

# SAMSUNG® ML-3050 • 3051

## TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS



SAMSUNG® ML-3050 TONER CARTRIDGE

# REMANUFACTURING THE SAMSUNG ML-3050/3051 TONER CARTRIDGES

By Mike Josiah and the Technical Staff at UniNet

First released in August 2006, the Samsung ML-3050 printers are based on a 30ppm, (27ppm for the Dell) 600dpi engine.

These cartridges are based on a completely new engine/cartridge design. They look somewhat similar from the outside to the ML-2250, but are very different. These cartridges do not have a drum cover, and come new with a piece of heavy paper with foam glued to it taped around the cartridge.

There are six different replacement cartridges in the series. So far there are three basic printer models, and each has a low yield and high yield cartridge. Each version of cartridge has its own specific chip. Methods to reset the OEM chips and/or new replacement chips should be available as you read this. Unlike past cartridges, the chip covers are held in place by plastic rivets. To replace the chip, the rivets need to be cut off, holes carefully drilled, (not too deep or the cartridge will leak), and screws installed. This is definitely a cartridge where a reset box is recommended.

The Dell version of these machines, as well as the Samsung SCX machines are multifunction, in that they print, copy, scan, and fax. The Dell 1815n and Samsung SCX-5530FN are also network-capable. Printers as well as cartridges are listed below:

## PRINTER

**Dell Multifunction Laser 1815n**  
**Samsung ML-3050**  
**Samsung ML-3051N**  
**Samsung ML-3051ND**  
**Samsung SCX-5530FN**

## LOW YIELD CARTRIDGE

**310-7943 (RF223)**      **3000 pages**  
**ML-D3050A**              **4000 pages**  
**ML-D3050A**              **4000 pages**  
**ML-D3050A**              **4000 pages**  
**SCX-D5530A**              **4000 pages**

## HIGH YIELD CARTRIDGE

**310-7945 (NF485)**      **5000 pages**  
**ML-D3050B**              **8000 pages**  
**ML-D3050B**              **8000 pages**  
**ML-D3050B**              **8000 pages**  
**SCX-D5530B**              **8000 pages**



Pictured here are differences between the high yield Dell cartridge, and the two different low yield Samsung cartridges. It's a bit strange how Dell has positioned itself on these cartridges in terms of yield, stating the print speed at 27ppm, versus 30ppm for the Samsung, but that's what they did. Even the toner hopper is different!

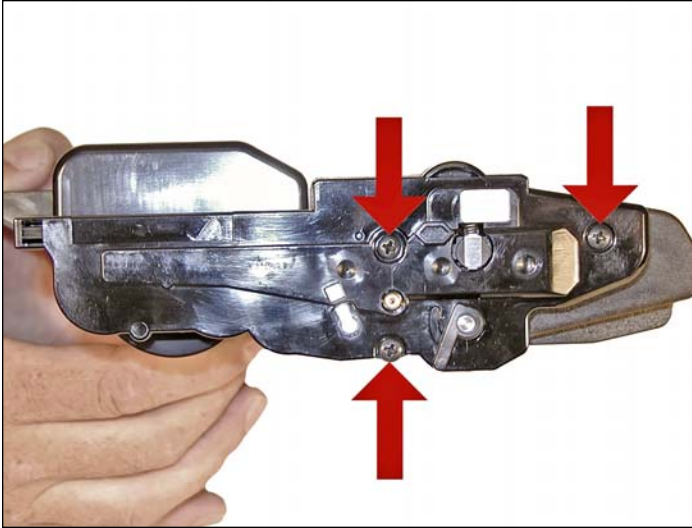
Since its release, the Dell machine has proven very popular. The Samsung machines were released towards the end of September 2006, so no information was available at the time of this writing.

**REQUIRED TOOLS**

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

**REQUIRED SUPPLIES**

1. Toner for use in Samsung 3050 (110g for LY and 215g for HY)
2. Conductive Grease
3. Drum lubricating powder



1. Place the cartridge with the handle/supply chamber facing you. Remove the three screws on the right end cap.



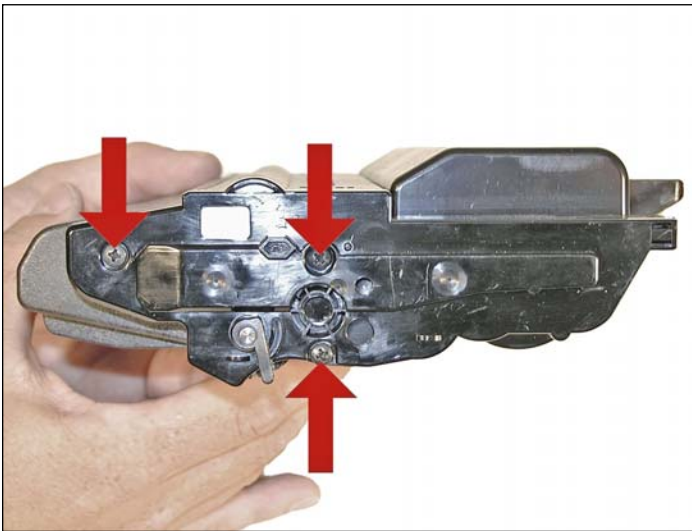
2. Gently pry off plastic drum axle bushing. Keep this bushing with the appropriate end cap when removed. Each side is different.



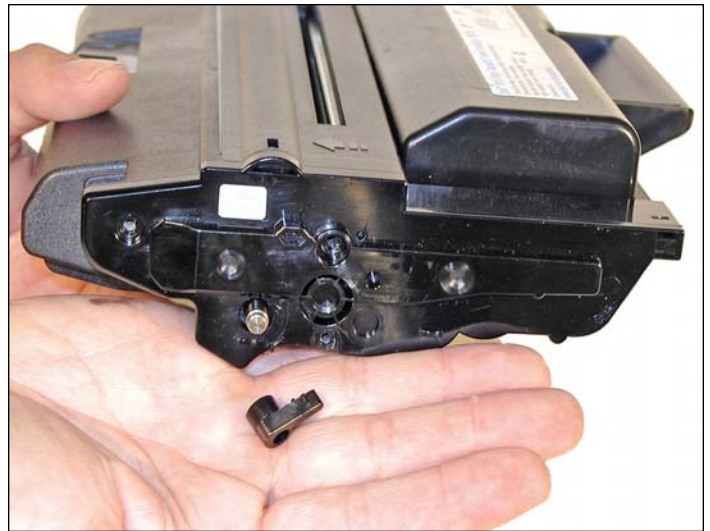
3. On the top edge of the end cap, there is a plastic tab.

Press in on the tab and remove the right end cap.





4. On the opposite side of the cartridge, remove the three screws on the left end cap.



5. Gently pry off plastic drum axle bushing. Keep this bushing with the appropriate end cap when removed.



6. On the top edge of the end cap, there is a plastic tab.

Press in on the tab and remove the left end cap.





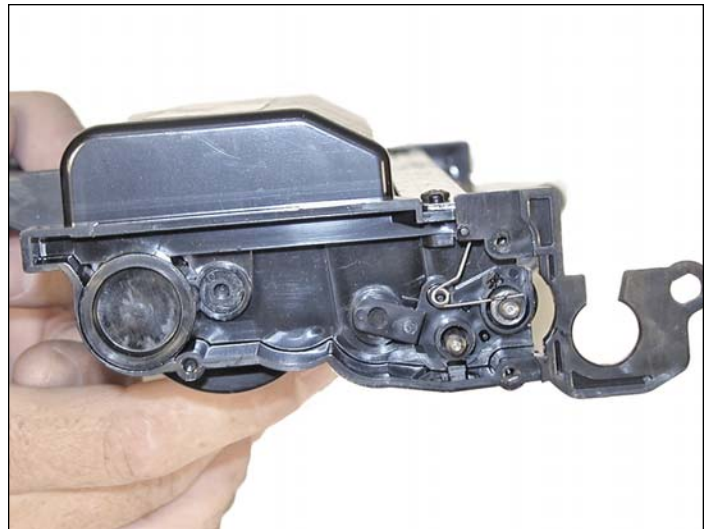
7. Lift off the roller assembly.



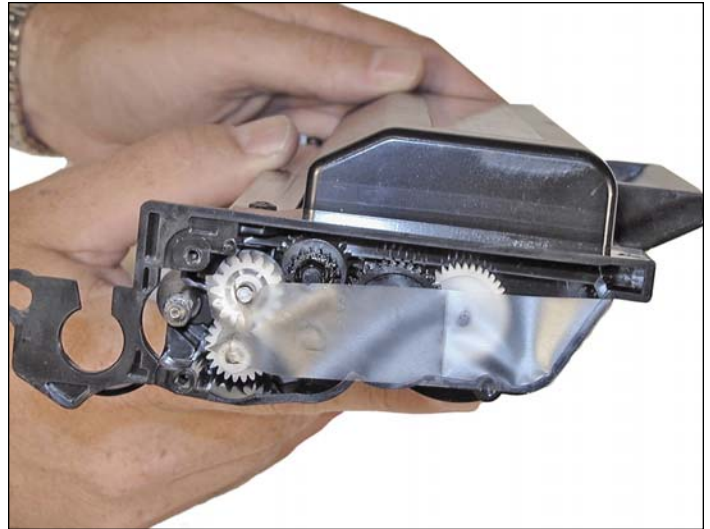
8. Carefully pry up the side plastic piece to release the waste chamber.



9. Remove the waste chamber.

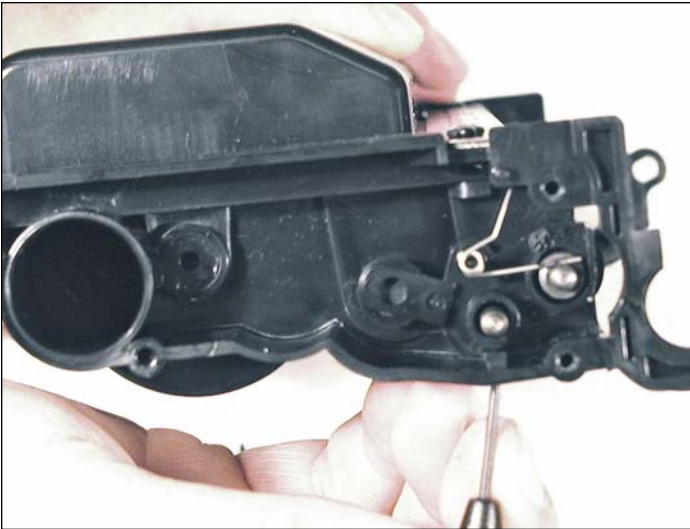


10. On the supply hopper, remove the fill plug and dump out any remaining toner.



11. Remove the developer roller drive gear, and place a strip of tape across the remaining gears.

They do not need to be removed, and the tape will help keep them in place.



12. On the fill plug side, press in on the plastic tab and remove the spring/plastic bushing assembly.



13. Remove the developer roller.



14. Remove the two screws on the doctor blade.



15. Carefully pry up the doctor blade.

Clean out any remaining toner from the hopper.



16. Clean the doctor blade and foam seals. It is too early to say exactly what chemical to use on the blade, but so far 99% isopropyl alcohol seems to work.



17. Replace the doctor blade and two screws.

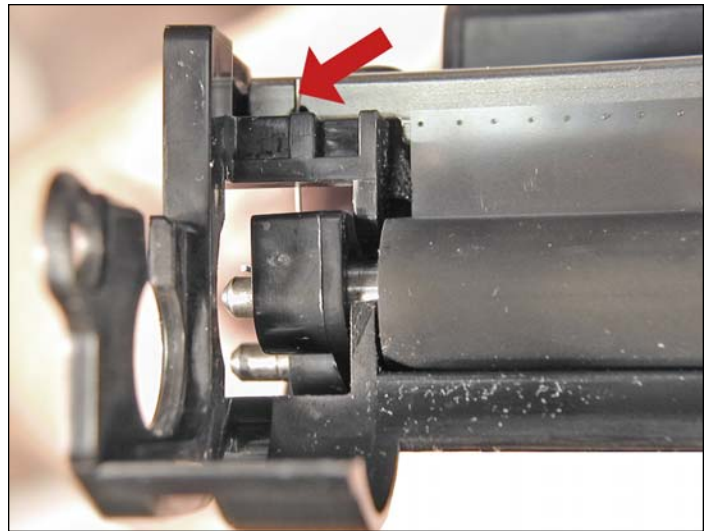


18. Clean and install the developer roller, long shaft side to gear side first.

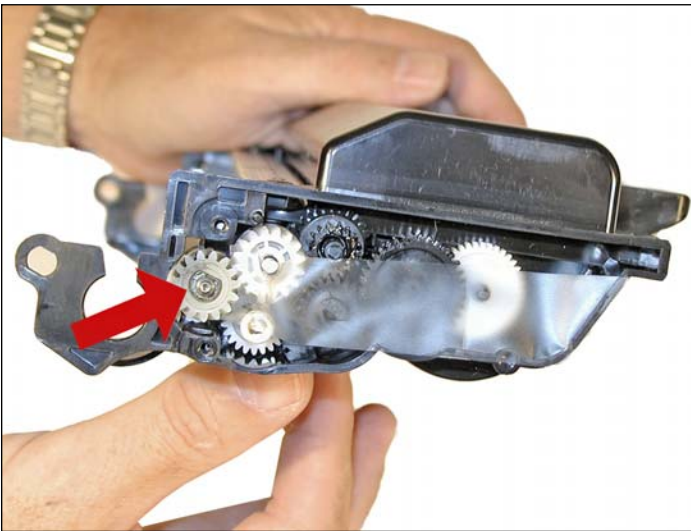


19. Snap the spring/plastic bushing assembly in place.

Make sure the tail of the spring is set properly.







20. Install the drive gear on the developer roller.



21. Fill the hopper with appropriate amount of toner for use in ML-3050. Check for leaks.



22. On the waste hopper, remove the E-ring from the drum axle.



23. Slide the drum axle out from the side opposite the E-ring.



24. Remove the OPC drum.



25. Slide the PCR to the non-contact side.

Remove the PCR.



26. Remove the two screws and the wiper blade. Clean out all the toner from the hopper.

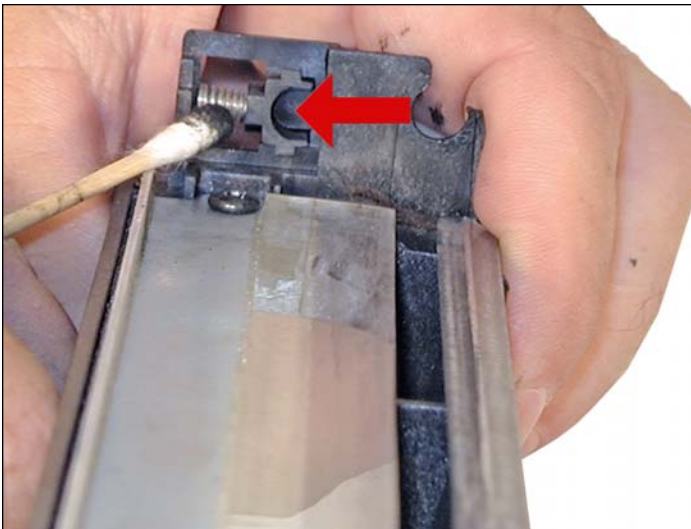
It is interesting to note that on new cartridges, some toner is in the waste hopper. Apparently these cartridges are being tested before they are shipped, or the drum was lubricated with toner.



27. Coat the new wiper blade with your preferred lubricant.

Install the new wiper blade and two screws.

The tail of the wiper blade should face up.



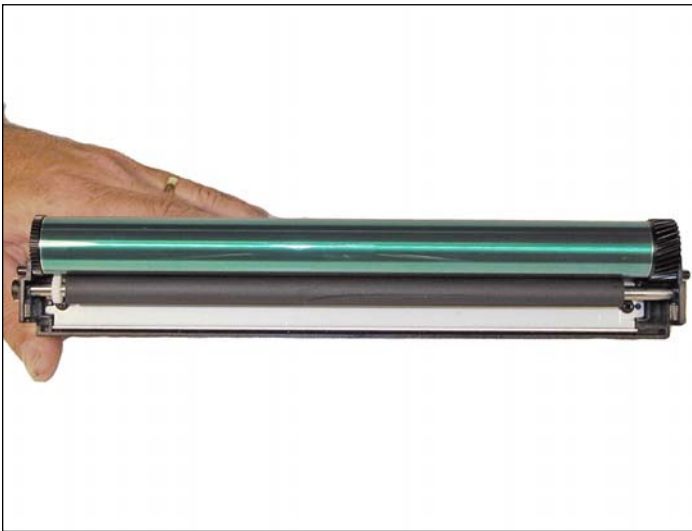
28. Clean the PCR with your preferred PCR cleaner.

**WARNING:** Do not clean the OEM PCR with alcohol, as this will remove the conductive coating from the roller. If the PCR is an aftermarket, follow the cleaning methods recommended by the manufacturer. If the PCR is an OEM, we recommend it be cleaned with your standard PCR cleaner.

Clean the old conductive grease off the PCR shaft and contact as shown. Replace with new.

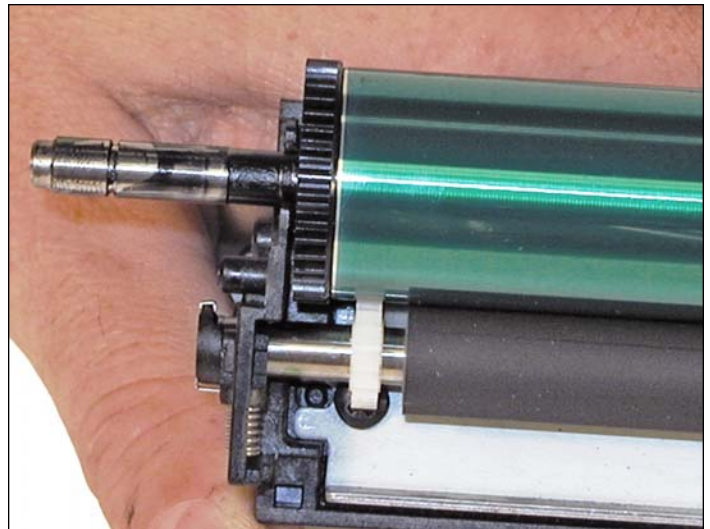


29. Install the PCR by sliding the long shaft side through the non-contact side. Bring it back to fit into the contact side.



30. Coat the OPC drum with your preferred lubricant.

Install the drum.

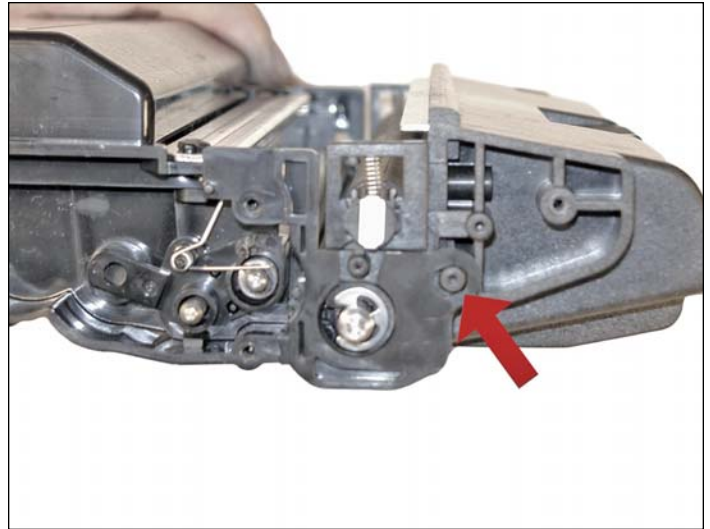


31. Install the drum axle through the drum's small gear side first.

Make sure that the E-ring groove ends up on this side.



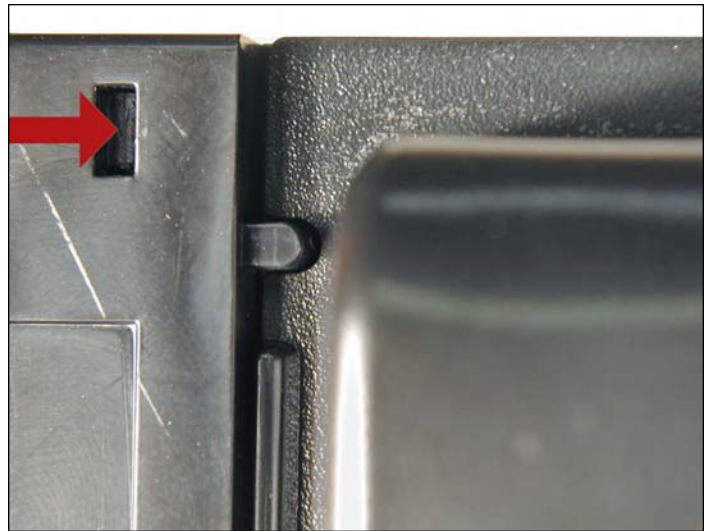
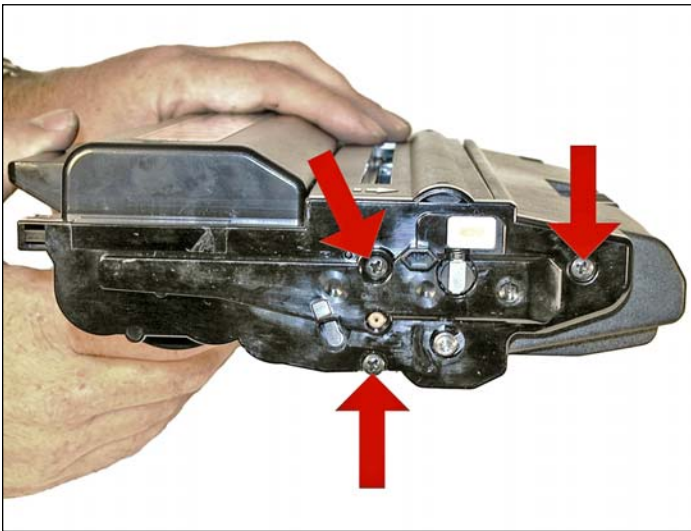
32. Install the E-ring.



33. Install the waste hopper on to the supply chamber.  
Make sure that the tabs lock into place on the side wall.



34. Clean the foam rollers in the roller assembly with clean compressed air. Install the roller assembly as shown.

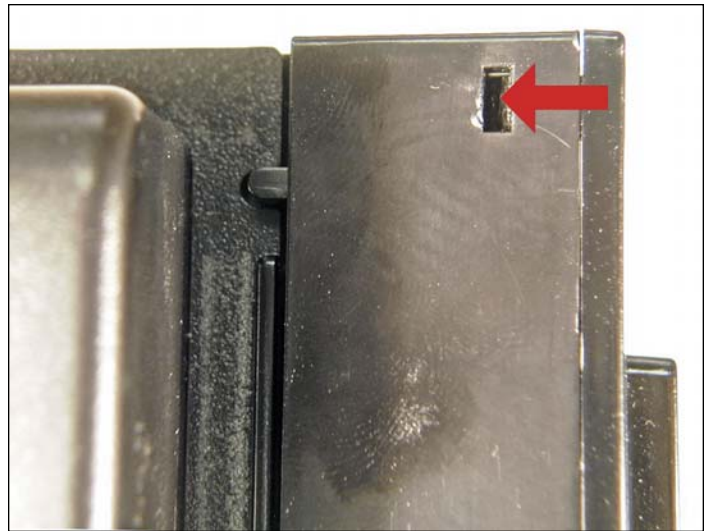
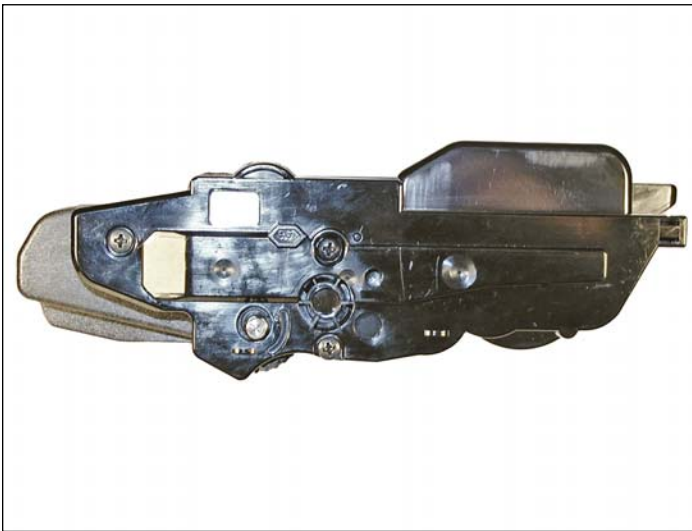


35. Install the right side end cap and three screws.

Make sure the top rear tab locks in place.



36. Press the drum axle bushing in place. Set it so the small tab is at the end of the groove, and make sure it is fully seated. The two small bushings are different. Make sure you have the correct bushing for this side.

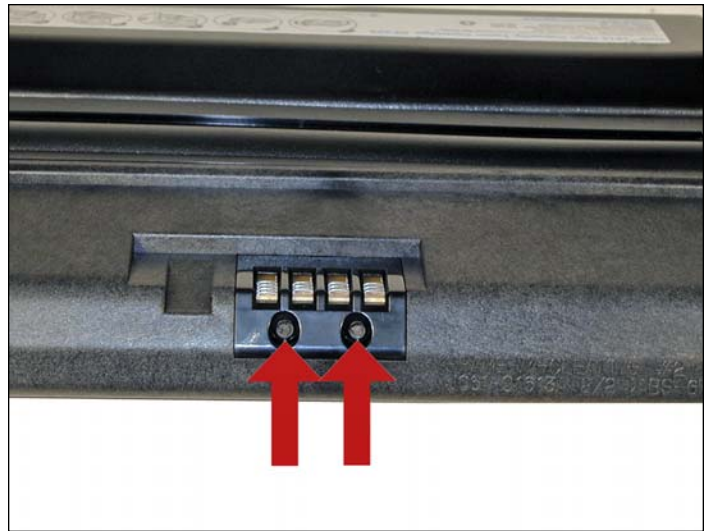
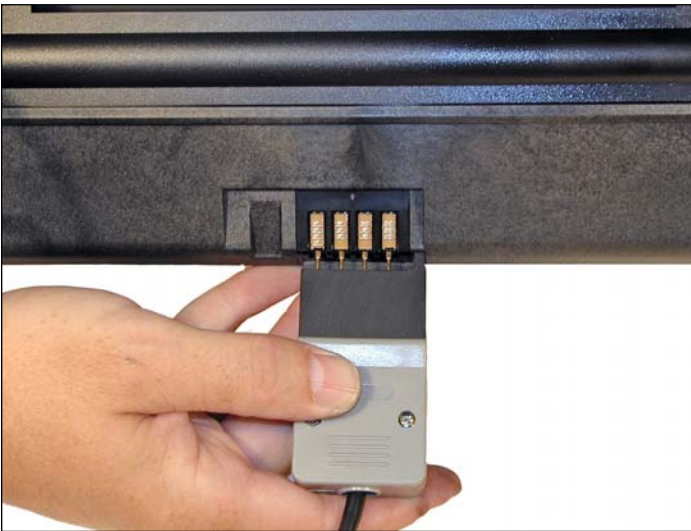


37. Remove the tape from the gears, and install the left side end cap and three screws.

Make sure the top rear tab locks in place.



38. Press the drum axle bushing in place. Set it so the small tab is at the end of the groove, and make sure it is fully seated. The two small bushings are different. Make sure you have the correct bushing for this side.



39. The chip is held in place by plastic rivets. It must be reset or replaced for the cartridge to work. Resetting is the easiest method (left image). But it can also be replaced by cutting the plastic rivets, drilling two holes, and setting two self-tapping screws in place (right image).

## PRINTING TEST PAGES

### Demo Page (easy method):

1. Press the Demo button on the control panel (next to the Toner Save button).

### Demo Page (harder method):

1. Press the MENU button until Information appears on the display.
2. Press Scroll Button until DEMO PAGE appears on the display
3. Press the OK button. A demo page will print out

### Configuration Page:

Press the MENU button until Information appears on the display.  
Press Scroll Button until CONFIGURATION appears on the display  
Press the OK button. A configuration page will print out

## REPETITIVE DEFECT CHART:

<b>Upper fuser roller:</b>	<b>77.8 mm</b>
<b>OPC drum:</b>	<b>75.5 mm</b>
<b>Lower pressure roller:</b>	<b>75.4 mm (back of page)</b>
<b>Transfer roller:</b>	<b>47.1 mm (back of page)</b>
<b>Supply roller:</b>	<b>44.9 mm</b>
<b>PCR:</b>	<b>37.7 mm</b>
<b>Developer roller:</b>	<b>35.2 mm</b>



## COMMON CARTRIDGE PROBLEMS

### 1. Dirty or bad Primary Charge Roller (PCR) located inside the cartridge:

This will show on the test print as either vertical gray streaks down the page, as a gray background throughout the page, as ghosting where part of a previously printed area is repeated, or as a mark that repeats every 37.7 mm.

### 2. Dirty PCR connection:

This will show as horizontal dark black bars across the page, or as shading throughout the page.

### 3. Scratched drum:

This is shown by a very thin, perfectly straight line that runs from the top to the bottom of the test page.

### 4. Chipped drum:

This will show as a dot or series of dots that repeat every 75.5 mm.

### 5. Light damaged drum:

This will show up as a shaded area on the test print that should be white. Again this will repeat every 75.5 mm.

### 6. Bad wiper blade:

This will show as either a gray line (approximately 1/8" thick) or as shading across the entire page. In either case there will be a film of toner on the drum surface.

### 7. Bad developer roller:

This will show up as light print or as a mark that repeats every 35.2 mm

## MACHINE ERROR CODES

<b>60:</b>	<b>Open fuser error</b>
<b>62:</b>	<b>Low fuser heat</b>
<b>68:</b>	<b>Fuser overheat error</b>
<b>64:</b>	<b>Printer cover is open</b>
<b>70-73:</b>	<b>Paper jam errors</b>

The SCX machines have "non-genuine toner" errors. Press CONTINUE and the message will clear.

## EXPECTED PRINTER PART LIFE

<b>Transfer roller:</b>	<b>70,000 pages</b>
<b>Fuser unit:</b>	<b>80,000 pages</b>
<b>Pickup roller:</b>	<b>150,000 pages</b>
<b>ADF rubber pad:</b>	<b>20,000 pages</b>
<b>Tray rubber pad:</b>	<b>250,000 pages</b>