



Your Low Cost Printing Solution Since 1994

Installation Instructions: Epson R2400 CFS



R2400 MIS CFS

Save Money and Improve Your Printing
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Materials:



Complete R1800 CFS Kit
Scissors
Measuring Tape or Ruler
Marking Pen or Pencil
Paper Towels
Alcohol or Cleaning Solution
Cartridge Set with tubes attached

Set of 4oz Inkset (C, Lc, M, Lm, Y, K, Lk)
8 Bottle Caps with Fittings
Clear Plastic Bridge Bracket with Black Velcro
1 Beige Tube Clip
8 Black Velcro Circles (Hook & Loop)

Step 1 - Check Printer Condition

If you have a brand new printer, follow the Epson instructions for setting up your printer. Use the Epson cartridges that came with the printer. Follow normal installation instructions for the software. Test the printer by printing 10 pages of the MIS purge-r800.tiff purge pattern with the printer in the text/photo quality setting. Learn how to use the Epson utilities to run a Nozzle pattern check and to run a Cleaning Cycle.

Make sure that the printer can produce a perfect nozzle pattern before proceeding with installation.

If you have been using the printer in the past, make sure it can produce a perfect nozzle pattern before proceeding with the CFS installation. If the Nozzle pattern has any gaps whatsoever, run cleaning cycles until it prints perfectly.

Step 2 – Disconnect Power from Printer

Push, but **do not hold** the INK button which is indicated by an ink drop symbol on the printer. This will move the carriage to the "replacement" position. After the carriage moves to this position, which is just slightly to the left of the parked position, **PULL THE POWER PLUG OUT OF THE WALL**. Now the carriage can be moved from side to side by hand. *We will tell you later when to reattach the printer power plug.*

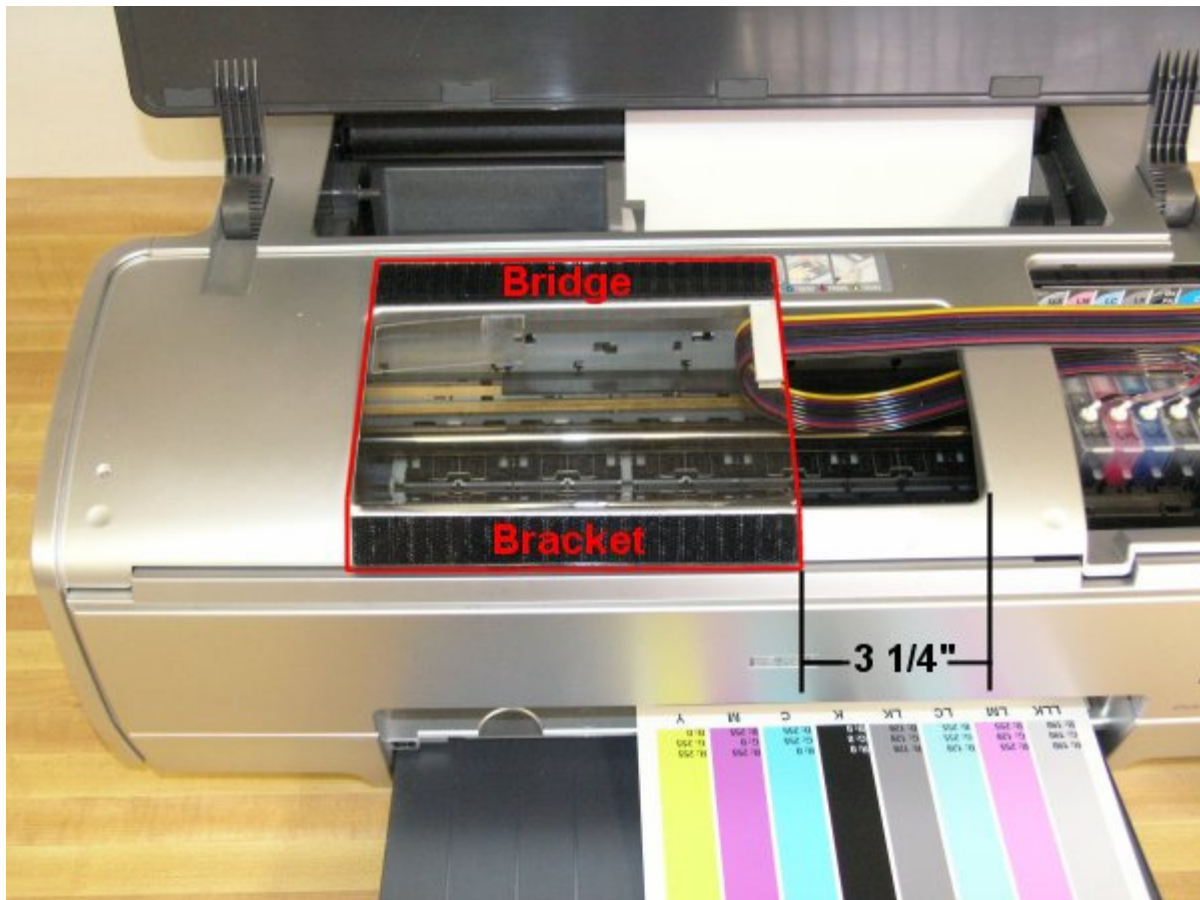
Step 3 – Remove Gray Cartridge Clamp

Remove the gray cartridge clamp from the left side. Use a thin flat screw driver blade to remove the clamp. See photo below. Be sure not to break the clamp. You may need it some day. Place the screw driver between the gray clamp and black cartridge carriage. Gently pry the two pieces apart while pulling the clamp forward from where it attaches to the carriage. You may need a small flash light to help you see what is happening where the clamp attaches. It will come out cleanly with no damage to either the clamp or the printer, so don't be over aggressive.



Step 4 – Install Bridge Bracket

Use your alcohol or cleaning solution and clean the top of the printer housing where the clear plastic Bridge Bracket is going to attach. Make sure you wipe this area clean and dry before proceeding. See photo below.



Bridge Bracket positioned to the left of the opening

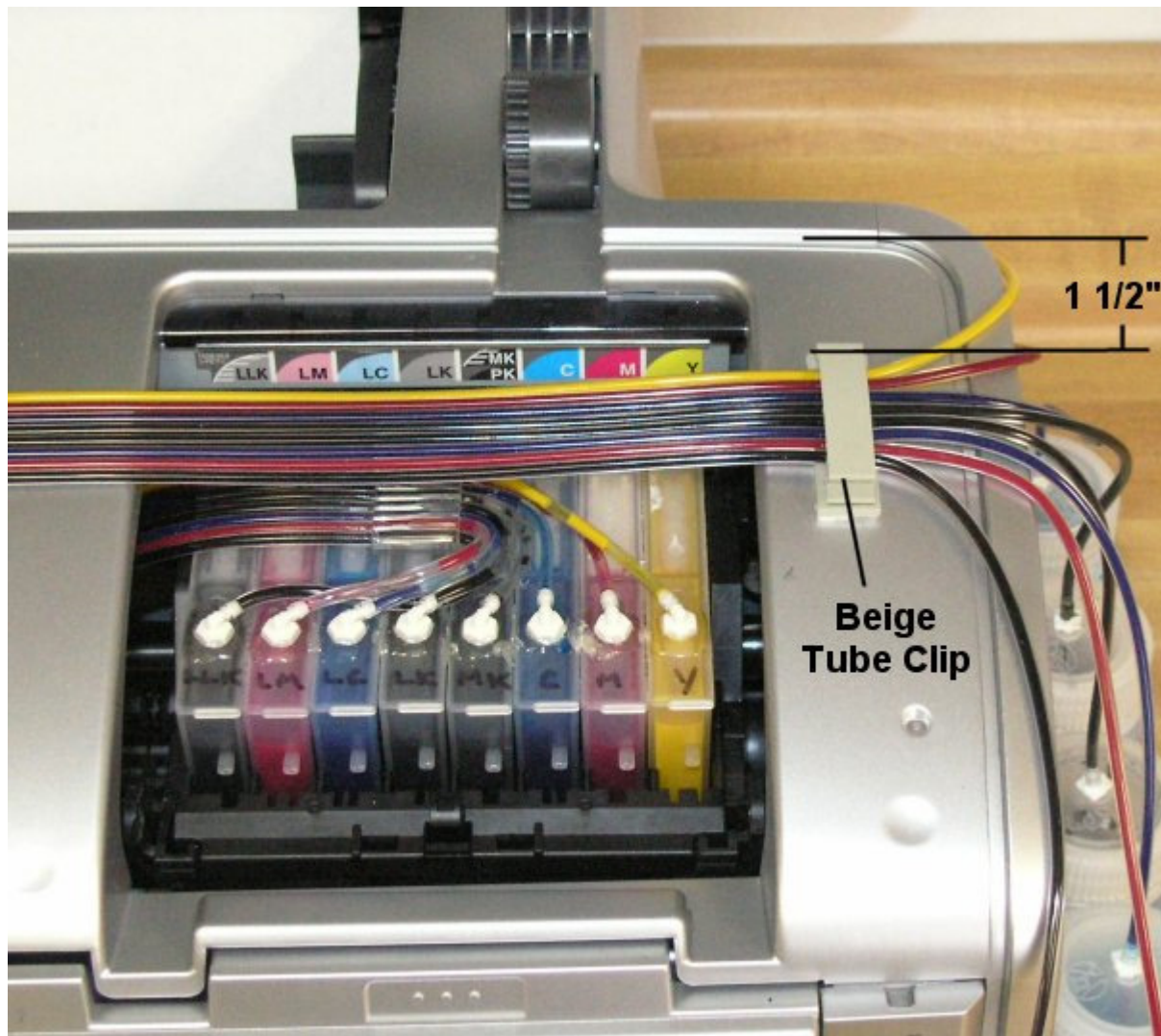
The Bridge Bracket will install flush with the left edge of the opening on the printer housing which will place the bracket $3\frac{1}{4}$ " from the right side of the opening in the printer housing as shown in the photo above. Check this position with a ruler.

Next, you will notice that the Bridge Bracket has both the Hook and Loop Velcro on it. The Hook portion of the Velcro is going to end up attached to your printer. The Loop portion will remain on the Bridge Bracket. Do not separate the Hook from the Loop, keep them together just like they were when delivered. Remove the adhesive tape from the Hook portion of the Velcro. Keep it attached to the Loop portion. Carefully install the Bridge Bracket in its proper location as shown above. **The tube clip will be on the under side of the Bracket on the right, not on top.** Keep it straight and press down firmly all along the edges. When you lift up on the Bridge Bracket, after pressing it down, the Hook Velcro will remain in place on the printer and the loop will stay attached to the Bridge Bracket.

Open the tube clip on the Bridge Bracket by pressing on the end of the clip. Press firmly, it takes a fair amount of pressure to open the clip. Put the Bridge Bracket back into its position with the beige clip open.

Step 5 - Install Tube Clip

The tube clip goes on the right edge of the printer housing. Clean this area with alcohol and wipe dry with paper towel.



Tube Clip image was taken after CFS installation

Use your pencil and make a mark 1.5 inches from the recessed edge in the housing as shown in the photo above. Remove the paper backing from the adhesive and place the clip as shown. Left to right position is not critical, however try to keep the clip close to center left to right on the housing recess as shown above or approx 5/8" from either side.

Step 6 - Install Cartridges (Prefilled Systems)

Remove the original Epson cartridges from the printer (power is disconnected). Set them aside on some paper towel. Do not throw away as you may need them someday. Wrap in a zip-lock plastic bag for to keep them from getting lost.

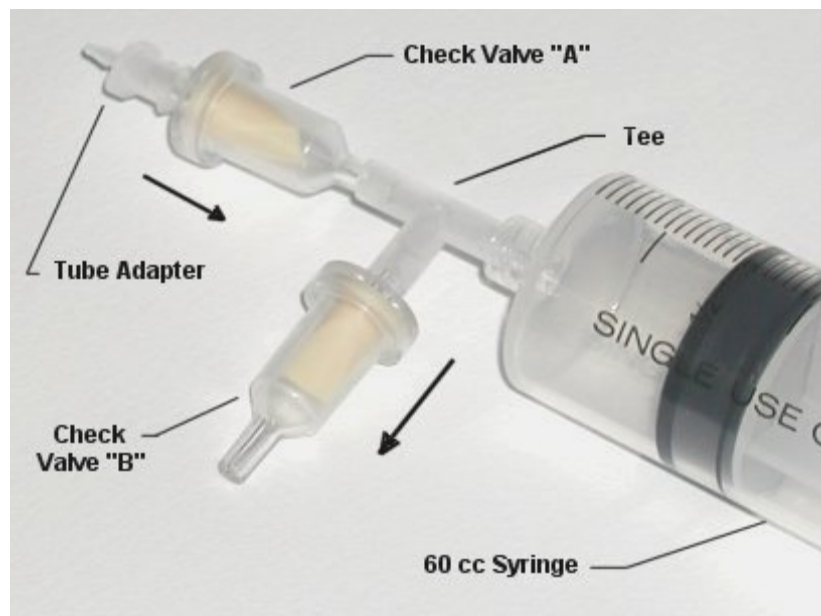
Put the CFS cartridges into the printer. Carefully align them, Yellow is on left and Gloss Optimizer on right. Do not scramble or let the tubes get all mixed up. Push down on the cartridges until they click into position. **This is very important.** When all of the cartridges are installed, they should look like the photo above.

Step 7 - Install Cartridges (Empty Systems)

Remove the caps from the ink bottles and replace them with the caps from the package supplied with your CFS system.



The vacuum pump must be assembled as shown in the below photo. Check valve direction is critical.



- Attach the tube from the chamber that is going to be filled to the tube adapter on the vacuum pump.

- Pull back on the plunger, all the way. It takes a fair amount of force.
- Push the plunger back down to the bottom to expel air.
- Pull back on the plunger again, all the way and push down to expel air.
- After 3 or 4 pulls, the plunger should snap to the bottom if let go.
- Let the vacuum pump rest for about one minute. This is a leak test.
- After one minute, pull back on the plunger and let go. It should snap to the bottom on its own.

If it does not go all the way down, then there may be a leak in one of the check valves or the CFS cart. Do not proceed until you can pass the leak test.

Note, at no time does ink ever enter into the vacuum pump, only air.

With the vacuum pump fully pumped up and maximum vacuum achieved, do the following to fill cartridge.

- Grab the tube, about 1 inch up from the vacuum pump below the tube adapter fitting and fold it in half or pinch it.
- This traps the vacuum in the tube and CFS. Now remove the tube from the vacuum pump without letting the tube unfold. Keep pinching the tube. This is important.
- Plug the tube onto the fitting on the top of the **correct ink bottle** for the position being filled.
- Release the fold in the tube. Ink should rush up the tube and into the cartridge.
- The ink level in the bottle should go down about 1/2 inch or more depending on cartridge size.
- After about 30 seconds the cartridge will be full.

When the process is complete, fill the next chamber following the same procedure, but with a different color. Needless to say, that if you put the wrong color ink in the wrong chamber you will ruin the CFS cartridge, and they will need to be replaced.

Remove the original Epson cartridges from the printer (power is disconnected). Set them aside on some paper towel. Do not throw away as you may need them someday. Wrap in a zip-lock plastic bag for safe keeping.

Put the CFS cartridges into the printer. Carefully align them, Yellow is on left and Gloss Optimizer on right. Do not scramble or let the tubes get all mixed up. Push down on the cartridges until they click into position. **This is very important.** When all of the cartridges are installed, they should look like the photo below.

Step 8 – Tubing Installation

Slide the printer carriage all of the way to the left side of the printer housing. Pull the tubing to the right as to eliminate any slack in the tubes, without pulling tight enough to

move the print carriage. Clip the tubing into the beige clip on the underside of the Bridge Bracket in such a way as to maintain enough tension on the tubes that they do not droop, but also do not pull the printer carriage away from the left side of the printer housing.

Caution: Do not break or damage the tube clip on the underside of the Bridge Bracket during tubing installation. If this clip breaks you must purchase a new one.

Test the carriage travel to make sure it can move all the way to the far right and to the far left of the printer without having the tubes causing interference. Move the print head and cartridges by hand to do this. If necessary, adjust the tube position in the beige tube clip under the Bridge Bracket. Make sure the Bridge Bracket is securely held down by the Velcro.

The tubes should curl under the Bridge Bracket and remain straight while the print head moves back and forth.

Make sure the tubes don't get directed on an angle coming out of the tube clips. Next, lay the tubes into the tube clip on the right edge of the printer and gently pull the tubes taut so all sag is eliminated. Then close the beige tube clip. The yellow tube should be in the front (toward you) and the Gloss Optimizer tube in back. Trace these tubes back to the cartridges to verify this.

Step 9 - Set up the Ink Bottles

Find the ink bottles and the black Velcro Circles. Clean the back of each bottle with alcohol and wipe dry. Attach a Velcro Loop circle to the back of each bottle. Attach the mating Velcro circle to the piece on the bottle. Peel off the backing on the mating Velcro so the adhesive is exposed.

Unless you filled the CFS System in **Step 5** take off the shipping caps and install the caps with fittings. Each cap should have a fitting in the center and a small vent hole in the Nalgene logo. Make sure the **vent hole** is there and that it is not blocked or obstructed.

Yellow - Magenta - Cyan - Black - Light Black - Light Cyan - Light Magenta - Light Black

When you press the exposed Velcro adhesive against the printer, the hook portion will stick to the printer and this becomes the permanent position for the bottle, so choose your bottle positions carefully.



Velcro attaches bottles to printer

The tube lengths will need to be trimmed so that the tube will connect to the fitting on top of the bottle without having a large amount of slack. The best way to accomplish this is to pull the tube over next to the bottle and mark the tube with a ball point pen at the point where the tube and the bottom of the bottle cap meet.

Set up the bottles as shown, and work with one tube at a time, starting with the Gloss Optimizer tube. Test the length of this tube by placing it near the bottle, on the outside, and see if it is going to reach the bottom of the bottle cap. It should not be too short. If it looks like it is going to be too long, then mark the tube with a ballpoint pen at the spot you think it should be cut.

Remove the white plug from the end of the tube and peel the tube back to the Beige Clip located on the right side of the printer housing. Next, cut the tube with scissors where you placed the mark and immediately connect it to the bottle. **SAVE THE WHITE PLUGS** as they will be needed if you ever remove the CFS System from your printer.

Make sure the correct color tube goes onto the correct color ink bottle. A mistake here will ruin the whole system and you will need to purchase an empty cartridge set w/ tubes.

The tubes should make a nice smooth curve to the bottles. Don't let your tubes make any vertical loops. The transition into the bottles should be smooth. The fully installed system should now look like the photo below.



Fully Installed CFS

Step 10 - Testing the System

Push the cartridges to the far right and plug the printer back in to a wall outlet. **Turn on the power** on the front of the printer if needed. Have your computer and graphics program up and ready to go.

The printer should come on and move back and forth a few times and perform an initial cleaning cycle. When it stops moving, only the green light should be on.

A red light at this point is not a good thing. This may indicate that one of the cartridges is not seated all the way down. Go back to Step 5 and make sure that all of the cartridges have clicked into position. Check each one with a red light, lifting it just slightly if needed, and reseal them until they click.

Before printing, use the printer properties and Epson utilities to check the nozzles. The nozzle pattern may not be perfect at this point.

Run 3 cleaning cycles if necessary to achieve a perfect nozzle pattern. When all the nozzles are present, print a copy of the purge8.tiff. As long as the print is satisfactory and all the nozzles are present, there is no need to do any further cleaning cycles.

The tubes are normally full, but if your tubes are partially empty, don't worry about the inks, it will take several (20 or more) prints for the inks to reach the cartridge and fill any gaps you may have in the tubes. There is no particular order in which they will get there. Gloss Optimizer is always last and may not get there for a long time, depending on what you are printing, as Gloss Optimizer is very seldom used.

The Care and Feeding of a CFS -

There are a couple of things you should know that will keep your system running trouble free.

These systems work best if they are used frequently, daily is best, but every few days is more important. If you are an infrequent printer or only print once or twice a week, then you can install our AUTOPRINT program (download it for free from our CFS page). Autoprint will make a printout using our Purge-R800 image at any interval as long as you leave your computer and printer turned on.

If you have to do cleaning cycles, do them in groups of 3 and be certain to print something, we recommend a copy of the Purge-R800 pattern after every 3 cleaning cycles. This resets the printer firmware so that you get a medium, long, and short duration cleaning cycle. If you don't do this, you will only get short cleaning cycles after the 3rd one. Running several short cleaning cycles can cause nozzles to drop out. If you are still having problems after about 3 or 4 sets of 3 cleanings, then let the printer rest for a few hours or overnight and try again later. This has worked on many Epson printers in the past. It gives the air bubbles in the ink a chance to rise to the surface and get out of the printhead.

Don't let your ink bottles run empty. Refill them when they are at the 1/4 full level. Before pouring new ink into your bottle, transfer the ink that is left into a clean glass or jar. Then wash out the CFS ink bottle with soap and water. Then refill with leftover ink and new ink. This keeps algae from building up on the walls of the bottle and causing premature ink failure. An easier method is to order a spare set of empty bottles, and keep them on hand, clean and ready to use.

If an ink does not print. Remove the tube from the bottle, lift the cartridge out, and suck out a little ink, not more than 2 cc, to eliminate any air locks that may be present. Use the syringe and bottom fill adapter, then reinstall. If you have all colors printing but you are having problems getting a perfect nozzle pattern after several cleaning cycles, then let the printer rest overnight and try a few cleaning cycles in the morning.

For additional technical assistance please read our *CFS Troubleshooting Guide* or visit our online HelpDesk.