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Lantech®

S-1500

2 Leg Design

Automatic Stretch Wrap Machine

Manual for

Serial Number: SC005056

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INTRODUCTION

1.0 Introduction

This manual tells the operator and maintenance personnel how to safely install and operate the machine. The function of the manual is to make sure that the operator and maintenance personnel have complete instructions.

1. Introduction
2. Specifications
3. Options
4. Safety
5. Installation
6. Operator Instructions
7. Maintenance
8. Troubleshooting
9. Appendix
10. Parts List and Drawings

The Specifications and Options sections contain data about special options. This is important as you install and operate the machine.

The Safety section points out the Warnings, Cautions, and Notes and makes sure that all personnel work in a safe environment.

The Installation and Operator Instructions sections tell you how to install and use the machine safely and efficiently.

The Maintenance and the Troubleshooting tell you how to make sure that the machine stays at top performance.

The Appendix section can include the CE - Declaration of Conformity, Glossary and Warranty procedures.

The Parts List and Drawings sections have data on parts.

This manual helps you operate your machine safely and efficiently. The value is to increase your productivity and decrease packaging costs.

INTRODUCTION

1.1 Support

For support, use the phone and email data below:

LANTECH AFRICA & EUROPE – CUIJK NETHERLANDS		
Phone	Email	Fax
Parts +31 (0) 485 751 771	europarts@lantech.com	+31 (0) 485 330 755
Service +31 (0) 485 751 770	euroservice@lantech.com	
LANTECH ASIA PACIFIC – MELBOURNE AUSTRALIA		
Phone	Email	Fax
+61 3 9796 5275	aus.support@lantech.com	+61 3 9703 2725
LANTECH CHINA - SHANGHAI		
Phone	Email	Fax
+86 21 6427 1962	LCH.Parts@Lantech.com	+86 21 6468 6478
Service Hotline +86 40 0877 1972	LCH.Service@Lantech.com	
LANTECH NORTH & SOUTH AMERICA – LOUISVILLE KENTUCKY		
Phone	Email	Fax
Parts 502-815-9101	Parts tsg@lantech.com	502-267-8864
Service 502-815-9103	Service tsc@lantech.com	
Retrofits 502-815-9104	Retrofits retrofits@lantech.com	

2.0 Specifications

All Lantech® machines have a serial number tag in 1 of these locations:

In the electrical enclosure

Figure 2-1

On the door of the enclosure

Figure 2-2

The serial number can also be in other areas of the machine.

Note: The "exposed" metal parts on all Stretch Wrap Machines have a heavy Rust Preventative applied before shipment.

You can use Mineral Spirits or a similar cleaner to remove it.

If you remove it, make sure that you apply a "light" Rust Preventative to the "exposed" metal before you operate the machine.

SPECIFICATIONS

2.1 Specifications

Note: Standard machine is 2032 mm (80”) wrap height and 457 mm (18”) conveyor pass height.

General Data	
Dimensions	4445 mm L x 4699 mm W x 3581 mm H (175” x 185” x 141”)
Weight (without Conveyor)	5194 kg (11450 lb)
Noise Level	≤ 75 dB(A)
Performance Data	
Speed	45-60 loads per hour
Minimum Load Dimensions	914 mm x 914 mm x 686 mm (36” x 36” x 27”)
Maximum Load Dimensions	1473 mm x 1473 mm x 2032 mm (58” x 58” x 75”)
Maximum Load Weight	Conveyor Capacity
Wrap Arm	
Wrap Arm Bearing Diameter	965 mm (38”)
Wrap Arm Speed	Maximum 15 rpm
Wrap Arm Drive	DC Drive Motor Control .56 kW (3/4 HP) TEFC 180 VDC 40:1 Speed Reducer
Automation Unit	
Film Cut	Pulsed Hot Wire Film Cutter and Film Wipe Down
Film Clamp	Load Seeking Clamp® 4.0

SPECIFICATIONS

Film Delivery System (FDS)	
FDS Lift Drive	508 mm (20”) FDS .37 kW (1/2 HP) TEFC 180 VDC Motor 50:1 Speed Reducer
Film Pre-stretch System	Power Roller Stretch Plus with EZ Thread FDS and Pallet Grip®
FDS Pre-stretch Drive	508 mm (20”) FDS .56 kW (3/4 HP) 180 VDC Motor
Standard Film Pre-stretch	250%
Film	All Commercial Grade Stretch Films
Standard Film Capacity	254 mm (10”) Diameter 508 mm (20”) Width (Standard) 762 mm (30”) Width (Optional)
Wrap Force Controls	Electronically Controlled with Load Cell and Stretch Force Display The “Reduced Wrap Force” engages at the start of the wrap cycle
Electrical Requirements	
Electrical Service - EU	3L-PE-400V-50 Hz (No Neutral) Lockable Main Disconnect switch
Electrical Service - US	480V, 3-ph, 60 Hz, Wye w/Ground Lockable Main Disconnect switch
Controls	PLC with HMI
Main Enclosure	NEMA 12 rated 1524 mm x 914 mm x 305 mm (60” x 36” x 12”)
Pneumatic Supply	85 – 142 Liter/Min @ 6 Bar (3 – 5 CFM @ 80 Psi) Clean, Dry Air
Fence	
Fence	2388 mm (94”) Height Access Gate with Electrical Interlock switch
Warranty	3 Years

SPECIFICATIONS

3.0 Options

This section includes the options that are not on the standard machine.

3.1 Base Plate Extensions

This option is for machines that have the legs near expansion joints, floor cracks or other blockages. The base plate extensions add anchor points.

Refer to the floor plan and leg drawings for the correct position of the base plates.

The option includes the floor anchors.

Use the base plate as a template to drill the holes for the anchors.

Refer to the installation instructions to install the anchors.

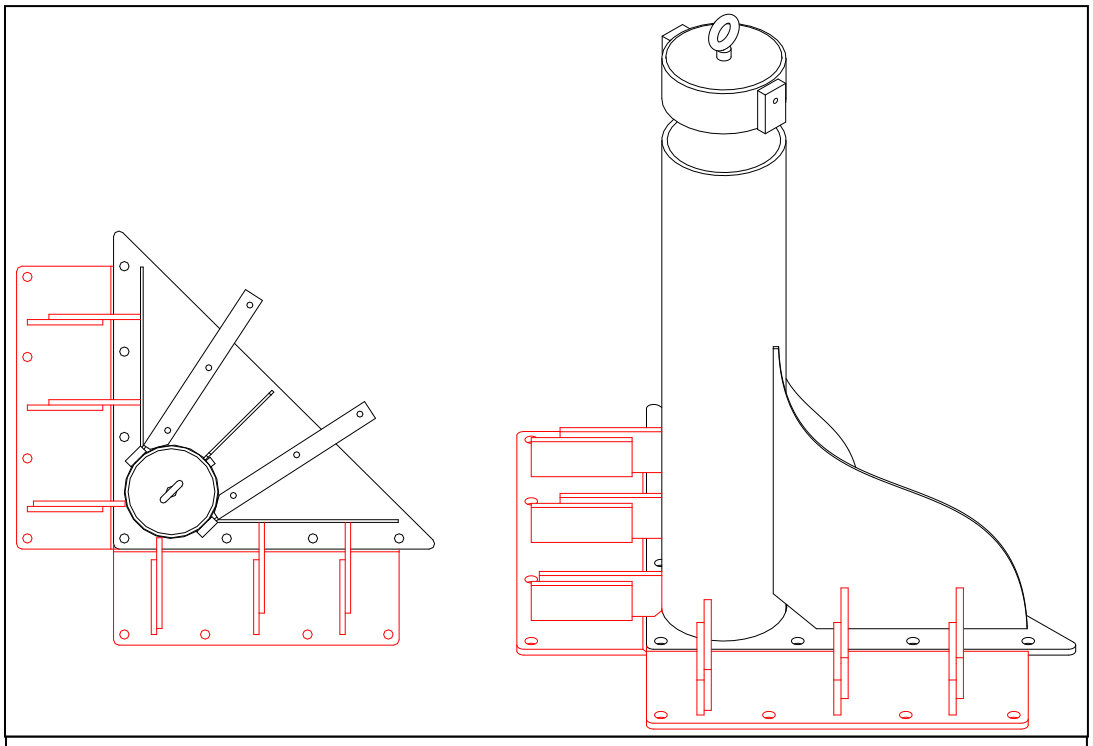


Figure 3.1 - Base Plate Extensions

OPTIONS

SAFETY

4.0 Safety

This manual tells the operator and maintenance personnel how to safely install and operate the machine. This section includes:

- General safety
- Personnel safety
- Residual Risk
- Lockout/Tagout Procedures
- Safety & Environmental Controls
- Warnings, Cautions and Notes
- Pictograms

4.1 General Safety

- Read the manual to install, operate, and repair the machine safely.
- Obey all safety decals.
- Obey all warnings to prevent an injury to personnel.
- Obey all cautions to prevent damage to the machine.
- Obey all Lockout/Tagout procedures before you change, adjust, repair a part.
- Refer to the adjustment data to prevent a safety hazard.

4.2 Personnel Safety

- To prevent an injury and safety risk, do not install, operate, repair the machine while influenced by drugs, alcohol, medication.
- A part that moves can catch loose clothing, long hair, jewelry and cause injury to personnel.
- Refer to the Installation section for personnel and tools to safely install the machine.

4.3. Residual Risk

4.3.1 Case Equipment - Tape

There is a risk when you operate, repair this machine even when personnel obeys all safety requirements.

Risk:

- Injury by the blade on the tape head when the operator, maintenance personnel:
    - Replaces the tape head
    - Replaces the tape on the tape head
    - Completes the maintenance on the tape head

Personal Protective Equipment (PPE) - Use of Personal Protective Equipment against injury is not applicable.

4.3.2 Case, Lid, Tray Equipment - Glue

There is a risk when you operate, repair this machine even when personnel obeys all safety requirements.

Risk:

An injury by contact with the hot surface on the glue gun, hotmelt unit and molten material when the operator, maintenance personnel:

- Adjusts the machine
- Fills the Hotmelt tank with glue
- Completes the maintenance on the glue gun, hotmelt unit

PPE - Use eye or face protection, heat-protective gloves and clothing during service, maintenance work on the Hotmelt equipment.

Use a scoop to fill the Hotmelt tank with glue.

4.3.3 Stretch Equipment

There is a risk when you operate, repair this equipment even when personnel obeys all safety requirements.

Q Series®, S Series™, Lanringer and Ring Straddle

Risk:

There is a risk of shock when you perform a troubleshooting task with the power to the machine “On”.

Make sure that only qualified personnel complete these tasks when the power to the machine is “On”.

PPE – Use of PPE against injury is not applicable

Q Series® and S Series™

Risk:

The Film Delivery System can fall during maintenance if you do not use sufficient support to hold the FDS.

Make sure that the supports hold the FDS when you change, adjust, repair the lift motor or belt.

PPE – Use of PPE against injury is not applicable

Q Series®

Risk:

The counterweight can fall during maintenance if you do not use sufficient support to hold it.

Install the FDS shipping brackets and the counterweight brackets before you change, adjust, repair the lift motor or belt.

PPE – Use of PPE against injury is not applicable

S Semi-Automatic

Risk:

The bumper is a mechanical device. It stops the wrap arm if it makes contact with an object in the wrap arm path and disengages the switch.

Make sure that the safety switch engages and the safety latches operate correctly.

PPE – Use of PPE against injury is not applicable

G Series™

Risk:

The "Wrap Assist" function lets the operator, manually, "rope" the film, apply labels, top sheets, etc. This occurs with the machine in motion, at a slower speed.

PPE – Use protective gloves when you use the "Wrap Assist" function.

Risk:

The load can extend past the dimensions of the turntable. The load can hit the operator if he/she is too close to the machine when it is in operation.

PPE – Use of PPE against injury is not applicable

Ring Straddle - Film Sealer

Risk:

The standard temperature of the Film Sealer, during operation of the unit, is 93˚ - 121˚ C (200˚ - 250˚ F). The temperature starts to decrease after approximately 5 minutes.

The unit can stay hot for up to 60 minutes after you turn the power to the machine "Off", open the access gate. This includes an E-stop condition.

PPE - Use heat-protective gloves and clothing during service, maintenance work on the Film Sealer.

Machine Option - Film Sealer

Risk:

The heater element in the Film Sealer is hot. Let the temperature of the heater element decrease to a cool temperature before you do maintenance work on the film sealer.

PPE - Use heat-protective gloves and clothing during service, maintenance work on the Film Sealer.

4.4 Lockout/Tagout Procedures

Obey these procedures to prevent an injury from unexpected energizing, start-up, release of stored energy.

This applies to local, regional, and federal controls, and includes the current controls for:

- Australia – OSHA – Prevention of Unexpected Startup
- Europe – CE – Machinery Directive – Isolation of Energy Sources
- USA – OSHA – Control of Hazardous Energy

4.4.1 Automatic Machines

1. Disconnect the main power.

a. Move the Main Disconnect switch to the "Off" position.

b. Lock the Main Disconnect switch in the "Off" position.

2. Disconnect the main pneumatic supply.

a. Move the main pneumatic valve to the "Off" position.

b. Lock the main pneumatic valve in the "Off" position.

4.4.2 Semi-automatic Machines

1. Disconnect the power cord from the electrical outlet.
2. Lock the power cord.

4.5 Safety & Environmental Controls

- Make sure that you recycle all waste.
- Release all chemical waste to a certified Waste Processing Company only.
- To decommission the machine, the owner of the machine and all auxiliary equipment, must:
  - Obey applicable environmental regulations and discard electrical components safely.
  - Obey all applicable environmental, plant, and industrial safety regulations.

    This applies to local, regional, and federal controls, and includes all OSHA and CE regulations.

4.6 Warnings, Cautions, and Notes

Warning – Tells the operator that there is a hazard that can cause a serious injury.

Caution – Tells the operator that there is a hazard that can cause:

- A minor injury
- Damage to the equipment, environment.

Note – Gives additional data that is helpful to the operator.

4.7 Pictograms

The pictograms tell personnel of possible dangerous areas around the machine. Obey all pictograms and safety labels.

Some of the pictograms in the list below do not apply to your machine.

	Do Not Operate Without Guard in Position		No Entry
	Maximum Capacity		Do Not Step
	Do Not Reach		Fire Can Occur

	Hot Surface		Electrical Warning
			Explosion Warning
	Release of Pressure		Electrical Shock Warning
	Pull In Warning		Do Not Walk on Conveyor
			Hit is Possible From Above
			

SAFETY

	Fall Warning		Hit is Possible From The Side
	Cut Warning		Film Delivery System Warning
			Crush Warning
			Do Not Reach
	Machine Can Fall		Obey the Safety Instructions
			

	Chemical Waste		Environment
	Important Note		Refer To Manual

INSTALLATION

5.0 Installation

Read the Installation section and do the steps in sequence.

Note: Illustrations are for reference only.

Note: Functions, descriptions and data can be different on your machine. Refer to Section 3 Options.

CAUTION
Obey the torque specifications and instructions to prevent damage to the fasteners. Too much torque can loosen the fasteners.

Note: The "exposed" metal parts on all Stretch Wrap Machines have a heavy Rust Preventative applied before shipment.

You can use Mineral Spirits or a similar cleaner to remove it.

If you remove it, make sure that you apply a "light" Rust Preventative to the "exposed" metal before you operate the machine.

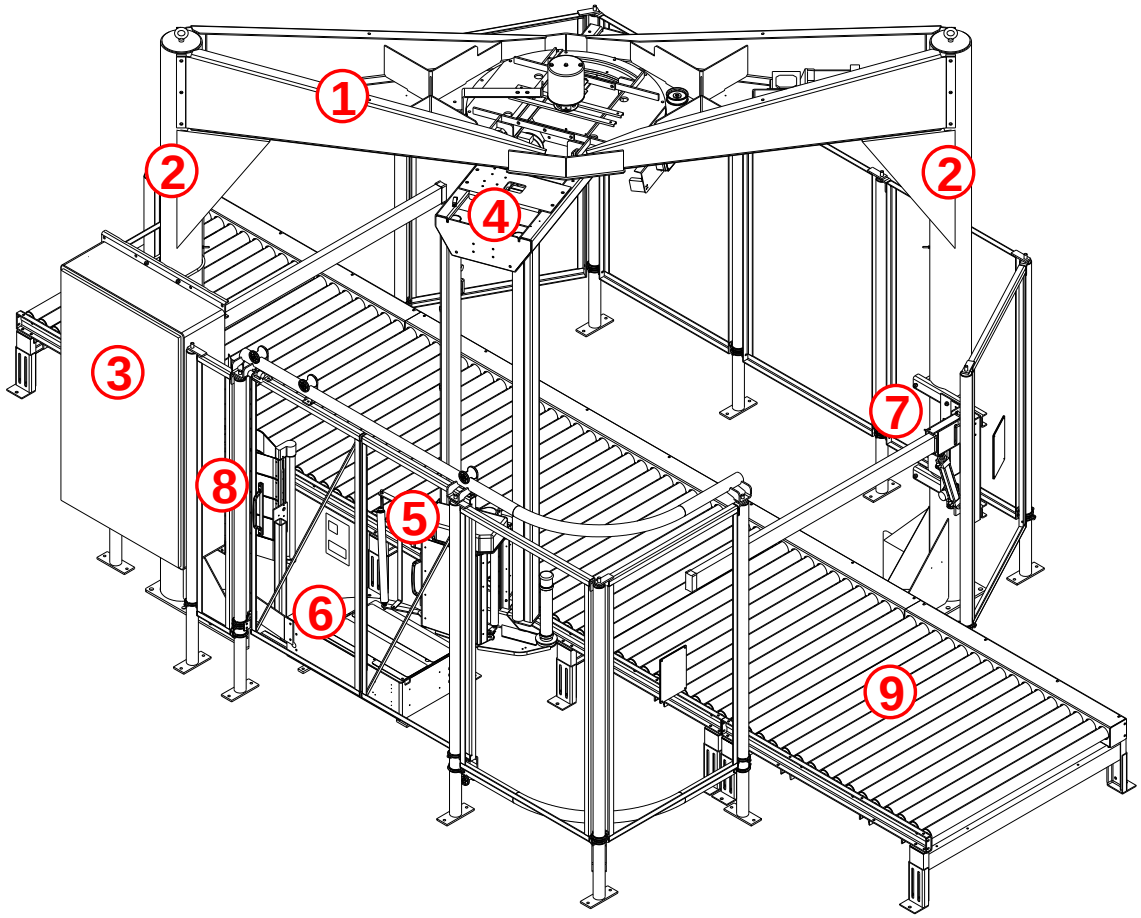


Figure 5.1

1	Top Frame
2	Legs
3	Main Enclosure
4	Wrap Arm
5	Film Delivery System with Pallet Grip®
6	Automation Unit
7	Safety Gates (if applicable)
8	Safety Fence with Access Gate
9	System Conveyors (if applicable)

INSTALLATION

5.1 Prepare the Area

The space requirements can be different on each machine. Use your machine dimensions when you prepare for the installation.

Location:

Space requirements for installation:

- 5791 mm L x 6706 mm W x 4877 mm H (19’ L x 22’ W x 16’ H)
- Ceiling clearance of 610 mm (2’) above the machine.

Concrete Floor Requirements

This machine transmits the forces that occur during the wrap cycle safely into the foundation. This gives a protection to the machine and the structure of the building.

Requirements:

- A concrete floor thickness of 152 mm (6”).
  - Recommend rebar reinforced concrete.
- A flat and level floor
  - If the floor is not flat, install the shims below the leg base plate and the outriggers.
- Compressive Strength 21 MPa (3000-Psi).
- No cracks, joints in the floor within 254 mm (10”) of the anchors.

Refer to section 1.1 for support:

- For alternative options to install the machine if the area does not align with these requirements.
- The machine is in a seismic area.

5.2 Personnel, Equipment and Tools

Personnel

- 1 Forklift Operator
- 2 Mechanical Technicians
- 2 Electrical Technicians

Equipment

- 1 Forklift with 2000 kg (4400 lbs) capacity and minimum 5 m (15’) Lift
- 1 Personnel Safety Cage (For Forklift) or Work Platform
- 1 Ladder – Minimum height 3 m (10’)

WARNING
Obey the Stepladder Safety Standards.

Tools

- Metric and Standard Wrenches and Sockets
- Allen wrenches
- Torque wrench (Up to 150 N-m, 110 lb-ft)
- Hammer Drill
- 18 mm (11/16”) Masonry Bit – 152 mm (6”)
- 1 Lift Strap, Chain
- (2) 3 m (10’) Lift Straps – 1000 kg (2200 lbs) Capacity
- (4) 1000 kg (2000 lbs) Shackles
- Transit or Laser level
- Belt Tension Gauge
- Plumb line
- Magnets
- Container - minimum 1.4 L (48 oz) (to mix the Grout)
- Funnel (to pour the grout)
- Plumbers Putty - approximately 2 kg (5 lb)
- Duct Tape

5.3 Fasteners

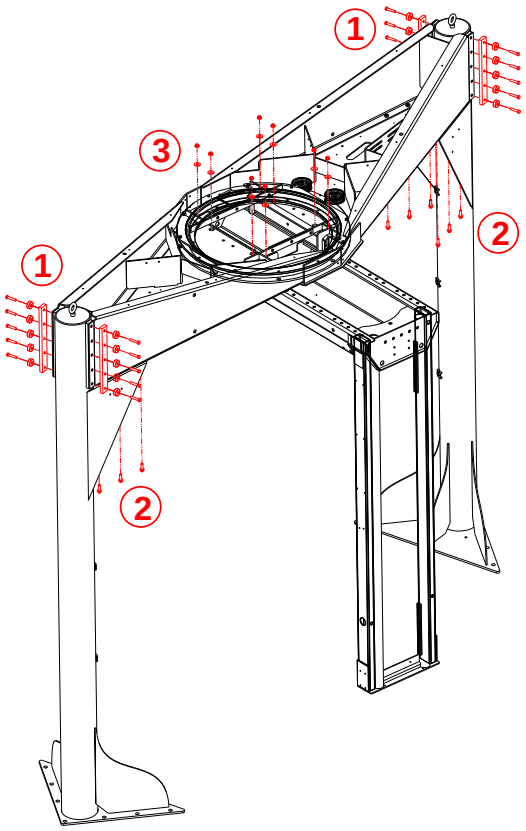


Figure 5.2

1	Quantity 20 - M12-1.75 x 60 mm Class 10.9 "Geomet" Coated Clamp Plates M12 Thick Hardened Washers	Apply Loctite to the male threads and female threads and tighten to 102 N-m (75 lb-ft)
2	Quantity 12 - M12-1.75 x 40 mm Long Flanged Head Bolts Class 10.9	Apply Loctite to male threads only and tighten to 102 N-m (75 lb-ft)
3	Quantity 8 - M12-1.75 Flanged Nuts with Flat Washers Class 10.9	Apply Loctite to the male threads on the wrap arm studs only. Tighten to 102 N-m (75 lb-ft).

5.4 Reference Charts

Metric Torque Chart		
Fasteners	**Class**	**Torque**
6 mm	8.8	14 N-m (10 lb-ft)
8 mm	8.8	24 N-m (18 lb-ft)
10 mm	8.8	47 N-m (35 lb-ft)
12 mm	10.9	102 N-m (75 lb-ft)

Anchors	Torque
16 mm (5/8”) Adhesive Anchors	102 N-m (75 lb-ft)
12 mm (1/2”) Expansion Anchors	81 N-m (60 lb-ft)

- The 16 mm (5/8”) anchor bolts are the standard adhesive anchors.
- Use the 12 mm (1/2”) expansion anchors in cold/freezer environments only.

Cure Time for the Adhesive Anchors	
Concrete Temperature	**Time**
-5° to 0° C (23° to 32° F)	5 Hours
1° to 10° C (33° to 50° F)	1 Hour
11° to 20° C (51° to 68° F)	30 Minutes
More than 20° C (68° F)	20 Minutes

WARNING
Do not use the Adhesive Anchors if the temperature of the concrete floor is less than -5° C (23° F).

5.5 Installation

Step 1
Put a mark on the floor for the centerlines of the machine, the conveyors and the first 2 anchor positions.

The correct position for the anchors:

- At the opposite ends of the machine, at the corner of the leg base plates.
- The dimensions between the anchors is 4356 mm (171 1/2"). Refer to the floor plan for the layout.

Note: The correct position for the 2 anchors is important. Use them as a reference point to complete the installation of the anchors.

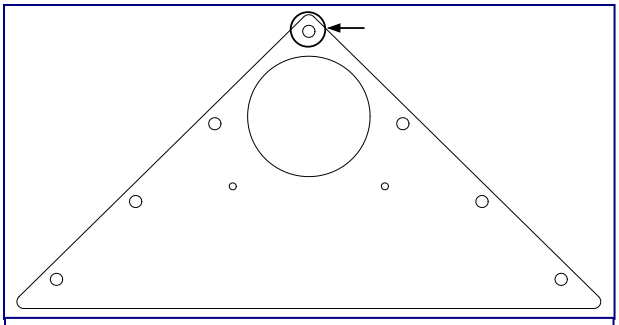


Figure 5.3 – Position for the 2 Anchors

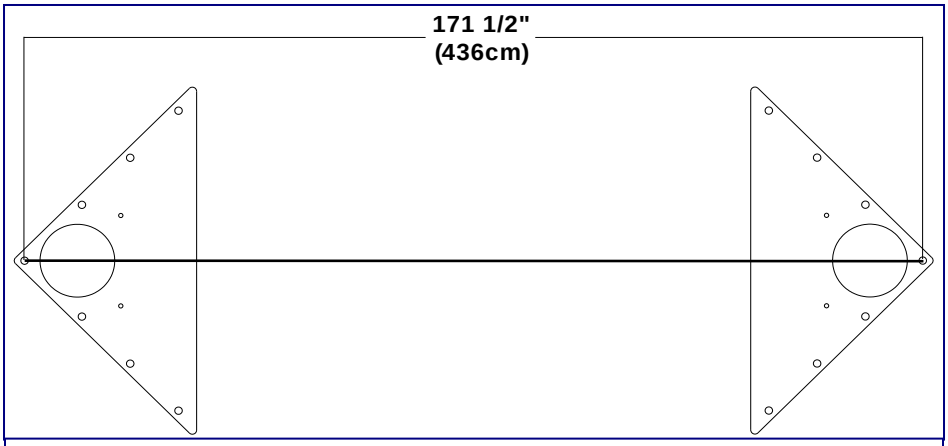


Figure 5.4

Step 2
Set the first 2 anchors

WARNING
Use only the anchors from Lantech to install the machine. Other anchors can cause a hazardous condition, injury to personnel.

INSTALLATION

Refer to the instructions for the Expansion Anchors below if you install the machine in a cold, freezer environment.

Adhesive Anchors

1. Drill the holes in the concrete for the first 2 anchors.

   Dimensions:

   - 18 mm (11/16”) diameter
   - 127 mm (5”) depth
2. Use the bottle brush, vacuum and compressed air to clean the holes.
3. Use a plug to increase the strength to the bottom if:

   a. The depth of the hole is more than 5 1/4” (133mm).

   b. The concrete breaks through the bottom of the hole.

   The hole must have a solid bottom to hold the adhesive while it sets.

   Note: The adhesive does not bond to the concrete if there is debris in the holes.
4. Put the adhesive cartridge into the anchor hole.
5. Put 2 nuts, with a washer between them, together at the top of the anchor.
6. Use a drill, impact wrench with a 15/16” socket, and put the anchor into the adhesive cartridge.
7. Put the anchor through the cartridge to the depth band on the stud to mix the adhesive.
8. Let the adhesive cure before you move to the next step. Refer to the “Cure Time” chart for the time requirements for the adhesive to cure.
9. Do not remove the nuts until the adhesive cures.

Expansion Anchors (Cold/Freezer Environment)

1. Drill the holes in the concrete for the first 2 anchors.
   Dimensions:

   - 18 mm (11/16”) diameter
   - 102 mm (4”) depth
2. Use the bottle brush, vacuum and compressed air to clean the holes.

Put the anchor sleeves into the holes.

Step 3
Install the legs

1. Refer to the floor plan for the correct flow direction and position for the machine.
2. Align the letters on the legs with the letters on the top frame.

   Examine the leg at the base plate. If it includes a cap, put the grout in through the weep holes in Step 11.
3. Clear a 5 m x 15 m (15’ x 45”) area to set up the top frame and legs.
4. Set the top frame on blocks in the middle of the area. Use caution to prevent damage to the conduits, cables, air hoses, and grease lines on the bottom of the top frame.
5. Put each leg in position, to point out.
6. Align the top 2 holes on the leg with the top 2 holes in the top frame.
7. Install (2) M12 x 60 bolts in the top hole with the clamp bars and M12 washers on each leg.
8. Do not apply the Loctite or tighten the bolts at this time.

   These bolts are pivot points for the legs when you raise the top frame.
9. Loosen the rotation drive belt. This lets you turn the saddle when you install the wrap arm.

Step 4
Lift the Top Frame

1. Attach a lift strap, chain to the 4 eyebolts on the top frame.
2. Use caution when you lift the legs. They can pivot freely.
3. Slowly lift the top frame and let the legs move across the floor and below the top frame.
4. Raise the top frame until the legs pivot below the machine.

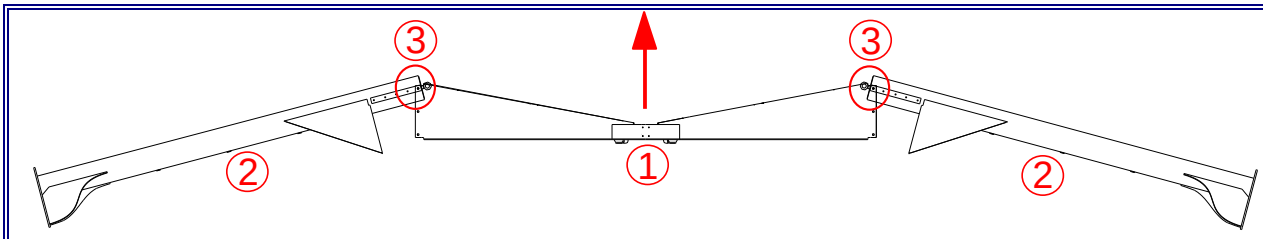


Figure 5.5

1	Top Frame
2	Leg
3	Pivot Points

Step 5
Set the machine in position

1. Move the machine into position over the 2 bolts installed in step 2.
2. Slowly lower the machine until 1 bolt is through the hole in the base plate.
3. Install a nut and washer onto the bolt. Do not tighten.
4. Lower the machine and move the other leg until the bolt aligns with the hole in the base plate.
5. Lower the machine to the floor and install the second nut and washer to the anchor. Do not tighten.
6. Do not remove the lift strap, chain from the machine or forklift.

Step 6
Complete the installation of the leg

1. With the machine in position, start the bolts on the legs and gussets.

   Do not apply the Loctite.
2. Tighten by hand:
   a. The (6) M12 x 40 mm bolts on the gussets below the top frame for each leg.
   b. The (8) M12 x 60 mm bolts with clamp plates and M12 washers on the sides of each leg.

   Do not tighten the bolts until the legs are level.

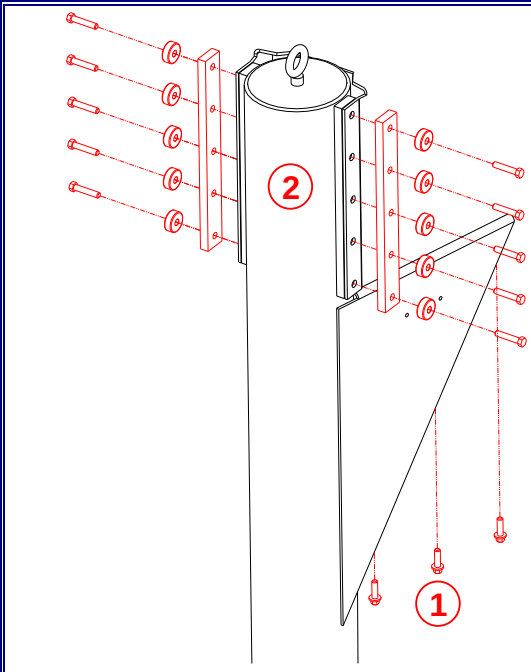


Figure 5.6

1	Bottom Bolts ((6) M12 x 40 mm
2	Side Bolts (10) M12 x 60 mm

Step 7
Complete the installation of the anchors

(Adhesive and Expansion).

1. Install the remainder of the anchor bolts.
2. Use the leg base plates as a template and drill the holes.
3. Refer to Step 2.
4. Let the adhesive cure and continue with Step 8.

Step 8
Level the legs

Use a laser level or transit to make sure that the elevation of the legs are equal.

1. Attach a magnet to the leg below the top frame at the leg gussets.
2. Attach a plumb line to extend to the floor.
3. Measure the distance from the leg to the string:
   a. At the top of the leg, and
   b. At the bottom of the leg.
4. Make sure that the distance is equal.
5. If the distance is not equal, install shims.
   a. Put the shims below the base plates.
   b. Measure at 4 points (90° intervals) around the leg.
   c. Install the shims until the machine is level.
   d. Add the shims below the base plate at the anchors.

      Make sure that you fill the gaps at the anchors to hold the leg level.
   e. Do these steps again for the second leg.

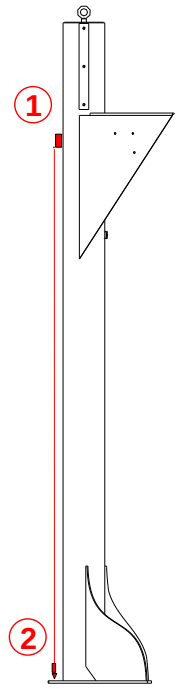


Figure 5.7

1	Attach a Magnet to the Leg
2	Plumb Line At Base Plate

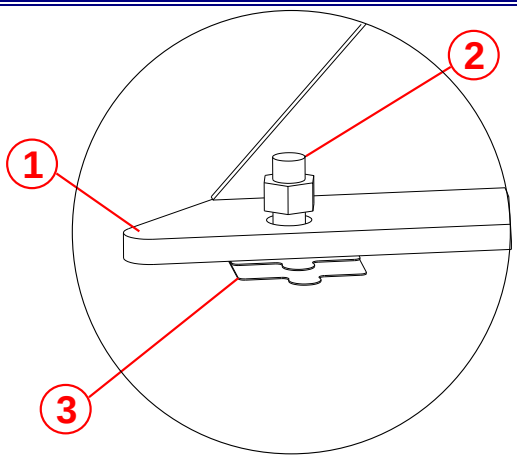


Figure 5.8

1	Leg Base Plate
2	Anchor
3	Shim

Step 9
Torque the bolts

Adhesive Bolts

- Tighten and torque the bolts to 102 N-m (75 lb-ft).

Expansion Bolts

- Tighten and torque the bolts to 81 N-m (60 lb-ft)

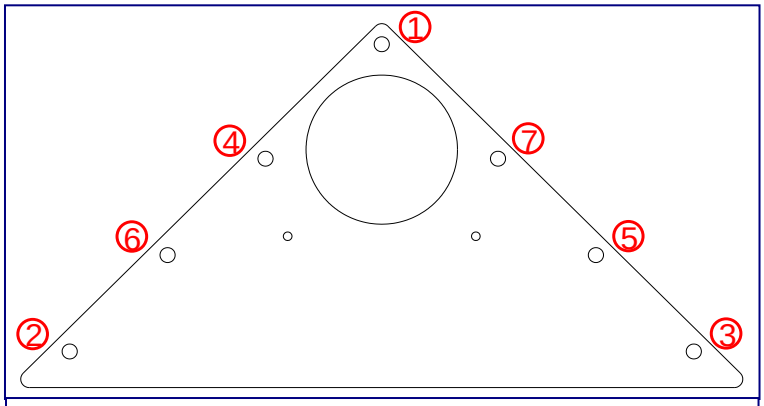


Figure 5.9 – Sequence to tighten the bolts

Step 10
Install the shims at the top frame

1. Put the shims between the top frame and leg gussets at the bolts to fill the gaps.
2. Remove each bolt and apply Loctite to the threads of the bolt only. Tighten the bolts by hand.
3. Remove each side bolt. Apply Loctite to the threads of the bolt and to the female threads on the leg. Tighten the bolts by hand.

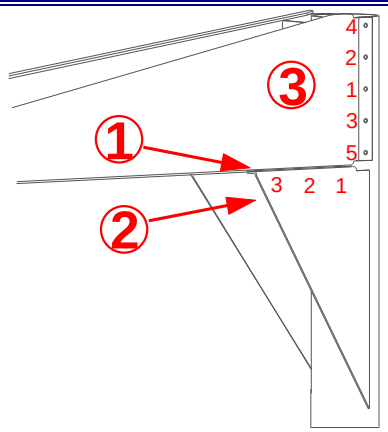


Figure 5.10

1	Put the shims between the Top Frame and Leg gusset to fill the gaps.
2	Apply Loctite to the Bolt Threads and Torque in the correct sequence.
3	Apply Loctite to the Bolt Threads and the Female Threads and Torque in the correct sequence.

4. Torque the bolts in numerical sequence and in the increments in the data below.

Bottom Bolts – Figure 5.10

a. Start with #1 and torque to 34 N-m (25 lb-ft).
b. Continue with #2 through 6 and torque to 34 N-m (25 lb-ft).
c. Torque #1 to 68 N-m (50 lb-ft)
d. Continue with 2 through 6 and torque to 68 N-m (50 lb-ft).
e. Torque #1 to 102 N-m (75 lb-ft).
f. Continue with 2 through 6 and torque to 102 N-m. (75 lb-ft).

Side Bolts – Figure 5.11

g. Torque #7 to 34 N-m (25 lb-ft).
h. Continue with #8 through 16 and torque to 34 N-m (25 lb-ft).
i. Torque #7 to 68 N-m (50 lb-ft)
j. Continue with 8 through 16 and torque to 68 N-m (50 lb-ft).
k. Torque #7 to 102 N-m (75 lb-ft).
l. Continue with 8 through 16 and torque to 102 N-m (75 lb-ft).

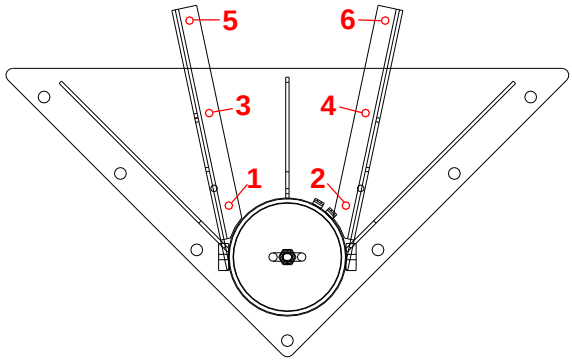


Figure 5.10

Bottom Bolts #1 - #6

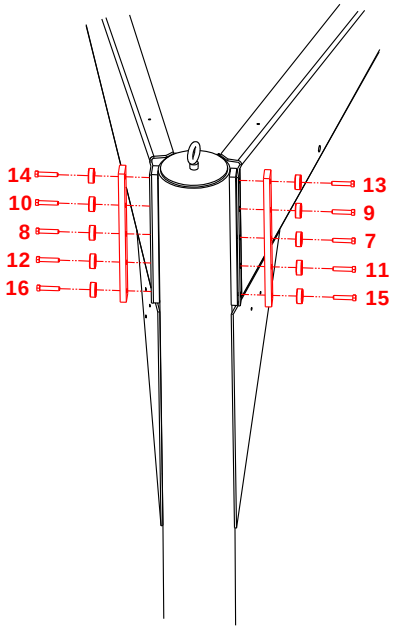


Figure 5.11

Side Bolts #7 - #16

INSTALLATION

Step 11
Apply the grout to the leg base plates (if applicable)

Do not use the grout if the floor temperature is less than 10°C (50°F).

1. Put the duct tape on the floor around the edge of the base plates. This helps to remove the plumbers putty when the grout cures.
2. Apply the plumbers putty around the edge of the base plates.

   Make sure that it is a minimum of 1/2 of the thickness of the base plate.

   Make sure that there are no gaps that can cause the grout to leak.

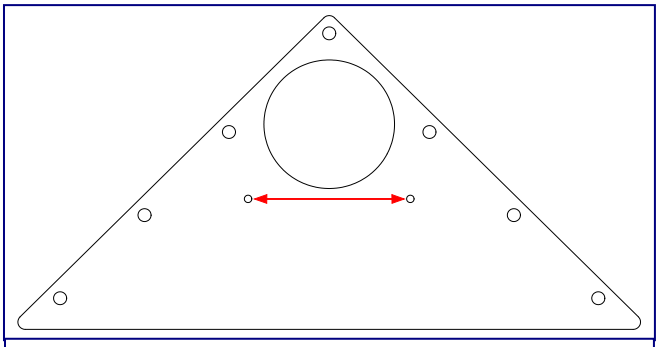


Figure 5.11 - Leg Base Plate with Weep Holes

3. Refer to the manufacturer directions and mix the grout.
4. Remove the eyebolt at the top of each leg.
5. Use a funnel and put the grout into the hole at the top of each leg. The grout fills the gaps below the leg base plates. Each base plate has 2 weep holes.

   If the legs include the caps at the base plate, put the grout in through the weep holes.
6. Make sure that you can see the grout in each hole.
7. Let the grout cure. Refer to the cure time data.

Cure Time for the Grout	
Temperature	Time
10°C (50°F)	6-7 Hours
16°C (60°F)	5-6 Hours
21°C (70°F)	2-4 Hours
27°C (80°F)	1-2 Hours
32°C (90°F)	45-60 Minutes

Step 12
Attach the Wrap Arm

Figure 5.12

1. Tighten the 8 bolts on the wrap arm to 34 N-m (25 lb-ft).

   Each bolt has a black line on the threads. Use the line to make sure that the bolt does not turn when you tighten the nuts.

2. Attach a lift strap to the wrap arm and to the forklift and lift the wrap arm into position.
   a. Use the labels on the wrap arm and saddle to align the wrap arm.
   b. Align the bolts with the wrap arm saddle.
   c. Put the flat washers on the bolts.
   d. Apply 2-3 drops of the Loctite on the bottom 2-3 threads near the flat washer.
   e. Thread the nut onto the bolt until it connects with the flat washer.
   f. Tighten by hand to remove the gap between the saddle and the wrap arm.
   g. Use a torque wrench to tighten the nuts on the inner bolts from the top side of the top frame.
   h. Torque to 102 N-m (75 lb-ft).
   i. Use the18 mm wrench to tighten the nuts on the outer bolts approximately 75-90° of the wrench turn.

      This removes the gap between the saddle and the wrap arm.

      This is equal to 102 N-m (75 lb-ft).
   j. If a bolt turns when you tighten the nut, loosen the nut and torque the bolt to 34 N-m (25 lb-ft).
   k. Tighten the nut.

Figure 5.13

Figure 5.14

1	Inner Bolts and Nuts
2	Outer Bolts and Nuts

3. Install the safety photoelectric sensors for the wrap arm.

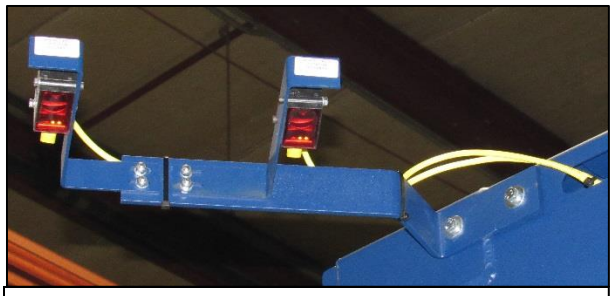


Figure 5.15 - Sensors

4. Attach the quick connect plug from the slip ring to the receptacle in the wrap arm.

5. Remove the FDS shipping bracket. Refer to the safety label on the FDS.

Figure 5.16 - FDS Shipping Bracket

Step 13
Install the Wrap Zone Conveyor

Refer to the floor plan to put the wrap zone conveyor into position.

1. Use the conveyor centerline for the correct position.

   Do not anchor the wrap zone conveyor to the floor until you install the automation unit.

2. Manually move the wrap arm and make sure that there is a clearance above the conveyor.

   The correct clearance is a minimum of 13 mm (½") above the highest point on the conveyor.

Step 14
Install the Automation Unit

The position of the Automation Unit is important for the machine to operate correctly.

Note: These instructions are for the standard flow. The reverse flow installation is a mirror image.

For a wrap diameter of 2032 mm (80") use the installation template to put the automation unit in the correct position.

If the wrap diameter is not 2032 mm (80"), refer to the dimensions on the floor plan.

The floor plan includes an illustration with the template and correct position for the automation unit.

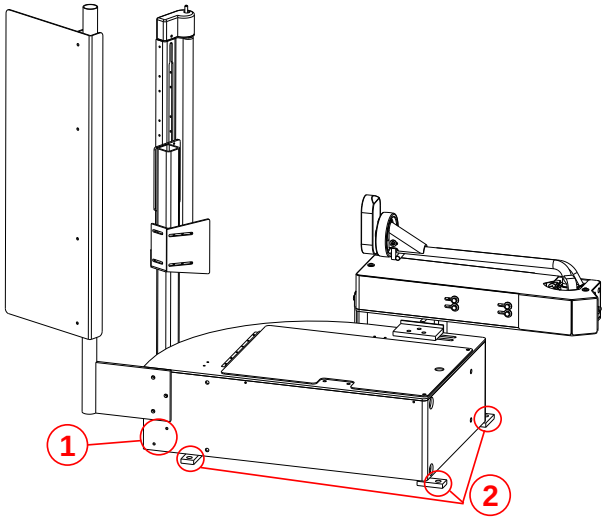


Figure 5.17

1	Location Template Mounting
2	Anchor Points

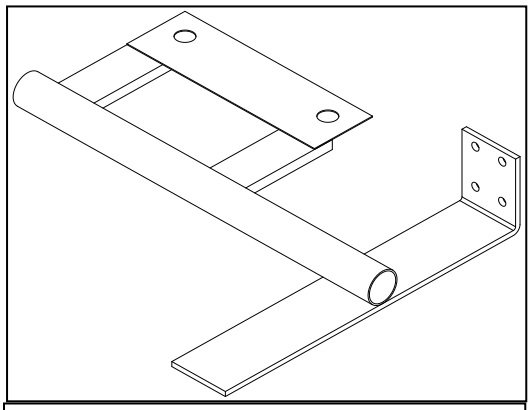


Figure 5.18 - Standard Flow Template

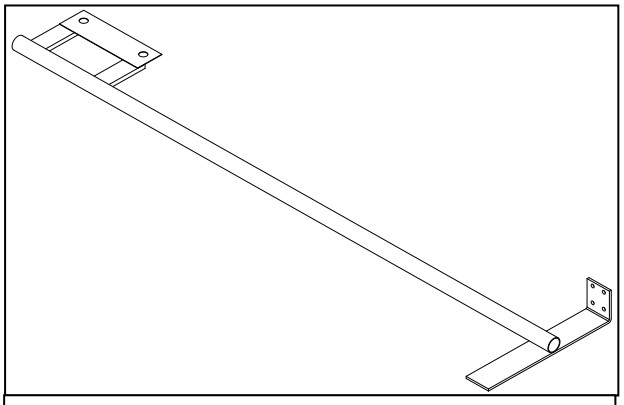


Figure 5.19 - Reverse Flow Template

1. Use M8 x 12 mm bolts and attach the template to the automation unit.
2. Use the template and leg anchors to set the automation unit in position at the leg base plate.
3. Align the automation unit.

   Make sure that it is square within the leg of the machine.

3. Put the wipe arm in the retracted position.

   Manually move the wrap arm to the automation unit.

   Make sure that there is a clearance from the film clamp and the Cut and Wipe assembly.

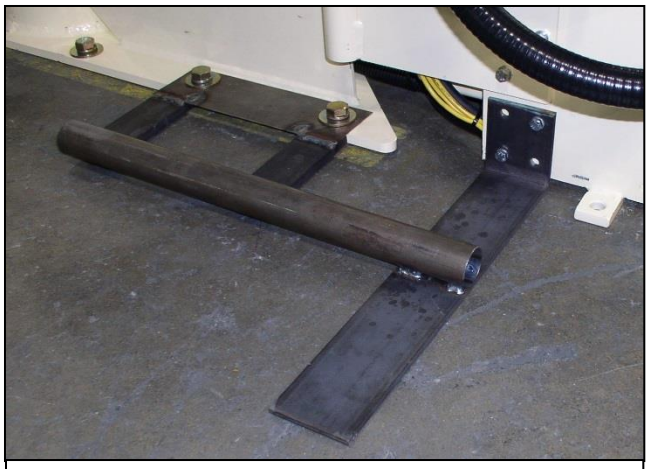


Figure 5.20 - Template Installed

4. Put a mark in the correct position for the anchors and drill the holes.
5. Remove the template and torque the anchors.
6. Use a bubble level on the top plate to make sure that the automation unit is level. There are 3 anchor points. Use the shims if the unit is not level.
7. Anchor the automation unit to the floor.

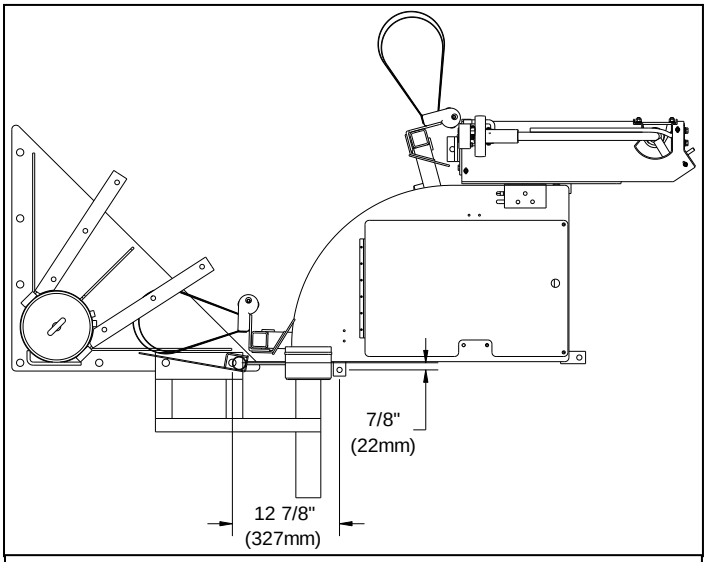


Figure 5.21 – Floor plan – 2032 mm (80”) Wrap Diameter

Step 15
Adjust the tension on the drive belt

1. Use a tension gauge to measure the tension on the drive belt.
2. Refer to figures 5.19 and 5.20 to adjust the tension.
3. Tighten the nut on the tensioning screw until the correct tension is set.
4. Tighten the bolts on the drive assembly.
5. Examine and adjust the tension after the first 100 cycles.

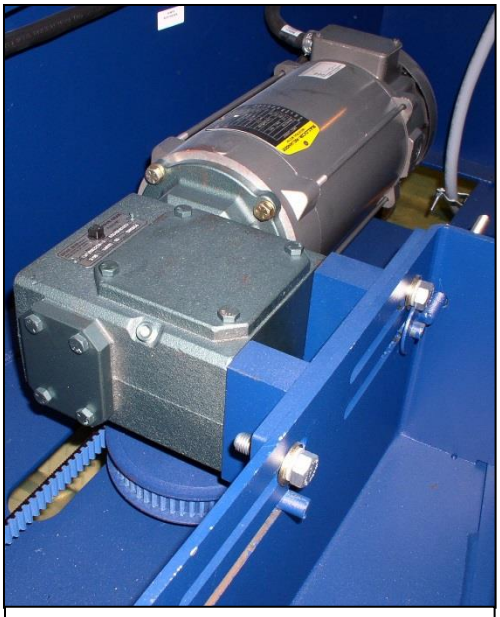


Figure 5.22

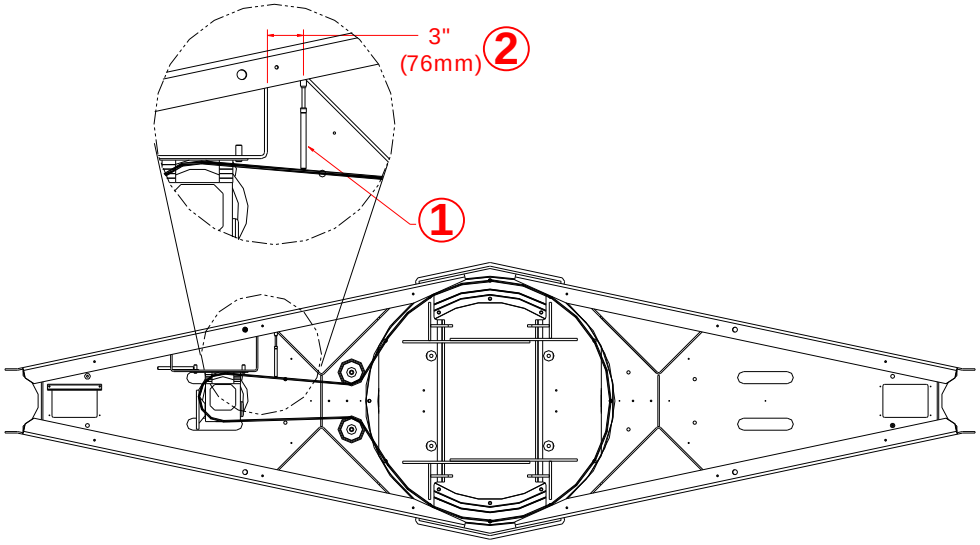


Figure 5.23

1	Belt Tension Gauge
2	Position of the Belt Tension Gauge

Tension for the Wrap Arm Belt	
Deflection	Force
8 mm (5/16”)	5 kg (11 lb)

Step 16
Install the Main Enclosure

Standard Enclosure

1. Attach a list strap to the eyebolts on the top of the enclosure.

   Use caution to not cause damage to the cables and connectors on the bottom of the enclosure.

2. Move the enclosure to the correct position.
3. Use the U-bolt and attach the bottom mounting bracket for the enclosure to the bracket on the leg.
4. Make sure that you do not "over tighten" the U-bolt. This can twist the enclosure.

   Open and close the door of the enclosure and examine the alignment of the disconnect shaft. Loosen and adjust the U-bolt if it does not align correctly.

Figure 5.24 - U-Bolt Mount

Figure 5.25 - Bottom- Bracket

Freestanding Enclosure

CAUTION
Do not remove the strap, chain from the enclosure, forklift until the enclosure is attached to the floor. The enclosure is unstable and can fall.

1. Refer to the floor plan for the correct location of the enclosure.
2. Attach a lift strap to the eyebolts on the top of the main enclosure.

   Use caution when you use the forklifts and other equipment. Use guarding to prevent damage to the enclosure.
3. Lift the enclosure slowly. Do not damage the cables and connectors on the bottom of the enclosure.
4. Move the enclosure into position.
5. Use the anchors to attach the enclosure to the floor.

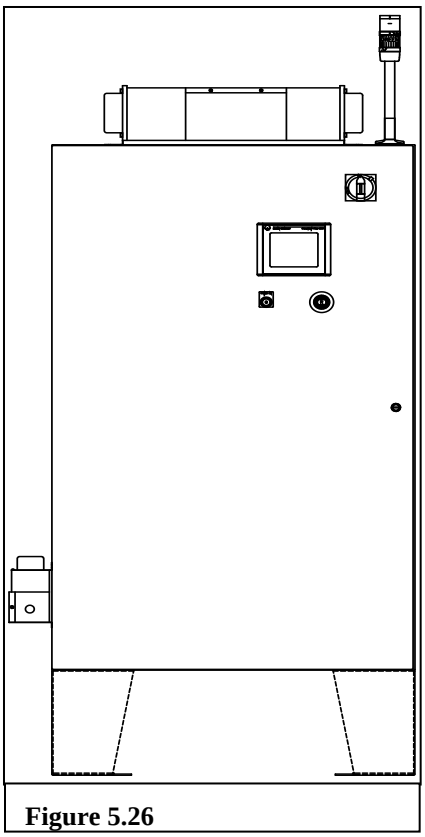


Figure 5.26

Step 17

Refer to Section 3. Install the options.

Examples: Film Hoist, Top Sheet Dispenser, etc.

Refer to the floor plan for the correct location for the options.

Step 18
Install the Fence

1. Refer to the floor plan for the correct location of the fence.
2. Set the fence sections in position and attach to the floor.

If your machine includes the option for a film hoist that attaches to the leg:
The access gate is a split monorail. If the fence sections that include the split monorail do not align, install shims.

Step 19
Attach the Air Hoses and Grease Line

CAUTION
Before you apply the air pressure for the first time, turn the supply regulator on the FRL down. This prevents the sudden movement of some devices. When you apply the air pressure, increase the pressure slowly to 6 Bar (80 PSI).

Safety Gates that attach to the leg:

1. Attach the air supply hose between the top frame and air valves on the opposite side of the gate.
2. Attach the air supply hose between the top frame at the near side leg and FRF (supply hose for the opposite side gate).
3. Attach the air supply hose between the FRF and the air valves on the near side gate.

Automation Unit:

1. Attach the air hoses from the automation unit to the pneumatic valve assembly. Use the labels on the hoses and valve assembly to align them correctly.

Grease Line:

1. Connect the grease line on the ring bearing:
   - Between the top frame at the near side leg, and
   - The grease fitting on the mounting plate on the pneumatic assembly.
2. Connect the pneumatic supply to the FRF at the pneumatic assembly.

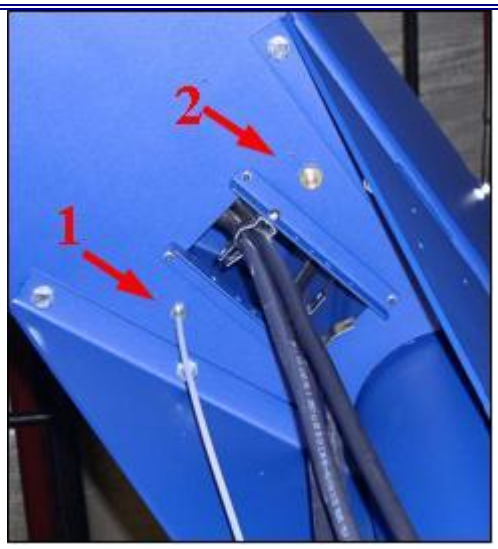


Figure 5.27

1	Airline Connection
2	Grease Line Connection

Step 20
Complete the Electrical Connections

1. Attach the quick connect plugs from the components to the bottom of the electrical enclosure. Use the labels on the connectors and receptacles to align them correctly.
2. Attach the electrical connector to the valve assembly.
3. Attach the pressure switch cable to the pressure switch.
4. Attach the connector plug from the top frame at the opposite side leg to the opposite side safety gate.
5. Attach the quick connect from the slip ring on the top frame to the receptacle in the wrap arm.
6. The gate switch connects to terminals in the main enclosure. Make sure that the key to the access gate engages the gate switch. The switch is on the fence.
7. Connect the main power supply to the top of the Main Disconnect switch in the enclosure. Refer to the electrical drawings for service requirements.

Hardwired Machine:

1. If the machine is hardwired, individual wires replace the quick connect plugs (except the slip ring).

   Connect the wires to the terminals:

   - At the main enclosure
   - At the opposite side safety gate junction box
   - At the conveyor junction boxes.

2. Refer to the electrical drawings.

Step 21

Complete the Conveyor Wiring (If Applicable)

Standard Machine

The conveyor motors and the staging photoelectric sensors have quick connectors.

The cables are "pre-wired" to the enclosure.

Thread the cables to the motor or photoelectric sensors and connect to the receptacle.

"Hardwired" Machine

The conveyors are "pre-wired" with conduit and junction boxes, or wired to a junction box on the conveyor.

If the conveyors are pre-wired, the conduits are attached and the wiring terminated in the junction boxes. If the conveyors are not pre-wired, wire the conveyors from the main enclosure to the junction box on the conveyor.

INSTALLATION

6.0 Operator Instructions

Note: Illustrations are for reference only.

Note: Functions, descriptions and data can be different on your machine. Refer to Section 3 Options.

Note: It is important to know all components. This includes how to thread the film and operate the controls.

Note: Some machines have a remote Emergency Stop. It is important to know the location of all E-stops before you operate the machine.

WARNING
Obey all Lockout/Tagout procedures before you change, adjust, repair a part.

WARNING
Obey all safety decal instructions and warnings.

WARNING
Do not make a change to this machine without approval from Lantech. It can cause a safety hazard and cancel the warranty.

6.1 Sequence of Operation

The sequence of operation starts with the machine in the "Auto" mode and a load on the infeed conveyor.

1. The safety gate raises.
2. The load moves into the wrap zone.
3. The infeed transition photoelectric sensor sees the load.

   The sensor, with a counter in the PLC, moves the load to the middle of the wrap zone.
4. The load moves out of the site of the sensor and the infeed safety gate lowers.
5. The load stops when it is in the correct position in the wrap zone.
6. The rotation of the wrap arm moves it around the load.

   The setting for the "Wrap Arm Speed" sets the rotation speed of the wrap arm at the start of the cycle.
7. The Film Delivery System (FDS) raises and applies the film to the load.
8. The FSD raises until the load height sensing photoelectric sensor sees the top of the load.
9. A timer in the PLC lets the FDS move above the top of the load to overwrap the top.
10. The FDS stops at the top of the load.
11. On the S3500, the speed of the wrap arm increases to the maximum 35 rpm.

On the S2500, the speed of the wrap arm does not increase.

12. The FDS applies the preset number of top wraps to the load.
13. The FDS moves down and continues to apply the film to the load.
14. The FDS moves to the “Bottom Travel” proximity sensor and stops.
15. The FDS applies the preset number of bottom wraps to the load.
16. The film clamp disengages to release the film and lowers to the “retracted” position.
17. On the last revolution the clamp extends and the vacuum engages.
18. The wrap arm speed decreases to low (homing) speed.
19. The wrap arm stops at the home position.
20. The exit conveyor safety gates raise.
21. The Cut and Wipe assembly extends to the load and the wipe down loops wipe the film to the load.
22. When the Cut and Wipe assembly moves to the fully extended position, the film pushes into the clamp. Vacuum holds the film in the clamp.
23. The Cutter Wire energizes for approximately 2.5 seconds to break the film.

    The heat of the cutter wire melts and separates the film.
24. The load moves to the exit conveyor.
25. The wipe down loops connect with the load to wipe the film tail to the load.
26. The Cut and Wipe assembly retracts.
27. The machine can accept the next load.

6.2 Components

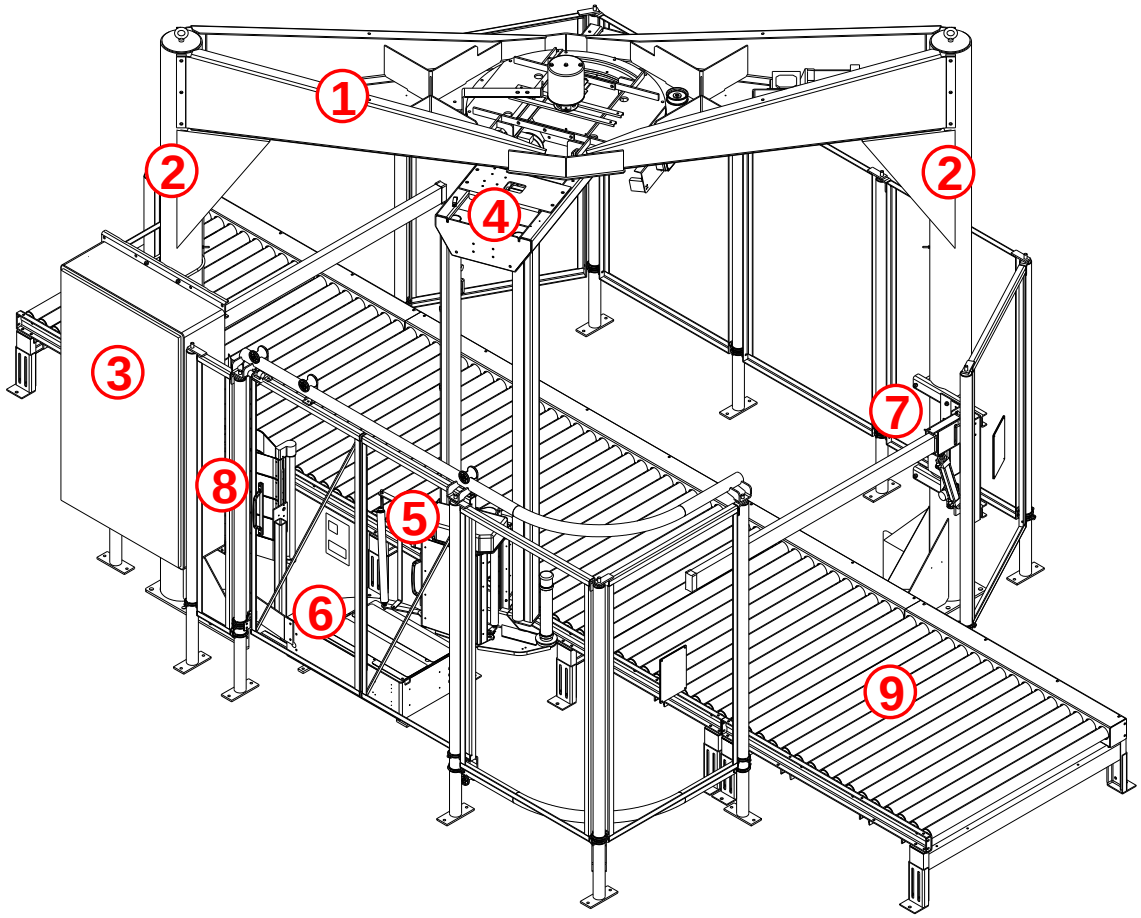


Figure 6.1

1	Top Frame
2	Legs
3	Main Enclosure
4	Wrap Arm
5	Film Delivery System with Pallet Grip®
6	Automation Unit
7	Safety Gates (if applicable)
8	Safety Fence with Access Gate
9	System Conveyors (if applicable)

OPERATOR INSTRUCTIONS

1. **Top Frame**
   - Slip ring
   - Ring bearing
   - Wrap arm rotation drive.

2. **Leg**

   The standard leg is:
   - 3353 mm - 4572 mm (11’ – 15’) Length
   - 219 mm (8 5/8”) Diameter

3. **Main Enclosure**
   - HMI
   - Machine control devices
     - Relays
     - Contactors
     - Motor starters
     - PLC

4. **Wrap Arm**
   - Film Delivery System (FDS)
   - Lift drive

5. **Film Delivery System (FDS) with Pallet Grip®**

   The FDS moves up and down the wrap arm to pre-stretch and apply the film.

   Pallet Grip®

   Pallet Grip locks the load to the pallet.

   As the FDS lowers, Pallet Grip engages and makes the "cable" of film. This cable attaches approximately 38 mm (1 ½”) below the top of the pallet to lock the load.

   Pallet Grip engages when the FDS applies the bottom wraps to the load.

6. **Automation Unit**
   - Load Seeking Clamp® (Vacuum Film Clamp)
     - Load Seeking Clamp eliminates the film tail at the start of the wrap cycle.
     - It lets the film wrap near the side of the load during the wrap cycle.
     - The vacuum clamp pivots to extend to the side of the load as it wraps.

7. Safety Gates (if applicable)

The gates are on the legs and protect the infeed and exit areas of the wrap zone. The gates include a pneumatic barrier and photoelectric sensor to scan the transition areas of the wrap zone.

8. Safety Fence with Access Gate

The safety fence is a guard for the perimeter of the wrap zone. It includes an access gate with an Electrical Interlock switch.

The control power to the machine disengages when the access gate is open.

9. Conveyors (if applicable)

The standard conveyor is:

- 1321 mm (52") Effective Width
- Powered Roller Conveyor
- Weight capacity 1814 kg (4000 lbs)

6.3 Controls

The controls are on the door of the main enclosure.

The standard HMI is a "touch screen".

The controls include:

"Main Disconnect" switch – This is a lockable switch that starts and stops the main power supply.

"HMI"

"MCR Reset" (//) – This is a blue illuminated button. This button controls the power to the machine. When the switch illuminates, the control power is on.

"Emergency Stop" (E-stop) – This is a red button that stops the operation of the machine.

Use the E-stop for emergencies only.

Push the button to disconnect the power to the machine.

Reset the button to engage the power.

A second Emergency Stop is on the opposite side of the machine for personnel safety.

6.4 Display

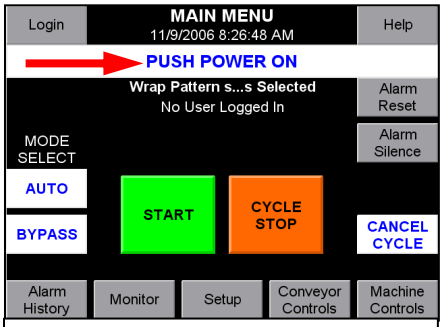


Figure 6.2

The HMI shows the machine status, fault conditions, and instructions.

The list below includes the standard data that can show on the HMI:

"Manual Mode" – Manual functions of the components are available.

"Automatic Mode" – Push the start button and the loads move continuously through the cycle.

"Bypass Mode" – The loads move through the cycle but do not wrap.

"Film Break" – The film roll is empty, there is a break in the film. The components move to the home position. The operator must correct the fault to start the machine.

"Transition Jam" – The machine stops when a jam occurs. The operator must remove the jam to start the machine.

"Low Air" – There is a low air pressure condition. All machine motion stops when the air pressure switch senses the low air pressure. Low air pressure is less than 3.8 Bar (55 Psi).

"Motor Overload" – The machine stops when an overload occurs. The operator must reset the overload device and start the machine.

6.5 Operator Controls

6.5.1 Main Menu

When the power is on, the Main Menu shows on the display.

"Login" – Gives access to the "Setup" menu.

Each operator must use the current time on the touch screen (hours and minutes – 1:45 p.m. = 1345) as the password for this menu.

"Help" – Gives access to the "Help" menu. This helps the operator find and correct the fault and alarm conditions.

"Alarm Reset" – Use this to clear the alarm condition and start the machine. This button shows on the display only when an alarm occurs.

"Alarm Silence" – Stops the alarm. This button shows on the display only when an alarm occurs.

"Mode Select – Auto/Bypass" – The operator makes the selection of the operating mode.

"Start" - Push the "Start" button and hold for 3 seconds to initialize the automatic function.

"Manual" – This puts the machine in the Manual Mode. It is available when the machine stops in the "Auto" mode.

"Cycle Stop" – Safely stops the machine at the end of the current wrap cycle.

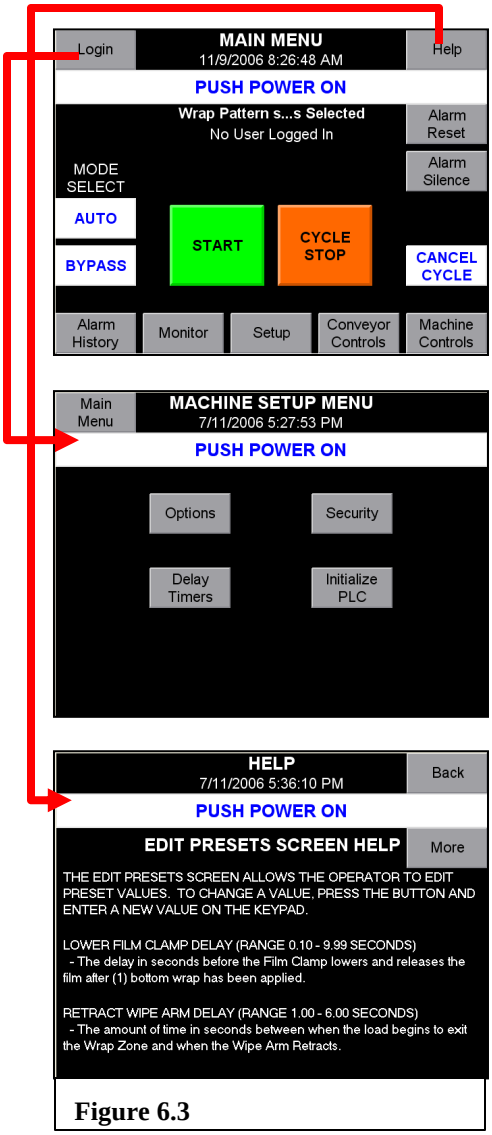


Figure 6.3

"Cancel Cycle" – Cancels the current wrap cycle.

"Alarm History" – Gives access to the Alarm History menu.

"Monitor" – Gives access to the "Monitor" menu.

"Setup" – This screen gives access to the "Setup" menus.

"Conveyor Controls" – Gives access to the manual controls for the conveyors, if applicable.

"Machine Controls" – Gives access to the manual controls for the machine components.

6.5.2 Setup

Use this menu to get access to the options, delay timers, security levels, and to initialize the PLC.

CAUTION
Make sure that only qualified personnel use these menus.

"Options" – Use this menu to make the selection or cancel the configurable options.

"Delay Timers" – Shows the delay timers.

"Security Setup" – Shows the levels of security and the user access menus.

"Initialize PLC Data" – Use this menu to initialize the PLC.

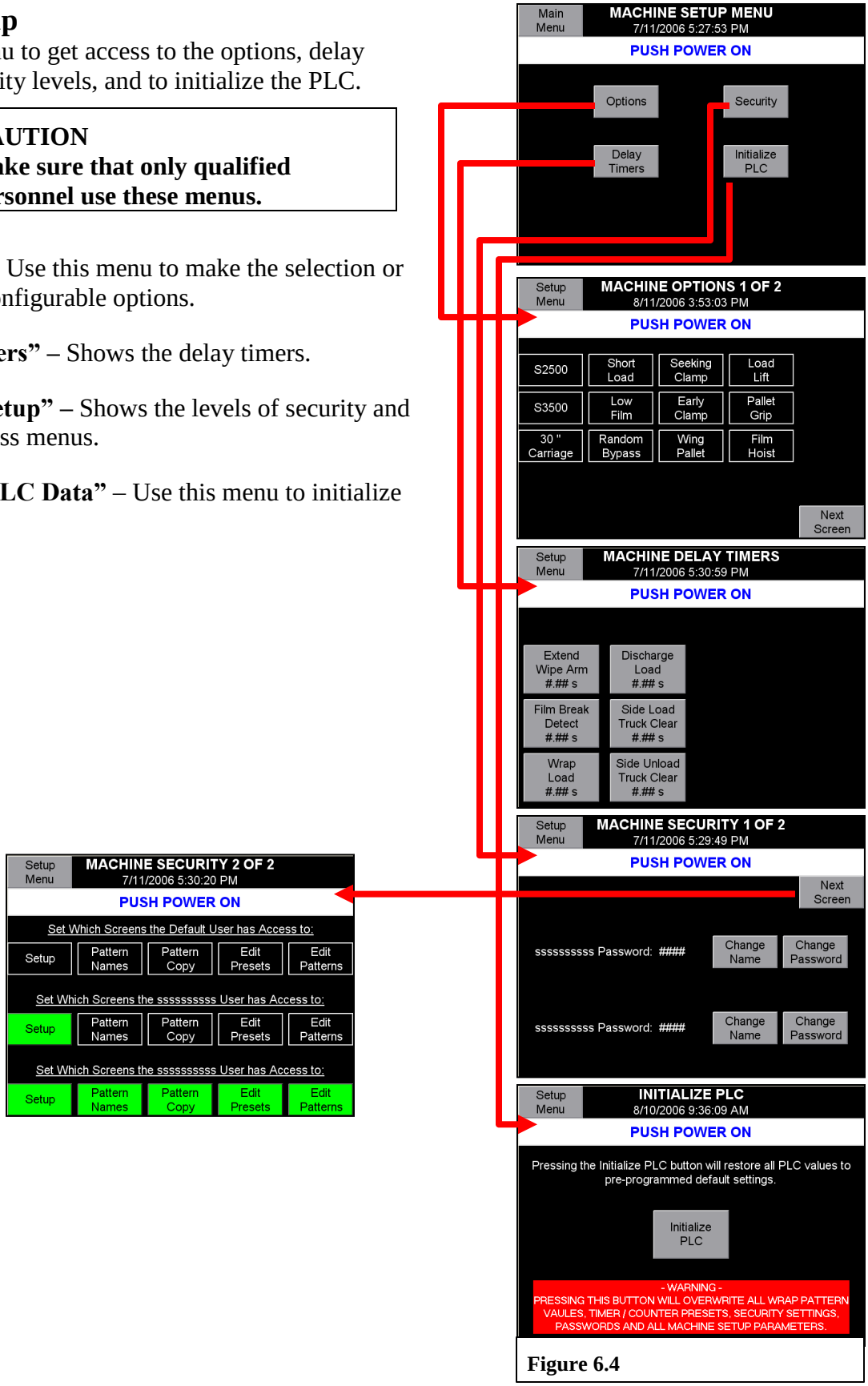


Figure 6.4

"Alarm History" – shows the alarm and fault conditions. It also shows the number of occurrences of each fault condition.

"Monitor" – This menu gives the operator access to the machine data menus. The menus include:

"Cycle Info" – Gives access to current data that includes:

- Cycle counters
- Cycle times
- Throughput

It includes a "Reset" button to set the data to 0.

You cannot reset the "Total Machine Cycles" counter.

"Analog Status" – Shows the current status of the analog inputs and outputs.

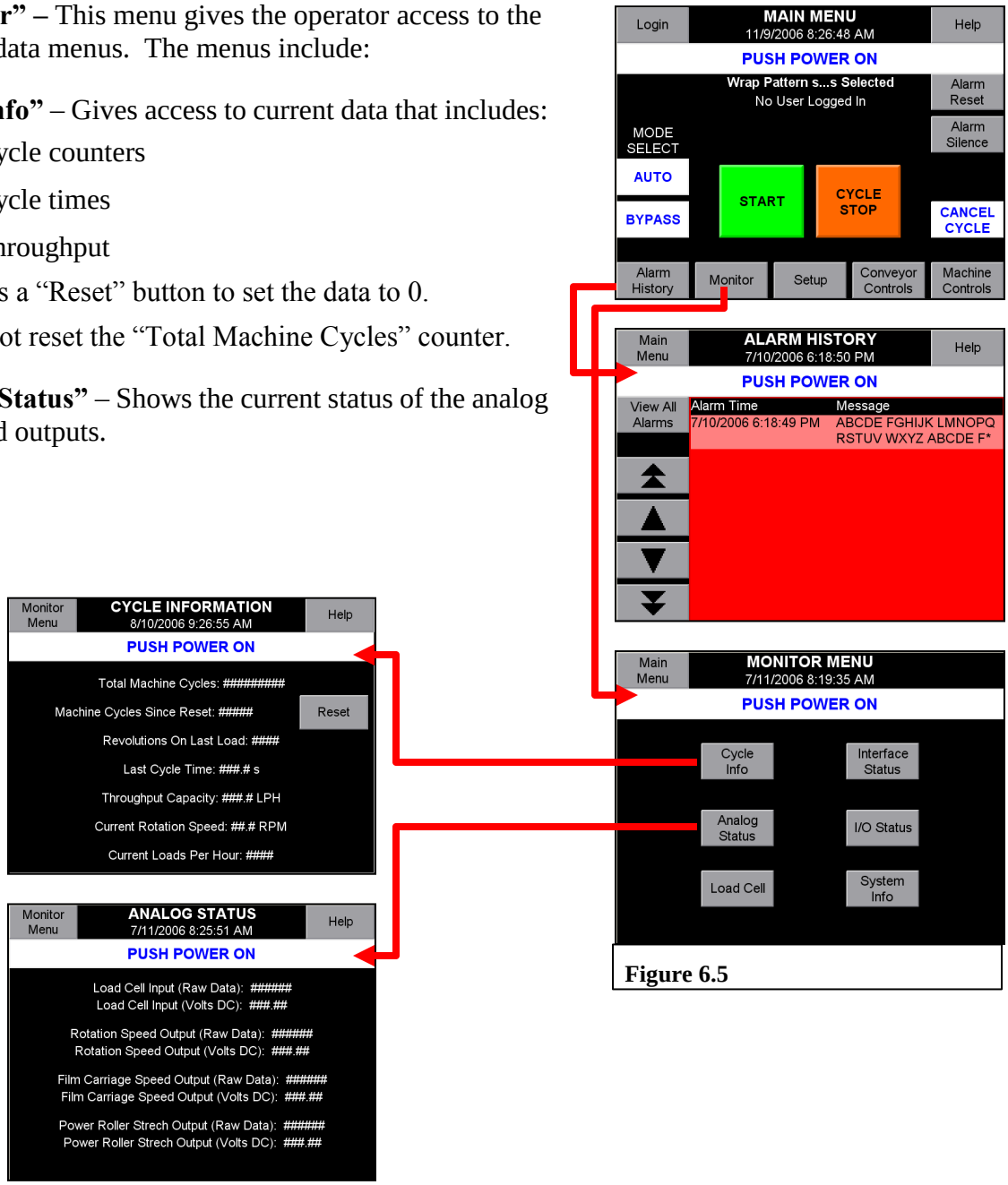


Figure 6.5

"Load Cell Trend" – Shows a chart for the load cell activity.

"Interface Status" – Shows the current status between the machine and the upstream and downstream systems.

"Digital I/O Status" – Shows the current status for all inputs and outputs.

Use the "Next/Previous Module" buttons to move between all digital Input and Output modules.

"System Info" – Shows the PLC and HMI data.

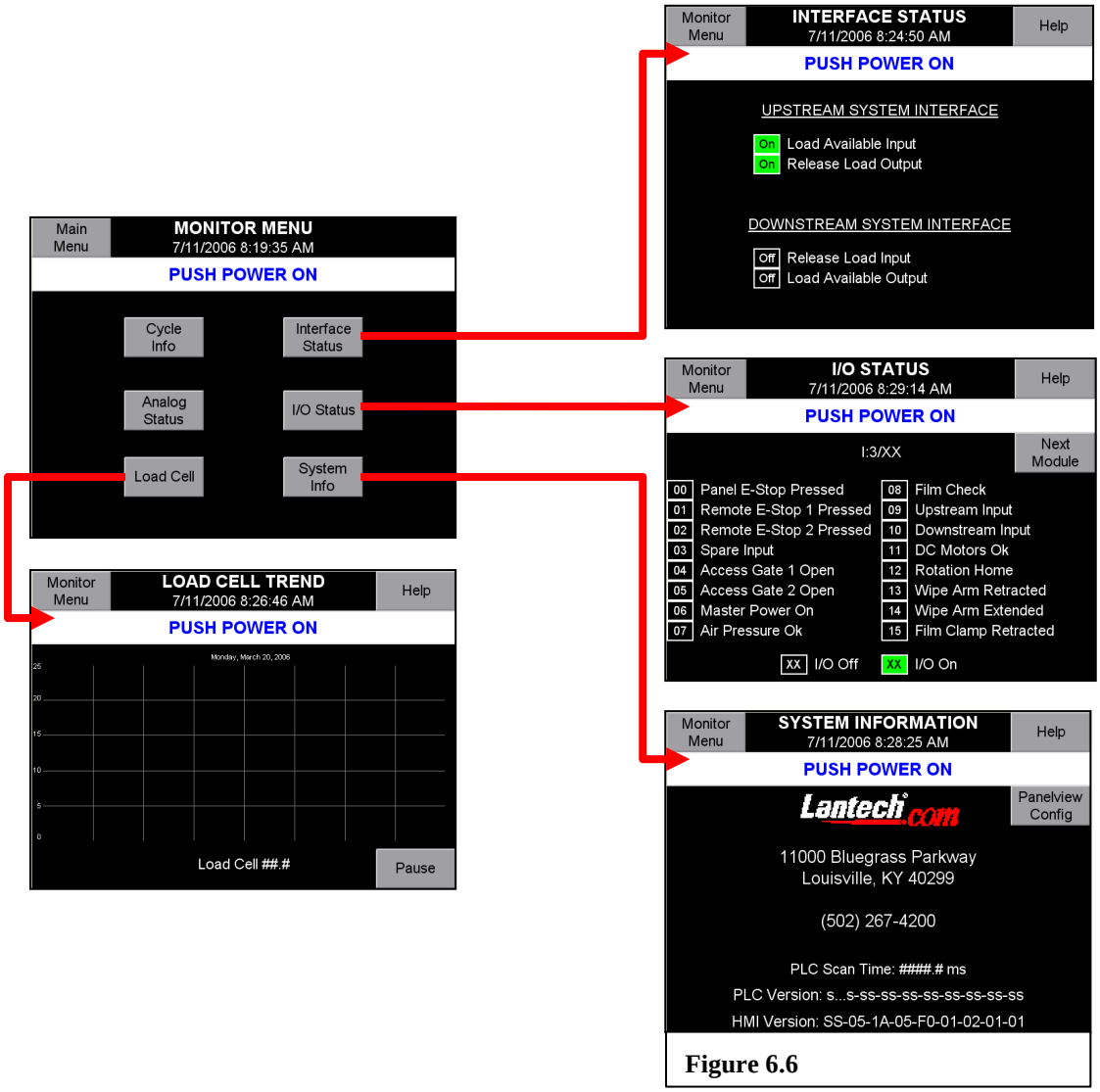


Figure 6.6

6.5.3 Wrap Patterns

"Wrap Pattern Select" – Push the "Wrap Pattern" button to make your selection.

You can change the wrap pattern during the wrap cycle.

"Pattern Names" – Use this screen to change the name of a wrap pattern.

"Pattern Copy" – Make a copy of presets and settings of a wrap profile and add to a second.

1. Make the selection of the source profile.
2. Make the selection of the second profile.
3. Push the "Copy" button.

"Edit Presets" – Use this screen to get access to the presets for the wrap pattern.

"Edit Patterns" – Use this screen to get access to the wrap pattern settings.

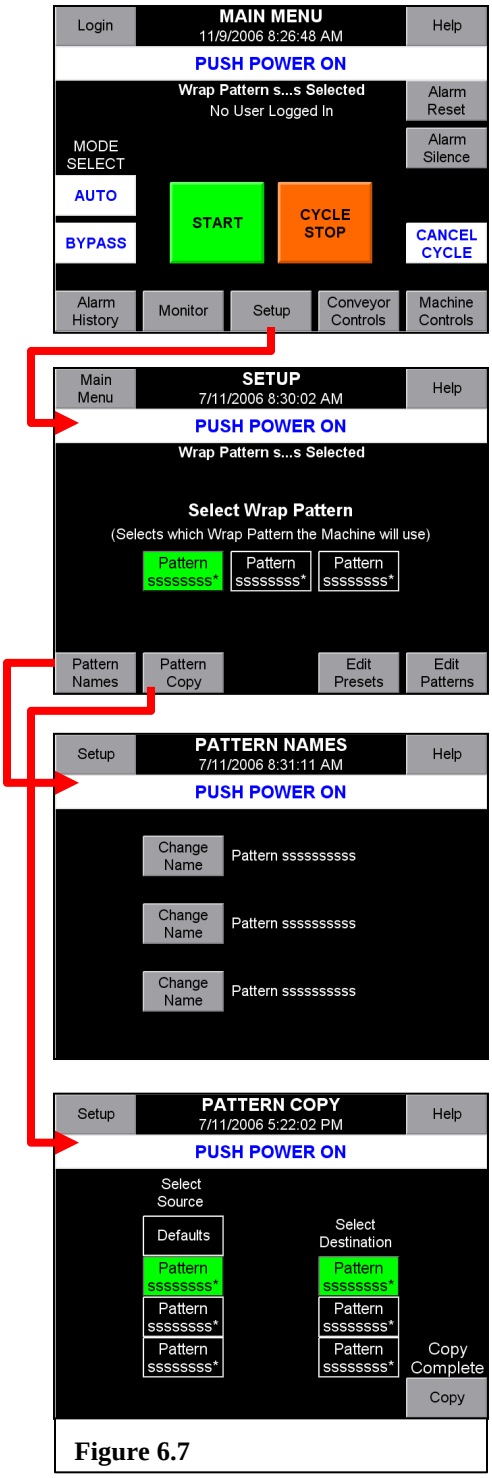


Figure 6.7

"Edit Presets" - Use this menu to adjust the preset values for all wrap profiles.

1. Push the "Preset" button and make an entry of the value on the screen.
2. Push the "Enter" button.

"Edit Patterns" – Use this menu to change the settings.

1. Push the "Pattern #" button.
2. Make the selection of the setting to change.
3. Make the entry of the correct value.
4. Push the "Enter" button.

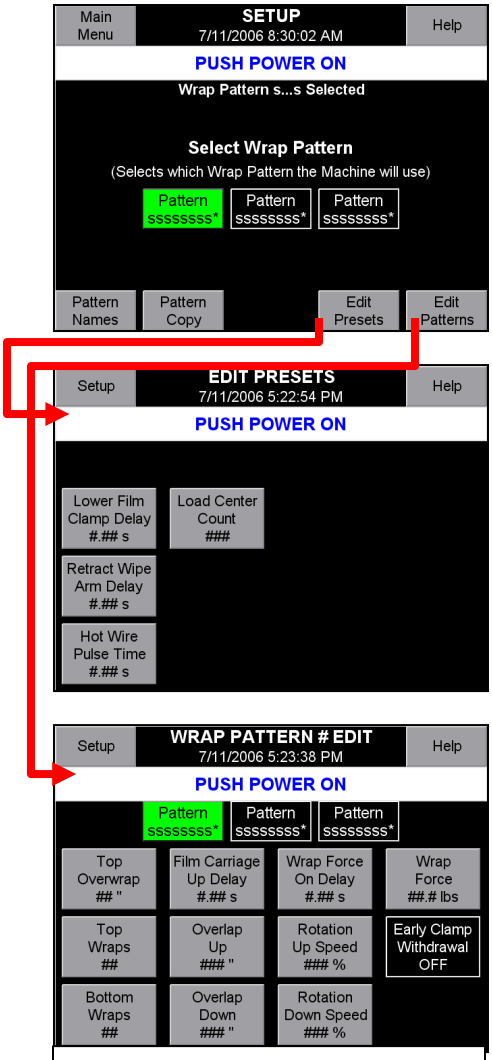


Figure 6.8

6.5.4 Conveyor Controls

The "Conveyor Controls" button gives access to the manual controls menu for the conveyor system.

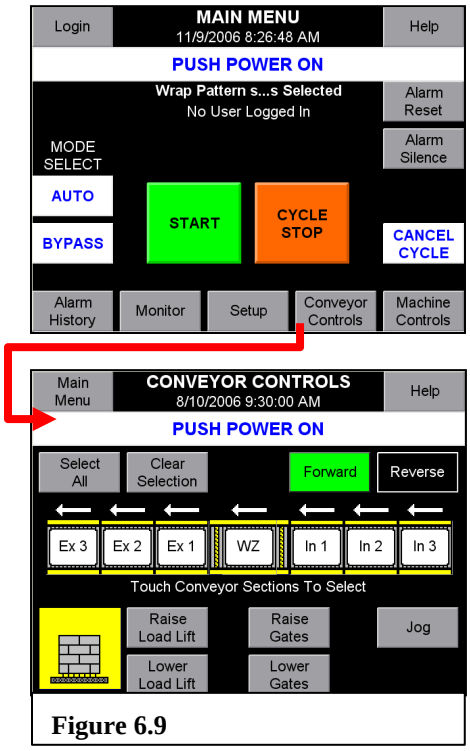


Figure 6.9

"Select All" – Touch this selection to include all conveyor sections.

"Clear Selection" – This erases all selections of conveyor sections.

"Conveyor Section Select" – Touch the conveyor section on the menu to make the selection. Touch a second time to erase the selection.

"Forward" – Changes the travel direction of the conveyors to the standard flow direction.

"Reverse" – Changes the travel direction of the conveyors to the opposite of the standard flow direction.

This is a manual function and is only available when the conveyors are in the manual mode.

"Jog" – Manually operates the conveyor sections.

"Raise Gates" (Option) – Raises the infeed and exit safety gates. The gates must be in the up position before the wrap zone, first infeed or exit conveyors can operate.

"Lower Gates" (Option) – Lowers the infeed and exit safety gates.

"Load Lift" (Option)

"Raise" – Raises the load lift.

"Lower" – Lowers the load lift.

6.5.5 Manual Controls

Rotation

"Jog Forward" – Turns the wrap arm in the forward (standard) direction.

"Jog Home" – Turns the wrap arm to the home position at low (Home) speed.

"Jog Reverse" – This turns the wrap arm in the opposite direction at low (Home) speed.

"Rotation Speed" – This button lets the operator set the speed for the wrap arm.

1. Push the button and make an entry for the speed.
2. Push the "Enter" button.

FDS

"Jog Up" – Moves the FDS in the up direction.

"Jog Down" – Moves the FDS in the down direction.

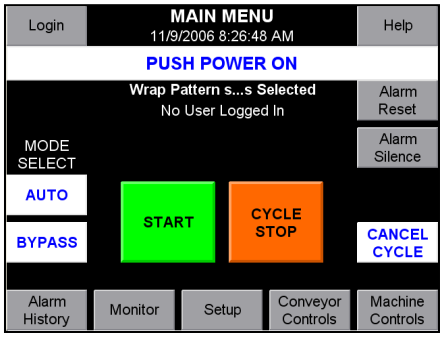
"FDS Speed" – This button lets the operator set the travel speed of the FDS.

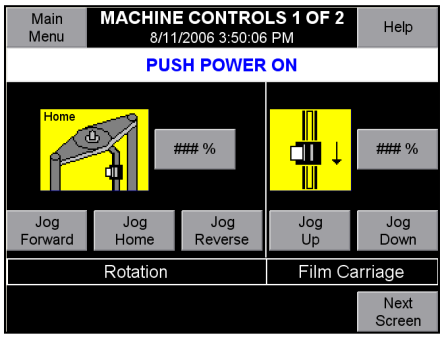
1. Push the button and make an entry for the speed.
2. Push the "Enter" button.

Film Clamp

"Release" – Releases the film clamp from the "retract" position.

"Retract" – Retracts the film clamp.





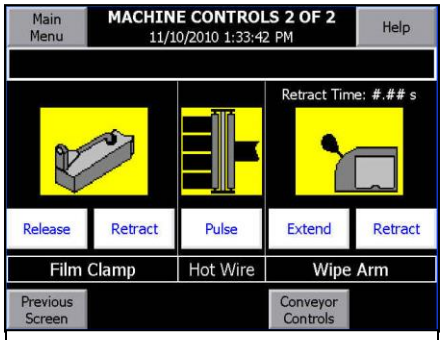


Figure 6.10

Cutter Wire

"Pulse" – Energizes the cutter wire. The wire energizes for a preset time (standard is 2.5 seconds). This function can also clean the debris from the wire.

Wipe Arm

"Extend" – Extends the wipe arm.

"Retract" – Retracts the wipe arm.

6.6 Initialize the System

6.6.1 Lockout/Tagout Procedures

Obey these procedures to prevent an injury from unexpected energizing, start-up, release of stored energy.

1. Disconnect the main power.
   a. Move the Main Disconnect switch to the "Off" position.
   b. Lock the Main Disconnect switch in the "Off" position.

2. Disconnect the main pneumatic supply.
   a. Move the main pneumatic valve to the "Off" position.
   b. Lock the main pneumatic valve in the "Off" position.

6.6.2 How to Stop the System

Standard Shutdown

If there is a load available at the infeed during the wrap cycle:

1. Push the "Cycle Stop" button.

   The machine completes the current wrap cycle, moves the load from the wrap zone and changes to Manual mode.

2. Push the E-stop.
3. Turn the Main Disconnect switch to the "Off" position.

It is safe to complete the maintenance, repairs.

If there is not a load available or the machine is not in operation:

1. Push the E-stop.
2. Turn the Main Disconnect switch to the "Off" position.

Emergency Shutdown

- Use only in an emergency condition.

Push the E-stop.

This immediately stops the operation of the machine.

The standard system has 2 E-stops. There is 1 in the operator controls and 1 on the safety fence on the opposite side of the machine. Refer to the floor plan.

6.7 How to Start the System

The standard system has the Manual mode, Automatic mode and Bypass modes of operation.

Before you make the selection, apply the power and initialize the machine.

To initialize the machine:

1. Turn the Main Disconnect switch to the "On" position.
2. Apply the air pressure and adjust to 6 Bar (80 Psi).
3. Close the Access Gate.
4. Reset the Emergency Stops (twist to release).
5. Push the "MCR Reset" button (**//**).

The "MCR Reset" button illuminates and the Main Menu shows on the screen.

6.8 Operate the System

It is important to know all components. This includes each mode of operation.

6.8.1 Manual Mode

To engage the Manual Mode:

1. Reset the Emergency stops.
2. Push the "MCR Reset" button. The button illuminates and the MCR Reset Alarm engages.
3. The machine is in the Manual Mode and all manual functions are available to the operator.

WARNING
Obey all Lockout/Tagout procedures. The machine can start automatically.

6.8.2 Auto Mode

To engage the Automatic Mode:

1. Reset the Emergency Stops.
2. Push the "MCR Reset" button. The button illuminates.
3. The Main Menu shows on the display.
4. Push the "Auto Mode" button.
5. Push and hold the "Start" button for 3 seconds to engage the automatic sequence.
6. The components move to the home position.
   - The Cut and Wipe assembly retracts.
   - The wrap arm moves to the home position.
   - The FDS lowers.
   - The Film Clamp engages.
7. Push and hold the "Start" button for 3 seconds to start the machine.

6.8.3 Bypass Mode

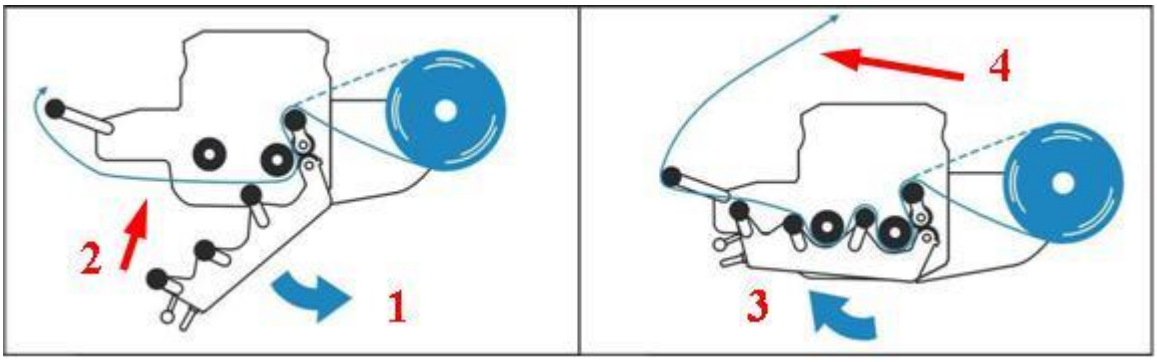
To engage the Bypass Mode:

1. Reset the Emergency Stops.
2. Push the “MCR Reset” button. The button illuminates.
3. The Main Menu shows on the display.
4. Push the “Bypass Mode” button.
5. Push and hold the “Start” button for 3 seconds to engage the “Bypass” sequence.
6. The components move to the home position.
    a. The Cut and Wipe assembly retracts
    b. The wrap arm moves to the home position.
    c. The FDS lowers.
    d. The Film Clamp engages.
7. Push and hold the “Start” button for 3 seconds to start the machine.
8. The loads move through the wrap cycle and do not wrap.

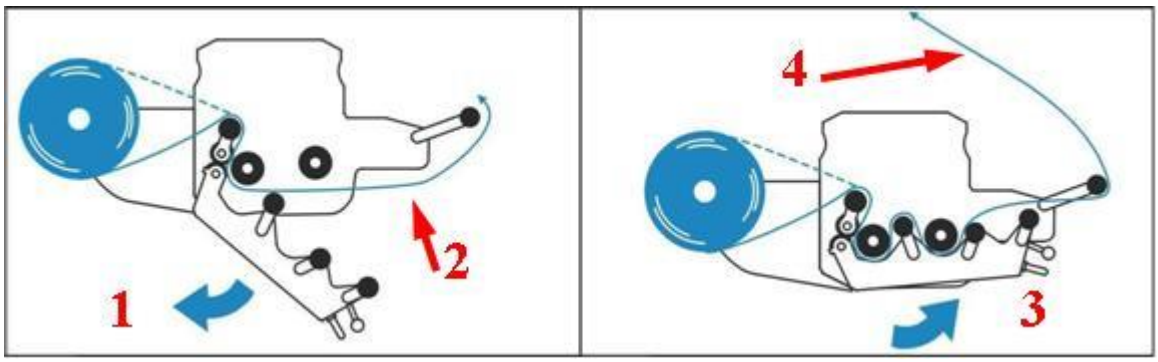
6.9 Thread the Film

Refer to the illustration below.

There is a diagram on the top cover of the FDS to help the operator.



Standard Flow



Reverse Flow

Figure 6.11

1	Open the EZ Thread Gate
2	Thread the Film
3	Close the Gate
4	Tackifier is on this Side

Film Loading Procedures

The standard film roll measures 254 mm (10”) in diameter and 508 mm (20”) width.

If the machine has a 762 mm (30”) FDS, you can use the film that is 762 mm (30”) width.

Thread the film:

1. Put the machine in “Manual” mode.
2. Make sure that all components are in the home position.
3. Push the E-stop.
4. Open the Access Gate.

5. Put a film roll on the film post of the FDS. The “tacky” side of the film points to the load.
6. Examine the film roll for defects, holes.
7. Open the EZ Thread gate.
   - Release the latch and pull the gate handle.
8. Refer to the diagram and thread the film around the pivoting roller.
9. Pull the film through the FDS. Make sure that the quantity of film is sufficient to attach to the film clamp after you close the gate.
10. Close the gate.
11. Keep the film slack to make sure that it does not break.
12. Pull the film around the last idler roller and attach the film to the vacuum film clamp.
13. Cut the film if the film tail measures more than 152 mm (6”) from the clamp.
14. Close the access gate.
15. Start the machine.

6.9.1 Film Roll Depletion/Film Break Recovery

If the film breaks, if the film roll is empty, a cycle for “Film Break Recovery” automatically starts.

The components go to the home position.

1. Push the E-stop.
2. Open the Access gate.
3. Replace the film roll.
4. Correct the film break condition.
5. Thread the film.
6. Start the machine.

OPERATOR INSTRUCTIONS

MAINTENANCE

7.0 Maintenance

Note: Illustrations are for reference only.

Note: Functions, descriptions and data can be different on your machine. Refer to section 3 for options.

Note: Some machines have a remote Emergency Stop. It is important to know the location of all E-stops before you operate the machine.

WARNING
Obey all Lockout/Tagout procedures before you change, adjust, repair a part.

WARNING
Obey all safety decal instructions and warnings.

WARNING
Do not make a change to this machine without approval from Lantech. It can cause a safety hazard and cancel the warranty.

7.1 Daily and Weekly Maintenance

- Tighten, replace loose fasteners.
- Look for oil leaks around the speed reducers.
- Look for air leaks.
- Make sure that the pneumatic supply and pressure settings are correct.
- Look for, drain the water in the air supply filter.
- Listen for unusual noise during operation.
- Clean the Cutter Wire. Use the "Pulse" function to clean the wire.
- Align the tension on the Nichrome wire. Adjust, replace the wire.

Note: The cutter wire does not touch the film when it cuts.

- Examine, fill the pneumatic lubricator.

7.1.1 Pallet Grip®

- Remove the debris from in and around the Pallet Grip.
- Make sure that the pivoting roller moves freely and retracts fully.
- Examine the groove roller and make sure that it turns freely.
- Make sure that the film moves over the groove in the film guide roller as the load wraps.

7.2 Monthly Maintenance

- Examine the FDS belt for wear.
- Examine the wrap arm drive belt for correct tension and wear.
- Examine the pre-stretch chains and sprockets for wear.
- Examine the conveyor chain for wear.
- Lubricate the chains with SAE 30 oil.
- Examine, adjust the clevis connections on the air cylinder

7.3 Bi-Annual Maintenance

Note: We recommend that personnel wear a dust mask for this step.

- Remove the cover of the electrical slip ring in the top frame. Use clean, dry, compressed air to remove the debris.

CAUTION
Do not use a solution to clean the slip ring. The ring self-lubricates and solutions can cause damage to the component.

- Examine, torque the bolts on the leg and the anchors. Refer to Torque Reference Chart in section 5.
- Lubricate the wrap arm ring bearing with 6 ml (0.2 oz) of grease (approximately 4 pumps of a standard grease gun). The grease fitting is on the pneumatic assembly

  Turn the ring bearing when you lubricate it.
- Examine, lubricate the bearings on the clamp.
- Refer to section 3 - Options for other lubrication requirements.

Ring Bearing Lubrication		
Environment	**Lubricant**	**Temperature Range**
Standard Cold/Freezer Clean Design/Food Grade	Fuchs Cassida EPS 2	-35° to +120° C (-31° to +248° F)

CAUTION
Do not apply more lubrication than the quantity shown to lubricate the ring bearing. Too much lubrication can cause damage to the bearing seal. If the lubrication leaks out, it can cause the drive belt to slip.

7.4 Annual Maintenance

Lubrication:

Drain the oil from and fill the speed reducers with **Klubersynth UH1 6-460** synthetic oil.

- Wrap Arm Rotation
- FDS Drive – there is a hole in the bottom of the wrap arm to drain the oil.

7.5 Mechanical Settings and Adjustments

7.5.1 FDS Up/Down Travel

WARNING
Disconnect the power to the machine before you make adjustments in the Wrap Zone.

Up/Down Travel Proximity Sensor and Actuator

There are 2 proximity sensors to control the Up and Down travel of the FDS. The adjustable actuators engage the sensors.

To adjust the proximity sensors:

1. Loosen the nuts on the sensor.
2. Move the sensor until it sees the actuator.

   The standard adjustment is 5 – 6 mm (3/16” – 1/4”).
3. Tighten the nuts.

To adjust the up/down limit positions:

1. Loosen the adjustment knob on the proximity sensor.
2. Move the actuator up, down to the correct height.
3. Tighten the knob.
4. Make sure that the “tilting roller” is set ½” above the floor.

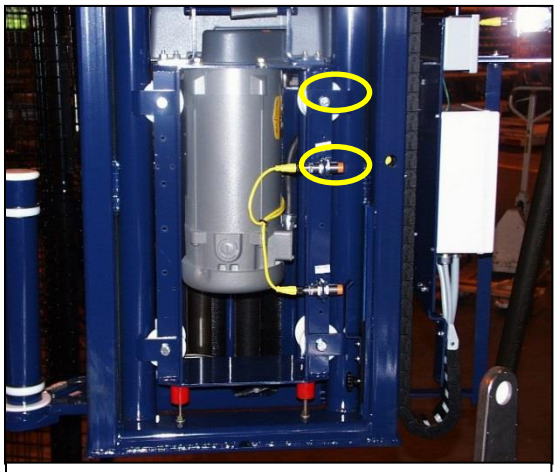


Figure 7.1

Figure 7.2 - Actuator

7.5.2 Belt Slack Switch

The belt slack switch senses a belt fault. The switch is on the bracket for the FDS lift drive.

Before you adjust the switch, remove the tension from the belt:

1. Move the FDS Down proximity sensor to the lowest point.
2. Move the FDS down to the Mechanical Limit.

To adjust the switch:

1. Use a 10 mm wrench to loosen the (2) M6 bolts on the bracket.
2. Use a 5/32 Allen wrench to loosen the switch lever arm.
3. Turn to the correct position.
4. Adjust the switch to approximately 45° to the floor when the switch is disengaged.
5. Tighten the bolts.

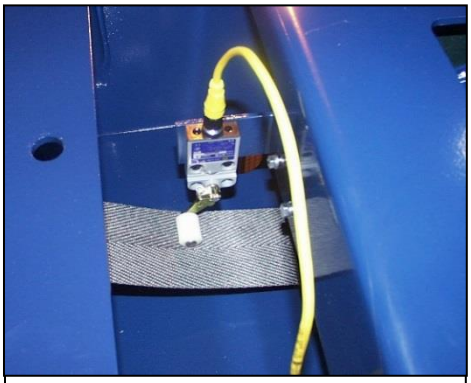


Figure 7.3 - Belt Slack

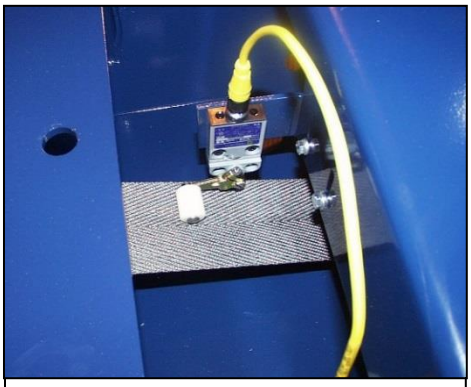


Figure 7.4 - Switch Activated

7.5.3 Wrap Arm Home Proximity Sensor

WARNING
Disconnect the power to the machine before you change, adjust, repair a component on the Top Frame.

The wrap arm uses a proximity sensor to sense the home position (start and stop points).

The home proximity actuator adjusts the position of the wrap arm home position.

The sensor and the actuator are in the top frame at the ring bearing.

Before you adjust the sensor, make sure that the actuator is below the sensor.

1. Loosen the nuts on the sensor.
2. Adjust the sensor until it senses the actuator, approximately 5 mm (3/8”).
3. Tighten the nuts.

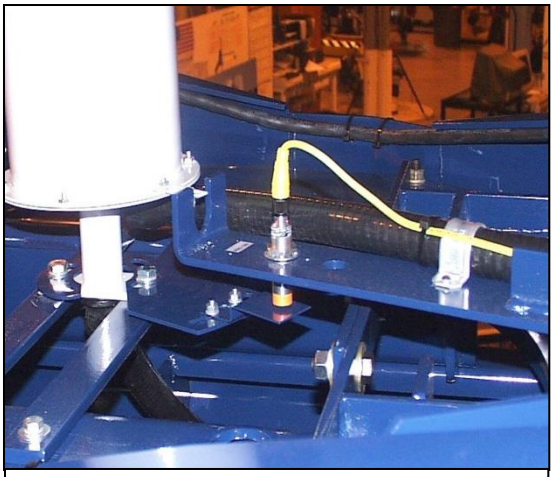


Figure 7.5

When you adjust the home position for the wrap arm, use the first home position as a reference point.

The actuator has 2 brackets.

Adjust the small bracket:

1. Make a note of the position of the proximity sensor on the actuator before you move it.
2. Loosen the 2 bolts on the home proximity sensor.
3. Adjust it to see the actuator.
4. Tighten the bolts.

Adjust the large bracket only if you cannot adjust the small bracket.

1. Loosen the 2 bolts on the bracket – below the slip ring.
2. Adjust to increase the range for the small bracket.
3. Tighten the bolts.

After you adjust the home position, move the wrap arm to the new position.

- Make sure that the wrap arm is not in a position above the conveyor.
- Make sure that it is not in the path of the cutter arm.

7.5.4 Wrap Arm Drive Belt

1. Use a tension gauge to set the correct tension on the drive belt. Refer to Figure 7.6.
2. Examine and adjust the belt after 100 cycles.

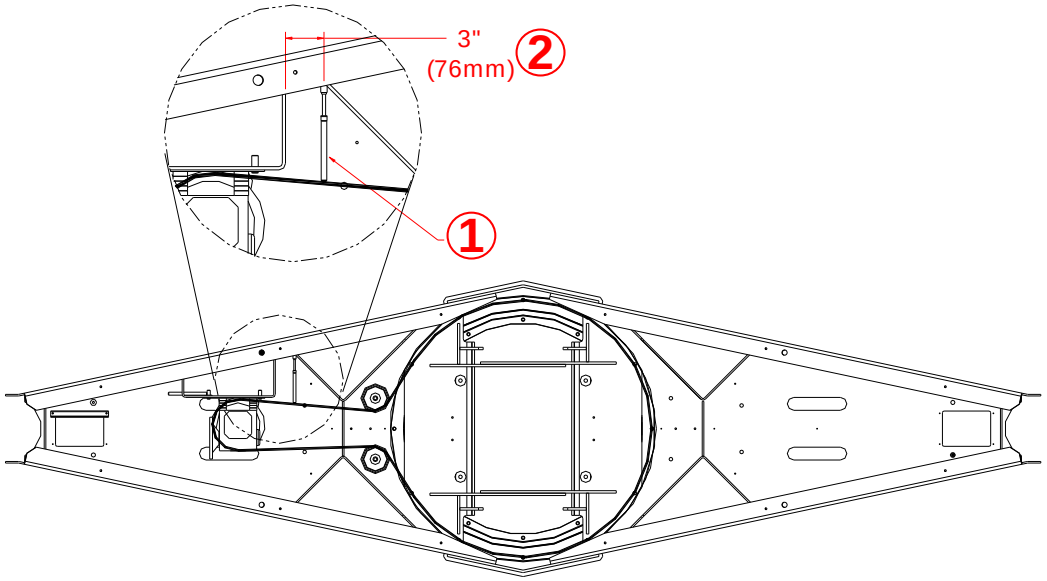


Figure 7.6

1	Tension Gauge
2	Position of the Tension Gauge

Tension on the Drive Belt for the Wrap Arm Rotation			
New Belt		**Used Belt**	
Deflection	**Force**	**Deflection**	**Force**
8 mm (5/16”)	5 kg (11 lb)	8 mm (5/16”)	4 kg (9 lb)

7.6 Pallet Grip® Setup and Adjustments

Pallet Grip includes:

"Tilting Roller" – attaches to the FDS frame. This roller moves the film down to align the edge of the film on the "Groove roller".

"Groove Roller" – The roller makes the film cable when the FDS is at the bottom of the load. The roller is adjustable to increase, decrease the quantity of film that makes the cable.

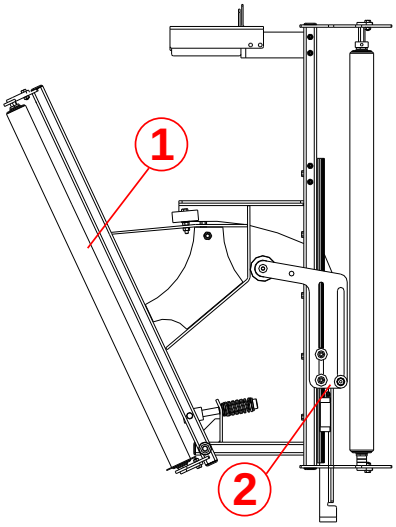


Figure 7.7

1	Tilting Roller
2	Groove Roller

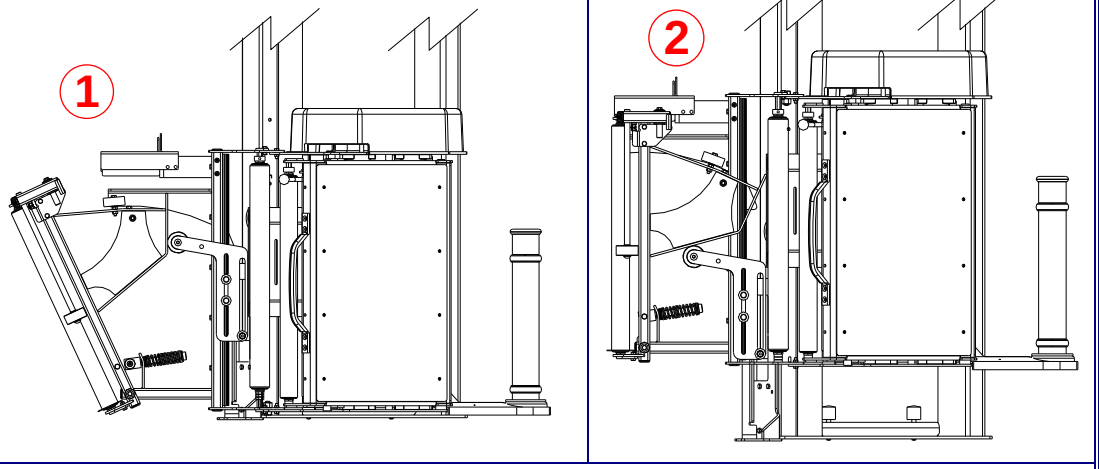


Figure 7.8

1	Pallet Grip® Activated
2	Pallet Grip® Deactivated

7.6.1 FDS Height Adjustment

1. Adjust the FDS down travel proximity actuator
2. Make sure that the bottom of the tilting roller is approximately 13 mm (1/2”) above the highest part of the conveyor.

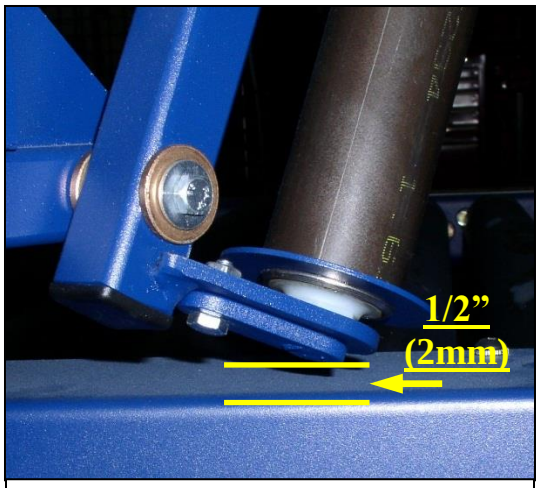


Figure 7.9

7.6.2 Mechanical Limit Adjustment

The Mechanical Limits are at the bottom of the wrap arm below the FDS.

1. Adjust the FDS down travel proximity actuator.
2. Make sure that the FDS extends below the bottom of the wrap arm.

   The FDS uses a mechanical limit at the bottom of the wrap arm to control the down travel.

   The mechanical limit has a 3/8-16 x 1 7/8” (48 mm) long threaded stud.

   The stud threads into the wrap arm and uses a jam nut to lock the stud in position.
3. Use a 9/16” wrench to loosen the jam nut and adjust.
4. Set the height to make sure that the FDS does not move too low.
5. Move the FDS to the lowest point.
6. Measure 2 mm (1/16”) between the FDS bottom plate and the top of the bumper stop.

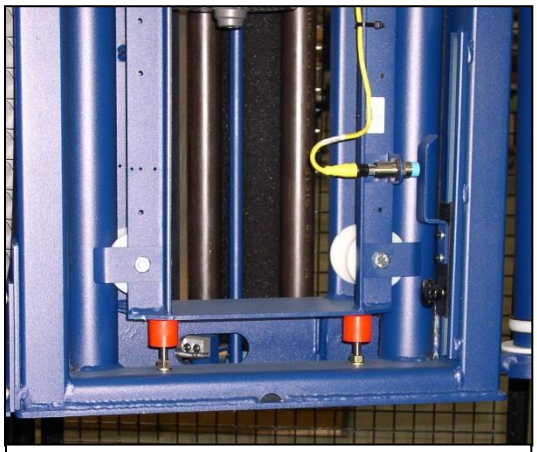


Figure 7.10

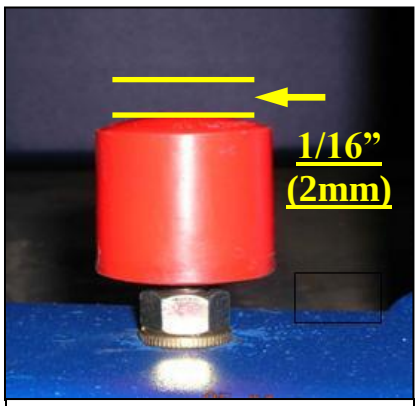


Figure 7.11

7.6.3 Groove Roller Height

This adjustment controls the quantity of film that makes the cable. It also sets the position of the cable on the pallet

1. Make sure that the FDS is in the down position (Pallet Grip activated).
2. Measure 171 mm (6 3/4”) from the FDS bottom plate to the top of the groove in the groove roller.

   This setting puts the film cable on the pallet at 38 mm (1 1/2”) below the top of the pallet.
3. Loosen the 2 bolts on the roller.
4. Adjust the roller height up or down to move the “payoff point” of the film on the tilting roller.

   This raises, lowers the cable on the pallet.

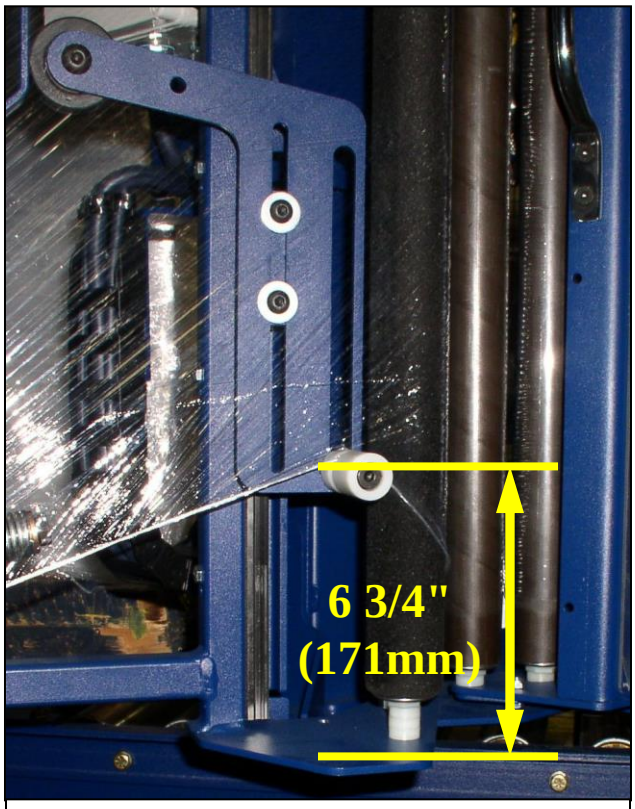


Figure 7.12

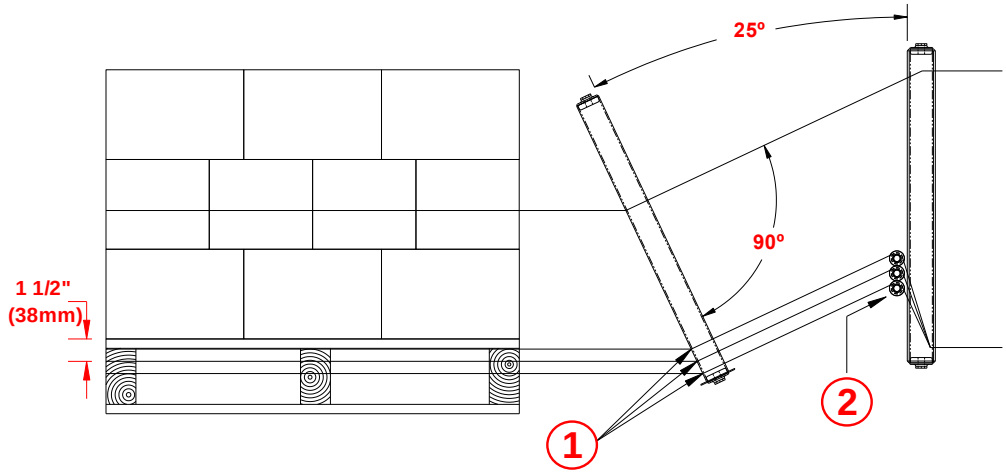


Figure 7.13

1	Film Payoff Points
2	Adjust the Roller

7.6.4 Use 20” Film on a 30” FDS

You can use 508 mm (20”) film on a 762 mm (30”) FDS.

Move the load height sensor with the overwrap gauge to the holes that are 254 mm (10”) below the standard holes.

This puts the sensor at the top edge of the film. It uses the overwrap gauge to make sure that the correct overwrap is applied.

Note: This function decreases the wrap height by 254 mm (10”).

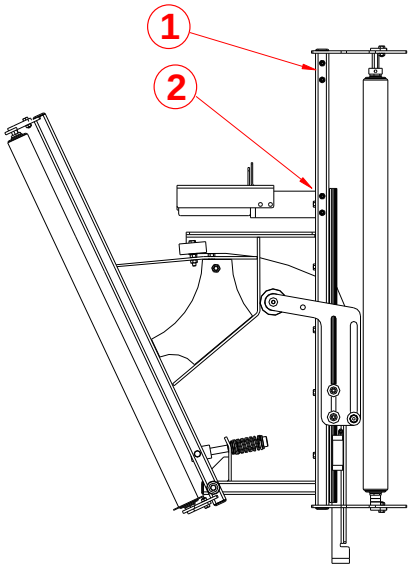


Figure 7.14

1	762 mm (30”) Film – Position for the Sensor
2	508 mm (20”) Film – Position for the Sensor

7.6.5 Disengage Pallet Grip®

Remove the groove roller and disengage Pallet Grip. The tilting roller continues to engage to wrap the bottom of the load.

1. Remove the Activation Wheel bracket and remove the Wheel.
2. Install the Activation Wheel in the rear hole.
3. Adjust the Activation Plate to the lowest position.
4. Remove the Groove Roller from the Plate.
5. Attach the Groove Roller in the Bearing in the aft of the Plate.

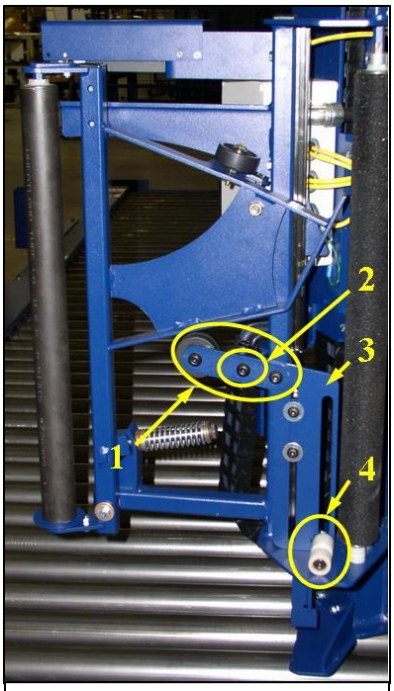


Figure 7.15

7.7 Automation Unit

7.7.1 Level the Automation Unit

There are 3 positions for the anchors. If the Automation Unit is not level:

1. Loosen the anchors and install the shims at the anchor positions.
2. Make sure that the top plate of the automation unit is parallel with the top of the conveyor rollers.
3. Use a level on the top plate.
4. Tighten the anchors.

7.7.2 Film Cutter Height

Adjust, align the height of the Film Cutter to make sure that the film clamps and cuts.

WARNING
Disconnect the electrical power to the machine and release the pneumatic supply before you do this procedure.

1. Move the arm of the Cut and Wipe assembly to the fully extended position.
2. Use a 13 mm wrench and loosen the 2 height adjustment bolts on the Film Cutter.
3. Adjust the Film Cutter.

   Make sure that the bottom is approximately 13 mm (1/2”) above the conveyor.
4. Align the Film Cutter parallel to the vertical arm.
5. Tighten the bolts.

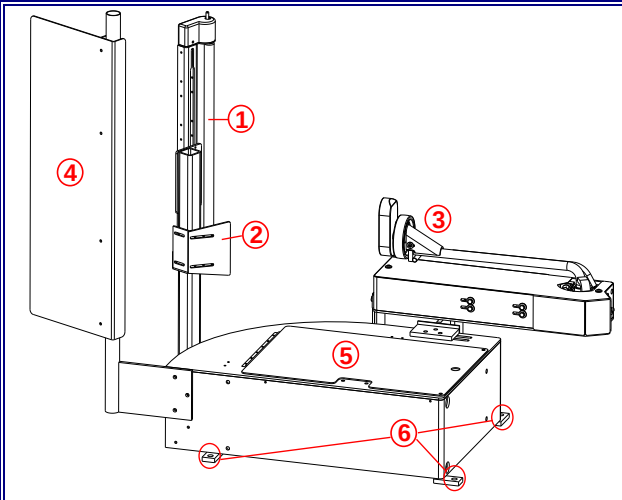


Figure 7.16

1	Film Cutter
2	Film Plow
3	Load Seeking Clamp®
4	Memory Bar
5	Access Door
6	Anchor Points

7.7.3 Adjust the Cutter Wire

The wire is between the idler roller and the film bar on the Film Cutter.

Adjust the wire to let the heat of the wire cut the film.

Note: The cutter wire does not touch the film.

1. Disconnect the power to the machine.
2. Release the air from the pneumatic supply**.**
3. Remove the top and bottom covers from the cutter head.
4. Loosen the screws on the top and bottom bushings.
5. Turn the bushings until the Nichrome wire is behind the roller surface.
6. Put a straight edge across the roller surface. Make sure that the wire does not touch the straight edge.
7. Tighten the screws.
8. Replace the top and bottom covers.
9. Wrap a load and make sure that the wire cuts the film.

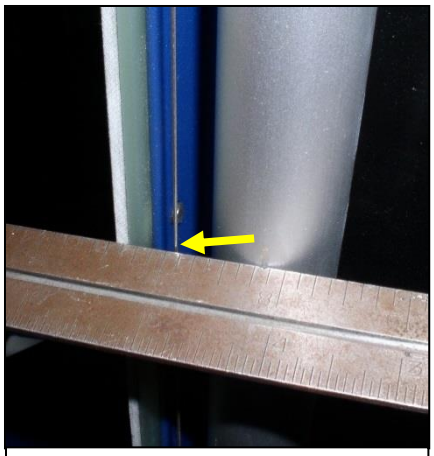


Figure 7.17

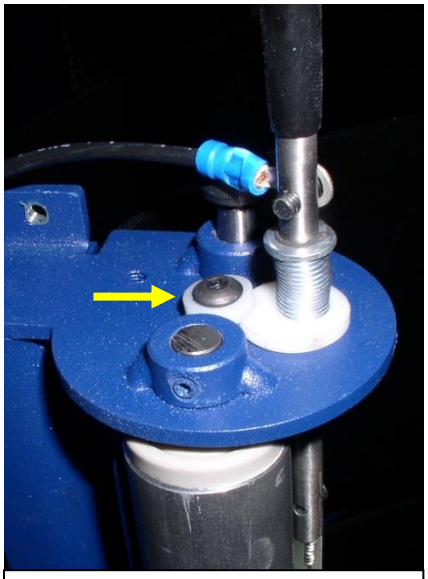


Figure 7.18 - Top Bushing

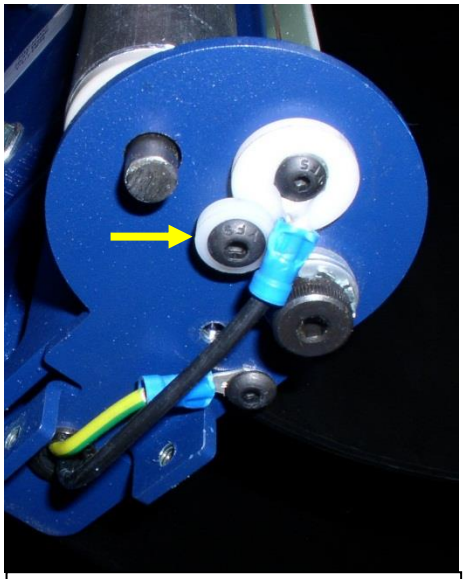


Figure 7.19 - Bottom Bushing

7.7.4 Adjust the Height of the Clamp

Adjust the height of the clamp to approximately 25 mm (1”) above the pass height of the conveyor.

1. Loosen the adjustment bolts.
2. Adjust the height of the clamp head.
3. Make sure that the clamp is level
4. Tighten the bolts.

7.7.5 Load Seeking Clamp®

The clamp uses a vacuum pump to energize the vacuum that holds the film to the clamp. This pneumatic vacuum pump is below the top plate of the automation unit.

The clamp has a filter in the vacuum hole that can collect debris. This can cause a decrease of vacuum. Use compressed air or clean the filter with water.

To remove the filter, remove the nylon faceplate on the vacuum head.

Install the faceplate into the vacuum hole over the filter.

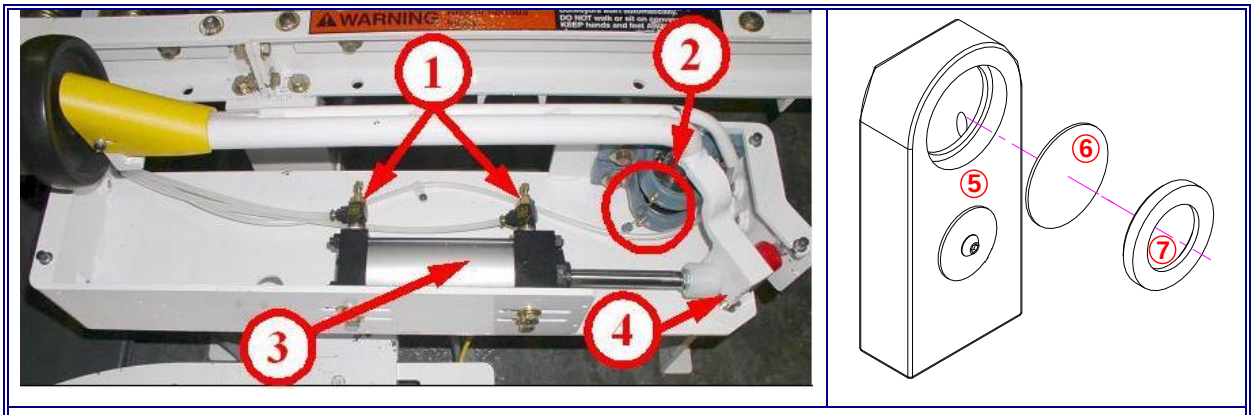


Figure 7.20

1	Flow Controls for the Air Cylinder
2	Bearing Lube Points
3	Air Cylinder for the Clamp Retract
4	Sensor for the Clamp Retract
5	Clamp Head
6	Vacuum Filter
7	Nylon Faceplate

The vacuum clamp valve is on the pneumatic assembly. The valve includes a regulator to control the air pressure to the vacuum pump.

Excessive air pressure to the vacuum pump can cause the film to break in the clamp. This can cause the vacuum to decrease and the film to release from the clamp.

The standard regulator pressure for the vacuum clamp is 2 – 2.4 Bar (30 - 35 Psi). The quality of the film, the film gauge, and pre-stretch ratio can change the pressure.

Make sure that the air pressure is not set too high. It can cause a "popping" noise and release the film from the clamp.

Vacuum Generator

The table below shows the quantity of vacuum to the generator at set air pressures.

Pneumatic Supply	HG (KPA)
1.38 Bar (20 Psi)	17 kPa (5 Hg)
2.75 Bar (40 Psi)	34 kPa (10 Hg)
3.44 Bar (50 Psi)	51 kPa (15 Hg)
4.8 Bar (70 Psi)	68 kPa (20 Hg)
6 Bar (80 Psi)	68 kPa (20 Hg)

7.7.6 Cutter Arm Proximity Sensor

The automation unit uses the proximity sensors to see the cutter arm in the "extend" and "retract" positions. These sensors are below the top plate of the automation unit.

1. Loosen the sensor to adjust it to see the actuator.
2. Use the mechanical limits on the cutter arm to align the actuator with the sensor.

7.7.7 Flow Control for the Cutter Arm

The cutter arm uses the flow controls on the pneumatic valve to control the movement.

If the cutter arm extends too slowly (low pressure), the wipe down loops can catch on the load.

If the cutter arm extends too quickly (excess pressure), it can cause a slack film condition.

Adjust the pressure to retract at a slower speed than the conveyor speed.

7.7.8 Replace the Cutter Wire

The film cutter uses a “Pulsed Hot Wire” to cut the film at the end of the wrap cycle.

The wire is Nichrome wire (.032 diameter-.66 ohms per ft.).

A 508 mm (20”) film cutter uses 635 mm (25”) of wire.

A 762 mm (30”) film cutter uses 889 mm (35”) of wire.

To Replace the Wire:

CAUTION
Disconnect the electrical power and release the air from the pneumatic supply before you continue.

1. Remove the top cover from the film cutter.
2. Loosen the screws on the top and bottom studs.
3. Remove the wire.
4. Thread the Nichrome wire through the bottom mount, around the screw.

   Twist the wire.
5. Fully compress the top mount spring.

   Thread the wire through the mount and around the screw.

   Bend the wire down, pull it tight and twist the wire.
6. Tighten the screws to hold the wire in position and cut the excess wire.
7. Replace the cover.
8. Complete a test of the wrap cycle and make sure that the film cuts correctly.
9. Adjust the wire if it does not cut correctly.

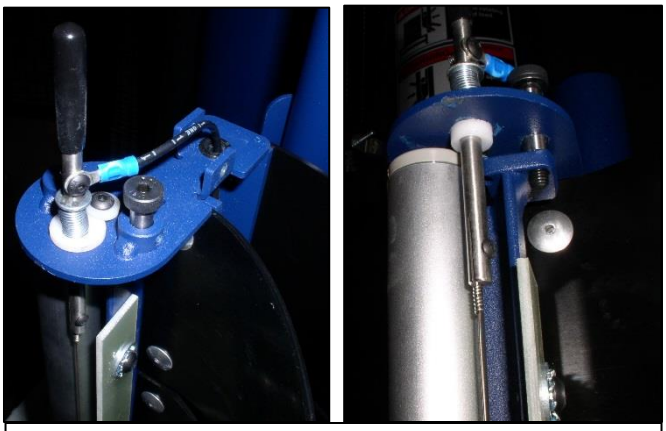


Figure 7.21 - Top Mount

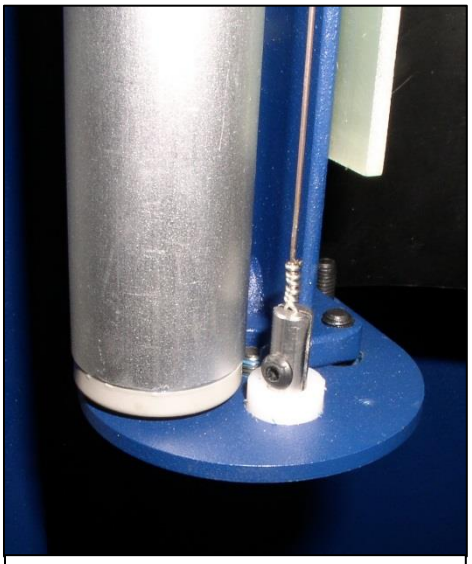


Figure 7.22 - Bottom Mount

7.8 Safety Gate Adjustments (if applicable)

The infeed and exit gates use the proximity sensors to sense the position of the safety gates.

The sensors have the indicator lights that illuminate when the gates are in the “raised” and “lowered” positions.

Adjust the sensors to the middle of the detection range for each direction.

The standard range is 12 mm (1/2”).

Loosen the nuts on the sensors and adjust in each direction.

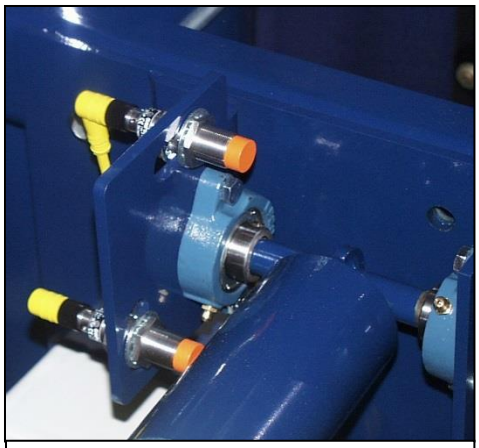


Figure 7.23

7.8.1 Flow Control

The flow controls on the safety gates control the movement of the gates. Make sure that the gates raise and lower smoothly.

The flow controls are on the air cylinder at the gates.

To set to the factory settings:

1. Use a small screwdriver and turn the top and bottom flow controls clockwise. This closes the flow controls.
2. Turn the top flow control counterclockwise 2 full revolutions.
3. Turn the bottom flow control counterclockwise 1 1/2 revolutions.

Adjust the settings to:

- Raise, lower the gates
- Increase, decrease the speed.

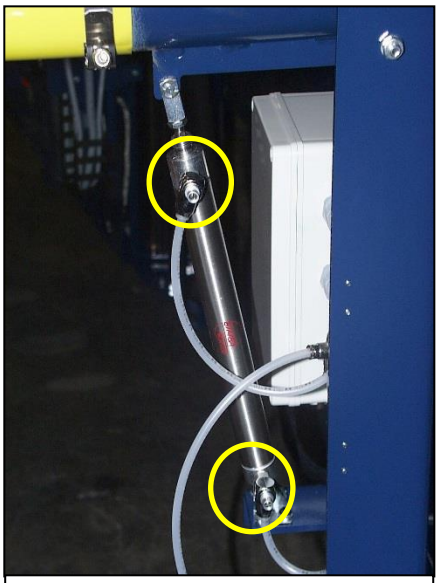


Figure 7.24

7.8.2 Air Cylinder Cushion

The air cylinder has a cushion at the top of the cylinder. The cushion helps the cylinder to stop smoothly when the safety gates raise and lower.

To adjust the cushion to the factory setting:

1. Use a small screwdriver and turn the screw fully clockwise.
2. Turn the screw counterclockwise 1 1/2 turns.

7.9 Motor Control Boards

Put a new film roll on the FDS before you adjust the boards.

7.9.1 Variable Frequency Drive (VFD)

(Option)

If the machine has VFD motor controllers, refer to the VFD manual. The parameters and the factory settings for the specific VFD controllers are on the electrical drawings.

WARNING
Make sure that only qualified personnel make these adjustments.

WARNING
Obey all safety procedures. You must apply the power to the machine for some electrical adjustments.

7.9.2 FDS Motor

	Factory Setting	Installed Setting	Alternative Setting	Notes
DB – Dead Band	Full CCW			
RESP – Response	50%			
IR – Internal Resistance Compensation	25%			
RCL – Reverse Current Limit	65%			
FCL – Forward Current Limit	65%			
MAX – Maximum Speed	65%			
FACC – Forward Acceleration	Full CCW			
RACC – Reverse Acceleration	Full CCW			
Jumpers				
J1A/J1B – Input Voltage	230V			
J2 – Armature Current	2.5 amp			
J3 – Armature Voltage	A180			
	J3 in "Tach Feedback Mode" T7 = 7 V per 1000 rpm T50 = 50 V per 1000 rpm			
J4 – Analog Input Voltage	10 V for Isolated Control			
	15 V for Potentiometer Speed Control			
J5 – Control Mode	SPD – Variable Speed Control			
	J5 - TRQ – Maximum Motor Torque as a function of Input Voltage to Terminal SIG (Signal) and COM (Common)			

Terminal	Function
EN - (Enable)	Enables Drive Board
COM – (Common)	
+15V – (Drive Board + DC)	Run Forward
SIG – Signal (Wiper)	Controls Motor Speed
-15V – (Drive Board –DC)	Run Reverse

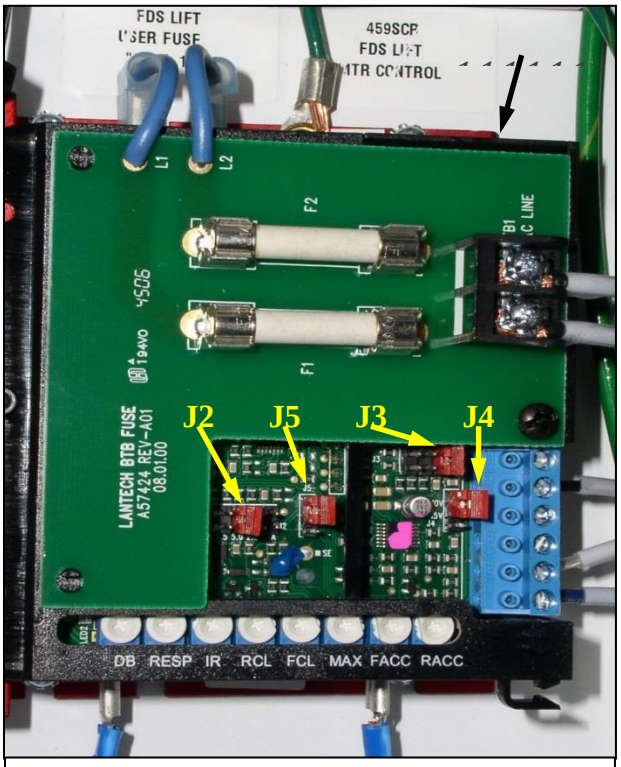
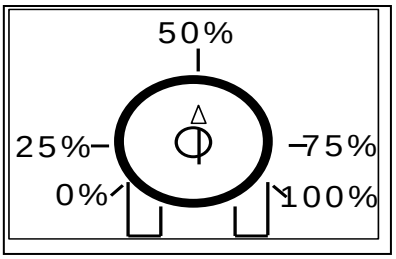
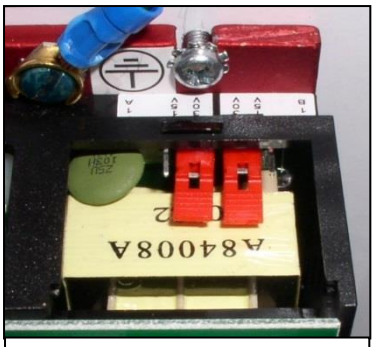


Figure 7. 25





J1A/J1B Jumper

7.9.3 Power Roller Stretch Plus

	Factory Setting	Installed Setting	Alternative Setting	Notes
KP	50%			
TCI	50%			
KD	20%			
Cur. Lim. (Current Limit)	65%			
Set Pt. Cal	Do Not Adjust			
Meter Cal	Use millivolt Gauge: 5 lbs = 50 Millivolts 10 lbs = 100 Millivolts			
Jumpers				
Jumper J1A/J1B	230 V			
Jumper J2	“Std”			
Jumper J3	6 Amps			
Jumper J4	2.5 LBS.			

7.9.4 Wrap Arm Motor

	Factory Setting	Installed Setting	Alternative Setting	Notes
DB – Dead Band	35%			
RESP – Response	50%			
IR – Internal Resistance Compensation	30%			
RCL – Reverse Current Limit	65%			
FCL – Forward Current Limit	65%			
MAX – Maximum Speed	65%			
FACC – Forward Acceleration	25%			
RACC – Reverse Acceleration	25%			
Jumpers				
J1A/J1B – Input Voltage	230V			
J2 – Armature Current	2.5 amp			
J3 – Armature Voltage	A180			
	J3 in "Tach Feedback Mode" T7 = 7 V per 1000 rpm T50 = 50 V per 1000 rpm			
J4 – Analog Input Voltage	10 V for Isolated Control			
	15 V for Potentiometer Speed Control			
J5 – Control Mode	SPD – Variable Speed Control			
	J5 - TRQ – Maximum Motor Torque as a function of Input Voltage to Terminal SIG (Signal) and COM (Common)			
J6 – Motor Stopping	CTS – Coast to Stop			
	RTS – Regen to Stop			

Terminal	Function
EN - (Enable)	Enables Drive Board
COM – (Common)	
+15V – (Drive Board + DC)	Run Forward
SIG – Signal (Wiper)	Controls Motor Speed
-15V – (Drive Board –DC)	Run Reverse

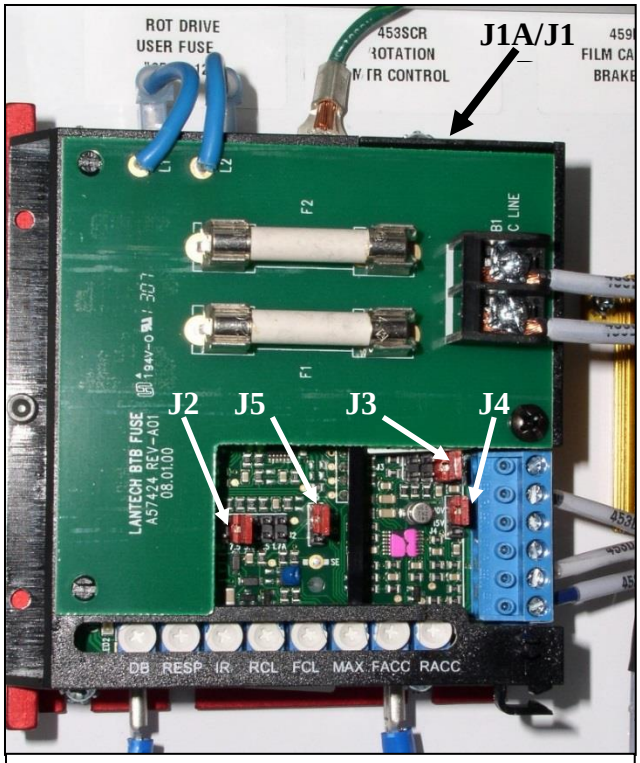
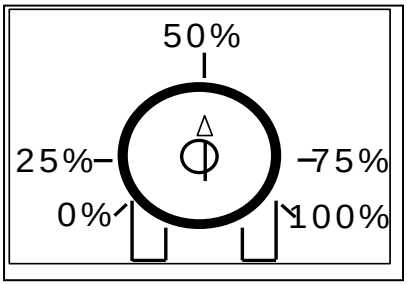
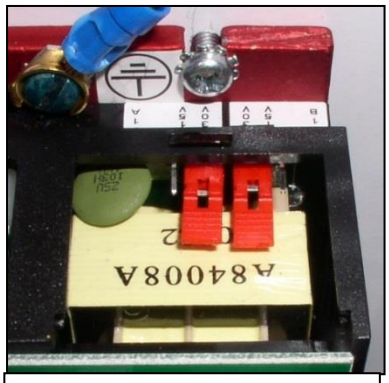


Figure 7. 26





J1A/J1B Jumper

7.10 Potentiometer Settings

7.10.1 Film Delivery System

Dead Band (DB) – Keeps the motor in position.

If Dead Band is set too low, a small output voltage can cause the motor to move.

If the motor continues to move down, (drift):

1. Turn the potentiometer clockwise until the motor stops.
2. Measure the voltage between the M1 and M2 terminals to make sure that the output is 0 VDC.

Response (RESP) – Dynamic Response Control - This potentiometer sets the response of the control board. If the potentiometer is set too high, it can cause the control board to operate incorrectly.

Maximum Speed (Max) – Controls the maximum of the FDS in the down direction.

1. Adjust the potentiometer for maximum voltage to 180 VDC.
2. Move the FDS down and measure the armature voltage.

   Measure across the M1 and M2 terminals.

Reverse Current Limit (RCL) – Controls the maximum current that is available to the FDS lift motor. If the RCL is set too low, the speed of the motor does not increase to the maximum setting.

Forward Current Limit (FCL) – Controls the maximum current (amperage) that the control board supplies to the FDS drive when it lowers.

Internal Resistance Compensation. This controls how the motor control board measures the differences between a load and a "no-load" condition. This is a factory setting.

If you replace the wrap arm motor, see the steps below.

1. Operate the wrap arm at low speed with a full film roll and move the FDS up.
2. Attach the film to the load and make sure that you maximize the force-to-load.
3. If the motor for the wrap arm drive surges, turn the potentiometer clockwise.

Reverse Acceleration (RACC) – Controls the FDS rate of acceleration in the up direction.

- If the speed of the FDS increases too slowly, turn the RACC potentiometer counterclockwise.
- If the speed increases too quickly, turn the potentiometer clockwise.

Forward Acceleration (FACC) – Controls the FDS rate of acceleration in the down direction.

- If the speed of the FDS increases too slowly, turn the FACC potentiometer counterclockwise.
- If the speed increases too quickly, turn the potentiometer clockwise.

7.10.2 Power Roller Stretch Plus

Current Limit – Sets the range of adjustment, to 200% for J1.

KD – Sets the time for the pre-stretch to adjust to a film demand. An example is a load corner.

Turn the setting fully counterclockwise to decrease the effect of this potentiometer.

KP – Sets the level of response of the pre-stretch to a film demand. An example is a load corner.

Meter Cal - calibrates the voltage output.

1. Connect a digital voltmeter (DVM) TP-C (Neg) to terminal TB2 pin 10 (POS).
2. The drive board engages when the control power is “On”.
3. Adjust the potentiometer to align with the force on the meter.
   - 2.3 kg (5 lb) = 50 millivolts
   - 4.5 kg (10 lb) = 100 millivolts

Set Pt. Cal - Adjusts the reference voltage for the drive board.

Do not adjust. The PLC controls the reference voltage.

TCI – Sets the time for the pre-stretch to adjust to a film demand. (Example – a load corner).

Calibrate the Load Cell

The load cell amplifier board is on the FDS in the small junction box.

The load cell motor control board is in the control panel.

Examine the jumpers on the amplifier board and the load cell. Make sure that they are in the correct position.

Align the load cell.

Make sure that it is 2 mm (1/16”) from the load cell actuator.

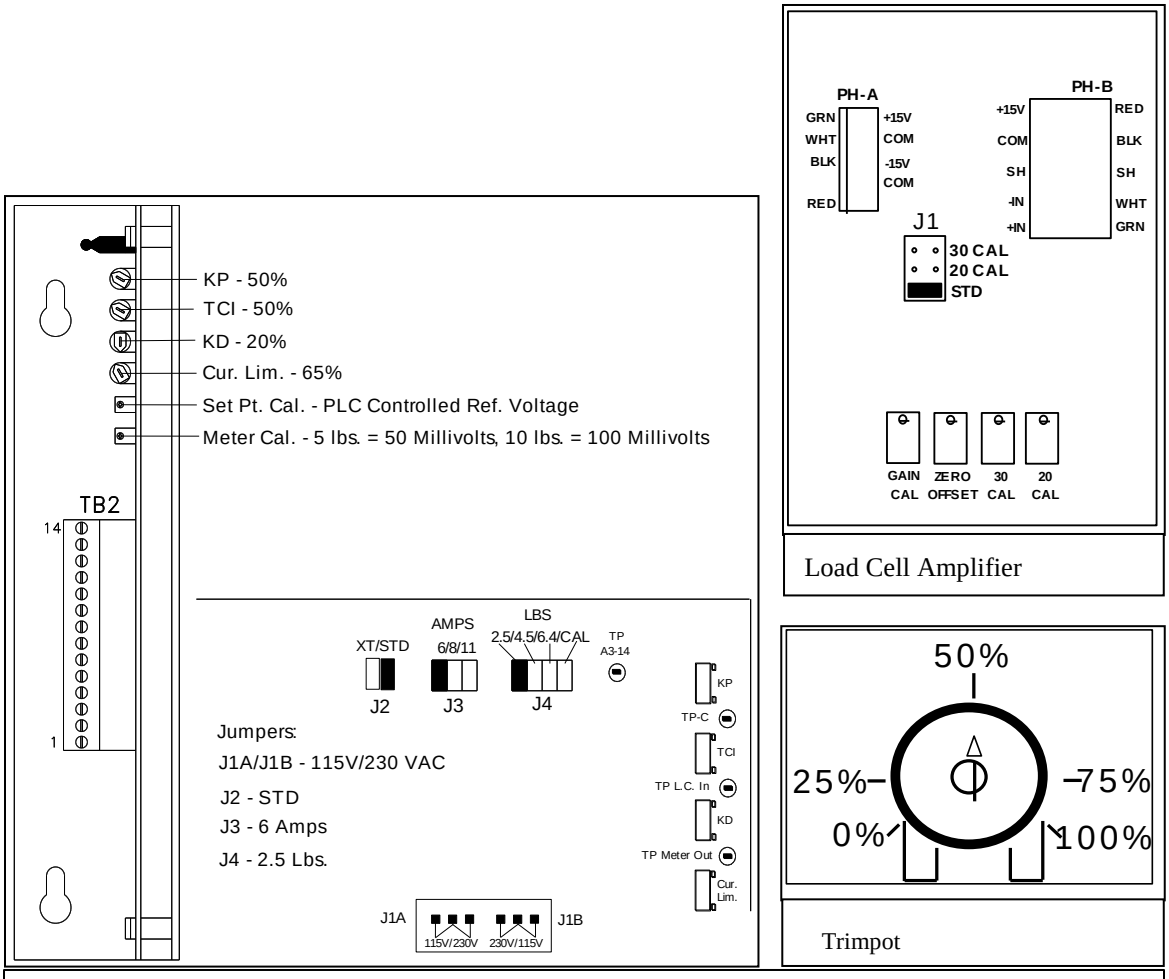


Figure 7.27

Calibrate the Load Cell

1. Disconnect the power.

WARNING
Obey all Lockout/Tagout procedures before you change, adjust, repair a part

2. Record the current position of jumper J4. Move it to the CAL position.

3. Make sure that the jumper J1 is set to "Std".

Note: The 20 CAL and 30 CAL jumper settings, potentiometers do not apply.

4. Attach the voltmeter positive lead to load cell output (TP-Load Cell In) and negative lead to circuit common (TP-C).

5. Apply the power and push the "MCR Reset" button.

Calibration - These steps make sure that the load cell senses the force on the load.

1. Make sure that there is no pressure on the load cell and the voltmeter shows 0 VDC. If a voltage is more than 0, adjust the "Zero Offset" potentiometer to 0 VDC.
2. Thread the film. Use a force gauge to apply 2.3 kg (5 lbs) of force to the film.
3. Make sure that the voltmeter shows 1 VDC at load cell output. If the voltage is negative, turn the load cell 180°.

To adjust:

4. Turn the "GAIN CAL" potentiometer clockwise to increase and counterclockwise to decrease the output. The GAIN CAL is on the FDS in the small junction box.
5. Complete the calibration at 2.3 kg (5 lbs) and increase the force to 4.5 kg (10 lbs). Make sure that the voltage is 2 VDC at load cell output.
6. Disconnect the power.
7. Remove the voltmeter leads from the circuit. Refer to the position of jumper J4 in step 2 and move it to the original position.

Power Roller Stretch Plus

The steps below make sure that the control board adjusts to the changes of force to the load during the wrap cycle.

Low Speed Operation

Adjust the TCI potentiometer counterclockwise if the FDS, at homing speed, pulses, chatters, or surges.

Normal Speed Operation

During the wrap cycle, look for changes in the force to the film. An example is that the force tightens as the demand increases at the corners of the load.

Increase the KP potentiometer function if the force at the corners is high. Turn the KP potentiometer clockwise to adjust.

Decrease the KP potentiometer function if the force at the corners is low. Turn the KP potentiometer counterclockwise to adjust.

Irregular Speed Operation

This condition can occur on rectangular loads and long narrow loads.

If the adjustment does not correct the condition, turn the potentiometer slowly clockwise in small increments (up to a maximum ¼ turn).

Make sure that the KD potentiometer is set fully counterclockwise for standard operations.

Heavier Gauge Film

A different film can pull more horsepower from the pre-stretch.

If this condition occurs, refer to the motor plate for the full load current. Set the J3 jumper to a higher setting.

Turn the “Force to Load” potentiometer fully counterclockwise for low force. Adjust the current limit to calibrate the low force setting.

Turn the current limit potentiometer clockwise to increase the current to the motor.

7.10.3 Wrap Arm

Dead Band (DB) – Keeps the motor in position.

If Dead Band is set too low, a small output voltage can cause the motor to move.

If the motor continues to move down, (drift):

1. Turn the potentiometer counterclockwise until the motor stops.
2. Measure the voltage between the M1 and M2 terminals to make sure that the output is 0 VDC.

Response (RESP) – Dynamic Response Control - This potentiometer sets the response of the control board. If the potentiometer is set too high, it can cause the control board to operate incorrectly.

Maximum Speed (Max) – Controls the maximum rotation speed.

1. Turn the "Wrap Arm Speed" knob fully clockwise.
2. Adjust the potentiometer for maximum speed.

   The maximum speed is:

   - S2500 = 25 rpm
   - S3500 = 35 rpm

   Refer to Section 3 for options that can change the speed.
3. Push and hold the "Wrap Arm Jog" button.
   - To increase speed, turn the potentiometer clockwise.
   - To decrease speed, turn it counterclockwise.

Reverse Current Limit (RCL) – Controls the maximum current to the wrap arm. It decreases the speed at the end of the wrap cycle.

Forward Current Limit (FCL) – Controls the maximum current (amperage) that the control board supplies to the wrap arm drive when it accelerates.

Internal Resistance Compensation. This controls how the motor control board measures the differences between a load and a "no-load" condition. This is a factory setting.

If you replace the wrap arm motor, see the steps below.

1. Operate the wrap arm at low speed with a full film roll.
2. Attach the film to the load and make sure that you maximize the force-to-load.
3. If the drive motor for the wrap arm surges, turn the potentiometer clockwise.

Reverse Acceleration (RACC) – The reverse acceleration is also a Forward Acceleration. It controls how quickly the wrap arm speed decreases when you change from a high speed to a lower speed.

- If it is set too far clockwise, it can cause the wrap arm to move by the "Home" position.
- Make sure that it moves at minimum speed for the last 3 feet of travel before the "Home" position.
- Make sure that it adjusts in less than 1 second when it is set fully counterclockwise.
- Make sure that it adjusts in less than 5 seconds when it is set fully clockwise.

Forward Acceleration (FACC) – Controls the wrap arm rate of acceleration.

- Adjust counterclockwise to decrease the time.
- Adjust clockwise to increase the time.

7.11 Standard Parts Replacement

7.11.1 FDS Lift Belt

1. Move the wrap arm until you get access to the FDS lift drive from the top of the wrap arm.
2. Move the down travel proximity sensor to the lowest point.
3. Move the FDS down until it stops at the mechanical limit and the lift belt is slack.
4. Keep the tension on the belt to engage the belt slack switch.
5. Push the FDS "Down" button to unwind the belt from the drum.
6. Push the E-stop and disconnect the power.
7. Before you remove the belt, look at the routing.
8. Remove the lift belt shaft from the top of the wrap arm and remove the belt.
9. A pin in the pocket of the belt holds the belt in the drum. You can get access to this from the top of the wrap arm. Remove the pin.
10. Pull the belt out of the slot.
11. Use these steps in the opposite sequence to install the new belt.

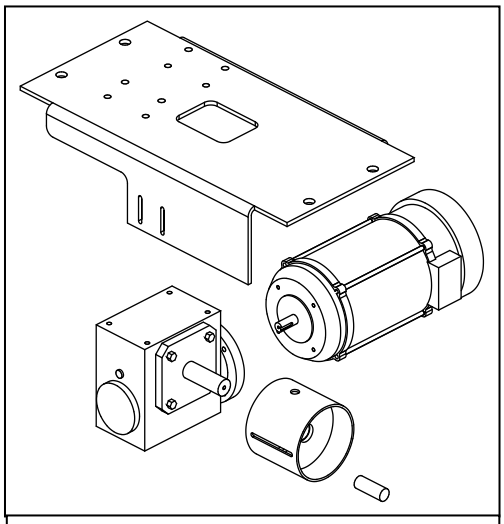


Figure 7.28

Note: The 2 ends of the belt are different. The drum end has a pocket (one side of the loop is closed) and the other end has a loop.

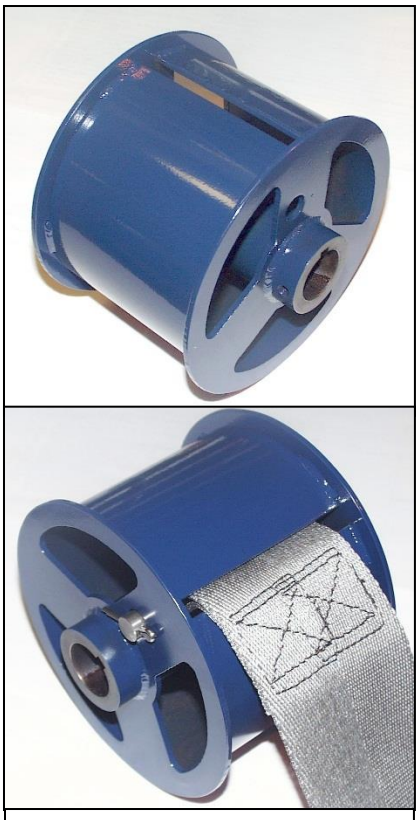


Figure 7.29

7.11.2 Wrap Arm Drive Belt

WARNING
Disconnect the power to the machine before you change, adjust, repair a component on the top frame.

1. In the junction box in the wrap arm, disconnect the slip ring to wrap arm electrical connector.
2. Remove the 4 bolts from the slip ring bracket on the saddle.
3. Loosen the bolts on the wrap arm drive.
4. Loosen the tensioning nut until you can remove the belt from the drive sprocket.
5. Remove the belt and examine the urethane ring on the bearing for wear.
6. Install the new belt around the ring bearing.
7. Thread the belt between the idler pulleys and around the drive sprocket.
8. Align the belt on the ring bearing before you set the tension on the belt.
9. Tighten the bolts.
10. Install the slip ring and connect the electrical connector to the junction box.

    Make sure that the cable from the slip ring stays below the saddle.
11. Move the wrap arm at high speed and make sure that the belt does not slip when you start and stop the wrap arm.
12. Examine and adjust the belt after 100 cycles.

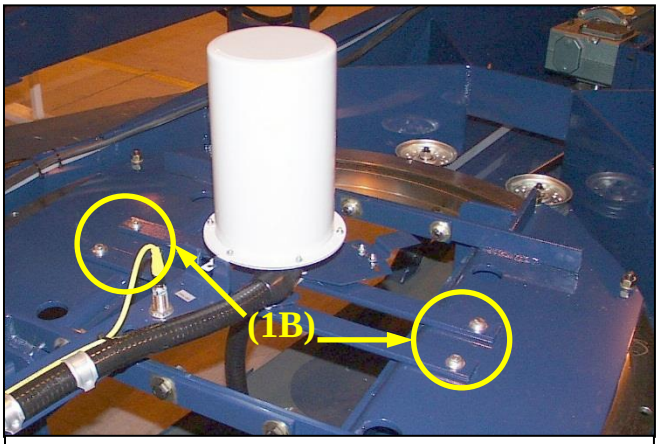


Figure 7.30 - Slip Ring

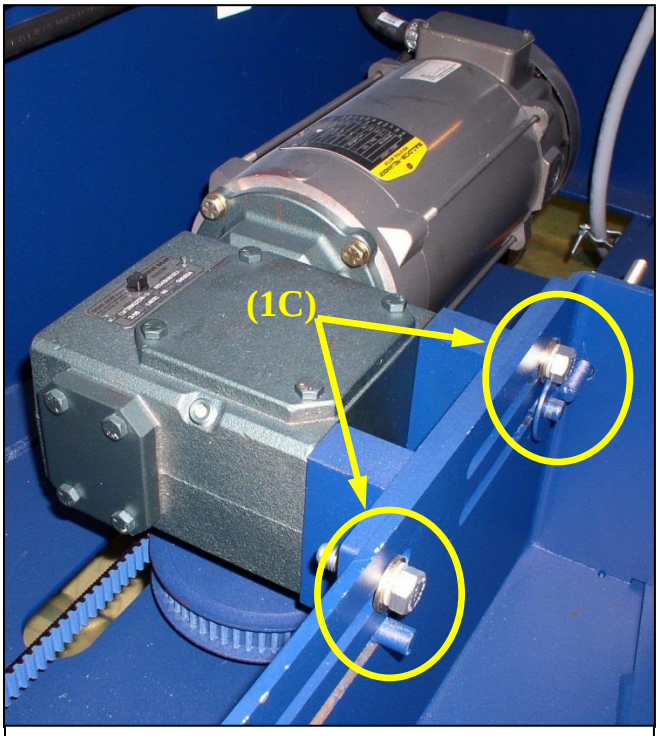


Figure 7.31 - Rotation Drive and Tensioner

7.11.3 Ring Bearing

WARNING
Disconnect the power to the machine before you change, adjust, repair a component on the top frame.

Remove the slip ring and wrap arm drive belt.

1. In the junction box in the wrap arm, disconnect the slip ring to wrap arm electrical connector.
2. Remove the 4 bolts from the slip ring bracket on the saddle.
3. Loosen the wrap arm bolts.
4. Loosen the tensioning nut until you can remove the belt from the drive sprocket.

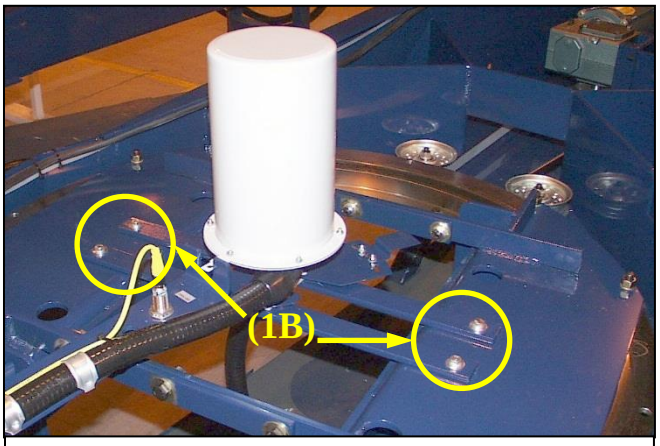


Figure 7.32 - Slip Ring

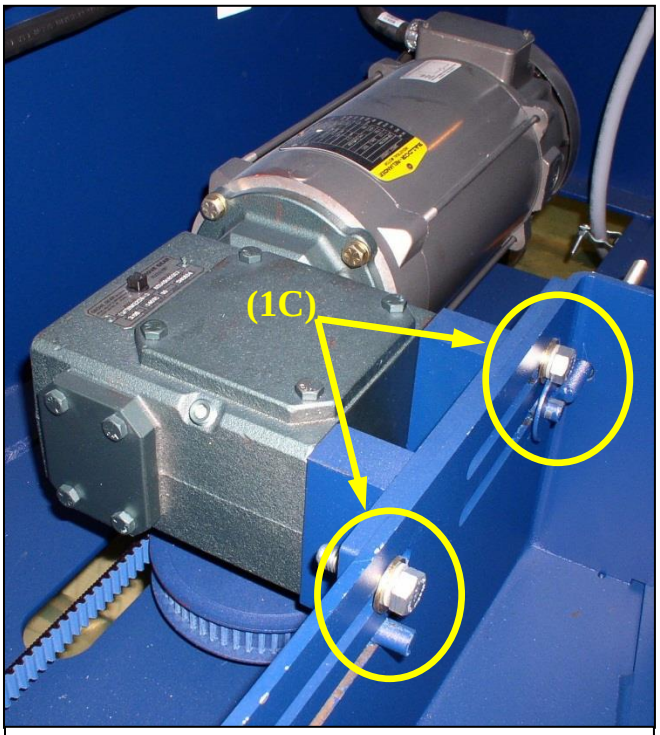


Figure 7.33 - Rotation Drive and Tensioner

Remove the wrap arm.

1. Use a 17 mm wrench and remove the safety photoelectric sensors from the wrap arm.
2. Use a forklift to remove the wrap arm.
3. Attach a lift strap to the wrap arm at the FDS lift drive.
4. Remove the 8 nuts and washers from the saddle.
5. Remove the wrap arm.
6. Refer to the Section 5 for instructions and illustrations.

Figure 7.34 – Lift, Balance Point

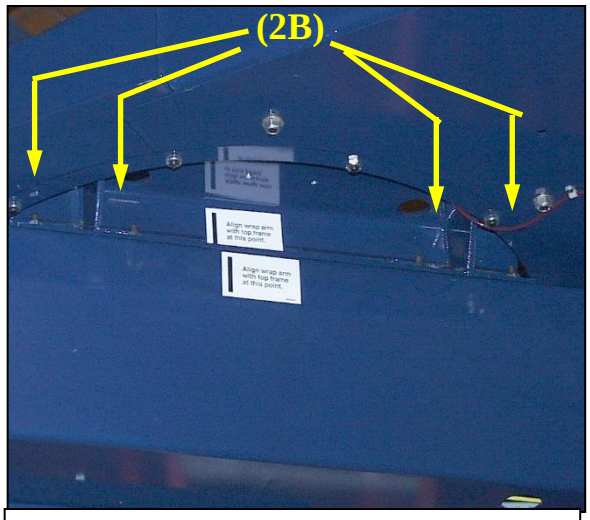


Figure 7.35 - Wrap Arm Bolts (4 Each Side)

CAUTION
Use caution when you remove the wrap arm to prevent damage to the wrap arm components.

Remove the saddle

1. Use a 19 mm wrench and remove the 6 bolts and washers from the tie bars on the saddle.
2. Use a ¾ wrench and remove the 8 bolts that attach the saddle to the ring bearing.
3. Remove the 2 sections of the saddle.

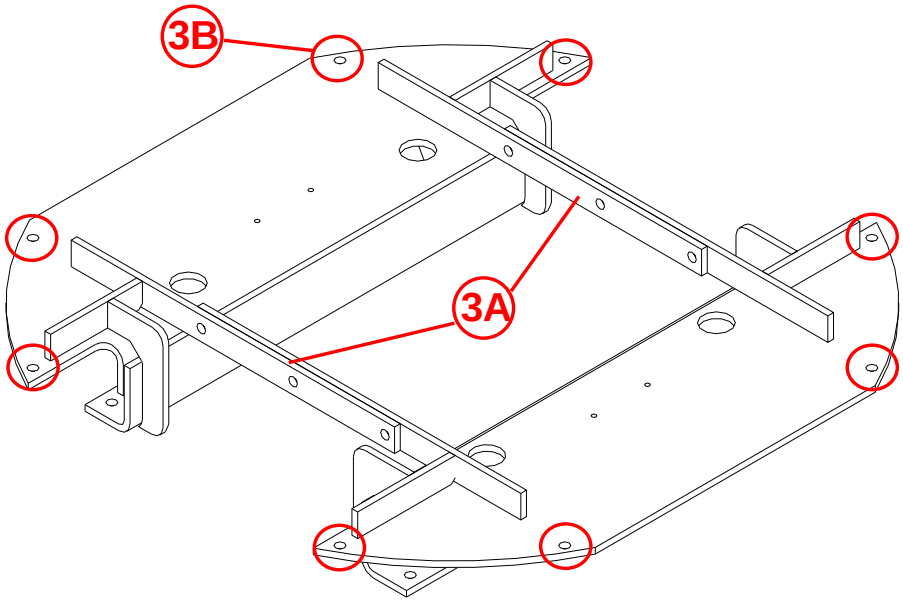


Figure 7.36

3A	Saddle Tie Bars
3B	Ring Bearing Mounting Holes – 8 Positions

Remove the ring bearing

1. Disconnect the grease line and remove the grease fitting from the bearing.
2. Keep the fitting for the new bearing.
3. Remove the jam nuts on the 12 ring bearing to adapter ring bolts.
4. Attach the eyebolts to the ring bearing on opposite side holes.
5. Attach a strap, chain to lift the ring bearing.

   Tilt the ring bearing to clear the top frame.

Install the ring bearing

1. Look at the original bearing and make sure that the ring bearing has a urethane band.

2. Use the steps above in the opposite sequence to install the new ring bearing.

3. Put the bearing in position and align the grease port for the grease fitting.

4. Install the ring bearing to the adapter ring.

Use a star pattern to tighten the bolts.

5. Torque the bolts to 108 N-m (80 lb-ft).

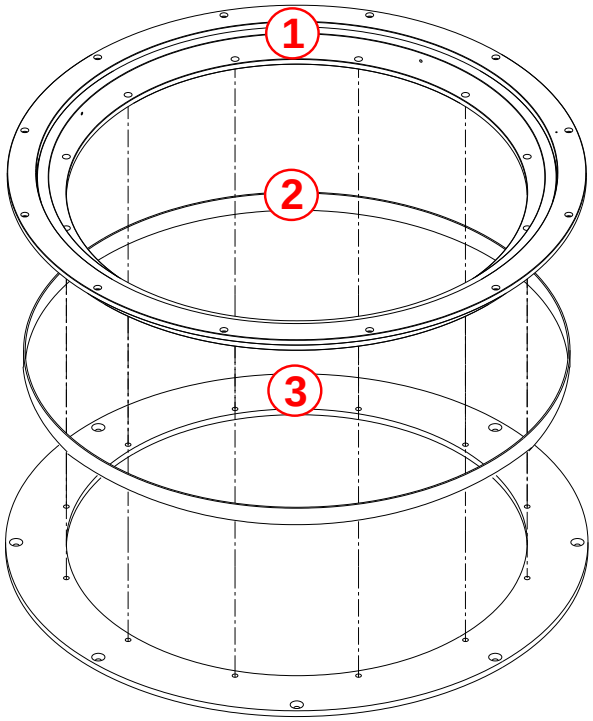


Figure 7.37

1	Ring Bearing
2	Urethane Band
3	Adaptor Ring

Assemble the saddle

1. Tighten the 6 tie bar bolts by hand.
2. Tighten the 8 bolts on the saddle by hand.
3. Torque the saddle to ring bearing bolts to 102 N-m (75 lb-ft).
4. Torque the tie bar bolts on the saddle to 102 N-m (75 lb-ft).
5. Refer to Section 5 for instructions to install the wrap arm to the saddle.

MAINTENANCE

8.0 Troubleshooting

This section tells some of the problems that can occur.

- Refer to the electrical and mechanical drawings
- Refer to the Maintenance section for adjustments.

See Section 1.1 for Lantech support.

8.1 General Data

	Problem	Possible Cause	Solution
1	The machine does not start.	The Main Disconnect switch is "Off".	Turn the switch "On".
		The Emergency Stop is engaged.	Reset the E-stop.
		The access gate is open.	Close the gate.
		The fuses to the control power are defective.	Replace the fuses.
		The DC power supply does not operate correctly.	Make sure that the input and output voltages are correct.
		The fuses on the Main Disconnect switch are defective.	Replace the fuses.
2	The machine does not start when you push the "Start" button.	The machine is not in the "Auto" mode.	Put the machine in "Auto".
		The FDS gate is open.	Close the gate.
		A component is not in the home position.	Make sure that all components are in the home position. This includes optional equipment.
		The load height sensor does not see the load in the wrap zone.	Adjust, replace the sensor.
			Examine the height of the load. Make sure that it is the correct height for the sensor.
		The "Short Load" sensor does not see a load in the wrap zone. **Note:** The "Short Load" is an option).	Adjust, replace the sensor.
3	The "Auto" or "Bypass" modes do not engage.	The FDS gate is open.	Close the gate.
		Look for fault conditions on the display: Slack belt, Low air pressure, Transition jam, et.	Correct the fault.
4	The machine stops during the wrap cycle.	Look for fault conditions on the display: Slack belt, Low air pressure, and Transition jam, Film Break.	Correct the fault.
		The FDS gate is open.	Close the gate.
		The wrap arm photoelectric sensors do not operate correctly.	Look for blockage in the path of the wrap arm.
			Adjust, replace the sensors.

8.2 Film Delivery System

	Problem	Possible Cause	Solution
5	Push the “Up” button and the FDS does not move up in Manual mode.	The FDS speed control is set too low.	Adjust the speed control.
		The FDS Up Travel proximity sensor does not operate correctly.	Adjust, replace the sensor.
			Examine the cable for damage. Make sure that the cable connects with the sensor.
		The control for the FDS lift does not operate correctly.	Make sure that the input and output voltage to the drive control is correct.
			Examine, replace the fuses on the drive board.
			Examine the armature wires on the lift motor.
6	Push the “Down” button and the FDS does not move down in Manual mode.	The speed control is set too low.	Adjust the speed control.
		The “Down Travel” proximity sensor does not operate correctly.	Examine, replace the sensor.
			Examine the cable for damage. Make sure that the cable connects with the sensor.
		The FDS drive board does not operate correctly.	Make sure that the input and output voltage to the drive board is correct.
			Examine, replace the fuses on the board.
			Examine the armature wires on the motor for the FDS lift drive.
		There is a slack condition on the FDS lift belt.	Examine the belt for a slack condition.
			Examine, adjust the “Belt Slack” switch.
			Examine the cable for damage. Make sure that the cable connects with the switch.

TROUBLESHOOTING

	Problem	Possible Cause	Solution
7	The FDS does not wrap to the top of the load.	The load height sensor is not set correctly.	Adjust the sensor.
		The FDS speed control is set too low.	Adjust the speed control.
		The “Overwrap” is not set correctly.	Adjust the overwrap setting.
8	The FDS does not move the correct distance above the top of the load during the wrap cycle.	The load height sensor is out of adjustment.	Adjust, replace the sensor.
		The wrap pattern settings are not set correctly.	Adjust the “Overwrap” setting.
9	The FDS does not stop at the top of the load.	The load height sensor does not operate correctly.	Adjust, replace the sensor.
		The wrap pattern settings are not set correctly.	Adjust the “Overwrap” setting.
10	The FDS does not move to the bottom position during the wrap cycle.	The “Down Travel” proximity sensor is not set correctly.	Adjust the switch and actuator.
11	The FDS does not move down during the wrap cycle.	The top wrap counter does not operate correctly. (The home proximity sensor counts the wraps).	Examine the input of the Home proximity sensor.
		The FDS speed control is set too low.	Adjust the speed control.
		The “Down Travel” proximity sensor does not operate correctly.	Examine, replace the sensor.
			Examine the cable for damage. Make sure that the cable connects with the sensor.
		The FDS drive board does not operate correctly.	Complete a test of the Up and Down functions in Manual mode.

8.3 Wrap Arm

	Problem	Possible Cause	Solution
12	The wrap arm does not turn when you push the "Jog" button.	The wrap arm speed is set too low.	Adjust the speed.
		The machine is not in the Manual mode.	Look at the mode on the display.
		The tension is not set correctly on the wrap arm drive belt.	Adjust the tension.
		The motor control board for the wrap does not operate correctly.	Make sure that the input and output voltage to the board is correct.
			Examine, replace the fuses.
			Examine the armature wires on the motor.
		A component is not in the home position.	Make sure that all components are in the home position. This includes optional equipment.
		The wrap arm drive does not operate correctly.	Make sure that the pulley for the wrap arm turns.
13	The wrap arm moves past the home position at the end of the wrap cycle.	The RACC potentiometer for the wrap arm is set too low.	Adjust the potentiometer.
		The Decel timer for the wrap arm is set too high.	Adjust the timer.

8.4 Power Roller Stretch Plus (PRS Plus)

	Problem	Possible Cause	Solution
14	The FDS does not apply the film.	The "Reduced Tension" delay is set too low.	Adjust the setting.
		The "Wrap Force" control is set too low.	Adjust the setting.
		The J2 jumper on the motor control board for the PRS Plus is not set correctly.	Set the Jumper. Refer to Section 7, maintenance.
		There is damage to the pre-stretch drive chain.	Examine, replace the chains and sprockets.
		The control board for the PRS Plus does not operate correctly.	Examine, adjust the control board fuses and the input and output voltages.
			Examine the armature wires on the motor.
		The load cell amplifier board does not operate correctly.	Make sure that the reference voltage is 15 VDC.
			Calibrate the amplifier board and the PRS Plus motor control board.
		The load cell is not set correctly.	Make sure that the force is applied in the direction of the arrow on the load cell.
15	The film breaks at the start of the wrap cycle.	The "Reduced Wrap Force" delay is set too low.	Adjust the setting.
		The film pulls out of the clamp.	The vacuum pressure is set too high. The standard setting is 2 – 2.34 Bar (30 - 35 Psi).
		The film breaks at the clamp.	Look for, correct sharp edges.
		The film roll is defective.	Replace the film roll.
		There is an adhesive from the film on the roller.	Use ammonia, detergent to clean rollers.

TROUBLESHOOTING

	Problem	Possible Cause	Solution
16	The film breaks during wrap cycle.	There is an adhesive from the film on the roller.	Use ammonia, detergent to clean rollers.
		There are sharp edges on the load.	Decrease the Wrap Force.
		There is damage to the pre-stretch rollers.	Replace the rollers.
		The film is not threaded correctly.	Refer to the diagram to thread the film.
		Look for damage on the film roll.	Remove the damaged film. Replace the film roll.
17	The load does not wrap with the correct force-to-load.	The Wrap Force is set too low.	Increase the Wrap Force.
		The motor control board for the PRS Plus is not set correctly.	Calibrate the board.
18	The film winds around the pre-stretch rollers. Do not use a knife to remove the film.	There is an adhesive from the film on the roller.	Use ammonia, detergent to clean rollers.
		There is damage to the pre-stretch rollers.	Replace the rollers.
		The motor control board for the PRS Plus is not set correctly.	Calibrate the board.
19	The FDS does not wrap low on the pallet.	The FDS “Down” proximity sensor, actuator, or mechanical limits do not operate correctly.	Adjust the components.

8.5 Pallet Grip®

	Problem	Possible Cause	Solution
20	The film cable does not catch the 4 corners of the pallet.	The FDS does not lower correctly to wrap the pallet.	Lower the FDS down travel proximity sensor.
		The groove roller is set too high for the height of the pallet.	Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet.
21	The film cable did not form correctly.	The FDS does not lower correctly to wrap the pallet.	Lower the FDS down travel proximity sensor.
		The groove roller is set too low for the height of the pallet.	Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet.
		The pivoting roller does not move correctly to make the film cable.	Lower the FDS to fully engage the roller. 
		The Wrap Force is set too low. A slack film does not make a tight cable of film.	Increase the Wrap Force setting at the control panel.

8.6 Automation Unit

	Problem	Possible Cause	Solution
22	Wipe arm does not extend at end of wrap cycle.	The wrap arm is not in the home position.	Make sure that the wrap arm is in the home position.
		There is an air leak.	Repair the leak.
		There is low air pressure.	Examine the air pressure gauge at pneumatic assembly. Make sure that it is 3.8 Bar (55 Psi).
		The pneumatic valve does not operate correctly.	Use the "Override" button on the valve to complete a test of the valve.
		Wipe arm extend proximity sensor does not operate correctly.	Adjust, replace the sensor.
23	The film does not cut at the end of the wrap cycle.	The wire is broken at the film cutter.	Replace the wire.
		Nichrome wire is out of adjustment.	Adjust the wire.
		There is an adhesive from the film on the wire.	Clean, replace the wire.
		The fuses in the cutter wire circuit are defective. .	Replace the fuses.
		The Cutter Arm does not fully extend.	Adjust the "Extended" proximity sensor. If the arm does not fully extend, the wire does not energize.
			Make sure that the load is not too close to the Cutter Arm.
24	Film does not clamp at the end of the wrap cycle.	The vacuum generator does not operate correctly.	Adjust, replace the generator.
		Clamp retract proximity sensor does not operate correctly.	Adjust, replace the sensor.
			Examine the cable for damage. Make sure that the cable connects with the sensor.
		There is an air leak.	Repair the leak.
		Film does not make contact with the clamp when wipe arm extends	Adjust the vacuum clamp and wipe arm.
			Examine the function of the air valve on the clamp. Put the machine in Manual mode. Use the "Override" button on the valve to complete a test of the valve.

8.7 Load Seeking Clamp®

	Problem	Possible Cause	Solution
25	The clamp does not hold the film at the start of the wrap cycle.	There is no vacuum at the film clamp.	Make sure that the pressure regulator is set correctly. Make sure that it is 2 – 2.5 Bar. (30 – 35 Psi).
			Clean the vacuum filter.
		The film does not cover the vacuum hole on the clamp head.	Adjust the FDS "Lower Travel" sensor.
			Adjust the home position of the wrap arm. Make sure that the film aligns with the face of the clamp.
		The vacuum is set too high. This can cause damage to the film.	Adjust the pressure regulator. The standard setting is 2 – 2.5 Bar. (30 – 35 Psi).
		The clamp does not connect with the side of the load when the arm pivots.	Move the load closer to the clamp.
		The speed of the wrap arm increases too quickly.	Adjust the wrap arm acceleration.
		The load cell does not operate correctly.	Examine, calibrate the load cell.
26	When the head of the clamp retracts, it does not move to the full vertical position.	The head of the clamp "sticks", or there is a break in the torsion spring.	Replace or repair/adjust. Refer to the clamp assembly drawing for details.
27	The head of the clamp "sticks" below the film at the load.	The film covers more than 50% of the wheel on the clamp head.	Adjust the FDS "Lower Travel" sensor. Make sure that the bottom edge of the film covers less than 50%.
28	The arm moves to the "retracted" position too quickly.	The flow control on the "retract" air cylinder is set too high.	Adjust the air cylinder. Make sure that it moves smoothly.

8.8 Conveyors

	Problem	Possible Cause	Solution
29	A section of conveyor does not "jog" in the Manual mode.	There is a motor overload condition.	Refer to the display and reset the overload.
		The fuse in the motor control circuit is defective.	Replace the fuse.
		The chain is defective.	Replace the chain.
		The safety gates are not in the "up" position.	If the conveyor section is the first infeed or exit section adjacent to the wrap zone: Raise the gate before you "jog" the conveyor in manual mode,
30	The wrap zone conveyor does not "jog" in the Manual mode.	A component is not in the home position.	Make sure that all components are in the home position. This includes optional equipment.
		The safety gates are not in the "up" position.	Raise the safety gates.
		There is a motor overload condition.	Refer to the display and reset the overload.
		The chain is defective.	Replace the chain.
		The fuse in the motor control circuit is defective.	Replace the fuse.
31	The load does not move to the next "staging" conveyor.	There is a motor overload condition.	Refer to the display and reset the overload.
		The "Staging" photoelectric sensor does not operate correctly.	Adjust, replace the sensor.
			Examine the cable for damage. Make sure that the cable connects with the sensor.
		The chain is defective.	Replace the chain.
		The fuse in the motor control circuit is defective.	Replace the fuse.
		The infeed or exit safety gate is in the down position.	If the conveyor section is the first infeed or exit section next to the wrap zone: Raise the gate before you "jog" the conveyor in manual mode,
			Adjust the safety gate "raised" proximity sensor.

APPENDIX - GLOSSARY

9.0 Appendix

CE - Declaration of Conformity

Glossary

Warranty

9.1 Glossary

Automation Unit - The assembly between the wrap zone conveyor and the FDS when all components are at the home position. It holds the beginning film tail, cuts the film and wipes it to the load. It eliminates the film tail at the end of the cycle.

Bottom Wrap - The layers of film that the Film Delivery System applies to the bottom of the load.

Bypass Mode - A load moves through the wrap cycle but does not wrap.

Cut and Clamp - The assembly that clamps and cuts the film at the end of the wrap cycle.

Cutter Wire - A component of the Cut and Wipe or Top Sheet Dispenser that energizes to raise the temperature. The heat in the wire cuts the film.

Emergency Stop (E-stop) – A button that safely stops the machine in an emergency condition.

EZ Thread - An option that is standard on most Film Delivery Systems. It includes a gate that makes it easy to thread the film.

Film Break Recovery - To start or continue the wrap cycle after a film break.

Film Delivery System (FDS) - The assembly that pre-stretches the film and generates the wrap force before it applies the film to the load. The FDS can apply Netting as an alternative to the film.

Film Plow - The assembly that pushes the film into the film clamp.

Initialize - This sets the safety circuits and puts all components in the start position.

Intelli-sensor - The trade name for a photoelectric sensor that sees a variety of colors and surface variations on a load.

Jog - To move a machine component with manual functions, controls. Examples are to "Jog" the wrap arm, turntable.

Load Cell - A transducer that changes the force or pressure into a measurable electrical output. A transducer is a device that changes the power from one system into a different form for a different system.

Load Height Sensor - A sensor that sees the top of the load and stops the Film Delivery System to apply the top wraps.

APPENDIX - GLOSSARY

Load Seeking Clamp® - The trade name for a vacuum clamp that pivots and holds the beginning film tail on the load. The clamp holds the film against the load to increase the containment force.

Lockout/Tagout - Safety procedures that align with OSHA requirements and give protection to personnel. The procedures make sure that the power is off and not started up again before the completion of maintenance, service work.

Outrigger - A structure that extends from a main structure to add stability, support. On the S Series™ machines, the outriggers attach to the base of the leg.

Overwrap - The quantity of film that extends above the load during the wrap cycle.

Pallet Grip® - The trade name for a "Lock Your Load to the Pallet" system. It makes a cable of film that attaches and locks the load to the pallet.

Personal Protective Equipment - PPE refers to protective clothing, goggles, other garments or equipment. It gives protection to personnel from injury, infection.

Photoelectric Sensor - A component that senses the distance, absence, or presence of an object. The sensor uses a light transmitter and a photoelectric receiver.

Power Roller Stretch Plus - A quick reacting Film Delivery System that senses the changes in the film tension as the film is applied to the load. It includes the force readout in pounds on the HMI and a faster response time for a higher film demand.

Pre-stretch - A procedure that extends the length of the film before the Film Delivery System applies it to the load.

Proximity Sensor - A component that senses objects in the range of the sensor without physical contact. The sensors change information on the movement or presence of an object into an electrical signal.

Qualified Personnel - Personnel who completes the training and receives certification to start-up, change, adjust, repair the machine.

Saddle - An assembly at the top of an S machine that holds the wrap arm.

Tensioner - A component to adjust the tension. This usually applies to a belt or chain.

Throughput - The number of loads that move through the wrap cycle.

Top Wrap - The layers of film that the Film Delivery System applies to the top of the load.

Variable Frequency Drive (VFD) - An adjustable speed drive that changes the motor input frequency and voltage to control the motor speed and torque.

Wrap Arm - The assembly on the S Series™ machines that holds the Film Delivery System. The wrap arm moves around the load and the FDS applies the film to the load.

Wrap Cycle - The sequence of steps to wrap a load.

APPENDIX - GLOSSARY

Wrap Force - An adjustable setting that controls the tension, pressure applied to the load during the wrap cycle.

Wrap Height - The maximum load height that a machine can wrap.

Wrap Pattern - A group of settings to make a repeatable sequence of operations for a specific load type.

Wrap Zone - The area of the machine where the Film Delivery System applies the film to wrap the load.

Wrap Profile - A group of settings to make a repeatable sequence of operations for a specific load type.

Wrap Zone - The area of the machine where the Film Delivery System applies the film to wrap the load.

APPENDIX - WARRANTY

9.2 Warranty

All Lantech machines include a warranty against a defect in:

- Material
- Design
- Manufacturing

Lantech has the option to repair, replace the machine, part if:

- Lantech is the manufacturer, vendor of the part
- The part is defective
- Lantech knows about the defect before the warranty period ends

Obey the steps below to prevent the cancellation of your warranty

The actions can cancel the warranty:

- The failure to operate the machine by Lantech instructions
- The failure to obey the maintenance instructions
- A change to the parts, the machine without Lantech approval
- An accident that can cause the machine to be damaged
- An environment where the weather conditions can cause the machine to be damaged.
- The failure to operate the machine by the environmental specifications.

  This includes:
  - An environment where moisture causes corrosion of parts
  - Explosive environment
  - The failure to prepare the area correctly for installation and maintenance

    This includes:
    - The electrical supply is not sufficient
    - The floor is not flat
    - The thickness of the floor is not correct
    - The floor has a crack in the area where the machine is installed
    - The machine is installed near joints in the floor

The warranty stops if the machine moves to a new customer.

Unless Lantech agrees in writing, this warranty does not include the requirements for federal, local, safety, environmental regulations and standards.

European standards:

- Supply of machine with Orgalime General Conditions

10.0 Parts List and Drawings

How to Use This Section

This section helps the operator and maintenance personnel find the parts and assemblies. The drawings follow each parts list.

How to Find a Part Number

1. Find the drawing that contains the part.
2. Find the part on the drawing and the item number for the part.
3. Use the item number to find the part on the parts list. Refer to the part number, description and quantity.

Send your parts order to the local Lantech® Distributor.

Refer to Section 1.1 for Lantech support.