

VisionPak

Operation and Maintenance

Guide

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Introduction

Congratulations on the purchase of your new VisionPak high speed packaging machine. Your machine has been custom designed for you to optimize your packaging needs. This manual was written to ensure the proper installation, operation, and maintenance of your VisionPak machine in a safe manner.

It is necessary that all personnel who come in contact with this machine in any way read this manual carefully. Failure to do so could result in serious bodily injury, death and/or damage to the machine and its components.

If you have any questions regarding the proper installation, operation, or maintenance of your VisionPak machine, please contact technical support:

CP Packaging
2530 W. Everett St.
Appleton, WI 54914
Ph. (920)733-6690
Fax. (920)7336927

1.0 VisionPak Overview and Specifications

Overview:

The VisionPak machine takes semi-rigid and rigid film applications. The film is loaded onto the bottom film mandrel and fed into the transport chain. The machine then forms the film into the desired package. When the bottom form has been made, the transport chain carries the film into the loading zone. In the loading zone, the product is placed into the package. After the package is loaded, the clip chain carries the package to the sealing station. Top film is brought against the bottom film and sealed in the seal station. Upon exiting the seal station, the package travels through the cutoff area and is discharged from the machine.

Specifications:

Electrical Supply: 400 WYE/230 VAC
3 PH, w/neutral
100 Amp, 60/50 Hz
Connected with 1-1/4" NPT Electrical Drop

Air Supply: 2-3 CFM dry air at 80-90 psig
1" Feed (Must be clean dry air)
Connected with 3/4" NPT Air Drop

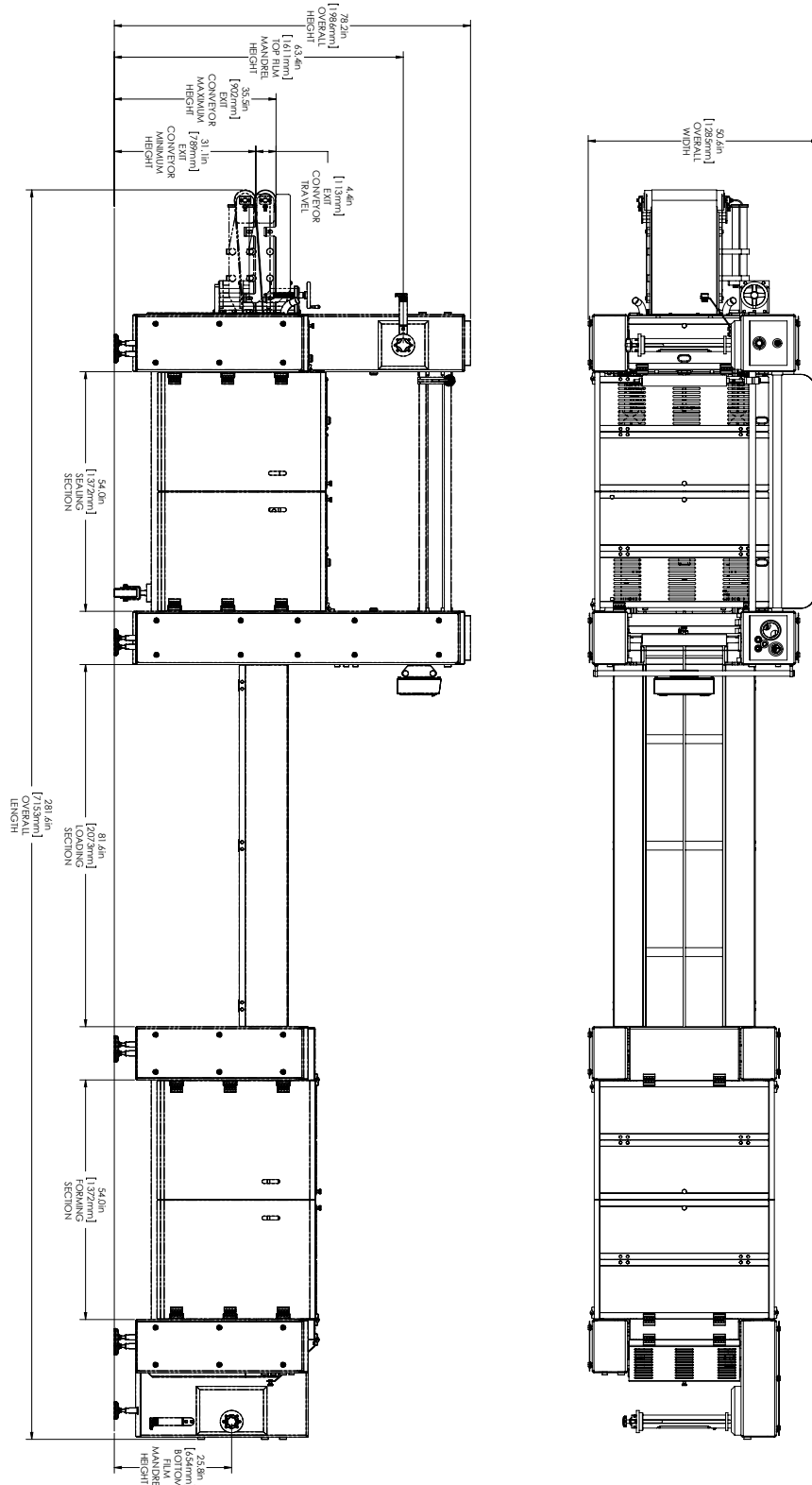
Cooling Water: 30-50 GPH @ 40 psi, 40-50° Fahrenheit
Connected with two(2) 1/2" NPT Water In and Out

Vacuum Source:

Main Vacuum - Busch, Inc. Vacuum Pump for package evacuation #RA0630
25 HP, 460 CFM
Connected with 3" NPT Vacuum Fitting

Forming Pump - Busch, Inc. Oil Free Mink Dry Claw Vacuum Pump #MM1142
5 HP, 116 CFM
Connected with 1-1/2" NPT Vacuum Fitting

1.0 VisionPak Overview and Specifications



2.0 Safety

The following safety section should be read by all personnel that operate, maintain, clean, or otherwise work with the VisionPak machine in any capacity. Failure to follow the safety instructions in this manual or tampering with the machine including the disabling of safety guards or switches could result in damage to the machine, injury, electric shock, or death. **Observe all safety instructions!**

Emergency (E-Stop) buttons: The E-Stop pushbuttons are used for automatically stopping the machine in the case of an emergency. There are five (5) E-Stop buttons, standard on all VisionPak machines: One on the main control panel, one on each tower, and at the entry and exit ends of the machine. All personnel should be aware of the location of the E-Stop push buttons in case of an emergency.

Guards: The guards on the VisionPak are installed as a safety feature to help prevent serious injury or death while the machine is in operation. Each guard is installed with a safety switch assembly that de-energizes the machine and causes it to go into safe mode if a guard is removed. Do not disable or jump the safety switch on the guard for any reason. Do not reach under the guard while the machine is in operation for any reason.

General Safety Practices:

- Press E-Stop button if the VisionPak needs to be shut down in an emergency situation.
- Do not operate, maintain, or clean VisionPak machine without proper training.
- Do not skip steps in a procedure from this manual.
- Pay special attention to all Warnings and Notes written in a procedure from this manual.
- Do not disable any safety guards or switches on VisionPak machine.
- Do not wear loose clothing or jewelry near the machine when it is operating.
- Do not reach under the guards while the machine is in operation.
- Follow lock-out/tag-out procedure before performing any electrical maintenance on the machine.

2.0 Safety

Although the VisionPak was designed with safety as the utmost priority, there are several dangerous areas on the machine that have the potential to cause serious injury or death. The following symbols are posted on the VisionPak to alert personnel to these specific areas.



Identify these areas before operating, maintaining, or cleaning the VisionPak.

Lift Drive and Sprocket Assembly:

- Keep all body parts and clothing out of the lift drive and sprocket assembly while the machine is in operation to prevent serious injury or death.
- There are two lift drive and sprocket assemblies: One at the entry end of the machine and one at exit end of the machine.

Film In-Feed Areas:

- Keep all body parts and clothing away from film mandrel and in-feed roller while the machine is in operation to prevent serious injury or death.
- There are two in-feed areas positioned near the bottom and top film mandrels.

Clip Opening Area:

- Keep all body parts and clothing out of the clip opening area while the machine is in operation to prevent serious injury or death.
- The clip opening area is located on the entry end of the frames.

2.0 Safety

Lift Arm and Cam:

- Keep all body parts and clothing out of the lift arm and cam configuration while the machine is in operation to prevent serious injury or death.
- There are four lift arm and cab assemblies for every servo lift on the machine.

Guillotine Knife Systems:

- Keep all body parts and clothing out of the knife cutting system while the machine is in operation to prevent serious injury or death.
- Wear protective gloves when handling blades.
- The knife cutting system is located on the exit end of the machine.

Rotary Knife:

- Keep all body parts and clothing out of the knife cutting system while the machine is in operation to prevent serious injury or death.
- Wear protective gloves when handling blades.
- The knife cutting system is located on the exit end of the machine.

Chain Drive Sprockets:

- Keep all body parts and clothing out of the chain drive sprockets while the machine is in operation to prevent serious injury or death.
- The chain drive sprockets are located at the exit end of the machine.

2.0 Safety

Heat Zones:

- Keep all body part and clothing out the heat zones while the machine is in operation to prevent serious injury or death
- Allow form box and seal box to cool and wear protective gloves before handling.
- The heat zones are located on each lift.

Main Electric Panel:

- Follow proper lock-out/tag-out procedure to turn off power in the main electrical panel and prevent injury or death from electrocution. Refer to section 4.0 for lock-out/tag-out procedure.

3.0 VisionPak Installation

3.1 Handling

1. Remove all packaging material carefully.
2. Lift machine at 2 lift points with 2 towmotors. Refer to illustration 3.1 below.

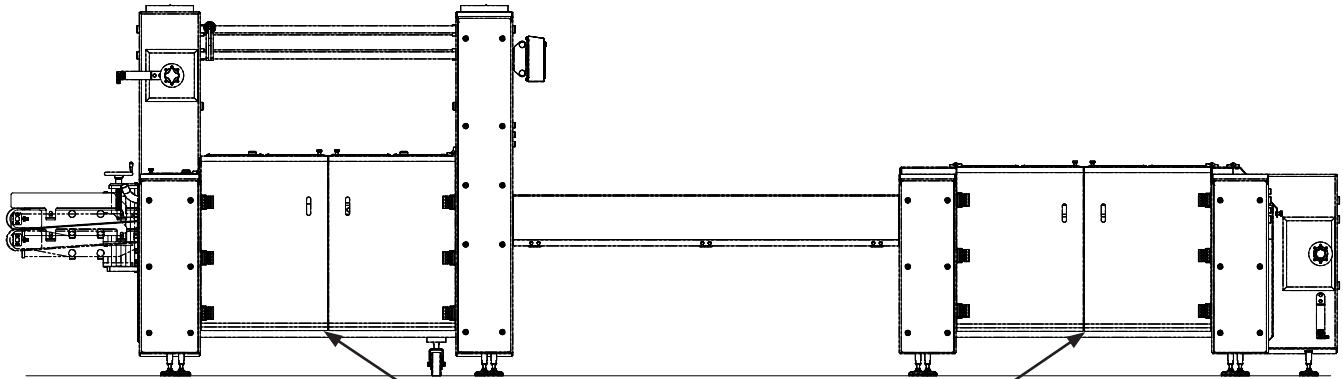


Illustration 3.1

Lift Points

3. Position dollies under middle and both ends of skid.
4. Lower machine onto dollies.

Warning: Make sure machine weight is properly balanced on dollies to prevent tipping.

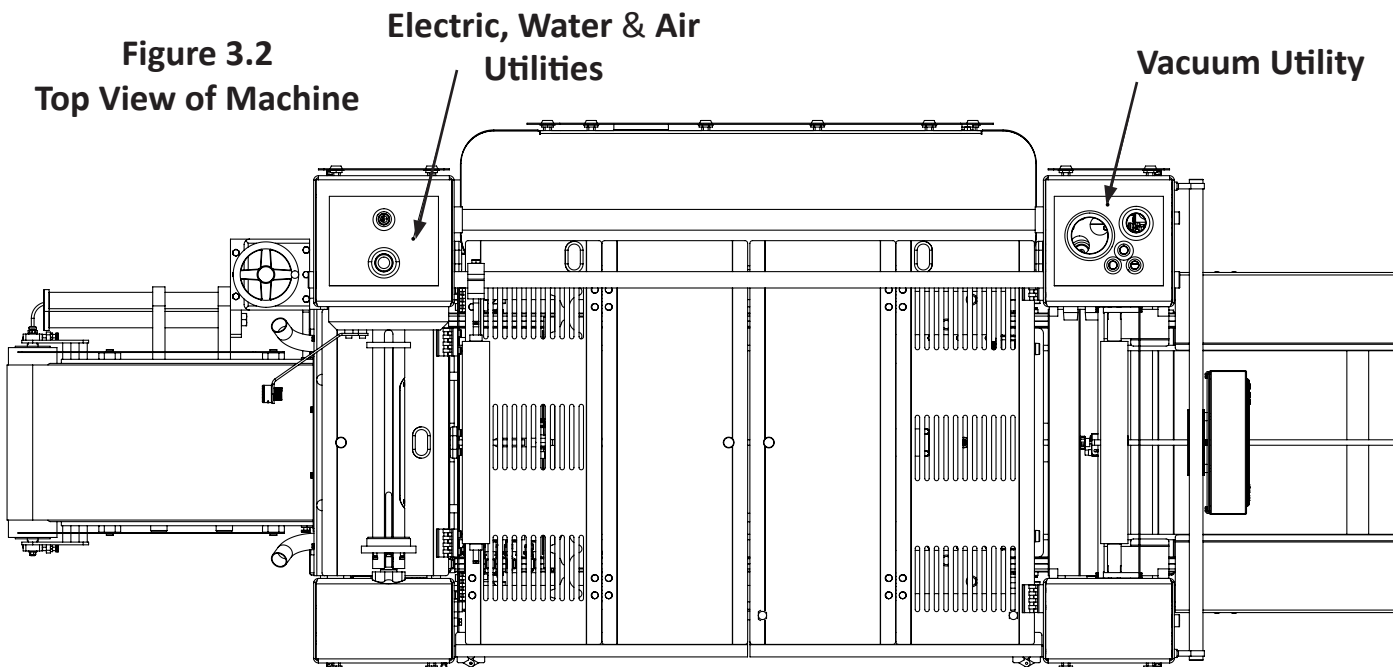
5. Move machine to desired location.
6. Remove tie-downs holding machine to skid.
7. Lift machine at 2 lift points with 2 towmotors and remove skid. Refer to illustration3.1
8. Install leveling mount feet and set machine down.

3.0 VisionPak Installation

3.2 Leveling and Hookup

1. Level entry end of machine using leveling mount feet to raise or lower machine as needed. Use lift rails and crossbars as references.
2. Level exit end of machine using leveling mount feet to raise or lower machine as needed. Use lift rails and crossbars as reference.
3. Level loading section by raising or lowering entry/exit ends as necessary.
4. Tighten jam nuts on leveling mount feet once the machine is completely level.
5. Connect electric, water, air, and vacuum lines to the machine. Refer to figure 3.1 for utility entry points into the machine. Refer to section 1.0 for utility specifications. Refer to section 5.0 for VisionPak start-up procedure.

Warning: To prevent damage to the machine or possible serious injury, all utility lines should be connected by qualified personnel.



Note: There is a second vacuum hook up on the panel side of the machine, on the lower part of the panel between the forming and loading sections.

4.0 Lock-Out / Tag-Out Procedure

This procedure establishes the minimum requirements for safely isolating potentially hazardous energy sources. Its purpose is to ensure that the VisionPak machine is isolated from all potentially hazardous energy before employees perform service or maintenance work where there may be an unexpected energization, start-up, or release of stored energy.

1. Notify all affected personnel that a Lock-out/Tag-out procedure is being implemented.
2. Turn main disconnect switch on front panel to **Off** position.
3. Close manual air dump valve.
4. Lockout or tagout the machine with authorized and assigned individual lock(s) or tag(s) on main disconnect switch and manual air dump valve.
5. Measure machine for voltage to assure power source has been removed. This measurement must be completed by qualified personnel.
6. Perform required operations.
7. Remove individual lock(s) or tag(s).
8. Turn main disconnect switch on front panel to **On** position and open manual air dump valve.
9. Follow VisionPak Start Up procedure if necessary.

5.0 VisionPak Start Up Procedure

5.1 VisionPak Start Up Operation

1. Visually inspect machine to ensure it is clear of debris.
2. Select correct tooling and inserts. See section 9.5 and 9.6 for tooling and insert change procedure.
3. Turn main disconnect switch on electric panel to **On** position.
4. Press each E-Stop button on machine to ensure proper shutdown in an emergency. Reset by turning each E-Stop button clockwise and releasing before moving on.
5. Open safety guard(s) on machine to ensure proper shutdown should a safety guard be opened during machine operation.

Note: *Test different guards daily to ensure all safety switches are functioning properly.*

5.2 On Operator Touch Screen Perform the Following:

1. Ensure E-Stops and guard switches are cleared (green) for machine operation to begin.

IF red indicators appear on screen, **THEN** replace guards or reset E-Stop(s) as indicated on Guard/E-Stop status screen.

2. Enter necessary **Operator Log In** information.
3. Enter appropriate **Form Heat** and **Seal Heat** temperatures.
4. Select (green) **Form Heat** and **Seal Heat**.
5. Select **Zipper Screen** button from Operations Overview Screen (if applicable)
6. Enter appropriate **Seal Heat**, **Top Heat**, and **Bottom Heat** temperatures (if applicable).
7. Select (green) **Seal Heat**, **Top Heat**, and **Bottom Heat** (if applicable).

5.0 VisionPak Start Up Procedure

5.2 Continued

Note: Check **current indicator** to ensure heaters are drawing amps and working properly.

8. Select **Operation** to return to Operations Overview Screen.

5.3 Bottom Web Loading

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Remove mandrel retaining ring and load film on mandrel.
3. Place film in clip chain. Pull enough film forward to fill 3 clips on each side.
4. Replace guard.
5. Select **Reset** on Operations Overview Screen.
6. Select **Clip Jog** (green) on operator touch screen.
7. Press and hold **Stop** button on machine to jog bottom web. Ensure web is aligned properly and tracking in clips equally on each side.
8. Adjust web alignment using wheel on mandrel if necessary. One full turn of wheel will move web 1/16”.

5.0 VisionPak Start Up Procedure

5.4 Top Web Loading

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Remove mandrel retaining ring and load film on mandrel.
3. Run web over rollers and down between registration eye and registration plate (if applicable) pulling through approximately 10 feet of slack.
4. Tape down leading edge of top web to bottom web.
5. Replace guard and select **Reset** on Operations Overview Screen.
6. Select **Clip Jog** (green) on operator touch screen.
7. Press and hold **Stop** button on machine to jog top and bottom webs past seal head. Ensure web is aligned properly and tracking correctly.
8. Adjust web alignment using wheel on mandrel if necessary. One full turn of wheel will move web 1/16".

5.5 Zipper Loading (if applicable)

1. Loosen and remove knob and collar on zipper mandrel.
2. Load roll of zipper material
3. Replace and tighten knob and collar on zipper mandrel.
4. Thread zipper material through dancer assembly according to threading diagram (Figure 1.5 A).

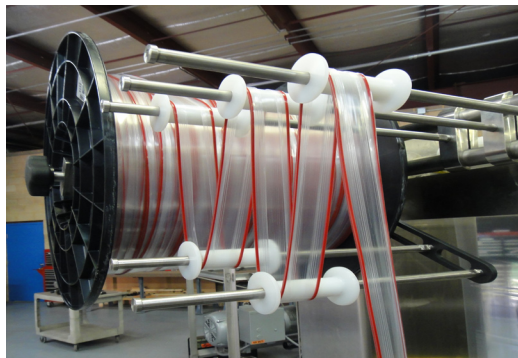


Figure 1.5 A

5.0 VisionPak Start Up Procedure

5.5 Zipper Loading Continued

5. Lift shoe and feed zipper through slot and under zipper top plate (Figure 1.5 B).
6. Lower shoe to original position.

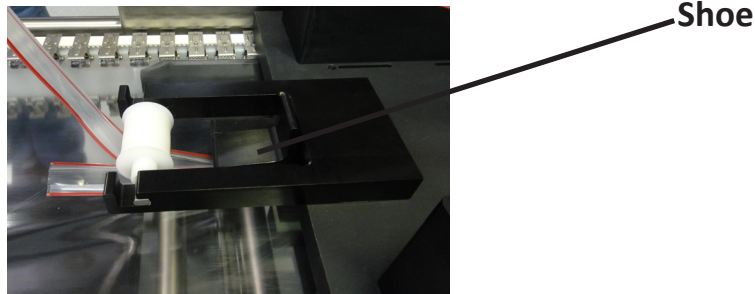


Figure 1.5 B

5.6 On Operator Touch Screen Perform the Following

1. Deselect **Clip Jog** (red).
2. Select **Seal Lift Up** (green). Wait for seal lift to reach top position.
3. Select **Seal Bar** (green).
4. Select **Lifts Down** (green).
5. Select **Recipe** from the bottom of the Operations Overview Screen. The Recipe Data Overview Screen will appear.
6. Select **Recipe Management** from the Recipe Data Overview Screen.
7. Choose the desired preprogrammed recipe and press **Load Recipe**. The machine will run with the parameters defined in the recipe.
8. Select **Back** and then select **Operation** to return to Operations Overview Screen.
9. Select all options (green) on Operations Overview Screen necessary for package.
10. Select **Reg Home** (if applicable).
11. Ensure all external vacuum pumps are **ON**.
12. Press **Start** button on machine to begin operation.

5.0 VisionPak Start Up Procedure

5.7 Exit Conveyor Adjustments

1. Push or pull exit conveyor to desired length.
2. Turn adjustment to raise or lower exit conveyor to desired height.

6.0 Loading and Saving a Recipe

6.1 To Load a Preprogrammed Recipe

1. Select **Recipe** from the bottom of the Operations Overview Screen. The Recipe Data Overview Screen will appear.
2. Select **Recipe Management** from the Recipe Data Overview Screen.
3. Choose the desired preprogrammed recipe and press **Load**. The machine will run with the parameters defined in the recipe.
4. Select **Back** and then select **Operation** to return to the Operations Overview Screen.

6.2 To Save Changes to a Recipe

1. Select **Recipe** from the bottom of Operations Overview Screen. The Recipe Data Overview Screen will appear.
2. Change desired parameters.
3. Select **Recipe Management**.
4. Select **Save**.
5. Select **Back** and then **Operation** to return to the Operations Overview Screen.

6.3 To Create a New Recipe

1. Select **Recipe** from the bottom of the Operations Overview Screen. The Recipe Data Overview Screen will appear.
2. Change desired parameters.
3. Select **Recipe Management**.
4. Select **Save As** and type a name for the new recipe.
5. Select **Back** and then **Operation** to return to the Operations Overview Screen.

Note: Refer to Appendix for definitions of parameters that appear on and can be changed from the Recipe Data Overview Screen.

7.0 VisionPak Sanitation Procedure

WARNING: Turn off all vacuum pumps if they are not integrated into the machine control before starting the Sanitation Procedure.

7.1 Preparation

1. Deselect **Form Heat** (red) and **Seal Heat** (red) on Operations Overview Screen to turn off heaters.
2. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
3. Cut top and bottom webs and remove roles from mandrels. Place in a safe, dry place.
4. Replace guard and select **Reset** on Operations Overview Screen.
5. Select **Sanitation** from Operations Overview Screen.
6. Select **Clip Jog** (green) at bottom of Sanitation Screen.
7. Press and hold **Stop** button on machine to jog remaining film clear of machine.
8. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.

WARNING: The following steps must be performed before cleaning machine to prevent water damage to machine's electrical systems.

7.2 Cover Form Tooling

1. Remove machine guards from forming section.
2. Loosen and remove bolts on forming hold down plate.
3. Remove forming hold down plate locking pin.
4. Press and hold button on machine to raise forming hold down plate.
5. Insert locking pin to hold forming hold down plate in position.
6. Cut piece of film and cover forming tooling.
7. Press and hold button on machine and remove locking pin.

7.0 VisionPak Sanitation Procedure

7.2 Cover Form Tooling Continued

8. Release button on machine to lower forming hold down plate and insert locking pin.
9. Replace and tighten handle bolts on forming hold down plate.
10. Replace machine guards.
11. Select **Reset** on Operations Overview Screen
12. Select **Close Lifts** on operator screen.
13. Cover operator screen and labeler (if applicable) with plastic bags and tape securely.
14. Ensure all tower panel doors are closed and latched.

7.3 Clean Clip Chain and Loading Areas

1. Select **Clip Start** (green) on operator screen.
2. Press and hold **Stop** button on machine button for 2 seconds to start clip chain.
3. Spray down clip chain with power washer and remove all debris in loading area.
4. Deselect **Clip Start** (red) from operator screen to stop clip chain.
5. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
6. Turn machine power **OFF** using Lock Out/Tag Out procedure. Refer to section 4.0
7. Open remaining machine guards in loading area and clean debris from rest of machine with power washer.

7.0 VisionPak Sanitation Procedure

7.4 Clean Sealing Section

1. Remove hoses from bottom of seal box.
2. Turn machine power **ON** following Lock-Out / Tag-Out procedure and replace guards.
3. Enter User Login information.
4. Select **Reset** on Operations Overview Screen.
5. Select **Lifts Down** (green) on operator screen.
6. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
7. Turn machine power **OFF** using proper Lock Out/Tag Out procedure.
8. Remove guards in sealing section.
9. Loosen and remove handle bolts on seal head.
10. Disconnect hoses from seal head.
11. Remove seal head locking pin.
12. Press and hold button on machine to raise seal head.
13. Insert locking pin to hold seal head in position.
14. Wash down knives and seal box with power washer.
15. Press and hold button on machine and remove locking pin.
16. Release button on machine to lower seal head and insert locking pin.
17. Replace and tighten handle bolts on seal head.
18. Reconnect all hoses.
19. Replace all guards in sealing section.

7.0 VisionPak Sanitation Procedure

7.5 Clean Exit Conveyor and Conveyor Belt

1. Move exit conveyor to outermost position.
2. Pull pin on left side of machine so pin is able to swing downward.
3. Pull pin on right side of machine and hold.
4. Lift up on machine side of exit conveyor until it locks in place.
5. Remove and clean belt.
6. Spray down exit conveyor section of machine.
7. Replace belt.
8. Pull pin on right side of machine and hold. Lower exit conveyor to original position.
9. Replace pin on left side of machine and lock in place.
10. Remove protective plastic from machine.
11. Clean operator touch screen with approved cleaner.
12. Restore power to machine using Lock-out / Tag-out procedure.

8.0 Labeler Operation and Recipe Selection

8.1 Labeler Operation (if applicable)

1. Loosen and remove labeler collar on labeler spool.
2. Load labels using correct spacers. Ensure proper orientation using the web threading diagram.
3. Replace labeler collar and tighten locking levers on both label roll retainers.
4. Turn nip drive counter-clockwise and pull collar to unlock.
5. Thread label sheet according to diagram (Figure 4.1). As label stock is threaded, ensure labeler conveyor is free of disposed labels.

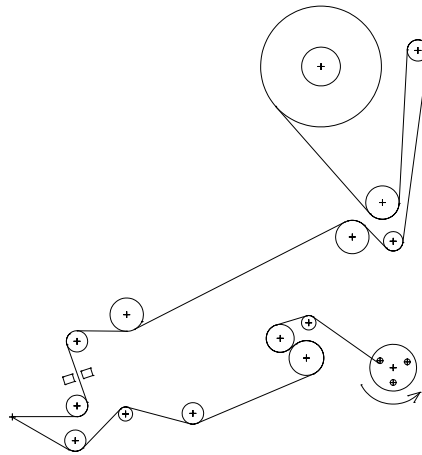


Figure 4.1

6. Turn nip drive clockwise and push in to lock once labels are loaded correctly.
7. Select **Labeler** from bottom of Operations Overview Screen.
8. Select **Bottom Labeler Recipe** from Labeler Overview Screen.
9. Select **Bottom Labeler Recipe Control**.
10. Select desired recipe from menu and then **Load Recipe**.
11. Select **Back** and then **Bottom Labeler Overview**.
12. Make sure **Auto Mode** is deselected (red) and select **Label Home**.
13. Select **Auto Mode** (green).

8.0 Labeler Operation and Recipe Selection

8.1 Labeler Operation Continued

14. Select **Operation** to return to Operations Overview Screen.
15. Select **Labeler Run** (green) from Operations Overview Screen.

8.2 To Save Changes to a Labeler Recipe

1. Select **Labeler** from the bottom of Operations Overview Screen. The Bottom Labeler Recipe Screen will appear.
2. Select **Bottom Labeler Recipe Control**.
3. Change desired parameters.
4. Select **Save**.
5. Select **Back** and then select **Bottom Labeler Overview**.
6. Select **Operation** to return to Operations Overview Screen.

8.3 To Create a New Labeler Recipe

1. Select **Labeler** from the bottom of the Operations Overview Screen. The Bottom Labeler Recipe Screen will appear.
2. Select **Bottom Labeler Recipe Control**.
3. Change desired parameters.
4. Select **Save As** and type a name for the new labeler recipe.
5. Select **Back** then select **Bottom Labeler Overview**.
6. Select **Operation** to return to Operations Overview Screen.

9.0 Weekly Maintenance Procedures

9.1 Machine Wear

1. Check all lift bearings and bearing rails on all lifts on machine (and labeler if applicable) to make sure they are traveling smoothly and for improper wear. If needed, lubricate with food grade grease only.
2. Check clip belt and clip belt track for proper belt motion. If needed, use a food grade silicone spray to lubricate. Spray into belt track while clip belt is in motion.
3. Replace any bent or broken film clips (Refer to Procedure 13.2).
4. Check that all guide blocks on lifts are moving freely. If needed, use silicon spray to lubricate.
5. Check clip openers at entry and exit ends of the machine for wear. Make sure clips are opening properly (Refer to Procedure 13.3).

9.2 Test Outputs

1. Select **Maintenance** from the Operations Overview Screen.
2. Select **Output Forcing Entry** and select (green) and deselect (red) each output listed to check operation.
3. Select **Output Forcing Sealing** and select (green) and deselect (red) each output listed to check operation.
4. Select **Output Forcing Exit** and select (green) and deselect (red) each output listed to check operation.

9.0 Weekly Maintenance Procedures

9.3 Perform Vacuum Test

1. Select **Vacuum Test** from Operations Overview Screen. Vacuum Test Overview screen will appear.
2. Turn vacuum pump **ON**.
3. Select **Vacuum Test Mode** from Vacuum Test Overview Screen. When sealing lift reaches top position, vacuum valves will fire.
4. Close ball valve on vacuum pump.
5. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the Vacuum Test.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** machine has failed the Vacuum Test. Refer to section 16.0 for locating and fixing vacuum leak.

10.0 Monthly Maintenance Procedures

10.1 Vacuum Hoses

1. Apply vacuum grease to gaskets inside vacuum hoses.

10.2 Inspect Seal Bar

1. Select **Reset** on Operations Overview Screen.
2. Select **Drop Seal Bar** (green) button from Operations Overview Screen.
3. Lift appropriate guard to de-energize machine and for it to enter safe mode.
4. Loosen and remove handle bolts on seal head.
5. Remove seal head locking pin.
6. Press and hold button on machine to raise seal head.
7. Insert locking pin to hold seal head in position.
8. Remove seal bar assembly.
9. Inspect silver-stone coating on bottom of seal bar. Recoat if necessary.
10. Inspect springs for wear and replace if necessary.
11. Reapply grease to gasket on seal bar assembly.
12. Inspect bladders on seal head for wear.
13. Replace seal bar assembly.
14. Press and hold button on machine and remove locking pin.
15. Release button on machine to lower seal head and insert locking pin.
16. Replace and tighten handle bolts on seal head.
17. Replace guard and select **Reset** on Operations Overview Screen.

10.3 Bladder Test

1. Perform air leak test on all bladders from Maintenance Overview Screen.

11.0 Semi-Annual Maintenance Procedures

11.1 Electrical

1. Ensure outgoing current is 24 volts. Adjust potentiometer on 24 volt power supply (Figure 11.1) as needed.
2. Inspect wires in main electrical cabinet. Ensure the following are correct:
 - Termination
 - Labeling
 - Wire duct cover installation



Figure 11.1

11.2 Seal Bar and Heater Junction Box

1. Select **Reset** on Operations Overview Screen.
2. Select **Drop Seal Bar** (green) button from Operations Overview Screen.
3. Lift appropriate guard to de-energize machine and for it to enter safe mode.
4. Loosen and remove handle bolts on seal head.
5. Remove seal head locking pin.
6. Press and hold button on machine to raise seal head.
7. Insert locking pin to hold seal head in position.
8. Remove seal bar assembly.
9. Loosen spring bolts and remove used springs.
10. Remove heater junction box and check wires for wear or damage. Replace as necessary.
11. Replace used springs.
12. Replace seal bar assembly.
13. Press and hold button on machine and remove seal head locking pin.
14. Release button on machine to lower seal head and insert locking pin.
15. Replace and tighten handle bolts on seal head.
16. Replace guard and select **Reset** on Operations Overview Screen.

11.0 Semi-Annual Maintenance Procedures

11.3 Replace Bladders (Figure 11.3 A)

1. Select **Reset** on Operations Overview Screen.
2. Select **Drop Seal Bar** (green) button from Operations Overview Screen.
3. Lift appropriate guard to de-energize machine and for it to enter safe mode.
4. Disconnect water, vacuum, air lines, and heater cable.
5. Loosen and remove handle bolts on seal head.
6. Remove seal head locking pin.
7. Press and hold button on machine to raise seal head.
8. Insert locking pin to hold seal head in position.
9. Remove seal head from machine.
10. Replace bladders on underside of seal head (Figure 7.3 B).
11. Replace seal head on machine and insert locking pin.
12. Press and hold button on machine and remove locking pin.
13. Release button on machine to lower seal head and insert locking pin.
14. Replace and tighten handle bolts on seal head.
15. Reconnect water, vacuum, air lines, and heater cable.
16. Replace guard and select **Reset** on Operations Overview Screen.

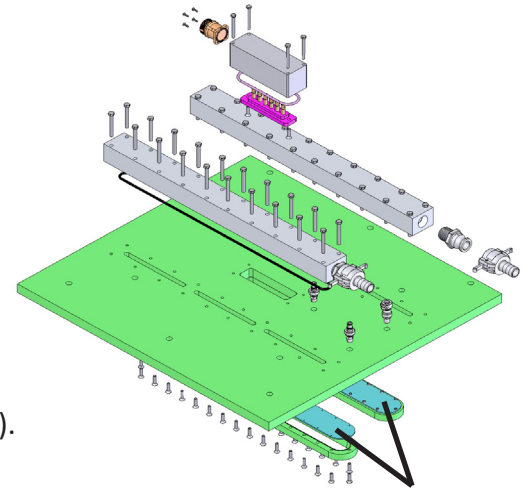


Figure 11.3 A Bladders

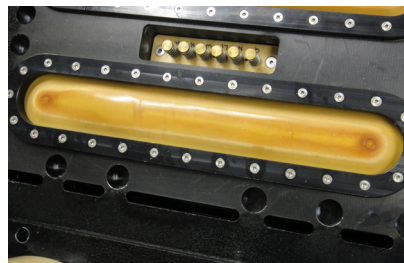


Figure 11.3 B

12.0 Yearly Maintenance Procedures

12.1 Valve Maintenance

1. De-energize machine using Lock-Out/Tag-Out Procedure
2. Remove all vacuum valves.
3. Disassemble each valve.
4. Clean any build up of debris on inside and outside of valve.
5. Replace O-Rings (Figure 12.1) and lubricate with food grade vacuum grease.
6. Reassemble valves and replace.
7. Re-energize machine using Lock-Out/Tag-Out Procedure

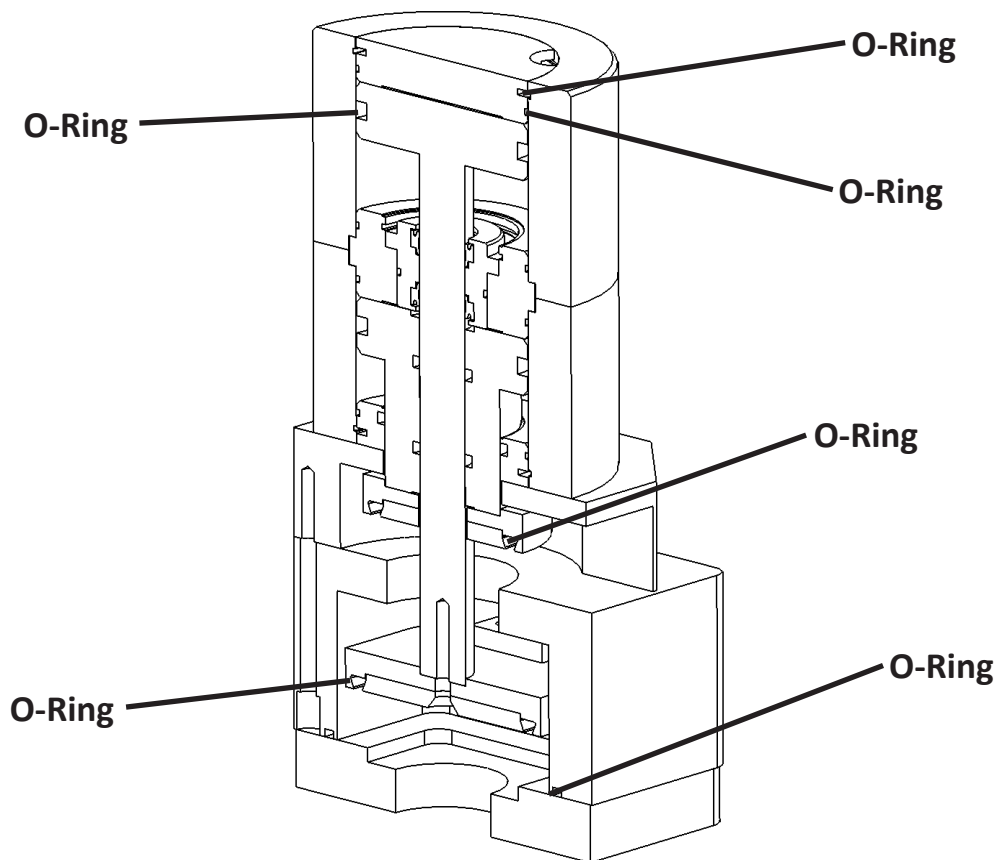


Figure 12.1

13.0 Miscellaneous Maintenance Procedures

13.1 Removing Exit Conveyor Belt (Figure 13.1)

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Pull white lever on side of exit conveyor and move exit conveyor to outermost position.
3. Pull pin on left side of machine so pin swings downward.
4. Pull pin on right side of machine and hold.
5. Lift on machine side of exit conveyor until it locks in place.
6. Remove belt and clean or replace as needed.
7. Pull pin on right side of machine and hold. Lower Exit Conveyor to original position.
8. Replace pin on left side of machine and lock in place.
9. Replace guard and select **Reset** on Operations Overview Screen.

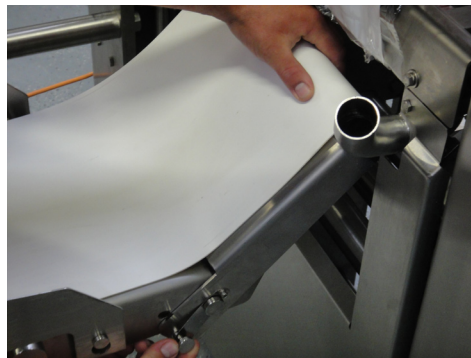


Figure 13.1

13.2 Clip Replacement

1. Select **Clip Jog** (green) on Operations Overview Screen.
2. Press and hold **Stop** button on machine to jog clip belt until broken clip is in an accessible position.
3. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.

13.0 Miscellaneous Maintenance Procedures

13.2 Clip Replacement Continued

4. Loosen and remove bolts on clip.
5. Remove damaged clip.
6. Replace clip and tighten bolts.
7. Replace guard and select **Reset** on Operations Overview Screen.

13.3 Adjust Clip Belt Tension

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Adjust tension bolt on entry end of machine to tighten clip belt.
3. Replace guard and select **Reset** on Operations Overview Screen.

13.0 Miscellaneous Maintenance Procedures

13.4 Lift Setup

Note: When a new Mi is installed, 'Home' on the lift will have to be reprogrammed. Refer to Appendix 17.8 for information on the Servo System .

1. Select **Maintenance** from Operations Overview Screen.
2. Select **Machine Configuration**.
3. Select **Homing Screen**.
4. Select **Set Home**.
5. Select **Form Axis** or **Seal Axis** for appropriate lift to be reprogrammed.

Note: Lift arms must be plumb before 'Home' is reprogrammed (Figure 13.4).

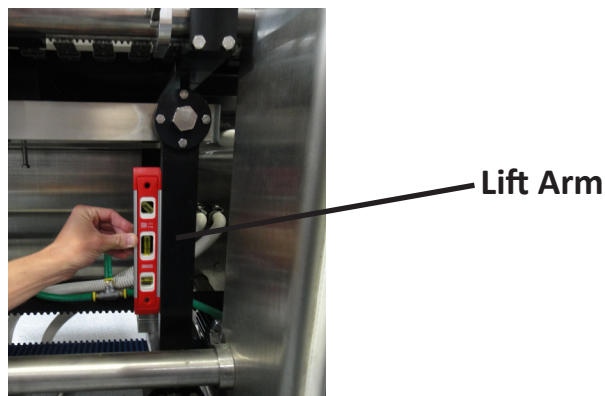


Figure 13.4

6. Select **Up** or **Down** depending on which direction lift arms need to travel.
7. Press **Stop** button on machine to jog lift arms to plumb position.

13.0 Miscellaneous Maintenance Procedures

IF both sets of lift arms return to plumb position, **THEN** skip to step 8.

IF both sets of lift arms do not return to plumb position, **THEN** perform the following steps:

- a. Jog one set of lift arms to plumb position
- b. Loosen bolts on adjustment block located under machine on lift belt.
- c. Slide adjustment block on belt until lift arms are in plumb position.
- d. Tighten bolts on adjustment block.

8. Select **Set Home**.

13.0 Miscellaneous Maintenance Procedures

13.5 Changing Inserts

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Loosen and remove bolts on forming hold down plate.
3. Remove forming hold down plate locking pin.
4. Press and hold button on machine to raise forming hold down plate.
5. Insert locking pin to hold forming hold down plate in position.
6. Cut film using utility knife.
7. Pull inserts, spacers, and/or dividers from forming box.
8. Place new inserts, spacers, and/or dividers in forming box.
9. Press and hold button on machine and remove locking pin.
10. Release button on machine to lower forming hold down plate and insert locking pin.

IF dividers were replaced, **THEN** continue with the following procedure:

IF dividers were not replaced, **THEN** skip to step 11.

- a. On left side of machine, loosen and remove retaining bolts underneath lift plate.
- b. On right side of machine, loosen and remove handle bolts on seal box.
- c. Slide sealing box out left side of machine onto an approved lift cart.
- d. Remove seal bead and dividers from seal box.
- e. Place new dividers in seal box.
- f. Insert new seal bead in seal box.
- g. Replace seal box in machine.

13.0 Miscellaneous Maintenance Procedures

13.5 Changing Inserts Continued

- h. On right side of machine, replace and tighten handle bolts on seal box.
 - i. On left side of machine, replace and tighten retaining bolts underneath lift plate.
11. Replace guard and select **Reset** from Operations Overview Screen.
 12. Select new recipe if necessary (Refer to procedure 2.1 for How to Load a New Recipe).

13.6 Changing Tooling For New Index

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. On left side of machine, loosen and remove retaining bolts underneath lift plate of forming box.
3. On right side of machine, loosen and remove handle bolts on forming box.
4. Slide forming box out left side of machine onto an approved lift cart.
5. Slide new forming box into machine using approved lift cart making sure locating pins on right side of form tooling are inserted into the holes on tooling plate.
6. On right side of machine, replace and tighten handle bolts on forming box.
7. On left side of machine, replace and tighten retaining bolts underneath lift plate of forming box.
8. On left side of machine, loosen and remove retaining bolts underneath lift plate of seal box.
9. On right side of machine, loosen and remove handle bolts on seal box.
10. Slide seal box out left side of machine onto an approved lift cart.
11. Slide new seal box into machine using approved lift cart making sure locating pins on right side of seal tooling are inserted into the holes on tooling plate.
12. On right side of machine, replace and tighten handle bolts on seal box.
13. On left side of machine, replace and tighten retaining bolts underneath lift plate of seal box.
14. Select **Reset** on Operations Overview Screen.

13.0 Miscellaneous Maintenance Procedures

13.6 Changing Tooling For New Index Continued

15. Select **Drop Seal Bar** (green) button from Operations Overview Screen.
16. Lift appropriate guard to de-energize machine and for it to enter safe mode.
17. Loosen and remove handle bolts on seal head.
18. Remove seal head locking pin.
19. Press and hold button on machine to raise seal head.
20. Insert locking pin to hold seal head in position.
21. Remove seal bar assembly.
22. Place new seal bar assembly in machine.
23. Press and hold button on machine and remove locking pin.
24. Release button on machine to lower seal head and insert locking pin.
25. Replace and tighten handle bolts on seal head.
26. Replace guard and select **Reset** on Operations Overview Screen.

13.7 Changing Preheat Plate

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
1. On left side of machine, loosen and remove retaining bolts under lift plate of forming box.
2. On right side of machine, loosen and remove handle bolts on forming box.
3. Slide forming box out left side of machine onto an approved lift cart.
4. Press down on one end of heater plate and prop in upright position.
5. Disconnect all wires.
6. Remove preheat plate.
7. Reassemble heater plate, reconnect wires and replace.

13.0 Miscellaneous Maintenance Procedures

13.7 Changing Preheat Plate Continued

8. Insert new heater plate into form box and reconnect wires.

Note: *Ensure heaters are free from feet of heater plate and that heater plate is resting level.*

9. Slide new forming box into machine using approved lift cart making sure locating pins on right side of form tooling are inserted into the holes on tooling plate.
10. On right side of machine, replace and tighten handle bolts on forming box.
11. On left side of machine, replace and tighten retaining bolts underneath lift plate of forming box.
12. Replace guard and select **Reset** from Operations Overview Screen.

13.8 Changing Seal Bar

1. Select **Drop Seal Bar** (green) button from Operations Overview Screen.
2. Lift appropriate guard to de-energize machine and for it to enter safe mode.
3. Loosen and remove handle bolts on seal bar
4. Remove seal head locking pin.
5. Press and hold button on machine to raise seal head.
6. Insert locking pin to hold seal head in position.
7. Remove seal bar assembly.
8. Place new seal bar assembly in machine.
9. Press and hold button on machine and remove locking pin.
10. Release button on machine to lower seal head and insert locking pin.
11. Replace and tighten handle bolts on seal head.
12. Replace guard and select **Reset** from Operations Overview Screen.

13.0 Miscellaneous Maintenance Procedures

13.9 Changing Guillotine Knives (Figure 13.9)

WARNING: Wear protective gloves to prevent injury to hands and fingers.



**Guillotine Knife
Housing**

Figure 13.9

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
2. Lift guard to access knife blade housing.
3. Loosen and remove two middle knobs on knife blade housing.
4. Remove knife blade housing from machine.
5. Remove both knife guards.
6. Loosen and remove bolts on knife blade.
7. Remove knife blade and install new blade.
8. Replace and tighten bolts on knife blade.
9. Replace both knife guards.
10. Replace knife blade housing in machine.
11. Replace and tighten two middle knobs on knife blade housing.
12. Replace guard and select **Reset** from Operations Overview Screen.

13.0 Miscellaneous Maintenance Procedures

13.11 Changing Rotary Knives

1. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.

WARNING: Wear protective gloves to prevent injury to hands and fingers.

Lift guard on back side of knives to prevent injury to hands and fingers when removing pins that hold rotary knife shaft.

2. Remove pins that hold rotary knife shaft.
3. Lift up on shaft to remove.
4. Remove retaining stop ring and collar.
5. Loosen allen bolt on knife and remove.
6. Install new knife and tighten allen bolt.
7. Replace retaining stop ring and collar.
8. Replace shaft in machine.
9. Replace rotary knife pins.
10. Replace guard and select **Reset** from Operations Overview Screen.

14.0 Operator Troubleshooting Guide

14.1 Bottom Web Not Tracking Correctly (Straight)

- ✓ Turn adjustment knob on mandrel to straighten web. One full turn will move web 1/16".
- ✓ Check that web roll was wound straight.

Adjustment Knob



Figure 14.1

14.2 Package Not Forming Properly or Of Poor Quality

- ✓ Ensure forming pump is turned **ON**.
- ✓ Ensure **Form Heat** is selected (green) and a **Setpoint** is entered on Operators Overview Screen.
- ✓ Ensure vacuum lines are connected.
- ✓ Adjust forming parameters from Recipe Data Overview Screen as needed.

14.3 Package Not Sealing Properly

- ✓ Ensure **Seal Heat** is selected (green) and a **Setpoint** is entered on Operators Overview Screen.
- ✓ Ensure bladder airline is connected.
- ✓ Ensure heater cable is plugged in.
- ✓ Adjust Sealing Parameters from Recipe Data Overview Screen as needed.

14.0 Operator Troubleshooting Guide

14.4 Package Not Evacuating Properly

- ✓ Ensure vacuum pumps are turned **ON**.
- ✓ Ensure vacuum hoses are hooked up properly.
- ✓ Adjust Evacuation Parameters from Recipe Data Overview Screen as needed.

14.5 Top Web Not Tracking Correctly (Straight)

- ✓ Turn adjustment knob on mandrel to straighten web. One full turn will move web 1/16".
- ✓ Check that web roll was wound straight.

14.6 Top Web Not Holding Proper Registration

- ✓ Ensure **Registration** is selected (green) on Operations Overview Screen.
- ✓ Ensure Registration Eye Offset is correct.
- ✓ Ensure registration eye on machine is in line with registration mark on top web.
- ✓ Select **Reg Home** on Operations Overview Screen.

14.7 Guillotine Knives Not Operating

- ✓ Ensure **Knife** is selected (green) on Operations Overview Screen.
- ✓ Ensure airlines are connected.

15.0 Maintenance Troubleshooting Guide

15.1 Ethernet Connection

Note: Each green light on the Ethernet Switch located in the control panel corresponds to a specific channel.

IF a green light is not illuminated, **THEN** communication has been lost for that specific channel. Perform the following:

1. Check all RJ45 connections.
2. Check Ethernet cables for damage or wear.

15.2 Guard Switch Circuit

IF Safety Guards are not functioning properly, **THEN** perform the following:

1. Ensure magnet on guard is lined up properly with switch and securely attached to guard.
2. Check connections at the Safety Block located on machine and Banner Safety Controller located in the control panel.

IF E-Stops are not functioning properly, **THEN** perform the following:

1. Check connections at the Safety Block located on machine and Banner Safety Controller located in the control panel.
2. Check connections at push button housing and connection on contact block on E-Stop push button.

15.0 Maintenance Troubleshooting Guide

15.3 Web Tracking

1. Ensure steps 14.1 in Operators Trouble Shooting Guide have been completed.
2. Ensure clips are opening properly. Adjust clip openers if necessary.
3. Ensure there is no slack in bottom web.

IF slack appears in bottom web, **THEN** continue with procedure 15.4.

15.4 Slack In Bottom Web

1. From Operations Overview Screen, select **Maintenance**.
2. Select **Bottom Web Setup**.
3. Adjust parameters as described in Appendix 17.3

IF slack is still present in bottom web, **THEN** continue with the following steps:

1. Press Stop button on machine.
2. Select **Maintenance Overview Screen**.
3. Select **Output Forcing Entry**.
4. Select **Bottom Web Brake**.

IF unable to move bottom web role on mandrel, **THEN** continue to adjust parameters on **Bottom Web Setup** page.

IF able to move bottom web role on mandrel, **THEN** continue with the following steps:

1. Check for air leaks in Pneumatic Control Panel on entry end of machine.

15.0 Maintenance Troubleshooting Guide

15.4 Slack In Bottom Web Continued

2. Check gauge for air pressure from ED05 valve in Pneumatic Control Panel on entry end of machine.
3. Perform Bladder Leak Test from Maintenance Overview Screen.
4. Check status lights on ED05/1 valve in valve cabinet. Ensure power light and status light are illuminated.

IF power light and/or status light are not illuminated, **THEN** check connection of valve cable to ED05/1 valve in valve cabinet and connection in electrical cabinet. Refer to electrical drawings.

15.5 Package Not Forming Properly or of Poor Quality

1. Ensure steps 14.2 in Operators Troubleshooting Guide have been completed.
2. Ensure H Gasket in form box is seated properly. Check for wear or damage. Replace if necessary.
3. Check vacuum hoses on vacuum pump and form box for leaks or cracks. Replace if necessary.

15.6 Package Not Sealing Properly

1. Ensure steps 14.3 in Operators Troubleshooting Guide have been completed.
2. Check seal bead on seal box for wear or damage. Replace if necessary.

15.0 Maintenance Troubleshooting Guide

15.7 Package Not Evacuating Completely

1. Perform Vacuum Test. Refer to procedure 9.3.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** package may be pre-sealing. Proceed to step 2 of this procedure.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** machine has failed the Vacuum Test. Refer to section 12.0 for locating and fixing vacuum leak.

2. Check status lights on EDO5/3 valve in valve cabinet. Ensure power light is illuminated and status flashes when seal bar fires.

IF power light and/ status light are functioning properly, **THEN** check connection of valve cable to EDO5/3 valve in valve cabinet and connection in electrical cabinet. Refer to electrical drawings.

IF power lights and status lights are functioning properly, **THEN** check springs on seal bar for wear or damage. Replace if necessary.

15.8 Slack In Top Web

1. Select **Maintenance** from Operations Overview Screen.
2. Select **Top Web Setup**.
3. Adjust parameters as described in Appendix 17.3

IF slack is still present in top web, **THEN** continue with the following steps:

1. Stop machine (not in safety mode).
2. Select **Maintenance Overview Screen**.
3. Select **Output Forcing Exit**.
4. Select **Top Web Brake**.

15.0 Maintenance Troubleshooting Guide

15.8 Slack In Top Web Continued

IF unable to move top web role on mandrel, **THEN** continue to adjust parameters on **Top Web Setup** page.

IF able to move top web role on mandrel, **THEN** continue with the following steps:

1. Check for air leaks in Pneumatic Control Panel on exit end of machine.
2. Check gauge for air pressure to ED05 valve in Pneumatic Control Panel on exit end of machine.
3. Perform **Bladder Leak Test** from Maintenance Overview Screen.
4. Check status lights on ED05/2 valve in valve cabinet. Ensure power light and status light are illuminated.

IF power light and/ status light are not illuminated, **THEN** check connection of valve cable to ED05/2 valve in valve cabinet and connection in electrical cabinet. Refer to electrical drawings.

15.9 Rotary Score Not Functioning Properly

1. Select **Rotary Score Screen** from Operations Overview Screen.
2. Increase air pressure until knives score package properly.

IF rotary score still does not score package properly, **THEN** blades need to be replaced.

16.0 Vacuum Leak Troubleshooting

16.1 Test Vacuum Pump Hose

1. Disconnect vacuum hose from machine and plug end of vacuum hose.
2. Ensure vacuum pump is **ON** and ball valve is open.
3. Close ball valve and check vacuum gauge.

IF Torr reading is less than 10 after 30 second test, **THEN** reconnect vacuum hose to machine and skip to procedure 16.2 “Test Vacuum Valve Cabinet.”

IF Torr reading is greater than 10 after 30 seconds, **THEN** continue to step 4 in this procedure.

4. Remove hose from vacuum pump.
5. Check for cracks in hose. Replace hose if necessary.
6. Apply vacuum grease to barbs on vacuum fittings.
7. Ensure hose clamps are tight.
8. Re-grease gaskets inside hose fittings.
9. Ensure vacuum pump is **ON** and ball valve is open.
10. Close ball valve and check vacuum gauge.

IF Torr reading is less than 10 after 30 second test, **THEN** continue to step 11 in this procedure.

IF Torr reading is greater than 10 after 30 second test, **THEN** return to step 4 in this procedure.

16.0 Vacuum Leak Troubleshooting

16.1 Test Vacuum Pump Hose Continued

11. Return machine to full operation setup for retest.
12. Ensure vacuum pump is **ON** and ball valve is open.
13. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
14. Close ball valve on vacuum pump.
15. Select **Start Vacuum Test**.

IF Torr reading is less than 10 after 30 second test, **THEN** machine has passed the vacuum test.

IF Torr reading is greater than 10 after 30 second test, **THEN** proceed to procedure 16.2 “Test Vacuum Valve Cabinet For Leaks.”

16.2 Test Vacuum Valve Cabinet

1. Remove all vacuum hoses from rear of vacuum valve cabinet.
2. Plug fittings at rear of vacuum valve cabinet.
3. Select **Vacuum Test** from Operations Overview Screen. Vacuum Test Overview screen will appear.
4. Ensure vacuum pump is **ON** and ball valve is open.
5. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.

Note: *Selecting **Vacuum Test Mode** will raise seal lift and fire vacuum valves when seal lift reaches its top position.*

6. Close ball valve on vacuum pump.
7. Select **Start Vacuum Test** from Vacuum Test Overview Screen.

16.0 Vacuum Leak Troubleshooting

16.2 Test Vacuum Valve Cabinet Continued

IF Torr reading is less than 10 at the end of 30 second test, **THEN** skip to procedure 16.3 “Test Hoses From Vacuum Valve Cabinet to Sealing Area.”

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** continue to step 8 in this procedure.

8. Ensure all fittings in vacuum manifold are tight.
9. Reapply Teflon tape and vacuum grease to all threads.
10. Remove hoses in vacuum valve cabinet. Check for cracks in hose, apply vacuum grease to inside of hose and replace.
11. Ensure hose clamps are tight.
12. Ensure fittings on back of valve cabinet are tight. Reapply Teflon tape and retighten.
13. Ensure vacuum pump is **ON** and ball valve is open.
14. Close ball valve on vacuum pump.
15. Select **Start Vacuum Test** from Vacuum Test Overview Screen.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** skip to procedure 16.3 “Test Hoses From Vacuum Valve Cabinet To Sealing Area.”

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** continue to step 16 in this procedure.

16. Regrease O-Rings inside valve, or replace O-Rings if necessary.

16.0 Vacuum Leak Troubleshooting

16.2 Test Vacuum Valve Cabinet Continued

IF Torr reading is less than 10 at the end of 30 second test, **THEN** continue to step 17 in this procedure.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** return to step 8 of this procedure.

17. Return machine to full operation setup for retest.
18. Ensure vacuum pump is **ON** and ball valve is open.
19. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
20. Close ball valve on vacuum pump.
21. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the vacuum test.

IF Torr reading is greater than 10 at the end of 30 second test, continue to procedure 16.3 “Test Hoses From Vacuum Valve Cabinet to Sealing Area.”

16.3 Test Hoses From Vacuum Valve Cabinet to Sealing Area

1. Reattach all hoses to rear of vacuum valve cabinet.
2. Plug ends of all hoses.
3. Ensure vacuum pump is **ON** and ball valve is open.
4. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
5. Close ball valve on vacuum pump.
6. Select **Start Vacuum Test**.

16.0 Vacuum Leak Troubleshooting

16.3 Test Hoses From Vacuum Valve Cabinet to Sealing Area Continued

IF Torr reading is less than 10 at the end of 30 second test, **THEN** continue to procedure 16.4 “Test Seal Box Manifold.”

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** continue to step 7 in this procedure.

7. Remove hoses from rear of vacuum valve cabinet. Check for cracks in hoses, apply vacuum grease to barbs on vacuum fittings and replace.
8. Ensure hose clamps are tight.
9. Re-grease gaskets inside hose fittings.
10. Ensure vacuum pump is **ON** and ball valve is open.
11. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
12. Close ball valve on vacuum pump.
13. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** continue to step 14 of this procedure.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** return to step 7 of this procedure.

14. Return machine to full operation setup for retest.
15. Ensure vacuum pump is **ON** and ball valve is open.
16. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
17. Close ball valve on vacuum pump.
18. Select **Start Vacuum Test**.

16.0 Vacuum Leak Troubleshooting

16.3 Test Hoses From Vacuum Valve Cabinet to Sealing Area Continued

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the Vacuum Test.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** continue to procedure 16.4 "Test Seal Box Manifold."

16.4 Test Seal Box Manifold

1. Pull plugs on bottom vacuum valve and reattach bottom vacuum hoses.
2. Select **Operation** to return to Operations Overview Screen.
3. Select **Lifts Down** (green) from Operations Overview Screen.
4. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
5. Remove seal box from machine.
6. Clamp appropriate size piece of Lexan over vacuum ports on face of seal box manifold.
7. Replace guard and select **Reset** from Operations Overview Screen.
8. Select **Maintenance** from Operations Overview Screen. Maintenance Overview Screen will appear.
9. Select **Output Forcing Sealing** from Maintenance Overview Screen.
10. Ensure vacuum pump is **On** and ball valve is open.
11. Enable **Bottom Vac** (green) from Output Forcing Sealing.
12. Close ball valve on vacuum pump and check gauge.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (red) from Output Forcing Sealing. Continue to procedure 16.5 "Test Seal Box."

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (red) from Output Forcing Sealing. Continue to step 13 in this procedure.

16.0 Vacuum Leak Troubleshooting

16.4 Test Seal Box Manifold Continued

13. Retape and apply vacuum grease to vacuum fittings on seal box manifold.
14. Ensure vacuum pump is **On** and ball valve is open.
15. Enable **Bottom Vac** (green) from Output Forcing Sealing.
16. Close ball valve on vacuum pump and check gauge.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (red) from Output Forcing Sealing. Continue to step 17 in this procedure.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (red) from Output Forcing Sealing. Return to step 13 in this procedure.

17. Return machine to full operation setup for retest.
18. Select **Operation**. Operation Overview Screen will appear.
19. Select **Vacuum Test** from Operations Overview Screen. Vacuum Test Overview screen will appear.
20. Ensure vacuum pump is **On** and ball valve is open.
21. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
22. Close ball valve on vacuum pump.
23. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the vacuum test.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** continue to procedure 16.5 "Test Seal Box."

16.0 Vacuum Leak Troubleshooting

16.5 Test Seal Box

1. Select **Operation** to return to the Operations Overview Screen.
2. Select **Lifts Down** (green) from Operations Overview Screen.
3. Press **Stop** button on machine for machine to come to a controlled stop. Lift appropriate guard to de-energize machine and for it to enter safe mode.
4. Clamp appropriate size piece of Lexan over seal box.
5. Relace guard and select **Reset** on Operations Overivew Screen.
6. Select **Maintenance** from Operations Overview Screen. Maintenance Overview Screen will appear.
7. Select **Output Forcing Sealing**.
8. Ensure vacuum pump is on and ball valve is open.
9. Enable **Bottom Vac** (green) from Output Forcing Sealing.
10. Close ball valve on vacuum pump and check gauge.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (Red) from Output Forcing Sealing. Continue to procedure 16.6 “Test Seal Head.”

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect (red) **Bottom Vac** from Output Forcing Sealing. Continue to step 11 in this procedure.

11. Remove seal box from machine.
12. Replace O-Rings on seal box.
13. Replace seal bead on seal box.
14. Replace seal box in machine.
15. Ensure vacuum pump is on and ball valve is open.
16. Enable **Bottom Vac** (green) from Output Forcing Sealing.

16.0 Vacuum Leak Troubleshooting

16.5 Test Seal Box Continued

17. Close ball valve on vacuum pump and check gauge.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect **Bottom Vac** (red) from Output Forcing Sealing. Continue to step 18 in this procedure.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** open ball valve on vacuum pump and deselect (red) **Bottom Vac** from Output Forcing Sealing. Return to step 11 in this procedure.

18. Return machine to full operation setup for retest.

19. Select **Operation**. Operation Overview Screen will appear.

20. Select **Vacuum Test** from Operations Overview Screen. Vacuum Test Overview screen will appear.

21. Ensure vacuum pump is **ON** and ball valve is open.

22. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.

23. Close ball valve on vacuum pump.

24. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the vacuum test.

IF Torr reading is greater than 10 at the end of 30 second test, continue to procedure 16.6 "Test Seal Head."

16.6 Test Seal Head

1. Re-tape and apply vacuum grease to vacuum fittings on seal head.
2. Remove heater junction box and inspect O-Ring.
3. Re-grease O-Ring or replace if necessary. Replace heater junction box.
4. Separate seal bar from seal head.

16.0 Vacuum Leak Troubleshooting

16.6 Test Seal Head Continued

5. Inspect O-Ring on seal bar.
6. Re-grease O-Ring or replace if necessary. Replace seal bar.
7. Ensure vacuum pump is **ON** and ball valve is open.
8. Select **Vacuum Test Mode** from Vacuum Test Overview Screen.
9. Close ball valve on vacuum pump.
10. Select **Start Vacuum Test**.

IF Torr reading is less than 10 at the end of 30 second test, **THEN** machine has passed the vacuum test.

IF Torr reading is greater than 10 at the end of 30 second test, **THEN** return to step 1 in this procedure.

17.0 Appendix

17.1 Operations Overview Screen Navigation and Button Definitions

Machine Status Message Bar: Displays real time machine operation status.

Initial Operations Overview Screen: Displays machine guard and E-Stop conditions.

Yellow buttons: Display current machine parameters and data. Values cannot be changed.

Blue buttons: Access to machine operation and maintenance pages.

- **Logon:** Enter appropriate logon information.
- **Operation:** Operation Overview Page
- **Sanitation:** Sanitation Overview Page
- **Maintenance:** Maintenance Overview Page
- **Safety Screen:** Displays machine guard and E-Stop conditions.

E-Stops OK / Guards OK: E-Stop and Guard status displayed red or green.

Guard / E-Stop Status: Select to check guard and E-Stop conditions. Choose Close Window to return to Operations Overview Screen.

Seal Lift Up: Select (green) to put seal lift in **UP** position.

Seal Bar: Select (green) to fire seal bar once.

Clip Jog: Select (green) then press and hold **Stop** button on machine to jog clip belt. To stop clip belt, release **Stop** button on machine. Deselect **Clip Jog** (red).

Lifts Down: Select (green) to put forming lift and seal lift in down position.

Change Seal Bar: Raises seal lift to optimum height for seal bar replacement.

Form Pump: Turns forming pump on/off

Evac Pump: Turns evacuation pump on/off

Reg Home: Registers top web.

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17.1 Operations Overview Screen Navigation and Button Definitions Continued

Status Buttons: Select (green) to enable the following machine functions during operation and/or setup:

- Date Code Conform On
- Registration Rotary Score
- Knife Flush
- Zipper Labeler Run

Form Heat: Select (green) to turn forming heater **ON**.

Seal Heat: Select (green) to turn sealing heater **ON**.

+ and **-**: select to change Eye Offset

Zipper Screen: Access to customizable zipper parameters.

Rotary Score Screen: Access to customizable rotary score knife parameters.

17.2 Sanitation Overview Screen Navigation and Button Definition

(Accessed from blue **Sanitation** button on Operations Overview Screen)

Close Lifts: Select (green) to put both lifts in up position.

Lifts Down: Select (green) to put both lifts in down position.

Clip Jog: Select (green) then press and hold **Stop** button on machine to jog clip belt.

Clip Start: Select (green) then press and hold **Stop** button on machine 2 seconds to start clip axis.

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17.3 Maintenance Overview Screen Navigation and Button Definition

(Accessed from blue **Maintenance** button on Operations Overview Screen)

Input Status Window: Indicates which inputs are activated (green).

Output Forcing Entry: Select (green) to test the operation of the following. Not all options listed may be on machine.

- Bottom Web Brake
- Forming Pump
- Form Vac
- Form Vent
- Air Assist

Output Forcing Sealing: Select (green) to test the operation of the following. Not all options listed may be on machine.

- Vacuum Pump
- Bottom Vac
- Bottom Vent
- Top Vac
- Top Vent
- Seal Bar
- Heater Relay
- Booster Pump
- Zipper Seal
- Zipper Crush

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Output Forcing Exit: Select (green) to test the operation of the following. Not all options listed may be on machine.

- Top Web Brake
- Rotary Knife
- Guillotine 1-5 (Depending on machine configuration)
- Exit Conveyor
- Scrap Canister
- Date Code

Alarm: Select to view Alarm Overview/Active Alarm Screen.

Acknowledge Alarm: Select to mark active alarm as being recognized. Color will change from red to yellow once recognized. **Reset Fault** will change alarm from red or yellow to green.

View Alarm History: Select to view past alarms.

Active Alarms: Select to leave Alarm History Screen and view current alarms.

Clear History: Select to clear out past alarms from Alarm History.

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Bottom Web Setup: Select for customizable Bottom Web parameters (Blue).

Ramp Stop PSI: PSI that will be reached incrementally from Ramp Start Position to Ramp Stop Position.

Final PSI: PSI from Ramp Stop Position to end of index.

Ramp Start Position: Position in the index PSI will begin increasing.

Ramp Stop Position: Position in the index PSI will stop increasing.

Top Web Setup: Select for customizable Top Web parameters (Blue)

Ramp Start PSI: PSI from 0" of index to Ramp Start Position.

Ramp Stop PSI: PSI that will be reached incrementally from Ramp Start Position to Ramp Stop Position.

Final PSI: PSI from Ramp Stop Position to end of index.

Ramp Start Position: Position in the index PSI will begin increasing.

Ramp Stop Position: Position in the index PSI will stop increasing.

Registration PSI: Pressure applied to mandrel break for top registration.

The following buttons offer real time data:

Seal Bar Pressure Trending

Heater Temperature Trending

Machine Efficiency

Production Shift Setup: Data fields for shift information

Machine Configuration: Selection (green) of options for machine.

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17.4 Grey Menu Bar (Located on Bottom of Screen)

Servo Control: Allows operator to select (green) various machine jogs and direction of jog.

- Form
- Seal
- Knife
- Flush
- Clip

Press **Stop** button on machine to perform jog.

Recipe: Parameters that can be changed from the Recipe Data Overview Screen.

Package Depth: Defines the depth of the pocket. Value entered in this field also defines Exit Conveyor height and how far the lifts will travel.

Index Length: Defines how far the chains will move in one cycle.

Slow/Medium/Fast: Select to determine clip belt speed.

Preheat Temperature: Determines the temperature of the preheat plate. This parameter can also be adjusted from the Operator Overview Screen.

Preheat Delay: Defines delay time that vacuum will be applied to preheat section in form tooling.

Forming: This parameter plus the **Form Delay** parameter define the amount of time the vacuum valve is energized after the lifts are in the up position.

Knife Selection Toggle Box: Defines which guillotine knives are in operation.

Seal Temperature: Defines the temperature of the Seal Plate located in the Seal Head. This parameter can also be adjusted from the Operator Overview Screen.

Seal Bar (S): Defines the amount of time the top and bottom webs are pressed together inside the seal head.

Seal Bar (PSI): Defines how much pressure is being applied to the top and bottom webs inside the seal head.

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Evacuation: Defines how long the vacuum is applied to the seal chamber.

Pulse Vacuum On/Pulse Vacuum Off: Allows intermittent vacuuming of the seal chamber.

Top Vent Delay

Gas Flush: Defines amount of time gas is introduced into seal box.

Registration Eye Offset: Distance measured from the center of the registration eye down to the center of the registration mark on the top web.

Vacuum Test: Access to **Vacuum Test Overview** Screen. Refer to section 5.3.

Temperature Control (From Maintenance Overview Screen): Allows auto tuning of heat zones.

Labeler (Refer to Labeler Diagram)

Label Length (mm): Length of the label from edge to edge. This value is obtained from the **Measure Label** procedure found on the Labeler Control screen and is not changeable. Once the label length is stored in a recipe, the Measure Label procedure is not necessary.

Label Gap (mm): Distance between labels. This value is obtained from the **Measure Label** procedure found on the Labeler Control screen and is not changeable. Once the label gap is stored in a recipe, the Measure Label procedure is not necessary.

Labels per Row: Number of labels in a horizontal row (across the machine).

Label Center Distance (mm): Distance between the center of a label in a row and the center of the label adjacent to it (should correspond to the package on the web).

Last Label Position (mm): Distance from the peeler bar to the edge of the first label in a row. This value is used to shift the whole row of labels together across the machine while maintaining the row center distance.

Label Sensor Offset (mm): Distance label protrudes from edge of peeler bar.

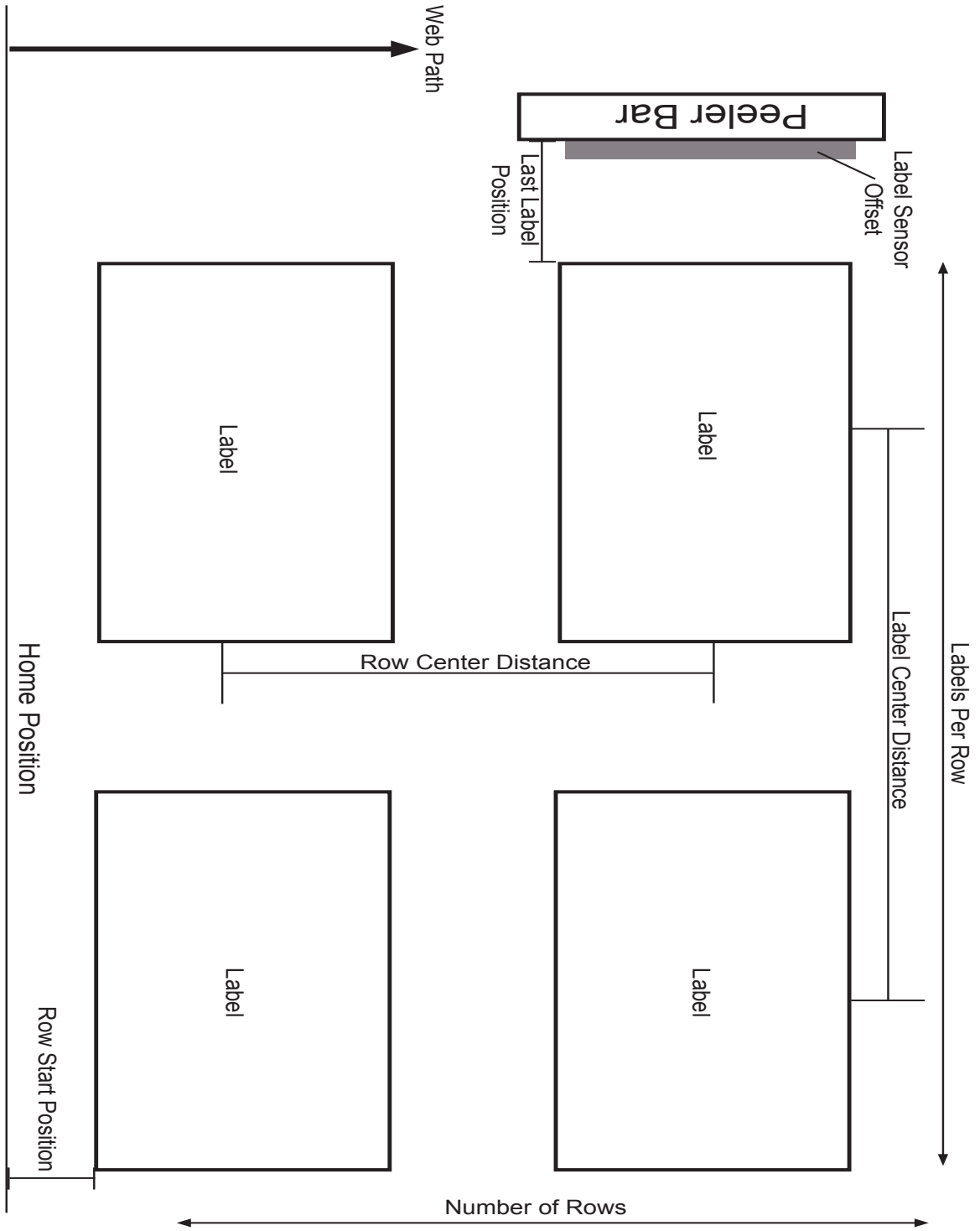
Label Speed (mm/s): Motor speed of labeler.

Number of Rows: Rows of labels vertically (machine direction).

Row Start Position (mm): Distance from Home Position to edge of first label in first row. This value is used to shift all rows together in machine direction while maintaining the row center distance.

Row Center Distance (mm): Distance between rows from center of label in one row to center of label in the next row.

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17.5 Servo System

Mi Description:

The Servo System on the VisionPak uses an integrated drive/motor combination known as the Mi. The Mi's are mounted on the machine inside the tower panels. There are two Mi's per lift section and two for the clip section. The Mi motors get their commands from the L40.2 PAC controller in the main control panel via a fiber optic SERCOS ring. Each pair of Mi motors follows a separate virtual axis that allows the motors to stay in phase and share the load of the section. All Mi axis have absolute encoders to eliminate the need for homing unless mechanically uncoupled or a Mi motor is replaced. See Procedure 9.4 for steps to reset homing for a Mi motor.

Mi Cable Connections and Cable Architecture:

The Mi requires only one cable IN and one cable OUT. The IN cable includes the servo drive control voltage, control signals, and DC bus. The OUT cable takes these same wires and daisy chains to the next Mi. The last axis in the line will have only one cable IN and a terminator on the open connector. The Mi receives the control voltage, control signals, and DC bus from a KCU module located inside the main electrical panel. The KCU receives the DC Bus and 24VDC control voltage from the stand alone drive located beside it in the main control panel. This stand alone drive also runs the exit conveyor motor if installed.