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Flex Legion Stretchwrapper Manual

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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.

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: Flex Legion Stretchwrapper
- Serial #: Shown on machine ID sticker

Distributed by Orion Packaging: Alexandria Minnesota, USA

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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 (HMI), and operational procedures.
- Section 4 is the Troubleshooting section. A Troubleshooting chart is found in this section.
- Section 5 is the Maintenance section. In this section you will also find a suggested maintenance schedule including a maintenance log. Assembly drawings conclude this section.

Flex Legion Warranty

Flex Legion

- Flex Legion turntable style machine.

WARRANTY

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

EFFECTIVE JANUARY 1, 2020

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

POLYURETHANE PRE-STRETCH ROLLERS

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

Wear parts including, but not limited to belts, fuses, light bulbs, circuit breakers, brakes, motor brushes, 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.

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 must be disconnected prior to all inspection, maintenance or repair work.

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

Before attempting to operate the equipment, become familiar with the safety recommendations and operational components of your Flex Legion 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 Orion Packaging 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 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	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Operation Safety

The following safety precautions are recommended for all personnel who will operate this Flex Legion 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 Flex Legion 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.
- Use only specified replacement parts. Never use non-specific fuses that have not been specified. Potential fire and/or damage may result.
- Before restarting the system, ensure personnel are not in the system and that the system and external devices are operating properly.

Lockout and Tagout Recommendations

Electrical System

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

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

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

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

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

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

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



Danger!

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

Installation and First Time Power Up

Unpacking

Machine can be easily unloaded and transported by a forklift with a minimum capacity of 2500 lbs. If your machine is a standard machine without options, proceed to the inspection section. See below for unpacking instructions for different options.

If your machine has the tower removed, you will need to follow this procedure to upright the tower prior to use:

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

1. If your model is a high tower, the tower will be removed and skidded separately.
2. Use a secured strap attached to the eye bolt on top of the tower to pivot the tower, securely hold the tower upright. Bolt the tower to the base using the four provided $\frac{3}{8}$ "x1 $\frac{1}{4}$ " bolts and lock washers. Make sure not to pinch any electrical connectors.

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



3. Connect the 2 quick disconnects for the electrical connections inside the tower.
4. Carefully insert the forks into the lifting tubes to the maximum possible depth. The fork truck tine width may have to be adjusted.

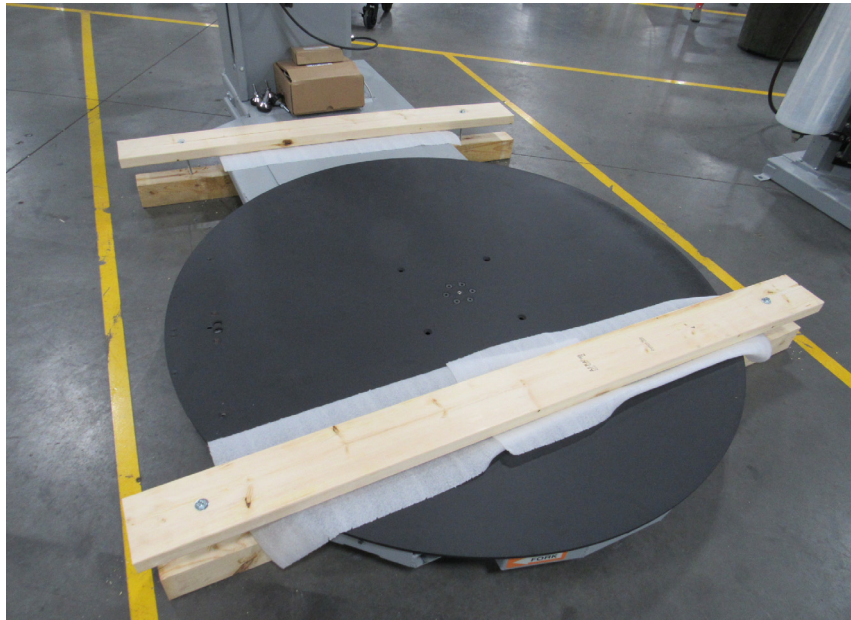
Figure 1 - 2
Machine Lifting Fork
Tubes



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

6. If there is a scale package, then machine must be lifted from the fork pockets and shipping materials must be removed and scale legs installed.

Figure 1 - 3
Scale Package
Shipping Materials



7. Sit the machine down assuring uniform contact with the floor, which is necessary to ensure correct and smooth operation.
8. If your machine has the optional ramp, set the ramp up next to the turntable. If it has the ramp option only, see the photo below. If it has the ramp and scale option, then the ramp does not attach directly to the machine.

Figure 1 - 4
Ramp Only Option
Connection



Inspection

1. Remove all packing and supporting additions.

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 gearboxes
 - Junction boxes
 - Electrical conduits
 - Proximity and limit switches
 - Photocells
3. 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
 - Inspect the HMI screen for damage and ensure all push buttons and dials are intact.
 - Use a screwdriver to open the panel and motor access door.

Figure 1 - 5
Panel Access



Machine Installation

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

1. Move the wrapper into its final position.
2. Verify the status of all assemblies before proceeding.

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.

Before Starting Machine Operation

- Make sure the **MAIN DISCONNECT** switch on the side of wrapper's tower is set to the **OFF** position.
- Orion Packaging insists that a dedicated circuit is used for this wrapper. **Extension cords are not allowed and can void your warranty.**
- Plug the machine into the 115 VAC/ 60 Hz/ 1 Phase / 15 Amp outlet.

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

System Description Contents

Machine Specifications2-1
Machine Floor Plan.....2-2

2. System Description

Machine Specifications

Utilities

- 115 / 1ph / 60hz / 15 Amp Service

Standard Speed

- 15 Rpm Variable Tower Speed VFD Controlled Motor

Drive

- Heavy Duty Chain Drive
- Positive Alignment Feature (True Home Position)

Control Features

- Allen Bradley 4" Color Touch-Screen HMI
- Quick Adjust Dials for Speed Adjustments for the VFD's
- Film Carriage Manual Jog Functionality
- Photocell For Automatic Load Height Detection
- Main Drive Jogging
- Reinforce Wrap Feature

Film Delivery

- 200% Powered Pre-stretch Insta-Thread Film Carriage
- 20" Film Width Capacity
- High Strength Chain Lift
- Variable Frequency Drive Motor

Structural Features

- 60" Diameter Turntable for Loads 55"x55"
- Structural Steel Construction Throughout
- Easy Access to all Components
- Limited Proprietary Parts for Ease of Maintenance

Available Options

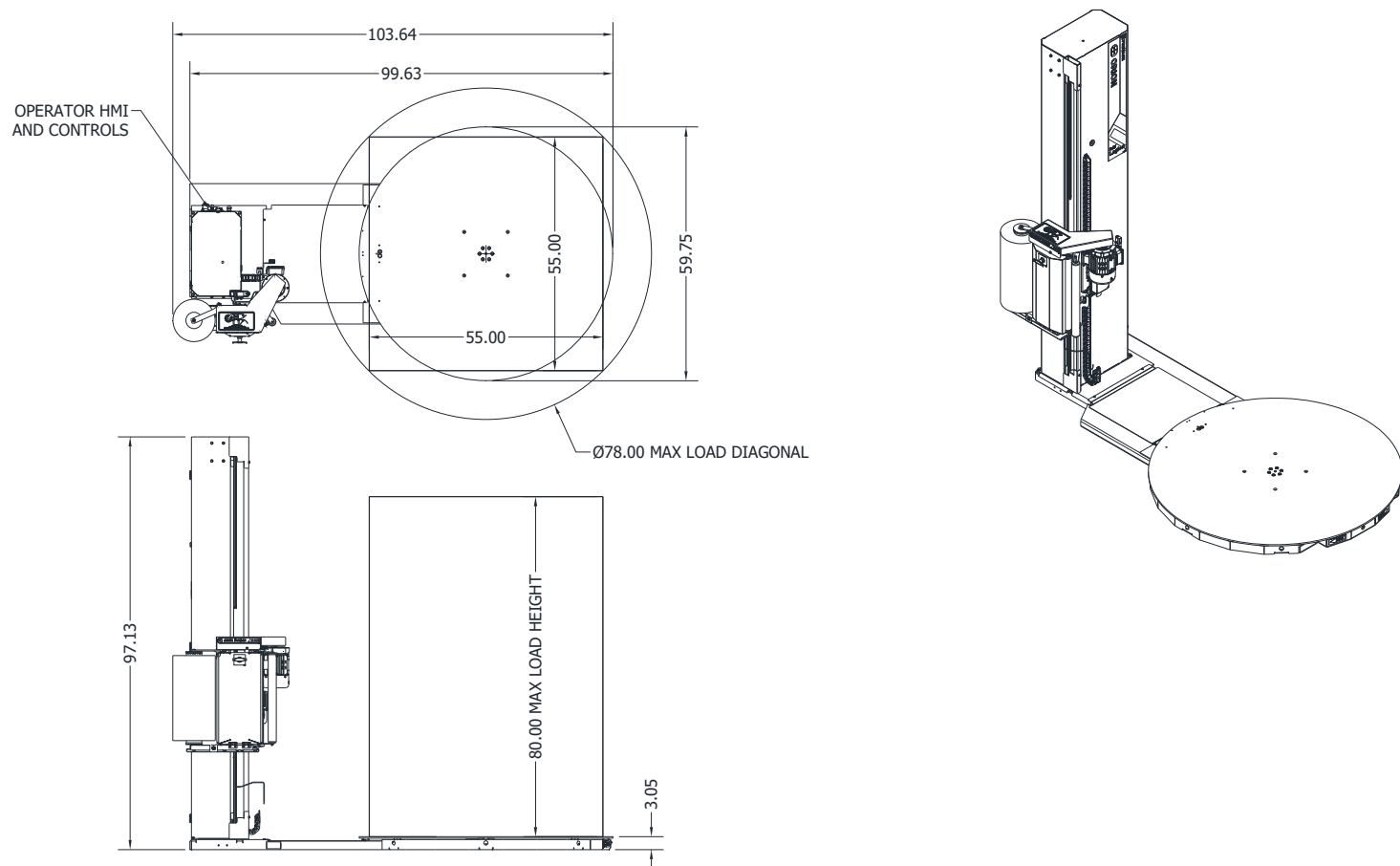
- Extended Tower
- Scale, Ramp, or Scale/Ramp Combo
- Dark/Opaque Load Photoeye
- Forklift Wheel Stop

Visit our Website At www.orionpackaging.com

Machine Floor Plan

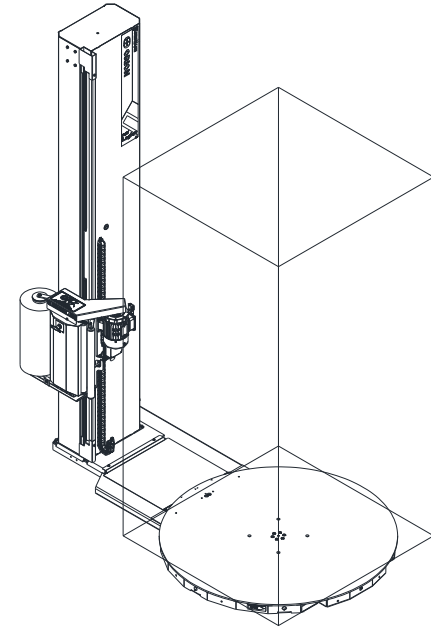
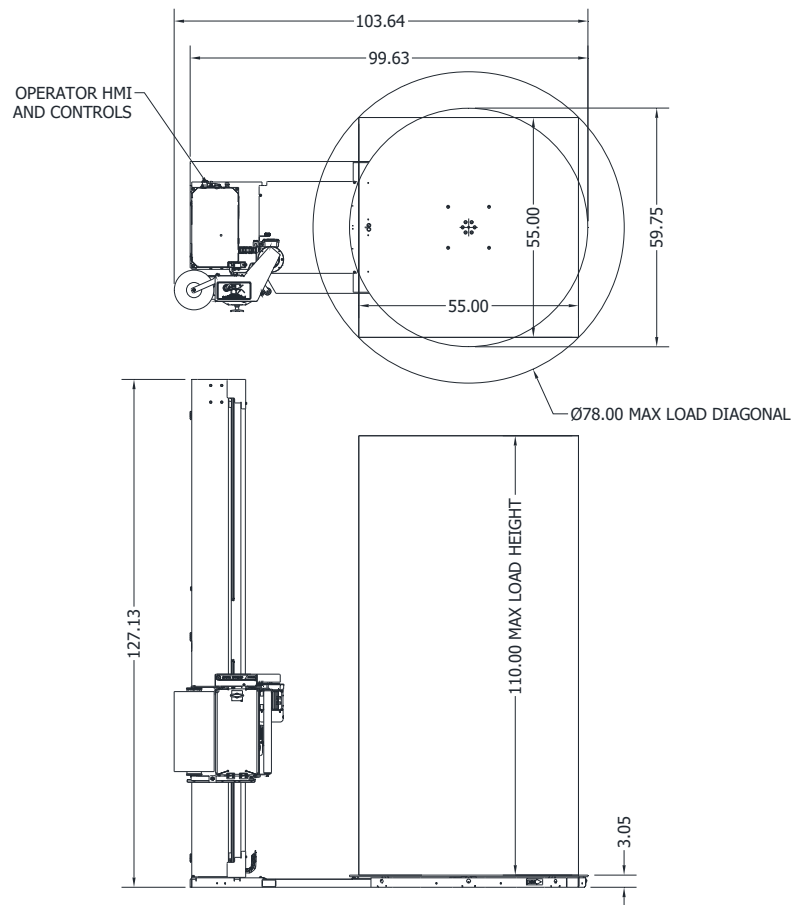
This drawing shows the Flex Legion machine layout of a standard height 80" tower machine.

Figure 2 - 1
Standard Height
Machine Layout



This drawing shows the Flex Legion machine layout of a tall tower 110" machine.

Figure 2 - 2
Tall Tower Machine
Layout



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3. System Operation

Operating Procedures

How to Start and Shut Down Your Wrapping System

Note: Do not use extension cords. Plug your Flex Legion Stretch-wrapper directly into a 115 VAC / 60Hz / 1 Phase / 15 AMP outlet.

Power Switch

Located on the side of the tower, the lockable power switch has two settings:

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

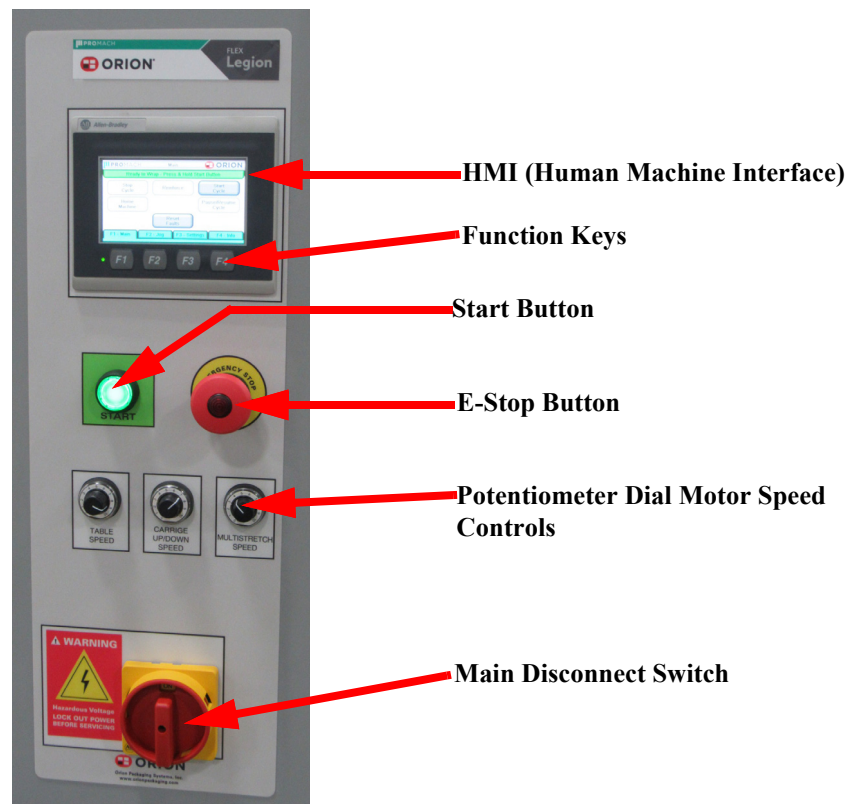
Power Up/Boot Up

- After verifying that the area around the machine is safe, you may apply power to the machine by turning the MAIN POWER switch to the ON position.
- Please allow 90 seconds before pressing any buttons to allow the program to boot up.
- Release the E-stop button, if pressed.
- Press and release the Start button once to gain Control Power.
- Initializing will display in the information banner momentarily.

Machine Controls

- The **MAIN DISCONNECT** switch is used to turn the machine on or off.s
- Press, and then release the **START** button to gain Control Power prior to starting.
- Press and hold the **START** button to start the cycle once the load is available.
- The cycle may be stopped at anytime by pressing the **E-STOP** button.
- The **HMI** and function keys are used to operate the machine. For additional information, see “The Human Machine Interface (HMI)” on page 3 - 4.
- The potentiometer dials are used to control the motor speed for the turntable, carriage (when rotated to 0% the carriage will not move), and film multistretch.

Figure 3 - 1
Flex Legion Panel



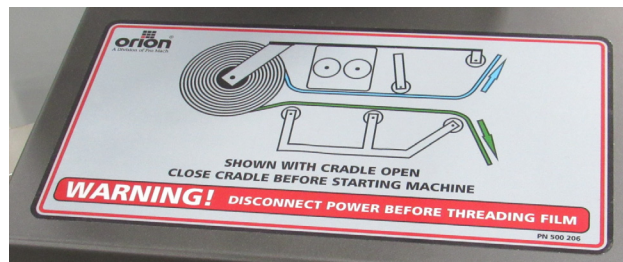
Operating Procedures

Loading The Film

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. Press in the E-stop. (When an E-stop is pressed, the multistretch will not run and control power is lost).
2. Lift 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. Rotate the door handle and open the carriage door.
6. Pass the roped tail of the film through the opening.

Figure 3 - 2
Film Threading
Diagram



7. Close the carriage door and rotate the handle to lock the door.
8. Release the E-stop and fix the film end onto the load. The system is now ready to begin the first wrapping cycle.

Figure 3 - 3
Film Properly
Threaded



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).

The Human Machine Interface (HMI)

The Navigation Tabs

The navigation tabs at the bottom of the screen allows easy access to the various functions of the HMI. The tabs also can be selected with the function buttons below the display screen. Not every screen has a tab, but within two screen touches, most every function should be available on the HMI.

Figure 3 - 4
The Navigation Tabs



The Main Tab

The Main Screen

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

Figure 3 - 5
The Main Screen

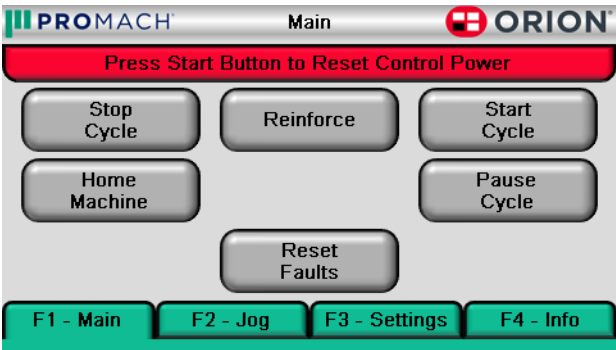


Table 3-1. The Main Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Stop Cycle	Press this button to cycle stop the current wrap cycle.	
Home Machine	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 the home position.	
Reinforce	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.	
Start Cycle	Press and hold this button to start the machine. This must be held until the Start Delay timer is complete to start the machine.	

Table 3-1. The Main Screen Button Descriptions (Continued)

STATE 1	DESCRIPTION	STATE 2
Pause Cycle	Press this button to pause the wrap cycle. When ready to continue wrapping, press the resume cycle button.	Resume Cycle
Reset Faults	Press this button to reset the current fault condition.	

The Jog Tab

The Jog Screen

On the Jog Screen, you can jog the main drive or carriage, home the machine, or reset any faults. To access this screen, select the Jog tab.

Figure 3 - 6
The Jog Screen

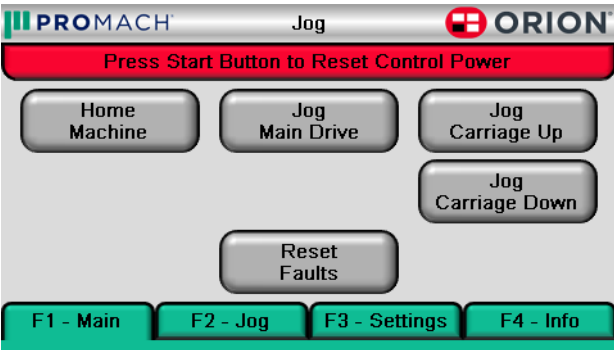


Table 3-2. The Jog Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Home Machine	Press this button to move the machine to the home position.	
Jog Main Drive	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.	
Jog Carriage Up	Press this button to jog the carriage upwards. The carriage move slowly upwards until the operator releases the jog button.	
Jog Carriage Down	Press this button to jog the carriage downwards. The carriage move slowly downwards until the operator releases the jog button.	
Reset Faults	Press this button to reset the current fault condition.	

The Settings Tab

The Settings Screen

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

Figure 3 - 7
The Settings Screen

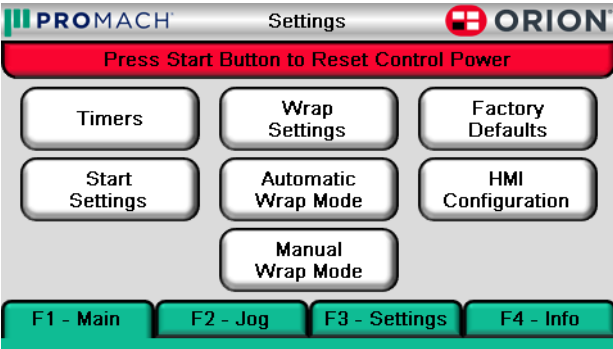


Table 3-3. The Settings Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Timers	Press this button to go to the Timers Screen. See “The Timers Screen” on page 3 - 8.	
Wrap Settings	Press this button to go to the Wrap Settings Screen. See “The Wrap Settings Screen” on page 3 - 9.	
Factory Defaults	Press this button to go to the Factory Defaults Screen. See “The Factory Defaults Screen” on page 3 - 10.	
Start Settings	Press this button to go to the Start Settings Screen. See “The Start Settings Screen” on page 3 - 11.	
Automatic Wrap Mode	Press this button to go the Automatic Wrap Mode Screen. See “The Automatic Wrap Mode Screen” on page 3 - 12.	
HMI Configuration	Press this button to go to the HMI Configuration Screen. See “The HMI Configuration Screen” on page 3 - 14.	
Manual Wrap Mode	Press this button to go to the Manual Wrap Mode Screen. See “The Manual Wrap Mode Screen” on page 3 - 13.	

The Timers Screen

On the Timers Screen, you may adjust the delay timer settings for the machine. To access this screen, select the Settings tab, and then press the Timers Screen button.

Figure 3 - 8
The Timers Screen

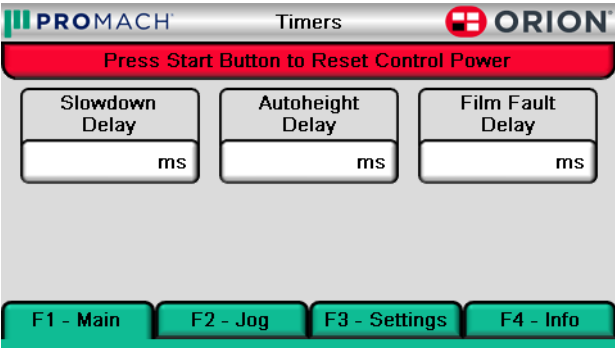


Table 3-4. The Timers Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Slowdown Delay ms	Press this button to enter the slow down delay timer. This is the amount of time, in milliseconds that the slowdown cycle is delayed past it's default position.	
Autoheight Delay ms	Press this button to modify the Autoheight Delay value, in terms of milliseconds. This value determines the amount of time that the Carriage will continue to travel up during the wrap cycle after the Autoheight photoeye no longer detects a load. This is used to adjust the amount of overwrap on the top of the load. Min - 0 ms, Max - 10,000 ms.	
Film Fault Delay ms	Press this button to modify the Film Fault Delay value, in terms of milliseconds. This value determines the amount of time, during a wrap cycle, that the Multistretch must be inactive before triggering an End of Film Roll or Broken Film fault. Min - 0 ms, Max - 10,000 ms.	

The Wrap Settings Screen

On the Wrap Cycle Settings Screen, you can adjust the wrap settings, enable or disable autoheight, or enable or disable the film fault. To access this screen, select the settings tab, and then press the Wrap Settings button.

Figure 3 - 9
The Wrap Settings Screen

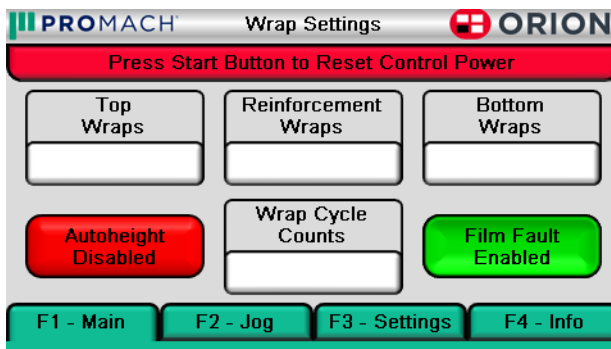


Table 3-5. The Wrap Settings Screen Button Descriptions

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.	
Reinforcement Wraps	Press this button to set the number of reinforce wraps that are applied when the enable reinforce wraps button is pressed on the Main screen.	
Bottom Wraps	Press this button to set the number of bottom wraps applied to the load. Parameters are 1-20.	
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.	
Wrap Cycle Counts	Press this button to set the number of wrap cycle counts for the wrap cycle. When the cycle is started, this is the amount of times the wrapper completes a wrap cycle before stopping.	
Film Fault Enabled	Press this button to enable or disable the end of roll or broken film fault. when disabled, the wrap cycle will continue even if the film has broken or there is no film left on the roll.	

The Factory Defaults Screen

This screen is used to restore factory defaults.

Figure 3 - 10
The Factory Defaults
Screen

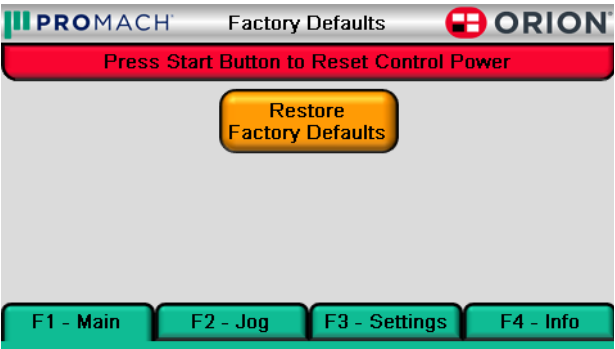


Table 3-6. The Factory Defaults Screen Button Description

STATE 1	DESCRIPTION	STATE 2
	Press this button to reset the factory defaults that the machine was shipped with. This resets the settings on the Timers Screen and the Wrap Settings Screen to the factory defaults.	

The Start Settings Screen

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

Note: Functions are often/only used during testing and setup; not during normal operations.

Figure 3 - 11
The Start Settings Screen

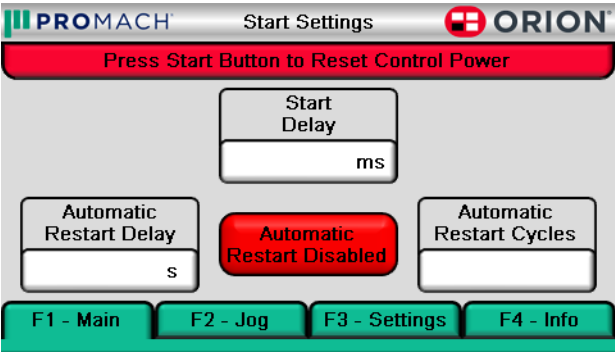


Table 3-7. The Start Settings Screen Button Descriptions

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

The Automatic Wrap Mode Screen

On the Automatic Wrap Mode Screen, you may select the wrap sequence for the wrapper. To access this screen, select the Settings tab, and then press the Automatic Wrap Mode button.

Figure 3 - 12
The Automatic Wrap
Mode Screen

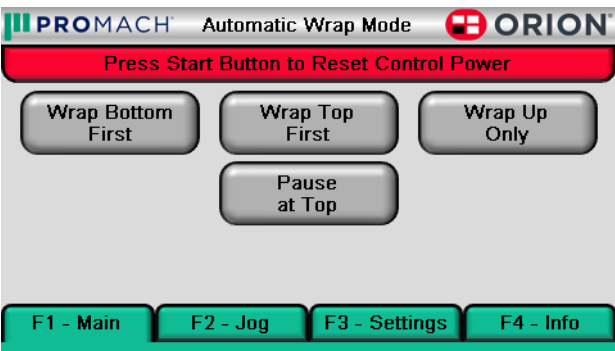


Table 3-8. The Automatic Wrap Mode Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
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.	
Pause At Top	Press this button to select the pause at top wrap sequence. When selected, the carriage will wrap to the top of the load, and then pause before applying the top wraps. This allows the operator to place top boards or adjust the load if needed. To resume wrapping, press the resume cycle button on the Main Screen.	

The Manual Wrap Mode Screen

On the Manual Wrap Mode Screen, you may stop the cycle, home the machine, run the main drive or carriage, or reset faults. To access this screen, select the Settings tab, and then press the Manual Wrap Mode button.

Figure 3 - 13
The Manual Wrap
Mode Screen

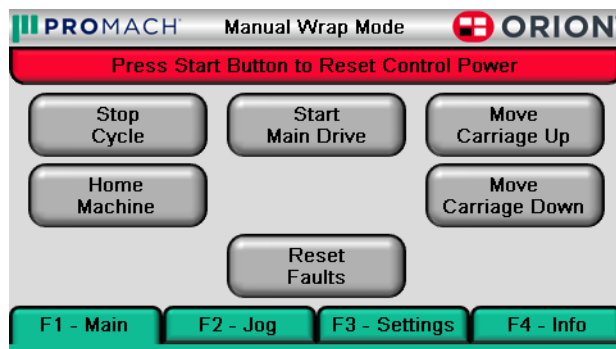


Table 3-9. The Manual Wrap Mode Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Stop Cycle	Press this button to cycle stop the current wrap cycle.	
Home Machine	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 the home position.	
Start Main Drive	Press this button to start the main drive (turntable) rotation. This allows the operator to adjust the load as it wraps. Press the start main drive button again to stop the main drive.	
Move Carriage Up	Press this button to move the carriage up the tower, this is often used with the main drive running to wrap the load. Press this button again to stop the carriage from moving up.	
Move Carriage Down	Press this button to move the carriage down the tower, this is often used with the main drive running to wrap the load. Press this button again to stop the carriage from moving down.	
Reset Faults	Press this button to reset the current fault condition.	

The HMI Configuration Screen

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

Figure 3 - 14
The HMI
Configuration Screen

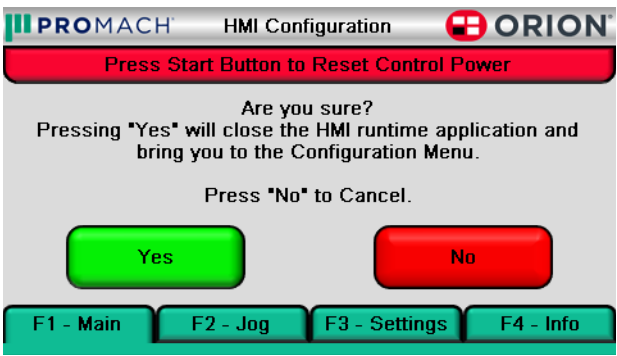


Table 3-10. The HMI Configuration Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Press this button to close the HMI application and will take you to the Configuration menu.	
	Press this button to cancel the HMI program shutdown.	

The Information Tab

The Information Screen

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

Figure 3 - 15
The Information Screen

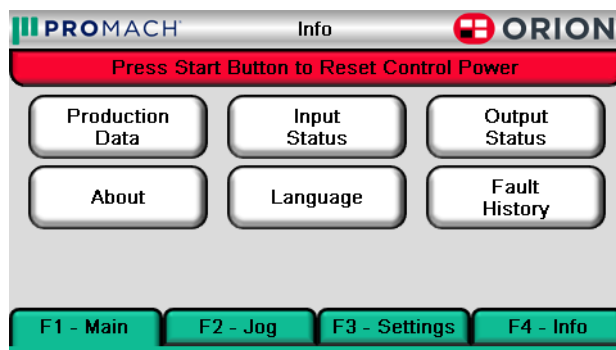


Table 3-11. The Information Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Production Data	Press this button to go to the Production Data Screen. See “The Production Data Screen” on page 3 - 16.	
Input Status	Press this button to go to the Input Status Screen. See “The Input Status Screen” on page 3 - 17.	
Output Status	Press this button to go to the Input/Output Status Screen. See “The Output Status Screen” on page 3 - 18.	
About	Press this button to go to the About Screen. See “The About Screen” on page 3 - 19.	
Language	Press this button to go to the Language Screen. See “The Language Screen” on page 3 - 20.	
Fault History	Press this button to go to the Fault History Screen. See “The Fault History Screen” on page 3 - 21.	

The Production Data Screen

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

Figure 3 - 16
The Production Data
Screen

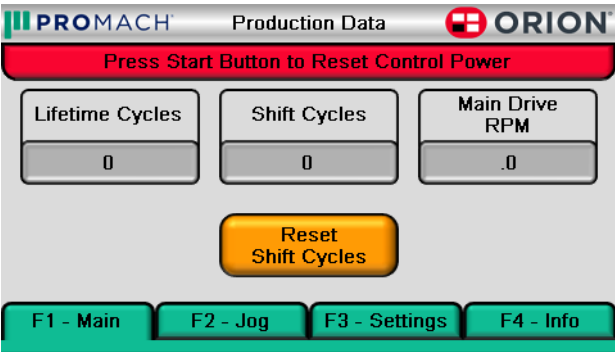


Table 3-12. The Production Data Screen Button Descriptions

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

The Input Status Screen

On the Input Status Screen, you may view the status of the machine inputs or go to the next screen. To access this screen, select the Info tab, and then press the Input Status button.

Figure 3 - 17
The Input Status Screen

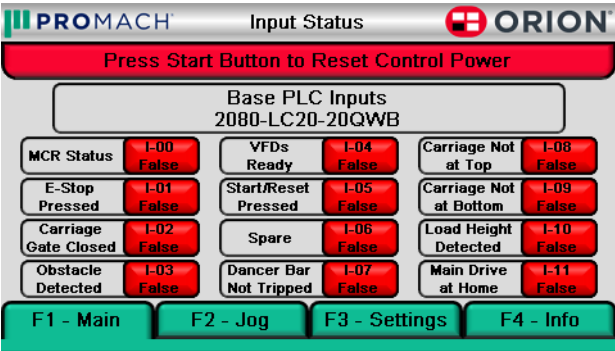


Table 3-13. The Input Status Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Red indicates and inactive input. Green indicates an active input.	

The Output Status Screen

On the Output Status Screen, you can view the status of the machine outputs, or go to the next screen. To access this screen, select the Info tab, and then press the Output Status button.

Figure 3 - 18
The Output Status Screen

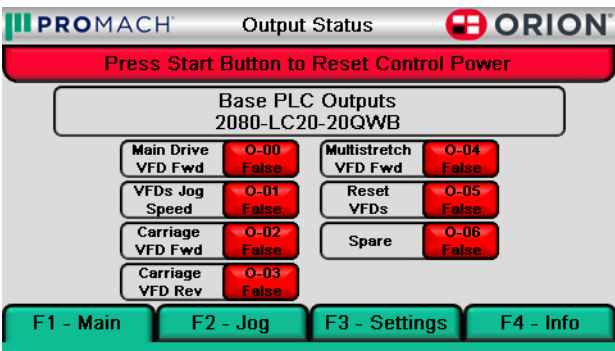


Table 3-14. The Output Status Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
	Red indicates and inactive input. Green indicates an active input.	

The About Screen

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

Figure 3 - 19
The About Screen



The Language Screen

On the Language Screen, you may change the language of the machine. To access this screen, select the Info tab, and then press the Language button.

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

Figure 3 - 20
The Language Screen



Table 3-15. The Language Screen Button Descriptions

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

The Fault History Screen

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

Figure 3 - 21
The Fault History Screen

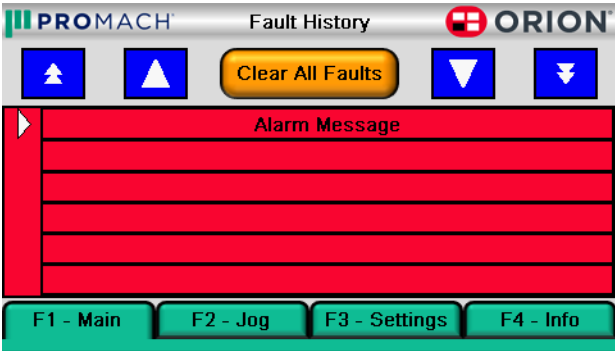


Table 3-16. The Fault History Screen Button Descriptions

STATE 1	DESCRIPTION	STATE 2
Alarm Message	This displays the current alarm message.	
	Press this button to up scroll through the alarm messages by page.	
	Press this button to scroll up through the alarm messages individually.	
	Press this button to clear all current alarm messages.	
	Press this button to scroll down the alarm messages by page.	
	Press this button to scroll down the alarm messages individually.	

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 - 25.

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

Table 3-17. The Message Displays

MESSAGE	DESCRIPTION	CORRECTION
APPLYING TOP WRAPS	The machine is currently applying the top wraps.	This is for informational purposes only. No correction necessary.
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 cycle button on the Main screen. See “The Main Screen” on page 3 - 4.
CARRIAGE RETURNING TO HOME POSITION	The carriage is returning to the home position.	Allow the carriage to return to the home position prior to starting.
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.

Table 3-17. The Message Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
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.
APPLYING BOTTOM WRAPS	The bottom wraps are currently being applied.	This is for informational purposes only. No correction necessary.
INITIALIZING...PLEASE WAIT...	The machine is initializing.	There is a brief initialization sequence once the machine is reset. Allow the machine to initialize prior to starting.
FAULTS EXIST	Faults currently exist.	Correct the cause of the fault. Press reset to reset the fault condition once the cause is corrected.
NO CONTROL POWER	Control Power is not present.	Press, and release the start button prior to starting the machine to reset control power.
CARRIAGE GATE OPENED DURING CYCLE	The carriage gate opened during the cycle.	Check for the cause of the unlatch. Re-latch and restart, when ready.
CARRIAGE GATE OPEN	The carriage gate is currently open.	Close the carriage to allow operation.
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.
CARRIAGE OBSTACLE DETECTED	The carriage has an obstruction.	Check for something under the film carriage. Check for a mechanical bind. Reset and restart, when ready.

Table 3-17. The Message Displays (Continued)

MESSAGE	DESCRIPTION	CORRECTION
VFDS FAULTED OR NOT READY	The VFDs are faulted or not ready to run.	Check the fault code on the VFD display in the electrical cabinet. See VFD manual for fault code information.
SD CARD DETECTED - TURN OFF POWER AND REMOVE	A SD card is detected in the HMI.	Turn off the machine power and remove the SD card.
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.

Alarm Displays

The messages in this section are the various critical status messages. For non-critical alarms, see “Message Displays” on page 3 - 22.

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 your machine may vary based on machine options.

Table 3-18. The Alarm Displays

MESSAGE	DESCRIPTION	CORRECTION
NO CONTROL POWER	Control Power is not present.	Press, and release the Start button prior to starting the machine to reset control power.
CARRIAGE GATE OPENED DURING CYCLE	The carriage gate opened during the cycle.	Check for the cause of the unlatch. Re-latch and restart, when ready.
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.
CARRIAGE GATE OPEN	The carriage gate is currently open.	Close the carriage gate to allow operation.
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.
CARRIAGE OBSTACLE DETECTED	The carriage has an obstruction.	Check for something under the film carriage. Check for a mechanical bind. Reset and restart, when ready.
VFDS FAULTED OR NOT READY	The VFDs are faulted or not ready to run.	Check the fault code on the VFD display in the electrical cabinet. See VFD manual for fault code information.
SD CARD DETECTED - TURN OFF POWER AND REMOVE	A SD card is detected in the HMI.	Turn off the machine power and remove the SD card.

Troubleshooting Contents

Troubleshooting4-1

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 located on the bottom of the carriage is pressed or carriage door open switch is open.	- Adjust the turntable speed on the potentiometer dial. - 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 located on the bottom of the carriage is pressed or carriage door open switch is open.	- Adjust the carriage speed on the potentiometer dial. - Ensure the bottom of the carriage is NOT pressing on any obstructions. Ensure the carriage door is closed.
The Machine Cycle Stops	The cycle stop button was pressed.	Restart the machine, when ready.
The Carriage Stops Prior to the Top of the Load	The autoheight delay setting found on the Timers Screen is set too low.	Increase the autoheight delay.
The Carriage Continues Too Far Past the Top of the Load	- The autoheight delay setting found on the Timers Screen is set too high. - The autoheight is not detecting the load.	- Decrease the autoheight delay. - Check/adjust the depth sensitivity on the photoeye.

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 multistretch potentiometer dial by increasing the speed. - Replace the film spool.

Maintenance Contents

Maintenance5-1

 Motor Maintenance5-1

 Reducers/Gearboxes.5-1

 Chain Maintenance5-1

 Cleaning The Stretch Rollers.5-2

 Preventative Maintenance Schedule5-3

 All Legion Series5-3

5. Maintenance

Maintenance

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

Motor Maintenance

The drive motors require no maintenance.

Reducers/Gearboxes

The reducers and gearboxes require no maintenance.

Note: The reducers and gearboxes are sealed units. Breaking the paint seal voids the warranty.

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 an 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.

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 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.

Preventative Maintenance Schedule

PM Intervals

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

Table 5-1. PM Frequency

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

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

All Legion 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.

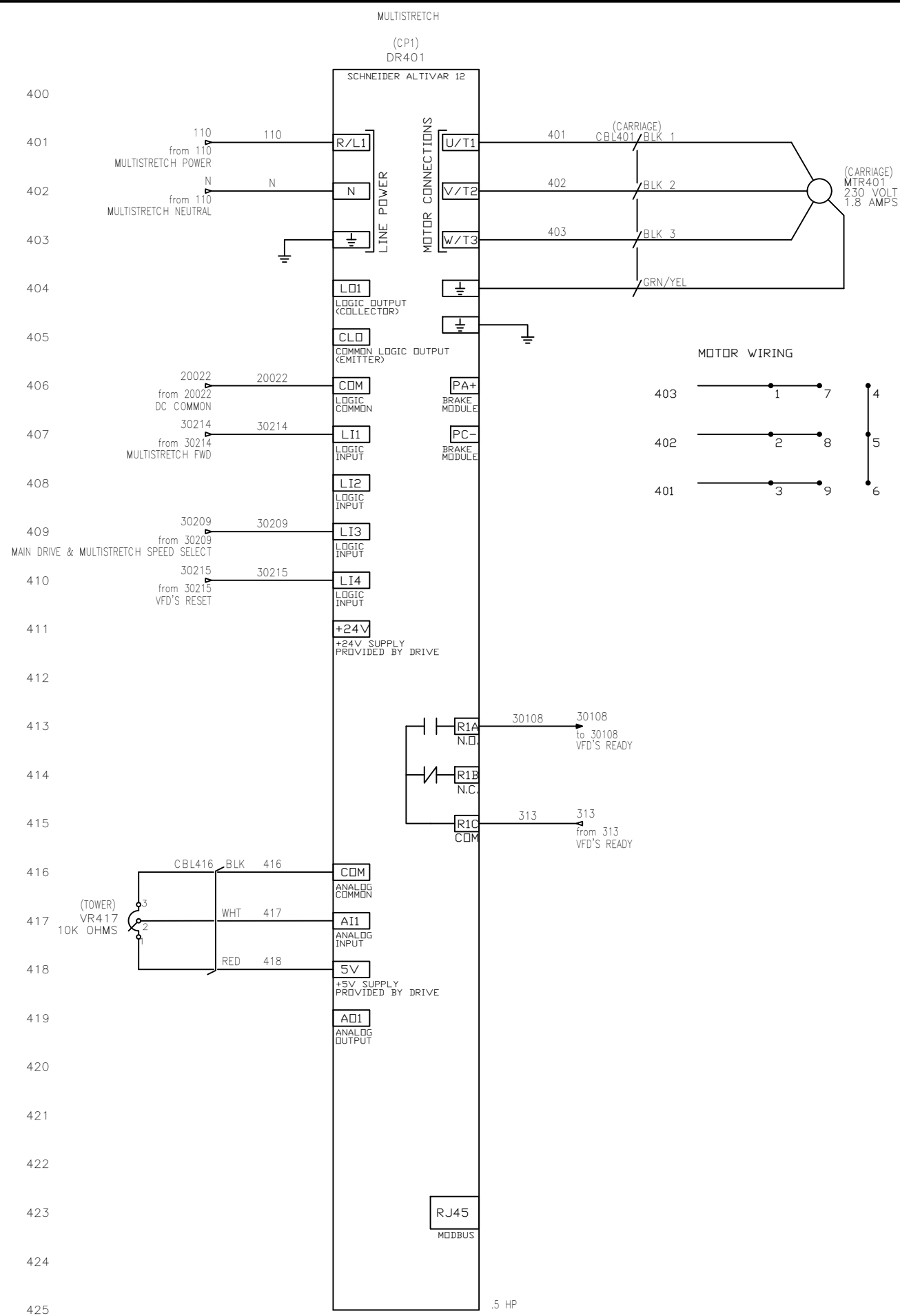
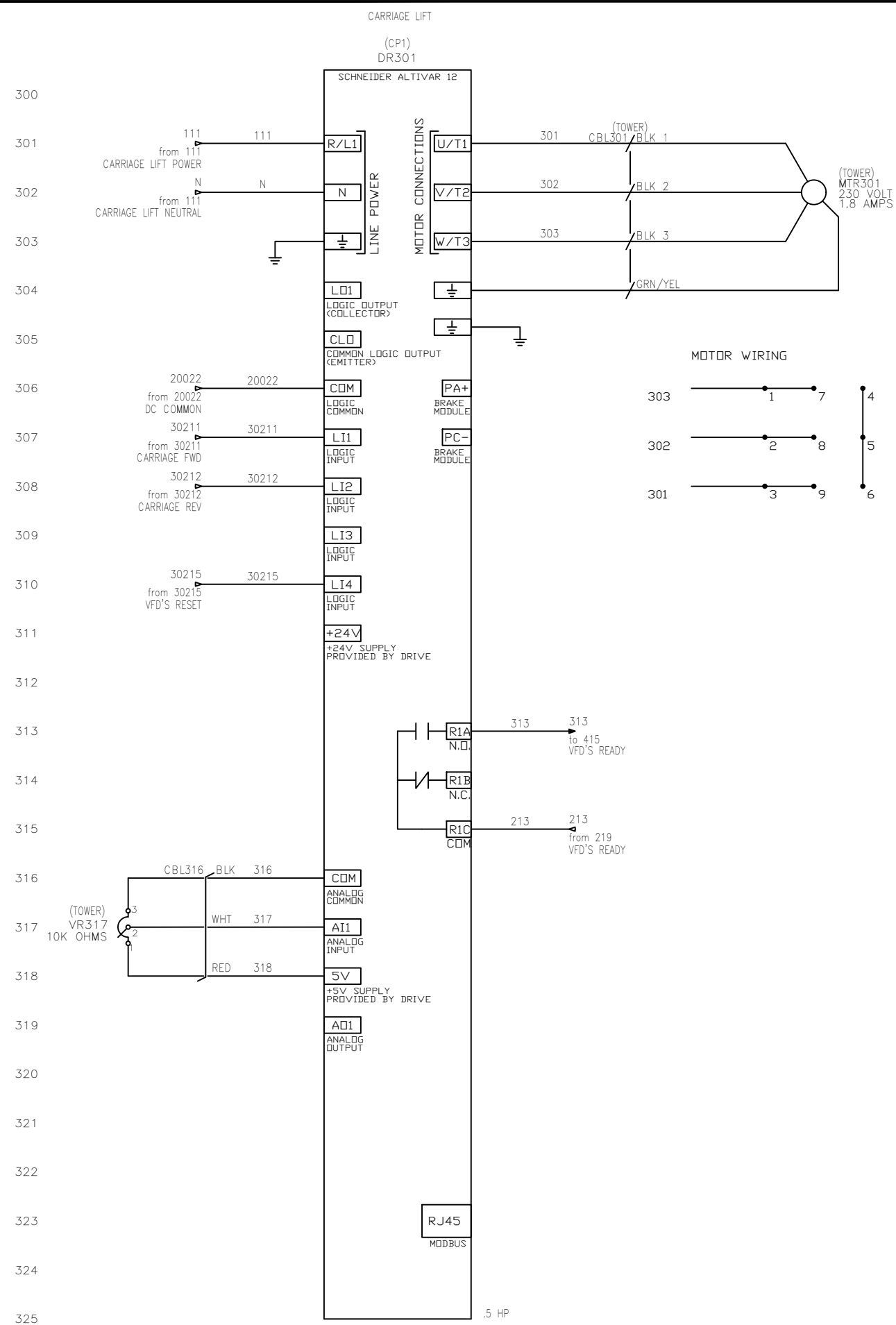
- Check all hardware. Tighten screws and bolts, as needed.

Electrical Prints and Mechanical Drawings

Electrical Prints	6-1
Mechanical Drawings	6-2

6. Electrical Prints and Mechanical Drawings

Electrical Prints



ORION, a ProMach product brand

4750 County Road 13 NE
Alexandria, MN 56308
PH 800-535-2730

DWG TITLE	
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*FLEX
LEGION
120VAC VFD*

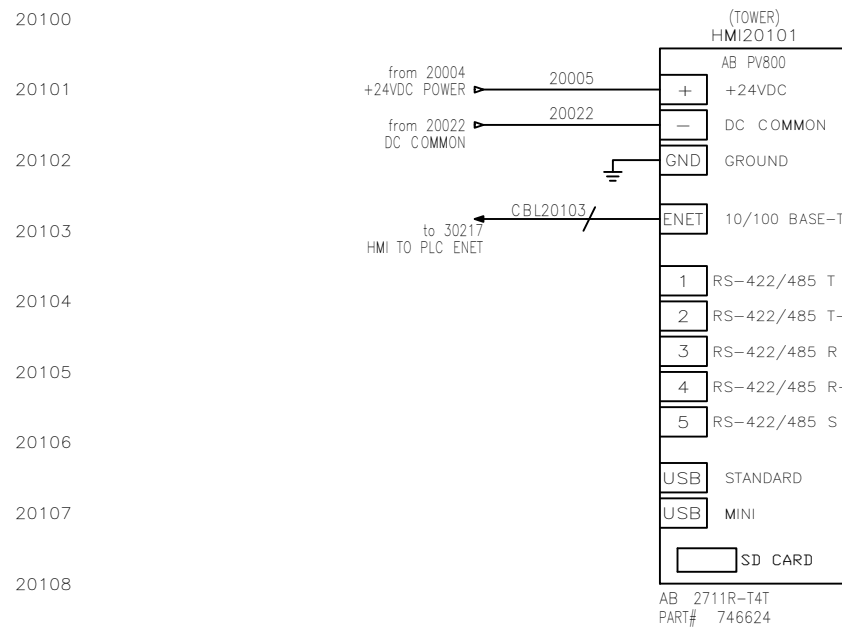
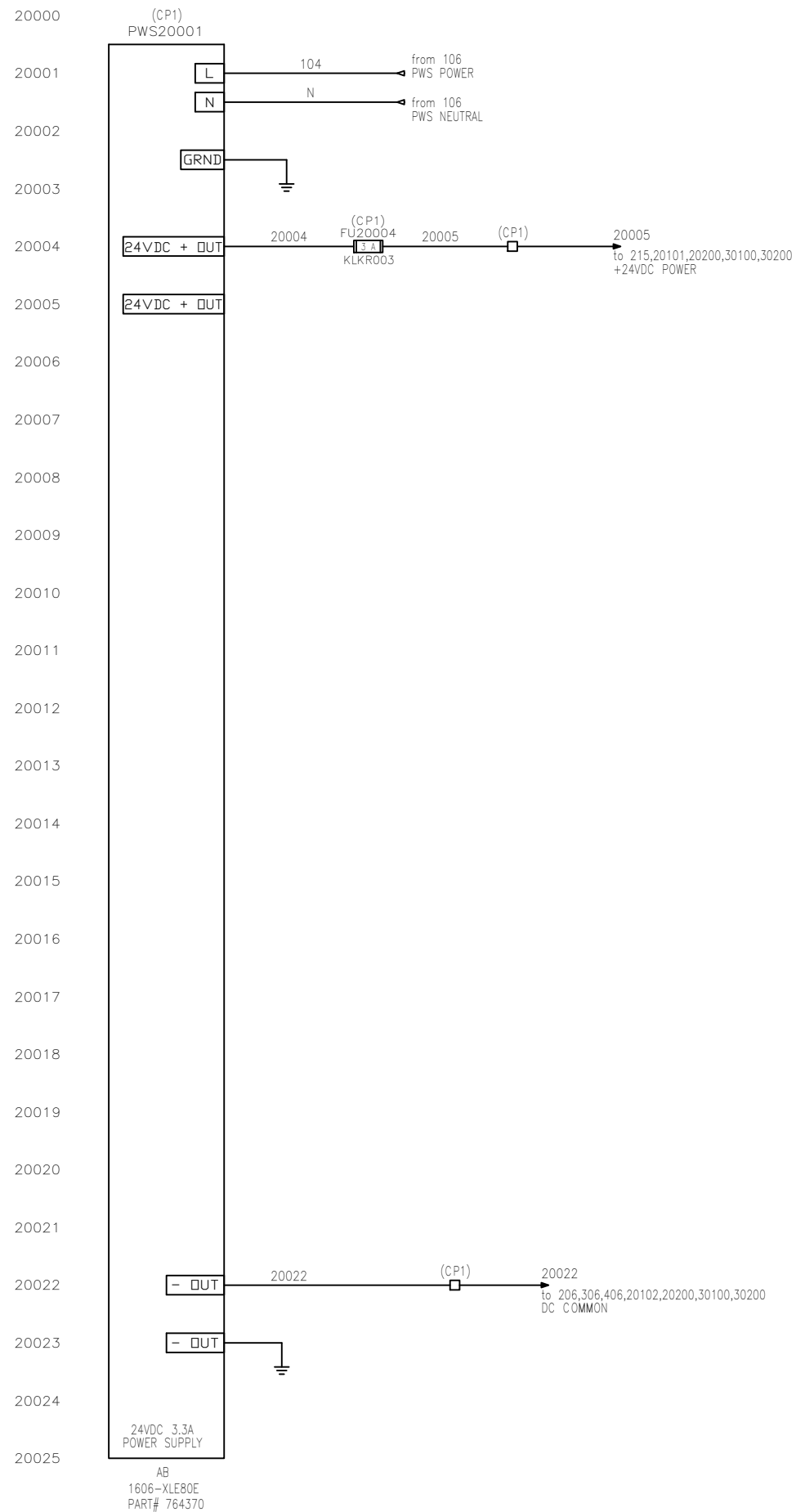
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JOB NO 764374	DRAWN BY <i>NLL</i>
SCALE NO SCALE	DATE 11/10/2025

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3 OF 10

I:\ELEC\Orion\Legion\Prints\PG3.dwg



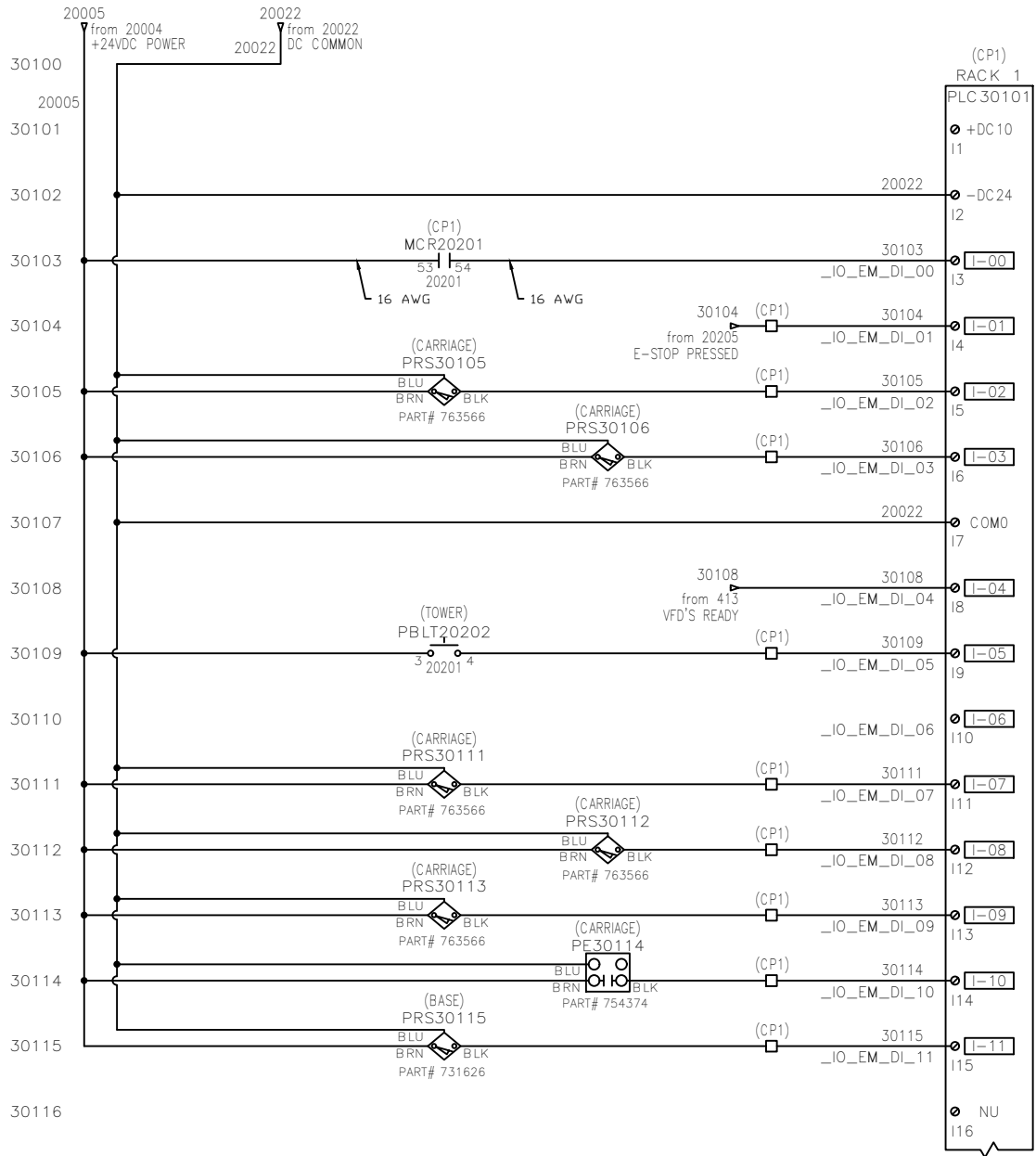
ORION, a ProMach product brand

4750 County Road 13 NE
Alexandria, MN 56308
PH 800-535-2730

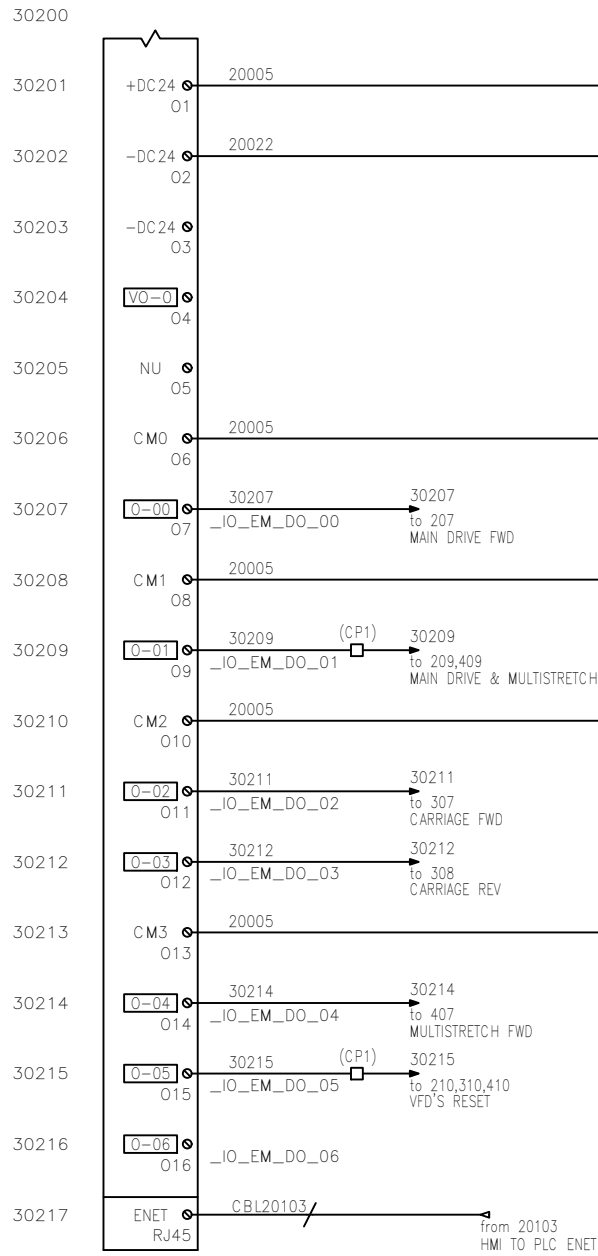
DWG TITLE									
<i>FLEX LEGION 24VDC SUPPLY AND DISTRIBUTION</i>									
ENGINEER <i>MRI</i>	CHECKED BY _____								
JOB NO. 764374	DRAWN BY <i>NLL</i>								
SCALE NO SCALE	DATE 11/10/2025								
DWG NO.	<i>764374</i>								
SHEET NO.	<i>4 OF 10</i>								

CAD DWG FILE I:\ELEC\Orion\Legion\Prints\PG4.dwg

DWG. TITLE					
<i>FLEX</i> <i>LEGION</i> <i>E-STOP CIRCUIT</i>					
ENGINEER <i>MRI</i>			CHECKED BY		
JOB NO <i>764374</i>			DRAWN BY <i>NLL</i>		
SCALE <i>NO SCALE</i>			DATE <i>11/10/2025</i>		
DWG NO <i>764374</i>					
SHEET NO <i>5 OF 10</i>					



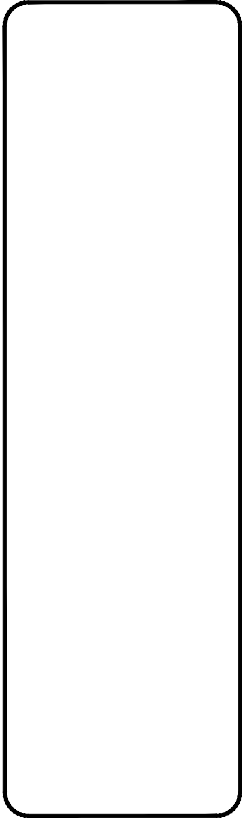
- CONTROL POWER ON
- E-STOP PRESSED
- CARRIAGE GATE CLOSED
- CARRIAGE OBSTACLE DETECTED
- VFDS READY
- START PRESSED
- SPARE
- DANCER BAR DEFLECTED
- CARRIAGE NOT AT TOP LIMIT
- CARRIAGE NOT AT BOTTOM LIMIT
- LOAD HEIGHT DETECTED
- MAIN DRIVE AT HOME



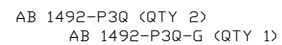
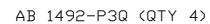
AB
2080-L20E-20QWB
764810
MICRO 820
12DI 4AI 7RO

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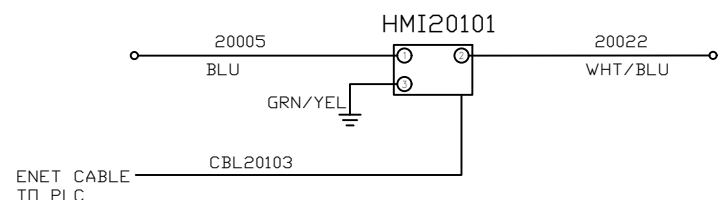
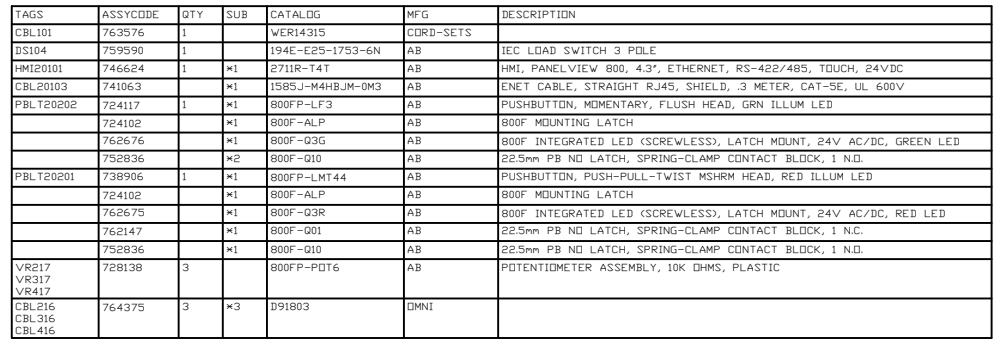
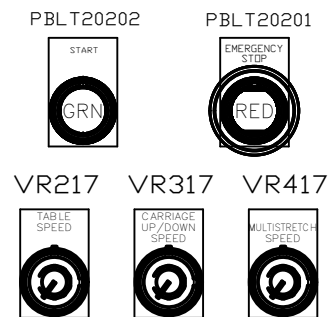
DWG TITLE	
FLEX LEGION 2080-L20E-20QWB INPUTS/OUTPUTS	
ENGINEER MRI	CHECKED BY
JOB NO 764374	DRAWN BY NLL
SCALE NO SCALE	DATE 11/10/2025
DWG NO 764374	
SHEET NO 6 OF 9	



ORION, a ProMach product brand

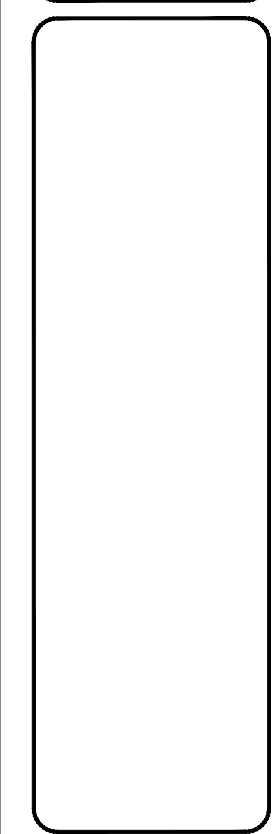
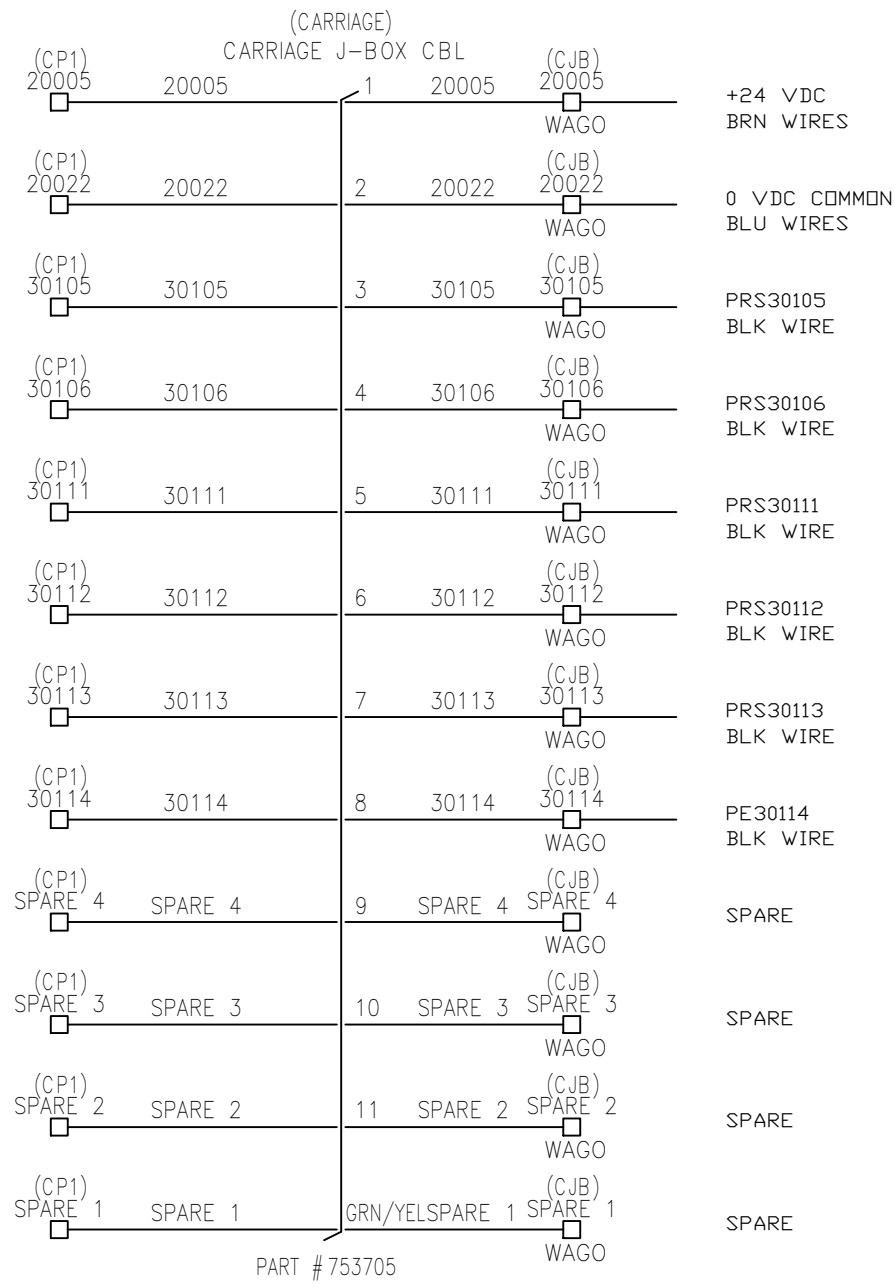


CAD DWG FILE I:\ELEC\Orion\Legion\Prints\PG7.dwg



C:\DWG FILE 1\<ELEC\Orion\Legion\Prints\PCB.dwg

DWG TITLE	
<i>FLEX LEGION HMI & PUSH BUTTON LAYOUT</i>	
ENGINEER <i>MRI</i>	CHECKED BY
JOB NO. <i>764374</i>	DRAWN BY <i>NLL</i>
SCALE NO SCALE	DATE <i>11/10/2025</i>
DWG NO. <i>764374</i>	
SHEET NO. <i>8 OF 10</i>	



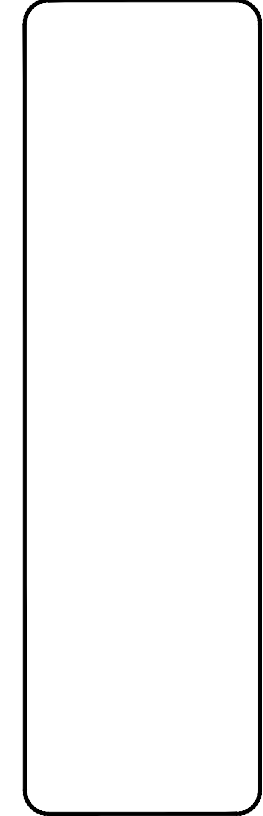
ORION, a ProMach product brand
4750 County Road 13 NE
Alexandria, MN 56308
PH 800-535-2730

DWG TITLE	
FLEX LEGION CARRIAGE I/O CABLE	
ENGINEER MRI	CHECKED BY
JOB NO 764374	DRAWN BY NLL
SCALE NO SCALE	DATE 11/10/2025
DWG NO 764374	
SHEET NO 9 OF 10	

C:\AD DWG FILE I:\VELEC\Orion\Legion\Prints\PC9.dwg

TAGS	QTY	SUB	ASSYCODE	CATALOG	MFG	DESCRIPTION
PRS30115	1	*1	731626	1040763/IME12-04BPSZC0K	SICK	M12 PROX SENSOR, SHIELDED, 4mm RANGE, PNP NO, M12
		*1	738870	7001-12221-0140500	MURR	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS, YELLOW

TAGS	QTY	SUB	ASSYCODE	CATALOG	MFG	DESCRIPTION
PE30114	1	*1	754374	1222711/WTB26I-24161420A00	SICK	PHOTO EYE SENSOR, DIFFUSE, TEACH 30-3000mm RANGE, PNP/NPN, M12 4-PIN, LO/DO, IO-LINK
		*1	738870	7001-12221-0140500	MURR	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS, YELLOW
PRS30105 PRS30106 PRS30111 PRS30112 PRS30113	5	*1	763566	1069411/IQE17-05NPSKW2S	SICK	
CBL101	1		763576	WER14315	CORD-SETS	14/3 SDW 90C, 15FT BLACK POWER CORD WITH 15 AMP MALE PLUG



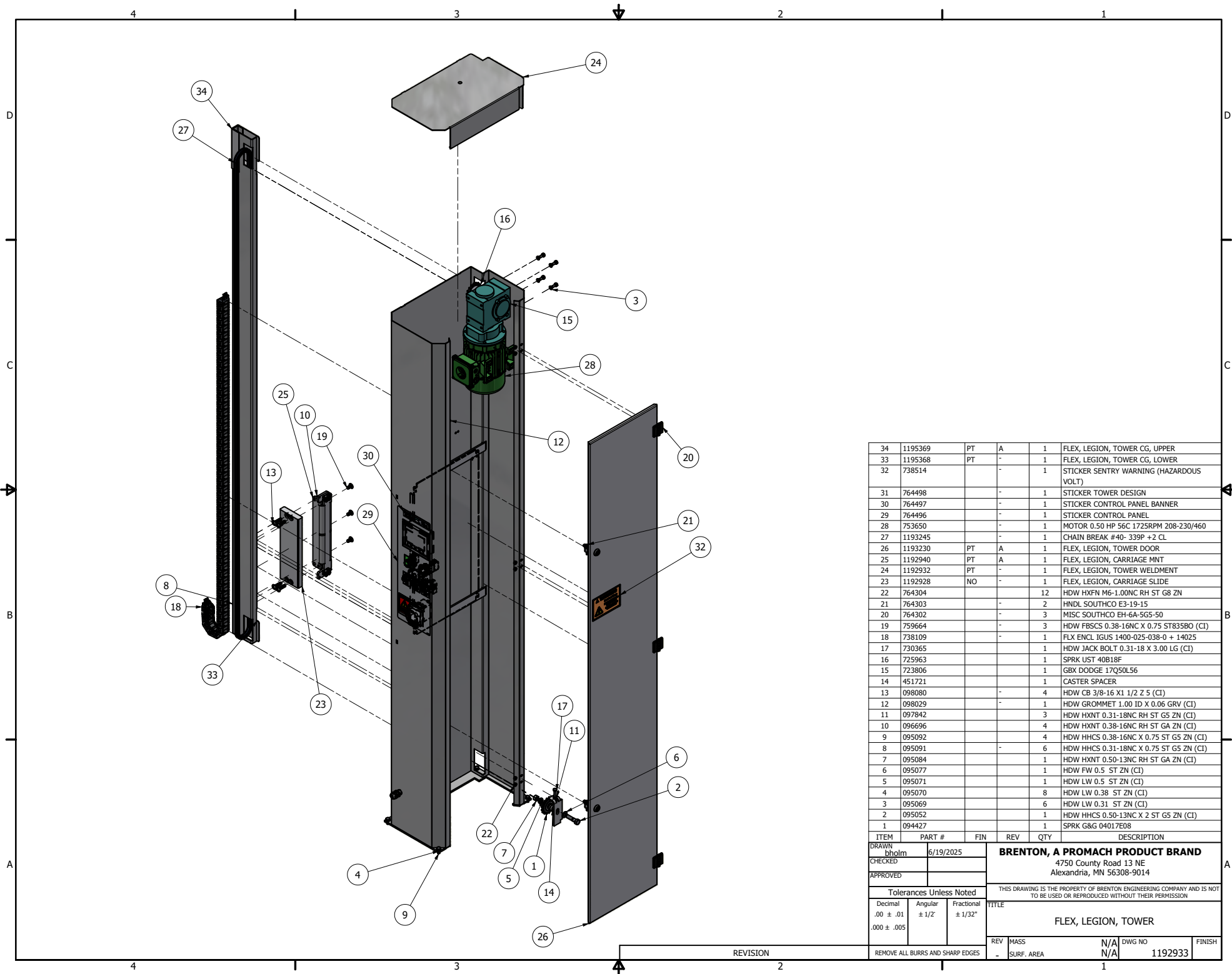
ORION, a ProMach product brand

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PH 800-535-2730

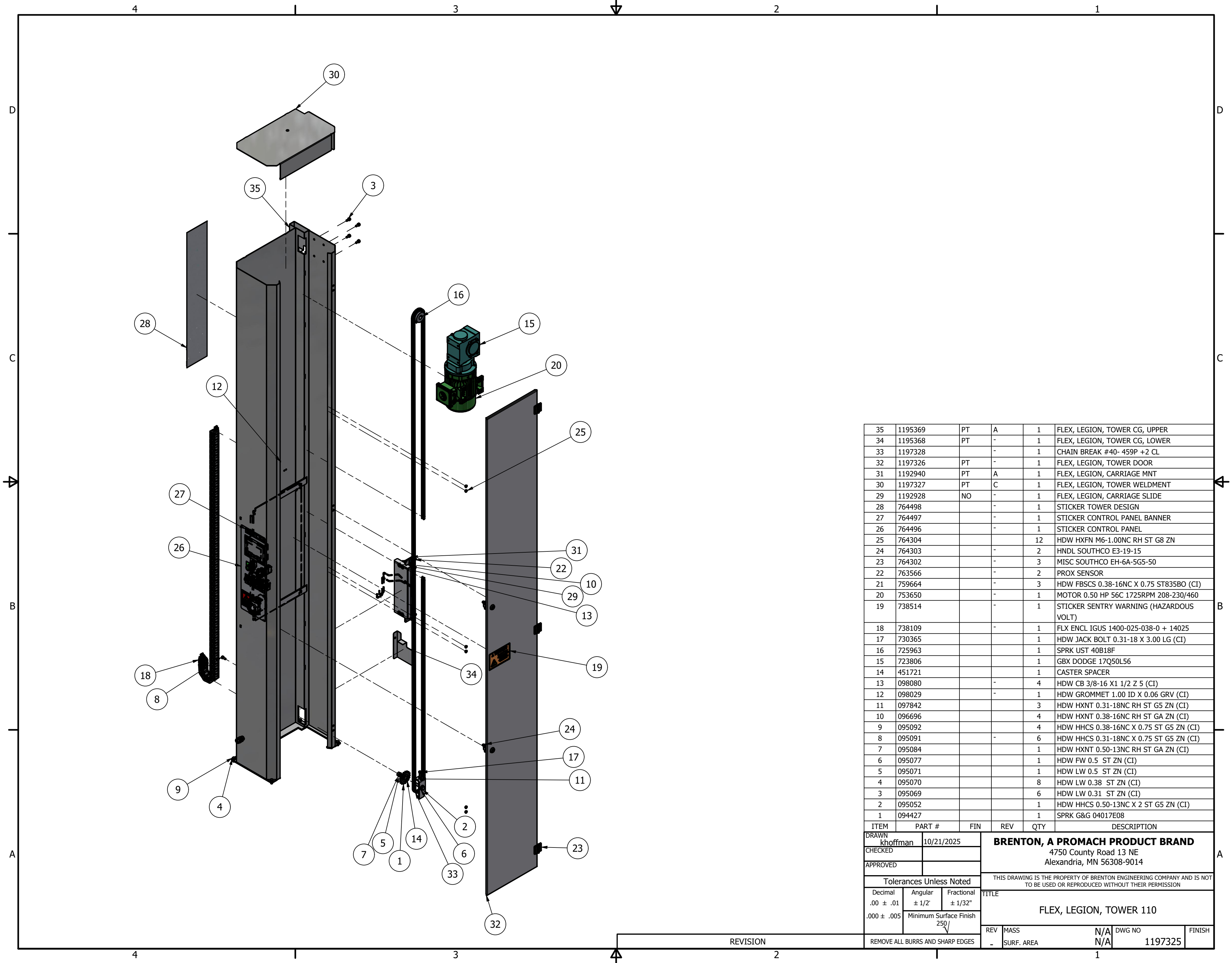
DWG TITLE	
FLEX LEGION MACHINE FIELD AND CARRIAGE BOM	
ENGINEER MRI	CHECKED BY
JOB NO 764374	DRAWN BY NLL
SCALE NO SCALE	DATE 11/10/2025
DWG NO 764374	
SHEET NO 10 OF 10	

C:\AD DWG FILE I:\VELEC\Orion\Legion\Prints\PG10.dwg

Mechanical Drawings



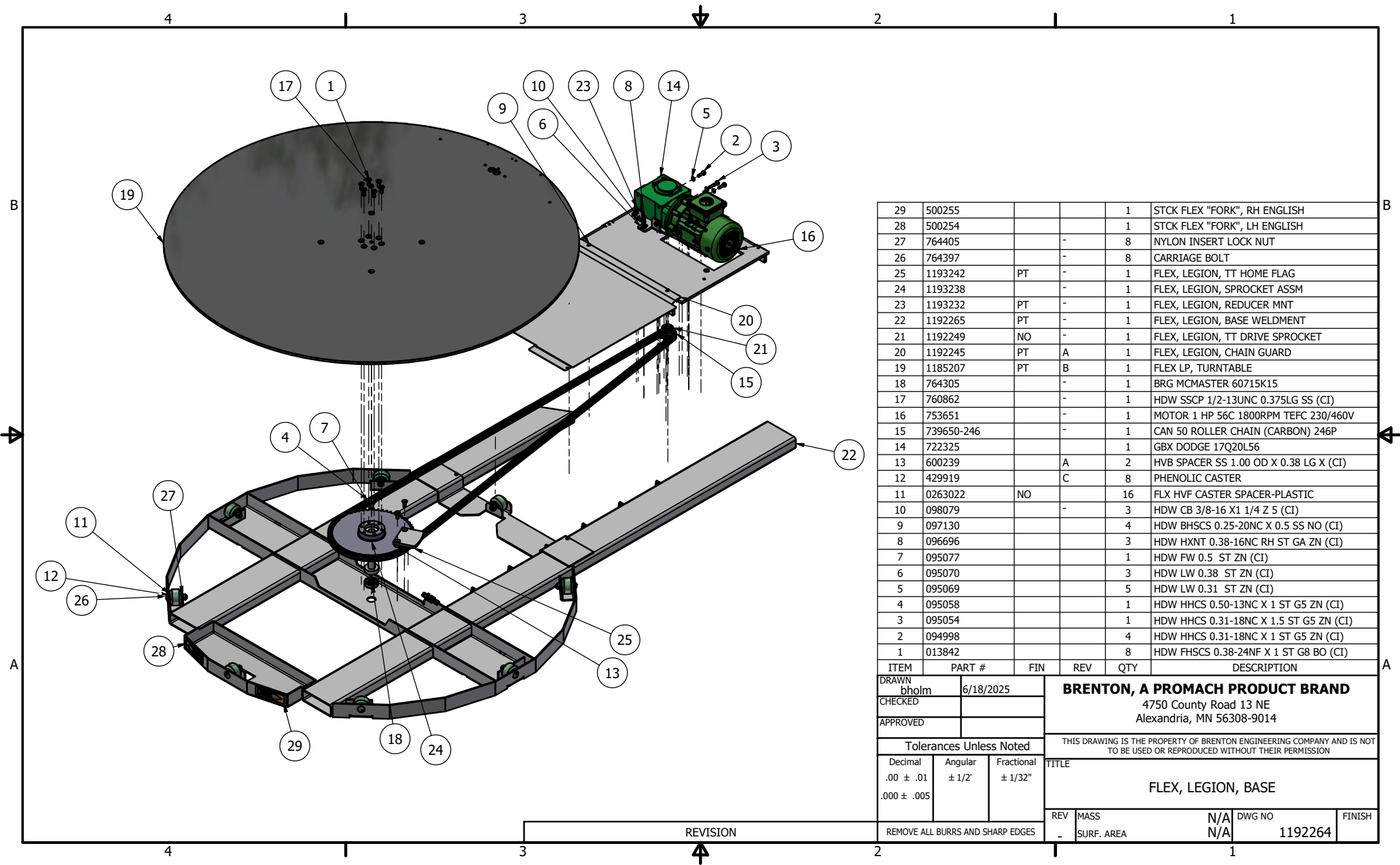
34	1195369	PT	A	1	FLEX, LEGION, TOWER CG, UPPER
33	1195368	PT	-	1	FLEX, LEGION, TOWER CG, LOWER
32	738514		-	1	STICKER SENTRY WARNING (HAZARDOUS VOLT)
31	764498		-	1	STICKER TOWER DESIGN
30	764497		-	1	STICKER CONTROL PANEL BANNER
29	764496		-	1	STICKER CONTROL PANEL
28	753650		-	1	MOTOR 0.50 HP 56C 1725RPM 208-230/460
27	1193245		-	1	CHAIN BREAK #40- 339P +2 CL
26	1193230	PT	A	1	FLEX, LEGION, TOWER DOOR
25	1192940	PT	A	1	FLEX, LEGION, CARRIAGE MNT
24	1192932	PT	-	1	FLEX, LEGION, TOWER WELDMENT
23	1192928	NO	-	1	FLEX, LEGION, CARRIAGE SLIDE
22	764304		-	12	HDW HXFN M6-1.00NC RH ST G8 ZN
21	764303		-	2	HNDL SOUTHCO E3-19-15
20	764302		-	3	MISC SOUTHCO EH-6A-5G5-50
19	759664		-	3	HDW FBSCS 0.38-16NC X 0.75 ST835B0 (CI)
18	738109		-	1	FLX ENCL IGUS 1400-025-038-0 + 14025
17	730365		-	1	HDW JACK BOLT 0.31-18 X 3.00 LG (CI)
16	725963		-	1	SPRK UST 40B18F
15	723806		-	1	GBX DODGE 17Q50L56
14	451721		-	1	CASTER SPACER
13	098080		-	4	HDW CB 3/8-16 X1 1/2 Z 5 (CI)
12	098029		-	1	HDW GROMMET 1.00 ID X 0.06 GRV (CI)
11	097842		-	3	HDW HXNT 0.31-18NC RH ST G5 ZN (CI)
10	096696		-	4	HDW HXNT 0.38-16NC RH ST GA ZN (CI)
9	095092		-	4	HDW HHCS 0.38-16NC X 0.75 ST G5 ZN (CI)
8	095091		-	6	HDW HHCS 0.31-18NC X 0.75 ST G5 ZN (CI)
7	095084		-	1	HDW HXNT 0.50-13NC RH ST GA ZN (CI)
6	095077		-	1	HDW FW 0.5 ST ZN (CI)
5	095071		-	1	HDW LW 0.5 ST ZN (CI)
4	095070		-	8	HDW LW 0.38 ST ZN (CI)
3	095069		-	6	HDW LW 0.31 ST ZN (CI)
2	095052		-	1	HDW HHCS 0.50-13NC X 2 ST G5 ZN (CI)
1	094427		-	1	SPRK G&G 04017E08
ITEM	PART #	FIN	REV	QTY	DESCRIPTION
DRAWN	bholm	6/19/2025			BRENTON, A PROMACH PRODUCT BRAND 4750 County Road 13 NE Alexandria, MN 56308-9014 THIS DRAWING IS THE PROPERTY OF BRENTON ENGINEERING COMPANY AND IS NOT TO BE USED OR REPRODUCED WITHOUT THEIR PERMISSION
CHECKED					
APPROVED					
Tolerances Unless Noted					TITLE
Decimal .00 ± .01 .000 ± .005	Angular ± 1/2°	Fractional ± 1/32"	FLEX, LEGION, TOWER		
REV	MASS	N/A	DWG NO	FINISH	
-	SURF. AREA	N/A	1192933		



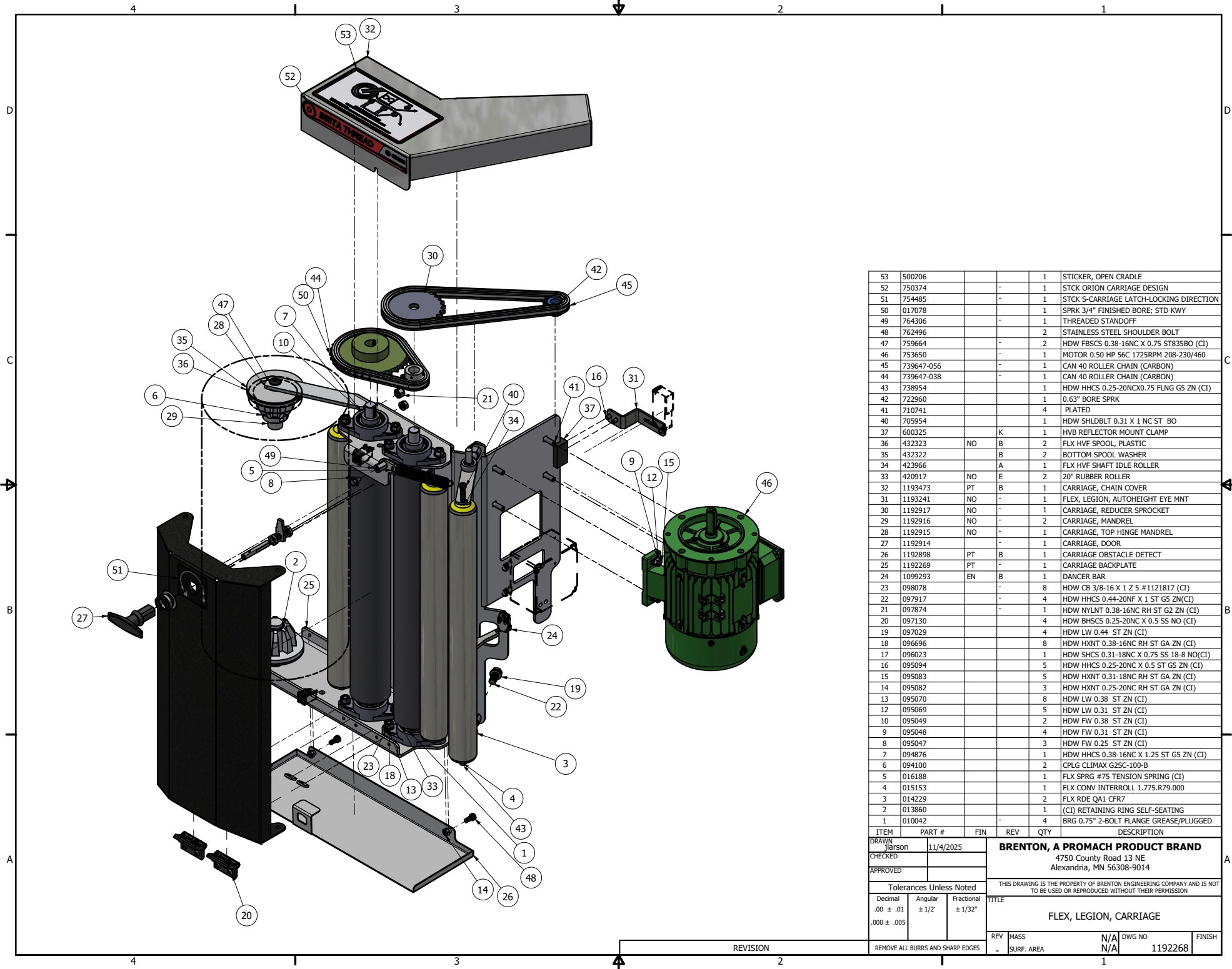
35	1195369	PT	A	1	FLEX, LEGION, TOWER CG, UPPER
34	1195368	PT	-	1	FLEX, LEGION, TOWER CG, LOWER
33	1197328		-	1	CHAIN BREAK #40- 459P +2 CL
32	1197326	PT	-	1	FLEX, LEGION, TOWER DOOR
31	1192940	PT	A	1	FLEX, LEGION, CARRIAGE MNT
30	1197327	PT	C	1	FLEX, LEGION, TOWER WELDMENT
29	1192928	NO	-	1	FLEX, LEGION, CARRIAGE SLIDE
28	764498		-	1	STICKER TOWER DESIGN
27	764497		-	1	STICKER CONTROL PANEL BANNER
26	764496		-	1	STICKER CONTROL PANEL
25	764304			12	HDW HXFN M6-1.00NC RH ST G8 ZN
24	764303		-	2	HNDL SOUTHCO E3-19-15
23	764302		-	3	MISC SOUTHCO EH-6A-5G5-50
22	763566		-	2	PROX SENSOR
21	759664		-	3	HDW FBSCS 0.38-16NC X 0.75 ST835BO (CI)
20	753650		-	1	MOTOR 0.50 HP 56C 1725RPM 208-230/460
19	738514		-	1	STICKER SENTRY WARNING (HAZARDOUS VOLT)
18	738109		-	1	FLX ENCL IGUS 1400-025-038-0 + 14025
17	730365			1	HDW JACK BOLT 0.31-18 X 3.00 LG (CI)
16	725963			1	SPRK UST 40B18F
15	723806			1	GBX DODGE 17Q50L56
14	451721			1	CASTER SPACER
13	098080		-	4	HDW CB 3/8-16 X1 1/2 Z 5 (CI)
12	098029		-	1	HDW GROMMET 1.00 ID X 0.06 GRV (CI)
11	097842			3	HDW HXNT 0.31-18NC RH ST G5 ZN (CI)
10	096696			4	HDW HXNT 0.38-16NC RH ST GA ZN (CI)
9	095092			4	HDW HHCS 0.38-16NC X 0.75 ST G5 ZN (CI)
8	095091		-	6	HDW HHCS 0.31-18NC X 0.75 ST G5 ZN (CI)
7	095084			1	HDW HXNT 0.50-13NC RH ST GA ZN (CI)
6	095077			1	HDW FW 0.5 ST ZN (CI)
5	095071			1	HDW LW 0.5 ST ZN (CI)
4	095070			8	HDW LW 0.38 ST ZN (CI)
3	095069			6	HDW LW 0.31 ST ZN (CI)
2	095052			1	HDW HHCS 0.50-13NC X 2 ST G5 ZN (CI)
1	094427			1	SPRK G&G 04017E08
ITEM	PART #	FIN	REV	QTY	DESCRIPTION
DRAWN	khoffman	10/21/2025	BRENTON, A PROMACH PRODUCT BRAND 4750 County Road 13 NE Alexandria, MN 56308-9014		
CHECKED					
APPROVED					
Tolerances Unless Noted			THIS DRAWING IS THE PROPERTY OF BRENTON ENGINEERING COMPANY AND IS NOT TO BE USED OR REPRODUCED WITHOUT THEIR PERMISSION		
Decimal .00 ± .01	Angular ± 1/2°	Fractional ± 1/32"	TITLE FLEX, LEGION, TOWER 110		
.000 ± .005	Minimum Surface Finish 250/√				
REV	MASS	N/A	DWG NO	FINISH	
-	SURF. AREA	N/A	1197325		

REVISION

REMOVE ALL BURRS AND SHARP EDGES



29	500255			1	STCK FLEX "FORK", RH ENGLISH		
28	500254			1	STCK FLEX "FORK", LH ENGLISH		
27	764405		-	8	NYLON INSERT LOCK NUT		
26	764397		-	8	CARRIAGE BOLT		
25	1193242	PT	-	1	FLEX, LEGION, TT HOME FLAG		
24	1193238		-	1	FLEX, LEGION, SPROCKET ASSM		
23	1193232	PT	-	1	FLEX, LEGION, REDUCER MNT		
22	1192265	PT	-	1	FLEX, LEGION, BASE WELDMENT		
21	1192249	NO	-	1	FLEX, LEGION, TT DRIVE SPROCKET		
20	1192245	PT	A	1	FLEX, LEGION, CHAIN GUARD		
19	1185207	PT	B	1	FLEX LP, TURNTABLE		
18	764305		-	1	BRG MCMMASTER 60715K15		
17	760862		-	1	HDW SSCP 1/2-13UNC 0.375LG SS (CI)		
16	753651		-	1	MOTOR 1 HP 56C 1800RPM TEFC 230/460V		
15	739650-246		-	1	CAN 50 ROLLER CHAIN (CARBON) 246P		
14	722325			1	GBX DODGE 17Q20L56		
13	600239		A	2	HVB SPACER SS 1.00 OD X 0.38 LG X (CI)		
12	429919		C	8	PHENOLIC CASTER		
11	0263022	NO		16	FLX HVF CASTER SPACER-PLASTIC		
10	098079		-	3	HDW CB 3/8-16 X1 1/4 Z 5 (CI)		
9	097130			4	HDW BHSCS 0.25-20NC X 0.5 SS NO (CI)		
8	096696			3	HDW HXNT 0.38-16NC RH ST GA ZN (CI)		
7	095077			1	HDW FW 0.5 ST ZN (CI)		
6	095070			3	HDW LW 0.38 ST ZN (CI)		
5	095069			5	HDW LW 0.31 ST ZN (CI)		
4	095058			1	HDW HHCS 0.50-13NC X 1 ST G5 ZN (CI)		
3	095054			1	HDW HHCS 0.31-18NC X 1.5 ST G5 ZN (CI)		
2	094998			4	HDW HHCS 0.31-18NC X 1 ST G5 ZN (CI)		
1	013842			8	HDW FHSCS 0.38-24NF X 1 ST G8 BO (CI)		
ITEM	PART #	FIN	REV	QTY	DESCRIPTION		
DRAWN bholm		6/18/2025		BRENTON, A PROMACH PRODUCT BRAND 4750 County Road 13 NE Alexandria, MN 56308-9014			
CHECKED							
APPROVED							
Tolerances Unless Noted				THIS DRAWING IS THE PROPERTY OF BRENTON ENGINEERING COMPANY AND IS NOT TO BE USED OR REPRODUCED WITHOUT THEIR PERMISSION			
Decimal .00 ± .01 .000 ± .005	Angular ± 1/2°	Fractional ± 1/32"	TITLE FLEX, LEGION, BASE				
REVISION			REV	MASS	N/A	DWG NO	FINISH
REMOVE ALL BURRS AND SHARP EDGES			-	SURF. AREA	N/A	1192264	



53	500206			1	STICKER, OPEN CRADLE
52	750374	-		1	STCK ORION CARRIAGE DESIGN
51	754485	-		1	STCK S-CARRIAGE LATCH-LOCKING DIRECTION
50	017078	-		1	SPRK 3/4" FINISHED BORE; STD KWY
49	764306	-		1	THREADED STANDOFF
48	762496	-		2	STAINLESS STEEL SHOULDER BOLT
47	759664	-		2	HDW FBSCS 0.38-16NC X 0.75 ST835BO (CI)
46	753650	-		1	MOTOR 0.50 HP 56C 1725RPM 208-230/460
45	739647-056	-		1	CAN 40 ROLLER CHAIN (CARBON)
44	739647-038	-		1	CAN 40 ROLLER CHAIN (CARBON)
43	738954	-		1	HDW HHCS 0.25-20NCX0.75 FLNG G5 ZN (CI)
42	722960	-		1	0.63" BORE SPRK
41	710741	-		4	PLATED
40	705954	-		1	HDW SHDLBOLT 0.31 X 1 NC ST BO
37	600325		K	1	HVB REFLECTOR MOUNT CLAMP
36	432323	NO	B	2	FLX HVF SPOOL, PLASTIC
35	432322		B	2	BOTTOM SPOOL WASHER
34	423966		A	1	FLX HVF SHAFT IDLE ROLLER
33	420917	NO	E	2	20" RUBBER ROLLER
32	1193473	PT	B	1	CARRIAGE, CHAIN COVER
31	1193241	NO	-	1	FLEX, LEGION, AUTOHEIGHT EYE MNT
30	1192917	NO	-	1	CARRIAGE, REDUCER SPROCKET
29	1192916	NO	-	2	CARRIAGE, MANDREL
28	1192915	NO	-	1	CARRIAGE, TOP HINGE MANDREL
27	1192914	-		1	CARRIAGE, DOOR
26	1192898	PT	B	1	CARRIAGE OBSTACLE DETECT
25	1192269	PT	-	1	CARRIAGE BACKPLATE
24	1099293	EN	B	1	DANCER BAR
23	098078	-		8	HDW CB 3/8-16 X 1 Z 5 #1121817 (CI)
22	097917	-		4	HDW HHCS 0.44-20NF X 1 ST G5 ZN(CI)
21	097874	-		1	HDW NYLNT 0.38-16NC RH ST G2 ZN (CI)
20	097130	-		4	HDW BHSCS 0.25-20NC X 0.5 SS NO (CI)
19	097029	-		4	HDW LW 0.44 ST ZN (CI)
18	096696	-		8	HDW HXNT 0.38-16NC RH ST GA ZN (CI)
17	096023	-		1	HDW SHCS 0.31-18NC X 0.75 SS 18-8 NO(CI)
16	095094	-		5	HDW HHCS 0.25-20NC X 0.5 ST G5 ZN (CI)
15	095083	-		5	HDW HXNT 0.31-18NC RH ST GA ZN (CI)
14	095082	-		3	HDW HXNT 0.25-20NC RH ST GA ZN (CI)
13	095070	-		8	HDW LW 0.38 ST ZN (CI)
12	095069	-		5	HDW LW 0.31 ST ZN (CI)
10	095049	-		2	HDW FW 0.38 ST ZN (CI)
9	095048	-		4	HDW FW 0.31 ST ZN (CI)
8	095047	-		3	HDW FW 0.25 ST ZN (CI)
7	094876	-		1	HDW HHCS 0.38-16NC X 1.25 ST G5 ZN (CI)
6	094100	-		2	CPLG CLIMAX G2SC-100-B
5	016188	-		1	FLX SPRG #75 TENSION SPRING (CI)
4	015153	-		1	FLX CONV INTERROLL 1.775.R79.000
3	014229	-		2	FLX RDE QA1 CFR7
2	013860	-		1	(CI) RETAINING RING SELF-SEATING
1	010042	-		4	BRG 0.75" 2-BOLT FLANGE GREASE/PLUGGED
ITEM	PART #	FIN	REV	QTY	DESCRIPTION

DRAWN	Jarson	11/4/2025	BRENTON, A PROMACH PRODUCT BRAND		
CHECKED			4750 County Road 13 NE		
APPROVED			Alexandria, MN 56308-9014		
Tolerances Unless Noted			THIS DRAWING IS THE PROPERTY OF BRENTON ENGINEERING COMPANY AND IS NOT TO BE USED OR REPRODUCED WITHOUT THEIR PERMISSION		
Decimal	Angular	Fractional	TITLE		
.00 ± .01	± 1/2°	± 1/32"	FLEX, LEGION, CARRIAGE		
.000 ± .005			REV		
REVISION		MASS	N/A	DWG NO	FINISH
REMOVE ALL BURRS AND SHARP EDGES		SURF. AREA	N/A	1192268	

