

THE SAMSUNG ML-3050 TONER CARTRIDGE



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Remanufacturing the Samsung ML - 3050 Toner Cartridge



The Samsung ML-3050 Toner Cartridge

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 6 different replacement cartridges in the series. So far there are 3 basic printer models and each has a LY and HY 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 of the cartridge will leak), and screws installed. This is definitely a cartridge where a reset box is the way to go.

Figure 1



Figure 2



The Dell version of these machines as well as the Samsung SCX machines are Multi function in that they print, copy, scan, and fax. The Dell 1815n and Samsung SCX-5530FN are also network capable.

The printers as well as the cartridges are listed below.

<u>Printer</u>	<u>LY Cartridge</u>	<u>HY cartridge</u>
Dell Multifunction Laser 1815n	310-7943 (RF223) (3000 pages)	310-7945 (NF485) (5000 pages)
Samsung ML-3050	ML-D3050A (4000 pages)	ML-D3050B (8000 pages)
Samsung ML-3051N	ML-D3050A (4000 pages)	ML-D3050B (8000 pages)
Samsung ML-3051ND	ML-D3050A (4000 pages)	ML-D3050B (8000 pages)
Samsung SCX-5530FN	SCX-D5530A (4000 pages)	SCX-D5530B (8000 pages)

Figures 1 & 2 show the differences between the HY Dell cartridge and the two different LY Samsung cartridges. As you can see, the two Samsung cartridges are physically identical. The difference is in the chips.

It's a bit strange how Dell has positioned itself on these cartridges (Yield wise, and stating the print speed at 27ppm VS 30ppm for the Samsungs, 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 info was available at the time of this writing.

Required Tools

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

Required Supplies

Samsung 3050 Toner (Gram weights to be determined, but OEM Dell HY has 135g, OEM LY SCX-5530 and ML-3050 have **85g**, and the HY cartridges have **140g**
Conductive Grease
Drum lubricating powder

- 1) Place the cartridge with the handle/supply chamber facing you. Remove the 3 screws on the right end cap. See **Figure 4**

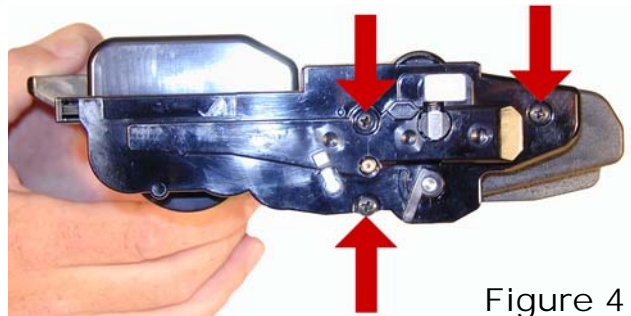


Figure 4

- 2) Gently pry off plastic drum axle bushing. Keep this bushing with the appropriate end cap when removed. Each side is different. See **Figure 5**



Figure 5

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. See **Figures 6 & 7**



Figure 6



Figure 7

4) On the opposite side of the cartridge, remove the three screws on the left end cap. See **Figure 8**

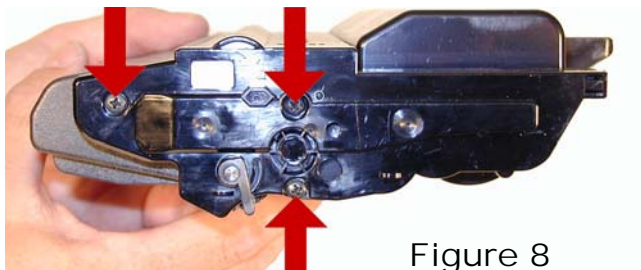


Figure 8

5) Gently pry off plastic drum axle bushing. Keep this bushing with the appropriate end cap when removed. See **Figure 9**



Figure 9

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. See **Figures 10 & 11.**



Figure 10

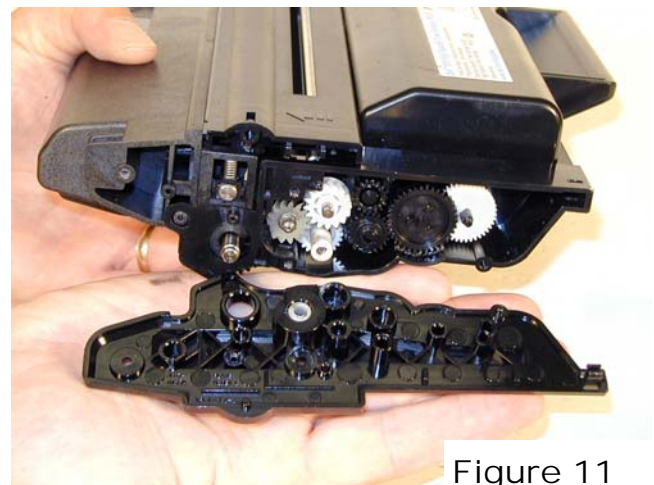


Figure 11

7) Lift off the roller assembly. See **Figure 12**

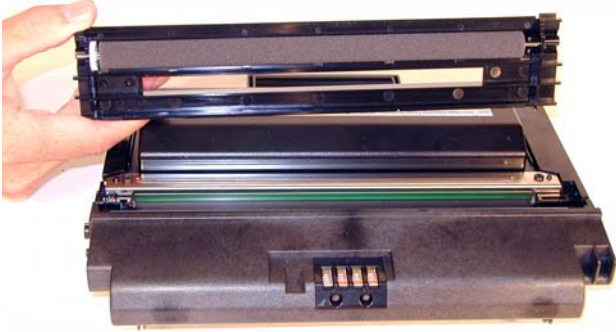


Figure 12

8) Carefully pry up the side plastic piece to release the waste chamber. See **Figure 13**



Figure 13

9) Remove the waste chamber. See **Figure 14**



Figure 14

10) On the supply hopper, remove the fill plug and dump out any remaining toner. See **Figure 15**



Figure 15

11) Remove the developer roller drive gear; put a strip of tape across the remaining gears. They do not need to be removed the tape will help keep them in place. See **Figures 16 & 17**

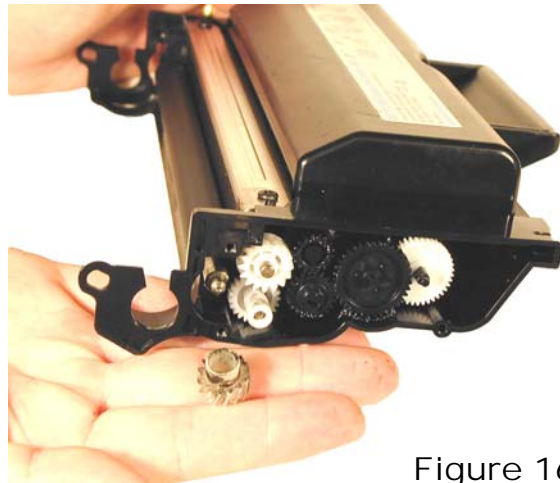


Figure 16

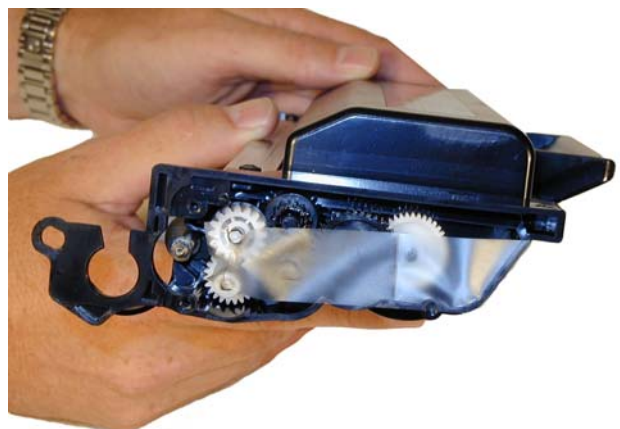


Figure 17

12) On the fill plug side, press in on the plastic tab and remove the spring/plastic bushing assembly. See **Figure 18 & 19**

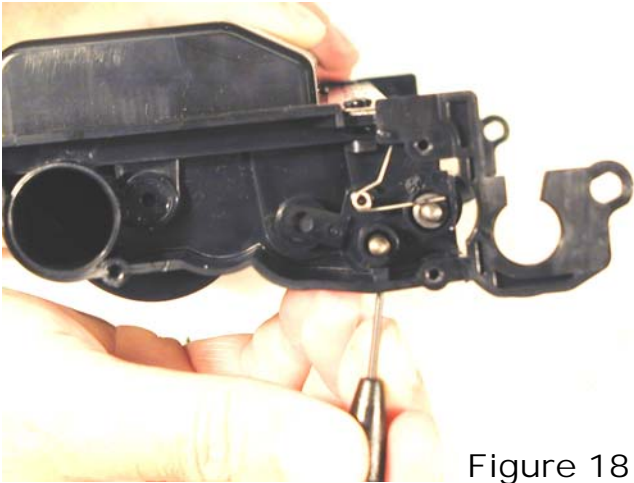


Figure 18

13) Remove the developer roller. See **Figure 20**



Figure 19



Figure 20

14) Remove the two screws on the doctor blade. See **Figure 21**



Figure 21

15) Carefully pry up the doctor blade. See **Figure 22**



Figure 22

16) Clean out any remaining toner from the hopper.

17) 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. See **Figure 23**



Figure 23

18) Replace the doctor blade and 2 screws. See **Figure 24**



Figure 24

19) Clean and install the developer roller, long shaft side to gear side first. See **Figure 25**



Figure 25

20) Snap the spring/plastic bushing assembly in place. Make sure the tail of the spring is set properly. See **Figures 26 & 27**

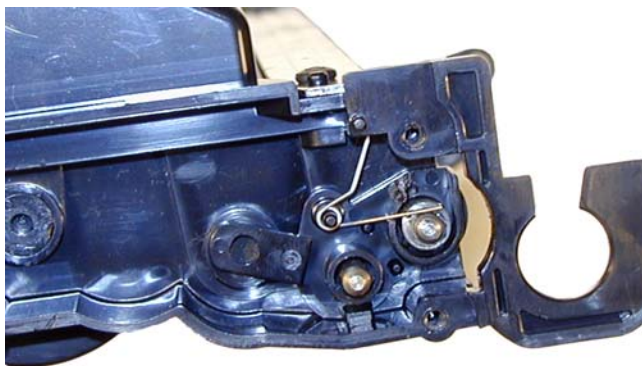


Figure 26

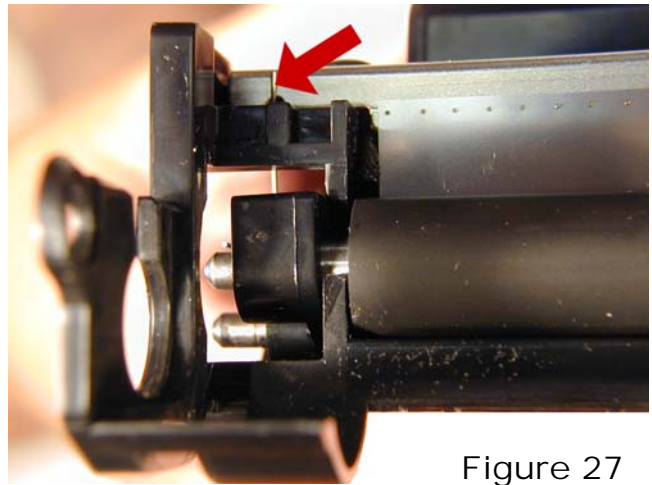


Figure 27

21) Install the drive gear on the developer roller. See **Figure 28**

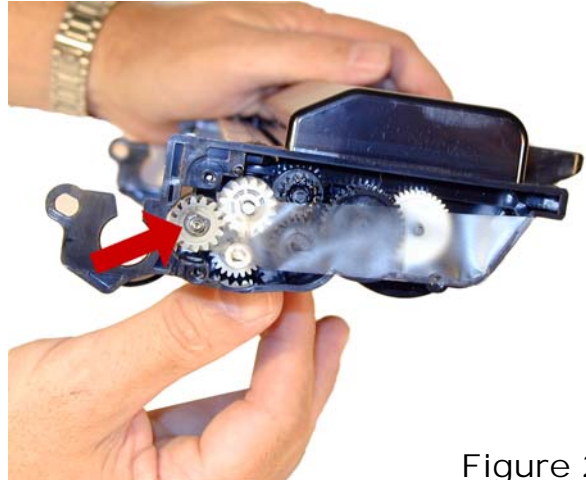


Figure 28

22) Fill the hopper with **g of ML-3050 toner. (See text at the start of this article for actual gram weights. Check for leaks. See **Figure 29**



Figure 29

23) On the waste hopper, remove the E-ring from the drum axle. See **Figure 30**



Figure 30

24) Slide the drum axle out from the side opposite the E-ring. See **Figures 31**



Figure 31

25) Remove the OPC drum. See **Figure 32**



Figure 32

26) Slide the PCR to the non contact side. Remove the PCR. See **Figures 33 & 34**



Figure 33



Figure 34

27) Remove the two screws and the wiper blade. See **Figure 35**



Figure 35

28) 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.

29) 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. See **Fig. 36**



Figure 36

30) 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.

31) Clean the old conductive grease off the PCR shaft and contact. Replace with new. See **Figure 37**

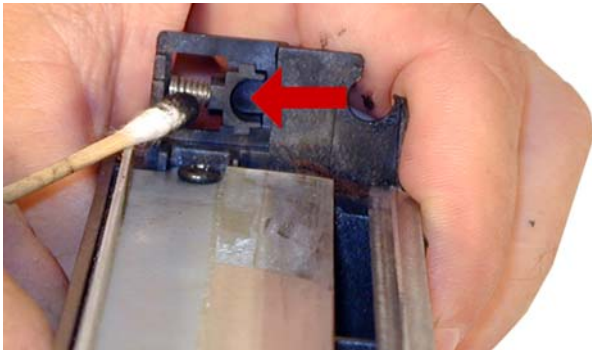


Figure 37

32) Install the PCR by sliding the long shaft side through the non-contact side. Bring it back to fit into the contact side. See **Figure 38**



Figure 38

33) Coat the OPC drum with your preferred lubricant and install the drum. See **Figure 39**



Figure 39

34) Install the drum axle small drum gear side first. Make sure that the E-ring groove ends up on the small drum gear side. See **Figures 40 & 41**



Figure 40

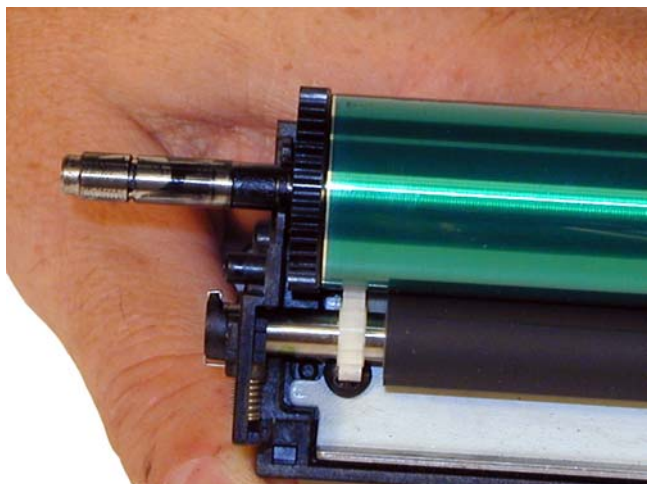


Figure 41

35) Install the E-ring. See **Figure 42**



Figure 42

36) Install the waste hopper on to the supply chamber. Make sure that the tabs lock into place on the side wall. See **Figure 43**

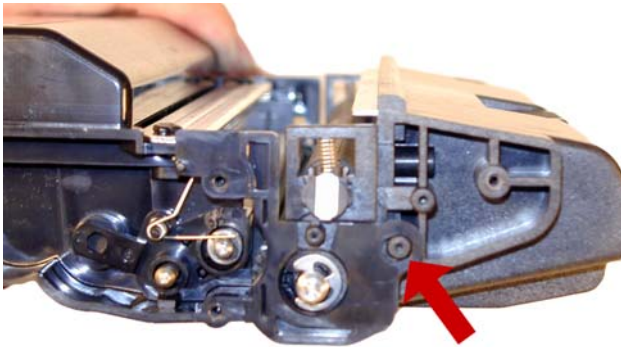


Figure 43

37) Clean the foam rollers in the roller assembly with clean compressed air.

38) Install the roller assembly. See **Figure 44**

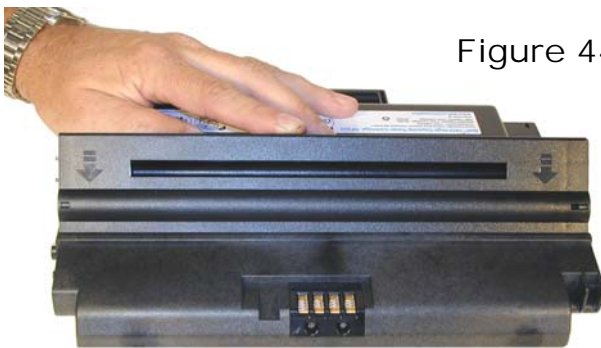


Figure 44

39) Install the right side end cap and three screws. Make sure the top rear tab locks in place. See **Figures 45 & 46**

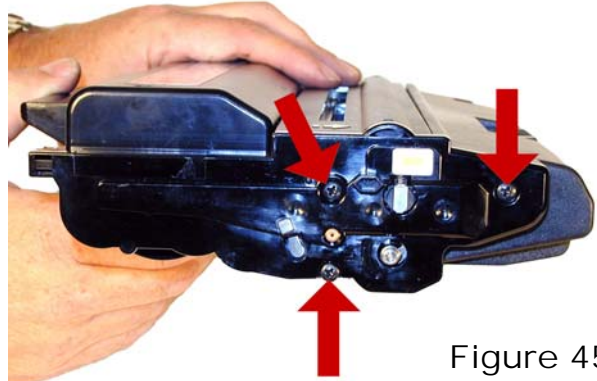


Figure 45



Figure 46

40) Press the drum axle bushing in place. Set it so the small tab is at the end of the groove; make sure it is fully seated. The two small bushings are different. Make sure you have the correct bushing for this side. See **Fig. 47**



Figure 47

41) 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. See **Figures 48 & 49**



Figure 48

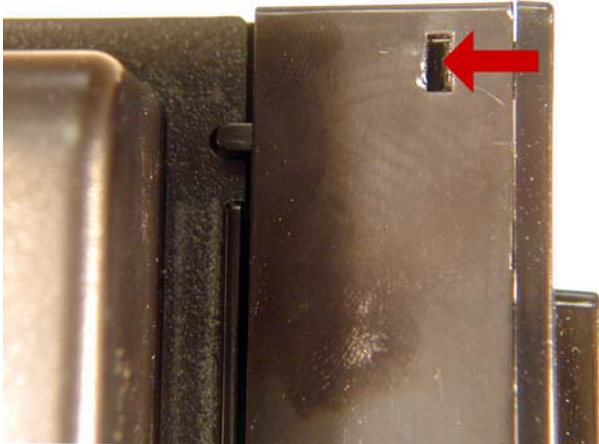


Figure 49

42) Press the drum axle bushing in place. Set it so the small tab is at the end of the groove; make sure it is fully seated. The two small bushings are different. Make sure you have the correct bushing for this side. See **Figure 50**



Figure 50

43) The chip is held in place by plastic rivets. It must be reset/replaced for the cartridge to work. Resetting is the easiest method, (See **Figure 51**) but it can be replaced by cutting the plastic rivets, drilling two holes, and setting two self tapping screws in place. See **Figure 52**

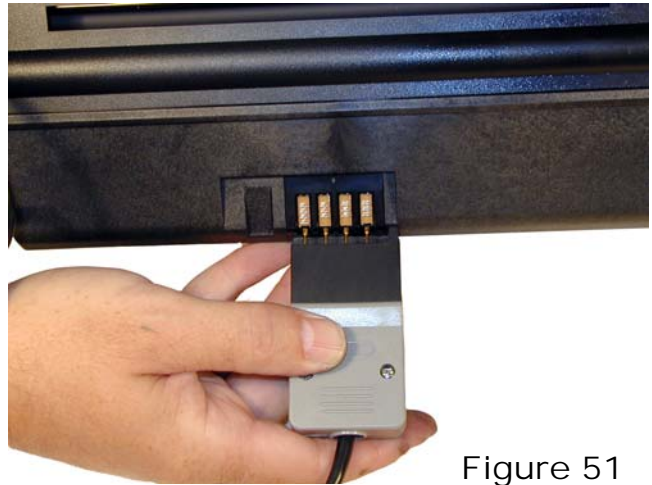


Figure 51

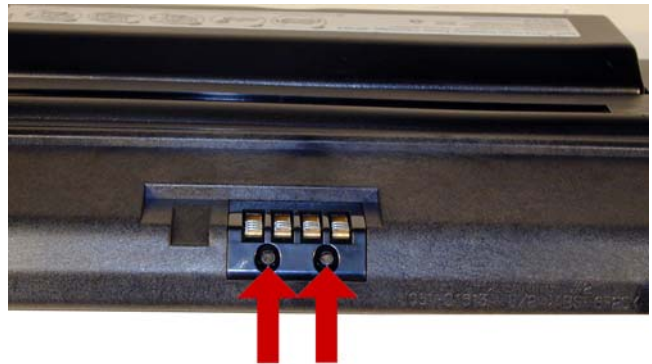


Figure 52

Printing Test Pages:

Demo Page

Easy way: Press the Demo button on the control panel. (Next to Toner Save button).

Harder way:

Press the MENU button until Information appears on the display.

Press Scroll Button until DEMO PAGE appears on the display
 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

Common Cartridge Problems

Repetitive Defect Chart

Upper Fuser roller	77.8mm
OPC Drum	75.5mm
Lower Pressure roller	75.4mm (Back of page)
Transfer Roller	47.1mm (Back of page)
Supply roller	44.9mm
PCR	37.7mm
Developer Roller	35.2mm

A Dirty or Bad Primary Charge Roller (PCR); located Inside the cartridge, this will show on the test print as 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 37.7mm.

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

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

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

Light Damaged Drum; This will show up as a shaded

area on the test print that should be white. Again this will repeat every 75.5mm.

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.

Bad Developer Roller; This will show up as light print or as a mark that repeats every 35.2mm

Machine Error Codes:

60	Open fuser Error
62	Low fuser Heat
68	Fuser overheat Error
64	Printer cover open
70-73	Paper jam errors

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

Expected printer part life:

Transfer roller	70,000 pages
Fuser unit	80,000 pages
Pickup roller	150,000 pages
ADF Rubber pad	20,000 pages
Tray rubber pad	250,000 pages

