Smart Pack Troubleshooting Guide

Amazon Corporate | MSP1

**Amazon Confidential**

Bohnsack, Cole

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Contents

[Examples 7](#_Toc533853794)

[Example Issue 7](#_Toc533853795)

[Status 7](#_Toc533853796)

[Example of parts and location 7](#_Toc533853797)

[*KO reasons* 8](#_Toc533853798)

[Failed Label Scan - High 8](#_Toc533853799)

[Collision - High 8](#_Toc533853800)

[Machine Fault – High 8](#_Toc533853801)

[Shipment Cancelled 8](#_Toc533853802)

[GTS Failure 9](#_Toc533853803)

[Discard Induct 9](#_Toc533853804)

[Process with Manual Slam 9](#_Toc533853805)

[Top Label Mismatch 9](#_Toc533853806)

[Virtual Negative No Cycle 9](#_Toc533853807)

[Jiffy Validation Failure 9](#_Toc533853808)

[WMS Internal Failure 10](#_Toc533853809)

[Slam 2 Connection Failure 10](#_Toc533853810)

[Unknown Controller Result Code 10](#_Toc533853811)

[WMS Restriction Authority – Non Shippable 10](#_Toc533853812)

[WMS Ship - Timeout 10](#_Toc533853813)

[*Machine Faults* 11](#_Toc533853814)

[Light Curtain Interrupted (Fault) 11](#_Toc533853815)

[Sealing Jaw Not Clear 11](#_Toc533853816)

[Material Feed Fault 11](#_Toc533853817)

[Gripper Servo Position Fault 12](#_Toc533853818)

[Nip Fault Cycle Too Long Or Servo Not Ready 12](#_Toc533853819)

[Nip Roller Not Closed 12](#_Toc533853820)

[Nip Roller Retracted During Run Attempt 12](#_Toc533853821)

[Product Sensor Not Clear 13](#_Toc533853822)

[Gripper Fault Cycle Too Long Or Servo Not Ready 13](#_Toc533853823)

[Auto Cycle Time Exceeded Fault 13](#_Toc533853824)

[Bubble Film Roll Out of Position 14](#_Toc533853825)

[PLC Alarm Fault Word 0 Bit 11 [Not in use] 14](#_Toc533853826)

[Air Pressure Low 14](#_Toc533853827)

[Gripper Index Not Complete 14](#_Toc533853828)

[Takeaway Conveyor Motor Fault 15](#_Toc533853829)

[Kickout Conveyor Motor Fault 15](#_Toc533853830)

[Grip Obstructing Seal Cycle 16](#_Toc533853831)

[Takeaway Conveyor Jam Fault [Disabled] 16](#_Toc533853832)

[Kickout Conveyor Jam Fault [Disabled] 16](#_Toc533853833)

[Tote Barcode Reader Offline 17](#_Toc533853834)

[Label Printer Fault 17](#_Toc533853835)

[Labeler Tamp Not Returned 17](#_Toc533853836)

[Labeler Cycle Too Long 18](#_Toc533853837)

[Printer Failed to Print 18](#_Toc533853838)

[Tamp Head Vacuum Fault 18](#_Toc533853839)

[Applicator Failed To Tamp 18](#_Toc533853840)

[Sealer Bar Temp Too Low 19](#_Toc533853841)

[Divert Position Timeout 19](#_Toc533853842)

[Verify Camera Not Ready 20](#_Toc533853843)

[Verify Camera Cycle Too Long 20](#_Toc533853844)

[Package Lost After Seal Cycle 20](#_Toc533853845)

[PLC Alarm Fault Word 0 Bit 31 [Not in use] 20](#_Toc533853846)

[PLC Alarm Fault Word 1 Bit 0 [Not in use] 20](#_Toc533853847)

[PLC Alarm Fault Word 1 Bit 1 [Not in use] 20](#_Toc533853848)

[Gripper Servo Home Sensor Not Found 20](#_Toc533853849)

[Gripper Servo Axis Fault 21](#_Toc533853850)

[Gripper Servo High Current 21](#_Toc533853851)

[Gripper Servo Overtravel Upper 21](#_Toc533853852)

[Gripper Servo Overtravel Lower 21](#_Toc533853853)

[Nip Servo Axis Fault 22](#_Toc533853854)

[PLC Alarm Fault Word 1 Bit 9 [Not in use] 22](#_Toc533853855)

[PLC Alarm Fault Word 1 Bit 10 [Not in use] 22](#_Toc533853856)

[PLC Alarm Fault Word 1 Bit 11 [Not in use] 22](#_Toc533853857)

[Jaw Open Error 22](#_Toc533853858)

[Jaw Closed Error 22](#_Toc533853859)

[Jaw Safety Sensor Fault (Operator Side) 23](#_Toc533853860)

[Jaw Safety Sensor Fault (Bag Roll Side) 23](#_Toc533853861)

[PLC Alarm Fault Word 1 Bit 16 [Not in use] 23](#_Toc533853862)

[PLC Alarm Fault Word 1 Bit 17 [Not in use] 23](#_Toc533853863)

[PLC Alarm Fault Word 1 Bit 18 [Not in use] 23](#_Toc533853864)

[PLC Alarm Fault Word 1 Bit 19 [Not in use] 24](#_Toc533853865)

[PLC Alarm Fault Word 1 Bit 20 [Not in use] 24](#_Toc533853866)

[PLC Alarm Fault Word 1 Bit 21 [Not in use] 24](#_Toc533853867)

[PLC Alarm Fault Word 1 Bit 22 [Not in use] 24](#_Toc533853868)

[PLC Alarm Fault Word 1 Bit 23 [Not in use] 24](#_Toc533853869)

[PLC Alarm Fault Word 1 Bit 24 [Not in use] 24](#_Toc533853870)

[Front Side HMI Cabinet E-Stop Pressed 25](#_Toc533853871)

[Back Side Film Roll E-Stop Pressed 25](#_Toc533853872)

[Back Side Exit Conveyor E-Stop Pressed 25](#_Toc533853873)

[Front Side Jaw Access Door Open 26](#_Toc533853874)

[Front Side Exit Conveyor E-Stop Pressed 26](#_Toc533853875)

[E-Stop Relay Failed To Drop 26](#_Toc533853876)

[PLC Alarm Fault Word 1 Bit 31 [Not in use] 27](#_Toc533853877)

[*Machine Warnings* 28](#_Toc533853878)

[Light Curtain Interrupted 28](#_Toc533853879)

[PLC Alarm Warning Word 0 Bit 1 [Not in use] 28](#_Toc533853880)

[Gripper Not Home 28](#_Toc533853881)

[PLC Alarm Warning Word 0 Bit 3 [Not in use] 28](#_Toc533853882)

[Sealer Bar Temperature Too Low 28](#_Toc533853883)

[Bag Film Low 28](#_Toc533853884)

[Bag Film Low – Machine Start Inhibited 29](#_Toc533853885)

[ASIN Tote Supply Conveyor Empty 29](#_Toc533853886)

[Machine Starved 29](#_Toc533853887)

[Failure to Read Reject Tote Barcode 29](#_Toc533853888)

[Reject Tote Full 29](#_Toc533853889)

[Label Printer Label Stock Low 29](#_Toc533853890)

[Label Printer Label Stock Low – Stop Machine 30](#_Toc533853891)

[Tamp Head Vacuum On At Wrong Time 30](#_Toc533853892)

[Label Printed At Wrong Time 30](#_Toc533853893)

[PLC Alarm Warning Word 0 Bit 15 [Not in use] 30](#_Toc533853894)

[Printer Failed To Print 30](#_Toc533853895)

[Tamp Head Vacuum Error 30](#_Toc533853896)

[Failed To Tamp Error 31](#_Toc533853897)

[PLC Alarm Warning Word 0 Bit 19 [Not in use] 31](#_Toc533853898)

[Seal Cutter Advance Overtime 31](#_Toc533853899)

[PLC Alarm Warning Word 0 Bit 21 [Not in use] 31](#_Toc533853900)

[PLC Alarm Warning Word 0 Bit 22 [Not in use] 31](#_Toc533853901)

[PLC Alarm Warning Word 0 Bit 23 [Not in use] 31](#_Toc533853902)

[Package Lost After Sealing Cycle 31](#_Toc533853903)

[PLC Alarm Warning Word 0 Bit 25 [Not in use] 32](#_Toc533853904)

[Takeaway Conveyor Jam 32](#_Toc533853905)

[Kickout Conveyor Jam 32](#_Toc533853906)

[Downstream Conveyor Stopped 32](#_Toc533853907)

[PLC Alarm Warning Word 0 Bit 29 [Not in use] 33](#_Toc533853908)

[PLC Alarm Warning Word 0 Bit 30 [Not in use] 33](#_Toc533853909)

[FLUSH REQUIRED (Dry/Empty Cycle the Machine) 33](#_Toc533853910)

[PLC Alarm Warning Word 1 Bit 0 [Not in use] 33](#_Toc533853911)

[PLC Alarm Warning Word 1 Bit 1 [Not in use] 33](#_Toc533853912)

[PLC Alarm Warning Word 1 Bit 2 [Not in use] 33](#_Toc533853913)

[PLC Alarm Warning Word 1 Bit 3 [Not in use] 33](#_Toc533853914)

[PLC Alarm Warning Word 1 Bit 4 [Not in use] 34](#_Toc533853915)

[PLC Alarm Warning Word 1 Bit 5 [Not in use] 34](#_Toc533853916)

[Excessive Tamp Head Vacuum Failures 34](#_Toc533853917)

[PLC Alarm Warning Word 1 Bit 7 [Not in use] 34](#_Toc533853918)

[PLC Alarm Warning Word 1 Bit 8 [Not in use] 34](#_Toc533853919)

[PLC Alarm Warning Word 1 Bit 9 [Not in use] 34](#_Toc533853920)

[Label Applicator Tamp Head Slow 35](#_Toc533853921)

[PLC Alarm Warning Word 1 Bit 11 [Not in use] 35](#_Toc533853922)

[Label Verify Slow 35](#_Toc533853923)

[Label Verify Failures High 35](#_Toc533853924)

[Sealing Jaw Movement Slow 36](#_Toc533853925)

[Sealing Jaw Cutter Movement Slow 36](#_Toc533853926)

[Pack Service Disconnected 36](#_Toc533853927)

[SLAM Service Disconnected 36](#_Toc533853928)

[EVENT Service Disconnected 36](#_Toc533853929)

[NTP Service Disconnected 37](#_Toc533853930)

[Sealing Jaw Cutter Failed To Advance 37](#_Toc533853931)

[PLC Alarm Warning Word 1 Bit 17 [Not in use] 38](#_Toc533853932)

[PLC Alarm Warning Word 1 Bit 18 [Not in use] 38](#_Toc533853933)

[PLC Alarm Warning Word 1 Bit 19 [Not in use] 38](#_Toc533853934)

[WMS ScaleInductACK Response Slow 38](#_Toc533853935)

[WMS LabelRequest Response Slow 38](#_Toc533853936)

[ASIN Scan Receipt May Be Slow 38](#_Toc533853937)

[PLC Alarm Warning Word 1 Bit 27 [Not in use] 39](#_Toc533853938)

[PLC Alarm Warning Word 1 Bit 28 [Not in use] 39](#_Toc533853939)

[PLC Alarm Warning Word 1 Bit 29 [Not in use] 39](#_Toc533853940)

[PLC Alarm Warning Word 1 Bit 30 [Not in use] 39](#_Toc533853941)

[PLC Alarm Warning Word 1 Bit 31 [Not in use] 39](#_Toc533853942)

[Miscellaneous Issues 40](#_Toc533853943)

[False Divert 40](#_Toc533853944)

[Machine stuck on “Pending” status 41](#_Toc533853945)

[Multiple packages sent without separating from each other 41](#_Toc533853946)

[Film walks out of alignment. 42](#_Toc533853947)

[Preventative Maintenance 43](#_Toc533853948)

[Daily 43](#_Toc533853949)

[Weekly 44](#_Toc533853950)

[4-Week 45](#_Toc533853951)

[12-Week 46](#_Toc533853952)

[12-Week CTM 47](#_Toc533853953)

[Label Printer 48](#_Toc533853954)

[Rethreading Printer Labels 48](#_Toc533853955)

[Printer Settings 49](#_Toc533853956)

[Default printer settings 49](#_Toc533853957)

[Printer Label Print Adjustment / Alignment 49](#_Toc533853958)

[Printer HMI Alarms 50](#_Toc533853959)

[Critical alarms 50](#_Toc533853960)

[No Media 50](#_Toc533853961)

[Warning alarms 50](#_Toc533853962)

[Low labels 50](#_Toc533853963)

[Tips and tricks 51](#_Toc533853964)

[*Appendix A - Settings* 52](#_Toc533853965)

[HMI Settings 52](#_Toc533853966)

[Programing Keyence sensor 53](#_Toc533853967)

[Tamp head sensor calibration 53](#_Toc533853968)

[Product / Bag film level sensors (FS-N11CP) 53](#_Toc533853969)

[*Appendix B – Acronyms* 54](#_Toc533853970)

[Useful Links 55](#_Toc533853971)

[Change Log 56](#_Toc533853972)

# Examples

*Example subtext / supplemental information.*

|  |  |
| --- | --- |
| Issue | Example Issue |
| Cause | 1. Cause 1 of issue. (most common) 2. Cause 2 of issue. 3. Cause 3 of issue. (least common) |
| Solution | 1. Solution for Cause 1. 2. Step for Solution 1. 3. Sub-step for solution 1. 4. Solution for Cause 2. 5. Step for Solution 1. 6. Solution for Cause 3. |

**The HMI will display different colors for the status.**

|  |  |
| --- | --- |
| Color | Status |
| Green | System normal and ready. |
| Amber | System has active warnings. Read HMI for more details. |
| Red | System has active faults. Read HMI for more details. |

## Example of parts and location

[PN: N42297] [Loc: SP1-E] Part number of N42297 and is located at smart pack cabinet 1 shelf E.

G4 Blade Holder Assembly 2.0

[PN: 12249] [Loc: A63-D-01] Part is located in the parts cage, Racking A63, shelf D, position 1.

Button: Keymat, “OK”

# *KO reasons*

KOs from FCShip can be found [[*here*](https://w.amazon.com/index.php/FCShip/Kickout_Codes)].

|  |  |
| --- | --- |
| Issue | Failed Label Scan - High |
| Cause | 1. Printer brass roller has adhesive on it. 2. Printer tamp head has adhesive on it. 3. Incorrect printer settings. [I.E. too light/dark, printing slow, misaligned print] 4. Verify label camera is not working correctly. 5. Keyence sensor on the tamp head assembly is not working correctly. 6. Bad labels. |
| Solution | 1. Clean knurled roller with isopropyl alcohol wipe. 2. Clean tamp head with an isopropyl alcohol wipe. 3. For printer settings [[*Click here*](#_Printer_Settings_1)]. 4. Clean the camera with a microfiber cloth. Call controls to verify alignment and focus. 5. If the labels are printing with blank areas. [*Click here*] 6. Verify the Keyence sensor is setup correctly. [*Click here*] 7. [Click here]   ***Note****: AA’s are supposed to clean the printer and tamp head each time they change labels.*  ***Tip****: During* ***each*** *break that the AA’s take, clean the printer and tamp head.* |

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| Issue | Collision - High |
| Cause | 1. AA is rushing causing data collisions. 2. AA failed to dry cycle when prompted after pack exception or after a data collision. 3. Low bubble film triggered inhibit cycle. |
| Solution | 1. Coach AA to wait until the label is fully printed to scan the next item. 2. Coach AA to cycle the machine after processing pack exceptions / data collisions. 3. This is a common occurrence. |

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| Issue | Machine Fault – High |
| Cause | 1. This is an aggregate of multiple faults in the machine. |
| Solution | 1. On the HMI tap ≡Menu, tap alarm, tap history. Press the ▼ to scroll down the list. 2. Find the most recent fault that halted the machine. 3. Resolve the cause of the fault, and observe the machine. 4. If this does not reduce the KO rate, repeat until the rate lowers. |

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| Issue | Shipment Cancelled |
| Cause | 1. Customer Canceled the order. |
| Solution | 1. Standard KO, process with ShipApp. |

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| Issue | GTS Failure |
| Cause | * 1. Transportation System cannot process this package. [[*Click here for more info*]](https://w.amazon.com/index.php/Transportation/MLTS) |
| Solution | * 1. Problem solve will file a ticket. |

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| Issue | Discard Induct |
| Cause | 1. Any time the AA scans but does not pack the item.    * 1. Does not fit. (Oversized)      2. Item is damaged.      3. PackApp timeout.      4. No Pslip. |
| Solution | 1. AA can mitigate some of the causes. 2. AA can leave the item in the tote and close the tote. 3. AA can also leave the item in the tote, or mark it as damaged.   **Note**: *A and b will leave the dwell time running for the items in that tote.*   1. Reset the thin client (PC) by pressing [*Ctrl*] + [*Alt*] + [*Backspace*]. 2. Check to see if the printer is connected, powered on and has media installed. |

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| Issue | Process with Manual Slam |
| Cause | 1. The package needed more than one label.   **Note**: *Packages for international ship will usually need a declaration label for customs.* |
| Solution | 1. Problem solve will deal with these packages in the ShipApp. |

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| Issue | Top Label Mismatch |
| Cause | 1. Wrong ship label was applied to the package. |
| Solution | 1. Problem solve will reprocess. |

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| **Issue** | Virtual Negative No Cycle |
| **Cause** | 1. Machine faulting when the item is scanned, causing a fault and this KO. |
| **Solution** | 1. Diagnose the initial fault, and coach AA. |

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| Issue | Jiffy Validation Failure |
| Cause | 1. ??? |
| Solution | 1. ??? |

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| Issue | WMS Internal Failure |
| Cause | 1. Networking failure or fault. |
| Solution | 1. Contact IT and escalate as needed. |

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| Issue | Slam 2 Connection Failure |
| Cause | 1. Network connection failure to WMS. 2. The fault that occurs with this is [*WMS LabelResponse Slow*]. |
| Solution | 1. If the issue does not resolve quickly, escalate to TT. |

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| Issue | Unknown Controller Result Code |
| Cause | 1. Gap in controls code. |
| Solution | 1. Contact CSS technician. |

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| Issue | WMS Restriction Authority – Non Shippable |
| Cause | 1. Not shippable due to Hazmat status. |
| Solution | 1. Problem solve will resolve the issue. |

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| Issue | WMS Ship - Timeout |
| Cause | 1. WMS Application timed out before sending data to the thin client. 2. WMS Regional LSE in AWS or SABLE or other large systems. |
| Solution | 1. Reset thin client and verify that the problem is resolved. 2. If the issue has not been resolved, escalate to IT. 3. Likely LSE in a major backbone system causing issues for supported systems. |

# *Machine Faults*

*Faults will halt the machine or inhibit the cycling of the machine.*

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| --- | --- |
| Issue | Light Curtain Interrupted (Fault) |
| Cause | 1. The light curtain was obstructed with an item / object. |
| Solution | 1. Remove the obstruction and press [*Reset*]. 2. If this does not clear, check for further obstructions, and visually verify the LEDs on the light curtain are green (safe). 3. Follow light curtain alignment procedures if the curtain is not obstructed and LEDs are still not visually green. |

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| Issue | Sealing Jaw Not Clear |
| Cause | 1. AA has product in the machine when the gripper is homing / changing to auto mode. 2. Pslip is in the way of the sensor. 3. Fiber optic ends are dirty / dusty. 4. Keyence sensor is not powered, has failed, or is not setup correctly. |
| Solution | 1. Remove item from machine and press [*Reset*]. 2. Remove Pslip that is in the way of the sensor. 3. Using an isopropyl alcohol wipe clean the fiber optic ends in the product sensor. 4. If the fault continues open the cover for the Keyence sensor located at the upper left hand side of the machine. Flip the grey tab down and carefully remove the fiber ends from the sensor. Clean each and reinstall until the fiber is fully seated. Flip the grey tab up to lock the fiber in. Verify the readout (upper) is greater than the set point (lower). 5. Verify the power cable is connected (***CBL5112***). Verify power to the sensor. 6. If the sensor has power, check to see if the sensor is counting down when an item is in the machine. If the sensor is counting up, then verify settings. [***Click here***] |

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| Issue | Material Feed Fault |
| Cause | 1. Film failed to feed. |
| Solution | 1. Verify all subcomponents for feeding. 2. Reset the HMI and manually feed the film. 3. Troubleshoot further if the issue does not resolve. |

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| Issue | Gripper Servo Position Fault |
| Cause | 1. Gripper movement was called, and no movement. 2. Servo fault / error. |
| Solution | 1. The HMI has lost the position of the gripper and must be rehomed. 2. Press [*Reset*] 3. If the fault continues to occur, observe the gripper rehoming. 4. Troubleshoot further and return to service. 5. Check the gripper drive servo. Default IP: 192.168.1.17 |

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| Issue | Nip Fault Cycle Too Long Or Servo Not Ready |
| Cause | 1. Servo Timed out or servo not ready. 2. Drive belt for the nip roller assembly or gears have failed. 3. No power to nip roller motor. 4. Prox sensor not working properly. |
| Solution | 1. Press [*Reset*]. 2. Verify the drive belt and gears are not damaged, replace damaged items. 3. Verify power to nip roller assembly motor. Check if the circuit breaker is tripped in the cabinet. Follow LOTO procedures before opening the cabinet. 4. Verify prox sensor lights up when triggered. Verify on the HMI that the input for the prox sensors are registering when triggered. |

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| Issue | Nip Roller Not Closed |
| Cause | 1. Nip roller did not close when moving to automatic 2. Nip roller is not closed when moving in manual. |
| Solution | 1. Press [*Reset*]. 2. This should not occur as the PLC when moving to auto will close the nip rollers. |

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| Issue | Nip Roller Retracted During Run Attempt |
| Cause | 1. Nip roller opened while cycling. 2. No / Low air pressure to nip roller assembly. |
| Solution | 1. Press [*Reset*]. If this continues troubleshoot the pneumatics and prox sensors for the Nip roller closed state. Verify the HMI displays the closed state. 2. Verify air pressure at the regulator, and then check the flow control valves. |

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| Issue | Product Sensor Not Clear |
| Cause | 1. Pslip in the way of the product sensor. 2. Oversized product. 3. Product in the way while gripper is homing, or jaw requesting to close. 4. Dirty fiber. 5. Incorrectly programmed Keyence sensor. |
| Solution | 1. Clear pslip and press [*Reset*]. 2. Clear the product from the machine, and verify no damage occurred. 3. Remove the product and press [*Reset*] to rehome the gripper, or close the jaw assembly. 4. Using isopropyl alcohol wipes clean the product sensor fiber ends in the machine. 5. Then clean the ends that are inserted into the Keyence sensor. 6. Click [*here*] for instructions to reprogram the sensor. |

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| --- | --- |
| Issue | Gripper Fault Cycle Too Long Or Servo Not Ready |
| Cause | 1. No/Low air pressure to gripper. 2. Linear bearing failed. 3. Gripper drive belt / cogs worn or damaged. 4. Prox sensor failed / misaligned. |
| Solution | 1. Verify pressure to the gripper at the regulator, then at the gripper flow control valves. 2. With the machine turned off via the front door open, lift the gripper arm assembly and feel how the linear bearing moves. 3. If the linear bearing has failed then replace with [PN: ] [Loc: ] 4. Verify the drive belt or cogs are damaged, and replace the defective parts. 5. Verify the prox sensors for the home / upper and lower travel limits are triggered correctly when the gripper is in motion, or use a piece of metal to manually trigger. |

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| Issue | Auto Cycle Time Exceeded Fault |
| Cause | 1. Machine timed out. |
| Solution | 1. Press [*Reset*]. Observe machine cycling. |

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| Issue | Bubble Film Roll Out of Position |
| Cause | 1. AA is changing the film roll. 2. Air cylinder has failed 3. Check the SICK safety relays in the cabinet. |
| Solution | 1. This is a normal fault, reset as the roll is back into position to increase the availability metric. 2. If the air cylinder is able to move, press an e-stop to release air pressure and observe the air cylinder extending. 3. If the air cylinder is rough or fails to extend replace. [PN: ] [Loc: ] 4. Check the sick gateway interface module. Default IP: 19.168.1.31 5. Contact controls for further diagnosis. |

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| **Issue** | PLC Alarm Fault Word 0 Bit 11 [Not in use] |
| **Cause** | NOT IN USE. |
| **Solution** | NOT IN USE. |

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| Issue | Air Pressure Low |
| Cause | 1. Air LO point shut off. 2. Main air regulator is turned down or off. 3. Main air pressure sensor failed. 4. Air compressor down / SEV |
| Solution | 1. Verify the Air LO point is not locked out, and turn on. 2. Verify air pressure returns to normal and fault clears. 3. Press [*Reset*] and return to operation. 4. Verify regulator gage is set to 70-80PSI [75PSI]. 5. Verify fault clears, press [*Reset*] and return to operation. 6. Verify regulator and LO point are set correctly, and the fault does not clear when [*Reset*] is pressed. 7. Replace pressure sensor PS50151. [PN: ] [Loc: ] |

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| --- | --- |
| Issue | Gripper Index Not Complete |
| Cause | 1. Gripper path was obstructed. 2. Gripper prox not found. |
| Solution | 1. Remove obstruction and press [*Reset*]. 2. Observe the gripper index, and verify all prox are made. |

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| --- | --- |
| Issue | Takeaway Conveyor Motor Fault |
| Cause | 1. Takeaway conveyor is obstructed. 2. Conveyor belt is not aligned and tensioned correctly. 3. Roller or bearing worn / seized. 4. Motor damaged or failed. |
| Solution | 1. Remove obstruction. 2. Press [*Reset*] and return to operations. 3. Correct the tension and track the belt so that it operates correctly. 4. Observe the belt in motion if possible. If there is audible noise from the conveyance diagnose further to determine where the fault lies. 5. Verify power to the motor. Check the circuit breaker for the takeaway conveyor. 6. If there is power to the motor and the motor is not moving follow LOTO procedure and verify the wiring of the motor. 7. After verification if motor wiring if there were changes then verify if the conveyor will start up. 8. If the motor wiring was correct or corrected and did not change replace the motor. |

|  |  |
| --- | --- |
| Issue | Kickout Conveyor Motor Fault |
| Cause | 1. Kickout conveyor is obstructed. 2. Conveyor belt is not aligned and tensioned correctly. 3. Roller or bearing worn / seized. 4. Motor damaged or failed. |
| Solution | 1. Remove obstruction. 2. Press [*Reset*] and return to operations. 3. Correct the tension and track the belt so that it operates correctly. 4. Observe the belt in motion if possible. If there is audible noise from the conveyance diagnose further to determine where the fault lies. 5. Verify power to the motor. Check the circuit breaker for the kickout conveyor. 6. If there is power to the motor and the motor is not moving follow LOTO procedure and verify the wiring of the motor. 7. After verification if motor wiring if there were changes then verify if the conveyor will start up. 8. If the motor wiring was correct or corrected and did not change replace the motor. |

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| --- | --- |
| Issue | Grip Obstructing Seal Cycle |
| Cause | 1. False fault. |
| Solution | 1. Press [*Reset*] to clear. |

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| --- | --- |
| Issue | Takeaway Conveyor Jam Fault [Disabled] |
| Cause | 1. Photo eye (PE) is obstructed. 2. PE is not aligned correctly. 3. PE is not powered or is damaged. |
| Solution | 1. Clear the obstruction and press [*Reset*]. Return to operation. 2. Check to see if the PE LED’s are illuminated 3. Green LED for power. Amber LED for signal. (Amber lit unobstructed). 4. Check the PE connector to be fully seated. 5. If the connector is fully seated and the green LED is not illuminated, check the power to ground on the connector from the machine to the PE. 6. No power on the pin [1(+), 3(-)], troubleshoot the dc power supply unit (PSU) and the cable to the IO block. 7. IO block located at Remote IO: RIO51100 connector 7 (lower right hand side). 8. Verify that all connections to the RIO block and PE connector are seated. 9. Verify that the fault has cleared and return to operation. |

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| Issue | Kickout Conveyor Jam Fault [Disabled] |
| Cause | 1. Photo eye (PE) is obstructed. 2. PE is not aligned correctly. 3. PE is not powered or is damaged. |
| Solution | 1. Clear the obstruction and press [*Reset*]. Return to operation. 2. Check to see if the PE LED’s are illuminated 3. Green LED for power. Amber LED for signal. (Amber lit unobstructed). 4. Check the PE connector to be fully seated. 5. If the connector is fully seated and the green LED is not illuminated, check the power to ground on the connector from the machine to the PE. 6. No power on the pin [1(+), 3(-)], troubleshoot the dc power supply unit (PSU) and the cable to the IO block. 7. IO block located at Remote IO: RIO51100 connector 7 (lower right hand side). 8. Verify that all connections to the RIO block and PE connector are seated. |

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| Issue | Tote Barcode Reader Offline |
| Cause | 1. Loose connector. |
| Solution | 1. Check all connectors leading into the tote barcode reader. |

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| Issue | Label Printer Fault |
| Cause | 1. Printer door is open. 2. Printer is paused. 3. Applicator is disabled. 4. No media Alarm. 5. No power to printer assembly or sub-assembly. |
| Solution | 1. Verify the pinch roller assembly is latched and printhead release are locked in position. 2. Close printer door and press the pause button. 3. Press the [*Reset*] button. Return operation. 4. Press the pause button. 5. If pressing the pause button does not clear the paused state. 6. Check that the media sensor cover and printhead release are locked in position. 7. Press the Applicator disabled button on the CTM HMI. 8. If the CTM HMI has the applicator disabled and tamp override enabled. 9. Clear the override then the applicator disabled, and press the HMI [*Reset*] button. 10. Replace roll of labels. 11. Check the power sources. 12. Switches and fuses on the printer. 13. The GFCI on the rear of the machine, the LED on it will be illuminated if it is operational. |

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| Issue | Labeler Tamp Not Returned |
| Cause | 1. Tamp head home sensor not triggered |
| Solution | 1. Check the position of the tamp head home sensor. 2. Manually cycle the tamp head and verify the home sensor is reading correctly. 3. Press [*Reset alarm*] |

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| Issue | Labeler Cycle Too Long |
| Cause | 1. The printer took too long to cycle. |
| Solution | 1. Manually feed a few labels on to the tamp head. 2. If the labels are not printing diagnose. 3. Verify if the labels are on the correct side of the film. 4. Verify if the labels are being unwound from the roll. 5. Check the peel bar for the labels separating from the film backing. 6. Check the alignment of the labels on the tamp head. 7. Verify air pressure set to machine *defaults*. |

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| Issue | Printer Failed to Print |
| Cause | 1. Print cycle was initiated but no label printed. 2. Network issues. (WMS / Packapp) |
| Solution | 1. Dry cycle requests after this, and should return to normal. 2. Contact controls and or IT to verify that the printer is receiving requests for labels. |

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| Issue | Tamp Head Vacuum Fault |
| Cause | 1. Bad labels. 2. Misaligned labels. 3. Low vacuum. |
| Solution | 1. Check to see that the labels are fully on the tamp head with no edges furled or bent. 2. Check to see how the labels are loading on to the tamp head. 3. Adjust the plastic film guides to align the labels to the tamp head. 4. Check the vacuum pressure at the rear of the machine. Default 18 PSI |

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| Issue | Applicator Failed To Tamp |
| Cause | 1. Low vacuum pressure. 2. Incomplete vacuum seal on tamp head. 3. No label on tamp head. 4. Bad labels. See here for more information. |
| Solution | 1. Check the solenoid for operation and correct pressure. (Default: 40 PSI) 2. Verify the label is fully on the tamp head and is covering all of the holes. 3. Verify that the label is secured to the tamp head and not easily moved. 4. If there was a label on the tamp head and it was removed, hit the jog button on the printer control screen before continuing to the next cycle. |

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| Issue | Sealer Bar Temp Too Low |
| Cause | 1. System cooled off or just started up. 2. Unplugged / loose connection. 3. Heater element failed. 4. Temperature controller failed. |
| Solution | 1. Wait until the system warms up. 2. Verify the heater element is connector is fully seated. 3. Check to see if the fault clears and the temperature reaches the set point. 4. Use an IR thermometer or thermal camera to check the heater elements surface temperature. 5. If the temperature is approximately the same as the readout on the temperature controller then the thermocouple is working correctly, but not heating up. 6. Replace the heater element for the corresponding seal jaw. 7. If the temperature is not approximately the same as the readout on the temperature controller then the temperature controller is not working correctly. 8. Verify the heater element has not failed before continuing on this solution. 9. Replace the temperature controller and follow [*this guide*] to program it. |

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| Issue | Divert Position Timeout |
| Cause | 1. No fault. 2. Low air pressure or speed controllers are not setup correctly. 3. Prox sensors for the position are not reading correctly. 4. Diverter plate swing arm is not setup correctly. |
| Solution | 1. Press [*Reset*] and return to operation. 2. Verify that the diverter plate is moving by logging into the HMI and going to the manual operations. 3. Pres the Valve Manual Control button for [*Divert Kickout*] to manually move the diverter plate. 4. Verify that manually cycling the diverter plate works. 5. Check the prox sensors for the diverter plate cylinder located at the bottom of the machine. 6. If the prox sensors illuminate when the diverter plate cycled to the corresponding status. 7. Replace prox sensors if they are not working correctly. 8. Check to see that the hardware is tightened and that when the cylinder cycles the diverter plate is swung enough to allow packages to fall on to their corresponding conveyors |

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| Issue | Verify Camera Not Ready |
| Cause | 1. Loose connections. |
| Solution | 1. Check for loose connectors on the verify camera. |

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| Issue | Verify Camera Cycle Too Long |
| Cause | 1. Cycle timed out |
| Solution | 1. Contact controls to verify camera parameters. |

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| Issue | Package Lost After Seal Cycle |
| Cause | 1. Jam caused by package. |
| Solution | 1. Remove the jammed package |

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| Issue | PLC Alarm Fault Word 0 Bit 31 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 0 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 1 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Gripper Servo Home Sensor Not Found |
| Cause | 1. Home sensor out of alignment. 2. Home sensor is broken. |
| Solution | 1. Re-gap the distance between the gripper and the prox sensor. 2. Replace prox sensor. [PN: ] [Loc: ] |

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| Issue | Gripper Servo Axis Fault |
| Cause | 1. Minor fault. |
| Solution | 1. Press [*Reset*] and return to operation. |

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| Issue | Gripper Servo High Current |
| Cause | 1. Minor fault. 2. Servo drive belt tension too high. 3. Worn / seized linear bearing. 4. Worn / seized drive cogs. |
| Solution | 1. Press [*Reset*] and return to operation. 2. Observe the drive belt as the gripper cycles. 3. If there is an audible noise, follow LOTO procedures and diagnose. 4. Open the front door and physically move the gripper arm along the linear bearing 5. If the gripper arm has significant resistance or noise / vibrations, follow LOTO procedures and check replace the linear bearing. 6. Check the drive cog wheel for the drive belt as this is the most likely to have wear. 7. Check for a worn / rolled keyway. If the keyway is damaged replace the cog and motor. |

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| Issue | Gripper Servo Overtravel Upper |
| Cause | 1. Gripper traveled past the upper limit. 2. Gripper upper limit prox not set correctly. |
| Solution | 1. Press [*Reset*] and wait for the gripper to rehome, and return to operation. 2. Verify the upper limit prox sensor is gapped correctly. 3. Verify the upper limit prox is set to the correct height. |

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| Issue | Gripper Servo Overtravel Lower |
| Cause | 1. Gripper traveled past the lower limit. 2. Gripper lower limit prox not set correctly. |
| Solution | 1. Press [*Reset*] and wait for the gripper to rehome. Return to operation. 2. Verify the lower limit prox sensor is gapped correctly. 3. Verify the lower limit prox is set to the correct height. |

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| Issue | Nip Servo Axis Fault |
| Cause | 1. Minor fault |
| Solution | 1. Press [*Reset*] and return to operation. |

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| Issue | PLC Alarm Fault Word 1 Bit 9 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 10 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 11 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Jaw Open Error |
| Cause | 1. Prox sensor is reading out an incorrect state. |
| Solution | 1. Verify prox sensors are in the following states 2. Jaw open PS = ON. 3. Jaw closed PS = OFF. 4. Jaw closed safety switch = OFF. (On the SICK safety sensor) |

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| --- | --- |
| Issue | Jaw Closed Error |
| Cause | 1. Prox sensor is reading out an incorrect state. |
| Solution | 1. Verify prox sensors are in the following states 2. Jaw open PS = ON. 3. Jaw closed PS = OFF. 4. Jaw closed safety switch = OFF. (On the SICK safety sensor) |

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| Issue | Jaw Safety Sensor Fault (Operator Side) |
| Cause | 1. The jaws were unable to close on the operator side. 2. The prox sensor is not operating correctly. |
| Solution | 1. Remove obstruction and press [*Reset*]. Return to operation. 2. Verify the prox sensor located on the operator side is operational when manually triggered with a piece of metal. 3. Manually close the sealing jaw and check to see if the prox sensor is illuminated. 4. If the sensor is not illuminated but is able to be manually triggered, adjust the bolt used as trigger until it flags the prox sensor in the closed position. |

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| Issue | Jaw Safety Sensor Fault (Bag Roll Side) |
| Cause | 1. The jaws were unable to close on the operator side. 2. The prox sensor is not operating correctly. |
| Solution | 1. Remove obstruction and press [*Reset*]. Return to operation. 2. Verify the prox sensor located on the rear side is operational when manually triggered with a piece of metal. 3. Manually close the sealing jaw and check to see if the prox sensor is illuminated. 4. If the sensor is not illuminated but is able to be manually triggered, adjust the bolt used as trigger until it flags the prox sensor in the closed position. |

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| Issue | PLC Alarm Fault Word 1 Bit 16 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 17 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 18 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 19 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 20 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 21 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 22 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 23 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Fault Word 1 Bit 24 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Front Side HMI Cabinet E-Stop Pressed |
| Cause | 1. E-Stop on the HMI cabinet is pressed. 2. E-Stop wiring is faulty. |
| Solution | 1. Clear the E-Stop, and resolve any issues that caused the e-stop to be pressed. 2. Press [*Enable*] and [*Reset*] then [*Press for Auto mode*]. Return to operation. 3. Verify that the E-Stop is cleared and the fault does not reset. 4. Follow LOTO procedures and check the wiring and the e-stop button for loose or faulty components. 5. Replace any defective items, power up the machine and verify the e-stop fault clears. Return to operation. |

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| Issue | Back Side Film Roll E-Stop Pressed |
| Cause | 1. E-Stop on the back side film side is pressed. 2. E-Stop wiring is faulty. |
| Solution | 1. Clear the E-Stop, and resolve any issues that caused the e-stop to be pressed. 2. Press [*Enable*] and [*Reset*] then [*Press for Auto mode*]. Return to operation. 3. Verify that the E-Stop is cleared and the fault does not reset. 4. Follow LOTO procedures and check the wiring and the e-stop button for loose or faulty components. 5. Replace any defective items, power up the machine and verify the e-stop fault clears. Return to operation. |

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| Issue | Back Side Exit Conveyor E-Stop Pressed |
| Cause | 1. E-Stop on the back side takeaway conveyor side is pressed. 2. E-Stop wiring is faulty. |
| Solution | 1. Clear the E-Stop, and resolve any issues that caused the e-stop to be pressed. 2. Press [*Enable*] and [*Reset*] then [*Press for Auto mode*]. Return to operation. 3. Verify that the E-Stop is cleared and the fault does not reset. 4. Follow LOTO procedures and check the wiring and the e-stop button for loose or faulty components. 5. Replace any defective items, power up the machine and verify the e-stop fault clears. Return to operation. |

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| Issue | Front Side Jaw Access Door Open |
| Cause | 1. Operator side access door is open. 2. Safety sensor is not made. 3. Safety sensor is not connected or faulted. |
| Solution | 1. Close the door fully and press [*Reset*]. Return to operation. 2. Verify that the latch is fully inserted and seated. 3. If the latch does not fully seat when the door is closed, or is fully seated when the door is open. Adjust the latch so that it is fully seated when the door is closed fully. 4. Press [*Reset*] and verify the fault clears. 5. Return to operation. 6. If the latch is fully seated in the housing and the fault does not clear when reset. 7. Verify in the PLC input slot 1 input 13 is not illuminated (on). 8. If the input is on and the door is closed fully then replace the safety sensor for the door. 9. Verify that the fault clears and return to operation. |

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| Issue | Front Side Exit Conveyor E-Stop Pressed |
| Cause | 1. E-Stop on the back side takeaway conveyor side is pressed. 2. E-Stop wiring is faulty. |
| Solution | 1. Clear the E-Stop, and resolve any issues that caused the e-stop to be pressed. 2. Press [*Enable*] and [*Reset*] then [*Press for Auto mode*]. Return to operation. 3. Verify that the E-Stop is cleared and the fault does not reset. 4. Follow LOTO procedures and check the wiring and the e-stop button for loose or faulty components. 5. Replace any defective items, power up the machine and verify the e-stop fault clears. Return to operation. |

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| Issue | E-Stop Relay Failed To Drop |
| Cause | 1. Safety relay did not reset. |
| Solution | 1. Power cycle the machine and check to see if the safety relay resets as the machine restarts. 2. Verify the PLC input in the HMI for the E-Stop that was pressed is off, and all other e-stops. 3. Follow LOTO procedures, and if necessary energized electrical work permit. 4. If the safety relay did not reset after power cycling, LOTO the machine and check the safety relay and diagnose if the relay needs to be replaced or sprayed with contact cleaner. |

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| --- | --- |
| Issue | PLC Alarm Fault Word 1 Bit 31 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

# *Machine Warnings*

Warnings can inhibit the machine, but normally are for non-optimal status

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| Issue | Light Curtain Interrupted |
| Cause | 1. The light curtain was obstructed with an item / object. |
| Solution | 1. Remove the obstruction and press [*Reset*]. 2. If this does not clear, check for further obstructions, and visually verify the LEDs on the light curtain are green (safe). 3. Follow light curtain alignment procedures if the curtain is not obstructed and LEDs are still not green. |

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| Issue | PLC Alarm Warning Word 0 Bit 1 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Gripper Not Home |
| Cause | 1. Gripper did not home in manual mode. |
| Solution | 1. Go to Auto mode or manually rehome the gripper. |

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| Issue | PLC Alarm Warning Word 0 Bit 3 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Sealer Bar Temperature Too Low |
| Cause | 1. Temperature for one or both heating elements is below the set point on the temperature controller. |
| Solution | 1. Wait for the temperature to reach the set point. 2. If this does not clear on its own within 30 seconds to 1 minute check the temperature controller or heating elements for wear / damage. 3. If this reoccurs frequently check the heating elements for damage and replace as necessary. |

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| Issue | Bag Film Low |
| Cause | 1. Warning for the bag film nearing empty. |
| Solution | 1. Replace the bag film soon. |

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| Issue | Bag Film Low – Machine Start Inhibited |
| Cause | 1. Bag film roll is empty and needs to be changed. |
| Solution | 1. Replace the film roll and wait for the warning to clear. 2. If the warning does not clear check the PE and the receiver. 3. Clean both with an isopropyl alcohol wipe. Check the Keyence sensor for the bag film PE. It should be below the set point and the red LED at the bottom of the sensor should be off. |

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| Issue | ASIN Tote Supply Conveyor Empty |
| Cause | 1. No totes at the infeed side for the operator. |
| Solution | 1. Visually check to see that the conveyor is empty. 2. Contact AM if there is no totes and no jams that are stopping totes from being routed to the smart pack infeed conveyor. |

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| Issue | Machine Starved |
| Cause | 1. The machine is currently producing but no product is available for the machine. |
| Solution | 1. If there are totes on the infeed conveyor, grab one to two totes for the AA to pack while the conveyor fills back up. |

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| Issue | Failure to Read Reject Tote Barcode |
| Cause | 1. There is no tote in the KO location. 2. Tote is not in-line with the camera. |
| Solution | 1. Grab an empty tote and place it in the KO location. 2. Adjust the alignment of the tote so that the barcode scanner is able to see it. |

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| Issue | Reject Tote Full |
| Cause | 1. The tote is over capacity. |
| Solution | 1. Replace KO tote with another empty tote. |

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| Issue | Label Printer Label Stock Low |
| Cause | 1. Low amount of labels left. 2. Alarm on the labeler HMI was not reset. 3. Dusty / dirty PE. |
| Solution | 1. Replace soon. 2. Press [*Reset alarm*] on the labeler HMI, then press [*Reset*] on the cabinet HMI. 3. Clean the PE on the rear side of the labeler unwind disk. And reset. |

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| Issue | Label Printer Label Stock Low – Stop Machine |
| Cause | 1. Unwind disk does not have any labels on the roll. |
| Solution | 1. Replace the label roll, press [*Reset alarm*] on the labeler HMI and [*Reset*] on the cabinet HMI. |

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| Issue | Tamp Head Vacuum On At Wrong Time |
| Cause | 1. Warning triggered only once. 2. Air lines are installed incorrectly. |
| Solution | 1. Dry cycle once and return to operation. 2. Verify that the air lines at the tamp head assembly and the vacuum generator. |

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| Issue | Label Printed At Wrong Time |
| Cause | 1. Warning triggered only once. |
| Solution | 1. Dry cycle once and return to operation. |

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| Issue | PLC Alarm Warning Word 0 Bit 15 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Printer Failed To Print |
| Cause | 1. Warning triggered only once. |
| Solution | 1. Dry cycle the machine and return to operation. |

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| Issue | Tamp Head Vacuum Error |
| Cause | 1. No label on the tamp head. 2. Label was not fully on the tamp head. 3. Label was not fully sealed on the tamp head. |
| Solution | 1. When manually feeding labels through the labeler, before returning the machine to auto mode press jog. Return to operation. 2. Adjust the alignment so that the label is square on the tamp head and covers all of the holes. 3. Likely bad labels, where one corner will not seal down on the tamp head. 4. Manually feed labels on to the tamp head and visually check that they are aligned with the tamp head. 5. If the label has a corner that is not sealed on the tamp head. Replace the label roll. |

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| Issue | Failed To Tamp Error |
| Cause | 1. Tamp head did not cycle forward to apply the label. 2. No / low air pressure to the tamp head cylinder. |
| Solution | 1. Press [*Reset*] and return to operation. 2. Verify that the air cylinder is able to actuate by manually triggering the cylinder on the labeler HMI. Press [*Applicator Enabled*] and [*Tamp override*]. 3. If the cylinder fails to extend diagnose further. |

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| Issue | PLC Alarm Warning Word 0 Bit 19 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Seal Cutter Advance Overtime |
| Cause | 1. Warning triggered only once. |
| Solution | 1. Press [*Reset*] and return to operation. |

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| Issue | PLC Alarm Warning Word 0 Bit 21 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 0 Bit 22 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 0 Bit 23 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Package Lost After Sealing Cycle |
| Cause | 1. Package jammed. |
| Solution | 1. Remove jammed package and return to operation. |

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| Issue | PLC Alarm Warning Word 0 Bit 25 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | Takeaway Conveyor Jam |
| Cause | 1. Package movement slow on the conveyor. 2. Package buildup at the bottom of the conveyor. 3. Package jammed or stuck. |
| Solution | 1. Conveyor speed setting should be set to 75% - 80%. 2. Check the air knife alignment. 3. Remove obstruction. |

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| Issue | Kickout Conveyor Jam |
| Cause | 1. Package movement slow on the conveyor. 2. Package buildup at the bottom of the conveyor. 3. Package jammed or stuck. |
| Solution | 1. Conveyor speed setting should be set to 75% - 80%. 2. Check the air knife alignment. 3. Remove obstruction. |

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| Issue | Downstream Conveyor Stopped |
| Cause | 1. Conveyance downstream is stopped. 2. Conveyance downstream is faulted. 3. PE for the chute leading to the downstream conveyance is blocked. 4. SLAM fault. 5. Conveyance leading into the SLAM line is jammed / off. |
| Solution | 1. Flats / Cross-belt sorter downstream, or its infeed conveyance is stopped. 2. Wait until the conveyance starts or contact OPS for more information. 3. Flats / Cross-belt sorter downstream, or its infeed conveyance is faulted. 4. Clear all faulted sections and return to operation. 5. The PE after the SLAM line declines the jam PE is blocked. 6. Clear the alarm and return to operation. 7. Check the HMI for the SLAM line and clear any faults, and restart the SLAM line. 8. Return to operation. 9. Clear any jams on the conveyance leading into the SLAM line. 10. Return to operation. |

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| Issue | PLC Alarm Warning Word 0 Bit 29 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 0 Bit 30 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | FLUSH REQUIRED (Dry/Empty Cycle the Machine) |
| Cause | 1. Data collision. 2. Exception processing. |
| Solution | 1. Coach AA on collision avoidance. 2. AA’s can scan items as soon as the machine starts to cycle (post Palm switch press). 3. Scanning a second item when one is present and w/o cycling the machine. 4. When an associate processes a pack exception. (Oversized, damaged, no pslip) |

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| Issue | PLC Alarm Warning Word 1 Bit 0 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 1 Bit 1 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 1 Bit 2 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 1 Bit 3 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 1 Bit 4 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

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| Issue | PLC Alarm Warning Word 1 Bit 5 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | Excessive Tamp Head Vacuum Failures |
| Cause | 1. Repeated tamp head vacuum failed warnings. |
| Solution | 1. Diagnose further and return to operation. [[*Go to Tamp head vacuum errors*](#_Tamp_Head_Vacuum)] |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 7 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 8 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 9 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | Label Applicator Tamp Head Slow |
| Cause | 1. Slow ASIN Scan. 2. Label generation is slow. 3. Incorrect printer settings. 4. Cylinder home sensor not reading correctly. |
| Solution | 1. Reboot the thin client (PC). 2. Return to operation. 3. If the issue still occurs then create a TT for Pack Services. 4. Check label generation time [[*here*](https://w.amazon.com/index.php/FCShip/SLAM/Auto-SLAM_Dashboards/NA/MSP1)*]*. (Change MSP1 to your site.) 5. Check the printer settings [[*here*](#_Printer_Settings_2)]. 6. Verify the position of the tamp cylinder home prox sensor, adjust as needed. 7. Return to operation. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 11 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | Label Verify Slow |
| Cause | 1. Verify camera is dusty / dirty. 2. Thin client issues. |
| Solution | 1. Clean the verify camera with a dry microfiber cloth or isopropyl alcohol wipe. 2. Reboot the thin client if the issue does not subside after cleaning the verify camera. |

|  |  |
| --- | --- |
| Issue | Label Verify Failures High |
| Cause | 1. Verify camera issues. 2. Label print issues. |
| Solution | 1. Check all connections and clean the verify camera. Then run a few totes through. 2. Check the label after it has been tamped onto the package. 3. Check for streaks or missing parts of the label. 4. Clean the printer interior with a can of compressed air or use a handheld blower to remove dust. 5. Clean the tamp head and peel roller assembly with an isopropyl alcohol wipe. 6. Check for misalignment of the print on the label. 7. Align the label on the tamp head and adjust the offset of the print for the label so that the print is fully on the label.   [[*Click here for print alignment and adjustments*](#_Printer_Label_print)]   1. Check for the alignment of the tamp head assembly. |

|  |  |
| --- | --- |
| Issue | Sealing Jaw Movement Slow |
| Cause | 1. Cylinder speed control valves are incorrectly adjusted. 2. Sealing Jaw cylinder prox sensors are not fully in position. |
| Solution | 1. Adjust the sealing jaw control valves until the jaws operate at the correct speed. 2. Adjust the sealing jaw sensors until the warning clears. |

|  |  |
| --- | --- |
| Issue | Sealing Jaw Cutter Movement Slow |
| Cause | 1. Flow control valves are turned down. |
| Solution | 1. Adjust the flow control valves for the affected component. 2. The flow control valves are located under the horizontal sealing jaw. 3. The order of the flow control valves from the top to the bottom are as follows.  |  |  | | --- | --- | | Top | Horizontal sealing jaw cutter extension | | Second | Vertical sealing jaw | | Third | Horizontal sealing jaw cutter retraction | | Bottom | Vertical sealing jaw |   ⠀ |

|  |  |
| --- | --- |
| Issue | Pack Service Disconnected |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | SLAM Service Disconnected |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | EVENT Service Disconnected |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | NTP Service Disconnected |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | Sealing Jaw Cutter Failed To Advance |
| Cause | 1. Lower proximity (prox) sensor is misaligned or damaged. 2. Sealing jaw cutter cylinder failed to cycle. 3. Low or no air pressure. |
| Solution | 1. Observe the cycling of the machine as the sealing jaws extend. 2. If the LED turns on before the sealing bar fully extends. 3. Use a flat head to loosen the screw. 4. Move the prox sensor to where it illuminates when the sealing bar is fully extended. 5. Cycle the machine and see if the warning clears. 6. If the LED does not turn on at all during cycling. 7. Use a flat head to loosen the screw. 8. Move the prox sensor to where the upper prox is illuminated. 9. If the prox sensor illuminates, move it further to the right. 10. Repeat until the warning clears. 11. If the LED does not turn on at all. 12. Use a flat head to loosen the screw. 13. Verify the sensor failed with a new one. [PN: N35398] [Loc: SP2-C] 14. If the LED illuminates at the same position as the upper prox. 15. Move the prox further to the right until the warning clears. 16. Verify that the air cylinder failed to cycle by manually triggering the air solenoid.   **Note**: *The valve is located with the Baluff solenoid block, 4th in. See plate above it.*   1. If the air cylinder cycles when the solenoid is manually triggered, check the flow control valves located under the horizontal seal bar assembly. 2. If the air cylinder does not cycle upon manual triggering. 3. Replace the cylinder. [PN: N34843] [Loc: SP1-D] 4. Verify the air pressure to the seal jaw regulator is set to 60 PSI. 5. If the air pressure going in to the regulator is lower, verify that the infeed air regulator is set to 75 PSI.   **Note**: *Low air pressure below the threshold will trigger an alarm.*   1. Adjust the air pressure on the seal jaw regulator to 60 PSI. 2. Verify the sealing jaw assembly operates correctly. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 17 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 18 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 19 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | WMS ScaleInductACK Response Slow |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | WMS LabelRequest Response Slow |
| Cause | 1. Network issue. |
| Solution | 1. Contact IT. 2. Create TT for IT if the warning does not clear or displays on two or more machines. |

|  |  |
| --- | --- |
| Issue | ASIN Scan Receipt May Be Slow |
| Cause | 1. Thin client response slow 2. Network issues. |
| Solution | 1. Reset the thin client by pressing [*Ctrl*] + [*Alt*] + [*Backspace*]. 2. Have the AA log back in to the packapp and see if the issue subsided. 3. If the issue has not cleared shortly afterwards, contact IT and have them check the latency. 4. Contact IT if this warning occurs on multiple machines at once. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 27 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 28 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 29 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 30 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

|  |  |
| --- | --- |
| Issue | PLC Alarm Warning Word 1 Bit 31 [Not in use] |
| Cause | NOT IN USE. |
| Solution | NOT IN USE. |

# Miscellaneous Issues

|  |  |
| --- | --- |
| Issue | False Divert |
| Cause | 1. Gripper is not cycling correctly. 2. Divert plate is not functioning correctly. 3. Air cylinder is not cycling correctly or at the correct rate during extension/retraction. |
| Solution | 1. Observe the machine cycling. 2. Is the packages getting stuck in the gripper fingers? 3. Check the gripper for loose, broken or wear. 4. Is the package not fully separating from the next one? 5. Check the horizontal sealing bar temperature, increase 5⁰F. 6. Is the packages sticking to the vertical sealing bar? 7. Clean the vertical sealing bar from any excess film.   **Note**: *If the vertical sealing bar coating is damaged, replace.*   1. Check the vertical sealing bar temperature, decrease -5⁰F. 2. Verify divert plate hardware is tight and moves smoothly when the machine is off. 3. Manually operate the horizontal sealing blade, it is the 4th one in. 4. If the air cylinder is slow to extend, but is operating correctly on the retraction. 5. Adjust the flow control valve located under the horizontal sealing blade assembly third one from the top of the four, turning counter-clockwise to speed up. 6. Verify the cylinder cycles at the correct rate. 7. If the air cylinder is operating correctly on extension, but is slow on retraction. 8. Adjust the flow control valve located under the sealing blade, top one of the four, turning counter-clockwise to speed up. 9. Verify the cylinder cycles at the correct rate. 10. If the air cylinder is extending too fast. 11. Adjust the flow control valve, third one from the top of the four, turning clockwise to slow down. 12. Verify the cylinder cycles at the correct rate. 13. If the air cylinder is retracting too fast. 14. Adjust the flow control valve, top one of the four, turning clockwise to slow down. 15. Verify the cylinder cycles at the correct rate. 16. If the air cylinder does not cycle at all. 17. Verify the sealing jaw pressure at the regulator (60 PSI). 18. Replace horizontal seal blade cylinder. [PN: N34843] [Loc: SP1-D] 19. Follow steps 4a-d on setup for the cylinder. |

|  |  |
| --- | --- |
| Issue | Machine stuck on “Pending” status |
| Cause | 1. Check in the socket service for the ASIN scan for the machine. 2. The message you are looking for are [PACK|PKGINDUCTNOTIFY|PKGID~...] pushes the Scanned state to the HMI. 3. The [PACK|PACKRESULTSACK|SEQUENCE~...|PKGID~...] pushes the Pending state to the HMI. |
| Solution | 1. If there is a long delay between or missing messages put a TT in for Pack Services. |

|  |  |
| --- | --- |
| Issue | Multiple packages sent without separating from each other |
| Cause | 1. Film tension too high. 2. Horizontal seal blade temp too low. 3. Horizontal seal blade damaged. 4. T-slot rubber has debris built up. 5. T-slot rubber damaged or missing. |
| Solution | 1. Set the tension on the dancer bar assembly. 2. Not too low that the film sags as it is going up and over the top of the machine. 3. Not too high that the dancer bars are unable to extend fully. 4. If the tension is set correctly there should be no sag under the roll, and none going up and over the machine. 5. Visually inspect a package and check to see if the seal blade partially cut through or failed to cut through the film. 6. Increase the temperature on the horizontal temperature controller by five degree increments until the film is sealed. Approximately 270-290⁰F. 7. Manually extend the horizontal seal blade and visually inspect it for defects. 8. Remove the T-slot rubber from the right hand side of the machine and clean out the debris.   **Note**: *Do not use any metal objects such as screwdrivers to clean the rubber as this can damage the t-slot rubber.*   1. Remove the T-slot rubber from the right hand side of the machine and inspect it for damage, replace as needed. |

|  |  |
| --- | --- |
| Issue | Film walks out of alignment. |
| Cause | 1. Film tension is too low. 2. End of the roll. 3. Web sensor failed. 4. FMS motor failed. |
| Solution | 1. Set the tension on the dancer bar assembly. 2. Not too low that the film sags as it is going up and over the top of the machine. 3. Not too high that the dancer bars are unable to extend fully. 4. If the tension is set correctly there should be no sag under the roll, and none going up and over the machine. 5. Near the end of the roll the film tension needs to be maintained so that the film does not walk out of the web guide, else the film alignment will go to the one side. 6. Verify that the web sensor has the amber LED illuminated when the film is in the guide, and that when moving the film side to side the film carriage moves side to side. 7. Physically move the film side to side and verify that the FMS motor adjust the film carriage to the side. 8. Verify that the web guide sensor is working first. |

# Preventative Maintenance

PMs are scheduled in EAM

## Daily

Verify all guarding is in place.

Check for air leaks or abnormal noises from the machine during operation.

Observe the machine for proper functionality.

Inspect the film drag brakes.

Verify the following settings.

|  |  |  |  |
| --- | --- | --- | --- |
| Horizontal Temperature | 280+/- 25 (270) | Vertical Temperature | 302 +/- 25 (290) |
| Horizontal Dwell | 600 ms | Vertical Dwell | 500 ms |
| Infeed Pressure | 90 PSI +/- 5 | Dancer Bar Pressure | 35 PSI +/- 5 |
| Nip Close Pressure | 7.5x10 PSI | Strip Off Pressure | 7.5x10 PSI |
| Jaw Close Pressure | 7.5x10 PSI |  |  |

Visually inspect the Teflon tape on the vertical seal bar.

Clean Teflon with a soft (micro fiber) cloth.

Inspect the vertical seal bar for damage.

Inspect knife blade for damage, cracks / dents / bending.

Inspect T slot rubber, clean debris out and replace if damaged.

Blow out dust from inside the print engine using compressed air or hand powered blower.

Clean tamp head and knurled roller with an isopropyl alcohol wipe.

Check for label alignment on the tamp head.

Check printed labels for streaks of missing print or other print quality issues.

## Weekly

Verify all guarding is in place.

Check for air leaks or abnormal noises from the machine during operation.

Observe the machine for proper functionality.

Inspect the film drag brakes.

Verify the following settings.

|  |  |  |  |
| --- | --- | --- | --- |
| Horizontal Temperature | 280+/- 25 (270) | Vertical Temperature | 302 +/- 25 (290) |
| Horizontal Dwell | 600 ms | Vertical Dwell | 500 ms |
| Infeed Pressure | 90 PSI +/- 5 | Dancer Bar Pressure | 35 PSI +/- 5 |
| Nip Close Pressure | 7.5x10 PSI | Strip Off Pressure | 7.5x10 PSI |
| Jaw Close Pressure | 7.5x10 PSI |  |  |

Visually inspect the Teflon tape on the vertical seal bar.

Clean Teflon with a soft (micro fiber) cloth.

Inspect the vertical seal bar for damage.

Inspect knife blade for damage, cracks / dents / bending.

Inspect T slot rubber, clean debris out and replace if damaged.

Blow out dust from inside the print engine using compressed air or hand powered blower.

Clean tamp head and knurled roller with an isopropyl alcohol wipe.

Check for label alignment on the tamp head.

Check printed labels for streaks of missing print or other print quality issues.

Inspect the belt on the takeaway and kickout conveyors for damage and alignment.

Flag both conveyor jam photo eyes.

Check to see that the web guide has an amber LED illuminated as it tracks the film.

Check each E-stop for functionality.

Interrupt the light curtain while the machine is cycling and verify that the cycle halts until the light curtain is clear.

Check the access door functionality.

Verify the jaw assembly safety system using a pliable non-metallic tubing / rubber.

Check for loose hardware.

## 4-Week

Verify all guarding is in place.

Check for air leaks or abnormal noises from the machine during operation.

Observe the machine for proper functionality.

Inspect the film drag brakes.

Verify the following settings.

|  |  |  |  |
| --- | --- | --- | --- |
| Horizontal Temperature | 280+/- 25 (270) | Vertical Temperature | 302 +/- 25 (290) |
| Horizontal Dwell | 600 ms | Vertical Dwell | 500 ms |
| Infeed Pressure | 90 PSI +/- 5 | Dancer Bar Pressure | 35 PSI +/- 5 |
| Nip Close Pressure | 7.5x10 PSI | Strip Off Pressure | 7.5x10 PSI |
| Jaw Close Pressure | 7.5x10 PSI |  |  |

Visually inspect the Teflon tape on the vertical seal bar.

Clean Teflon with a soft (micro fiber) cloth.

Inspect the vertical seal bar for damage.

Inspect knife blade for damage, cracks / dents / bending.

Inspect T slot rubber, clean debris out and replace if damaged.

Blow out dust from inside the print engine using compressed air or hand powered blower.

Clean tamp head and knurled roller with an isopropyl alcohol wipe.

Check for label alignment on the tamp head.

Check printed labels for streaks of missing print or other print quality issues.

Inspect the belt on the takeaway and kickout conveyors for damage and alignment.

Flag both conveyor jam photo eyes.

Check to see that the web guide has an amber LED illuminated as it tracks the film.

Check each E-stop for functionality.

Interrupt the light curtain while the machine is cycling and verify that the cycle halts until the light curtain is clear.

Check the access door functionality.

Verify the jaw assembly safety system using a pliable non-metallic tubing / rubber.

Check for loose hardware.

Verify the temperatures on the heating elements using IR or thermal camera.

Check the height of the slam line conveyor to the bottom of the takeaway conveyor to four inches.

Check the dust filter on the cabinet.

## 12-Week

Verify all guarding is in place.

Check for air leaks or abnormal noises from the machine during operation.

Observe the machine for proper functionality.

Inspect the film drag brakes.

Verify the following settings.

|  |  |  |  |
| --- | --- | --- | --- |
| Horizontal Temperature | 280+/- 25 (270) | Vertical Temperature | 302 +/- 25 (290) |
| Horizontal Dwell | 600 ms | Vertical Dwell | 500 ms |
| Infeed Pressure | 90 PSI +/- 5 | Dancer Bar Pressure | 35 PSI +/- 5 |
| Nip Close Pressure | 7.5x10 PSI | Strip Off Pressure | 7.5x10 PSI |
| Jaw Close Pressure | 7.5x10 PSI |  | |

Visually inspect the Teflon tape on the vertical seal bar.

Clean Teflon with a soft (micro fiber) cloth.

Inspect the vertical seal bar for damage.

Inspect knife blade for damage, cracks / dents / bending.

Inspect T slot rubber, clean debris out and replace if damaged.

Blow out dust from inside the print engine using compressed air or hand powered blower.

Clean tamp head and knurled roller with an isopropyl alcohol wipe.

Check for label alignment on the tamp head.

Check printed labels for streaks of missing print or other print quality issues.

Inspect the belt on the takeaway and kickout conveyors for damage and alignment.

Flag both conveyor jam photo eyes.

Check to see that the web guide has an amber LED illuminated as it tracks the film.

Check each E-stop for functionality.

Interrupt the light curtain while the machine is cycling and verify that the cycle halts until the light curtain is clear.

Check the access door functionality.

Verify the jaw assembly safety system using a pliable non-metallic tubing / rubber.

Check for loose hardware.

Verify the temperatures on the heating elements using IR or thermal camera.

Check the height of the slam line conveyor to the bottom of the takeaway conveyor to four inches.

Check the dust filter on the cabinet.

Check the PTFE coating on the V-fold assembly.

Lubricate jaw assembly linear bearings.

Inspect film feed assembly gear box for damages or loose hardware.

## 12-Week CTM

Verify air pressure settings are set to the following.

|  |  |  |  |
| --- | --- | --- | --- |
| Main Air | 84-90 PSI | Vacuum | 15-30 PSI |
| Tamp head | 75-85 PSI | Air Assist | 30-40 PSI |
| Blow | 40-50 PSI |  | |

Check the printer settings [[*Link*](#_Printer_Settings_2)]

# Label Printer

3600a Zebra print engine

## Rethreading Printer Labels

*Go* [*here*](https://broadcast.amazon.com/videos/74815) *for a visual guide.*

1. Open the printer door, pinch roller assembly, the peel roller assembly, and the print head latch. Lock the print head latch fully open.
2. Remove any excess label material from the print engine from the last roll.
3. Remove the pin from the take-up spindle and remove and discard the film.
4. Remove empty or near empty roll of labels, else skip.
5. Remove the roll by loosening the handle for the unwind disk.
6. Use prepped rolls that are provided on the table, if there is none retrieve a new roll and remove about 10 labels of the roll, discard removed labels.
7. Replace labels so that when the labels are fed they are on the bottom of the film.
8. Replace the unwind disk cover, firmly press the cover so that the roll is fully seated to the rear of the unwind assembly. Tighten the disk cover.
9. Feed the labels over the dancer arm, across the next roller, in between the guide posts, through the media sensor and printhead assembly.

**Note**: *Be careful to not feed the labels over the air assist tube.*

1. Feed the labels over the peel bar, around the air tube through the peel roller assembly, over the guide post, over the roller to the take-up spindle.
2. Feed enough on the take-up spindle to cover over the slot for the pin.
3. Hand turn the spindle one full rotation, so that the film is rolled upon itself.
4. Close the printhead latch, peel roller assembly and pinch roller assembly. Then close the print engine door.
5. Press the [**❚❚**] button to enable the print engine.
6. Press the [*Feed*] button until the labels are on the tamp head.
7. If the no media alarm displays on the CTM HMI clear the alarm and continue.
8. Verify alignment on the tamp head.
9. If the alignment is off adjust the nylon guides to the direction the labels need to move.
10. Do not adjust it to the point that the label film is curled. Adjust to the point that the film is just barely loose.
11. Remove the label and press [*Jog*] on the CTM HMI.
12. Clear any alarms on the CTM HMI
13. Return to operation.

## Printer Settings

Press Setup / Exit button.

Press ▼ to cycle through the options below.

When changing parameters press the + / - button.

Login with [\*\*\*\*] + increment and - moves to the next character, after you type the password press ▼ to go back to the parameters, change as needed.

Press Setup / Exit then + when you are finished to save changes.

**Note**: *If you are not wanting to make changes, to exit and cancel changes press Setup / Exit and* ▼ *to change to* [*Cancel changes*] *and wait for it to return to the main screen.*

### Default printer settings

|  |  |  |  |
| --- | --- | --- | --- |
| **Darkness** | **+18 — +26** | **Print Speed** | **10 IPS** |
| **Slew Speed** | **10 IPS** | **Back feed Speed** | **2 IPS** |
| **Tear off** | **Wear dependent**[1] | Print Mode | Applicator |
| Applicator port | Mode 2 | Start Print Sig | Pulse Mode |
| Media Type | Non-continuous | Sensor Type | Web |
| Print Method | Direct-Thermal | Print Width | 1200 |
| Maximum Length | 8.0in 202MM |  | |

**Note** [1]: Adjust as needed when the white roller of the peel roller assembly becomes worn.

**Note**: *Items in bold are primarily changed.*

**Note**: *Login credentials are subject to Data Classification Policy* [[*Link*](https://policy.amazon.com/policy/97)]

## Printer Label Print Adjustment / Alignment

## Printer HMI Alarms

### Critical alarms

|  |  |
| --- | --- |
| Issue | No Media |
| Cause | 1. No labels are present. 2. Cycled without labels on the film. 3. Media PE not working correctly. |
| Solution | 1. Press [*Reset alarm*] on the HMI and manually feed labels with the [*Feed*] button on the print engine, repeat until labels are on the tamp head or the no media alarm triggers. 2. Press [*Reset alarm*] on the HMI and manually feed labels until labels are fed onto the tamp head. 3. Open the printer door and pinch roller assembly and verify the red LED is on for the media sensor. 4. If the media sensor is not powered on or the LED is not illuminated. 5. Vendor repair? Or replace. |

### Warning alarms

|  |  |
| --- | --- |
| Issue | Low labels |
| Cause | 1. Low labels 2. Alarm not reset. 3. Dirty PE. |
| Solution | 1. Replace labels soon. 2. Press [*Reset alarm*] on the HMI. 3. Clean the PE on the reverse side of the unwind disk with a isopropyl alcohol wipe. |

# Tips and tricks

The following are some examples of quick fixes for the issues with the machines, having minimal downtime.

* When adjusting the film alignment so that it is centered, assuming the film is tensioned correctly and in the web guide sensor.

Dry cycle the machine or grab a package off the line, and inspect which side has the excess film.

Check how much excess there is, per ¼” adjust 1 full rotation.

If it is on the label side rotate counter clockwise the desired amount, and vice versa.

Check the machine after about 10 or so packages are cycled through the machine, repeat until the excess is under 1/16th, the closer the better.

* After this is done all that is needed is to maintain tension on the roll and the machine will do the rest.
* Clean the printer during each of the AA’s breaks as this will reduce the failed label scans KO rate.

# *Appendix A - Settings*

## HMI Settings

Tap ≡Menu.

Tap Sign In.

**HMI Sign in credentials**

|  |  |
| --- | --- |
| **Login** | \*\*\*\*\* |
| **Password** | \*\*\*\*\* |

Tap Setup.

**Configuration Settings**

|  |  |  |  |
| --- | --- | --- | --- |
| **Horizontal Dwell** | 600ms | **Vertical Dwell** | 550ms |
| **Min. Bag Size** | 11.000” | **Reject Conv. Speed Adjust** | 100% |
| **WEB INDEX: Draw Length** | 14.000” | **Auto Length Detection** | On |
| **Auto Edge Guide** | Off | **Take Away Conv. Speed** | 65%-80% |
| **Pre-Tension Distance** | 0.250” |  |  |

**Note**: ***Do not*** *press* [*HMI config*] *unless you are a CST or are trained in HMI Configurations.*

**Note:** If you are needing to go the home screen press the House button.

**Note:** HMI login credentials are subject to Data Classification Policy [[*Link*](https://policy.amazon.com/policy/97)]

**Manual Operations**

## Programing Keyence sensor

**This sensor is used for the product sensor, bag film level sensor, and tamp head sensor.**

### Tamp head sensor calibration

1. Set the tamp head assembly 8” away from the film.
2. Press the [*Set*] button for 3 seconds.
3. Wait for the word “Set” to be displayed on the screen.
4. Press [*Up*] for 1 second.
5. Press [*Up*] or [*Down*] to adjust the number on screen until it reads “115”.
6. If the sensor displays “- - -“, then it failed to read, adjust until the number displays.

### Product / Bag film level sensors (FS-N11CP)

# *Appendix B – Acronyms*

|  |  |
| --- | --- |
| **Acronym** | **Definition** |
| AA | Amazon Associate |
| AM | Area Manager |
| PA | Process Assistant |
| PG | Process Guide |
| OPS | Operations Manager |
| SR. OPS | Senior Operations Manager |
| FM | Facilities Manager |
| SFM | Senior Facilities Manager |
| MM | Maintenance Manager |
| SMM | Senior Maintenance Manager |
| KO | Kick Out |
| SEV(1-5) | Severity (1 [highest] – 5 [lowest]) |
| TT | Trouble Ticket |
| Prox | Proximity sensor |
| FO | Fiber optic |
| LOTO | Lock out Tag out |
| LO | Lock out |
| MTHA | Maintenance Task Hazard Analysis |
| SLAM | Scan Label Apply Manifest |
| PLC | Programmable Logic Circuit |
| PS | Pressure Switch |
| ASIN | Amazon Standard Identification Number |

# Useful Links

<https://w.amazon.com/bin/view/FCShip/SmartPac/>

<https://eam-rme.corp.amazon.com/Secure/WorkOrder.aspx>

<https://w.amazon.com/bin/view/SmartPac_Weekly_Data/Percentages/> (MSP1 only)

<https://w.amazon.com/index.php/SmartPacMetricsMSP1> (Replace MSP1 with your FC)

<https://w.amazon.com/bin/view/FCShip/SmartPac/SmartPac_KO_Control_Limits_and_Mitigation/>

<https://fpy.corp.amazon.com/NA/MSP1/combined> (Replace MSP1 with your FC)

# Change Log

All changes will be documented below

|  |  |  |
| --- | --- | --- |
| Date | Changes | Approved by |
| 12/20/18 | Initial document release | [COLBOHNS](mailto:colbohns@amazon.com?subject=Smart%20Pack%20Troubleshooting%20Guide%20Change%20Request) |