

REFILL INSTRUCTIONS FOR HP 92 93 95 96 97 98 99 100

CARTRIDGES SHOULD BE REFILLED PRIOR TO RUNNING OUT OF INK

Damage to the print heads could result from running a dry cartridge.

Prepare:

Before you get started here are some suggestions for getting the most from the refilling process while maintaining a clean, usable work area.

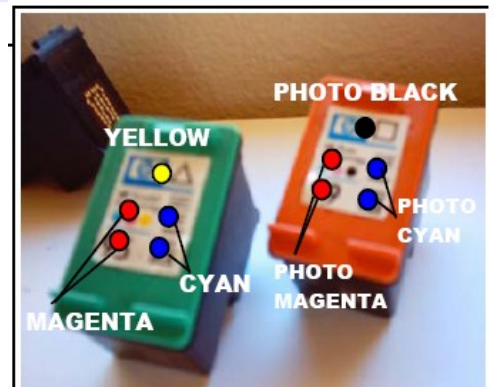
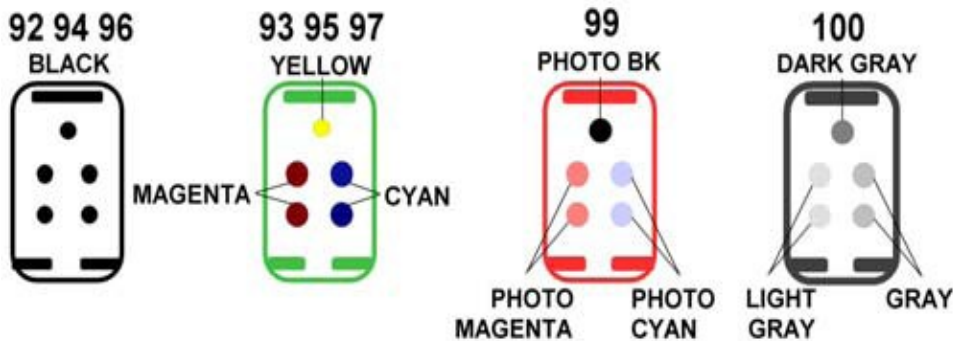
1. Work close to or over a sink.
2. Place an adequate amount of newspaper over your work area.
3. Have prepared for use a cup of water and several paper towels folded into quarters.

FILL LOCATIONS

ACCESSING THE INTERNAL SPONGE:

There are two methods used to access the internal sponge of these cartridges. The first method is to peel the label off entirely. This is preferred for the first couple of times you refill as it allows you to see the vent holes that lead into the fill holes.

Once you have become accustomed to refilling these cartridges you can access the fill holes simply by using a push pin or supplied needles to puncture the top label to access the sponge. When using this method make sure the hole is larger than the needle so air can escape while you are injecting ink into the cartridge.



THE REFILL PROCESS

BLACK CARTRIDGES: 92, 94, 96 & 98 (When filling the 92 black please use the fill hole circled in red above)

1. This cartridge uses a sponge material to retain ink. To get to the sponge remove the label at the top of the cartridge
 2. Once you have removed the label attach needle to injector and fill injector with 10cc of ink* for 94 / 96 or 5cc for 92*.
 3. Insert the injector needle 1/2" into desired fill hole.
 4. Begin to inject ink into the cartridge very slowly. Remember: you are injecting into a sponge—GO SLOW. 1cc for every 15 seconds is preferred.
 5. When you see ink begin to bubble at the top of the fill hole stop injecting ink. Immediately blot any visible ink with paper towel.
 6. Slowly remove injector and return any unused ink to its bottle.
 7. Sealing the top of the cartridge can be accomplished by reusing original label or by use of tape (scotch tape as an example).
 8. If cartridge accepts a complete refill then repeat using an additional 5cc*.
 9. To clean the injector draw water in and out repeatedly. A good 8-10 times will do an effective job. For more thorough cleaning remove tip and run both under a faucet.
 10. When finished, inspect the bottom of the cartridge. If there is any ink at the bottom blot on paper towel or coffee filter. DO NOT SCRAPE—blot.
 11. Allow cartridge to sit for several minutes before inserting into printer. This will allow ink to be absorbed into the sponge.
- When filling the black cartridge it is best to use a couple of fill holes to ensure a complete refill. As an example you can fill the three holes closest to the outside edges of the cartridge filling each with equal amounts of ink. If you prefer you can use just two of the fill holes, the one closest to the print head and one of the two farthest from the print head.

* Though the capacity of ink in the 94 is less than the 96 the cartridges are physically identical. You can fill the 94 to a higher capacity than it originally contained. For the 92 only use a maximum of 5cc for the entire refill.

COLOR CARTRIDGES 93, 95, 97, PHOTO 99 & PHOTO GRAY 100

1. This cartridge uses a sponge material to retain ink. To get to the fill location you must first remove the label at the top of the cartridge.
2. Use the cartridge diagrams above to determine which color you wish to refill first.
MAKE SURE YOU USE THE CORRECT COLOR CODES FOR YOUR CARTRIDGE.
3. Tape over holes that you are not going to refill with a piece of tape. Scotch tape is acceptable for this purpose.
4. Once you are ready to refill, attach needle to injector and fill injector to 4cc for 95 / 97 / 99 / 100 or 2cc for 93*.
5. Insert the injector needle 1/2" into desired fill hole.
6. Begin to inject ink into the cartridge very slowly. Remember: you are injecting into a sponge—GO SLOW. 1cc for every 15 seconds is preferred.
7. When you see ink begin to bubble at the top of the vent hole stop injecting ink. . Immediately blot any visible ink with paper towel.
8. Wait a few seconds and slowly remove the injector. Return any unused ink to its bottle.

9. Sealing the top of the cartridge can be accomplished by reusing original label or by use of tape (scotch tape as an example).
 10. To clean the injector draw water in and out repeatedly. A good 8-10 times will do an effective job. For more thorough cleaning remove tip and run both under a faucet.
 11. REPEAT process with remaining colors.
 12. When finished, allow cartridge to sit several minutes before returning to printer. This will allow ink to be absorbed into the sponge.
- *Though the recommend amount of ink to start with is listed as 4cc your cartridge may not take this much ink. The amount of ink the cartridge will accept is dependent on the amount used. In some refills you may not get more than 1cc of ink if the color being refilled was not used as much as other colors in the cartridge. Never fill the 92 cartridge with more then 2cc of ink. This cartridge contains a sponge that holds less ink then the 95 and 97.

AFTER

1. Initially the cartridges may release ink. This is not uncommon when ink has been quickly injected into sponge or if too much ink for the sponge to retain has been injected. Blot cartridge on paper towel several times to reduce the amount of ink weeping from the cartridge. This will prevent cross contamination.
2. DO NOT install your cartridge until the cartridge has ceased releasing ink.
3. Test your printer by printing a nozzle check. This is accomplished through the "Services" tab and printing a diagnostic page. If you see lines in your print or incomplete print then perform your printers routine head cleaning. This can be accomplished through the printers "Services" tab. If lines are persistent perform an intermediate cleaning and then a prime if required.

What to Know

Due to nature of the print heads on Hewlett Packard cartridges, it is common that after several refills that the cartridge components become fatigued and cease to function. There are many factors involved in why the cartridge will fail. How long it takes is partially up to you. Here are some guidelines to protecting your cartridge and getting the most from it.

1. Never touch the contact points or print head of the cartridge. Oil from your finger tips will corrode the delicate surface.
2. Clean the contact points with a Q-tip or soft coated cleaning cloth (such as those made for CDs or even a coffee filter). Using distilled or filtered water is recommended. Tap water may contain minerals that can be damaging to cartridge components.
3. Refill the cartridge before it is empty. HP cartridges use a heating mechanism that heats ink to several hundred degrees on a microscopic level to dispense ink. Running a dry cartridge for any length of time can 'burn up' the cartridge's internal heating elements.
4. Expect the inevitable: Cartridges will eventually cease to work. Have an extra cartridge on hand. All printer manufacturers recommend this as well. It is just good practice to keep a new cartridge available at all times
5. Never scrape the contact points or print head area with any type of abrasive material. This includes paper towels & newspaper. Always blot.

TROUBLE SHOOTING

CLOGGED JETS (from cartridge sitting out of the printer or printer not being used for a long time)

Clogged jets are very common with cartridges that have sat for a lengthy period of time without use. To remedy this; Place a wet paper towel in the microwave for 20 seconds. Take your cartridge and place the print head on the paper towel. DO NOT scrape the cartridge along the towel. Just allow it to rest on the paper towel for 15 seconds. Repeat on a different portion of the towel. Blot print head on a dry absorbent cloth or towel. Hot water will break up the caked ink and start the capillary action working again.

COLOR SHIFT:

Color Shift, such as a green tint or purple tint in output can be the result of filling ink too quickly or allowing ink to wick at the bottom of the cartridge. Essentially what occurs is that ink from one chamber is allowed to wick back up into another chamber from the print head level. To resolve this issue you will need to perform several printer cleanings. Wait 20-30 seconds after each set. First perform the printers routine cleaning followed by an intermediate. If shift is persistent follow with a priming of the cartridge.

Color shift can also be a result of missing ink from one color. The easiest way to determine which is the problem is to perform the printers diagnostic from the services tab of your printer. The diagnostic prints a series of nozzle checks. If the test print lines are not printing the correct colors then your concern can be resolved with the above mentioned method. If the lines are missing then your concern is ink not flowing properly.

If ink is not flowing properly check the top of your cartridge to make sure you have not closed off the vent holes at the top of the cartridge. The vent holes appear as indentations at the top of the cartridge in several locations around the label. If these are completely sealed then air will not be capable of getting into the cartridge therefore ink can not get out of the cartridge.

Additional information on this can be found on next page

MAINTENANCE, GOOD CLEANING HABITS & TIPS 92 93 94 95 96 97 99 100

For best performance it is recommended that you refill prior to running out of ink.

Damage to the print heads could result from running a dry cartridge.

DO NOT SEAL CARTRIDGE COMPLETELY!

It is a common misconception that these cartridges are sealed AIR TIGHT. Fact is they are not. When you initially look at a cartridge from the top you'll see that around the label are little indentations in the plastic. These indentations are part of the air vents that lead into the air paths which lead directly into the colors chambers. Sealing these completely will prevent air from getting into the cartridge and ink from getting out. Note: The amount of ink that leaves the cartridge must be equal to the amount of air that gets into the cartridge otherwise a pressure build up occurs.



Here are a few “DO NOT DO” for you just to make sure your colors do not contaminate and you do not damage the cartridges.

DO NOT place cartridge in a zip lock bag unless it is in a cartridge clip. Contact with the bag can cause color to bleed and wick into another chamber.

DO NOT store cartridge on its side. Storing a cartridge on its side can lead to missing colors when ink settles to one side of the cartridge.

DO NOT use your printer or cartridge if temperature is below recommended printing temperatures. If ink is too cold it will not flow properly through the cartridge

filter screen. This can inadvertently cause missing and burn the jets.

DO NOT seal the entire cartridge top—do not seal cartridge air tight.

DO NOT reapply the original tape used on the bottom of the cartridge. This can cause cross contamination as it does not create a completely air tight seal. It does though assist in pulling ink out of the cartridge which can wick into another set of jets!

DO NOT tilt cartridge while refilling. This will result in less ink being injected into the cartridge. So remember to hold the cartridge as level as possible.

INK LEVEL INDICATORS:

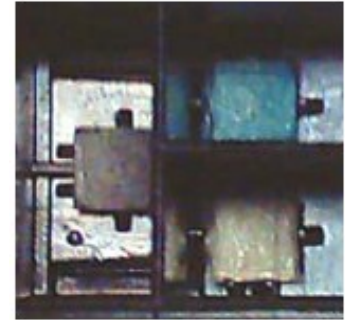
Ink Level Indicators do not always work. This means that even on brand new cartridges the ink level indicators may be wrong. Users of

HP cartridges commonly have issues with erroneous ink level indicators showing ink available when there is none in the cartridge. This can be a result of several things;

1. HP ink level indicators are designed to fail so close that erroneous information is given if printer is shut off and turned on too many times.

2. This is accidental and that HP ink level indicators are inefficient.

3. Ink determined available for use contains ink that can not actually be used by the cartridge. The filter screen placement as shown on the image to the right displays that the screen sits slightly higher than bottom of the cartridge. Therefore though there is “X” amount of ink in the cartridge this does not mean all of the ink is used. It is recommended for this reason that you refill when ink level indicators first come on—or before they come on at regular intervals. This is something we call “topping off” a cartridge.

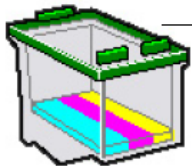


INK LEVEL INDICATORS: WHEN TO REFILL

HP printers that use the 92 93 94 95 96 97 99 & 100 cartridges do not stop printing when ink level indicators show that ink is missing from the cartridge. This is both a benefit and a disadvantage in refilling ink cartridges.

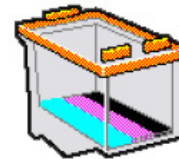
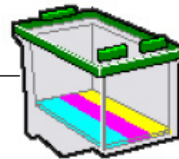
The advantage is that you do not have to reset the ILI every time you refill. The disadvantage is that you never really know how much ink is in a cartridge.

What we can determine and advise on is when to initially pull a cartridge for refilling. HP printers using the 94 85 96 97 & 99 will display a pop-up dialog box that ink levels are getting low. This is a good time to refill your cartridge. If you can not refill your cartridge at this time remove the cartridge from the printer. Your printer will continue to use the cartridge during cleanings, priming when the printer is turned on and when printing. It will use the cartridge even if there is no ink in the cartridge.



This cartridge does contain a small amount of ink and according to the Ink Level Indicator is a good time to refill.

This cartridge has been refilled twice, but the ILI remains the same even after the cartridge has been removed several times. HP uses ID numbers to retain the ink cartridge information so when it is removed and reinserted the printer remembers the ink levels.



This cartridge was never refilled and was not removed from the printer. The result was the cartridge burned up before the first refill. The visible ILI though still shows a small amount of ink

VIEWING YOUR INK LEVELS

There are two ways to view your ink levels.

The first is to monitor your ink levels when printing. A dialog box automatically appears when you start a print job.

If you disabled your pop-up dialog box at any time you can always view your ILI by accessing your printer Properties and clicking on the SERVICES TAB of the dialog box. Click on SERVICE THIS DEVICE button and then ESTIMATED INK LEVEL tab to see the 3-D view show above.

This cartridge does contain a small amount of ink and according to the Ink Level Indicator is a good time to refill.



* Estimate only. Actual ink level may vary.

MONITOR YOUR USAGE

Since the ink level indicators will not be useful after the first refill it is recommended that you monitor your print to determine when a good refill time is. Since you will need to refill before the cartridge completely runs out of ink to avoid print head burn up it is recommended that you refill in regular intervals. We call this “topping off” a cartridge. If you normally use up a cartridge every two weeks then top off your cartridge once a week or once every ten days. It is better to refill often and refill less each time than it is to burn up the cartridge. You can also monitor for white streaks or missing print. This is a good indication that ink levels are beginning to run low.

NUMBER OF TIMES A CARTRIDGE CAN BE REFILLED.

There are several factors involved in how many times a cartridge can be refilled. These include how many times a printer has been turned on and off, how long it takes to go through (use up) a cartridge, how well the cartridges are handled during the refill, how the cartridges are stored if not in printer and several other factors will sway the number of refills. Of our initial batch of 18 cartridges (94-3 95-3 96-4 97-5 99-3) the average number of refills was four per cartridge. The 92 and 93 cartridges averaged at 6 refills and the Photo Gray 100 averaged 5.

Protect your ink.

Do not expose ink to direct sunlight. Do not expose inks to extreme temperatures. Do not freeze inks.

Wash tools immediately after use and store in zip lock bag. Seal bottles immediately after use and store upright.

Do not open more than one bottle at a time. Ink stains. Please wear gloves when handling.

If ink gets on skin wash immediately with soap and cold water. Hot water will allow ink to set. Bottles & caps are recyclable.