CANON® IMAGECLASS MF7200 SERIES (EP105)
TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS

CANON EP105 TONER CARTRIDGE

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REMANUFACTURING THE CANON IMAGECLASS MF7200 SERIES EP105 TONER CARTRIDGE

By Mike Josiah and the Technical Staff at UniNet

First released in September 2006, the Canon imageCLASS MF7200 series of printers are based on a 1200 dpi, 20-ppm Canon engine. They are true multifunction machines, in that they are a duplex copier, laser printer, color network scanner, Super G3 fax, and are network capable. These machines also print on up to 11 x 17 inch (tabloid) paper, have a touch-screen interface, come standard with 256 MB of memory, have a 50-sheet ADF (automatic document feeder), and have a first-page out at less than 7.9 seconds.

The cartridge for the MF7200 series is the EP105 (0265B001AA) and is rated for 10,000 pages. The cartridge is unique in its design, and as of June 2007, there is no comparable HP cartridge. Testing is ongoing to determine what parts are needed, or available to remanufacture these cartridges. As with most Canon cartridges they do NOT use a chip.

The left image shows the potential location for a chip, and possibly a different plastic configuration for other manufacturers. However no chips are used on the EP105 version and we have not seen any other manufacturers use this cartridge yet.

The right image shows the cartridge as removed from the box. Note the many shipping lock and tape seals. This cartridge even comes with a bag of desiccant (drying agent) attached!

This cartridge has a list price of $388.00 USD* but so far has a street price of about $205.00 USD*.
***Pricing as of June 2007, in U.S. American Dollars.**

So far, the only machine based on the MF7200 engine is the imageCLASS MF7280.

Printing test pages, cartridge troubleshooting as well as some simple machine troubleshooting is covered at the end of this article.

The theory for these cartridges is the same as most of the other HP/Canon monochrome cartridges, so we will not include them here.

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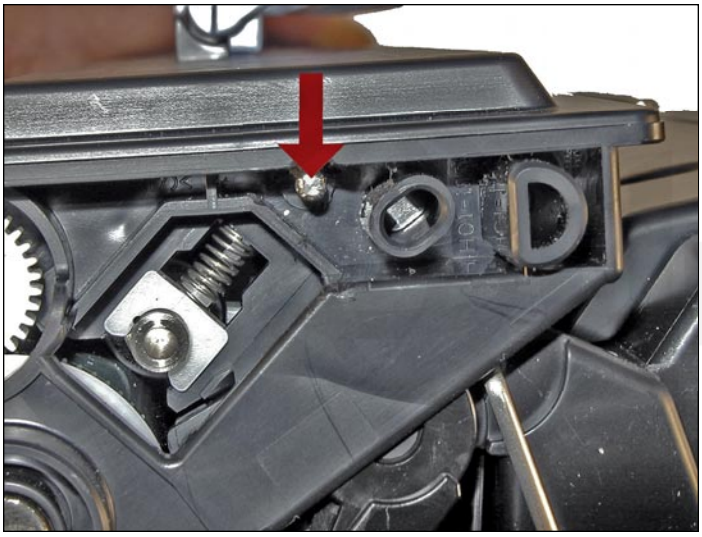
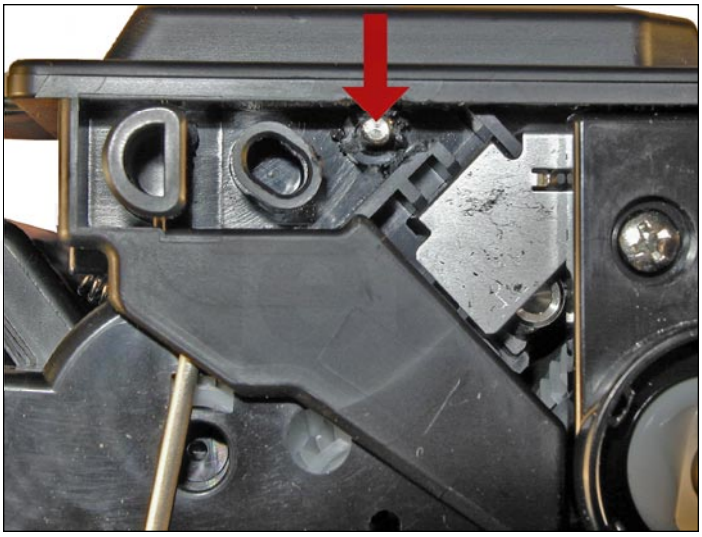
REQUIRED TOOLS

1. Toner approved vacuum
2. A small common screwdriver
3. A Phillips head screwdriver
4. Needle nose pliers
5. Flush cutting wire cutters

REQUIRED SUPPLIES

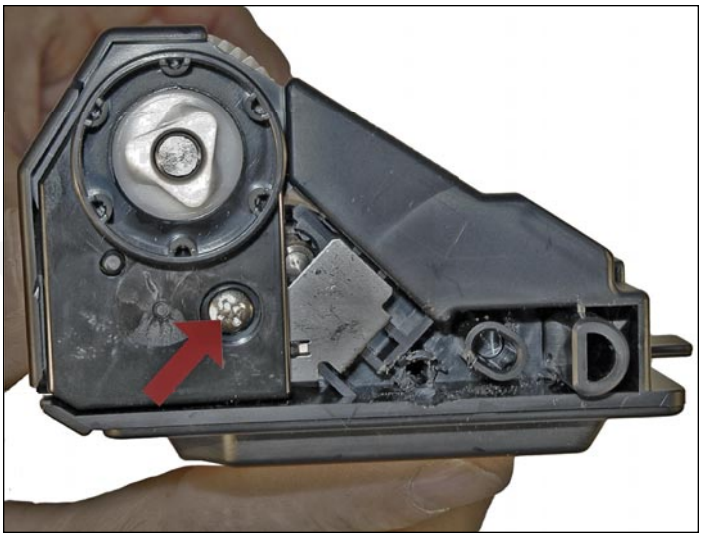
1. Toner (500 grams) for use in the Canon EP105 cartridge
2. New OPC drum
3. New wiper blade
4. New PCR (optional)
5. New magnetic roller (optional)
6. New doctor blade (optional)
7. 99% isopropyl alcohol
8. Magnetic roller cleaner
9. Drum lubricant
10. Conductive grease
11. White lithium grease





1. Note on each end of the cartridge there are small silver pins. To separate the two halves, these pins must be removed. There is no need to cut through the top of the cartridges to remove the pins. With a Dremmel tool or wire cutters, cut away the plastic from around the pins and remove the pins.

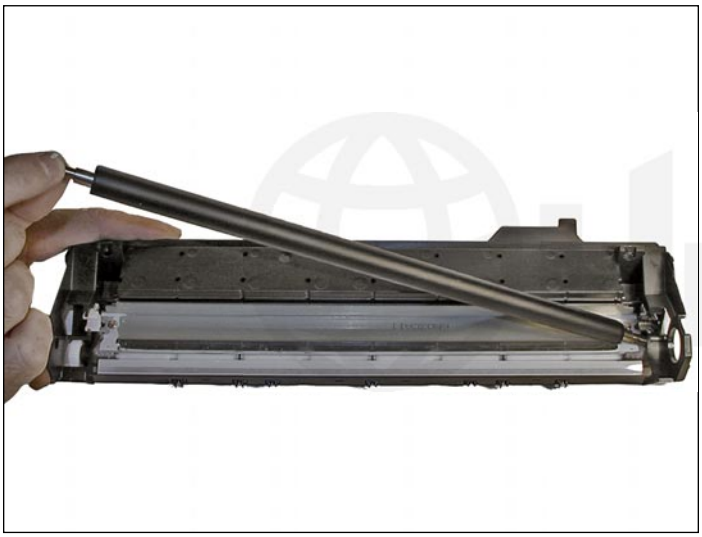
2. Separate the two halves.



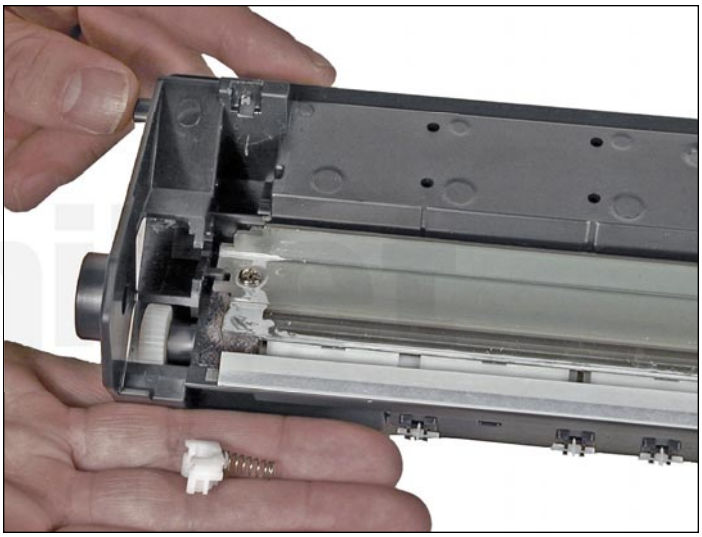
3. On the large gear side, remove the drum alignment plate and screw.

4. On the small gear side, remove the metal axle pin with wire cutters. The pin comes out easily, and there are already two notches in the plastic that allow the wire cutters access.

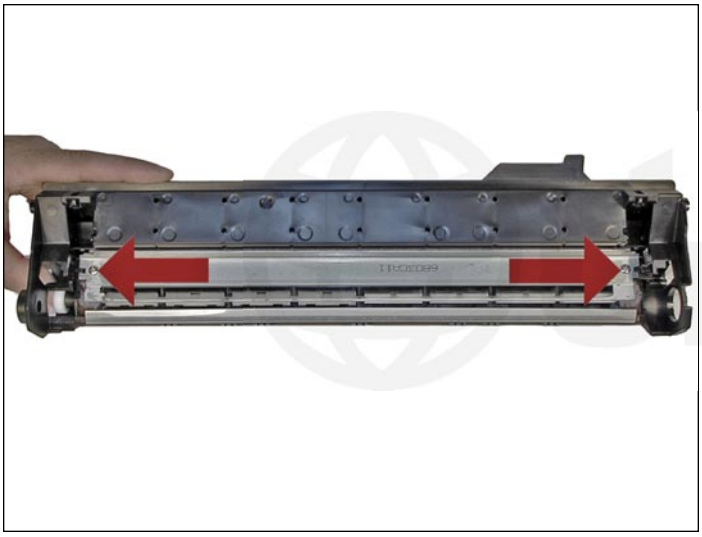
5. Remove the photoconductive drum, and place aside.



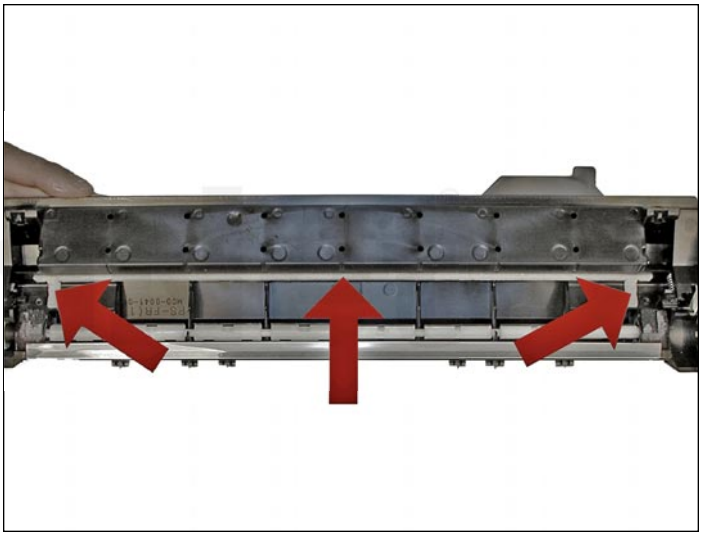
6. Remove the primary charge roller (PCR), by prying it out of the clips on either end. Clean the PCR with your preferred cleaner and place the aside.



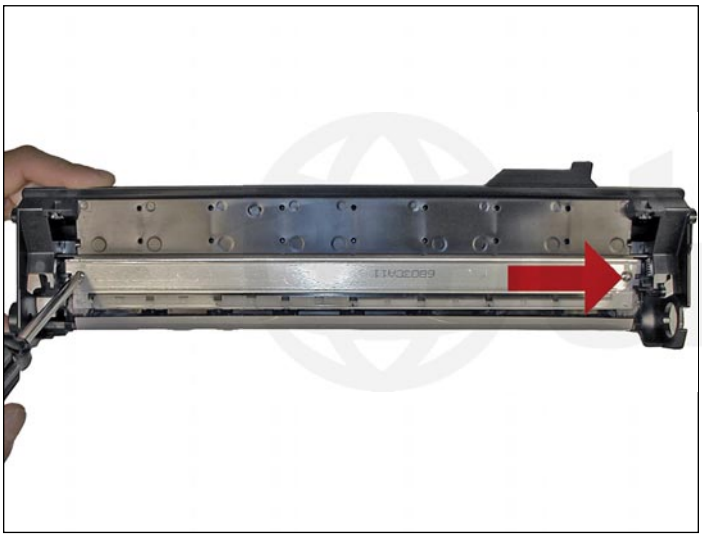
7. Remove the white PCR holder by carefully prying it off the cartridge. This holder must be removed to allow the wiper blade to be removed.



8. Remove the wiper blade and two screws. **NOTE**: Be very careful not to damage or distort the thin mylar recovery blade, next to the wiper blade. If this blade is bent or damaged in any way, it should be replaced.

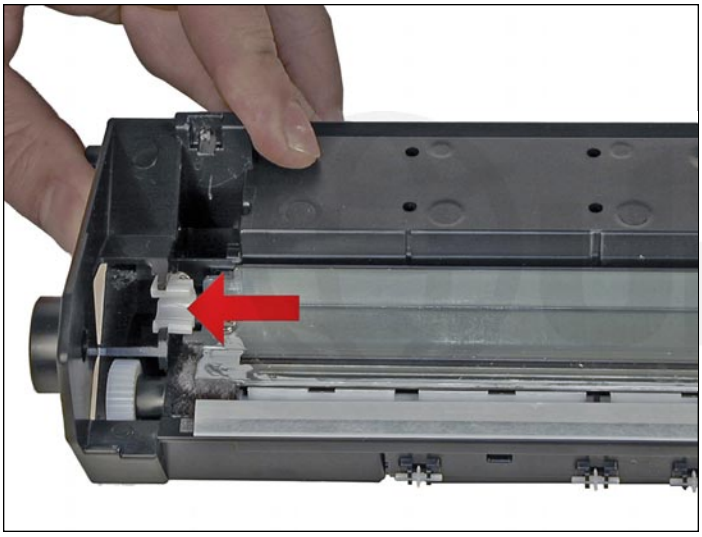


9. Clean out any remaining waste toner. Make sure the foam seals under the wiper blade are clean and not damaged.



10. Lightly coat the new blade with your preferred lubricant.

Install the wiper blade and two screws into the cartridge.



11. Install the white PCR holder and spring.

Clean both of the PCR holders, and place a small amount of conductive grease on the black side.

Install the PCR.

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.

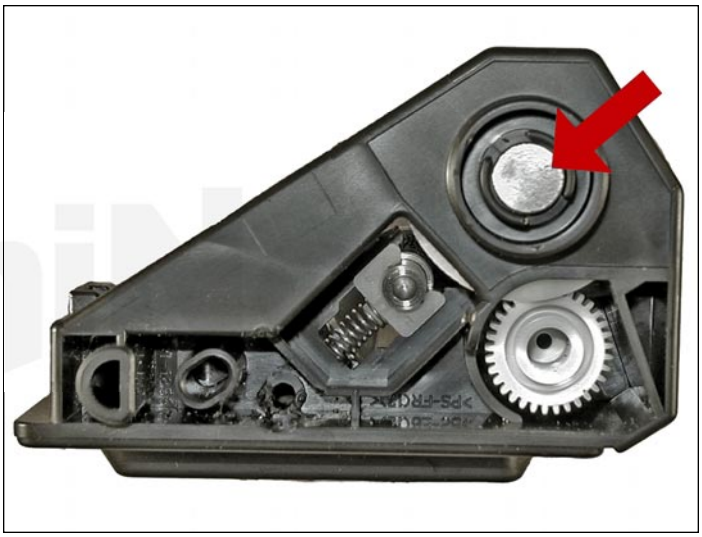
E. Using the super glue, place a few (3-4) small drops of glue strategically around the inside edge of the OPC drum. Make sure you leave a blank area for the metal contacts!

F. Insert the contact gear.
G. Check for continuity again with the Ohmmeter.
H. Repeat steps E and F for the drive gear.

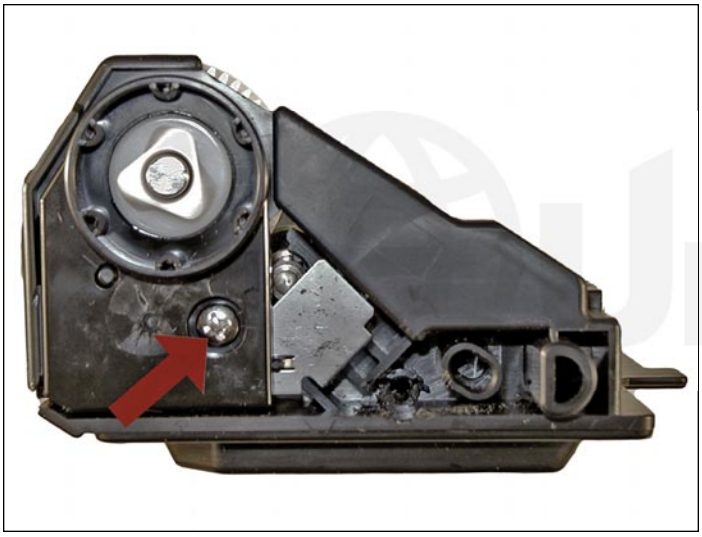
NOTE: Be very careful not to place the metal contacts in direct contact with the glue, as this will interfere with the proper grounding of the drum, and the cartridge will not print properly, (solid black pages). It is also very important to NOT put any glue on the gear, as the chances of it dripping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

12. Coat the drum with your preferred lubricant.

Install the drum.

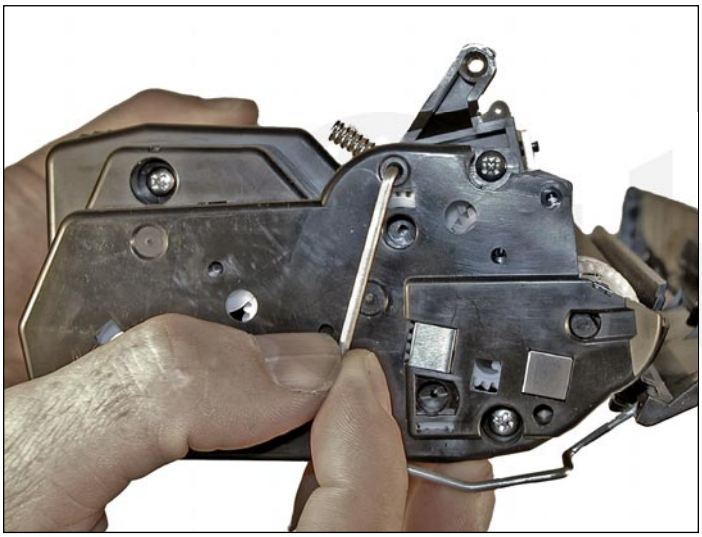


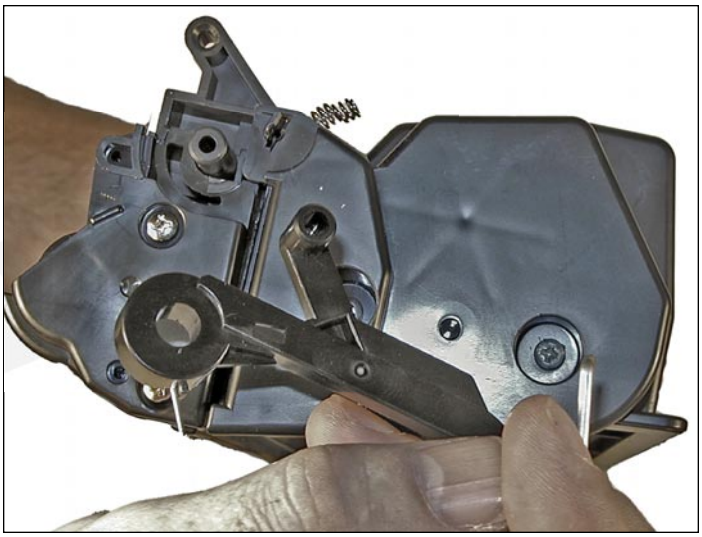
13. Replace the metal drum axle pin, and install it on the cartridge.



14. Install the plastic drum alignment plate and screw.

Place the waste chamber aside.

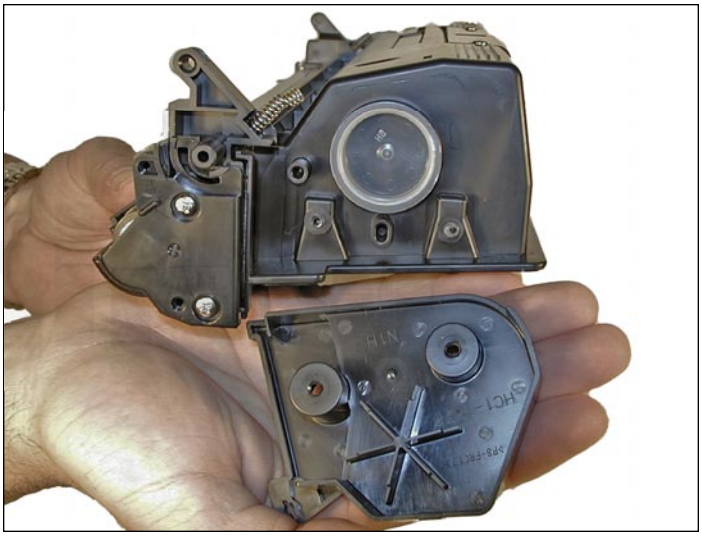




15. Remove the drum cover by prying up the metal bar on each side of the toner hopper.

Pry off the spring-loaded arm.

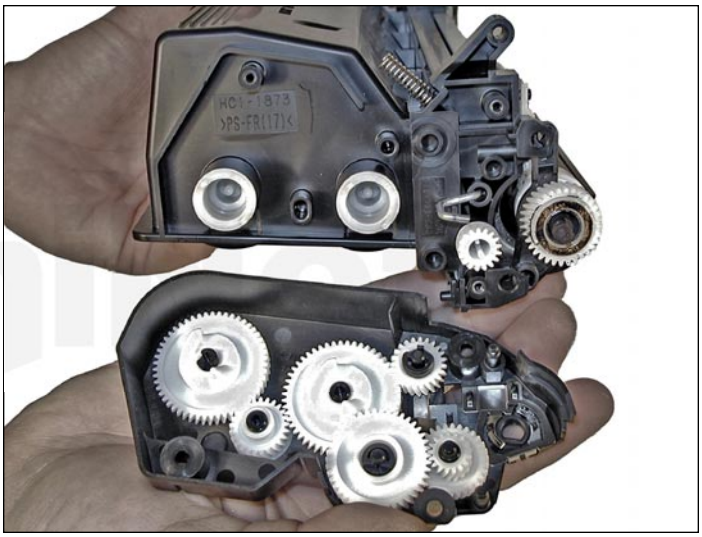
Be careful not to lose the spring!



16. Take the supply section on the plastic end cap that is held on with plastic rivets.

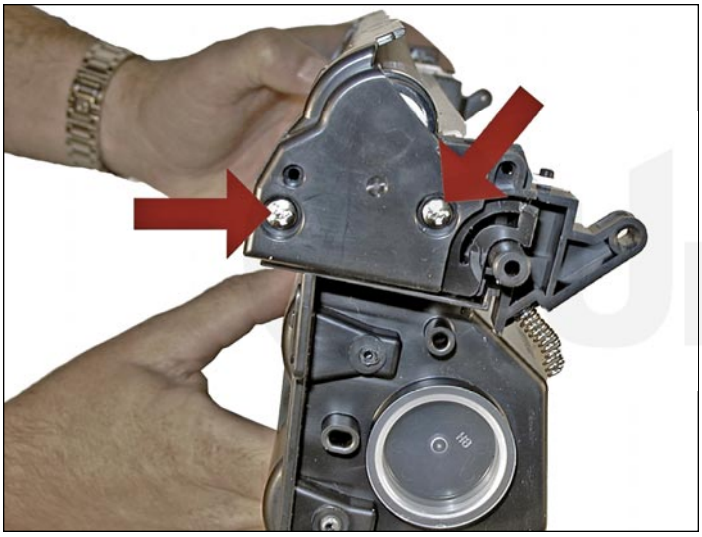
Using a common screwdriver, snap the rivets off.

Remove the end cap.

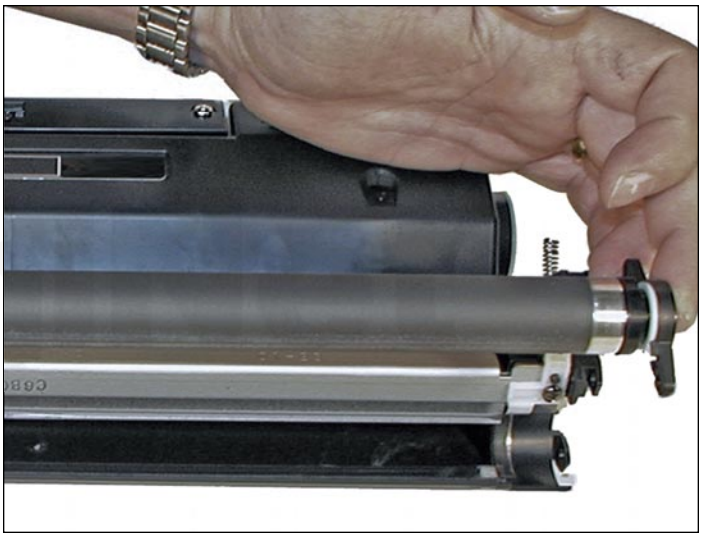


17. Remove the three screws on the large gear side end cap, and remove the end cap.

Note that most of the gear train will come with it, but he gears themselves will not fall off.



18. Remove the two screws from the small end cap on the left (non-gear) side.



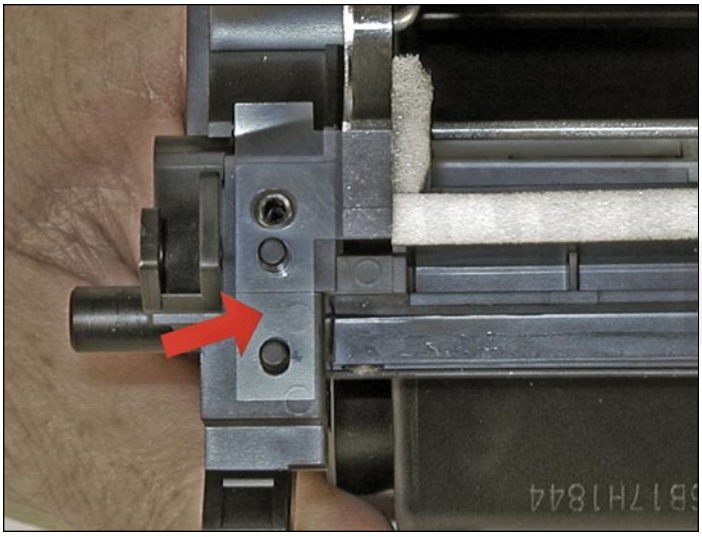
19. Remove the magnetic roller assembly from the cartridge.

20. Remove the magnetic roller drive gear and copper contact plate, so they do not get lost.

21. Remove the two screws and doctor blade.

Pry the bar up, being very careful not to break the alignment pins.

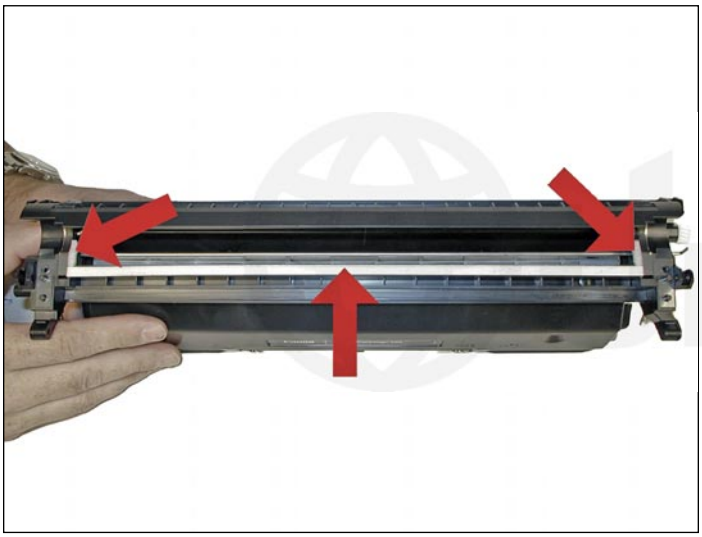
Note the screws used here are of a darker color, and are longer than other screws in this cartridge.



22. Clean out any remaining toner.

Be very careful not to lose the clear doctor blade shims!

If a seal is available, install it now.

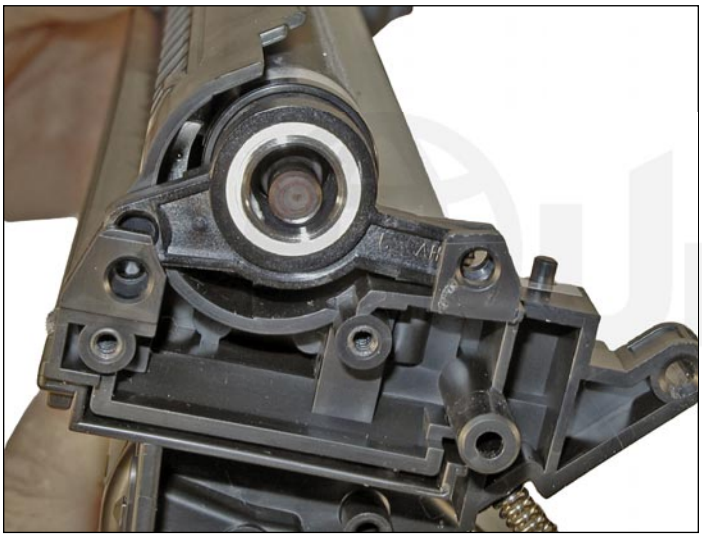


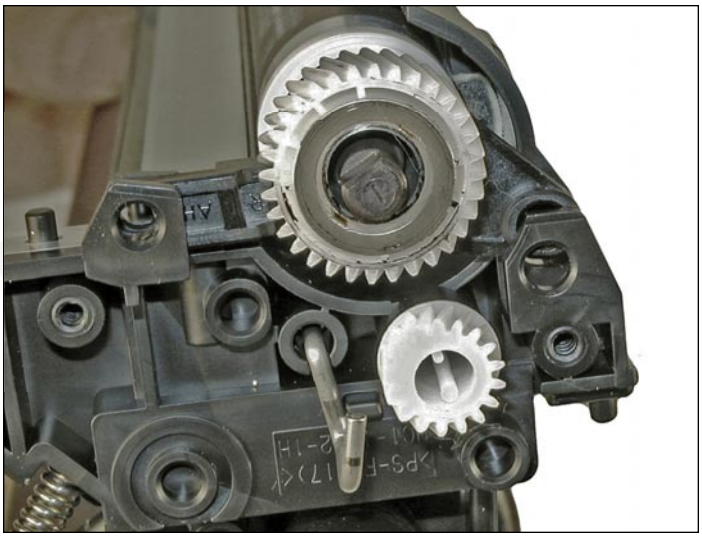
23. Make sure the doctor blade seals are clean.

Install the doctor blade and two screws (be sure to use the darker colored screws).

24. Clean the magnetic roller contact plate that you removed earlier from the drive gear. Clean the magnetic roller sleeve with a dedicated magnetic roller cleaner.

25. Install the magnetic roller drive gear and copper contact plate onto the magnetic roller assembly. Make sure the contact fits tight!

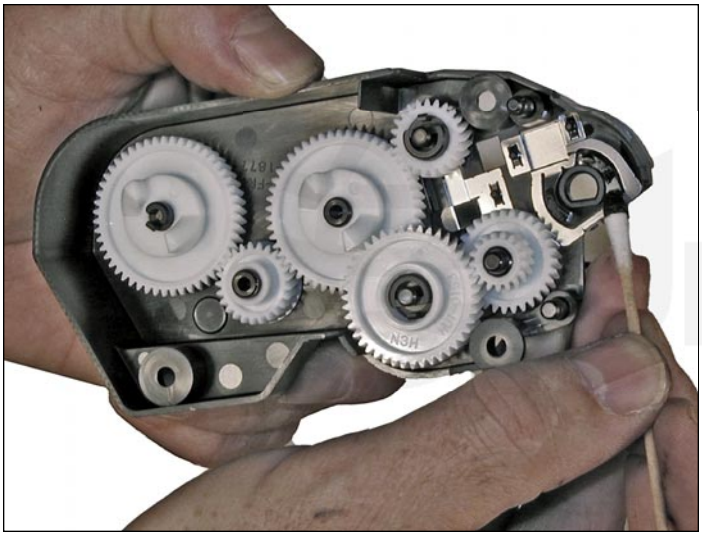




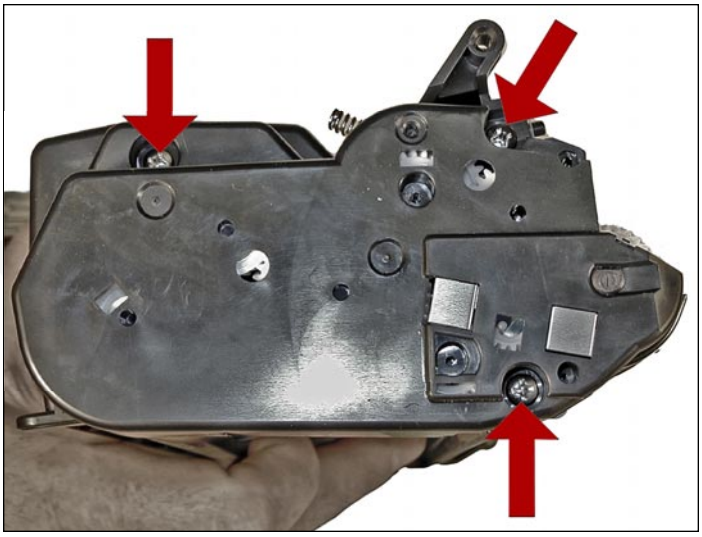
26. Install the magnetic roller assembly.

Set the bearings so they fit into their respective slots.

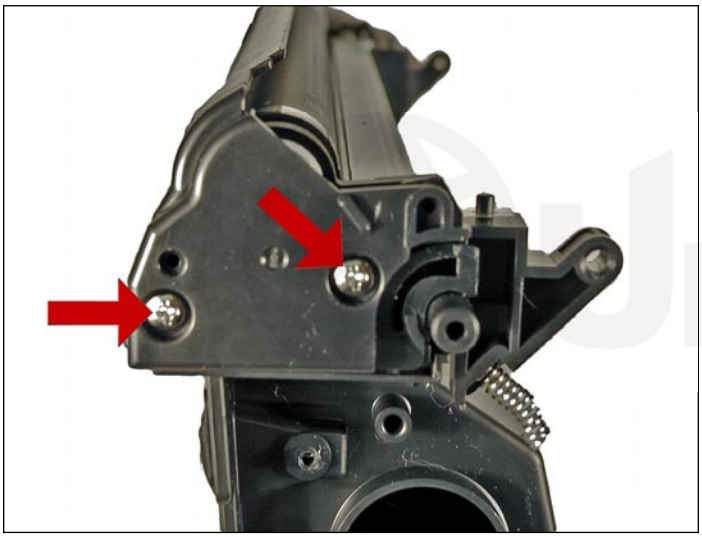
Replace the conductive grease on the contact plate.



27. Clean the contacts on the gear end cap, and replace the conductive grease.

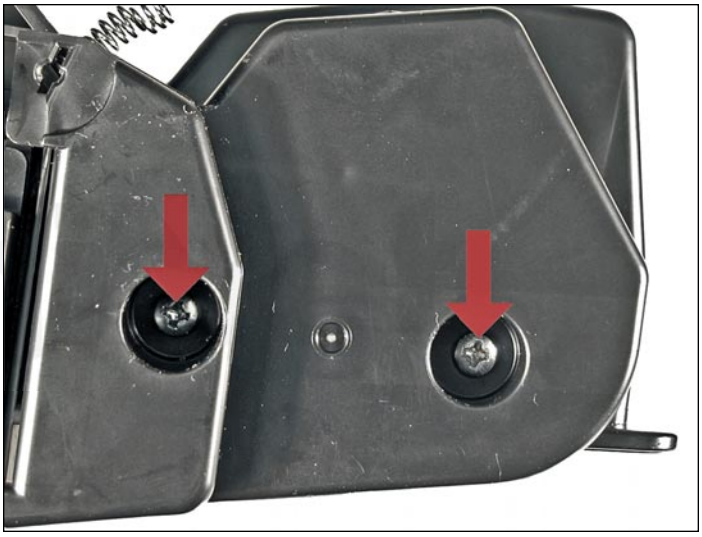


28. Install the gear end cap and three screws. If the end cap does not fit, the stationary magnet needs to be turned, so that it fits properly.



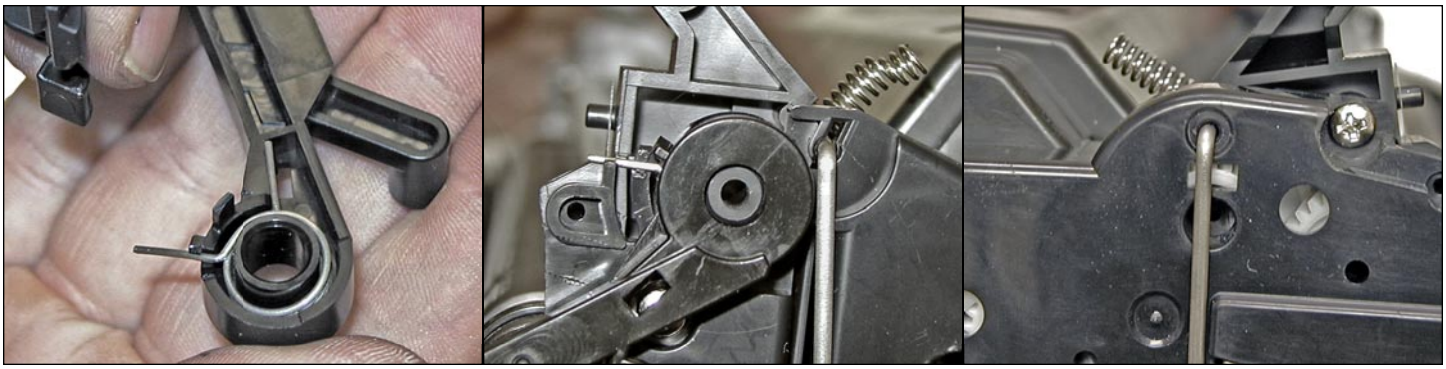
29. Install the small end cap and two screws.

30. Fill the toner hopper with 500 grams of toner for use in the Canon EP105 cartridge. Replace the fill plug.



31. While holding the remaining end cap in place, drill two small shallow holes into where the plastic pins once were.

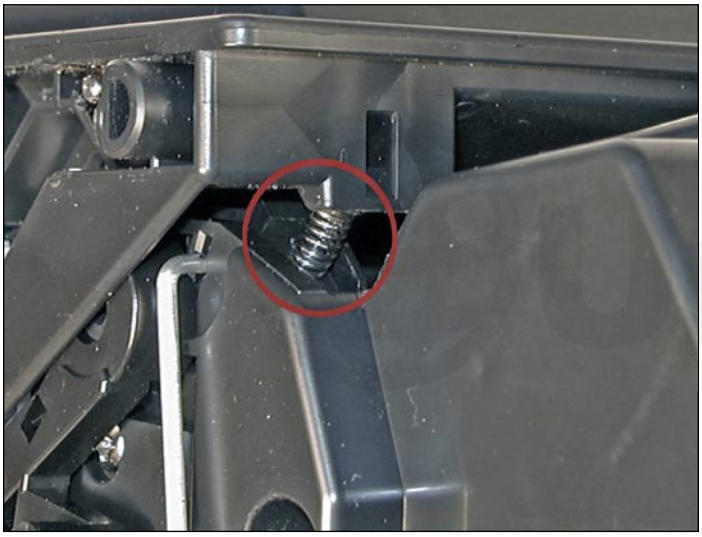
Install two screws to hold the end cap in place.

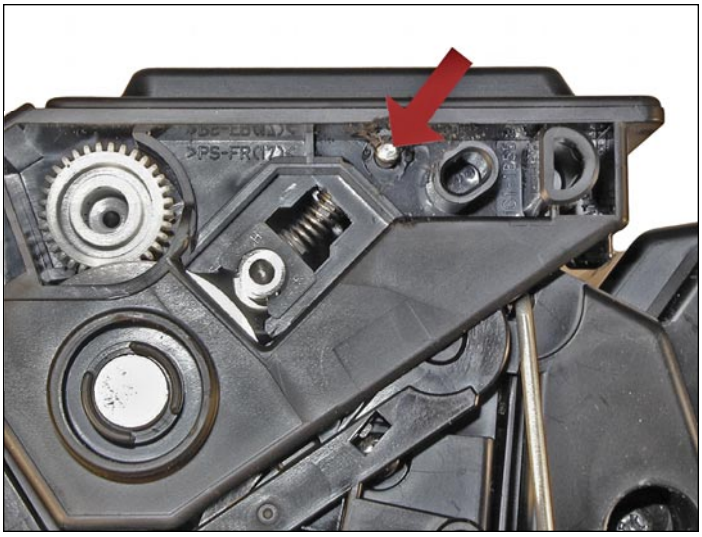


32. Set the spring on the drum cover arm as shown.

Install each end of the metal bar into its proper holes.

Snap the arm into place, and make sure the spring-loaded arm is set correctly.





33. Place the two halves together.

Make sure the springs are set, and install the two pins.

PRINTING TEST PRINTS

As this is a copier, the simplest way to make a test print is to just take a good test sheet and make a copy.

REPETITIVE DEFECT CHART

Drum:	**95 mm**
Magnetic roller:	**63 mm**
PCR:	**45 mm**

PRINTER TROUBLESHOOTING

While most of the error messages are text-oriented and fairly specific, there are a few that are numbered only. We are listing some of the more common ones here:

001: **Paper jam**
009: **No paper**
037: **Memory full**

CHANGING THE DENSITY

1. Press ADDITIONAL FUNCTIONS, then ADJUSTMENT/CLEANING.
2. Press the up or down arrow until SPECIAL MODE M appears on the display.
3. Press SPECIAL MODE M.
4. Select NORMAL, LOW, or HIGH.
5. The mode is set.
6. Press DONE repeatedly until the BASIC FEATURES screen appears.