

# PLEASE KEEP THESE INSTRUCTIONS AND ALL PARTS FOR LATER USE



## CIS Instructions for the Epson 1160

Thank you for your purchase of Lyson's Continuous Ink System. We appreciate your custom and will do our best to make your experience with our products a pleasant one. If you have any questions, please refer to the Stage 3 and if that does not help, please contact us at [technicalsupport@lyson.com](mailto:technicalsupport@lyson.com).

**The installation process is three-stage: First you prime the CIS with ink (p2), then you install the primed CIS into the printer (p4). Finally, there are a few things that you will need to know for successful day-to-day operation of the system (p7).**

We recommend that you allow the primed CIS sit overnight before installing into the printer to allow the ink to settle in the system.

Please take your time installing the CIS system. Many people have found it possible to go from opening the box to printing in less than 30 minutes, but there is no reason to rush things. Do not remove your old cartridges until you have the CIS system primed and ready to install (to prevent ink from drying in the printhead). In addition, make sure you are getting perfect nozzle checks before installing the CIS. The CIS will not be able to work properly if the nozzles are previously clogged.

It is best for you to test a new printer with Epson™ OEM inks before installing with a CIS. Should you find a fault with the printer, it will be far easier for you to return the printer to Epson without having to uninstall the CIS!

Keep the part used cartridges in case you should need them in the future.



1270 Epson Stylus Photo printer with installed CIS

### **\*\*\*Please read the information below on Colour Management before installing your CIS\*\*\***

Please note that Lyson **Fotonic** and **Lysonic** inks will produce different colour output to the original Epson ink sets. To aid you in achieving accurate colour output Lyson produce free ICC profiles for the Fotonic and Lysonic inksets when they are used in combination with Lyson's ink jet media. These can be downloaded from our website, at [www.lyson.com](http://www.lyson.com), free of charge. Alternatively, contact your CIS supplier and request the profile you require for your ink, paper and printer combination.

ICC profile compatible software is required to use the profiles, such as Adobe PhotoShop full version (5.0, 5.5, 6.0, or 7.0) or PhotoShop Elements II. Some of the more recent versions of Corel Draw and Corel Photo Paint (8.0 and upwards) are able to support ICC profiles, however, if you are unsure about this facility within your preferred choice of imaging software please check with your software provider that RGB ICC Profiles can be supported before installing your CIS system. Alternatively you can check this with your CIS supplier or e-mail [technicalsupport@lyson.com](mailto:technicalsupport@lyson.com).

Photographic



print essential

If you prefer to use a non-Lyson media you may be able to get accurate results using our free ICC profiles, but bear in mind the free Lyson ICC profiles are not written for non-Lyson papers. To achieve accurate colours you may need to have a custom profile written by a colour management company. Again for a referral on this please e-mail our technical support address as detailed previously.

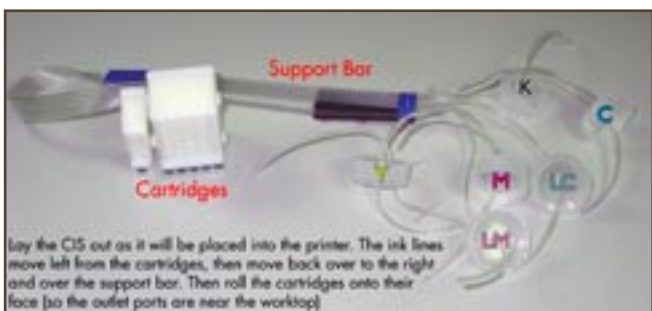
Within the Technical section of the Lyson website under "Support Documents", there is also a PDF document which deals with these issues in more detail, entitled Colour Management 2003. All our ICC profile downloads contain PDF support documents to help you install and use the profiles.

Lyson's **Small Gamut** inks require ICC profiles for accurate colour reproduction in many cases. Please follow the same process as with Lysonic and Fonic inks for profile downloading and the same stipulations regarding ICC profile compatible software apply. There is a PDF support document in the Technical section of [www.lyson.com](http://www.lyson.com), entitled Small Gamut User Guide, which covers the colour management of Small Gamut inks in more detail.

**Quad Black** inks can be used without ICC profiles by setting your print space or profile to Grey Gamma 1.8 at the File and Print stage in PhotoShop. Ensure your media setting is Photo Quality Glossy Film for Lyson Media. We do offer ICC profiles for use with Quad Black on certain machines, this is usually an optional requirement although some improvement in greyscale gradation can be made using the profile. Again, go to the Technical section of [www.lyson.com](http://www.lyson.com) to download the available profiles. Also in this section, under Support Documents, is a PDF file of the Quad Black User Guide, which covers all this in more detail and covers image conversion and PhotoShop tips and techniques.

## Stage 1: Priming the Cartridges and Tubing with Ink

### Preparation



Set the cartridges and attached support structure down on a level surface as shown above, with the cartridges tilted forward onto their front edges and the bottle caps neatly arranged. Exact cartridge and support bar (and number of ink lines) will depend on the CIS model being primed.

Screw the white T shaped connector with attached valves onto the 35cc syringe as shown in the picture above (if it was shipped unattached). It takes about 1/2 of a turn with light pressure for it to lock securely onto the syringe. **DO NOT OVER TIGHTEN.**




### Tips for proper vacuum pump usage:

- Moisten the tip of the nipple before inserting it into the tubing (to make it easier to get it out later).
- Insert and remove the nipple from the CIS tubing by holding the filter, not the body of the syringe (more control and less stress on the syringe tip).
- Place your ink bottles well away from your hands and the vacuum pump when you are taking the pump on and off the tubing or working the handle. If your hand should slip by accident, you don't want to knock over any ink bottles!
- Unscrew the cap from the ink bottle that you are about to use before you start pumping. Place the open bottle far enough away from you that there is no risk of knocking it over while pumping. This way it is ready to use immediately after pumping out all the air – you do not want unnecessary delays between pumping and filling.
- When you pump, you should be able to hear air being expelled from the exit valve with each return stroke. Each cycle should result in less air being expelled (after the first few pumps, the amount of air being expelled may be so small that you won't hear anything, which is good). If the amount of air being expelled does not decrease, something major is wrong. Make sure that the clear membrane covering the holes on the bottom of the cartridges is intact, and that all connections are tight.

Attach the slide clamp to the tubes just above the bottle caps, but leave them hanging loosely for the moment.

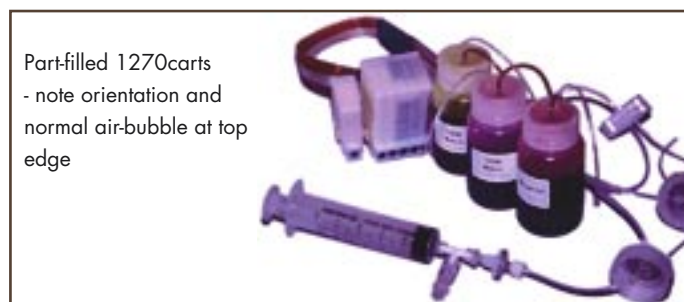
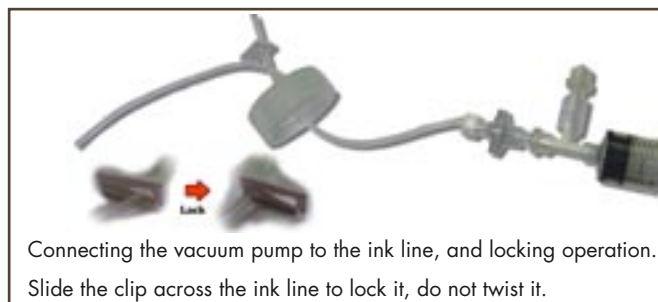




Once the ink lines have ink in, or the cartridge seals have been pierced by inserting into the printer, vacuum priming will no longer be possible. Refer to Troubleshooting if you feel such a procedure may be necessary.

# Priming

- 1 Gently insert the vacuum pump into the end of the tube leading to the black cartridge. (NOT the smaller 4" long venting tube) A label on the right side of acrylic support indicates what colour ink should go into each tube. K=Black, C=Cyan, M=Magenta, Y=Yellow (for photo or 6 colour printers, C\*=Photo or Light Cyan and M\*= Photo or Light Magenta).



**\*\*\* Make sure you put the right colour ink into each cartridge chamber. \*\*\***

**\*\*\* Once the chamber is filled, there is no way to undo it! \*\*\***

- 2 Remove all the air from the cartridge by pulling the syringe handle back all the way to the 35cc mark, and then pushing it all the way forward to the 0cc mark. Repeat the pull and push cycle 10 times for each colour (15 times for 900 or 980 owners). Each time the syringe handle is pulled out to the 35cc mark, stop and hold it there for 2-4 seconds before pushing it back down to the 0 mark. This allows you to get the maximum amount of air out of the cartridge with each stroke.
- 3 Slide the clamp over so that it pinches the tubing as shown in the second picture insert above;
- 4 Remove the vacuum pump from the end of the tubing.
- 5 Place the end of the tubing down into your ink bottle and screw the cap down loosely. Make sure that the tubing goes to the bottom of the bottle and does not get stuck along the edge when it is inserted. (If you bought ink from us in 4oz bottles, you can use these bottles).
- 6 Slide the clamp back to it's original position (where it hangs loosely and does not pinch the tubing), and the cartridge will fill within seconds. If your CIS has translucent cartridges, a white spot may be visible on the side of each chamber after it is filled (The edge of the cartridge that is furthest away from the fill tube). This is the result of a very small amount of air that remained in the cartridge. It will not affect print quality in any way since the chamber is more than 99 percent filled with ink. If your cartridges are not translucent, a good fill can be inferred from the drop in ink levels in the bottle.
- 7 Tighten down the bottle cap securely.

Repeat the steps for each ink colour until both cartridges are filled; 3 colours plus black for "Color" printers, 5 colours plus black for "Photo" printers.

Tape down the breathing tube using any household tape (optional), or if you bought the acrylic rack, stick the venting tube into the small hole beside every bottle hole in the rack. This tube functions to virtually eliminate evaporation (testing showed no ink loss after 6 weeks using a scale accurate to .01 grams). This is important because it keeps the colour from shifting and also keeps the more volatile alcohol components of the ink from evaporating, which would change the viscosity. Your ink should stay just as fresh as if it were in a sealed container.

The tubing for each colour has been accurately measured and cut. Arrange the bottles beside the printer as shown to the right.



\*\* Set the bottle rack or loose bottles on the same surface as the printer. If the bottles are raised relative to the printer, ink could start to drip out of the print heads. If the bottles are kept right next to the printer, and at the same level, the CIS will operate properly.

# Stage 2: Installing the CIS into the Printer

## Removing the cartridge holder lids

The 2 cartridge holder lids must be removed in order to attach the cis system. This is the only printer modification required. If you wish to return the printer to its original factory condition, the lids can be easily reattached.



## Method 1 (recommended)

It is possible to remove the cartridge lids without breaking the tabs off.

- 1 Gently pull the two lower connection points of the cartridge lid off of the printer (the two connection points that do not have the tab holding them in place).
- 2 Pull the black piece of plastic that runs underneath each cartridge up so that it can be removed from the printer (there is a slot on the side of the cartridge holder area that it is locked into. If it is pulled up, it can be removed from this slot).
- 3 The blue cartridge lid and the black piece of plastic (still attached) should be stored safely in case you wish to reinstall them at a later date. Continue to the next step without delay. If there is no cartridge installed in the printer for a significant period of time, ink may dry in the inlet nipples causing a clog.

## Installing the CIS Cartridges

Make sure the print head is in the cartridge changing position (if it is not, hold down the paper feed button for 4 or more seconds until it moves into position).

Unplug the printer from the wall or extension cord (this leaves the print head in the unlocked position so you can move it back and forth by hand. If you try to turn the printer off using the on/off switch on the front, the print head will move to the far right and be locked into position).

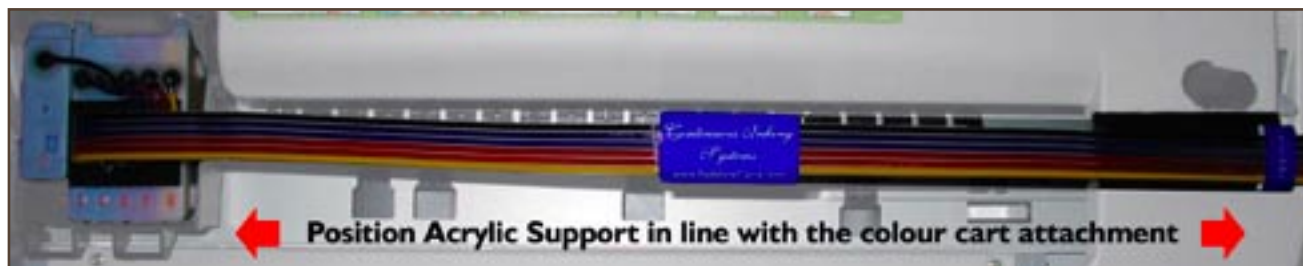
Install your newly filled cartridges by pushing them firmly down into position, making sure the holes in the bottom of the cartridges line up with the nipples found at the bottom of the printhead. There is a friction pad on each side of the cartridge designed to hold the cartridge firmly in place in the absence of the blue lids that were removed previously. It will require slightly more force to push the cis cartridges into position compared with regular cartridges.

Push the cartridges down carefully at first to make sure you don't catch the friction pads on the edge of the cartridge bay and knock them off, then push the cartridges down very firmly to make sure they are all the way down.



# Install the Support Bar

Position the acrylic support arm over the right side of the printer. Adjust the support arm so that it is directly in line with the tubing where it is attached to the colour cartridge and is also parallel to the motion of the print head.



Mark the position where the Velcro should be attached as determined by the previous step. Clean the area with one of the alcohol pads provided.

Pull the bottom piece of Velcro off of the support bracket. Peel off the plastic backing and attach it to the spot you marked. Push down firmly and repeatedly over the entire piece. Velcro sets within a couple of minutes, and reaches full strength in 24 hours. It will be strong enough to hold the support bracket immediately. (Velcro can be removed at a later date if the printer needs to be returned to its original condition. It will take some force but it will come off with little or no residue) If you ever get a new printer, remove the Velcro, or it pulls off, you will need to get a new piece because it will not stick securely a second time.



Slide the print head as far as it will go both left and right to make sure that none of the tubing or any part of the CIS system touches the printer except for the attachment to the colour cartridge as well as the acrylic support mounted on the right side of the printer.

You may need to shift the support arm left or right up to 1/4 inch if the tubing contacts any part of the printer. If the tubing appears to be overly stressed when the printhead is in the far left position, move the support arm slightly left (pull Velcro connection apart and reattach).

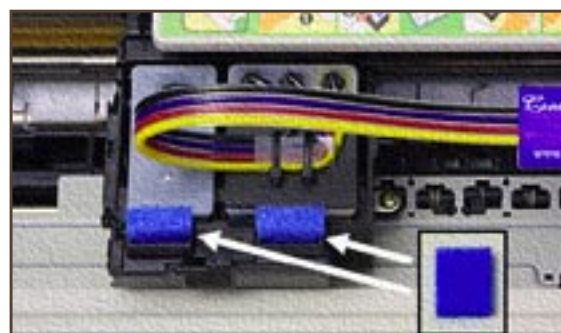


When you are confident that the CIS system will not interfere with normal print head movement, push the print head to the far right (the parked position) and plug the printer back in.

## Activating the Cartridge Lid Sensors

Once on, the printer will return to the cartridge changing position because the cartridge sensor switch has not been activated. If this does not happen, press and hold the paper feed button for 4 or more seconds until the print head moves into cartridge changing position.

Place the two foam blocks straight down into the holes located in front of the cartridges (2 extra are provided). The blocks must be inserted straight down to ensure that they press down on a small lever in the hole. Only insert the blocks as far as is needed to make the lights go out. If the lights were already on before you installed the CIS (old cartridges were empty), then the lights will not go out until the blocks are positioned and you have hit the paper feed/ink-change button. Inserting the blocks signals the printer that a cartridge is installed. The ink out lights should now be off since the switches have been activated.



Press the paper feed button briefly to initiate the 'new' cartridge priming routine.

## Installing the Lid Support Bungs



Affix the rubber bumpers used to prop up the lid with the round velcro circles (clean the props and the printer's case with the alcohol prep pad provided). For small letter sized printers, place the props near the front corners of the printer. For the larger printers, a little more room is needed so place the props near the middle on each side of the printer. Make sure the lid is held up high enough that it does not interfere with the movement of the tubing.



## First Prints with the CIS

Using the Epson printer utility, print a "Nozzle Check" to make sure that all the nozzles are firing properly. If necessary run a cleaning cycle or two. If that does not clear things up, let the printer sit for an hour or two before trying again. Running numerous cleaning cycles in a row usually does not help the situation, and can in fact hinder progress. Some people have had success printing large colour blocks in order to get all the nozzles firing.

Using the Epson utility, do a "Print Head Alignment". (You may need to do this twice if the first alignment is off the scale).

# **Congratulations, you have successfully installed your CIS!**

**Please keep this manual and all your parts for future use and reference.**

**Read on to find out the basic things you will need to know for successful long-term operation of the CIS.**

## Stage 3: Your CIS in Day-to-Day Use

As with many things in life, your CIS will serve you best if you treat it with respect and apply the following maintenance procedures regularly. They take just a few seconds, and could prolong the life of the system, and prevent the need for more drastic maintenance items in the long term.

### Resetting the Ink Levels

Whilst the CIS cartridges are always full in normal use, the printer maintains a count of the amount of ink used, and shows the ink levels dropping. It will occasionally show the ink out lights, and force you to 'change the cartridges'. To do this, get the cartridges to the ink-change position using the normal method for your printer. Remove and then replace the foam blocks when the print head assembly is in the cartridge changing position. This will reset the ink counter without ever having to remove the cartridges. Reset both cartridges at the same time; the priming routine that takes place after a cartridge change pulls ink out of both cartridges even if only one is changed. By resetting both at the same time, you will save time and ink.

## Frequent Checks Required

The following checks of your system should be applied frequently – they will take no more than a few seconds and we suggest it would be a good habit to do them weekly or monthly at least:

- Check ink levels in your bottles and top-up if necessary (a procedure follows);
- Check for correct positioning of the support bar, that the ink lines are not overstretched or catching anywhere. The ink lines will stretch a little after first installation into the printer;
- That the ink is in the line for the majority of the length (a few centimetres of air bubble is not normally a problem) of the lines;
- That the cartridges are fully pressed into their holders;
- That the air-lines into the bottles are clear of obstruction.

## Refilling your Ink Bottles

For pigment and pigmented inks we recommend you run individual bottles to about a cm or two of the bottom of the bottle. Follow this procedure:

- 1 Lock the ink line for the colour you will be changing;
- 2 Unscrew the bottle cap and fit it to a new, full bottle of the same ink type and colour;
- 3 Unlock the ink line;
- 4 Over time, as the ink level in this full bottle drops, you can just pour the last bits of the old ink bottle into this new one.

For dye inks, this procedure is less critical, and you can simply unscrew the bottle cap, and pour in fresh ink to top up your bottles. Be sure to put the correct ink into the correct bottle!

Do not fill the bottles too high or you may get ink drops on your paper. If you do get ink drops after refilling, raise your printer ½ to 1 inch (leaving the bottles at the original height), or pour some of the ink back out of the bottles).

Keep at least ½ inch of ink in the bottles, you do not want to run out of ink and draw air into the cartridge (if that happens and only a small amount of air enters you will be ok, as long as you don't use up more than half of the ink in the ink line). You can refill all the bottles at the same time or individually as each one gets low, it makes no functional difference.

Use this as an opportunity to check-over the whole system (See the first item above).

When refilling, be sure to use the same type and make of ink that is already in the system. Some inks may mix badly with others, and this mixing inks could clog your CIS or printer. Additionally, mixing different types of inks could result in colour changes over many hundreds of prints, as the new inks run through the system. If you wish to change the ink set in use, we have instructions to do this online.

## Removing the CIS from the Printer

'Lock' the ink lines before removing the system. The cartridges may drip slightly when removed from the printer because they are filled with more ink than the sponge can retain. Keep the cartridges above the level of the reservoir bottles until you are able to plug the exit holes with EZ Plugs or with 3M electrical tape (exit port area must be perfectly dry or the tape won't stick). Make sure that the CIS cartridges are well sealed – you do not want ink to leak out of them, or ink to drain out of the cartridges back into the bottles. Tape alone will not provide a good long-term seal!

## Fixing Banding Problems

First do a nozzle check to see how many nozzles are not working properly. Then run a cleaning cycle. Say yes to print another nozzle check. If there are still gaps in your nozzle check, run another cleaning cycle immediately. If you alternate cleaning cycles and nozzle checks without exiting the utility, each cleaning cycle will be progressively stronger. If after 3 consecutive cleaning cycles you are still having problems, let the printer sit for an hour before running any more. Banding can occur with just about any printer, and we have extensive support information online.

# Troubleshooting and Support

If you have any questions regarding installation or operation of the CIS system please contact your supplier. If they are unable to resolve the query your supplier will contact Lyson for the correct information and refer it straight back to you. Please pass on the details of your CIS model, the type of ink you are using, and how long the system has been installed in any technical query. If your CIS supplier is unavailable please e-mail [technicalsupport@lyson.com](mailto:technicalsupport@lyson.com). If you need to send us another email after our initial response, ALWAYS reply to our email or copy the old text into your new email. It is a lot easier for us to respond to your questions if we have the old dialogue right there rather than have to search through thousands of old emails.

Please note that most component parts of the CIS system are replaceable should there be a fault. Please do not remove CIS systems and return them to your supplier without first discussing the problem you are experiencing, and allowing us the opportunity to deliver the best solution to the problem, in the most economical manner.

If you find any part of the CIS system or instructions confusing or difficult, please let us know so that we can continue to improve the product, by e-mailing [technicalsupport@lyson.com](mailto:technicalsupport@lyson.com).

## Parts List

- Patent pending CIS unit  
(with modified cartridges, tubing and acrylic support arm with Velcro backing, bottle caps with breathing tubes)
- 2 rubber lid props with Velcro circles to attach to printer
- 4 white slide-type tube clamps
- 2 alcohol cleaning pads
- 1 vacuum pump (35cc syringe, 2 check valves (intake and exit), T adapter, filter, 2 nipples (one spare))
- 4 foam blocks to hold down the cartridge sensor switch (2 for immediate use, 2 spares)
- Installation instructions

### Key Extras (Optional)

Acrylic Bottle Rack – to hold the bottles safely and neatly to the right of the printer

EZ-Plugs to plug the outlet ports of the CIS when it is removed from the printer