

HP® LASERJET P1006 SERIES

TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS



HP® P1006 SERIES TONER CARTRIDGE

REMANUFACTURING THE HP LASERJET P1006 SERIES TONER CARTRIDGE CB435A

By Mike Josiah and the Technical Staff at UniNet

In November 2007, Hewlett Packard released the LaserJet P1006 printer. The HP P1006 series of laser printers are based on a 17-ppm, true 600-DPI Canon engine. These cartridges use a chip that controls the toner low functions. The CB435A is rated for 1,500 pages. Physically, the cartridges look like a small 12A (1012) cartridge, but there are many differences.

The printer itself has a very small foot print. It's a nice small office/home machine. The first page out is stated to be in under 8.5 seconds from a power save mode. The memory is fixed and not expandable at 8Mb. The recommended monthly volume is from 250 to 1,500 pages per month, but the maximum monthly duty cycle is 5,000 pages. Unlike many small printers these machines have an input tray that can hold 150 pages. A nice touch!

The system that holds the two halves of the cartridge together is completely new. The good news here is that you don't have to cut holes in the cartridge to get access to the pins. The toner inside is also new. HP has stated that the toner now has spherically shaped particles. We are currently investigating (time of this writing) if this means the toner is chemical or conventional toner that has been thermally rounded. our guess is that it is thermally rounded toner, but until our investigations are finished, we won't know for sure.

In addition to the new toner, the chips have also had intelligence added to help aid cartridge ordering when supplies are low. Again, we are investigating the chips for these cartridges (time of this writing). We have tested the same cartridge five times, and the chip has not shut the printer down. Just the toner low features were not working.

The printer, when new, comes with a starter cartridge that is rated for 700 pages at 5% coverage, so your customers will be coming to you fairly quickly!

PRINTERS BASED ON THIS ENGINE SO FAR

P1000

P1005

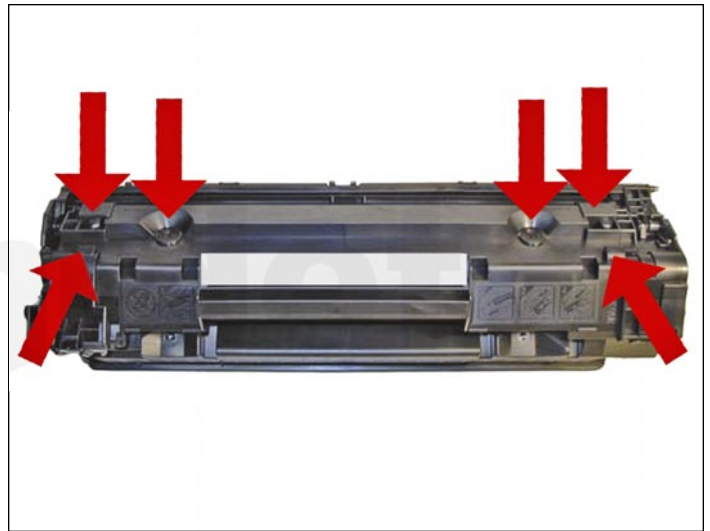
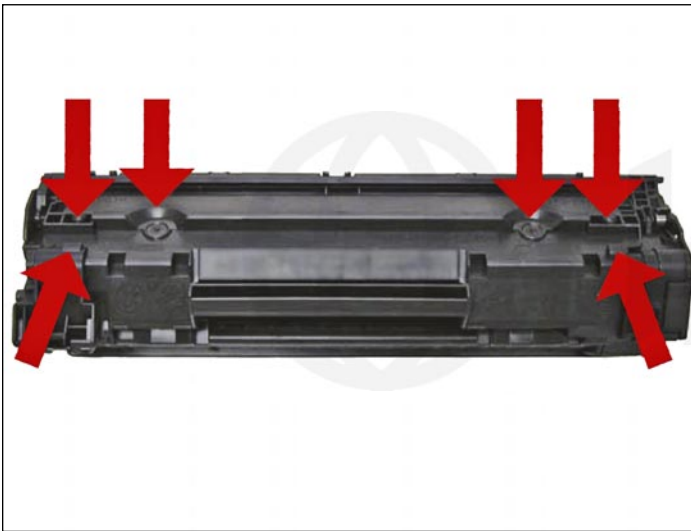
P1006

P1007

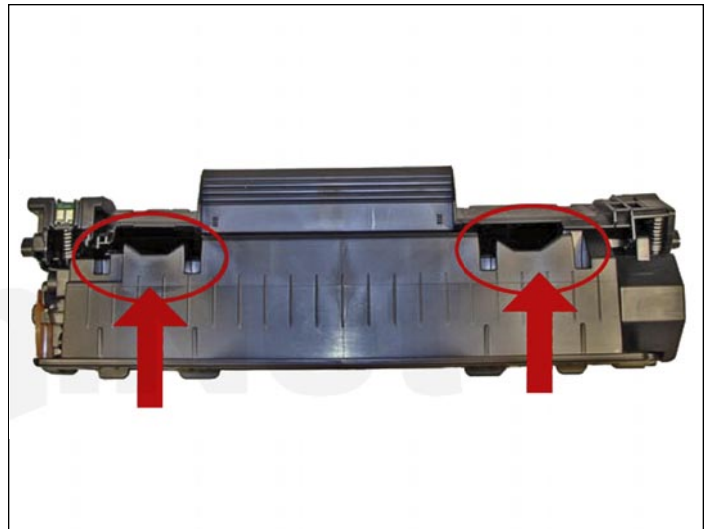
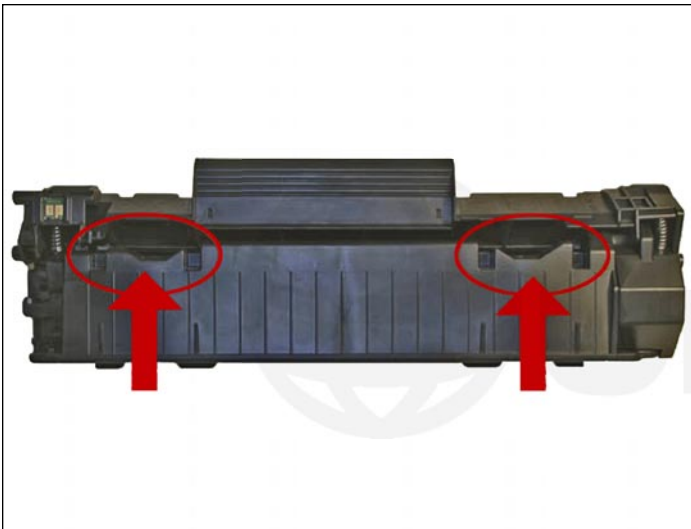
P1008

P1505

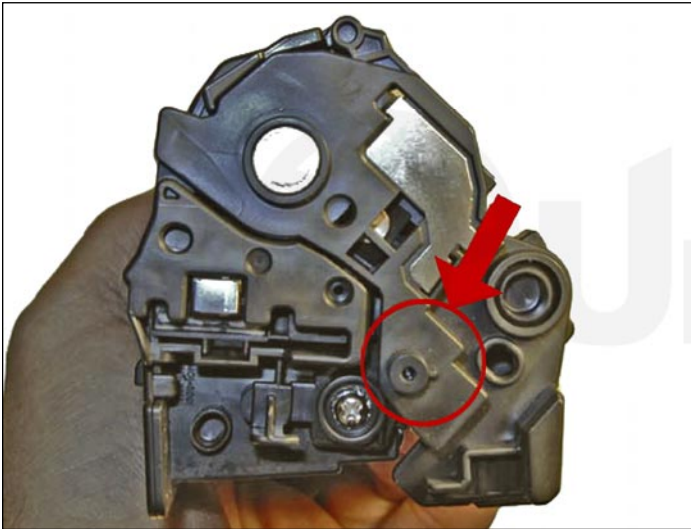
Cartridge troubleshooting, as well as running test pages, cleaning pages and some simple printer troubleshooting will be covered at the end of this article.



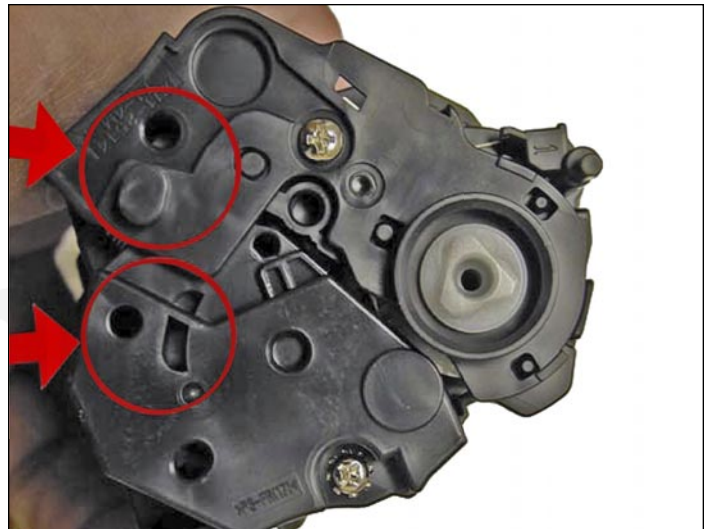
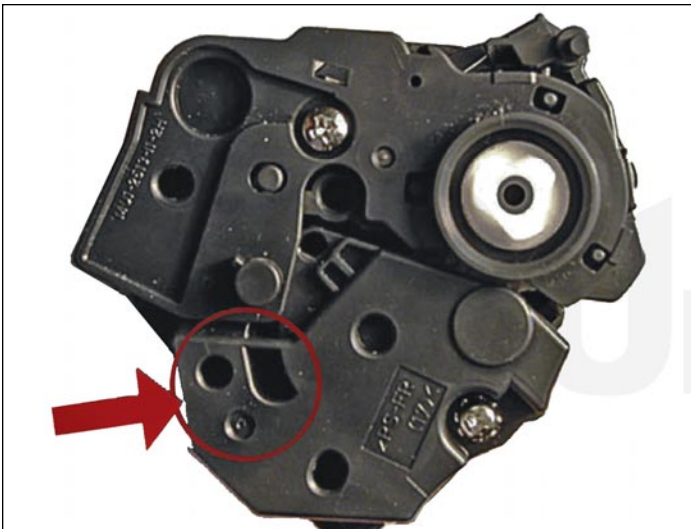
There are large similarities between the **CB435A** and **CB436A** cartridges which are used in the **HP P1505** printer, but they are not interchangeable. The instruction may also be considered to demonstrate the other cartridge mentioned. The pictures shown have arrows to demonstrate the differences on the cartridge casing, especially the critical differences on the end caps which allow the cartridge to fit in their respectable printers. The images above show the **top portion** of the 35A and 36A cartridges, respectively.



The images above show the **lower portion** of the 35A and 36A cartridges, respectively.



The images above show the **left end cap** of the 35A and 36A cartridges, respectively.



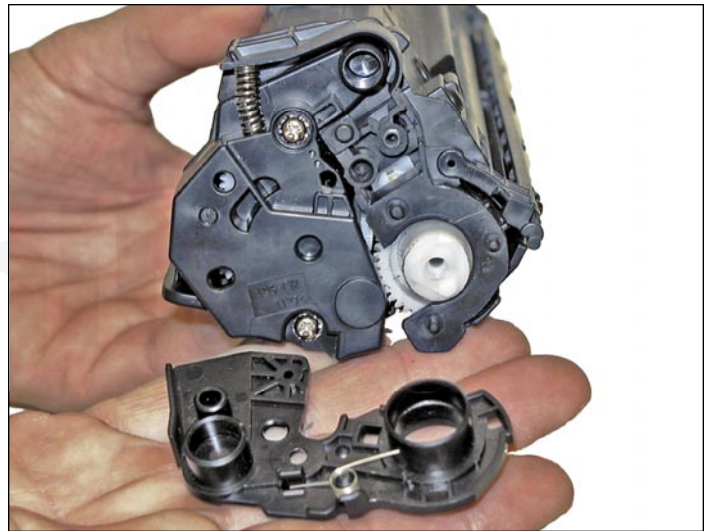
The images above show the **right end cap** of the 35A and 36A cartridges, respectively.

SUPPLIES REQUIRED

1. Black replacement toner (unique to this series)
2. New replacement drum (unique to this series)
3. Wiper blade (unique to this series)
4. Doctor blade (unique to this series)
5. Magnetic roller (unique to this series)
6. Sealing strip (unique to this series)
7. Cotton swabs
8. Isopropyl alcohol
9. Drum padding powder
10. Conductive grease

TOOLS REQUIRED

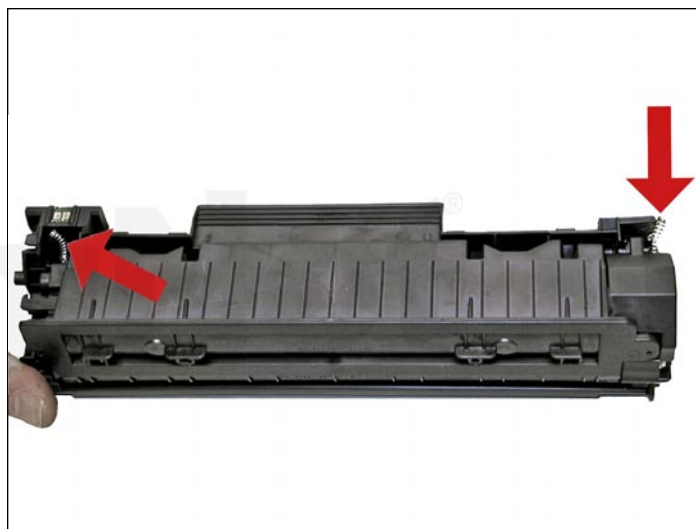
1. Phillips head screwdriver
2. Small common screwdriver
3. Needle nose pliers
4. Jeweler's screwdriver set



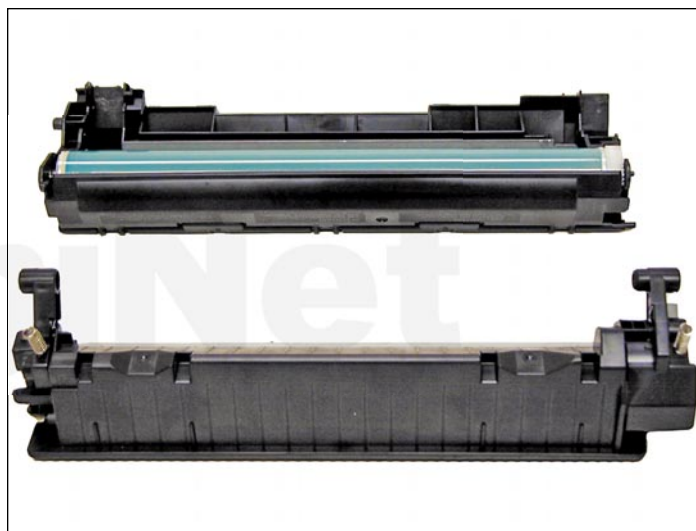
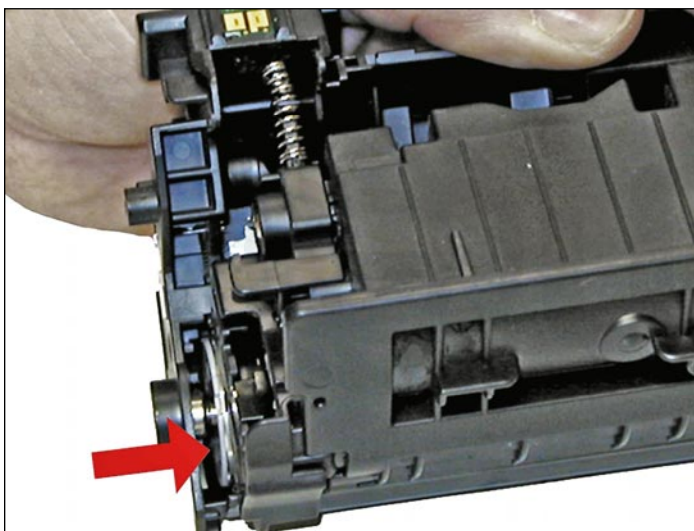
1. With the handle facing you, remove the right side screw and end cap from the cartridge.

Be careful of the drum cover spring.

Remove it with the end cap.

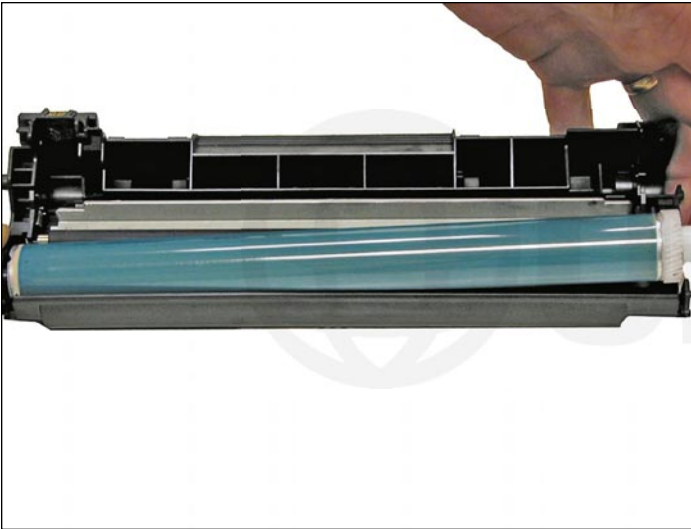


2. With the pair of needle nose pliers, release both the hopper tension springs.

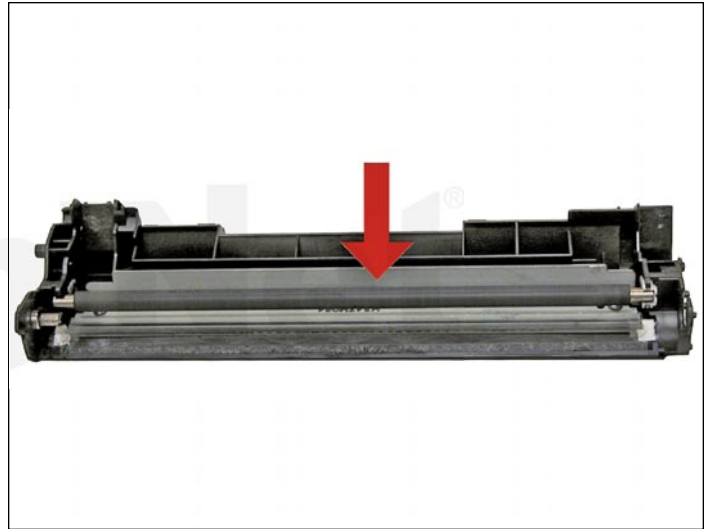


3. Slide the waste/drum section over to the left side.

Separate the two halves.



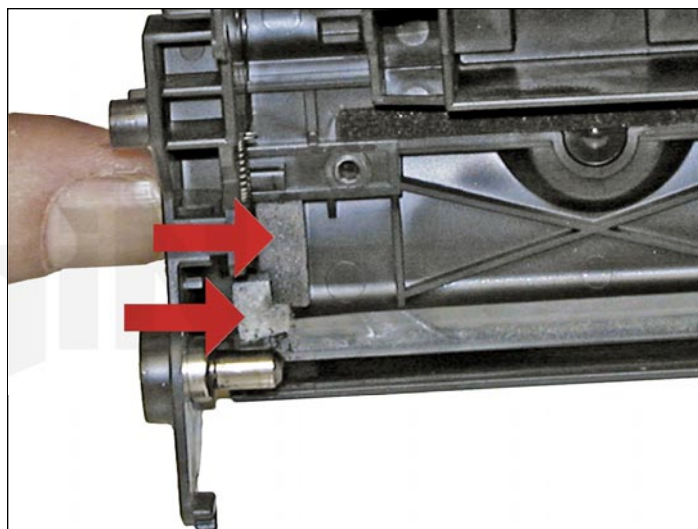
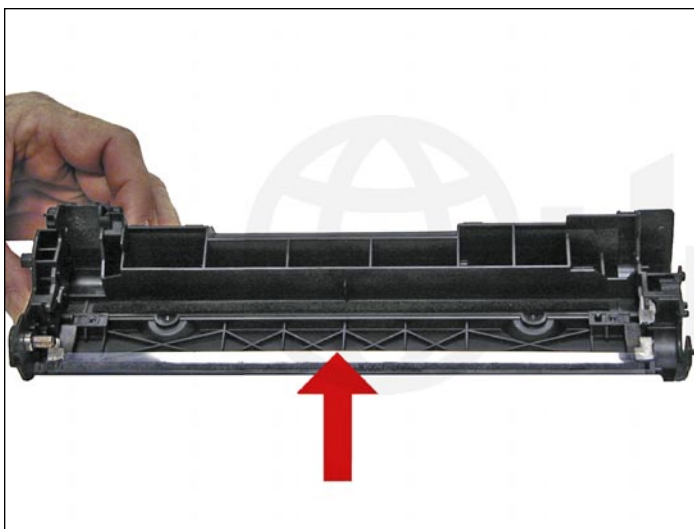
4. On the waste/drum section, lift the drum up from the gear side. Twist and remove from the hopper.



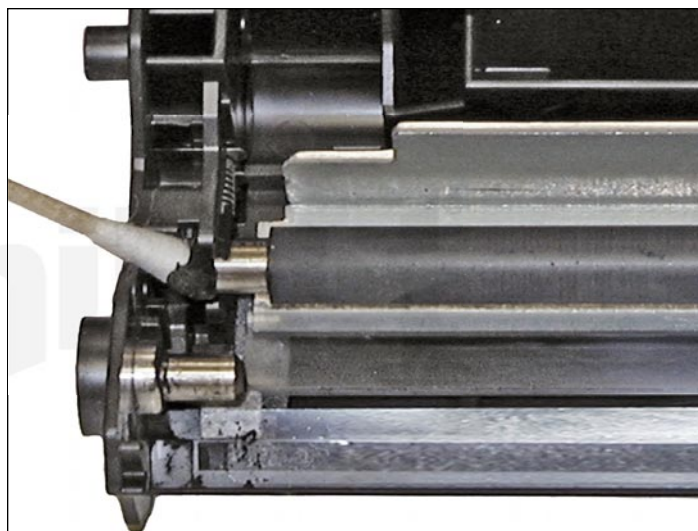
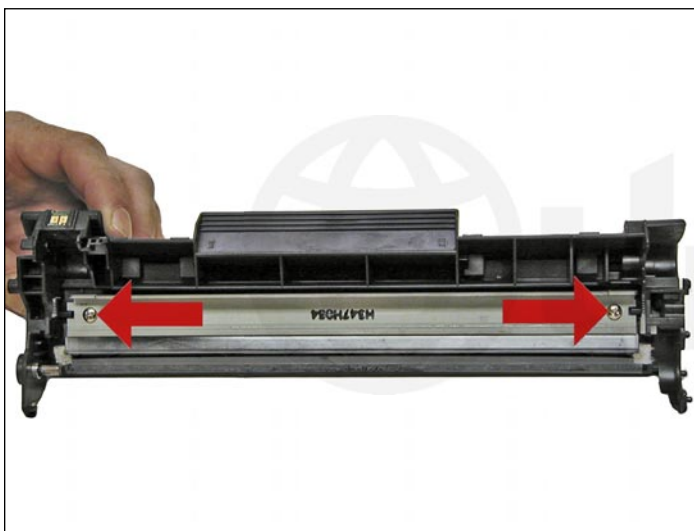
5. Remove the PCR and clean with your standard PCR cleaner.



6. Remove the two screws and the wiper blade.

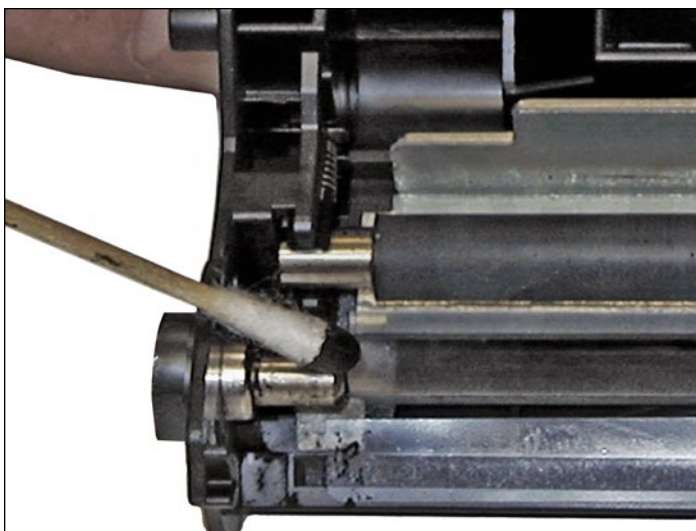


7. Clean out all the waste toner from the hopper. Be careful not to damage the recovery blade next to the wiper blade. If this blade is bent in any way, the cartridge will leak. Make sure the wiper blade foam seals are clean.



8. Coat the new/cleaned wiper blade with your preferred lubricant. Install the wiper blade and two screws.

9. Install the cleaned PCR. Place a small amount of conductive grease on to the black holder side of the shaft. Just a small amount of grease is more than sufficient.



10. Place another small amount of conductive grease on to the metal drum axle.

DRUM GEAR CHANGE

UPDATE: If you are replacing the drum, the gears will need to be changed over from the OEM to the new. There are two methods of removing the gears from OPC drums: The first and easiest method is to place the drum in a metal vice approximately 2" back from the gear, and slowly tighten the vice. The gear should pop out easily. This is the only method you can use on the OPC drums, which have a weighted slug in the center. If you use this method go on to step #3. The other method is as follows.

REQUIRED TOOLS & MATERIALS

1. A 1/4" x 15" metal rod
2. A 1" x 15" wooden dowel
3. A tube of super glue
4. A small piece of emery-cloth or sand paper

Step #1: Remove the drive gear:

The drive gear is the gear that has no metal electrical contacts in it. These gears are usually larger than the contact gear.

- A. Carefully insert the 1/4" metal rod into the center of the gear that has the contacts, or the contact gear.
- B. Angle the rod so that the rod presses against the edge of the opposite gear. The rod should be touching both the inside of the OPC drum and the edge of the gear.
- C. Tap the end of the rod with a hammer, working the rod around the entire edge of the gear, until the gear comes loose.

NOTE: Gently heating the ends of the drum with a hair dryer or heat gun on low may cause the glue to soften and ease in the removal process. Just be careful not to use too much heat and melt the gear!

Step #2: Remove the contact gear:

- A. Insert the 1" wooden dowel into the gearless end of the drum.
- B. Tap the dowel with a hammer until the gear comes loose.

Step #3: Remove any old adhesive from the gears; straighten out any damage done to the contact gears' metal contacts:

- A. Removing the adhesive can be done with a small sharp common screwdriver. The glue comes off easily.

Step #4: Install the gears on the new replacement drum:

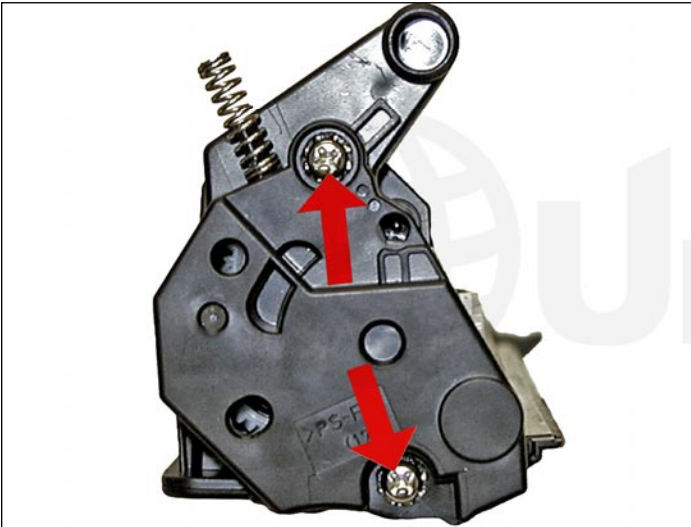
- A. Inspect the metal contacts on the contact gear. Make sure that the contacts will make proper contact with the inside of the OPC drum.
- B. Locate the side of the drum on which you are going to place the contact gear. On some OPC drums, this is critical. See individual instructions for more information.
- C. Lightly sand the INSIDE of the OPC where the metal parts of the contact gear will meet. This will insure a good electrical contact.
- D. Dry-fit the contact gear in the OPC drum and check for a good contact with an Ohmmeter. The reading should be a direct short, or no more than 1 or 2 Ohms. NOTE: When checking the contact, place one lead on the drum axle contact and the other on the edge of the drum. This way, you will not have to pierce the coating that is on the OPC surface. A retail electronics store, such as Radio Shack, carries cheap Ohmmeters for less than \$10.00 USD, and a sales person would normally be glad to show you how to use it.
- E. Using the super glue, place a few (3-4) small drops of glue strategically around the inside edge of the OPC drum. Make sure you leave a blank area for the metal contacts!
- F. Insert the contact gear.
- G. Check for continuity again with the Ohmmeter.
- H. Repeat steps E and F for the drive gear.

NOTE: Be very careful not to place the metal contacts in direct contact with the glue, as this will interfere with the proper grounding of the drum, and the cartridge will not print properly, (solid black pages). It is also very important to NOT put any glue on the gear, as the chances of it dripping out onto the drum surface and ruining it are high. Placing the glue inside the drum tube works much better.



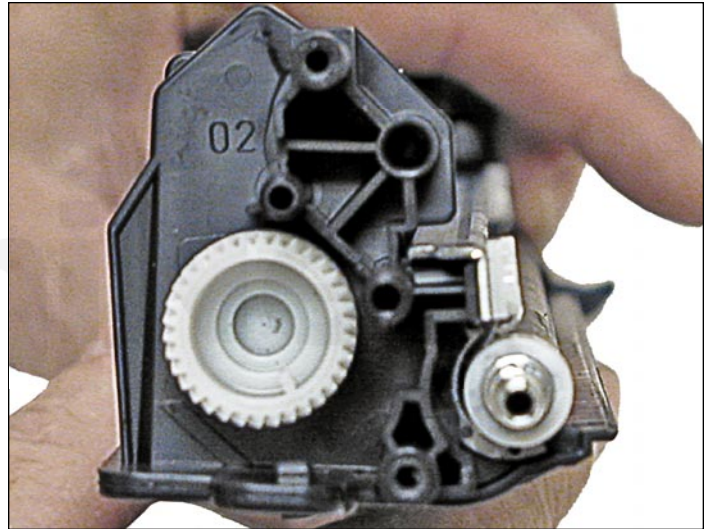
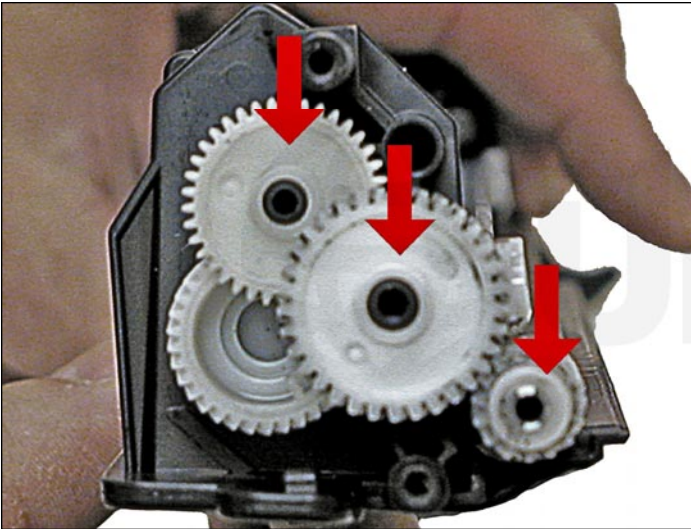
11. Install the new/cleaned drum hub side first.

Place the waste/drum section aside.



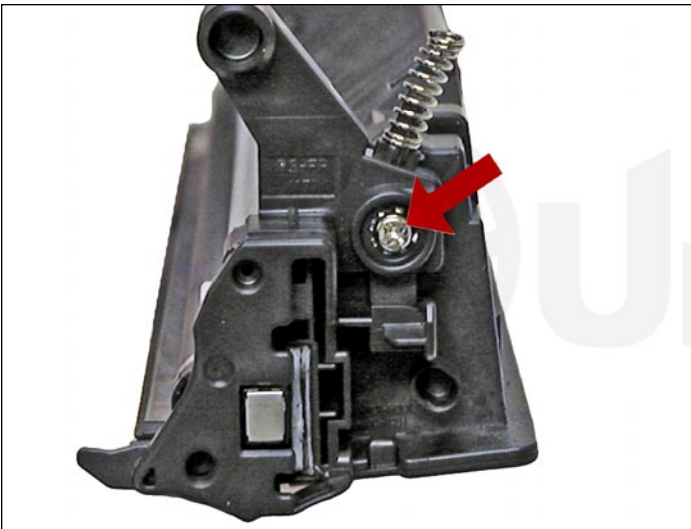
12. On the toner supply chamber right side, remove the two screws and end cap.

Note that these screws have lock washers.



13. Remove the gears from the hopper as shown.

Leave the large auger gear in place.



14. Remove the single screw and end from the opposite side.

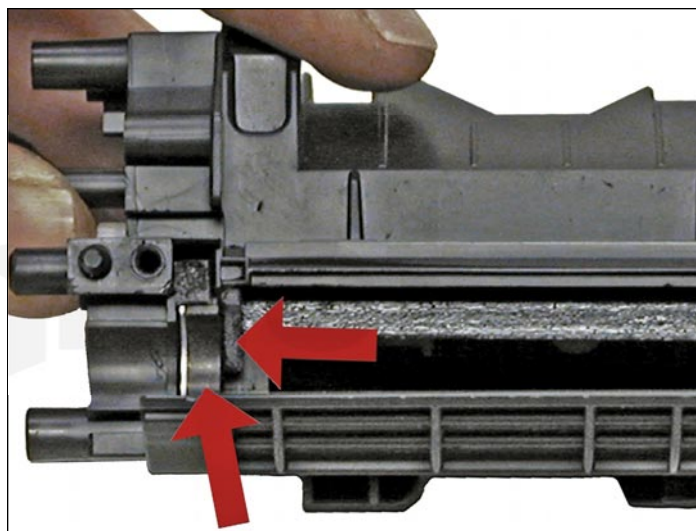


15. Remove the magnetic roller assembly.

Be careful of the bushings. They are very fragile.



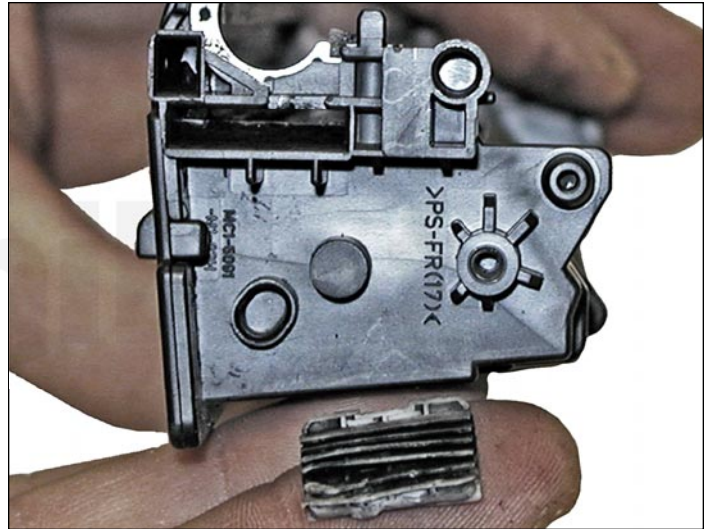
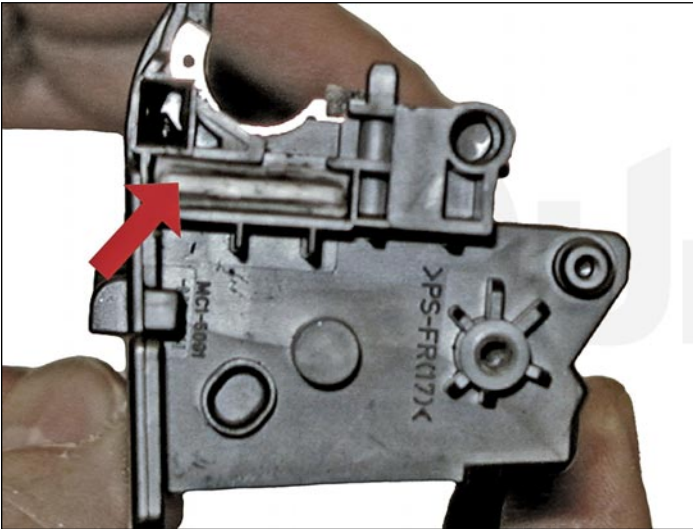
16. Remove the doctor blade and two screws.



17. Clean out all the remaining toner from the hopper. Make sure the magnetic roller seals and the doctor blade seals are all clean.



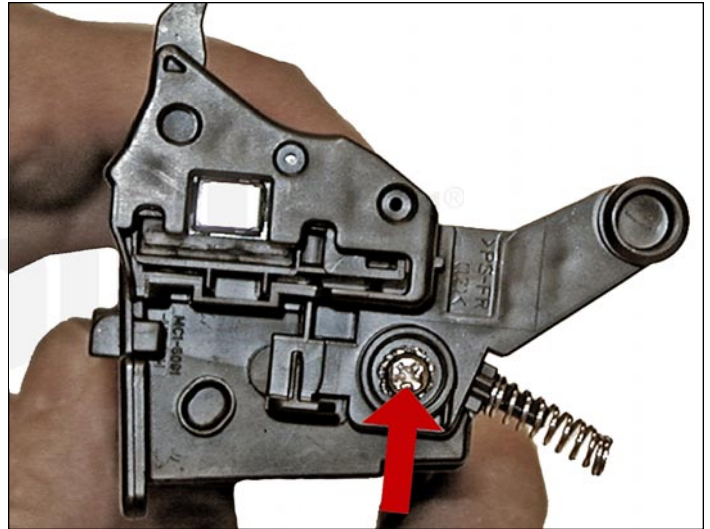
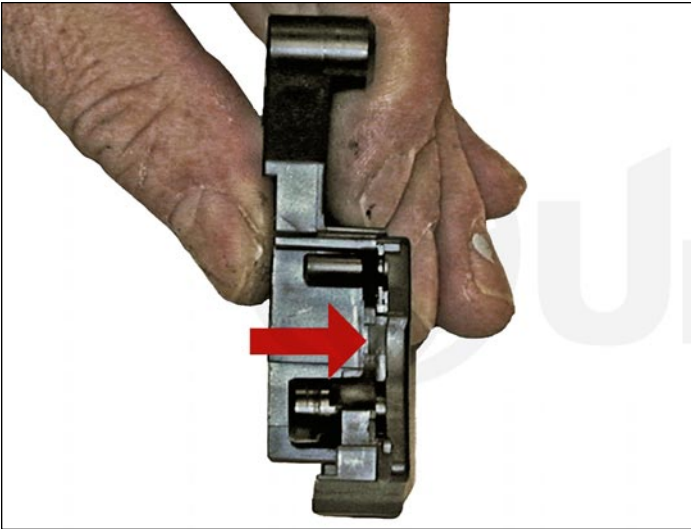
18. Fill the hopper with the appropriate amount of replacement toner for use in HP P1006.



19. When a seal becomes available, remove the seal port plug and install the seal.

Bring the tail out through the seal port hole.

Install the plug.

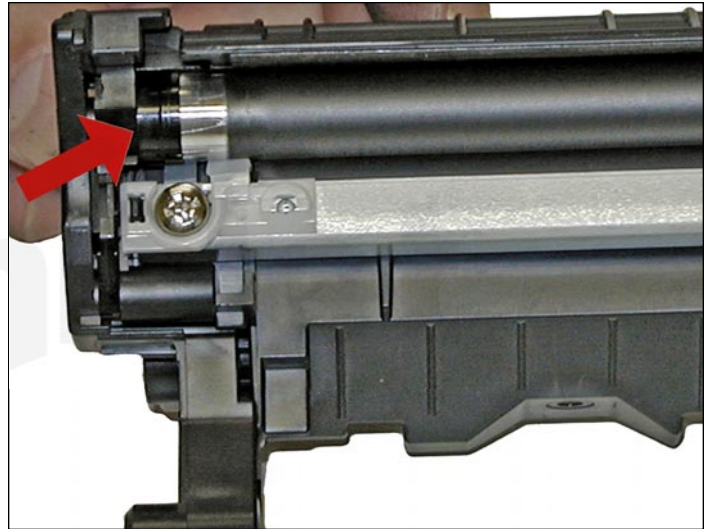


20. Install the left side end cap and screw.

Make sure the small contact piece is installed correctly on the end cap.

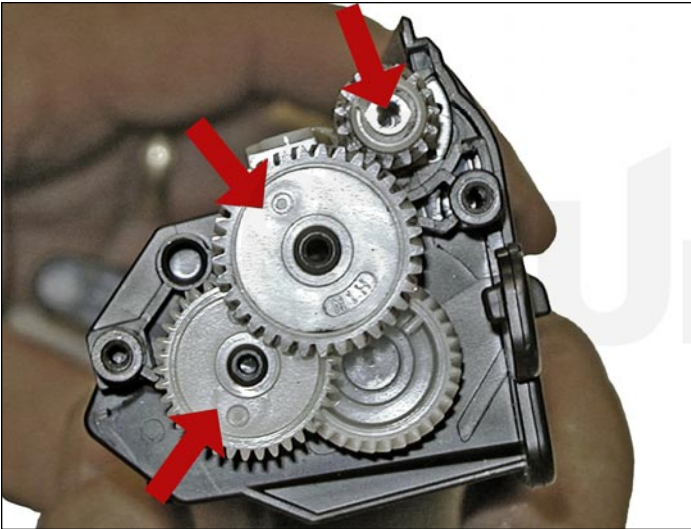


21. Install the doctor blade and two screws.

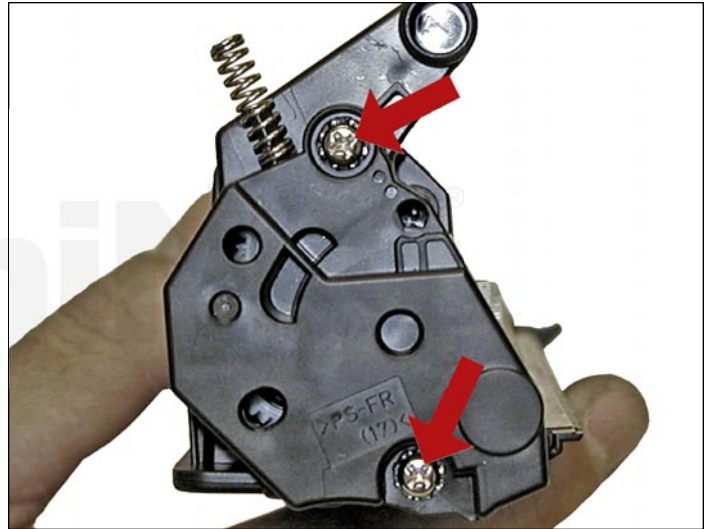


22. Install the magnetic roller black bushing side first.

Turn the roller until the keyed end locks in place.



23. Install the gears as shown.

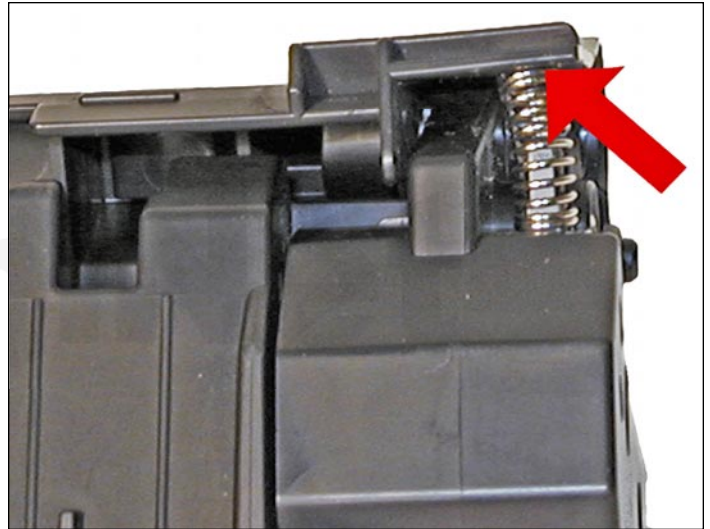
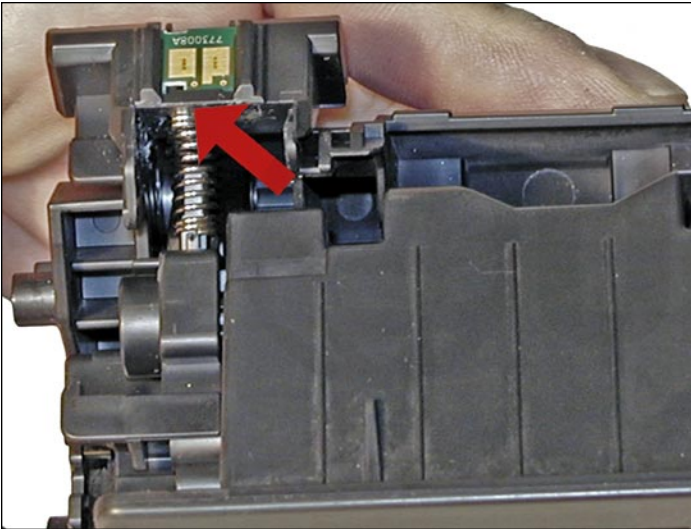


24. Install the end cap and screws.

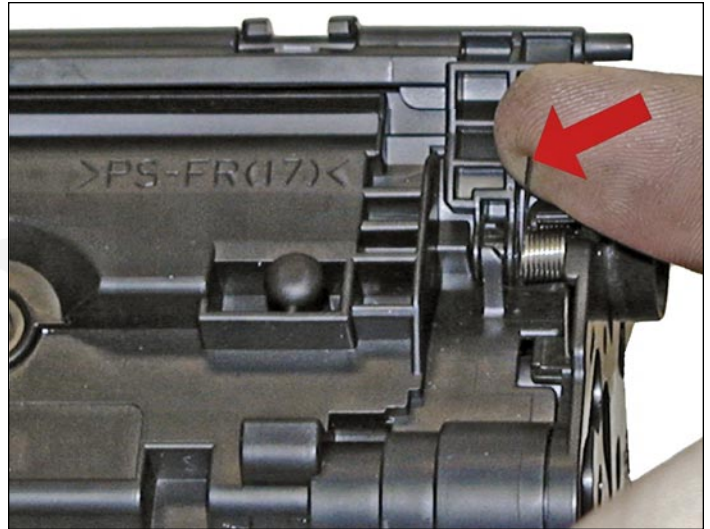


25. Place the drum/waste hopper into the toner hopper.

Slide it over so the round hinge pins fit into their respective holes.

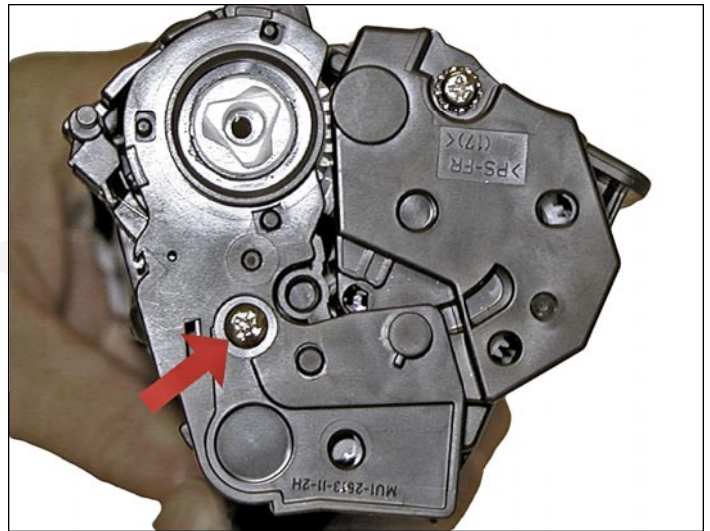
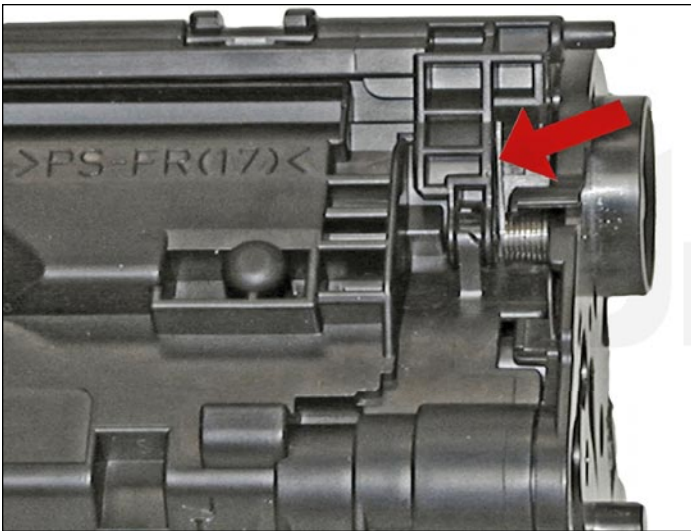


26. Set the hopper tension springs back in place.



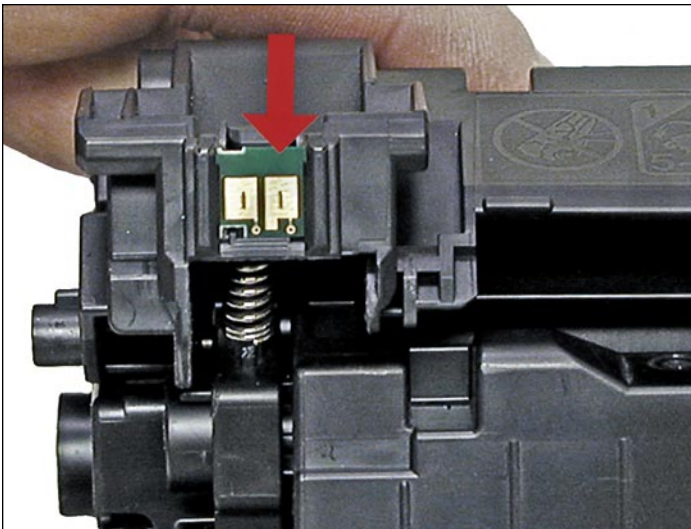
27. With the drum cover spring as shown on the end cap, install the end cap.

Lift up the tail of the spring to fit onto the hopper.



28. Lift up the drum cover sprint tail to fit as shown on the drum cover.

Install the screw into the cover.



29. Replace the chip.

REPETITIVE DEFECT CHART

OPC drum:	75 mm
Magnetic roller:	31 mm
PCR:	27 mm

RUNNING TEST PAGES

1. Test pages must be run from the P1006 menu.
2. Access the PRINTER PREFERENCES menu, then SERVICES, and INFORMATION pages.
3. There are three test pages that can be selected: the DEMO, CONFIG, and SUPPLY STATUS page.

RUNNING THE CLEANING PAGE

The cleaning page for these machines can only be run from the printer menu. HP recommends that a transparency be used for best results. If a transparency is not available, use copier grade paper with a smooth surface.

1. To run this page, access the printer preferences.
2. Click on DEVICE SETTINGS.
3. Press START.
4. The cleaning cycle takes up to two full minutes. The page will start and stop.
5. Do not turn the printer off until the cleaning page has finished printing.

PRINTER TROUBLESHOOTING

As with all low cost machines these days, this series of these machines do not have a display panel. All the error codes consist of different pattern of the two lights. Information on the lights is very poor.

Top light blinking:

Cartridge door open, no print cartridge installed, or there is a paper jam.

Both lights on:

Fatal error. Turn the printer off and unplug it for 30 minutes. If the error still exists, the printer has a major problem. No information could be found yet on what these problems may be. At the time this article was written, the service manual has not been released.

Both lights blinking:

A printer initialization is in progress.