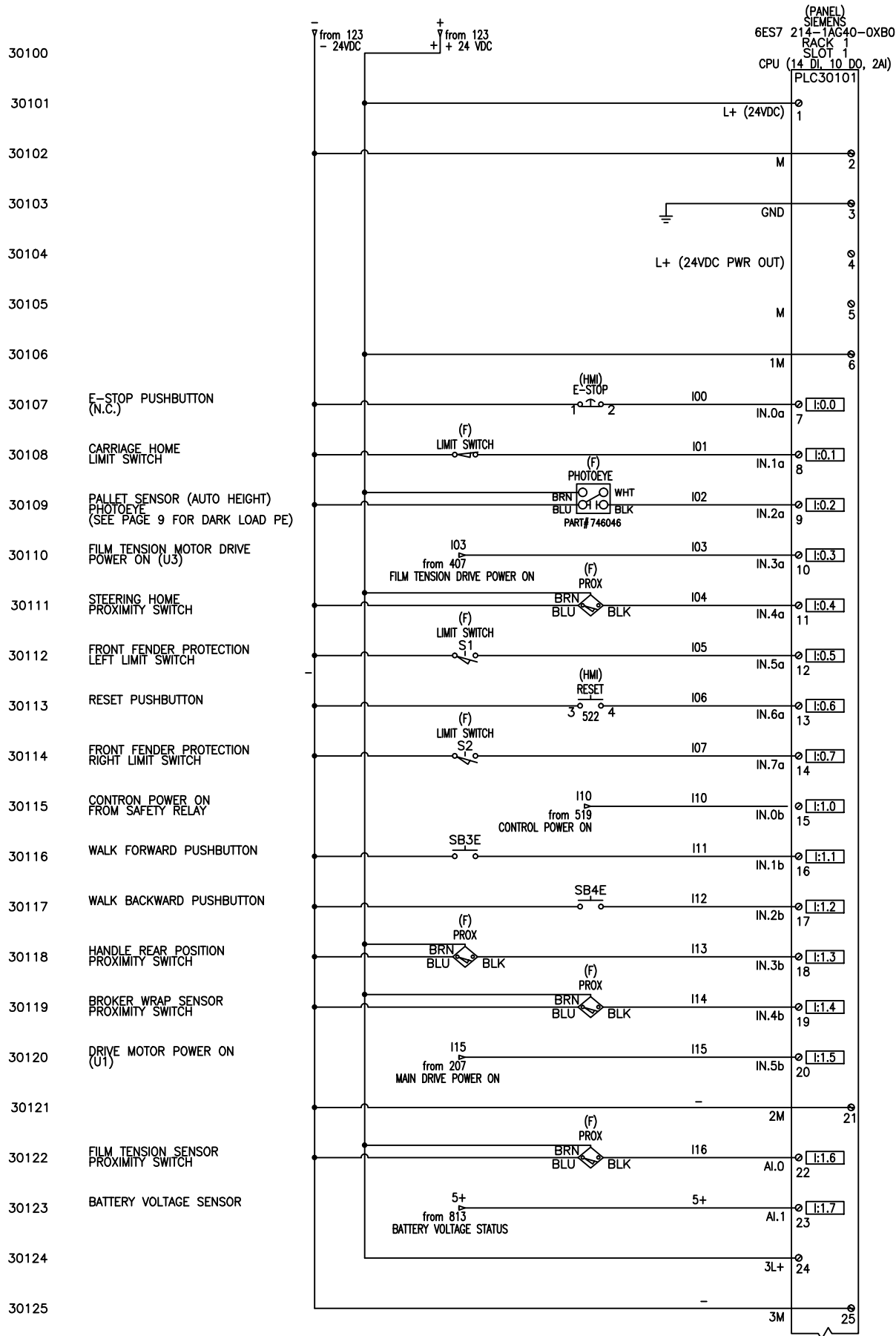
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ROBO WRAPPER AG360					
SAFETY					
ENGINEER		CHECKED BY			
JOB NO		DRAWN BY			
SCALE		DATE			
NO SCALE		05/2018			
DWG NO					
AG360(V2.0)					
SHEET NO					
4 OF 9					



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NO.	DATE	REVISION	BY
DWG TITLE			
ROBO WRAPPER AG360			
PLC/INPUT OUTPUT			
ENGINEER	CHECKED BY		
JOB NO	DRAWN BY		
SCALE	NO SCALE	DATE	05/2018
DWG NO	AG360(V2.0)		
SHEET NO	6 OF 9		

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
KA2	1	*1	019138	IDEC	RY2S-ULC-DC24V	PLUG-IN RELAY, DPDT, 24VDC, 10 AMP, 2 NO 2NC
		*1	019124	IDEC	SY2S-05C 95Z01	RELAY SOCKET, 8 PIN, USE FOR RY2S RELAY
DS1 DS2 LS30108 LS30309 LS30310 S1 S2	7		746319	OMRON	D4V-8108Z	LIMIT SWITCH
PE30109	1	*1	746046	P&F	RLK31-8-2500-IR/31/115	PHOTO EYE SENSOR, DIFFUSE, NPN, LO
		*1	738870	MURR	7000-12221-0140500	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS
SQP5	1	*1	746043	IFM	IG6084	M18 PROX SENSOR, UN-SHIELDED, 0.8-8mm RANGE, 4-20mA ANALOG, 3-WIRE, M12
		*3	738870	MURR	7000-12221-0140500	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS
SQP SQP3	2	*1	746045	P & F	NBN5-F7-E0	INDUCTIVE PROXIMITY SENSOR
		*3	738870	MURR	7000-12221-0140500	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS
PRS30111 SQP3	2	*1	746044	SICK	1040773/IME12-04BNSZW2K	M12 PROX SENSOR, SHIELDED, 4mm RANGE, NPN NO, M12
		*3	738870	MURR	7000-12221-0140500	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
KA3	1	*1	019138	IDEC	RY2S-ULC-DC24V	PLUG-IN RELAY, DPDT, 24VDC, 10 AMP, 2 NO 2NC
		*1	019124	IDEC	SY2S-05C 95Z01	RELAY SOCKET, 8 PIN, USE FOR RY2S RELAY
KL	1		746322	PILZ	777 301	SAFETY RELAY FOR MONITORING EMERGENCY STOP PUSHBUTTONS, SAFETY GATES (SCREW TERMINALS)
U2 U3	2		742976	B&R	8I44S100075.000-1	
FU1	1	*1	701414	AB	1492-H5	FUSE HOLDER, 6.3x32MM FUSES, INDICATOR
		*1	730979	LITTELFUSE	314002P	FUSE, 6.3x32mm, 2 AMP, FAST ACTING
KM1	1		732927	SCHNEIDER	LC1D40ABD	CONTACTOR, 3 POLE, 440V 40A, COIL 24VDC, 1 NO + 1 NC
PLC30101	1		746320	SIEMENS	6ES7 214-1AG40-0XB0	SIMATIC S7-200 - CPU 224
PLC30301	1		746321	SIEMENS	6ES7 221-1BF32-0XB0	SIMATIC S7-200 - EM 221 DIGITAL INPUT
PLC30401	1		739494	SIEMENS	6ES7 232-4HD32-0XB0	SIMATIC S7-200 - EM 232 ANALOG OUTPUT MODULE

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
PB505	1	*1	745764	TELEMECANIQUE	ZB4BS844	EMERGENCY STOP HEAD Ø40mm- TURN TO RELEASE - Ø22 - RED
		*1	745765	TELEMECANIQUE	ZB4BZ009	ELECTRICAL BLOCK FIXING COLLAR FOR Ø22mm UNITS XB4-B - SET OF 10
		*1	745767	TELEMECANIQUE	ZBE102	CONTROL BUTTON CONTACT BLOCK - ZBE Ø22 - 1NC
SB2E	1	*1	746048	TELEMECANIQUE	ZB4BW313	ILLUMINATED PUSHBUTTON HEAD - Ø22 - WHITE
		*1	745765	TELEMECANIQUE	ZB4BZ009	ELECTRICAL BLOCK FIXING COLLAR FOR Ø22mm UNITS XB4-B - SET OF 10
		*1	016211	TELEMECANIQUE	ZBE101	ADD ON CONTACT BLOCK 1 N.O.
SA1	1	*1		TELEMECANIQUE	ZB4BG2TEC10	SELECTOR SWITCH HEAD KEYLOCK - 2 POSITIONS - Ø22 - BLACK
		*1	745765	TELEMECANIQUE	ZB4BZ009	ELECTRICAL BLOCK FIXING COLLAR FOR Ø22mm UNITS XB4-B - SET OF 10
		*1	016211	TELEMECANIQUE	ZBE101	ADD ON CONTACT BLOCK 1 N.O.

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ENGINEER	CHECKED BY		
JOB NO	DRAWN BY		
SCALE	NO SCALE	DATE	05/2018
DWG NO AG360(V2.0)			
SHEET NO 8 OF 9			

Mechanical Drawings

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