

**MIS**

Continuous Flow System

for

Epson Stylus Photo 750 Printer

## Installation Instructions

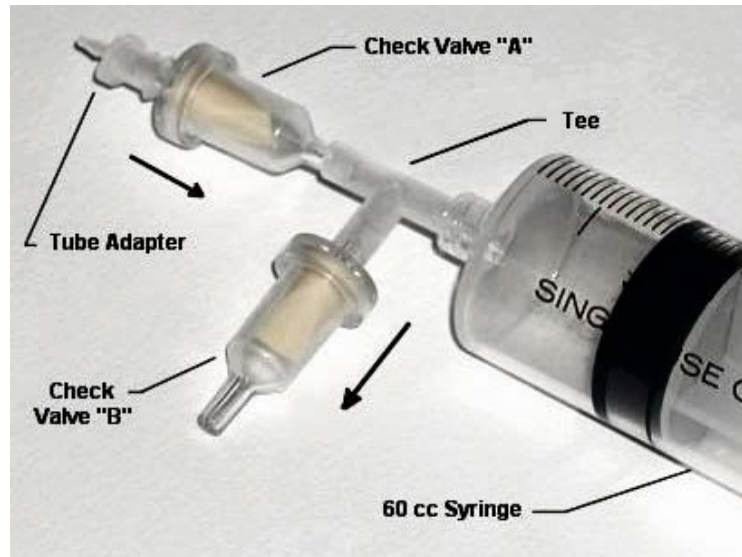
Based on a Personal Computer  
Using Windows Software

Rev 4/28/02

**MIS Associates Inc.**  
**1070 W. Silverbell Road**  
**Lake Orion, MI 48359**  
[www.inksupply.com](http://www.inksupply.com)

Do not remove foil pull tabs from top of cartridges. **This is important.**

1. **Fill Cartridges With Ink using the vacuum pump assembly**



Attach one of the CFS tubes to the end of the "Tube Adapter". Don't push it on too far, or it will be very difficult to get off. Just far enough to make a seal.

Pull on the plunger of the 60 cc syringe to create a vacuum in the CFS tube. (*this takes some hand strength*). Air from inside the tube and cartridge will flow across Check Valve "A".

When the plunger is all the way back, push the syringe plunger forward, causing the air extracted from the cartridge to be expelled across Check Valve "B", while Check Valve "A" maintains a seal preventing air from going back into the cartridge.

Pull back on the plunger again, getting even more air out of the cartridge. Then push the plunger forward, expelling the extracted air out Check Valve "B". Do this at least 3 more times and a perfect vacuum has been created inside the cartridge and the CFS tube.

Next, fold the CFS tube in half about 3 inches from the Tube Adapter. Make sure it stays folded and the vacuum is not lost. Hold it tight.

Before you detach the tube from the vacuum pump, make sure your cartridges are properly orientated. See photo.



Detach the tube from the end of the Tube Adapter make sure it remains folded over and the vacuum is not lost. Insert the end of the tube at least one inch into the ink bottle without unfolding the bend (make sure it is the right color).

Slowly let the tube unfold. Keep the end of the tube 1" or more under the ink surface during this time. The ink will flow from the bottle, through the tube and into the cartridge. Be sure to unfold the tube slowly. The ink will surge into the cartridge. Some portion of the cartridge, in the front, will not get filled, this is normal and it will not interfere with the operation of the CFS.

Repeat this procedure for each tube on the CFS unit. Keep the cartridge on end, as shown. After all the tubes are full, set the cartridge on your bench. Put a pencil or some sheets of paper under the end of the cartridge so that it is perfectly level. Make sure the end of the tubes are open and not kinked or twisted.

**You are done for today.** Let the freshly filled cartridges age overnight. You can continue in the morning or later in the day with the next step in the process. This is important, don't try to rush it. The ink needs about 8 hours to get fully absorbed by the sponge. Any bubbles or gases will come to the surface and disappear.

## 2. Establish Working Condition of Printer- Make sure nozzle check is perfect

With an image on your screen and paper in the printer, click on **file | print**, then on printer **properties**. When you see the **Utility** tab on the printer properties dialog box, click on it, then on **Nozzle check**. This can also be done from the Control Panel | Printers section by right clicking on the correct printer and then clicking on properties.

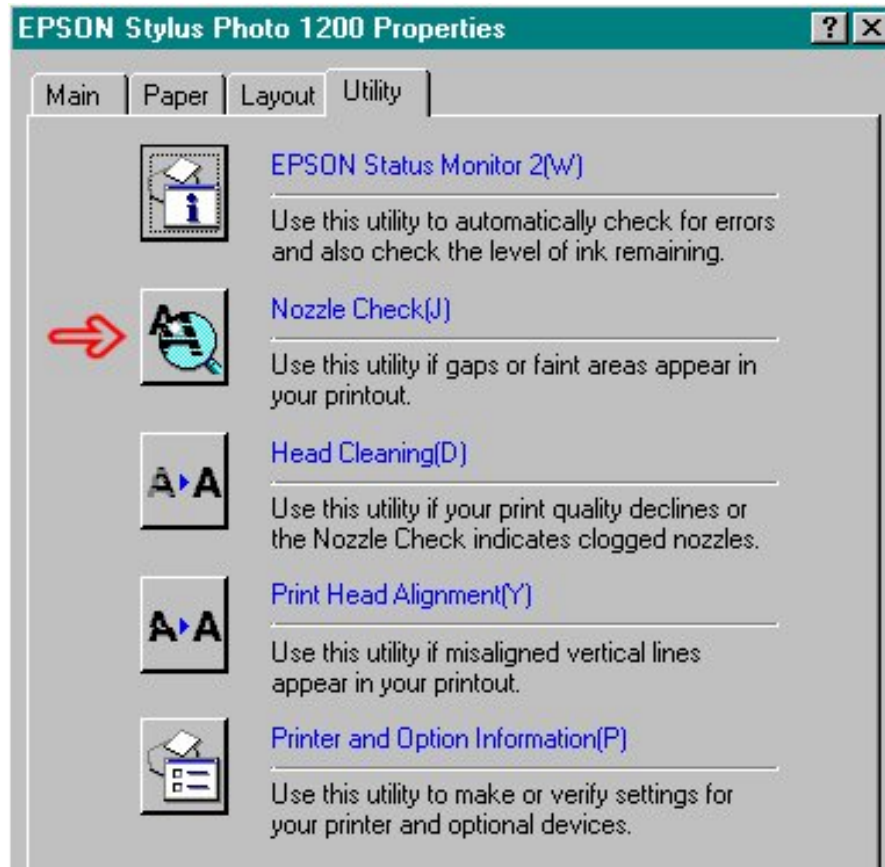
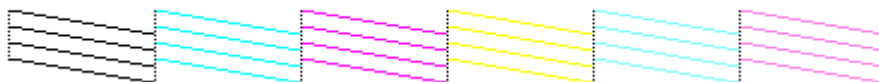


Figure 1

The nozzle check is very important. If your printer can not produce a **PERFECT** nozzle check, then there is something wrong with it and you should **not** proceed with the installation of the CFC (Continuous Flow Cartridge).

Here is what a perfect nozzle check should look like....



There are 48 segments in each section. Each one of these represents an inkjet nozzle on the print head. They must all be working properly before you proceed.

### 3. Remove the printer cover –

The printer cover un-snaps from the printer housing. There are no screws holding it. Just a little bit of force in the right direction and it pops off. Keep it near by to use to cover the printer if you plan on leaving it unattended for a long period of time, like a vacation break.

You do not have to remove the printer cover. It can be propped up by using a small piece of cork or something similar. Must be enough so the tubes do not touch anything as the cartridges traverse back and forth.

### 4. Remove Cartridge Clamps – See photo



Push the paper feed button and hold it down until the cartridge holder moves to the left. Pull the power plug out when the cartridge holder is in its left position. This will keep it from returning to the right unexpectedly.

Use a thin flat screw driver blade to remove the clamps. Be sure not to break them. You may need them some day. Remove the black clamp first. This will give you more room to remove the larger color clamp. Follow the instructions on the above photo. You may need a small flash light to help you see what is happening where the clamps attach. They will both come out clean with no damage to either the clamp or the printer, so don't be over aggressive. It is a bit of a puzzle but it can be done easily. Both the blue piece and the black piece have to be removed.

## 5. Housing Modification

A small piece of the printer housing must be removed before the installation can continue. The tubing will hit the left edge of the housing and cause major interference with the print head motion. Here is a photo of what has to be removed.



**740 and 750 Require the Same Modification (740 shown here)**

A piece 1 1/2" (left to right) by 1 3/4" (up and down) must be cut from the housing. The best way to do this is to remove the housing from the printer. There are 4 screws that must be removed to lift up the housing. Two in the back, and 2 in the front.

Do this carefully, and remember which screw goes back into which hole, they are not all the same size. With all of the screws removed, the housing can be separated from the printer. Go slow and don't force anything or break anything.

Once you have it removed you can use any tool or combination of tools needed to remove the section defined above. Keep it neat and file down any sharp edges you may have created so they will not damage the tubes, should they come in contact by accident. We used a hack saw blade and a file. Other customers have suggested a coping saw, a dremel tool or a hot wire knife. Use what ever you have, or take it to your handy neighbor with all the tools and skills. Remember, you will want to show off your installation after it is finished, so try to make it look good.

When you reinstall the housing, make sure it fits properly on the printer. It is a little tricky getting it to reseat it self before the screws can be put back in place. Patience is a virtue.

The whole process took us about 30 minutes to accomplish.

## 6. Install Tubing Brackets - See photo

There are two brackets required for the 750. The small one goes on the right,  $1\frac{3}{4}$  inches from the inside edge of the printer. The left one goes  $3\frac{3}{4}$  inches from the inside edge of the printer.



Photo of 700 same as 750

Use an alcohol swab to clean the plastic on the housing before attaching each bracket. Wipe the area dry with a paper towel after using alcohol swab. Once it goes down, it is there to stay, so don't put it in the wrong spot. **This is important.** If you have to remove it, use a wide blade screwdriver and twist it under the bracket. You can buy the white mounting tape at the hardware store if needed. Mineral sprits will remove any adhesive residue.

## 7. Prepare Cartridges for Installation

Turn off the printer power. Move the cartridge lock lever found under the cartridge holder towards you. This will allow the cartridges to move back and forth freely by hand.

**Do not remove foil pull tabs from top of cartridges. This is important.**

Insert the cartridges into the cartridge holder. Make sure the black felt pads are on the cartridges. There should be 2 on the black cartridge and 2 on the color cartridge. When you insert the cartridges be careful that the felt pads do not come off or change position. You will have to insert the cartridge slowly to get a nice tight fit. Make sure the cartridges are down all the way and seated firmly on the bottom of the cartridge holder. The color cartridge will stick up a little above the black cartridge. These felt pads will prevent the cartridge from coming loose or from being pulled out by the tension on the tubes.

**Do not lift the cartridges off the posts or out of the cartridge holder once they are down. This will introduce a large air pocket into the print heads and may prevent the printer from working properly. This is very important.**

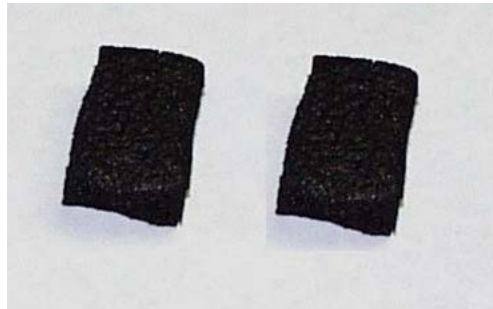
#### **8. Attach Ribbon Tube to Bracket**

Insert tubing into the bracket. Do not twist the tubes. Make sure the tubing is secure and all the way down into the bracket. Pull the tubing through the bracket to take up the slack. Use some rubbing alcohol to lubricate the tubes and the inside of the bracket so they will slide. You will have to make some adjustments so that the tube is not too tight when the carts are in the left most position. Move the cartridges from left to right by hand, the tubing should not touch the bottom of the carriage and it should not be too tight when the cartridges are at the extreme left or right. Make adjustments in the position of the tubing in the bracket until you are satisfied that you have found the optimum position.

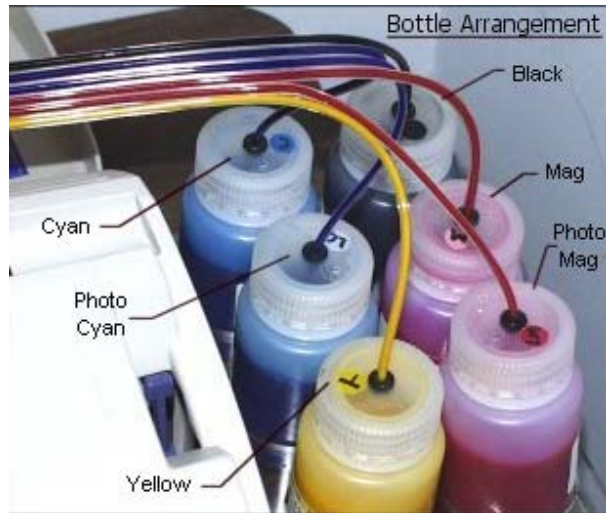
When you have the right spot, mark the tubes with a magic marker. The tubes should now make a large arc as the carriage moves from left to right and back again. They should not touch anything during this motion.

#### **9. Install the Switch Activators**

These two pieces of rigid foam are the Switch Activators (see photo). Push them down into the front of the cartridge holder, where the end of the clamp previously went. Don't press too hard or they will not work. They must be inserted deep to activate the switch. They are tight enough to stay in place by themselves, no tape is necessary.



## 10. Set up the ink bottles



Put the tops that have the drilled holes in them, on the 4 oz bottles of ink. Put the ink bottles in the acrylic tray as shown in the above photo. Position is not critical. Check to verify that there is a vent hole in each of the tops to let air into the bottles. If any of the vent holes are missing, you will have to make one using a drill. **This is important.**

## 11. Insert the tubes into the bottles

Trim the length of the tubes so they will just reach the bottom of the bottles. Don't cut them too short. Don't leave them too long. They must come off the printer and make a turn into the bottles without rising up. If they rise up before going into the bottle, then trim them so this does not happen. Cut the ends of the tube on a diagonal so they will feed in the hole on the bottle caps.

Make a black mark on the ends of the tubes, 3.5 to 4.0 inches from the end of each tube. Use black magic marker and a ruler and make a mark or line on each tube, 3.5 inches from the end. **This is important.**

It is very important to get the right tube into the right color bottle or the cartridges will be ruined. Check the label on the cartridge and trace down the yellow tube from the cartridge to the end of the tube. The yellow tube is the one closest to you as you look at the cartridges in the printer.

If you are installing MIS Quadtone inks, use the diagram below to translate from color to percent black.

Yellow	= 50%	Magenta	= 75%	Cyan	= 25%
Photo Mag	= 45%	Photo Cyan	= 15%	Black Cart	= 100%

Insert the end of the yellow tube through the hole in the yellow ink bottle. Keep pushing it down into the bottle until the black mark has entered the top. Stop there, that puts 3.5 inches of tube inside the bottle, which is perfect.

Now do the rest of the tubes, being careful to get the right tube into the right colored bottle of ink.

You can rearrange the bottles if you find a neater sequence to keep the tubes from tangling. You can also separate the tubing from the ribbon by pulling them apart. Do what ever you have to do to get a neat arrangement.

The ink bottle tray must be on the same surface as the printer. Do not elevate the tray or set it below the printer surface. Put the tray in a position so that the ribbon tubing is not touching the paper in the feed tray.

If the bottles are too high, the ink will flood the print head and it will not work. If the bottles are too low, the print head will not have enough power to pull up the ink and it will not work. The best level for the bottles is the same level that the printer is sitting on.

## 12. Establish Working Condition of the Cartridges

At this point, the tubing may be partially full and the ends have been installed in the ink bottles, and the **printer power is off**.

Make sure the cartridges are on the **far right** of the printer, up against the stop. If they are, then turn on the printer power. The printer should do a cleaning cycle and then become idle after a few minutes.

Bring up the MIS purging image (purge6.tif) using Photoshop, Paintshop Pro, Corel or any graphics program. This image and some others, are on the diskette that came with the CFC. If you don't have this image, you can download it from the MIS website ([www.missupply.com](http://www.missupply.com)), it is on the ARCHIVAL / PURGING page.

Assuming you have the file loaded, go to **file** and click on **print**, when the printer dialog box comes up, click on **properties**, then click on the **utilities** tab. See Figure 1 on the first page.

Run a nozzle check. It most likely will not be acceptable.

Run the first cleaning cycle, then another nozzle check. You should see the ink begin to climb up the tubes.

Run second cleaning cycle, then another nozzle check. On the second cleaning cycle there is about 7 seconds worth of pumping and the ink should travel several inches up the tubes.

If the nozzle check is good, skip the third cleaning cycle.  
If necessary, run a third cleaning cycle, then another Nozzle check.

If the nozzle check is **not** perfect, print one page of the purging image (purge6.tif) then run a nozzle check. If it is not perfect run up to 3 more nozzle check-cleaning cycles until you get a good nozzle check. After 3 cleaning cycles, print another page of the purging image.

### 13. Fill Tubes With Ink by printing bar charts

Now that you have a good nozzle check, print 10 copies of the purging image, purge6.tif. After the 10 copies have finished, run a nozzle check and a cleaning cycle, then another nozzle check and cleaning cycle. After the 2<sup>nd</sup> cleaning cycle, run a nozzle check. If it is good, then print 10 more copies of the purging image. Repeat this process until the ink has reached the cartridges.

If all went well, you are almost finished. You can print some images and use the printer like you normally would use it. If you see any banding, run a couple of nozzle check – cleaning cycles. It will clear up.

Don't be alarmed if the ink is not right up to the cartridges. The ink can retract a little bit, as much as 4 inches back from the cartridges. This is normal. When you start to print again the ink will be drawn into the cartridges and it will function normally.

In the morning, if you see the ink has retracted all the way back to the bottles, on any of the tubes, **this is a problem**. It means there is an air leak. There is no fix for this, other than a new CFC. We will replace the CFC at no cost if this occurs.

You should enjoy printing with a minimum of problems. Occasionally you will have to run a couple of cleaning cycles, just like you would have to without the CFC. Always make sure you have a perfect nozzle check before printing images. The bottles hold approximately 12 cartridges full of ink, when they start to get low, remove the top and add more ink. There is no vacuum in the bottles, they are vented to atmosphere. The tops can be removed at any time.

#### Resetting the Out of Ink Switches –

On the Photo 750 printer there are two switches in the front of the cartridge holder. These switches get released and then pushed in each time you remove the Switch Activators (previously done by the cartridge clamps). These switches control the lights on the front panel of the printer. When an out of ink condition occurs, the lights come on and the printer will not print again until the switches are reset.

**Removing the cartridges must be avoided.** When the cartridges are lifted off of the printer posts, inside the cartridge holder, an air pocket forms in the prechamber of the cartridge. This air pocket then gets sucked in by the print head and requires a couple of cleaning cycles to clear it out, if you are lucky. Sometimes you can not recover unless you install a brand new cartridge. It can be a major problem for the CFS.

Hold the paper feed button on the printer for 3 seconds until the cartridges begin to move to the left position. Remove the **Switch Activators** (not the cartridges) and put them right back in position, this resets the switches. Always do both the color and the black. The light or lights may not go off. Push the paper feed button again and the cartridges will return to the right, the printer will run one cleaning cycle and the lights will go off. If this does not happen, you do not have the Switch Activators deep enough.

Let it finish the cleaning cycle, then run a nozzle check. If the nozzle check is good, you are all set to continue printing. If the nozzle check is not good, then you will have to run additional “nozzle check – cleaning cycles”. Remember only do 3, then print something and do 3 more if you have to. Always stop when you get a good nozzle check. If after several cleaning cycles, you are still having problems, let the printer sit for about 6 to 8 hours and then try again.

## WORDS OF WISDOM FOR USING YOUR NEW CONTINUOUS FLOW SYSTEM

Each morning before you print anything, run a NOZZLE CHECK.

Find this on Control Panel → Printers → Right Click on printer icon → click on PROPERTIES → click on UTILITY tab → click on NOZZLE CHECK.

If the Nozzle check is not perfect, every horizontal line segment must be there, then run up to 3 Head Cleaning Cycles. Check the Nozzles after each head cleaning. If it is OK, don't run extra cleaning cycles. After 3 cleaning cycles, print 2 copies of the bar chart... **purge6.tif**. If you need to, you can run 3 more cleaning cycles. Printing something in between prevents the print head from losing prime.

When the printer stops and one of the red lights is on, this indicates that the printer **thinks** one of the cartridges are empty. Follow the instructions on the previous page, "**Resetting the Out of Ink Switches –**"

If you have a dusty environment, reattach the printer cover. Leave it up when the printer is running. Put it down when you are not using the printer. This will help keep the dust from accumulating.

Don't let your printer set for long periods of time without printing something. The ink in the print heads can dry, especially if you are in a hot dry climate.

The ink in the tubes will retract after the printer is idle for an hour or so. This is normal. The inks may move back about 2 or 3 inches. Don't worry about it, they will be pulled up when you start printing. The weather will also cause the inks to change position. When a high pressure front is present, the inks will be closer to the cartridges. When a low pressure front is present, the inks will move back. The inks should **never** return all the way to the bottle leaving the tubes empty. This indicates that there is an air leak. Call us if this happens.

For printing images, always use a high quality inkjet paper, either matte finish or glossy. Adjust your print settings to 720 dpi or 1440 and select the proper paper type.

Don't let the ink bottles go empty. When they start to get low, like 1/4 or less, order replacement bottles from MIS. If you order 4 oz bottles of ink, you can just unscrew the empty ones and screw the full ones back on the cap. Having the tubes out of the ink does not hurt anything as long as the printer is not printing. For better economy order an extra set of 4 oz bottles and bulk ink, in pints or gallons.

For additional information on your CFS, check our CFS page on the webstie...

[www.inksupply.com](http://www.inksupply.com)

Please feel free to call (248-814-9398) for technical assistance at any time or email us (CFS@inksupply.com). We will be glad to help. We have been working with these for about a year now and we have quite a bit of experience.