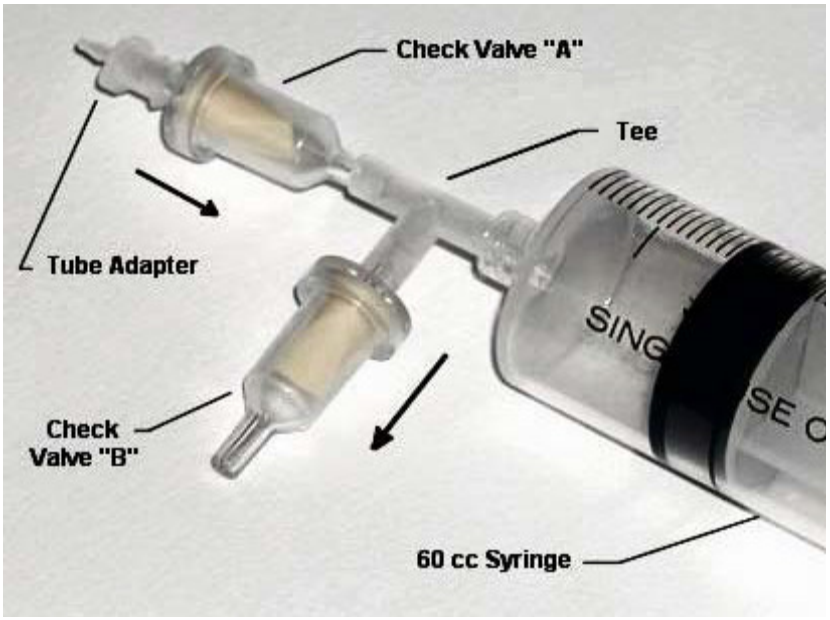
Your Low Cost Printing Solution Since 1994

Installation Instructions: Empty Epson 1160 CFS

Procedure:

1. Fill Cartridges With Ink using the vacuum pump assembly



Do not remove foil pull tabs from top of cartridges.

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 ends 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.

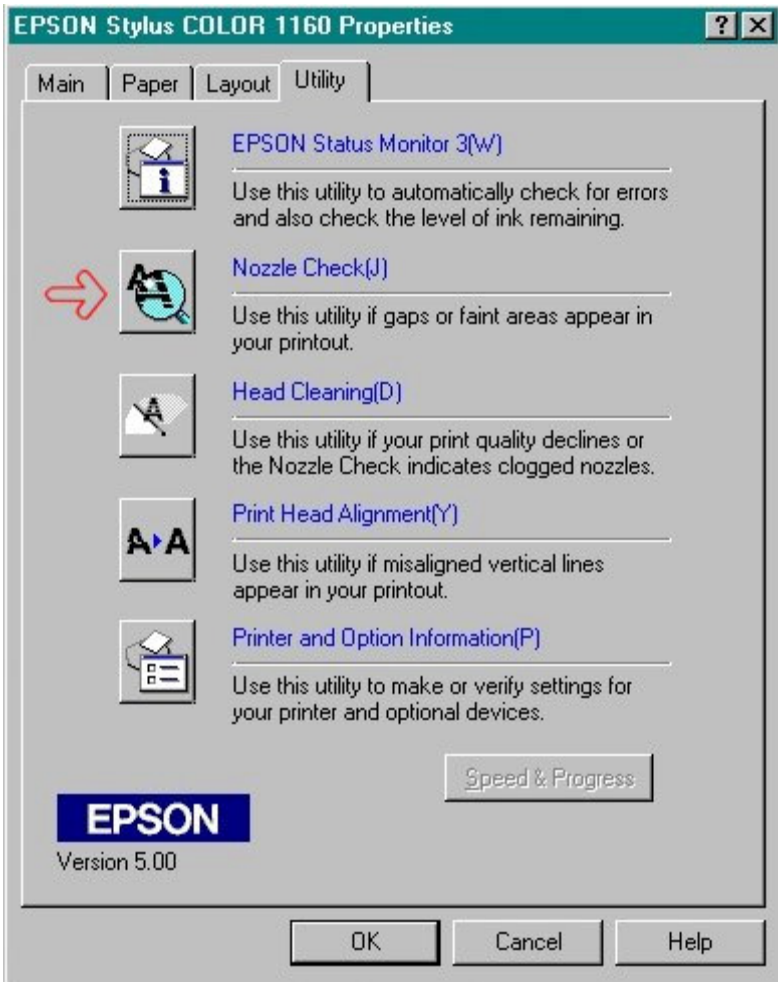
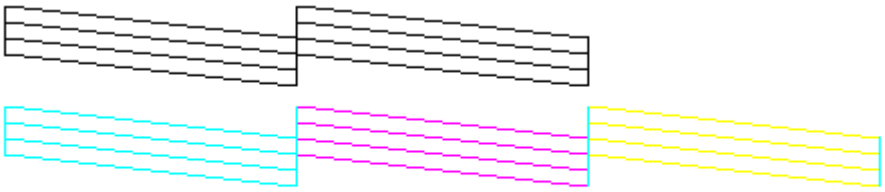


Figure 1

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 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. You do not have to remove the printer cover, but it has to be up when the printer is running.

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. 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 - 6 1/2" from right end of printer opening – See photo**

The 6 1/2" is not from the outside of the printer, but from the inside opening of the housing to the **center** of the bracket. Use an alcohol swab to clean the plastic before attaching the bracket. 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.

Note: If you have a refurbished 1160 with a housing that does not look like the one above, use the bracket with the 45 degree bend instead of the long flat bracket.

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

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. 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.

7. **Attach Ribbon Tube to Bracket**

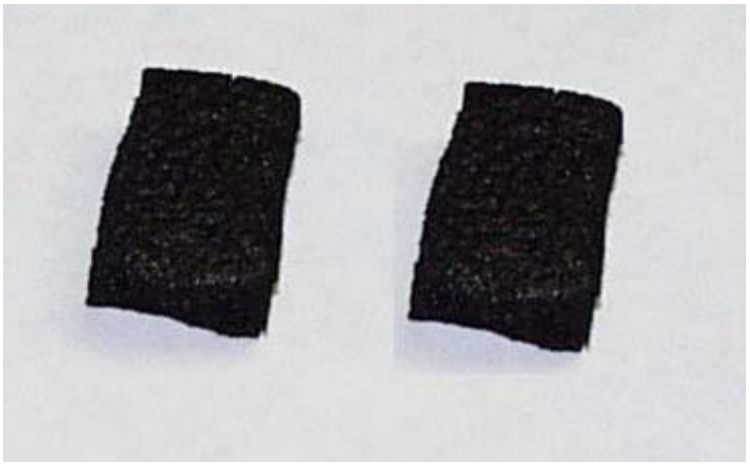
Move the cartridges to the left position, manually. Power is still off.

Insert tubing into the bracket so that the tube closest to you is in the front. This is the yellow tube. Make sure the tubing is secure and all the way into the bracket. Use some alcohol to lubricate the tubing and the bracket. 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.

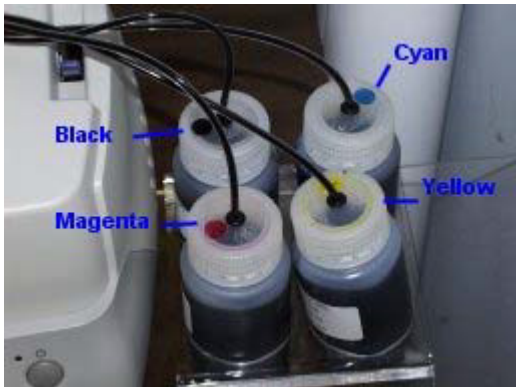
8. **Install the Switch Activator**

These two pieces of rigid foam are the Switch Activators (see photo). Push them down gently into the front of the cartridge holder, where the end of the clamp previously went. They must be inserted deep to activate the switch. They are tight enough to stay in place by themselves, no tape is necessary. If you push too hard, it will make the lights will come back on again when the power is on. Just push hard enough to activate the switch.

When you are done with the cartridges push them all the way to the right until they stop. This is important so that the belt does not jump when you turn the power back on.



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……..
100% = Black 25% = Cyan 75% = Magenta 50% = Yellow
For **Full Spectrum** Quadtone, **VM Quadtone** and color inks follow the bottle labels.

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**
    At this point, the tubing has some ink in it and the ends have been installed in the ink bottles, the switch activators are installed and the tubing bracket is installed. Now make sure the carriage is all the way to the right most position and plug the printer into the power outlet and turn on the power.

    Load the MIS purging image (purge4.tif on diskette) 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 or you have a Mac computer, you can download it from the MIS website (www.inksupply.com), it is on the bottom CFS 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 fill 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.

Print 10 pages of the purging image (purge4.tif) then run 3 more cleaning cycles, then 10 more copies of purge4. Repeat the cleaning cycles and printing of purge4 until the inks reach the cartridges. Check the nozzles. If they are perfect, you are ready to start printing. If not, run a cleaning cycle and check them again.

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.

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 get to 1/4 full, 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 1160 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.