INKSUPPLY.COM

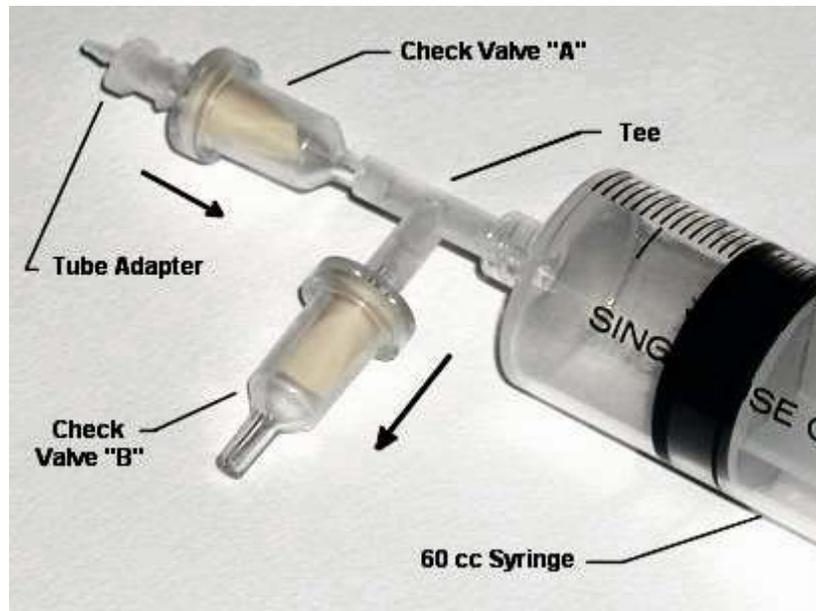**Your Low Cost Printing Solution Since 1994**

Installation Instructions: Epson 880 CFS

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. If you have one of our tube pinchers, use it here instead of manually pinching off the tube.

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.
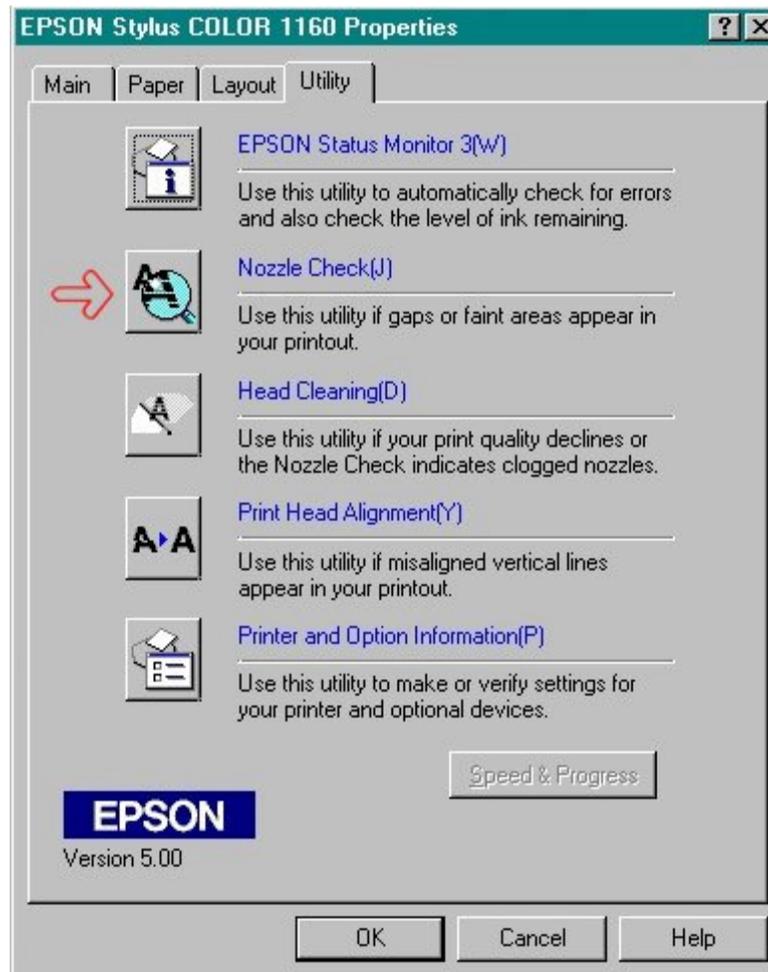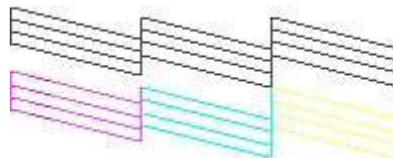
The nozzle check is very important. If your printer can not produce a **PERFECT** nozzle check, then there is something wrong with it and you should **not** proceed with the installation of the CFS.
Here is what a perfect nozzle check should look like….

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.

4. **Remove Cartridge Clamps – See photo**

Insert a thin screw driver blade at the white line to force blue part of clamp to the outside and then pull forward

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. Don't plug the power in until later.

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. **Install Tubing Bracket – on the right end of printer opening – See photo**

860 and 880 are the same

Use an alcohol swab to clean the plastic and dry it with a paper towel before attaching the bracket. Once it goes down, it is there to stay, so don't put it in the wrong spot. If you have to remove it, use a wide blade screwdriver and twist it under the bracket.

6. **Prepare Cartridges for Installation**
Put some newspaper or paper towels in front of your printer.

Insert the cartridges into the cartridge holder. The felt pads on the side of the cartridges will keep them in place. Make sure they are seated down into the cartridge holder all the way.

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.

7. **Attach Ribbon Tube to Bracket**
If the printer is unplugged, move the cartridges all the way to the right hand side before plugging the power in. With the printer power on, move the cartridges to the left position, by holding in the paper feed button for 3 seconds.

Insert tubing into the bracket so that the tube is straight and not twisted. Make sure the tubing is secure and all the way down into the bracket, use some alcohol for lubricant. Pull the tubing through the bracket to take up the slack. You will have to make some adjustments so that the tube is not to tight when the carts are in the left most position. As the cartridges traverse from left to right, the tubing should not touch the bottom of the carriage

8. **Install the Switch Activator**
The Switch Activators are made of ridged foam material (see photo). Push them down into the front of the cartridge holder, where the clamps used to snap into. When you plug the printer in, the lights on the front panel will go out. If the lights don't go out, you have not got the Switch Activators in far enough. Don't push them down too hard. This will cause the lights to come back on and defeat the purpose. Push just hard enough to get them to the bottom.
When you are ready for the cartridges to return to the right, just push the paper feed button to start the process. The printer will return the cartridges to the right and run one cleaning cycle.
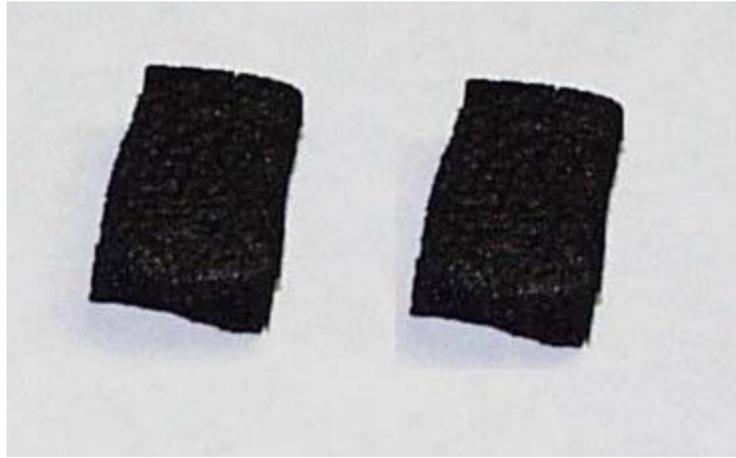
9. **Set up the ink bottles**

   Put the tops that have the holes in them, on the 4 oz bottles of ink. Put the ink bottles in the acrylic tray as shown in the above photo. 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 1/16 diameter drill.

10. **Insert the tubes into the bottles**

    Set up the bottle tray next to the right hand side of the printer. Trim the tubing length so that the tubes will make a turn into the bottle with out **rising up**. There must be 3 ¾ inch of tubing inside the bottle. The bottles are arranged in order K-C, M-Y from front to back. You just want to have a neat orderly tube arrangement. After you cut the tubes to length, use a black marker and make a mark on each tube 3 ¾ inch from the end of the tube. Insert the tubes through the larger hole in the center of the cap until the black mark is just inside the cap. **Don't cut the tubes too short.**

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 CFS 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 **Original** Quadtone inks, use the diagram below to translate from color to percent black. For the Full Spectrum Quadtones or the VM Quads, go by the label on the bottles.

100% = Black   25% = Cyan   75% = Magenta   50% = Yellow

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.

11. **Establish Working Condition of the Cartridges**
Bring up the MIS purging image (purge4.tif) using Photoshop, Paintshop Pro, Corel or any graphics program. This image and some others, are on the diskette that came with the CFS. If you don't have this image, you can download it from the MIS website (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 three pages 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 a couple of pages of the purging image.

If you have done a total of 9 cleaning cycles and the nozzle pattern is still not right, then turn off your computer, leave the printer power on and let it rest over night. The next morning, check the nozzles and do 3 cleaning cycles if necessary.

At this point, assuming you have a perfect nozzle check, the printer is ready to use.

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.

When the day is done, check your tubes. The ink should be right up to the cartridges. The next morning, the ink will have retracted 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 more than half 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 continuous flow cartridge. We will replace it 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 CFS. 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.

12. **Resetting the Out of Ink Switches –**
On the 880 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 is **not** desirable. 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. It is a pain.

Hold the paper feed button on the printer for 3 seconds. The cartridges will move to the left position. Remove the **Switch Activators** (not the cartridges) and put them right back in position, this reset the switches. The light or lights will 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.

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 some purge4 pages and do 3 more if you have to. Always stop when you get a good nozzle check.

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… purge4.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.