LEXMARK™ E120
CARTRIDGE REMANUFACTURING INSTRUCTIONS

CARTRIDGE COVER

TONER CARTRIDGE

DRUM UNIT

SUMMIT TECHNOLOGIES

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REMANUFACTURING THE LEXMARK E120 TONER & DRUM CARTRIDGE

By Mike Josiah

The Lexmark E120 was introduced in February 2006. The E120 engine is a new low cost engine that in some ways is a bit strange, but it works well, and will most likely sell well too. The new machines are based on a Lexmark 19ppm, 600 DPI engine. With a retail price of around $149.00 USD (March 2006), these machines should be very popular. As with all Lexmark cartridges these days, they do have a chip that shuts the cartridge down after use on the return versions. The code in this chip is new, and at the time of this writing new replacement chips are actively being worked on. Check with you supplier for availability. There are also different cartridges used for different regions of the world. It is too soon to say for certain, but as with other new Lexmark series, I think it is a safe guess that it is the chips that are different.

There are two cartridges used for this engine, a toner and drum unit. The toner cartridge is rated for 2,000 pages and the drum unit is rated for 25,000. No high yield cartridges are available at this time. These machines also have standard and Return Program (Prebate) cartridges and all have chips. The “Return” chips must be replaced each cycle. The drum units are the same wordwide. We have included the instructions for the drum cartridge as well as they are so simple to do. Testing is on-going so at the time of this writing, we do not know if a drum or wiper blade will last another cycle. Preliminary test indicate they will, but not enough tests have been run to say for certain. There are no chips on the drum units.

The drum units are installed and removed from the back of the printer, and the toner from the front. A little strange but as these machines have such a small footprint, understandable. I just wonder what the customer reaction to that will be. New machines ship with a 500-page starter cartridge, so new owners will be looking for cartridges fairly quickly.

CARTRIDGES FOR USE IN THE USA AND CANADA

Part#	Type	Yield	List Price
12026XW	Drum cartridge	25,000	$40.00 USD*
12015SA	Return cartridge	2,000	$86.75 USD*
12035SA	Standard cartridge	2,000	$66.75 USD*

CARTRIDGES FOR USE IN EUROPE, THE MIDDLE EAST AND AFRICA

Part#	Type	Yield
12026XW	Drum cartridge	25,000
12016SE	Return cartridge	2,000
12036SE	Standard cartridge	2,000

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CARTRIDGES FOR USE IN THE ASIA PACIFIC REGION

Part#	Type	Yield
12026XW	Drum cartridge	25,000
12017SR	Return cartridge	2,000
12037SR	Standard cartridge	2,000

CARTRIDGES FOR USE IN LATIN AMERICA

Part#	Type	Yield
12026XW	Drum cartridge	25,000
12018SL	Return cartridge	2,000
12038SL	Standard cartridge	2,000

*(Pricing as of March 2006)

MACHINES BASED ON THIS ENGINE SO FAR ARE:

Lexmark E120
Lexmark E120n

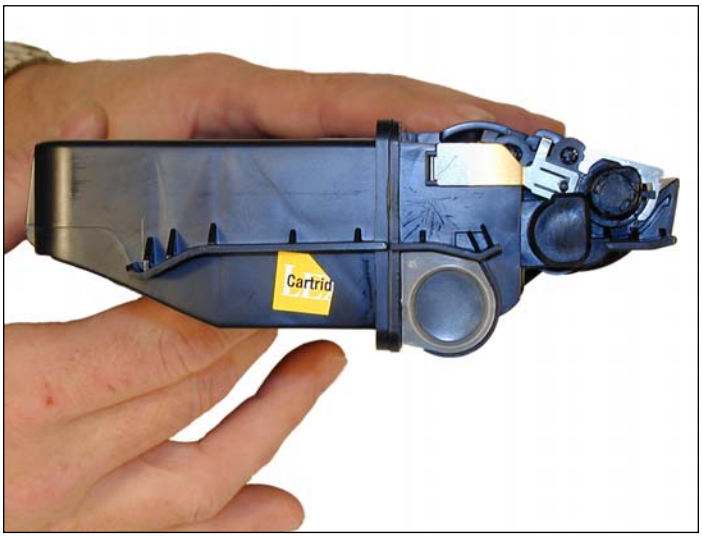
How to take test prints as well as troubleshooting are covered at the end of the article.

TOOLS REQUIRED

1. Toner approved vacuum
2. A small common screw driver
3. A Phillips head screwdriver
4. Needle nose pliers

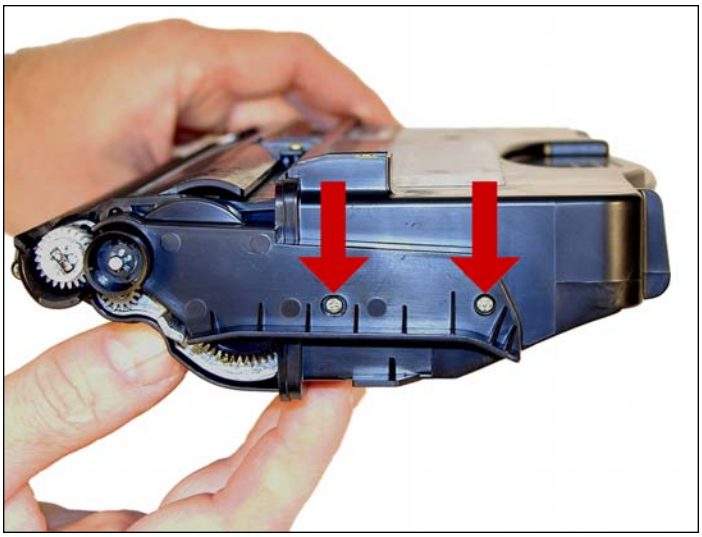
SUPPLIES REQUIRED

1. Lexmark E120 toner
2. Toner Magnet cloths
3. Lint-free synthetic cotton 4"x 4" pads
4. 99% pure Isopropyl Alcohol
5. Cotton Swabs



TONER CARTRIDGE

1. Remove the fill plug from the right side of the cartridge. (Developer roller facing away from you). Dump out any remaining toner from the hopper.

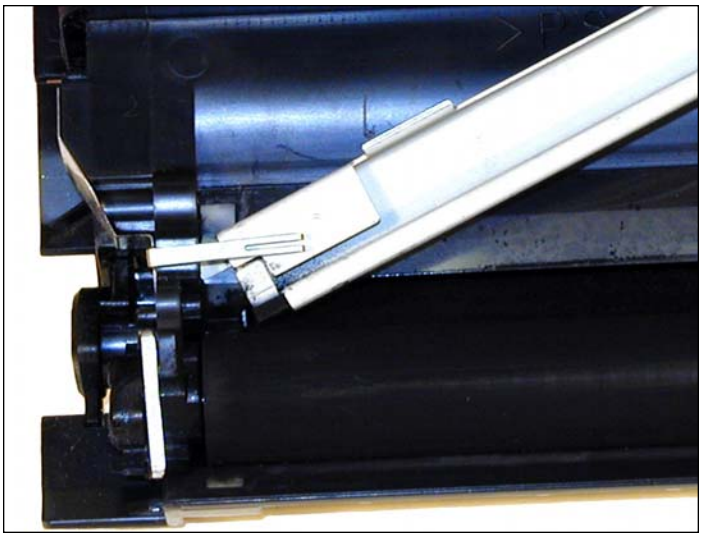


2. On the left side, remove the two small screws and the gear cover.

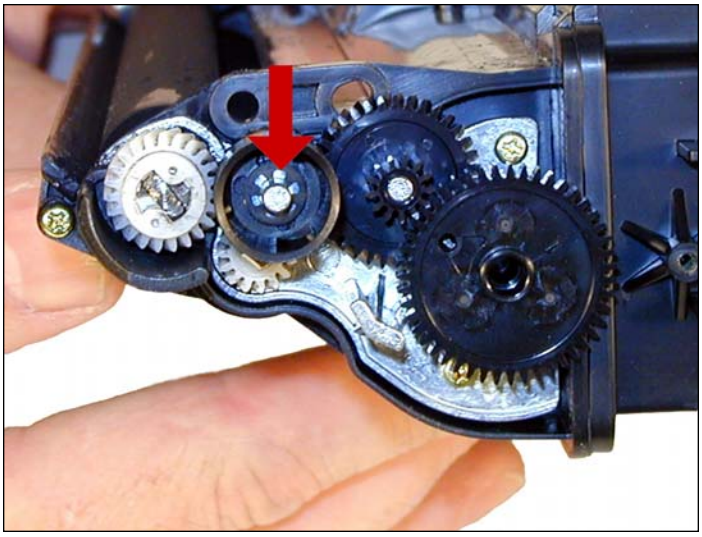
3. Remove the center screw on the developer roller cover.

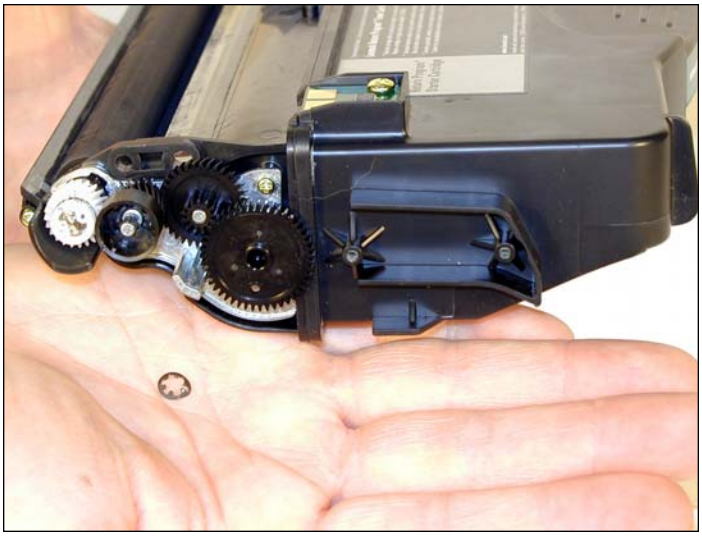
4. Lift up the developer roller cover from the center, and remove. Be careful not to damage the plastic pins on the cover.

5. Remove the doctor blade spring.



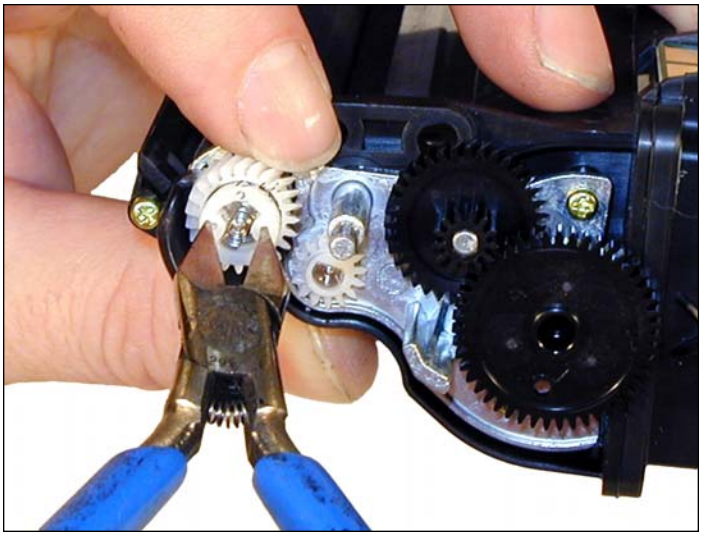
6. The doctor blade is now loose. Carefully lift it out, watching the contact spring on the right side. Also, be careful not to damage the retaining blade that is located under the doctor blade.

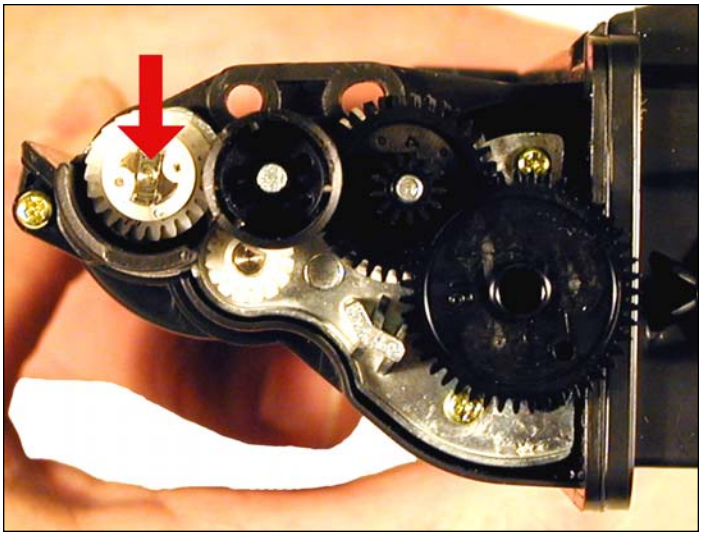




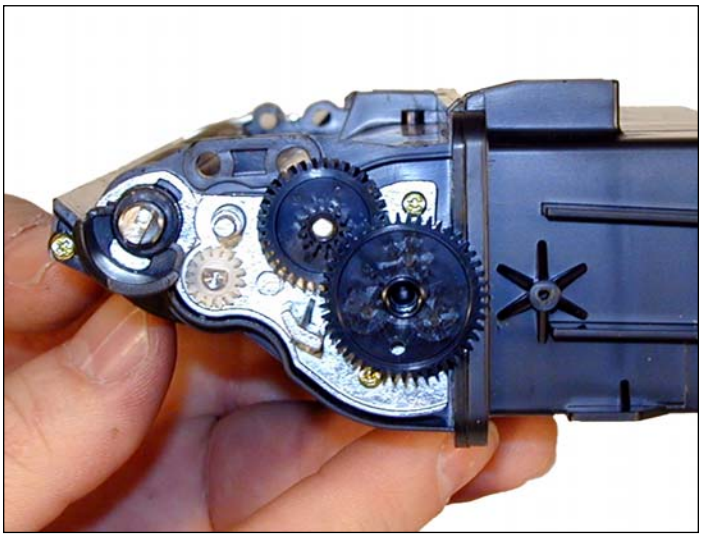
7. On the large black drive gear, there is a locking star washer pressed onto the shaft. With a small pair of wire cutters, cut the old washer off, and remove. You can try to bend up the different legs of the washer, but that is very time consuming, and most likely at least one leg will break anyway and the washer will still have to be replaced.

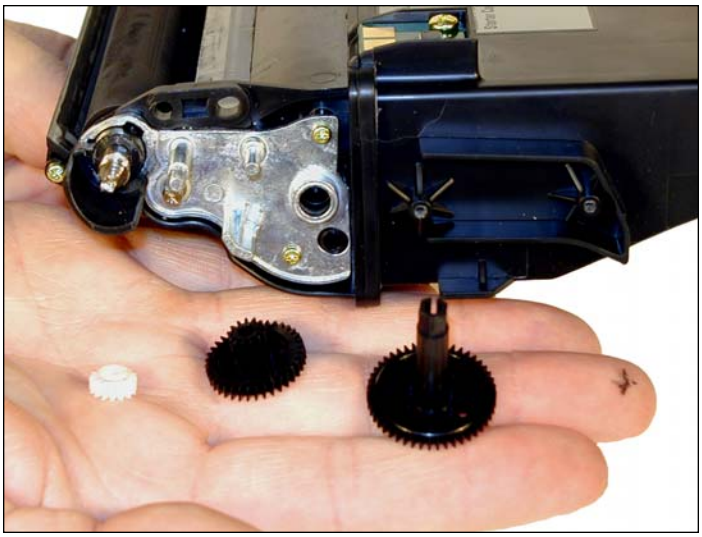
8. Remove the large black drive gear. Make sure you don't loose the small flat washer from under where the star washer was.



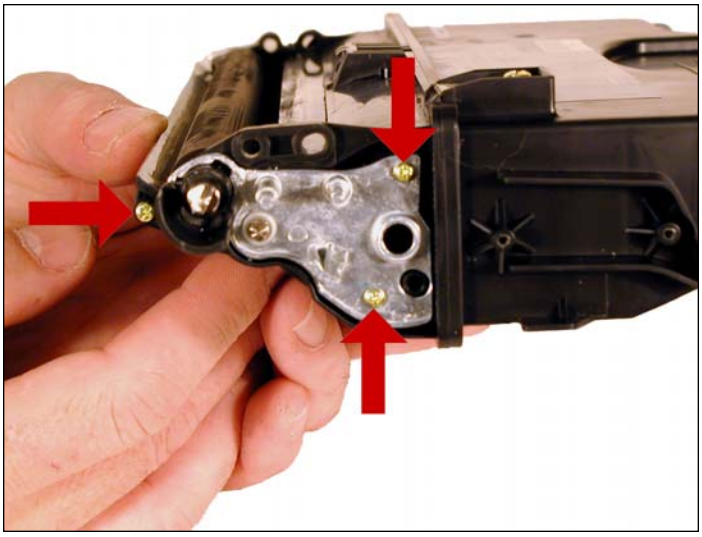


9. On the white developer roller gear, take the tips of your small wire cutters, and place them into the two small holes. Spin the gear so the metal shaft is in the slot on the opposite side of the gear. Remove the gear.



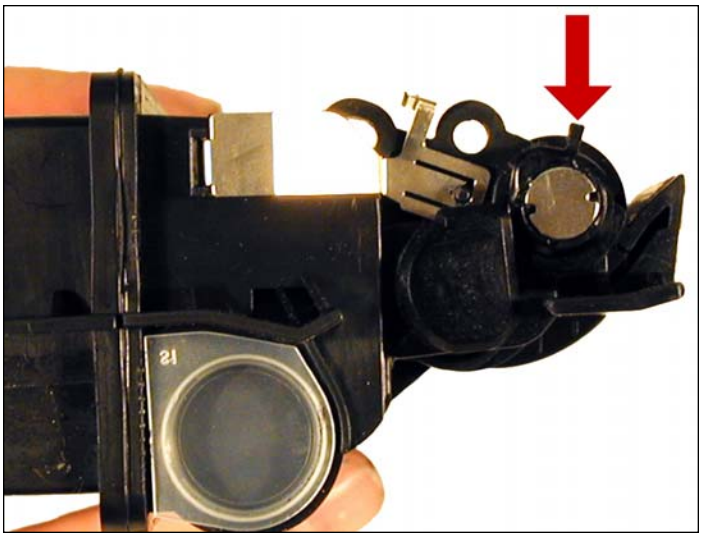


10. Remove all the gears.



11. Remove the three screws and gear alignment plate.

12. With a small flat head jeweler's screwdriver, pry off the metal lock from the developer roller bushing.



13. Turn the developer roller bushing so the plastic tab is facing up.

14. Lift the developer roller out of the cartridge. The bushing will come off with the roller.

15. Clean out any remaining toner from the hopper. Make sure the developer roller retaining blade does not get damaged!

Wipe the developer roller down with a clean lint free cloth. Testing is ongoing, but for now, do not use any chemicals to clean it.

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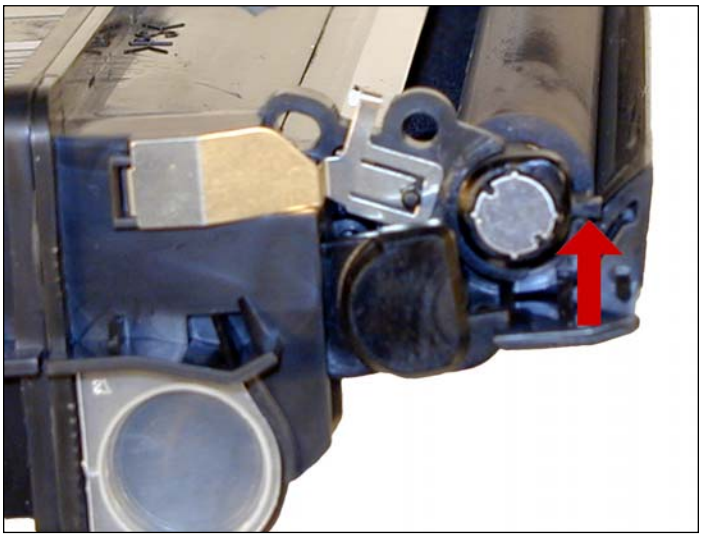
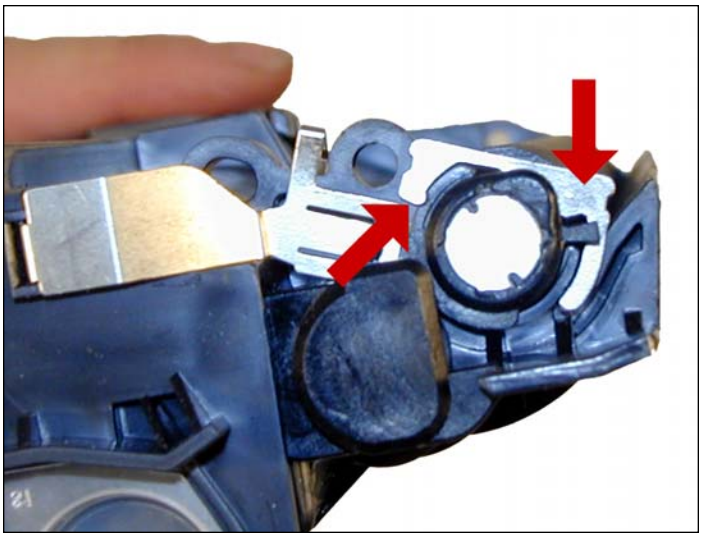
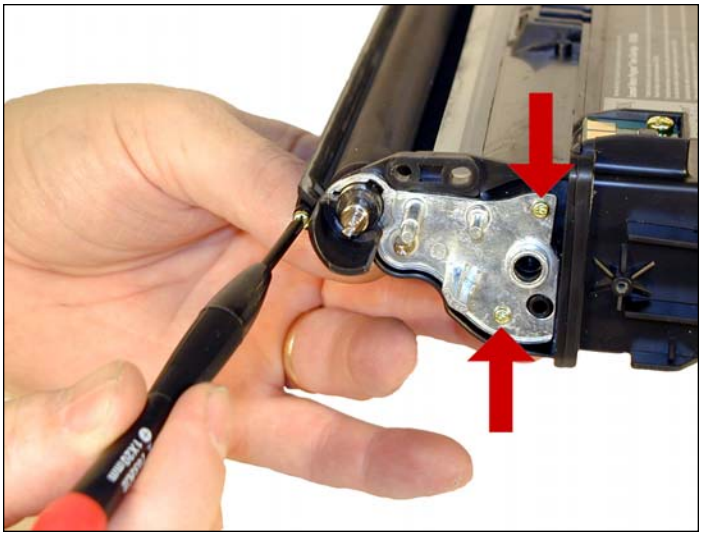




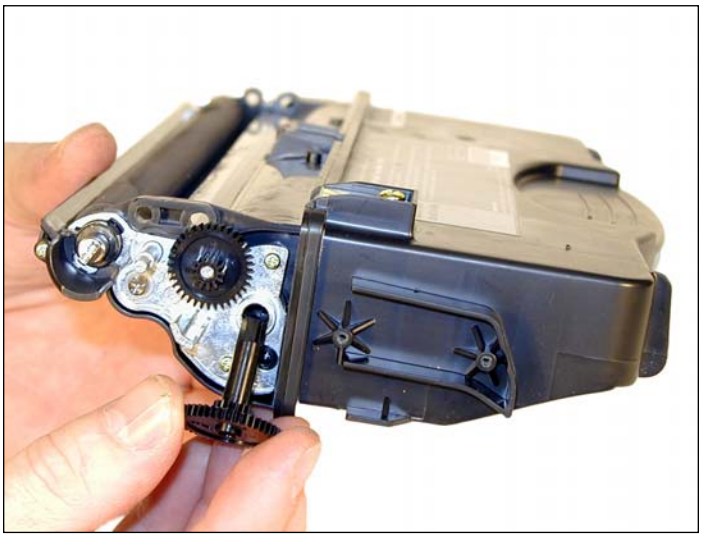
16. Re-install the developer roller. Spin the plastic bushing so it is locked in place.

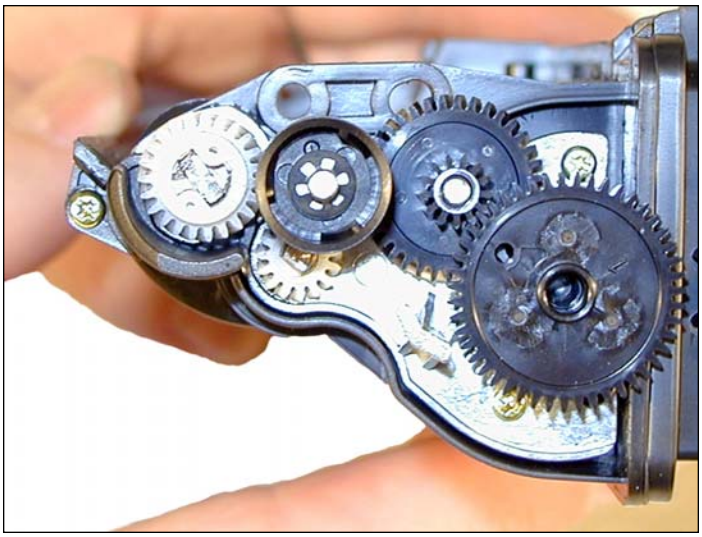
Install the metal locking bar, note that the left side fits into the small notch, and the right side is flush with the hub.

17. If the small metal plate fell off the bushing, replace it.

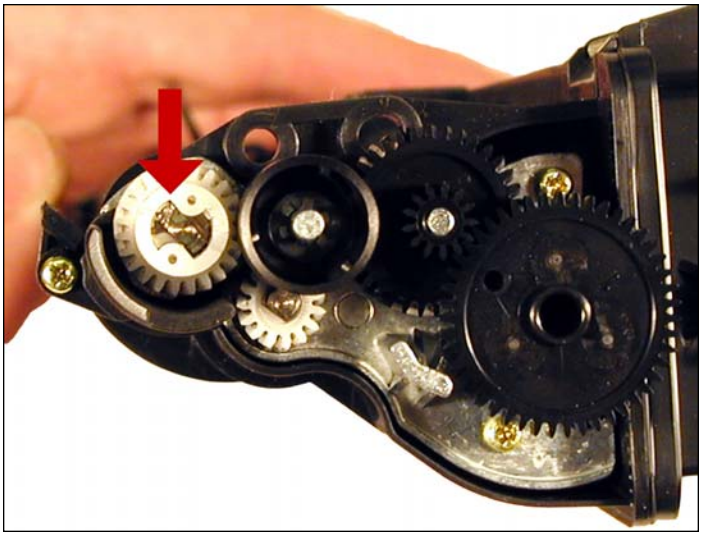


18. Install the gear axle plate and three screws.

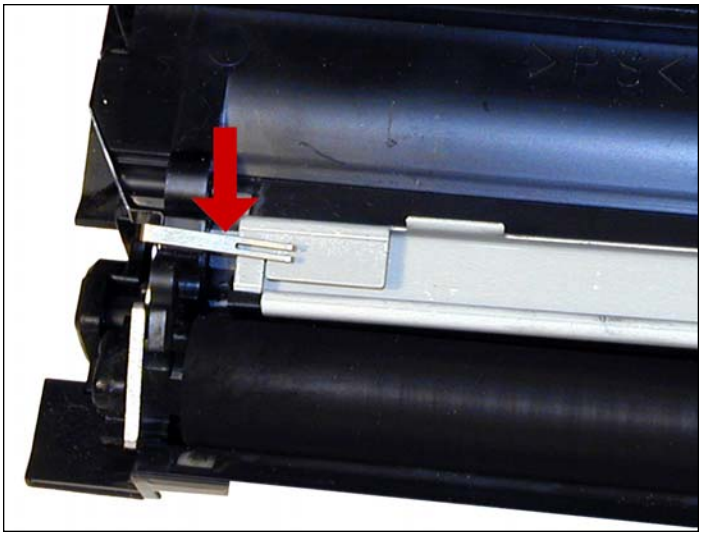




19. Install the gears. The large gear with the long shaft fits onto the toner agitator bar inside the hopper. Spin it a few times and listen to make sure it is engaged properly. On the large drive gear, make sure the flat washer is in place, and install a new star lock washer. Make sure the lock washer is pressed down fully against the base of the gear.



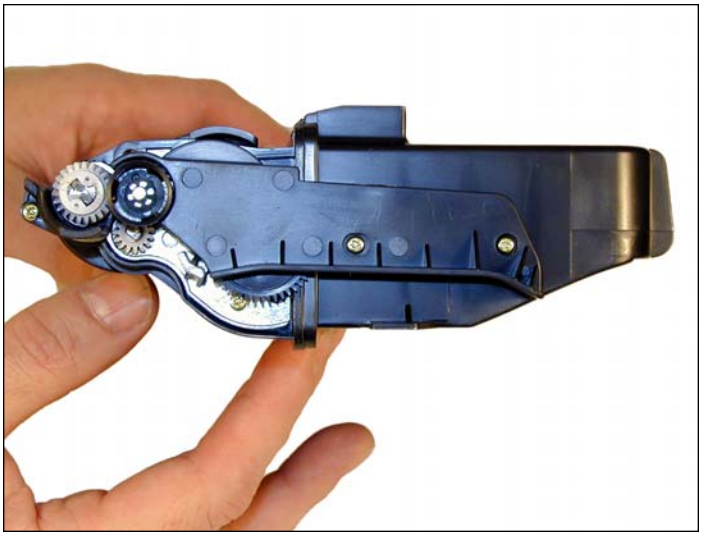
20. Lastly on the developer roller drive gear, spin the gear by the two small holes while holding the developer roller in place. This will lock the gear on to the shaft.



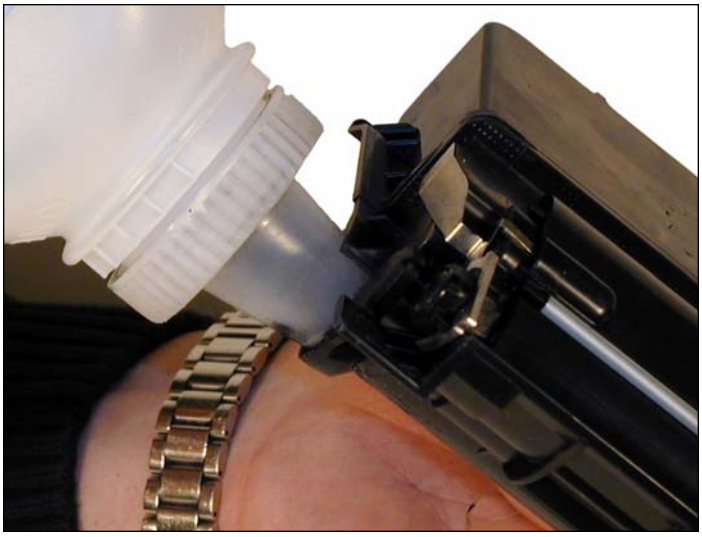
21. Clean the doctor blade and install. Make sure the metal tab on the right side fits into its slot.

22. Install the doctor blade spring.

23. Install the developer roller cover and screw.



24. Install the gear cover and two screws.



25. Fill hopper with E120 toner, replace the fill plug.

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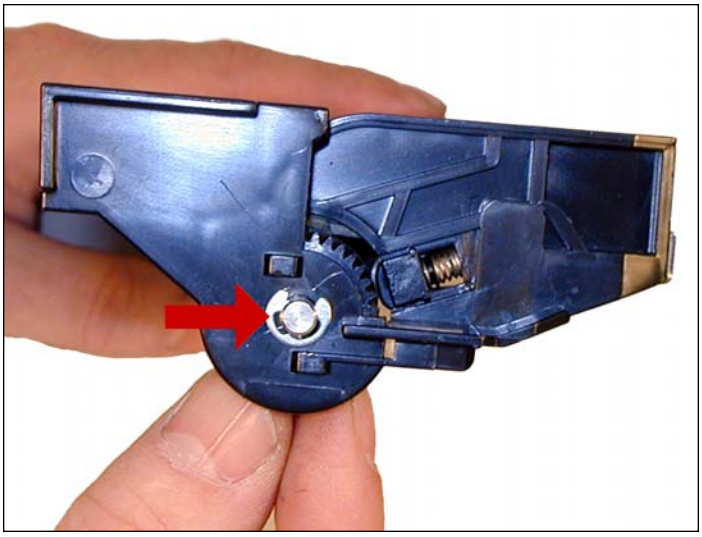
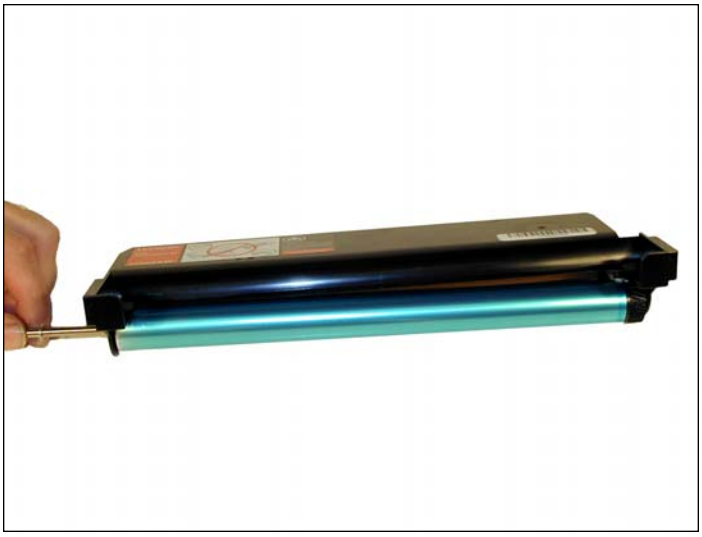
26. Replace the chip.

27. If the cartridge cover is available, wrap the cartridge as indicated. This cover helps protect the developer roller from damage. Aftermarket covers are in development.



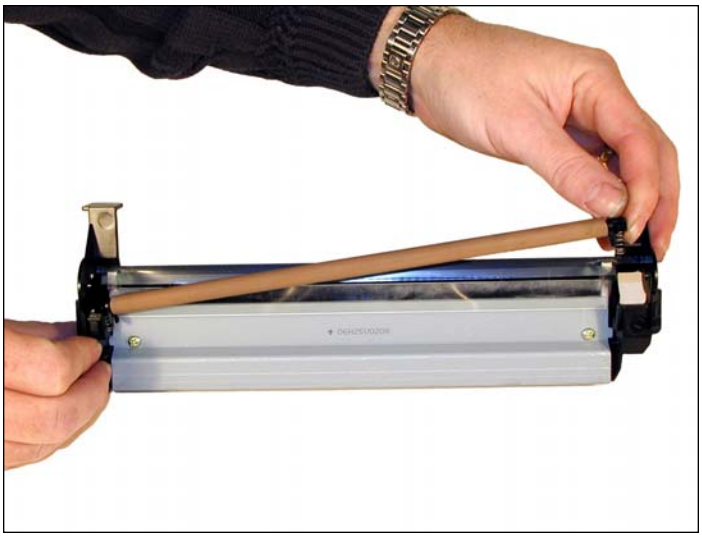
DRUM CARTRIDGE

28. On the gear side of the drum unit, remove the E-ring from the drum axle shaft.

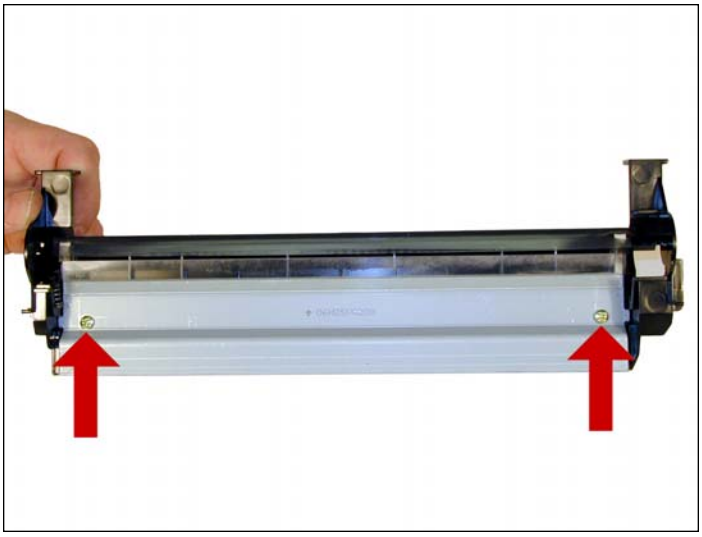


29. Slide the drum axle out from the drum.

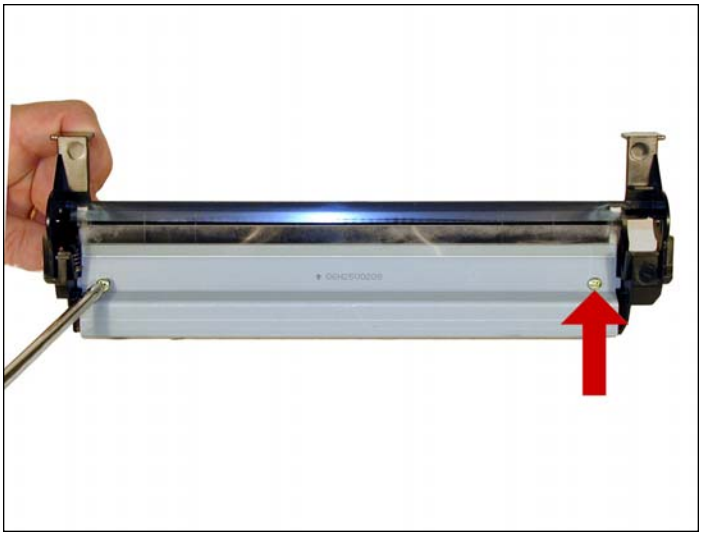
30. Remove the drum.



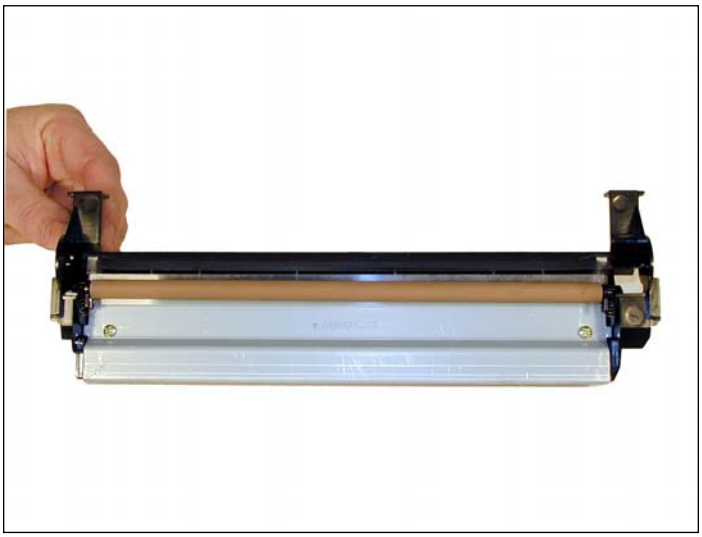
31. From the right (gear) side, remove the PCR assembly (the spring loaded holder may come with it).



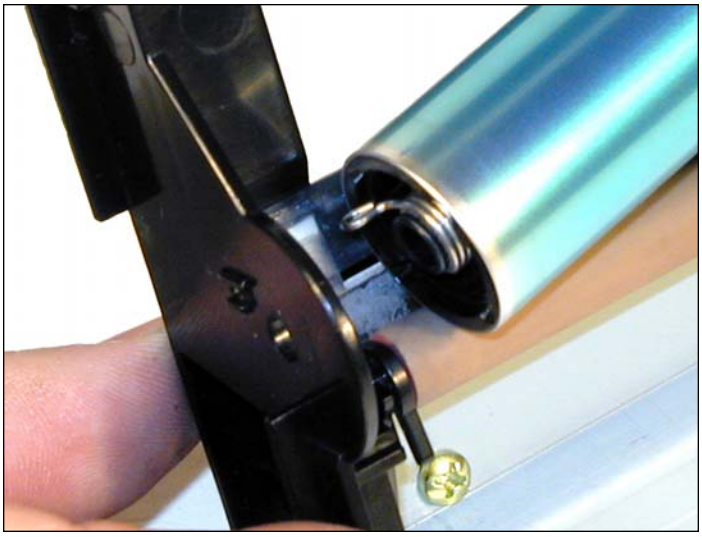
32. Remove the two screws from the wiper blade, remove the blade. Clean out the waste toner.

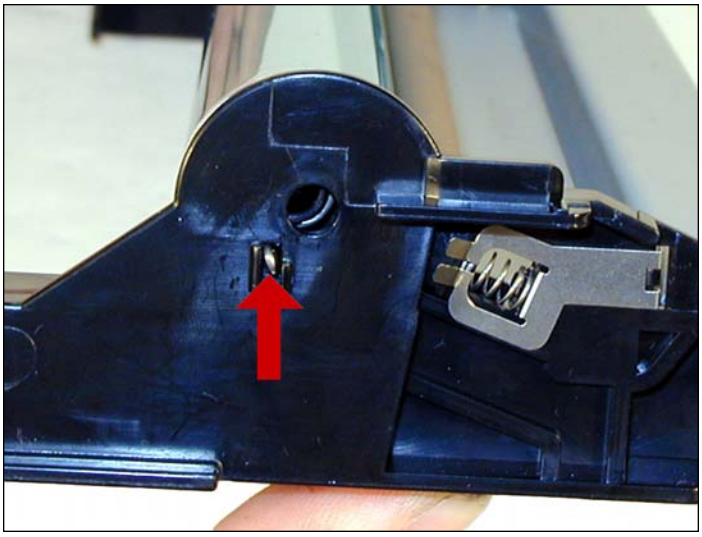


33. Clean and coat the edge of the wiper blade with your preferred lubricant. Install the blade and two screws.



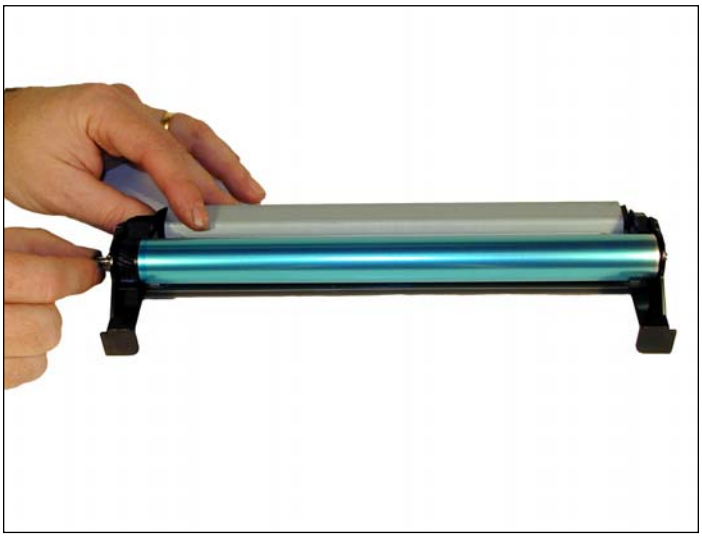
34. Clean the PCR and install. Make sure the black spacers are orientated towards the back of the wiper blade as shown.





35. Coat the drum with your preferred lubricant, install the drum.

Make sure the small spring on the non-gear side fits into the slot in the plastic cartridge wall.



36. Install the drum axle shaft from the gear side of the drum. Install the E-ring.

PRINTING TEST PAGES

1. With the printer at the READY state, press the CONTINUE button.
2. The printer will print the MENU SETTINGS page and NETWORK SETUP page if so configured.

REPETITIVE DEFECT CHART

Lower Fuser Roller (Printer)	17.8 mm
Toner Feed Roller (Toner Cartridge)	18.7 mm
PCR (Drum Cartridge)	29.0 mm
Paper Pinch Roller (Printer)	30.4 mm
Developer Roller (Toner Cartridge)	36.1 mm
Fuser Exit Roller (Printer)	37.9 mm
Transfer Roller (Printer)	48.1 mm
Paper Feed Roller (Printer)	56.2 mm
Upper Fuser Roller (Printer)	62.2 mm
Drum (Drum Cartridge)	74.1 mm
Paper Pickup Roller (Printer)	92.4 mm

PRINTER ERROR CODES (LIGHT SEQUENCES)

The E120 does not have an LCD display. It has a panel of lights to indicate problems. Some of the more common are listed below. In some cases, the same sequence of one light on, and another blinking will have different meanings. The difference is the amount of times the blinking light blinks.

The first four sequences listed will give you a good idea of what I mean:

ERROR light ON / READY light blinking (4x): Cartridge region mismatch.
Wrong chip is installed on the cartridge.

ERROR light ON / READY light blinking (3x): Missing/defective cartridge.

ERROR light ON / READY light blinking (1x): Door open.

ERROR light ON / READY light blinking (8x): Toner low.

ERROR light blinking / READY light blinking (1x): Replace the Drum unit.

Some light sequences have a Primary and Secondary sequence. The Secondary sequence can be seen by pressing the CONTINUE button twice quickly.

Here is an example of the Primary and Secondary sequence:

Primary: **TONER LOW light ON / ERROR light blinking**

Secondary: **TONER LOW light ON / PAPER JAM blinking / ERROR light on:**
Missing/defective cartridge.

Most of the others deal with various paper jams. All are listed in the user manual.