

PRINT IMAGE QUALITY PROBLEMS – How to determine cause and solution

When the image quality of your output becomes unacceptable, there is often a fairly simple solution or fix. Determining the true source of the flaw is key, and not very difficult to do. If you see voids, light print, black vertical lines, smudges, random piles of toner, fuzzy characters, etc., you can often find the cause by the process of elimination. First, a couple definitions and a primer on how your CF1000 PLUS™ works:

The **Developer** is the toner hopper that locks in place with green hooks right behind the front cover of the printer. Toner can be seen on the revolving sleeve at its lower rear.

The **OPC** (Organic Photo Conductor) **Drum** is the black plastic and green aluminum unit positioned behind the Developer. Both items are consumables that will slowly wear out.

The **Printer** works by shooting a laser beam through a narrow window in the top cover of the printer. It paints a picture of what you want to print on the green face of the OPC drum. As the drum rolls past the Developer sleeve, toner is attracted to the OPC in the desired image. An electrical charge is put on the Transfer Corona Wire in the base of the printer, and as your paper or label passes by, the toner is drawn from the OPC drum to the paper just as it was originally painted. The image then passes through the Fuser, which uses heat and pressure to bond the toner to the paper.

After thousands and thousands of pages or labels have been printed as above, you may encounter printing defects in a certain area on your page or even a flaw across the entire page or label. Normally, this is a signal that a **consumable should be replaced**, or something in the printer **should be cleaned**. Here is what you might see and why:

Void - A void is a white spot, line, or area that should be black. It can be temporary, intermittent, might move across your page, or always appear in the same area, or get progressively worse. It is normally caused by the Developer, Transfer Corona Wire, or Fuser Roller. Use our **“Stop & Look”** procedure below to pinpoint the source.

Light Print – The printed image, or parts of it, are too light. The probable cause is that your Toner Bias has been turned too low (green dial inside on left should be at “3” or so), or your Transfer Corona Wire is dirty. Again, see **“Stop & Look”** below.

Clumps of toner on paper – These small drops or piles of toner appear intermittently in a relatively straight line down the page as it travels through the printer. In most cases, a paper plug or similar debris has been caught inside the OPC Drum and has wedged itself between the drum face and the seal that runs from end-to-end on the underside of the OPC. Toner builds up behind this “dam” and intermittently spills out around it.

The typical fix is to briefly turn the drum in the opposite direction and/or and **gently** slide a business card or doubled over piece of paper between the drum face and the seal. This procedure will often dislodge whatever is causing the blockage, and it will eventually work its way to the waste toner bottle. Note: Any “dings” on the green roller will result in black marks of the same size and shape every five inches down your page or label.

Sharp black lines or streaks – Caused by debris on the charge corona wire which is under the black plastic cover on the top of the OPC Drum. Use the brush that is attached right beside it, and gently clean the wire.

Stop & Look Procedure – Send a short job to the printer. While it is still printing, turn the printer off. Open the top cover and you will be able to see the unfused image on the paper between the OPC and the fuser. You can now start the process of elimination:

If the image looks good inside the printer, but the fused image coming out of the printer looks bad, your problem is with the fuser. The fuser roller probably has wear lines or areas on it that correspond to your image quality issue. If you are a Hot Spare customer, install your loaner fuser and advise us. If not, contact us and we will help.

If the image does not look good inside the printer, carefully lift the OPC out of the printer and look at the image on the drum.

If the image looks good on the drum, but not good on the paper, the Transfer Corona Assembly is probably at fault. Usually it's the Corona Wire itself that has gotten dirty or covered with paper plugs or dust. Turn the printer back on until the fuser unlocks, then **turn it off and unplug it**. Remove your Developer and paper and you will see an aluminum trough with a clear piece of plastic running left-to-right across the width of the printer. The corona wire, which resembles a human hair, is right under the leading edge of the clear plastic piece. **Gently and carefully** rub a Q-Tip / cotton swab soaked in alcohol across the wire until it looks clean (gold). Clean out anything left in the trough.

If the image does not look good on the drum, the problem is with the Developer, the OPC Drum itself, or the Cover Glass that the laser beam has to go through. If you have a different OPC Drum, install it and see if the problem goes away. If not, try the same thing with a different Developer. You can also use the process of elimination to determine which component is the cause:

Remove the **Developer** from the printer and look at the toner-covered sleeve at the rear of it. It should be uniformly black from edge to edge. If your image problem is a white vertical line or an area of very light print, you may see a matching area on the sleeve that looks gray or silver rather than black. If so, some kind of contaminant, such as a plug, has wedged itself between the sleeve and the doctor blade. It may be possible to eject it by putting your thumbs on the small white gears at each end of the sleeve, and turning the gears toward your body. Toner will build up on the sleeve and you may see and be able to remove whatever is causing the blockage. Before putting the Developer back into the printer, turn the gears away from you so that the excess toner will go back inside.

The **OPC Drum** is rated at 30,000 pages (330,000 inches) and will eventually wear out. Put a new, or at least different, drum in the printer. If the resulting image is good, your problem was a worn out OPC Drum.

If your OPC and Developer are both in good shape, but the image on the drum is not sharp and clear, then you probably have a dirty or smeared **Cover Glass** that the laser beam must go through in order to paint the image on your OPC Drum. The Cover Glass is on the underside of the printer's top cover. It's the piece of glass (1/8th x 8") about an inch in front of the strip of foam that runs between two silver clips. You do not want to smear this piece of glass, so the best way to clean it is to use lens cleaner on a swab or greaseless piece of material. **Wipe gently** in one direction only.