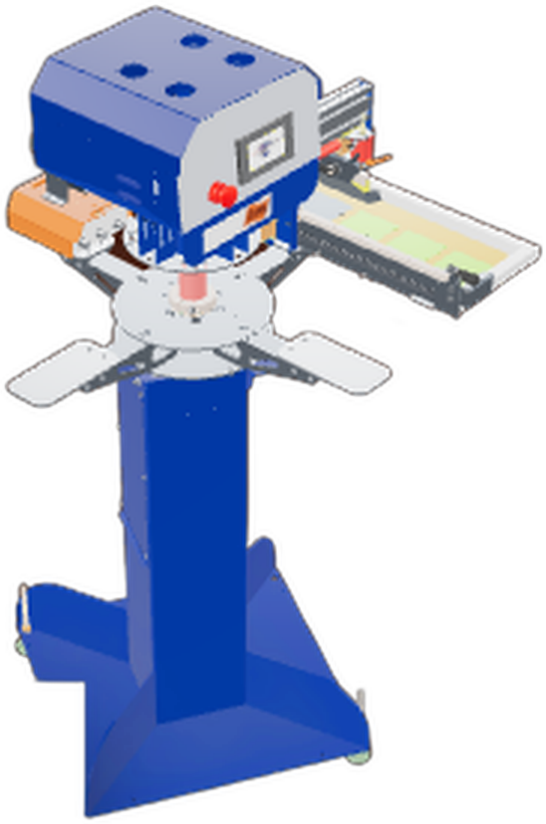
RapidTag
BY aspe PRINTING TECHNOLOGIES

MANUAL FOR THE

RAPIDTAG LIGHTNING

Automatic size-switching tagless label printer



Configuration: 1 print head / 1 flash cure / 4 stations / 7 label sizes (XS to 3XL) on one screen.

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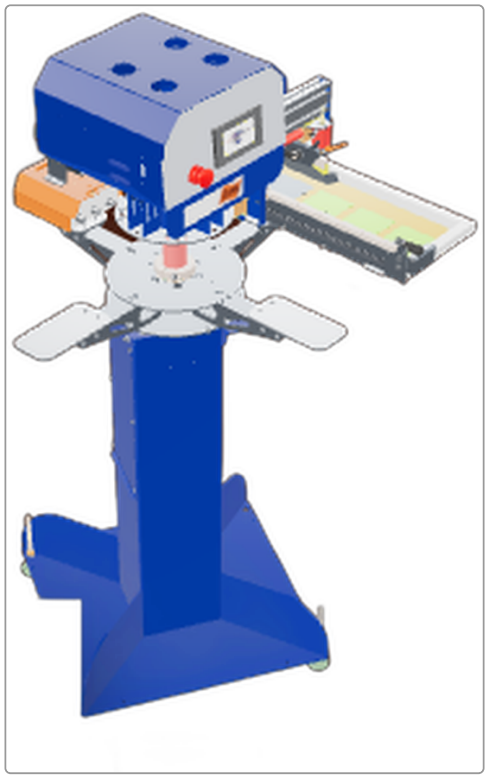
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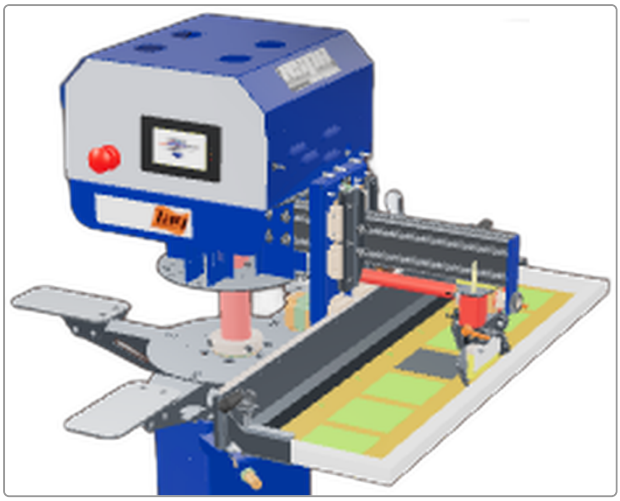
Liability and Safety

Safety	The product described in this publication may operate at high speed and contain numerous moving parts. It may employ mechanical, and/or pneumatic forces, and/or hazardous voltages and may create other conditions that could, through misuse, abuse, negligence, unauthorized alteration or other retrofitting, inattention, or lack of understanding, result in personal injury, death, and/or damage or destruction to the product or to other equipment. In addition, improper operation may also depreciate the value of the machine and other assets of the owner, and impair the working efficiency of the machine.
Electrical	The electrical specifications in this manual are based on mathematical calculations that assume ideal conditions exist for electrical supply line values, material used in the installation of electrical service and site preparation. Although every effort has been made to provide accurate electrical specifications, ASPE does not assume any liability for damages whether consequential or incidental, that may result from the use of the indicated electrical specifications.
Product	This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware, software, features, or specifications, or to provide for every possible contingency in connection with installation, operation and maintenance. Features may be described herein which are not present in all variations of this product. ASPE reserves the right to alter specifications in the manufacture of their products, and they assume no obligation of notice to holders of this document with respect to changes subsequently made.

Renders



Isometric view



Print station (detail view)

General Information

The Lightning prints all seven garment sizes, XS through 3XL, from a single 10″ x 34″ screen and switches between sizes automatically from the touch screen.

Carrousel	• 4 stations: loading, print head, flash cure and unloading • Single / automatic / index • Hoodie arms standard • Shirt detector (no garment, no print)
Print Head and Screen	• 10″ x 34″ (25.4 x 86.4 cm) screen • 7 label sizes on one screen, 4.5″ (11.4 cm) center to center • Automatic size switching, no screen changes • Automatic registration between sizes • Recommended mesh: 200 or 230 • Adjustable stroke length • Multiple print stroke capable
Touch Screen HMI / PLC	• Color touch screen • Size selection, also on the fly while running • Index speed and dwell time • Curing time • Automatic per-size piece counting
Flash Cure	• 1 high-density flash cure unit, twice the size of the LP1 / LP2 unit • 4 ruby red bulbs, 7.5″ long, 750 W each • Curing time set-up from the touch screen

Why only 4 stations: with the long 10″ x 34″ screen, any extra station would place a pallet under the screen when it comes down and put ink on the previous garment. Four stations keep the print area clear.

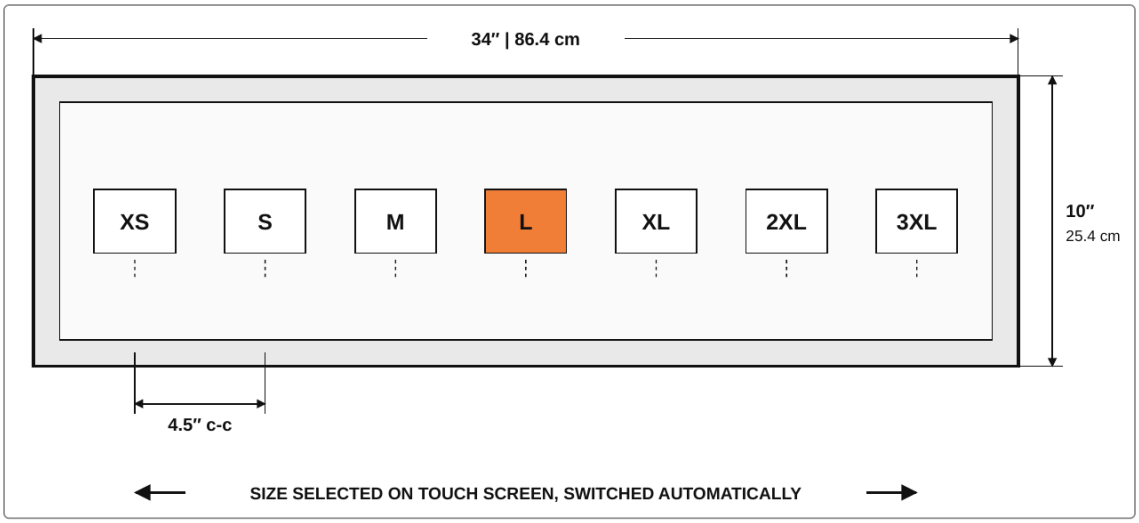
Product Specifications

Output	Up to 2,000 tagless labels/h (1)
Sizes on one screen	7 (XS, S, M, L, XL, 2XL, 3XL)
Size change	Automatic, selected on the touch screen
Size counting	Automatic, per size
Screen size	10″ x 34″ (25.4 x 86.4 cm)
Label spacing	4.5″ (11.4 cm) center to center
Recommended mesh	200 or 230
Stations	4 (loading, print head, flash cure, unloading)
Flash cure	1 high-density unit, 4 ruby red bulbs, 7.5″, 750 W each
Interface	Color touch screen
Shirt detector	Included (no garment, no print)
Hoodie arms	Included
Power	220 V, single phase, 25 A
Warranty	2 years on non-consumable parts

(1) Rated for tagless labels. Full-front shirt prints lay down more ink and run slower. Specifications are subject to change without notice.

Screen Layout

All seven sizes are burned on one 10″ x 34″ screen, in order from XS to 3XL, spaced 4.5″ (11.4 cm) center to center. When you select a size on the touch screen, the machine moves the screen so that size lands over the pallet.



7 sizes on one 10″ x 34″ screen. Schematic only, not to scale for artwork.

Burn the seven sizes in the order and spacing shown above so each one lands in the right position. Artwork position and size depend on your label design.

> **Why this saves time:** with a conventional set-up you burn a separate screen for each size (or tape off the sizes you are not printing) and re-register on every change, usually 45 to 60 minutes per size. On the Lightning you burn one screen, register it once, and change sizes with the touch of a button.

Getting Started

Receiving Machine

When you receive the machine it will come in a crate. In order to properly uncrate the machine you must have a drill and a Phillips drill bit in order to take out the screws. The easiest way to do this is to take out all the screws on one side of the crate. That way the machine will be able to slide out. Make sure you take out the screws that are on the base of the machine.

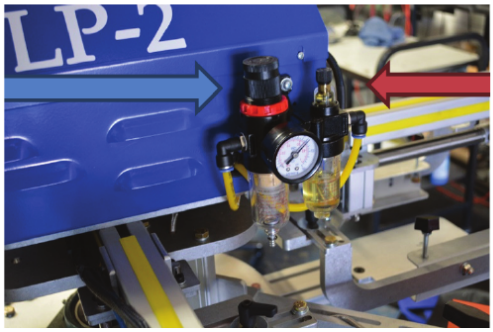
Unwrap any plastic or paper on the machine. After you have the machine on the floor, you must put on the feet. The feet are attached to the base of the machine. Lift one side of the machine at a time and screw in the feet. The feet should be adjusted to the appropriate height of the loader. After all four feet have been installed, make sure that the machine is leveled and stable for production. Leveling the machine is NOT required but recommended by ASPE Inc.

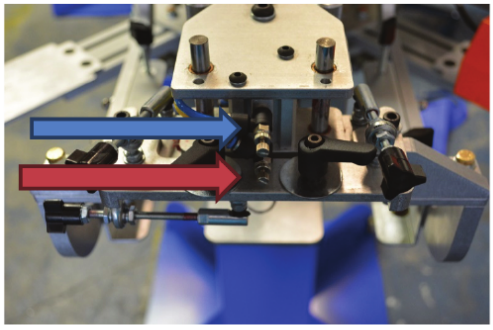
Plug It in

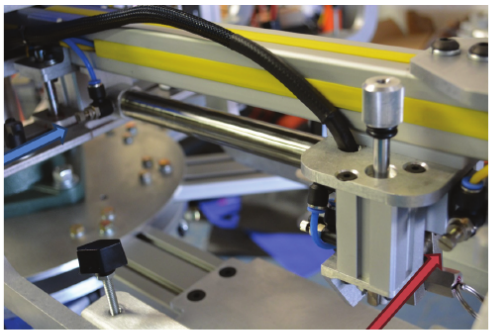
Move the machine into position on the production floor. Make sure you have a 220 V single phase connection rated for 25 A and at least 80-110 psi / 2 cfm of air. We supply ¼ inch tubing with ¼ fitting npt. It is best to have a quick disconnect attached to the fittings. In regards to the connection, black is power, white is neutral, and green is ground. We prefer you to run the air and power from the ceiling and down onto the machine. That way you can move freely around the machine and not have to worry about tripping over cords. If you prefer the air and the power to run through the bottom then open the control box and run the tubing and extension cord through the shaft. Run this all the way down (there is a hole on the bottom of the machine).

Adjustments on the Machine

Now that the machine has been properly installed, let's go over the different features and adjustments on the machine before we turn it on.







Pressure

1. The Air Regulator adjusts the overall air pressure of the machine. Make sure it is 80-110 psi. You can adjust this by lifting the black cap on top of the regulator (blue arrow). Once you pop it up you will be able to spin it. You will notice if you tighten it the pressure will go up, if you loosen it then it will decrease the pressure.

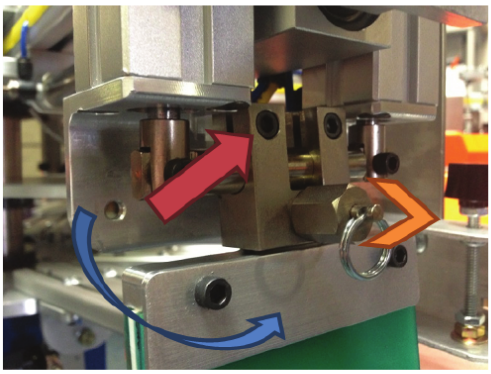
In the pictures you will see the air regulator on the left and the lubricator on the right. Set the knob on the lubricator to a minimum (red arrow). The machine's lubricator is already pre-set. The lubricator is calibrated to release one drop of oil for every 200 prints. The lubricator lubricates all of the pneumatic cylinders on the machine.

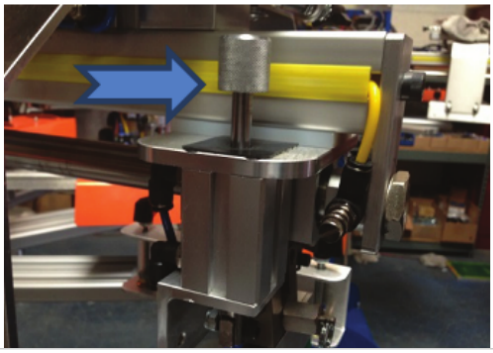
There are two flow control valves on top of the print carriage. These do not have to be adjusted simultaneously. The one on top (blue arrow) adjusts how fast the carriage will rise. The tighter you screw it in, the slower the carriage is going to rise. The one on the bottom (red arrow) controls how fast the carriage drops down. Make sure the locking nuts are locked into place.

2. There is one flow control fitting on each end of the print head. These fittings control the speed of the flooding and printing. The fitting in the back (blue arrow) controls the stroke speed while the one in the front (red arrow) controls the flooding speed. The deeper the screw is in the fitting, the slower the print stroke (or flood speed).

3. Squeegee Angle and Replacement: With a simple Allen wrench (red arrow) you can loosen up the squeegee holder and be able to adjust the squeegee's angle (blue arrow). And to take out your squeegee then pull the holding pin (orange arrow) and then the squeegee should come off.

4. In this picture, the blue arrow is pointing to the chopper cylinders. There is one chopper cylinder on each side of the print head. Both correspond with the squeegee pressure. Tighten to increase pressure on your squeegee.

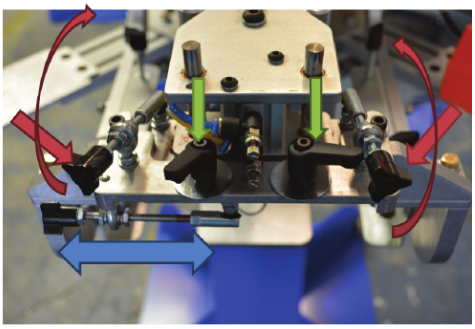




Carriage (Putting in the screen)

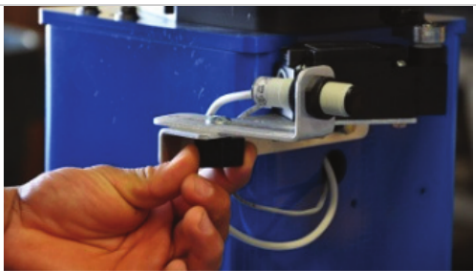
Once you burn all seven size images onto your 10″ x 34″ screen (see Screen Layout), you are ready to place it into the machine. First you should take out the squeegee and the flood bar from the print head. This will make it easier for you to set up off contact. Loosen the two black knobs above the flood bar in order to take it out. Pull the pin above the squeegee in order to take it out. If you need different sizes of squeegees, squeegee holders, or flood bars then we can customize those for you.

On the edge of the print head is the micro registration. You will be using this feature to register your screen precisely. The registration tool has three pivot points. In order to start adjusting your registration you must first unlock the print head. Do this by undoing the black lock knobs (green arrow), please note there are also two located in the back of the print head that also need to be unlocked. Once you have done this then you can start adjusting. The two pivot points corresponding with the red arrows will move the print length wise (also up and down). The one knob below the registration device (blue arrow), moves the print head side to side. On the Lightning you only register the screen once: after that, the machine positions each size automatically.



There are four dome nuts, two on each side of the screen holder. Loosen them up with a 7/16 wrench to be able to lift or lower the screen in order to set up off contact.

Place the flood bar and squeegee back into their positions on the screen.



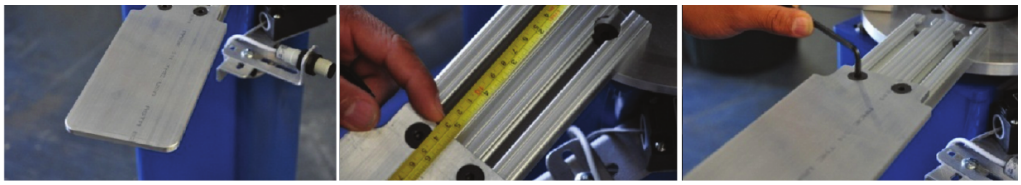
Base of machine (shirt detector)

On the base of the machine you will find the sensor. The sensor reads about 4 inches away. It detects t-shirts and other garments on the pallet: if there is no garment, the machine does not print. Undo the black knob below the sensor. This will loosen the bracket and enables you to aim the sensor where you want. We suggest the sensor be pointed in-between the print head and the station previous to the print head. If you have questions about the sensor or want it to be placed in a different location for your product, then please contact ASPE so we can customize the machine for you.



Pallets

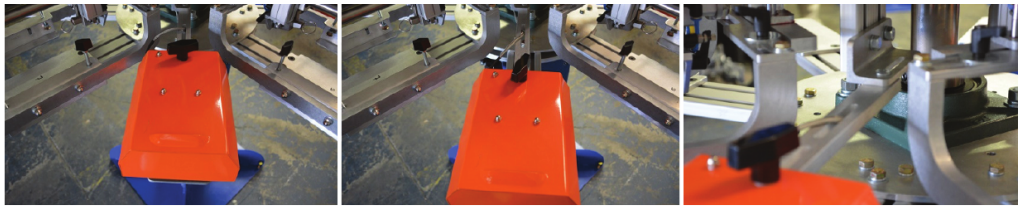
The pallets have already been preset and leveled but if you need to adjust the pallets for whatever reason, you need a 3/16 Allen wrench, a right angle, and some sort of measuring device (ruler, caliper, etc.). First measure from the edge of the arm to the pallet how much you think you need. Use the right angle to make sure the pallet is on straight. Tighten up the screw when you are satisfied. Repeat on all 4 pallets. If you have any questions about pallets or if you need different sized pallets, please contact ASPE.



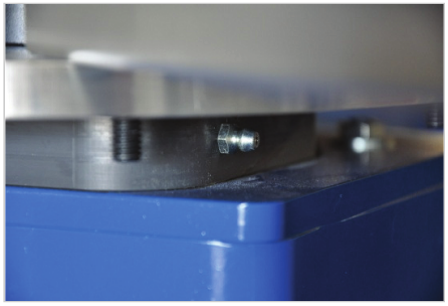
> **Tip:** instead of spray adhesive, you can use reusable adhesive pallet tape sheets cut to the size of the pallet. When they collect lint, spray a little water, scrub them and let them dry. Spray adhesive gets all over the machine and makes it hard to clean.

Flash Cure

The Lightning uses one high-density flash cure, twice the size of the flash on the LP1 / LP2. It is important for the flash cure to be directly above the pallet at the flash cure station. You can move the flash side to side, and by undoing the black knobs on top, you can move it forward and back. You can adjust the height of the flash from the pallet by unscrewing the collar and raising it or lowering it. The flash carries 4 ruby red bulbs, 7.5″ long, 750 W each. When installing the bulbs, first make sure you have some plastic gloves handy: if you touch the bulbs with your bare hands, dirt, oil and other particles will get onto the bulb, resulting in discoloration and failure. Remember that the flash cure gets very hot, so be aware of this while you are walking around the machine. ASPE is not responsible for anyone being burned or injured by the machine. Before you start your production, we suggest having the machine index for about five minutes in order to warm up the flash cure and pallets. You get the best curing when the pallets are hot!



Maintenance



The only maintenance we require for you to do is to be cautious of the oil and grease on the machine. Oil is already put onto the machine. It takes pneumatic tool oil. The lubricator controls how many drops of oil are being pumped into the machine.

Grease is already in the machine as well but every month or so, you should put a little bit of red high temperature grease in the machine. There is a grease fitting in the back of the machine below the index plate. Check the flash cure bulbs regularly and replace any bulb that is discolored or burned out.

Also make sure the air that is being pumped into the machine is dry. There should be no moisture. The compressor needs a chiller in order for the machine to work at peak performance and for the warranty to be active.

Now that you are familiar with the outside components and variables of the machine, we can move on to the touch screen controls.

The Touch Screen

When you turn on the machine you are taken to the Automatic screen. It shows the current set-up of the print head and the flash cure:

- H1 = Print head. The number below is the number of print strokes.
- C1 = Flash cure. The number below is the curing time.

Before indexing, the pallets must be homed. Press “Home” to send the carrousel to its starting position; when it is home the message changes to “Press Start” and the “Start” button appears. Press “Start” to begin indexing and press it again to stop. “Disable” lets you skip a station without a pallet, and “Stats” opens the production counters.

The machine only prints when the shirt detector sees a garment on the pallet: no garment, no print. Press “Menu” to go to the main menu.

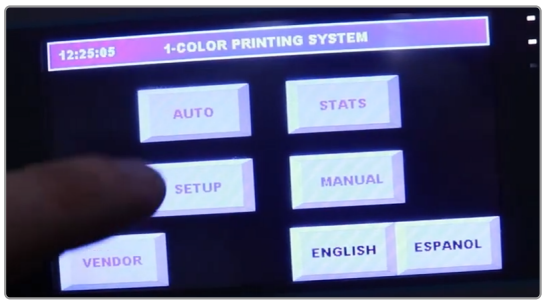


Automatic screen, waiting to be homed

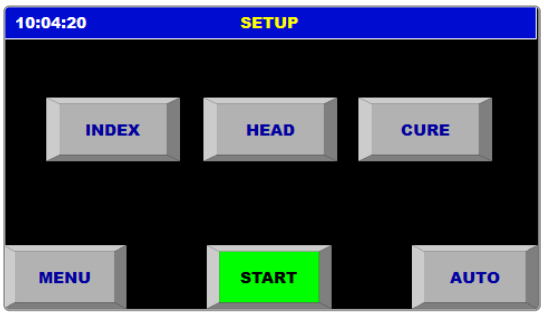


Automatic screen, homed and ready to start

From the main menu (1-COLOR PRINTING SYSTEM) you can go to Auto, Stats, Setup or Manual, switch the language to English or Español, or open the Vendor menu (service level, password protected).



Main menu

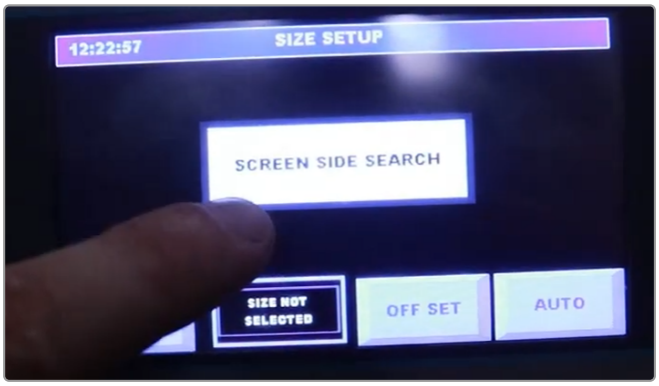


Setup menu

From “Setup” you open the configuration screens: “Index” (carrousel speed and dwell time), “Head” (print head on/off and number of strokes) and “Cure” (flash cure time). “Start” and “Auto” are also available here so you don’t have to go back to the main menu to run the machine.

Size Setup

Size Setup is where you choose which label size the machine prints. After you install the 10″ x 34″ screen, the first thing you see is “Screen Side Search”. This is the homing of the screen: press it and the screen travels all the way to one side to find its reference position. The indicator at the bottom shows “Size Not Selected” until you pick a size.



Size Setup: Screen Side Search (screen homing)

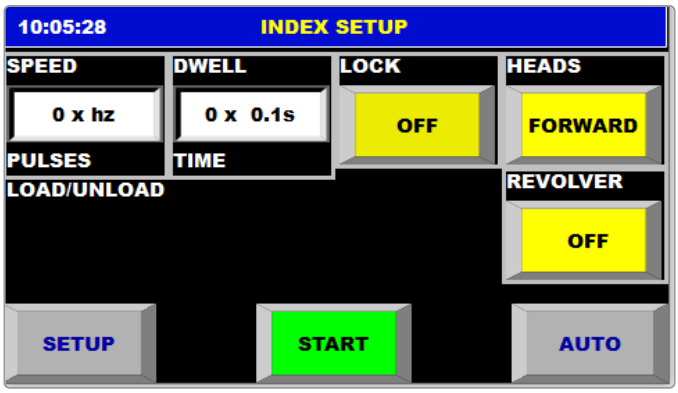
When the search is done, the seven size buttons appear (XSmall to XXXLarge). Press the size you want to print and the screen moves to that position automatically. Then go to Auto, home the machine and press Start.



Size Setup: size selection

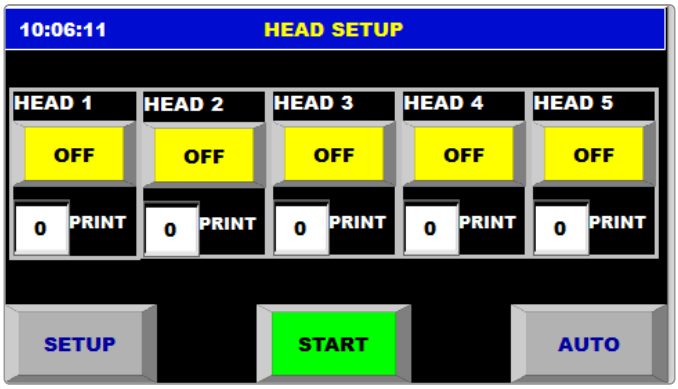
You can change sizes on the fly while the machine is running: open Size Setup, press the next size and the screen moves to it, so the next garment prints in the new size. No taping off, sliding or flipping screens. “Off Set” is used to fine-tune the screen position, and “Setup” / “Auto” take you back to those screens.

Pressing “Index” from Setup takes you to the indexing configuration. “Speed” sets how fast the pallet moves from one station to the next; “Dwell Time” sets how long the machine pauses before moving to the next station. “Lock” and “Revolver” are additional index controls, and “Load/Unload” refers to the loading and unloading stations of the carrousel.



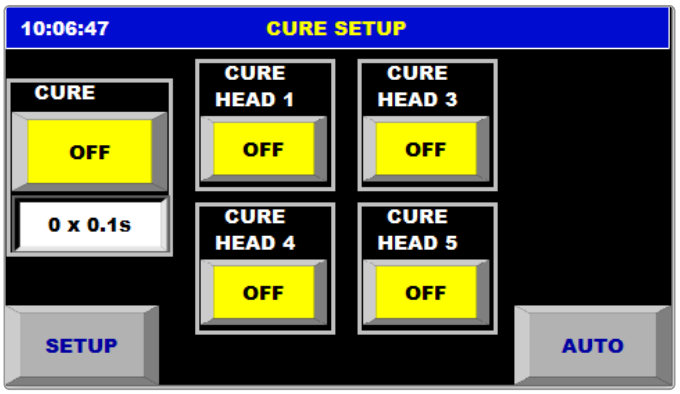
Index Setup screen

Pressing “Head” from Setup opens Head Setup. The Lightning has one print head, so only Head 1 is used: switch it On/Off and set the number of print strokes (max 10) by pressing the number below the switch and typing the value you want. The other head columns on this screen do not apply to the Lightning.



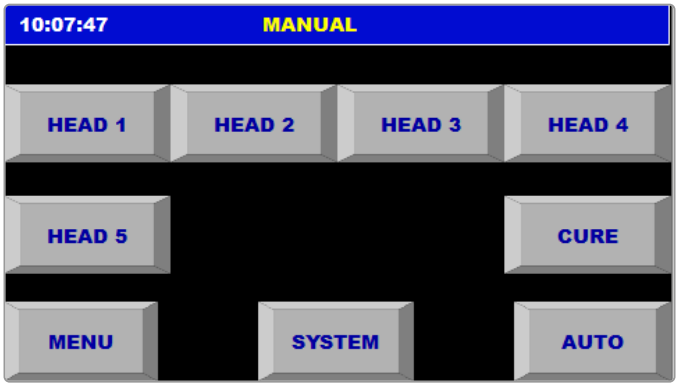
Head Setup screen (only Head 1 is used on the Lightning)

Pressing “Cure” from Setup opens Cure Setup. Use the main “Cure” switch to turn the flash cure on or off, and press the time box below it (shown in x 0.1 s) to set the curing time. The Lightning has one flash cure, which cures the label right after the print head. The “Cure Head” buttons on the right are for multi-head machines and do not apply to the Lightning.



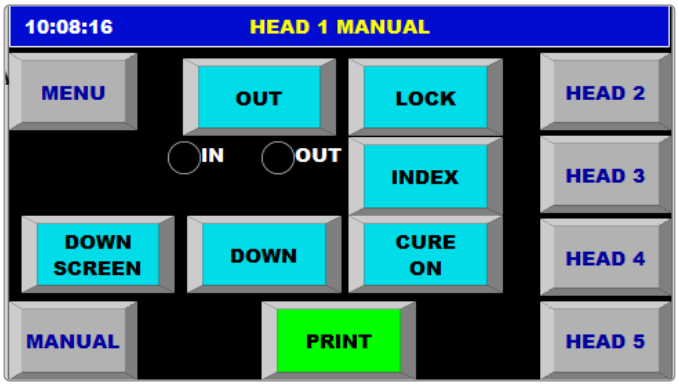
Cure Setup screen

Go back to “Menu” and press “Manual”. In manual mode you can operate the print head and the flash cure without indexing the machine. On the Lightning use “Head 1” and “Cure”.



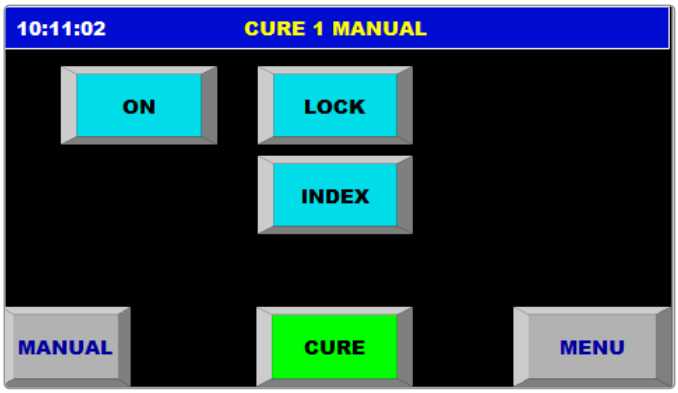
Manual menu

Pressing “Head 1” opens the head manual screen. Press “Print” and the head will cycle a full flooded print, or press “Out” to bring the print head forward into position, “Down” to bring the squeegee and screen down, and “In” to make the actual print stroke; after that the squeegee and screen return up automatically. “Lock” locks the head in place, “Index” advances the carrousel one station and “Cure On” fires the flash cure from this screen.



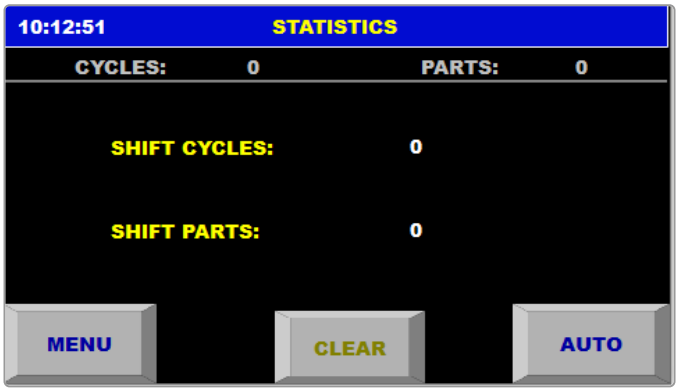
Head 1 Manual

From the Manual menu, press “Cure” to open Cure Manual. Press “Cure” to fire a full timed cure cycle so you can test whether it fully dries the ink on the label, or use “On” / “Lock” / “Index” the same way as on the head screen.



Cure Manual

Go back to “Menu” and press “Stats”. “Cycles” is the number of indexes and “Parts” is the number of printed pieces; “Shift Cycles” and “Shift Parts” count the current shift only.



Statistics screen

The Lightning also counts pieces per size automatically. Press “Next” on the counter screen to see how many XS, S, M, L, XL, 2XL and 3XL labels you printed, so you can track each size per shift, day or week without tally sheets. Press “Clear” to reset the counters to zero.

Thank you for taking the time to read the product manual. We wish you much success with our machine.

For any other questions regarding the machine or printing tips, please contact ASPE NOW!