OPERATION MANUAL

UniPrint116 HSLA
Operator Manual

(Original Instructions)

Innovative Machine, Inc.

imisolutions.com

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Table of Contents

Introduction

General use of the UniPrint116 HSLA model is to apply a paper label that is 63.5mm (2.5") wide x 44.45mm (1.75") long, with a 47.5mm (1.870") pitch and 66.68mm (2.625") liner width. Tolerances on the label are .25mm (.009"). Nominal label thickness is .1mm (.004") with the liner of .05mm (.002") for an overall thickness of .15mm (.006").

The UniPrint116 HSLA will apply a label to the side of a package from 50.8mm (2.0") to 254mm (10.0") away. Package sizes will be a minimum of 50.8mm (2.0") tall with no max height set. The label will apply from the bottom of the conveyer rollers approx. 6.35mm (0.25") up.

All UniPrint116 HSLA models will be able to provide the following:

- Report conditions (like machine error, offline, low label, etc.) through Input/Output (I/O) to the customer control panel.
- I/O devices are powered from the contained Sato Engine's 24VDC supply.
- All sensors must be the PNP type.
- Allow for label stock replenishment in approximately 60 seconds.
- Label placement accuracy can be less than or equal to +/- 12.7mm at a max distance of 304.8mm from the centerline on the blow head.
- RFID label enabled.
- A status indicator "light tree" is located on the machine. The indicator contains a horn and red and green light. This is controlled by the HSLA itself, as well as the customer control panel.
- Apply labels at a rate up to 254mm/sec or 6000 labels per hour per machine.

The UniPrint116 HSLA is a side apply machine. This means that the machine applies a label to the side of a package.

This manual will display the HSLA with a S84NX print engine in the visual aids.

HSLA

Specifications

UniPrint116 HSLA	
Dimensions and Weight	
Width	29" (736.6mm)
Height	43" (1092.2mm)
Depth	22" (558.8mm)
Weight	52.62kg (116lb)
Power Supply	
Input Voltage	AC 100 V - 240 V ±10% DC 24v Both supplied through Harting Connector
Frequency	AC – 50-60 Hz
Power Consumption	AC – 6 amps DC – 2 amps
Pneumatics	
Min/Max Pressure	4.82bar(70psi)/6.20bar(90psi)
Min Volume	11.72m3/h (6.0cfm)
Environmental Conditions (Without Media)	
Operating Temperature	23 to 104 °F (-5 to 40 °C)
Storage Temperature	-4 to 140 °F (20 to 60 °C)
Operating Humidity	15 to 85% RH (Non-condensing)
Storage Humidity	15 to 90% RH (Non-condensing)

Important Safeguards

Residual Risk

CE versions of the UniPrint116 HSLA use a variety of pictographic symbols. These symbols show the safe and correct operation of the machine and how to prevent injury to others and property damage. The symbol explanations are as follows:

	Electrical Shock / Electrical Hazard
	Lock Out / Electrical Power. Before any maintenance of the machine is to be done, the Electrical Lock-Out Tag-Out should be used.
	Lock Out / Pneumatic. Before any maintenance of the machine is to be done, the Pneumatic Lock-Out Tag-Out should be used.
	Hand Entanglement / Belt Drive Hazard
	Wear Ear Protection
	Please read and understand all manuals prior to use.
	This machine is UKCA and CE Certified in accordance with the applicable UK & EU Directives and BS EN Standards, current at the time of certification; any modification to this machine, without the prior consent of the manufacturer, may invalidate the compliance of the machine.

Precautions for Handling, Installation, and Use

This section describes how to safely operate the UniPrint116 HSLA machine. Be sure to read and understand all instructions carefully before you install and/or use the machine.

- Place the machine on the stand provided.
- Do not place objects on the machine.
- Do not place containers filled with liquid on the machine. If any liquid spills onto or into the machine, immediately power off and disconnect power. If you operate the machine under these conditions, it could cause a fire, electric shock or malfunction.
- Do not place objects inside the machine. If a foreign object gets inside the machine, immediately power off and disconnect the power.
- Do not mount the stand and machine on a slanted surface, or a surface subject to strong vibration. If the machine falls off or topples, it could cause injury to someone.
- Use only specified voltages. Using voltages outside specified ranges could cause a fire, electric shock or malfunction.
- Always connect the machine to electrical ground. Not using the grounding wire could cause electric shock.
- Do not share the machines power source with other electrical devices, doing so could cause power fluctuations and performance issues.
- Do not break, change, overly bend, twist, place heavy objects on or pull the 16 pin harting interface cable. If the cable becomes damaged, contact Innovative Machine Inc. or the Technical Support Center. Using the cable in this condition could cause a fire, electric shock or malfunction.
- If the machine has been dropped or broken, immediately power off and disconnect the power. Using a damaged machine could cause a fire, electric shock or malfunction.
- Do not use the machine if anything is unusual about it, i.e., smoke, unusual smells, or broken parts. Continuing to use the machine in this state, could cause a fire, electric shock or malfunction.
- Do not disassemble or modify the machine. Doing so could cause a fire, electric shock or malfunction.
- Do not place the machine in a location subject to water and/or oil. Water and/or oil entering the machine may cause a fire, electric shock, or malfunction.

Foreseeable Misuse

To prevent damage to the machine and protect the customer from harm:

- Do not climb on the machine for any reason. It is not designed for this purpose. Safe means of access have been provided by either the Manufacturer and/or the End User.
- Do not operate the machine unless trained and authorized to do so. "Read Manual before operating" decals are affixed at Control Stations.
- Do not use the machine outdoors. It is rated for indoor use only.
- Do not operate in an explosive atmosphere, i.e., ATEX environment. It is not rated for this purpose.

Noise

The maximum corrected noise levels recorded for this machine was 85.9 dB(A). Therefore, hearing protection must be worn in the vicinity of this machine.

Limitations of Use

The UniPrint116 HSLA should always be inside for operation and storage. The machine should only be operational when temperatures are between -5 to 40 °C (23 to 104 °F) and stored in temperatures between -20 to 60 °C (-4 to 140 °F). The machine should be in an environment where the humidity is between 15 to 85% RH (Non-condensing).

Only trained personnel should operate and conduct maintenance on the UniPrint116 HSLA machine. All personnel should read and comprehend the operation manual in its entirety before operating or conducting any maintenance on the machine.

Lifting and Handling

The UniPrint116 HSLA machines exceed the weight recommended for one person to move or handle (52.62kg). Two people are required when handling the machine at all times. Handling involves installation, removal or replacment for service.

The UniPrint116 HSLA label machine must be handled correctly to not damage certain components.

- **DO NOT** use the Regulator (A), Light Tree (B), Blow Head (C), or Dancer Arm (D) when moving or positioning the equipment.
- The machine **MUST** be picked up with a person on each side of the frame.
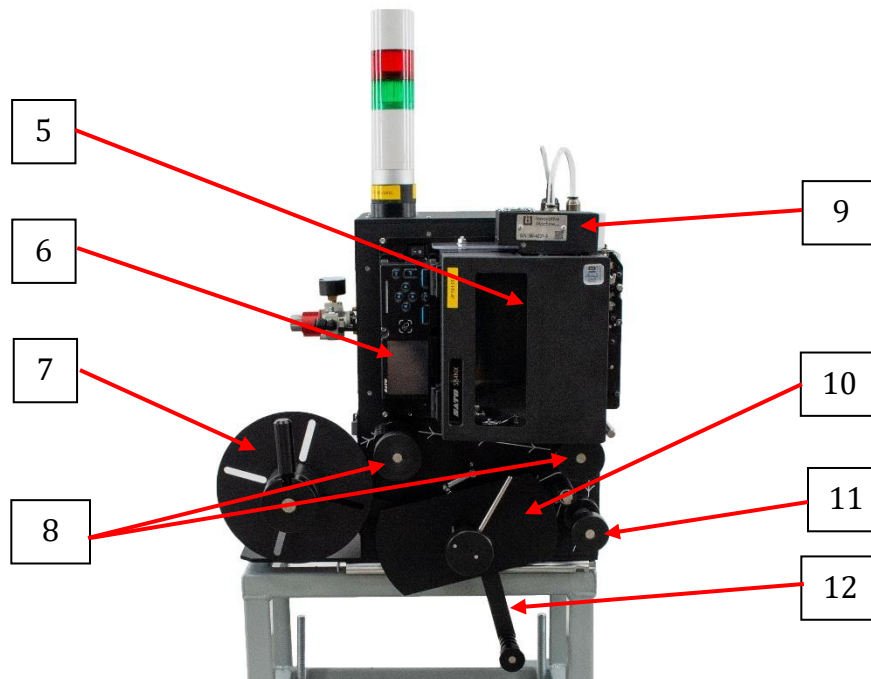- The UniPrint116 HSLA is mounted to the stand with (2) knobs to secure it in place.
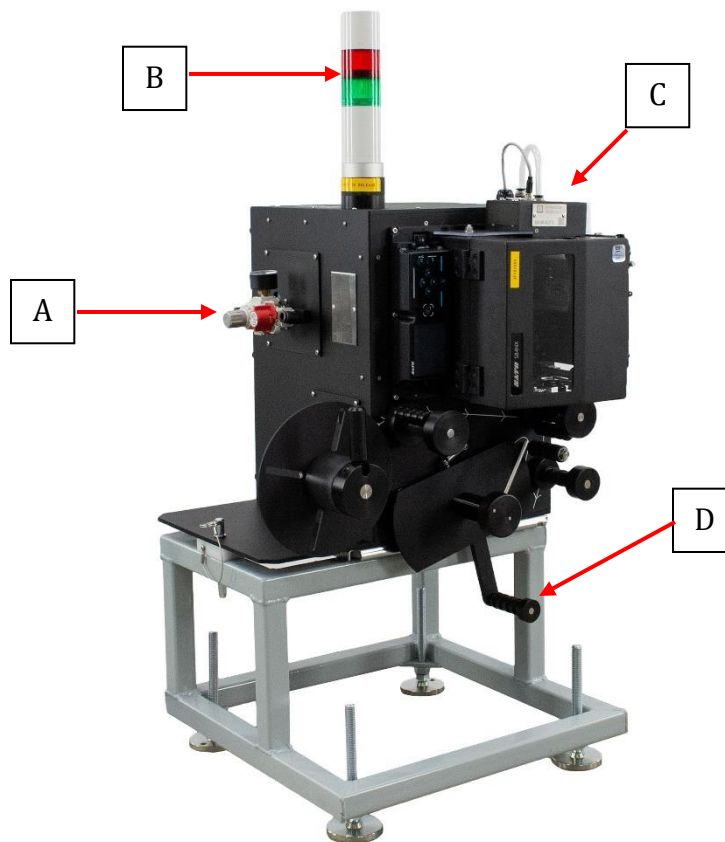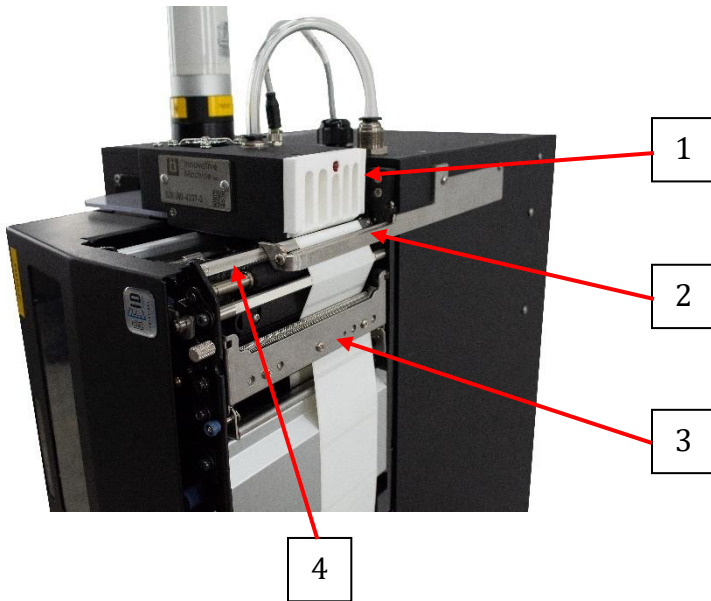
Definition of Components

Component Overview
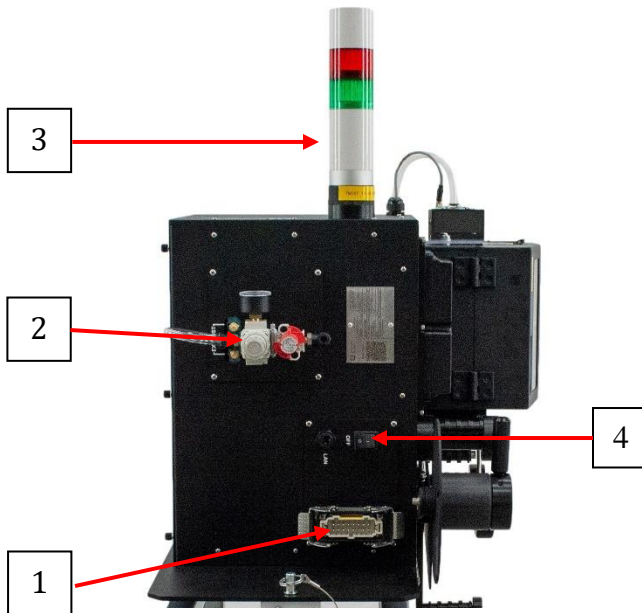
1	Harting Connector
2	Regulator/Disconnect
3	Light Tree
4	Power Switch
5	SATO S84-EX **OR** S84NX Print Engine
6	SATO LCD Display
7	Roll Feed
8	Pinch Rollers
9	Blow Head
10	Take Up Hub
11	Idle Roller
12	Dancer Arm

Print Engine Detail

1	Blow Head
2	Air Assist Rod & Protector
3	Pressure/Knurl Roller Assembly
4	Dispense/Peel Bar
5	Print Plate/Head
6	Latch for Print Plate/Head
7	RFID Insert
8	Gap Sensor
9	Label Guide
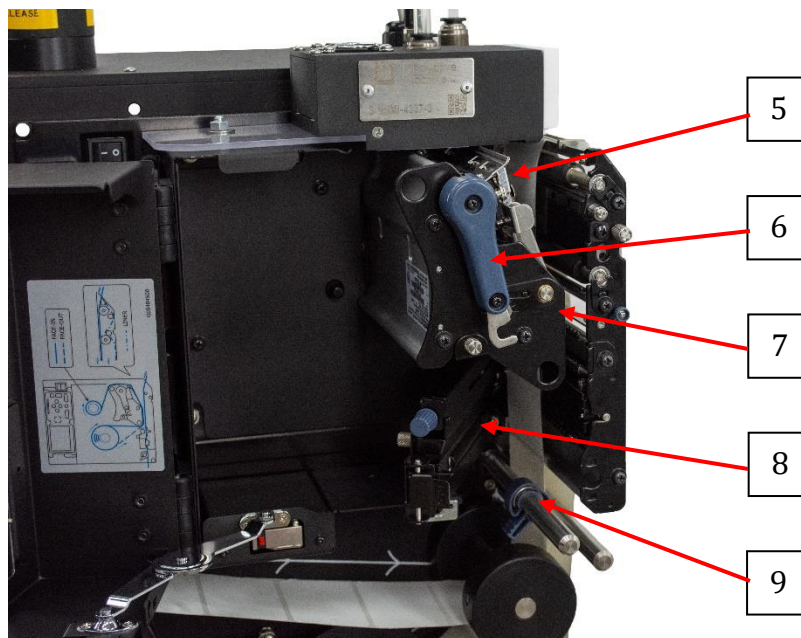
Identification Tag

All identification tags will list the model type, frame serial number, machine info, Innovative Machine contact information, and a QR code to access the UniPrint116 HSLA support webpage. This webpage includes helpful documents, videos for routine maintenance, interactive images to reference replacement parts, and more.

Non-CE Version   CE Version

Component Detail

Roll Feed

The roll feed allows the labels to be properly mounted/fed through the machine and maintains proper tension on the label feed. If excess or lack of tension occurs, labels can jam or feed improperly causing label application problems. To load the roll stock, lift up and down on the roll feed handle.

The low label sensor is an I/O connection to UPS's control PLC. This sensor will detect when the roll stock is low.

Roll Feed

Low Label Sensor is behind the Take Up Back Plate
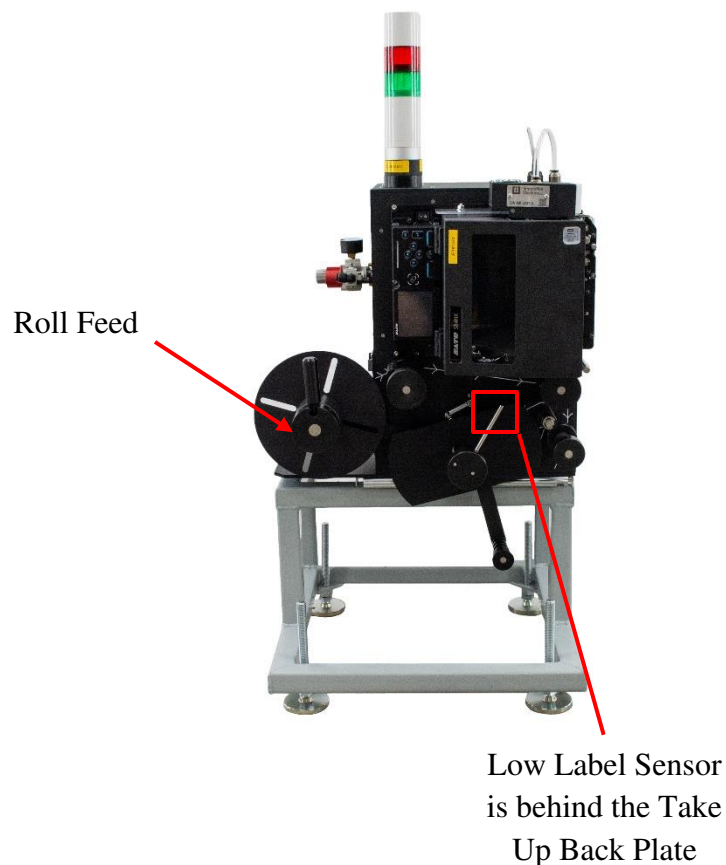
Label Guide

The label guide is a blue tab inside the S84 print engine that prevents the label liner from moving off track of the normal path. If the guide is not touching the label liner, labels can get off track, resulting in labels bouncing. Verify the label guide is free of residue to prevent label application problems.
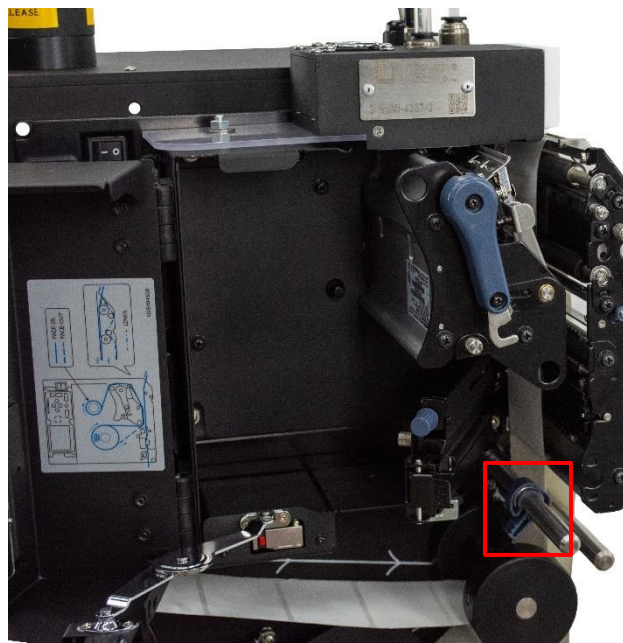
Gap Sensor

The gap sensor provides the S84 print engine with feedback on the status of labels being fed through the printer. As the labels travel through the engine, this sensor detects the labels and the gaps between the labels to ensure the availability of material to print. When the sensor is dirty it can no longer properly detect the labels and will cause a "Labels Out" fault and/or multiple blank labels to be fed at once. To correct this issue, clean the gap sensor and rollers.

If cleaning the gap sensor does not help, then you may have to calibrate the gap and I-mark sensors.

Gap Sensor
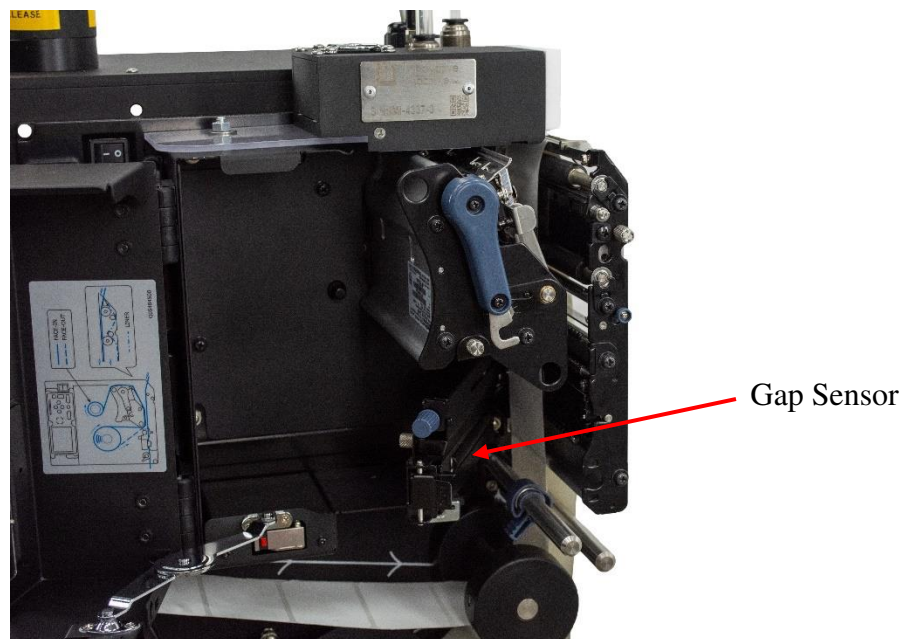
Print Head Pressure Switch

The pressure switch provides the ability to increase the pressure the print head applies to the label stock. This affects the ability of the print plate to properly contact the label during printing. The label stock UPS utilizes requires the least amount of pressure due to its thickness (4 mils). If the switch is increased to anything other than 1, an increase in the tension on the labels could cause label feed issues.

Having the pressure switch set at 2 or 3 will cause premature wear on the print head and shortens the life of this component.

Pressure Switch

Dancer Arm

The dancer arm provides constant tension on the label liner to prevent a jam in the label feed path. The dancer arm controls when the take up spool rotates to take up any slack in the label liner. The dancer arm should move/spin freely. The photo eye inside the machine frame detects the presence of the dancer arm as it moves across. As the dancer arm travels towards the furthest point the photo eye engages the take-up spool. Once the dancer arm returns to its neutral position the photo eye dis-engages the take-up motor. If the photo eye fails, the take-up spool drive will not run. Also, if the S84 print engine door is open, the take up will turn off.

To test the photo eye, remove the liner from the take up spool and manually move the dancer arm. Verify the LED on the photo eye is changing states from amber to black. If not, then the photo eye needs to be replaced.

Dancer Arm

Photoeye

Take Up Spool

The take up spool provides the machine with a simple way to retrieve and store all used label liner and keep proper tension on the feed system. The motor for the take up spool is controlled by the dancer arm and should only be engaged while the dancer arm is extended past its resting position. If the driving belt is worn or the motor fails, the take up spool will not respond to the dancer arm.


Take Up Spool
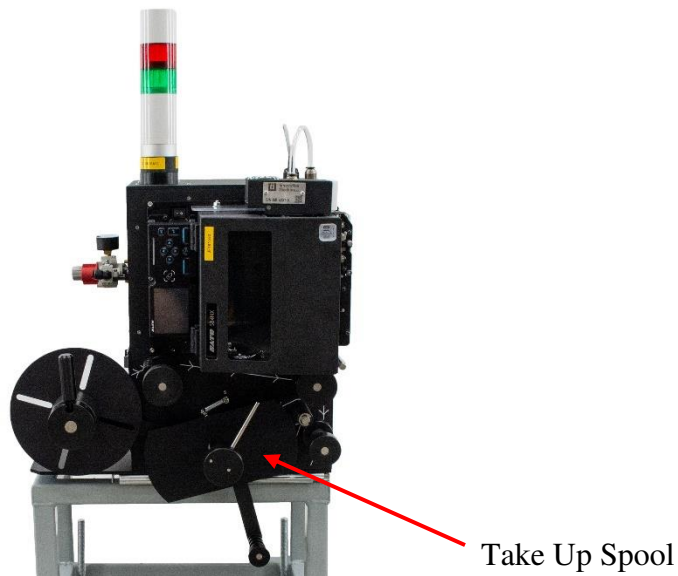
Blow Head

The UniPrint116 HSLA blow head is mounted to the SATO print engine with the M6 Bolt. The blow head uses a fan to pull air into the blow head to hold the label on the Teflon plate until the air jets are actuated. A simple test to verify fan functionality is to stack 3 labels and place on blow head while system is in *Maintenance Mode*. If a label will not stay on the blow head, the fan is failing or failed and needs to be replace

The set screws are very sensitive components and are usually the culprit of labels blowing consistently high or low on the packages. To adjust the direction of the label coming off the blow head use these two set screws. (Ie. If the labels are blowing high, move the set screws out a bit. Retest until the labels are blowing down as needed. If the labels are blowing low, move the set screws in a bit.) Take caution when making adjustments due to the large impacts minimal adjustments will have. Ensure the label feed is correct before making these adjustments. Labels should release from the liner completely during dispensing.

The blow applicator photo eye (sensor) detects when a label is on the blow head. If this photo eye becomes dirty, the system will experience either false "Label on Blow Head Faults" or will not blow the label onto the package. Cleaning the photo eye typically solves both issues.

If the photo eye does not respond after cleaning, a replacement photo eye or Blow head should be installed.

Fan

Photoeye

Set Screws
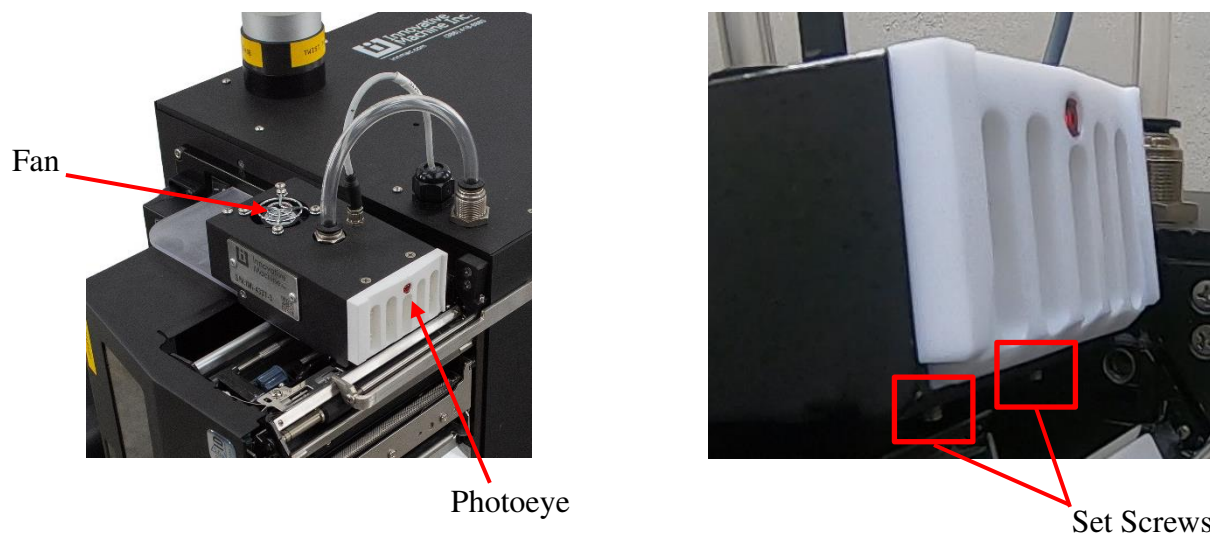
Installation and Start-Up

Installation and Commissioning

Once installed onto the stand, the 16-pin harting connector can be plugged in and secured to the harting base. The input voltage will be supplied through the harting connector as 100 – 240V ±10%, 50-60Hz AC and 24v DC. The power consumption of AC is 6 amps while DC usage is 2 amps.

The minimum pneumatic supply should be 4.82bar (70 psi) and maximum pneumatic supply should be 6.20bar (90psi). The minimum pneumatic volume is 11.72 m3/h (6.9 cfm).

Start-up Steps

1. Make sure the Harting, Air In and LAN connections are attached.
2. Make sure the air disconnect is open (label should display SUP and regulator will show pressure).
3. Make sure the regulator is reading 80psi. If not, adjust accordingly.
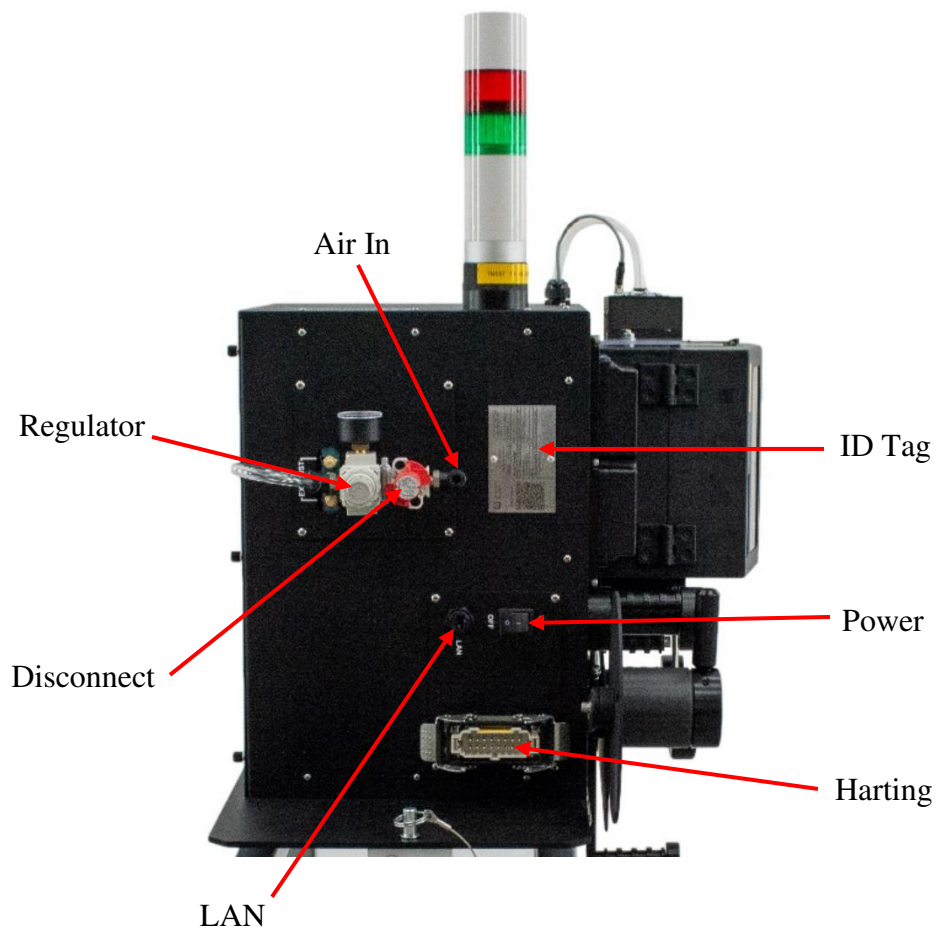
4. Load the labels. Make sure not to miss any pinch or standard rollers.
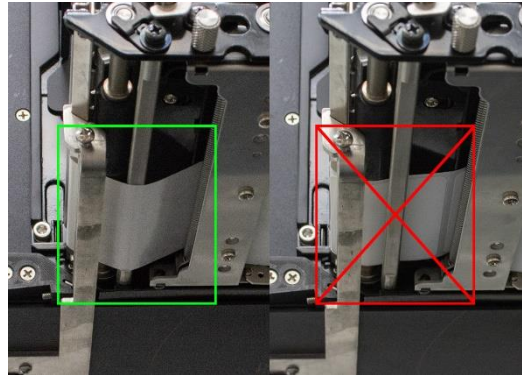
5. Using the power switch, turn on the machine. If the Sato print engine is not powered up, use its power switch to turn it on.

6. Feed a few labels to make sure they are registering correctly on the blow head.

S84ex

1. Press the "LINE" key on the S84ex print engine. "OFFLINE" should be shown on the display.
2. On the UPS Control Panel HMI, turn the maintenance/pre-trip.
3. Place your hand or a package in front of the blow head, press the "FEED" key on the print engine.
4. If multiple labels dispense, remove them from the blow head.
5. Press the "FEED" key. Each time the "Feed" key is pressed a label should be dispensed on the blow head and blown onto your hand or package.
6. Make sure to run at least five labels without any problems.
7. Press the "LINE" key on the print engine. "ONLINE" should be shown on the display.
8. Turn the maintenance/pre-trip off.

S84NX

1. Press the left rectangular button. "Offline" should be shown on the display.
2. On the UPS Control Panel HMI, turn the maintenance/pre-trip.
3. Place you hand or a package under the blow head and press the right rectangular button.
4. If multiple labels dispense, remove them from the blow head.
5. Press the right rectangular button. Each time the button is pressed a label should be dispensed on the blow head and blown onto your hand or package.
6. Make sure to run at least five labels without any problems.
7. Press the left rectangular button. "Online" should be shown on the display.
8. Turn the maintenance/pre-trip off.

Label Alignment

Adjustments to label tracking is only needed when the label is consistently being fed onto to blow head at an angle.

Once an adjustment to the tracking has been made, the label should be centered in the grooves on the teflon plate.
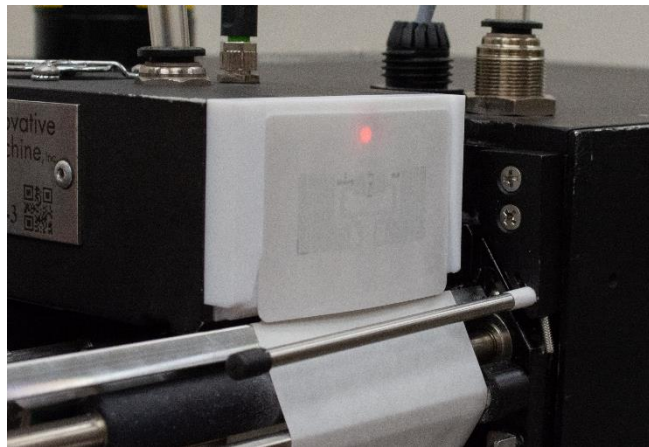
The label should always apply straight from the center of the blow head.

Too High	*Straight*	*Too Low*

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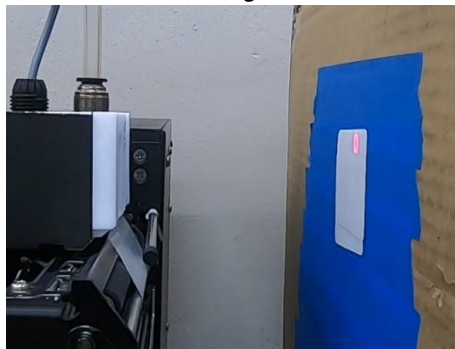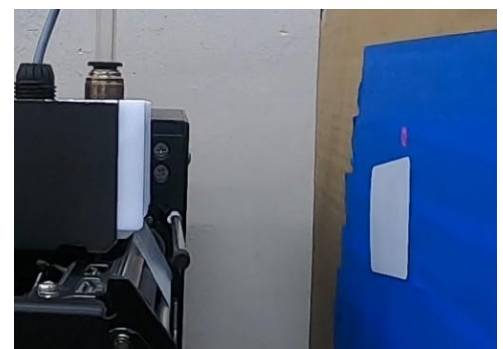
Proper Label Feed Position

Setting the Pitch and Offset for Label Position

The pitch will adjust where the text is on the label. If the text is not centered on the label, the print engine may double feed labels. See below for examples of good and bad pitch position.
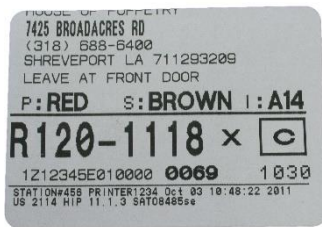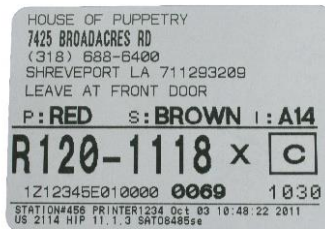
Bad - High	Good Pitch	Bad - Low
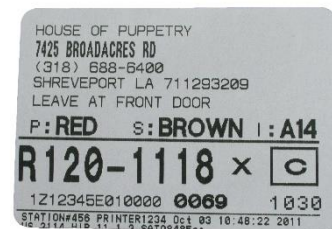
The label offset will affect how the label is printed and applied to a package. If there is too little or too much label queued over the dispense/peel bar, it is important to adjust the offset. See below for examples of good offset position. *Please note that the picture below will not happen in normal operation as the next label is pulled back into the print engine to increase speed. You will need to watch as you feed multiple labels to see how far the next label is presented on the dispense/peel bar before it is pulled back.* For instructions on how to adjust the offset, please view the ***Label Offset*** video on the support webpage.
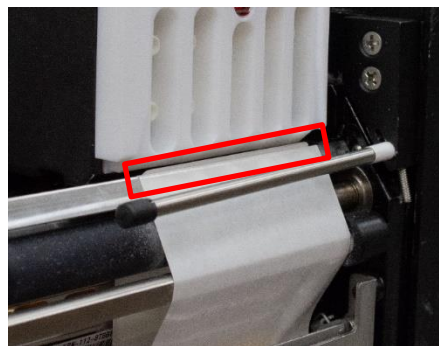
New Machine Checklist

The following checklist should be completed once a machine is installed from the manufacturer/integrator:

1. Verify all connections:
   - Power
   - Air
2. Verify the machine is properly secured to the stand.
3. Ensure all components power on properly.
   - Power switch is switched to the on position.
   - S84 print engine is powered on.
     - Initial air charge should be heard until the print engine boots.
     - Verify 80 psi on regulator.
     - Print engine LCD screen should display "ONLINE".
     - Opening the print engine door should generate an alarm (3 beeps should be heard), and an error message should be displayed on the machine's HMI.
     - Verify that all print engine label feed heads (tracking, print head and pressure roller) are secured.
     - Once printer engine door is closed, the LCD screen should display "OFFLINE", and the error on the machine's HMI will no longer be displayed.
4. Verify all idle rollers spin freely and are free of residue.
5. Properly load a roll of labels. Check that the feed path is clear of debris and residue.
   - Verify the label guide is touching the label liner. It should not distort the liner.
   - Once labels are loaded, press the "FEED" key on the print engine to present a label onto blow head.
     - Feed 10 labels onto the blow head to ensure proper label alignment.
     - The 11th label should be square and centered in the grooves of the teflon plate.
6. Test the label blow pattern by putting the machine in maintenance mode.
   - On the print engine, press the "FEED" key to feed a label onto the blow head and blow the label onto a test box. The labels should stack on top of each other on the test box.
7. Test the machine by running a stress test of 25 packages to verify it is communicating and performing correctly.

General Maintenance

CAUTION: Before maintenance is started, ensure that both the electrical and pneumatic lockout/tagout (LOTO) has been carried out.

Proper Cleaning Supplies

- Denatured Alcohol
    - [View SDS for Denatured Alcohol](#)
- Microfiber Cloth
- Sato EZ Wipes
    - [View SDS for EZ Wipes](#)

Frequency of maintenance

- Clean the machine before and after every sort.

Cleaning includes (recommended daily)

- Label stock should be removed from each machine after every sort and stored in an air conditioned environment.
- Use denatured alcohol with a microfiber cloth or Sato EZ Wipes to clean the following components:
    - Rollers
    - Label guide
    - Gap sensor's black segmented rollers
    - Gap sensor window
    - Print plate/head
    - Pressure/Knurl roller assembly
    - Blow Head Teflon Plate

Compressed air can also be used to remove slitter dust from the machine. If you do not use denatured alcohol or EZ wipes there will be a build up of label residue on key components that will affect the application process.

Decommissioning and Disposal

When the machine has reached the end of its life cycle, care should be taken to decommission and dispose of it.

Decommissioning involves disconnecting the machine from the source and cutting all pneumatic hoses and electrical conductors. This is done to ensure that the machine is inoperable.

When disposing of the machine, it should not be treated as household waste. Disposal of any hazardous substance and/or electrical/electronic components should be in accordance with National regulations of the end user (e.g., the re-cycling of components, sub-assemblies and the equipment itself).

Troubleshooting/Support

Our UPS Support website provides documentation, videos, interactive spare parts, and FAQs to help with general maintenance and troubleshooting. If any issues are not answered after viewing the webpage, please contact our office by calling **(386) 418-8880** or emailing **support@imisolutions.com**. Technicians may ask for videos or photos of the issue to be sent in to better identify the problem.

Full machines, print engines, and/or blow applicators may be sent to our repair department to be serviced. Please follow the instructions on the UPS Repair Process webpage to send in units.

Spare Parts

Coupa Number	Description	Rec. Qty
7187254	UNIPRINT116 HSLA RFID MACHINE (ETHERNET)	1
7187244	S84 BLOW APPLICATOR FOR HSLA MODELS	1
7187268	SKB MOLDED SHIP CRATE	1
7187335	DUAL BEARING BLOCK PULLEY (LARGE) FOR HSLA MODELS	1
7187318	BEARING BLOCK ASSEMBLY FOR ALL UNIPRINT MODELS	1
7187346	DUAL MOTOR PULLEY (SMALL) FOR HSLA MODELS	1
7187384	TAKE-UP MOTOR ASSEMBLY FOR ALL UNIPRINT MODELS	1
7187250	TAKE-UP DRIVE BELT FOR ALL UNIPRINT MODELS	2
7187351	3/8" OD X 24" LENGTH HARD TUBING	1
7187352	1/4" OD X 30" LENGTH HARD TUBING	1
7187344	1/4" TUBE IN-LINE FLOW CONTROL	1
7187355	AIR ASSIST ROD	1
7187349	3/8" OD X 10" SOFT TUBING	1
7187359	AIR REGULATOR FOR UNIPRINT116 HSLA MODELS	1
7187332	1/4" TUBE TO 1/8" NPT QC STRAIGHT FITTING	1
7187333	3/8" TUBE TO 1/8" NPT QC STRAIGHT FITTING	1
7187341	1/8" NPT MUFFLER	2
7187337	3/8" TUBE TO 1/8" NPT QC 90 DEGREE FITTING	1
7187347	MAC AIR VALVE FOR UNIPRINT109 AND 116 MODELS	1
7187393	UNIPRINT116 MAIN PCB BOARD (RED)	1
7187290	FUSE PACK (1, 2, 6 AMP) FOR UNIPRINT109 AND 116 MODELS	1
7187320	BLOW APPLICATOR MOUNT PLATE FOR UNIPRINT109 AND 116 HSLA MODELS	1
7187375	BLOW APPLICATOR SENSOR FOR UNIPRINT109 AND 116 BLOW APPLICATORS	1
7187241	BLOW APPLICATOR POWER CABLE FOR UNIPRINT109 AND 116 HSLA MODELS	1
7187374	TAKE-UP SENSOR FOR ALL UNIPRINT MODELS (DOES NOT INCLUDE CABLE)	1
7187261	TAKE-UP PIN HOLDER FOR HSLA MODELS	1
7187316	TAKE-UP SPRING ASSEMBLY FOR ALL UNIPRINT MODELS	1
7187389	LIGHT TREE FOR UNIPRINT109 AND 116 HSLA MODELS	1
7187391	S84 PRINT ENGINE TESTER	1
7187286	IMI TOOL KIT	1
7186057	EZ WIPES FOR CLEANING/MAINTENANCE	1

S84-ex Specific Parts

7187291	STAGE 1 KIT RH FOR S84EX RH PRINT ENGINES	1
7187298	STAGE 2 KIT RH FOR S84EX RH PRINT ENGINES	1
7187310	TRACKING COLLAR FOR S84 PRINT ENGINES	1

S84NX Specific Parts

7187528	RH S84NX RFID PRINT ENGINE FOR UNIPRINT116 HSLA (ETHERNET) MODELS	1
7187471	STAGE 1 KIT RH FOR S84NX RH PRINT ENGINES	1
7187557	STAGE 2 KIT RH FOR S84-nx RH PRINT ENGINES	1

Support Links for All UniPrint Models

Scan the QR code with your phone/tablet or click the model.

UniPrint109

HSLA

SSLAW

UniPrint116

HSLA

SSLAW / SSHSLA

UniPrint121EB

ALA LH / RH

SSLAW / SSHSLA

UniPrint116 HSLA Wiring Diagram

Click here to view Online

Innovative Machine, Inc.

Declaration of Conformity Example

DECLARATION OF CONFORMITY
2006/42/EC Machinery Directive
2014/30/EU EMC Directive

Name of manufacturer or supplier
Innovative Machine Inc.

Full postal address including country of origin
6115 NW 23rd Place, Gainesville, FL 32653, USA

Description of product
Print and apply Label Machine

Name, type or model, batch or serial number
Model: Uniprint116 - SSLAW   Serial Number: XXXXXX

120/240VAC, 1 Phase 50/60Hz   Gainesville (FL) USA

Relevant Standards for Machinery Directive
EN 4414: 2010; EN 11201:2010; EN 12100: 2010; EN 13849-1: 2015; EN 13857:2008; EN 14120: 2015; EN 60204-1: 2006/AC2010 and EN 61310-1:2008

Relevant Standards for EMC Directive
EN 55011+A1: 2010; EN 61000-4-2: 2009; EN 61000-4-3 +A2: 2010 and EN 61000-4-4 +A1: 2012

Name of Responsible Person within the EU
Dianne Cowley

Full postal address if different from manufacturers
Laicon Ltd: 300 Pennistone Road, Sheffield, S5 FU2, England

Declaration

I declare that as the Manufacturer, the above information in relation to the supply / manufacture of this product, is in conformity with the stated standards and other related documents following the provisions of the above Directives and their amendments.

Printed Name:

Signature of Manufacturer:

Position Held:

Date:

CE

ORIGINAL