

Ink Fill and Use Instructions for the Refillable Cartridge System for Epson™ 4800 & 4880 Printers

The instructions below describe how to fill and use refillable cartridges, in general terms. Color managed work flows are not discussed here, nor are instructions for using Piezography inks. Filling and using these cartridges is easy, provided you are prepared before you begin and follow the instructions below. A one liter ink bottle contains enough ink to fill a cartridge about four times, the 16oz bottles will fill a cartridge about two times and 8oz bottle is enough ink to fill a cartridge once. Additional bottles of ink are available from www.inkjetmall.com. For further information on ConeColor inks, visit www.conecolor.com. An info sheet for ConeColor and Piezography K7 ink use is located at the end of these instructions, please refer to it before filling the cartridges with ink.

Background Information to Read Before Beginning:

Cartridges are sold individually, as sets and with ink bottles. Refer to the item description to know what is included with the specific item you purchased.

1. Before beginning, make sure to have the following items on hand:

- Ink bottle(s), which can be ordered from www.inkjetmall.com.
- Empty refillable cartridge(s). **Each cartridge must have a dual fill/air vent plug on the top and chip attached.**
- Funnel(s) for filling and refilling cartridges with ink.
- A pair of thin rubber gloves to wear when filling or refilling cartridges.
- A 10ml syringe and priming tip to prime cartridge exit channel with ink before installing into the printer.
- A table or work surface large enough to hold all cartridges and ink bottles. If you wish, cover the table with newspapers or a plastic sheet to protect it from ink spills.
- Work near a sink for easy cleanup.
- A roll of paper towels.
- A bottle of Windex or other glass cleaner.
- Printer: before you begin, verify that all positions in the nozzle check pattern are fully printing and your printer is in perfect working order. Fix any printing related problems before proceeding.
- A chip resetter is needed when a cartridge reads empty to make it read full again- but is NOT necessary when installing new cartridges. Chip resetters are available from Inkjetmall.

2. Treating and avoiding ink spills:

- If you spill ink, wipe it up as quickly as possible. Blot up ink with paper towels, then spray glass cleaner and wipe the surface with a paper towel.
- Ink spilled on clothing or other fabric, on carpets or on porous surfaces like wood or unglazed ceramic tiles will likely cause permanent stains. Keep this in mind as you choose the workspace area and clothing you wear.
- If you spill ink on the outside of a cartridge during filling, wipe the ink off with a paper towel, rather than rinsing it off, to avoid getting water into the cartridge.
- If you spill ink on your skin it will temporarily stain. Clean the ink off with water and an abrasive soap, such as “Lava” soap or with regular soap using a rough sponge. Thin rubber gloves are recommended when filling ink cartridges because accidents can happen.

Procedure for Filling Cartridges:

1. If you are filling cartridges for the first time, unwrap them and inspect them for damage. Contact Inkjetmall if you suspect a cartridge is damaged. **Make sure the chip is attached flat and straight on each cartridge.** Also, make sure there is a plug in the fill and air vent holes on top of each cartridge. If not, please check inside the cartridge wrapping before you discard it. Verify you have the correct black ink cartridge necessary for the Photo or Matte black ink you will be using. For Piezography inks, you can use whichever black cartridge that your printer is currently using to avoid having to do the “black ink change” procedure. **NOTE:** the Matte Black cartridge number ends in “8” and the Photo Black cartridge number ends in “1”.
2. Arrange the ink bottles on your work surface. Do not open them yet. For ConeColor, make sure that you have the correct type of black ink you want to use, either Matte or Photo Black. For Piezography ink, make sure to know what shade ink to pour into which color position cartridge- an info sheet that explains shade placement can be found on page 2. For Piezography ink users, we recommend writing the shade # on each cartridge by following the shade placement chart- this will make for easy refilling in the future and avoid accidental ink mixing.
3. Place the cartridge upright and remove the silicone plug from the filling hole on top. Select the correct bottle of ink for the cartridge, and shake it gently. Unscrew the cap, and if it is a new liter bottle, cut the foil seal from the bottle neck using a razor blade or knife. Cut away as much of this seal as possible so the ink will not splash as you pour. Carefully clean residual ink from your knife blade before using it on a different bottle of ink so as not to mix ink.
4. Put on your gloves.
5. Insert funnel into the cartridge fill hole. Support the funnel and the cartridge with one hand. Pour ink with the other.
6. Fill the cartridge until the ink level reaches the “Max” line on the end of the cartridge. If your cartridge doesn’t have a “Max” line, keep the ink level about 1/2” from the top of the cartridge. Do not add more ink than this, as it may cause problems during printing.



- After filling a cartridge with ink, the funnel can be rinsed with water, air dried and used for later refilling. If the funnel stains and can't be cleaned to a "new" condition, this will not contaminate your inks. However, introducing even small amounts of ink from one color bottle into another color bottle **will** contaminate your inks, so be careful of this.

Color Ink Users:

Match label on the ConeColor Pro or Ink-Thrift (dye) ink bottles, cartridge color label and printer's ink position label.

Gently shake the ink cartridge every few weeks to keep pigment in suspension and printing full density, as pigment inks settle over time. ConeColor Pro specific ICC color profiles should be used to get the highest quality output with ConeColor Pro inks, which can be downloaded from here: <http://shop.inkjetmall.com/About/ICC-Profile-Libraries/> along with instructions for printing with a color ICC profile. Contact Inkjetmall to purchase custom ICC profiles for papers not already profiled.

Piezography Ink Shade Placement:

This table applies to Piezography ink, make sure to follow the shade placement chart for the specific setup you're using.

Shade 1 is the darkest (black) and Shade 7 is the lightest. For easy refilling (and to avoid accidental mis-filling carts with the wrong ink), we recommend writing the ink and shade # on the side of each cartridge, following the chart below.

Note: For Piezography **gloss** printing, Photo Black, Gloss Overprint, and glossy curves must be used. Contact Inkjetmall for more information or to have a custom Piezography curve made.

Cartridge Position (Left to right)	1) Piezography K7*	2) Piezography P2**	3) Piezography PRO***
Black	Shade #1 (Matte or Photo Black)	Shade #1 (Matte Black)	HD Matte or HD Photo Black
Cyan	Shade #2	Shade #2	Cool: Dark
Magenta	Shade #4	Shade #4	Warm: Dark
Yellow	Shade #7	Shade #1 (Photo Black)	Warm: Light
Light Black	Shade #6	Shade #6	Cool: Light
Light Cyan	Shade #3	Shade #3	Cool: Medium
Light Magenta	Shade #5	Shade #5	Warm: Medium
Light Light Black	Gloss Overprint (for gloss printing) or PiezoFlush (if NOT printing gloss)	Gloss Overprint (for gloss printing)	Gloss Chroma Overprint (for gloss printing)
NOTES	* Change black ink for matte or gloss printing. Can print digital negatives. Use "K7" curves	** NO need to change black ink, can also print digital negatives. Use "P2" curves	*** Warm and cool split-tone, change black ink for matte or gloss printing, can also print digital negatives. Use "PRO" curves

Prime Cartridges Before Installing into Printer:



After filling a cartridge with ink, the exit channel must be primed with ink before installing into the printer for proper ink flow.

To prime a cartridge with ink, place it upright on a table with chip side up. With priming tip attached to the slip-tip syringe, insert the priming tip straight into the exit valve to depress the spring and open the valve. Pull the syringe plunger to draw ink up the exit channel until air is removed and some ink enters the syringe. Remove the syringe by pulling it straight out of the exit valve. Now the cartridge is ready to be installed in the printer.

Installing Cartridges into the Printer:

NOTE: When installing the cartridges for the first time in your printer, if you are using ConeColor ink and wish to switch from Photo Black Epson to Matte Black refillable, or from Matte Black Epson to Photo Black refillable cartridges, you must first run a "black ink change" in order for the printer to accept the different black cartridge. Refer to your printer manual for information on this and run the black ink change before proceeding.

*These cartridges have small air vent holes, located on top next to the fill hole. The cartridges come with small air filters that can be used in the air vent holes to prevent dust from getting inside, but if ink gets in this filter it will dry and create a plug that air can't pass thru, which will restrict ink flow. We recommend plugging both the fill and air vent holes when the printer is not in use to prevent evaporation and anything from getting inside, but **OPEN the air vent hole whenever the printer is in use for proper ink flow**. Once the cartridges contain ink, you must take care in handling them to avoid dripping ink out of the air vent holes- plug both holes before removing cartridges from the printer to avoid accidental spills.

1. Before installing cartridges into the printer, prime each cartridge with ink following directions above. If the cartridge is not primed before installation, air from the exit channel will enter the printer's ink line. An air bubble can cause interrupted printing or a poor nozzle check but is usually fixed with a cleaning cycle. After priming with ink, install the cartridges into their appropriate slots in the printer. Lower the cartridge levers, and turn the printer on if needed (cartridges can be installed with printer power on or off).
2. **NOTE:** With the x880 models, the printer will tell you that non-Epson cartridges are installed and asks if you want to continue (scroll down to read the entire message). Keep pressing next until the printer reads 'ready'. All x880 printers made after June 2009 will display this message at every start up, every time a new cartridge is inserted and every time a cartridge is reset and reinstalled. We have found that Epson has added a new 'feature' to the x880 model printers to not accept Epson M + LM cartridges after non-Epson cartridges have been installed and used. An Epson service tech can adjust the printer to accept Epson cartridges again if you wish, or you can transfer chips from the Epson M + LM carts to the refillable carts and reset them using the chip resetter so the printer sees them as genuine Epson carts.
3. Purging the system: ConeColor K3 inks provide such a good color match to Epson UltraChrome K3 inks; therefore, purging the Epson inks from your printer is optional and may be skipped if desired. If you do choose to purge your printer, follow the Initial Fill instructions below. Be sure to have a spare maintenance tank on hand, if yours is nearly full. Piezography inks are compatible with Epson inks, although some color staining can occur when switching from color to Piezography inks. To avoid color staining, we recommend using flush cartridges in between the two inks, but flush is not required. If flush cartridges are not used and color staining occurs, usually a few cleaning cycles clears this up. We recommend flushing the printer's internal ink system with a set of flush cartridges if switching from any ink other than Epson, as this is the only ink we have tested and know our inks are compatible with, though other inks may not be compatible.
4. Verify all positions are fully printing in the nozzle check pattern.

Epson pro 4800/4880 Initial Fill Procedure:

NOTE: 3-4 Power Clean Cycles can be done thru the printer's control panel, which is the equivalent of doing 1 Initial Fill Cycle

To do a Power Clean Cycle, push the Menu button on the printer, scroll down to select Maintenance, then scroll down to select Power Clean, then push the Menu button to start the cycle.

1. Start with the printer power OFF
2. Hold the Pause, Down and Right buttons while turning the printer on. The printer will start in "Maintenance Mode3".
3. Scroll to and select CLEANING.
4. Scroll and select INIT FILL.
5. When finished, exit Maintenance Mode by turning the printer off, then back on regularly.

Printing with ConeColor and Piezography Inks:

ConeColor Inks: You can use the same printer settings and workflow as when printing with Epson UltraChrome K3 inks and Epson papers. The excellent color match between ConeColor Pro K3 and Epson UltraChrome K3 inks allow Epson profiles to be used with CCP inks to produce very close results to Epson ink output, although the best quality is produced when using the full set of CCP inks and CC Pro specific profiles. Several pre-made color ICC profiles can be downloaded from www.conecolor.com, and custom profiles are available thru Inkjetmall.

Piezography K7 inks: Roy Harrington's QuadTone RIP or Ergosoft's StudioPrint RIP support many different printer models with our inks. Be sure to follow OUR tutorial for using QuadTone RIP with our Piezography inks to get the best results, as our workflow differs from Roy Harrington's.

*Before attempting to print with Piezography inks, be sure to read the Piezography manual, located at www.Piezography.com, along with other helpful documents related to Piezography printing.

Refilling Cartridges:

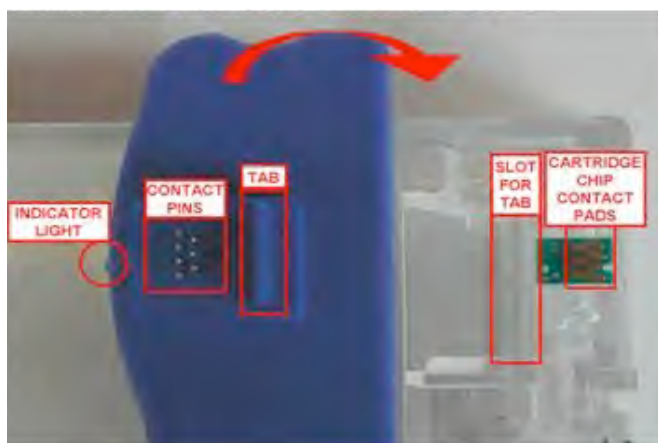
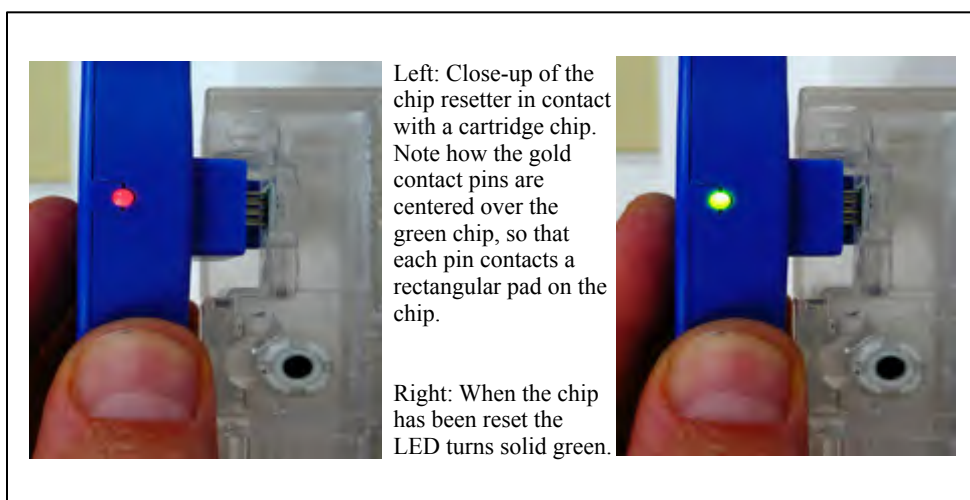
Monitor ink levels in the refillable cartridges and refill any before the ink reaches about 1/2" from the bottom to avoid introducing air into the ink lines of your printer. Use the necessary steps from the procedure above for refilling cartridges. **Always shake the bottles gently before pouring ink from them and make sure to refill cartridges with the correct ink.** Fill each cartridge to the "Max" line (or 1/2" from the top), securely replace the plug in the ink fill hole, gently shake the cartridge so ink is in suspension, tilt the cartridge forward to ensure the exit channel is filled with ink, reinsert the cartridge into the printer and lower the cartridge locking lever.

Resetting Cartridge Chips:

The photos below show the chip resetter next to a cartridge chip. Note that the resetter has seven pins and the chip has seven rectangular gold pads. To reset a chip, you must put each of the seven pins in contact with a gold pad on the chip. To properly align the resetter to the cartridge, flip the resetter over and onto the cartridge as indicated by the arrow below.

When the resetter is pushed against a chip, make sure the tab on the resetter fits into the slot next to the cartridge chip (see photo below). Slide the resetter upwards, alongside the cartridge, so that it pushes against the top of the slot in the cartridge, then press the resetter gently against the gold pads on the chip – the pins on the resetter are spring loaded and will depress slightly when pushed against the chip. As soon as the resetter and chip have made contact, a red LED will flash several times while the chip is resetting. When the chip has been reset the light will turn solid green. After seeing the green LED, separate the resetter from the cartridge. Your cartridge chip has now been reset and is ready to use.

NOTE: Chips are fragile, sensitive to electrical shock and can short out. We recommend resetting and reusing them whenever possible, but suggest having a set of replacement chips on hand if needed. New chips can be attached in place of the old chips by using double sided tape, by following the procedure in the troubleshooting section. Replacement chips can be purchased thru www.inkjetmall.com



Troubleshooting & Helpful Information:

- **Shaking ink bottles and cartridges:** over time pigment particles in the ink can separate and settle. In most cases this looks worse than it actually is; however, periodic shaking is a good idea. The best time to shake the bottles and cartridges is when refilling the cartridges. But if a printer is not used for a few weeks pigment can settle in the cartridges and ink lines- to fix this agitate the cartridges and perform 2-3 power clean cycles. To agitate ink cartridges, remove and gently shake the carts by tilting forward and swishing around, (make sure both fill and air vent holes are plugged to avoid ink spilling) then reinstall into the printer. Be careful to not shake too hard because this will create froth in the ink and introduce air into the ink lines, just a few tilts back and forth is good. Remove air vent plug to open vent holes for proper ink flow before using printer, plug vent holes when printer is not in use to prevent evaporation and dust or bugs from getting inside. Print a nozzle check to confirm all positions are printing then resume printing as normal.
- **Use the printer on a regular basis for best function.** To keep the ink moving thru the cartridges and head moist, print a small image or do a cleaning cycle at least once a week. It is not recommended to leave pigment inks installed in a printer that will be unused for an extended period of time. It is best to remove ink by installing a set of flush cartridges to flush ink from the lines, dampers and print head. This will allow for safe long term storage.
- Monitor and maintain humidity levels between 40-60% in the printing area. Both low and high humidity can cause problems with printer, ink or paper.
- Storage of cartridges out of the printer: If you want to take cartridges out of the printer for a long period of time, you must store them upright and plug the air vent and fill holes to prevent evaporation and spills.
- Watch ink levels in the cartridges: refill a cartridge before ink level gets below 1/2" from the bottom.
- When to reset: only reset the chip after, or immediately before refilling a cartridge. Do not reset the chip on a less than full cart, as you might run the cartridge dry.
- Printer gives a "wrong cartridge" or "cartridge error" message: be sure cartridges are installed in the correct positions and securely locked into position for tight connection between the cartridge chip and printer's chip sensor for good read. Make sure there's nothing on the chip blocking the read and tightly reinstall the cartridge into the printer. Printer gives "set ink cartg" error: this usually means the printer doesn't have tight contact with the cartridge chip or the chip is shorted out and needs to be replaced (instructions below).
- **Attach new chip to refill cart:** Chips occasionally go bad and need to be replaced. When the printer gives a cartridge error which is not resolved by resetting the chip, this usually means the chip has shorted out and is no longer read correctly by the printer. We recommend everyone have a set of spare chips on hand to be prepared if a chip needs to be replaced, which is very quick and easy to do. The cartridges themselves are very robust and will likely last the life of your printer. New chips already read full, so do not need to be reset. Pry the current chip off the cart using a straight edge screw driver or something similar, then attach the new chip in place of the old one using a chip-sized piece of double sided tape (DON'T glue chips into place). Make sure gold contacts are facing the front of the cartridge (same direction as the one you removed). Chips are sensitive to static, so against what you may think, it is best to handle them with clean, dry hands instead of wearing cotton gloves. With the new chip in place on the cart (with a small piece of double sided tape on the back of the chip), press straight down with your clean + dry finger or thumb to secure the new chip to the cartridge- making sure it sits flat in the chip area of the cart and nothing is on the chip contacts that would interfere with the chip read.
- **Resetter light doesn't come on:** Occasionally, chip resetters need to be reset just like any computer does. To reset your resetter, open it by unscrewing the two screws (may be under the label). Inside you will find a board with three round batteries attached (batteries are on the same side of the board as pins that touch the chip contacts). Gently pry up one tab holding each battery down and slide the three batteries out of place. Wait 30 seconds then slide them securely back into place (it doesn't matter which battery goes into which spot, they're all the same) and put the resetter back together. Test the resetter on a different cartridge chip (sometimes a faulty chip can short out the resetter, so testing on a different cart chip rules out the chip). If the batteries are dead, they can be replaced with Energizer 392.
- Unable to print a perfect nozzle check pattern after installing new cartridges: occasionally when installing new ink cartridges, the print head will flood with ink and a perfect nozzle check pattern may be difficult to print. Running additional cleaning cycles can make this problem appear worse, rather than better. Wait about 30 minutes to allow ink to settle, then print a nozzle check. Don't do excessive cleaning cycles if the nozzle check isn't perfect.
- Unable to print a perfect nozzle check after use of printer: each time you remove a cartridge from the printer you can introduce a small bubble of air into the ink tube. This air bubble slowly works its way thru the ink line and may interrupt ink flow when it reaches the damper or print head. If standard cleaning cycles don't fix the problem and if cleaning the capping station doesn't fix the problem, then run one or two high powered cleaning cycles to push the air bubble out of the print head. Before putting a cartridge into the printer, tilt it forward to fill the exit channel with ink. If the cartridge is not tilted forward before installing, this channel can contain air so the air enters the printer's ink line before ink starts flowing. You can open the printer's lid and examine the length of ink tubes, make sure they are all filled with ink and there are no sections of air inside.

*** If you continue having problems or have additional questions, please refer to our InkjetMall Support Forum, which contains lots of helpful information in the Articles> Product Manuals and Instructions section, as well as previously asked/ answered threads to read. You can post a new question to contact us for support if you're unable to find the answer you need.*