

# PLEASE KEEP THESE INSTRUCTIONS AND ALL PARTS FOR LATER USE



## CIS Instructions for the Epson 2100


Thank you for your purchase of the Lyson 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 Frequently Asked Questions (FAQ) and if that does not help, contact us at [technicalsupport@lyson.com](mailto:technicalsupport@lyson.com).

**The installation process is three-stage: First you prime the CIS with ink, and then you install the primed CIS into the printer. Finally, there are a few things that you need to know to use the system day-to-day.**

After priming, we recommend that you allow the primed CIS sit overnight (before installing into the printer) to allow the ink to settle in the system. If any part of the priming or install procedure does not go as expected, please refer to the FAQs.

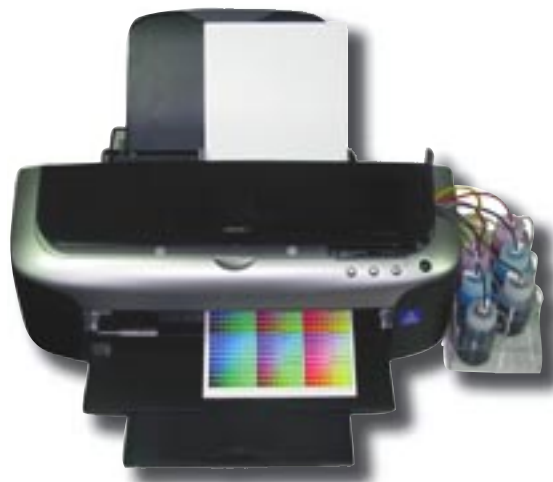
Please take your time installing the CIS system. Many people have found it possible to go from opening the box to printing in less than 30 minutes, but there is no reason to rush things, and good reasons not to.

Do not remove your current ink or cleaning 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 and general operation of the printer before installing the CIS. The CIS will not be able to work properly if the nozzles are clogged or there are any other pre-existing issues. Even if your printer is a new printer, it is best to test it with Epson<sup>®</sup>™ OEM inks before installing a CIS. Should you find a fault with the printer, it will be far easier for you to return the printer without having to uninstall the CIS! Keep the part used cartridges in case you should need them in the future.



**Risk of Static**

Due to a potential risk of static damage to the 100% full chips, we recommend that you earth yourself (e.g. touch your computer's case near the power supply) prior to handling the cartridges with 100% full chips.



Epson<sup>®</sup> Stylus Photo 2100 printer with installed CIS

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

Please note that Lyson **Fotonic** and **PhotoChrome** 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 PhotoChrome inksets when they are used in combination with Lyson's inkjet 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 support 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).

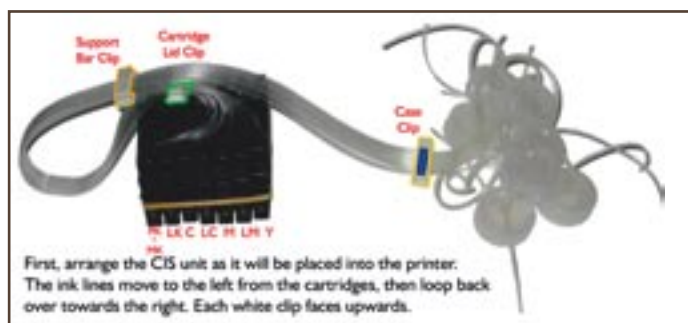
If you prefer to use a non-Lyson media you may be able to get accurate results using our free ICC profiles, but bear in mind the free Lyson ICC profiles are not written for non-Lyson papers. To achieve accurate colours you may need to have a custom profile written by a colour management company. Again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

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

Further information on Lyson inks and media for Digital Photography and Fine Art Giclee printing can be found at [www.lyson.com](http://www.lyson.com).

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

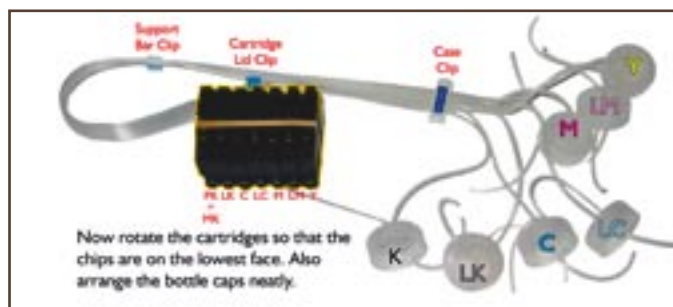
### Preparation



First set the cartridges and attached support structure down on a level surface with the cartridges oriented as they are placed into the printer. The ink lines should be arranged so that they move left from the cartridges, then back over towards the right. Roll the cartridges onto their front face (where the chips are), and arrange the bottle caps neatly. You may find it helpful to temporarily group the cartridges together with an elastic band, as shown. It will be very useful to you to get the orientation of the ink lines

and cartridges correct now, so that later stages of installation do not require you to untangle the ink lines and bottles.

Screw the white T shaped connector with attached valves onto the syringe as shown in the picture. It takes about 1/2 of a turn with light pressure for it to lock securely onto the syringe. **DO NOT OVER-TIGHTEN.**

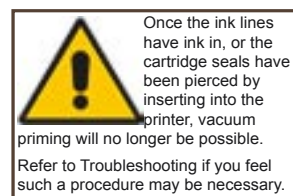


### Tips for proper vacuum pump usage:

1. Moisten the tip of the nipple before inserting it into the tubing (to make it easier to get it out later).
2. Insert and remove the nipple from the CIS tubing by holding on to the filter, not the body of the syringe (more control and less stress on the syringe tip).
3. 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! The optional bottle rack can be useful to help prevent this too.
4. 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.
5. 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,



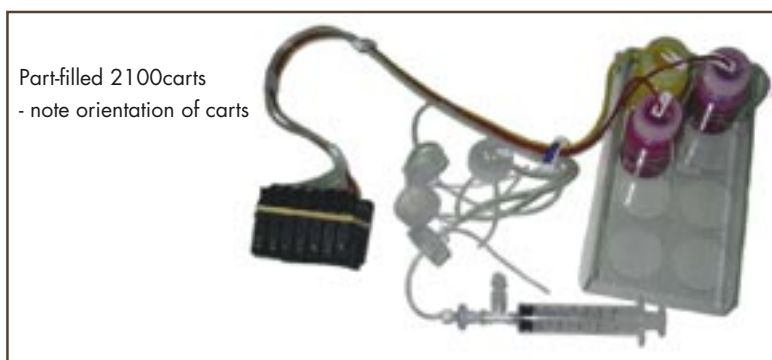
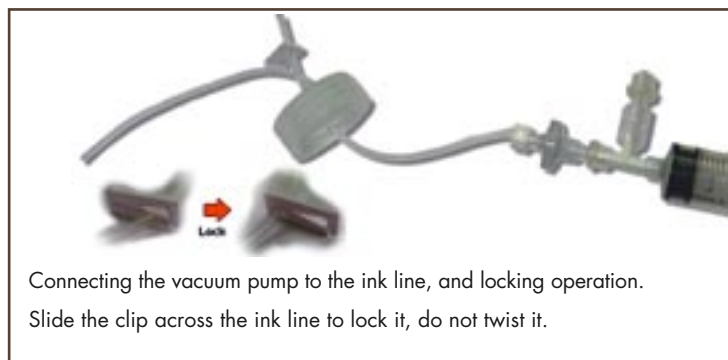
which is good). If the amount of air being expelled does not decrease, something major is wrong. Make sure that the clear membrane covering the holes on the bottom of the cartridges is intact, and that all connections are tight. Then refer to the Support and Troubleshooting section.



# Priming

Attach the ink-line clamps to each tube, just above the bottle cap. Leave it hanging loosely (as shown the first picture insert below).

1 Being careful to select the correct ink line, take the Yellow line, and take your Yellow ink bottle to one side. Gently insert the vacuum pump into the end of the tube leading to the yellow cartridge. (not the smaller 4" long venting tube). A label on the case-clip indicates what colour ink should go into each tube. In order from back to front: Y=Yellow, LM=Photo / Light Magenta, M=Magenta, LC=Photo / Light Cyan, C=Cyan, LK = Light Black, K=Black



**\*\*\* 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 Yellow cartridge by pulling the syringe handle back all the way to the 35cc mark, and hold it for 2-4 seconds. Then push it all the way forward to the Occ mark. Repeat the pull and push cycle 10 times for each colour. After even the first pump cycle, you should notice a substantially different feel to the pump, and hear virtually no air being expelled on the 'push' cycle. Do not pump more than 10 times!
- 3 Slide the clamp over so that it pinches the tubing as shown in the second picture insert above (this is to hold the vacuum in the cartridge and ink line).
- 4 Remove the vacuum pump from the end of the tubing.
- 5 Double and triple-check that you have the right ink bottle for the ink-line you are working on. Place the end of the tubing down into your ink bottle and screw the cap down loosely (If you bought ink from us, you can use the original bottle the ink came in). Sometimes, a small bubble of ink is present on opening the bottle – you may find it useful to have a tissue on hand to absorb this up, as popping it can cause small splashes of ink.
- 6 Slide the clamp back to it's original position (where it hangs loosely and does not pinch the tubing), and the ink-line and cartridge will fill within seconds. The vacuum we created with the pump now sucks the ink up into the cartridge. On translucent cartridges, a white spot may be visible on the side of each chamber after it is filled. This is normal. On opaque cartridge designs, you can see how much ink has been sucked into the cartridge by seeing the ink level in the bottle fall.
- 7 Tighten down the bottle cap securely.

Repeat the preceding steps for each ink colour until all cartridges are filled; five colours plus light black and black.

Orient the cartridges back to the upright position (as they will be installed into the printer) and allow the ink to settle in to the CIS cartridges, typically at least thirty minutes or ideally overnight. Pigmented inks in particular will benefit from longer settle times.

If you need to use cleaning cartridges in your printer before installing the new ink (this is recommended for moves from some inks to others), then this is the time to go through that procedure.

# Stage 2: Installing the CIS into the Printer

Tape down the breather tubes 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 (our internal 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 some 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.



## Inserting the Cartridges

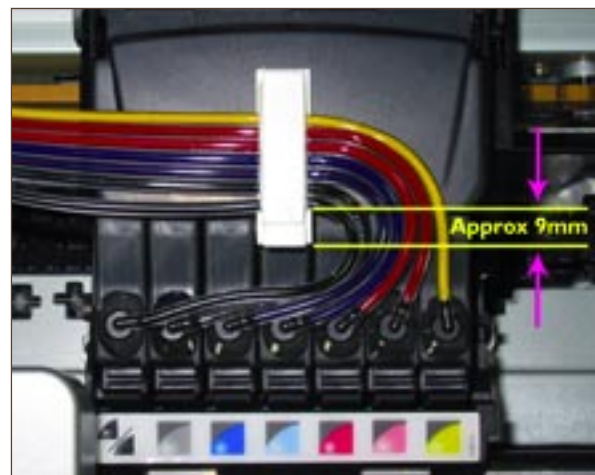
Turn on your printer and open the cover. The print head will move rapidly across the carriage back and forth a couple of times, and eventually will settle at the rightmost (home) position. Press the Cleaning button (the central silver button under the ink droplet icon) to bring the print head into the ink-change position. Once this has happened, pull the power cord from the back of the printer, or switch it off at the main plug, whichever is easier for you.

Open the cartridge cover, and remove each cartridge in turn. Check that each cartridge has its chip properly in place; inserting a cartridge without the chip can permanently damage your printer. Being absolutely certain that you take each CIS cartridge in the correct ink position and order, insert the Black cartridge, then the Light Black, Cyan, Photo/Light Cyan, Magenta, Photo/Light Magenta, and Yellow cartridges in turn. Ensure

each cartridge is carefully, but firmly pressed into place; you should hear and feel the cartridge lock into place.

Now, close the cartridge cover, and affix the first ink-line clip to the cartridge cover as shown. Use an alcohol wipe to clean the plastic prior to attempting to place the sticky pad.

Note how the clip sticks out a little way forward (nearly a centimetre) over the edge of the cartridge cover, and is directly above the Photo/Light Cyan position cartridge (it is very important that it is slightly forward like this, otherwise the ink lines will rub on important internal parts of the printer). Peel off the strip from the back of the clip to fix the clip into place.



Move the print head right across to the left hand side of the printer as you look at it, and confirm that you have placed the clip in such a way that neither it or the ink line interferes with the case.

Now, look at the inkline support clip (the 'case clip') nearest the bottles. Wipe off the area where you will be placing this with an alcohol wipe. Remove the cover from the sticky pad, and press it down into place directly in line with the clip you stuck to the cartridge lid.

## Support Bar Placement

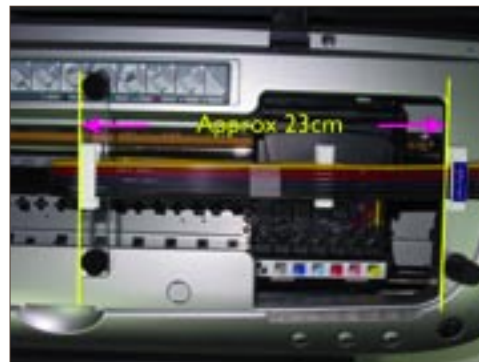
All that is left is to place the support bar in situ, and find it's correct location. To do this, attach the central clip to the left side of the support bar, again, so the ink line is held directly in-line between the two clips you have already placed. Now, without undoing the Velcro dots under the support bar, move it across the printer until the ink line is fairly taut between the two clips, and this will tend to be about 23cm from the left side of one clip to the left side of the other.

Whilst gently holding the support bar in place, move the print head to the rightmost and leftmost positions on the carriage. At each furthest point, the ink lines should not be under any undue pressure or touch the case. Adjust the positioning of the support bar as appropriate,

then fix it in place by wiping down the area to receive glue with an alcohol wipe...then remove the film from the Velcro dots under the bar and using a medium pressure to force the glue to stick.

Once again, check that the full range of print head movements does not cause any strain on the ink line, support bar or cartridges.

You may need to shift the support arm left or right if the tubing contacts any part of the printer. If the tubing appears to be overly stressed when the print head is in the far left position. If necessary, you can unlock the ink-line support clips and pull or push ink line through it before relocking them. This should not be necessary though.



## Lid Support Bungs

Now fix the rubber lid support bung to the printer, in the approximate location shown, to support the lid so it does not rest on the ink line support clips. Use the 'dots' of Velcro to do this, and be sure to wipe the printer surface with one of the alcohol wipes first.

When you are confident that the CIS system will not interfere with normal print head movement, and that the ink line will not foul on the timing strip, push the print head to the far right (the parked position) and plug the printer back in or turn the power switch on the wall-socket back on.



When you first try to print, you may get the following message (or something similar, depending on your exact printer model). If you do, click yes to continue. [We have yet to see this on our 2100 printer, but you just may see something similar, as we have seen such messages with past CIS units]

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. 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

In normal operation of the CIS, the cartridges will remain full of ink. Nevertheless, the printer and computer maintain a count of the amount of ink used in printing, and will show the ink levels falling – potentially even getting to a point where it shows the cartridge as 'low' or even out; stopping a print half-way through. There is no need to let it think the cartridge is out of ink though...simply switch the printer off and then on again after about two seconds, and the ink levels will reset! If you use the on-computer tools to monitor ink levels, you may need to exit the dialog and then re-run it to check that the ink levels have indeed been reset.

We recommend that you leave the printer on as a matter of course...and apply this simple procedure before the ink levels recorded by the printer get too low. Leaving it too late could result in you having to cancel a print half way through to apply the reset procedure.

## 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 – particularly watch for the potential for ink lines to catch the timing strip inside the printer. 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 airlines into the bottles are clear of obstruction.

## Refilling your Ink Bottles

For pigment and pigmented inks we recommend that you run individual bottles to about a centimetre or two of the bottom of the bottle.

- 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 line clamps, and unlock the support clips on the cartridge lid assembly. Unthread the ink lines from the clip above the cartridges. Do the same for the clip at the right side of the printer. You can now remove all the cartridges and the complete support bar assembly. 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 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. Please believe us that tape alone will not seal these cartridges long-term!

# FAQ - Frequently Asked Questions

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## **When I turn the printer on, an 'ink-out' light shows**

If, when you first power-on the printer after installing the CIS an ink-out light shows up, it indicates that the chip on the relevant cartridge is not being read correctly. Press the ink change button on the printer, and make sure that the cartridge is pressed firmly and fully into place. It may also be wise to pull it out from the print-head assembly before fully reinserting it. This will normally clear the error. If you plan on removing the CIS cartridges for more than a second or so, follow our procedure for this in the previous section.

## **What is the difference between 'Photo' and 'Matte' Black Cartridges?**

Epson® make two types of black ink for this printer; Photo Black and Matte Black. These inks have differing properties, and result in differing driver settings being made available inside the standard printer driver. We can supply two types of chip that identify themselves to the printer as Photo Black (PK) or Matte Black (MK).

## **Why are there air bubbles in the ink lines?**

Air bubbles in the lines are usually the result of some of the air trapped in the top of each colour chamber working its way up into the tubing. This is of normally of no concern and will not effect your print quality, where the bubble takes up only up to about 5cm of ink line. As you print, the air will move back into the top of the cartridge, but do check the ink lines are not catching anywhere or damaged.

If the air-bubble extends for a substantial part of the ink line, check the line thoroughly for damage and that the cartridges are pushed firmly into place; of course you should also be sure that you have ink in the relevant bottle. There may be an air leak somewhere between the cartridge and the ink bottle. This must be corrected before you use up all the ink left in the cartridge. Carefully check the tubing and where the nipples are glued to the cartridge for leaks and contact us for assistance.

## **Why are there ink drops or drips on the printout?**

Most likely you refilled the reservoir bottles too high. Keep the ink level in the bottles below the curve of the neck (2 ½ inches high). Individual printers vary in their ability to tolerate high ink levels. If you have this problem, either remove some of the ink from the reservoir bottle, or raise the printer slightly (1/2 of an inch) while leaving the bottles at the original height. We have extensive FAQs online to help with printer problems.

## **How do I fix banding problems?**

Banding problems are not necessarily related to a problem with the CIS, they are quite normal to experience occasionally with an ink jet printer. However, if you have them on first installing a new ink or CIS, it is likely you need to clear an air-lock from the print-head, or allow the ink to settle some more.

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 or two before running any more. Running more than 3 cleaning cycles in a row could contribute to further problems as the demand for ink is high, and it does not allow ink for to settle in the cartridge.

We have extensive FAQs online to help with printer problems.

## **I'm going away for a couple of weeks - Will this be a Problem?**

As CIS cartridges are always nearly full in normal operation, there is very little risk of them drying out. However, we do recommend that you at least switch the printer on once every two weeks and run a nozzle check (and clean if necessary). This alone should help keep the ink in the printhead fresh. We have used a printer with CIS after about 8 weeks of no use at all, and got perfect nozzle checks at the first attempt. This excellent performance should not, however, be relied upon!

If you are not going to be using the printer for many weeks, it may be best to remove the CIS from the printer and seal it up (following our instructions on the previous page), and follow your printer instructions on how to prepare the printer for long-term storage.

# Technical Support

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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 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)

● 7 '100% Full' microchips installed on the cartridges. The black position cartridge will be marked 'PK' or 'MK' depending upon whether you ordered a 'Photo Black' or 'Matte Black' system. Lyson CIS ship with Photo Black as standard

● 7 white Slide type tube clamps

● 2 alcohol cleaning pads

● 1 Vacuum pump (35cc syringe, 2 valves, T adapter, filter, 1 nipple)

● 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