

THE SAMSUNG ML-2010 TONER CARTRIDGE



DOC# 0367

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Remanufacturing the Samsung ML-2010 Toner Cartridge



The Samsung ML-2010 Toner Cartridge

First released in July 2005, the Samsung ML-2010 printers are based on a 20ppm, 1200 x 600 dpi engine.

These cartridges are based on the new engine/cartridge design of the ML-1610 (Dell 1100). The cartridges have a huge handle which folds over the cartridge when installed. The good news here is that for at least the Samsung ML-2010 version, there is NOT a fuse or Chip used to reset the machine. There is a fuse clip however. It is possible that one of the soon to be released Xerox or other Samsung cartridges will use one.

These cartridges do not have a drum cover, and come new with a piece of heavy paper taped around the cartridge. All new cartridges opened so far have shown some toner leakage on the drum that would have shown on any prints.

The replacement cartridge it self is rated for 3,000 pages at 5% coverage (ISO 19752). The starter cartridge is rated for 1000 pages.

Printer

Samsung ML-2010
 Samsung SCX-4321 Series
 Samsung SCX-4521 Series
 SEE
 Samsung SP20MPP

Cartridge

ML-2010D3
 SCX4521D3/SEE
 SCX4521D3/
 SEE
 Not released as

of 9/19/2005
 Samsung SP20MPU
 of 9/19/2005
 Xerox Phaser 3117
 Xerox Phaser 3122

Not released as
 106R01159
 106R01159

Possible other machines based on the ML-2010 engine:
 Not confirmed, but likely.

Printer

Xerox WorkCentre PE-220
 of 9/19/2005
 Xerox CopyCentre PE-220
 of 9/19/2005

Cartridge

Not released as
 Not released as

Required Tools

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

Required Supplies

Samsung 2010 Toner 85g
 Conductive Grease
 Drum lubricating powder



1) Place the cartridge with the handle facing away from you. Remove the 2 screws on the left end cap. See **Figure 1**

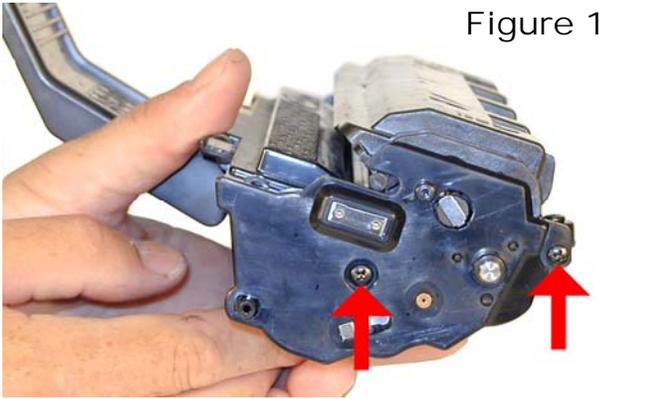


Figure 1

2) Gently pry off the left end cap. See **Figure 2**

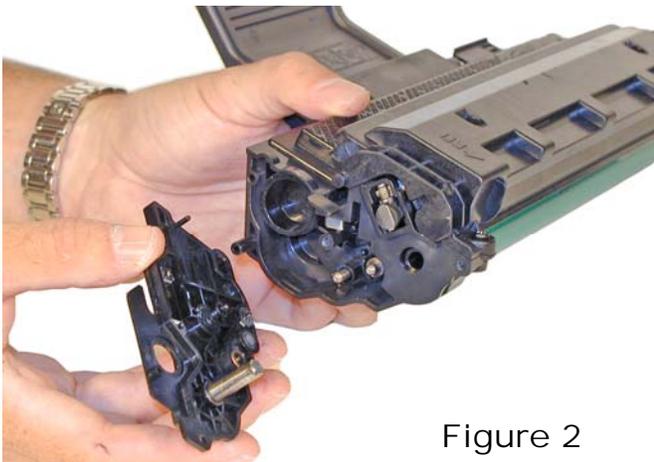


Figure 2

3) On the front edge of the cartridge, there are two screws, remove them. See **Figure 3**

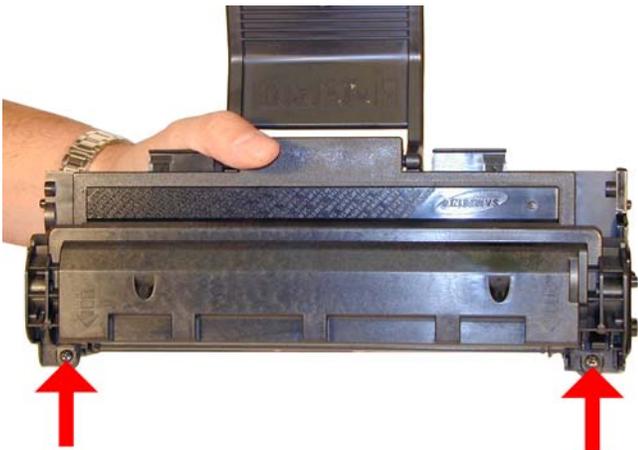


Figure 3

4) Lift up and remove the waste chamber from the cartridge. Make sure the tab on the right side slide out of the slot. If you try to lift the cover off without sliding the tab out, it will break off. See **Figure 4**

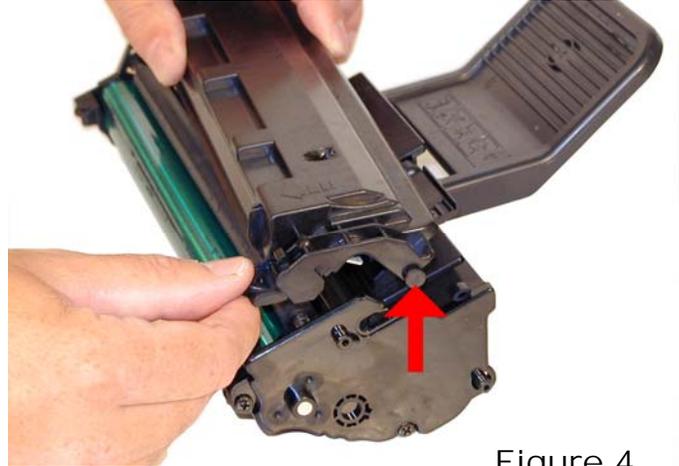


Figure 4

5) Remove the two screws and wiper blade from the waste chamber. See **Figures 5 & 6**



Figure 5



Figure 6

6) Clean out any remaining toner from the waste chamber.

7) Re-install the wiper blade and two screws. Place the waste chamber aside. See **Figure 7**



Figure 7

8) Remove the two screws from the right side end cap. Carefully pry off the end cap. See **Figure 8**



Figure 8

9) Remove the 4 gears, and place aside. See **Figure 9**

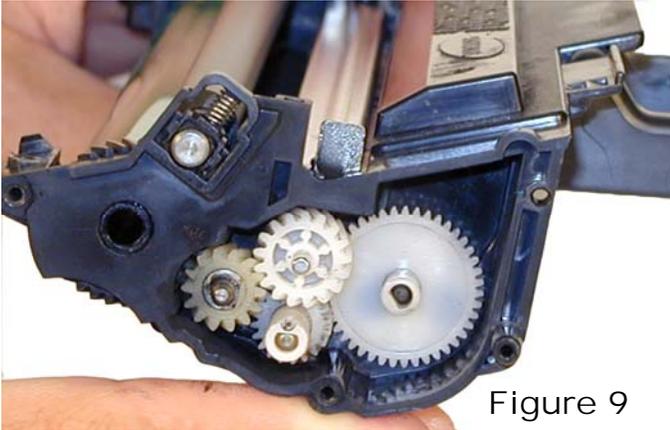


Figure 9

10) Slide the PCR away from the contact side, lift up and remove. See **Figure 10**



Figure 10

Clean the PCR with your normal 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.

11) Remove the OPC drum. See **Figure 11**



Figure 11

12) Carefully pry out the fill plug. It fits tight and is easily damaged. Work a small jeweler's screwdriver around the edge until the plug comes free. See **Figure 12**

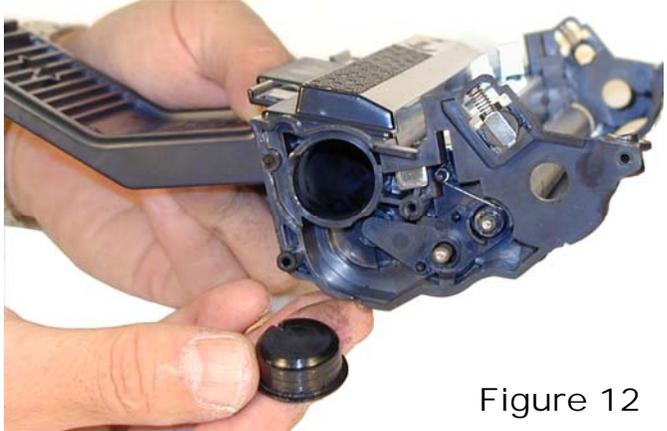


Figure 12

13) Clean out any remaining toner from the hopper.

14) Gently pry out the roller plate from the cartridge by pressing in on a tab located on the bottom of the cartridge. There is a spring that is in contact with the developer roller shaft. Move the tail of the spring up so that as the plate is lifted out, it will fall behind it. See **Figures' 13 & 14**

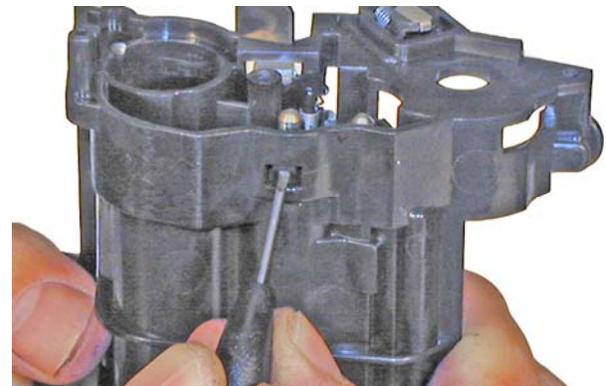


Figure 13

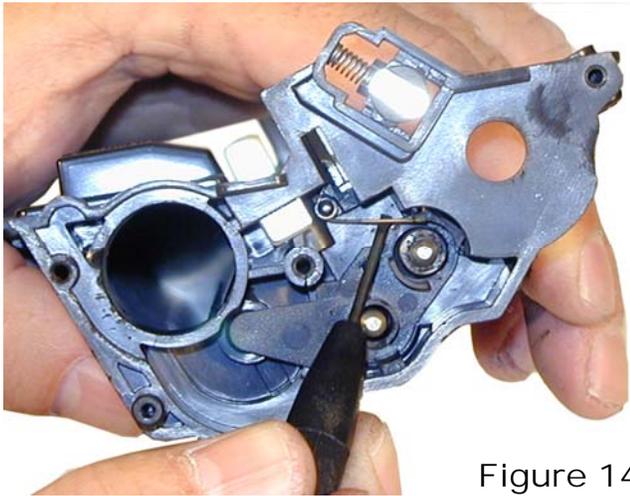


Figure 14

16) Remove the Developer Roller by lifting it out. See **Figure 15**



Figure 15

17) Remove the 2 screws on the doctor blade. On the fill plug side of the blade, there is the other tail of the spring. Lift it up while removing the doctor blade so it is not damaged. See **Figures 16 & 17**



Figure 16

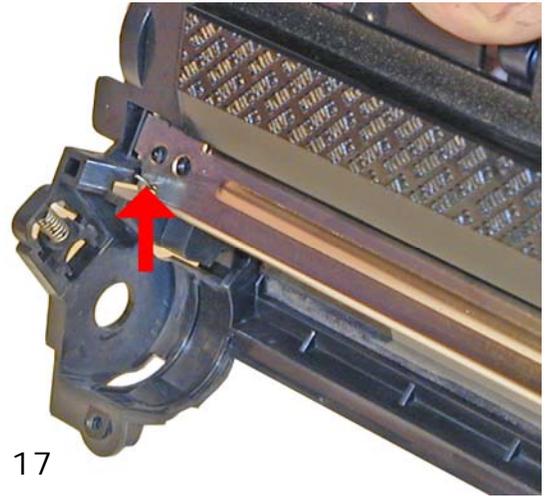


Figure 17

It is highly recommended that the Doctor Blade be cleaned. Failure to do so will cause streaking. Dampen a cotton swab with alcohol, and clean the blade. Be careful not to press too hard and damage the blade. If the blade has a heavy buildup of toner on it, clean it with Acetone, and then alcohol.

18) Clean the feed roller and any remaining toner from the hopper. See **Figure 18**



Figure 18

19) Re-install the doctor blade and two screws. Make sure the tail of the spring fits into the proper slot. See **Figures 19 & 20**



Figure 19

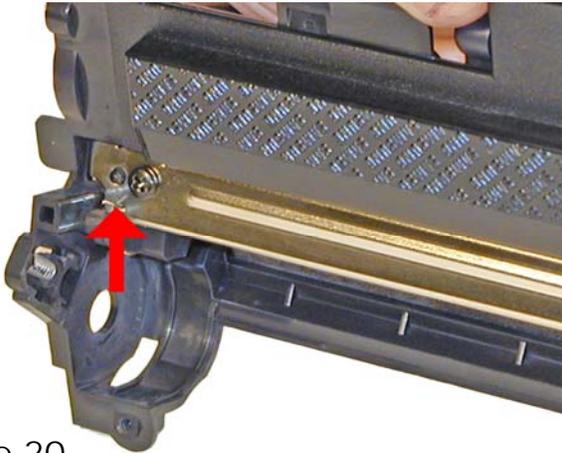


Figure 20

20) Install the developer roller, keyed end to the gear side of the cartridge. See **Figure 21**

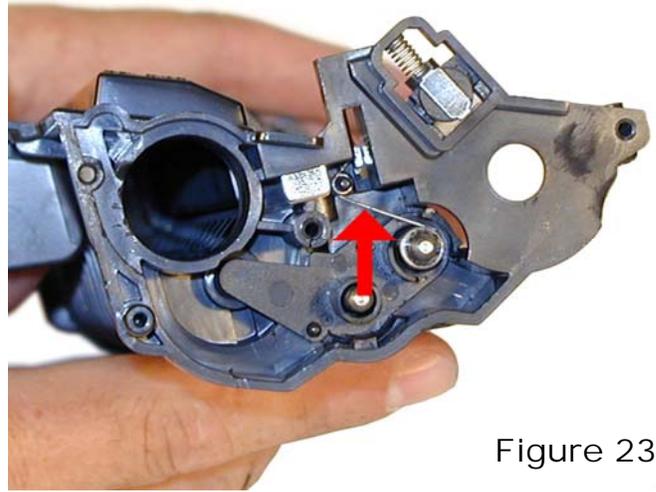


Figure 23

23) Install the 4 gears as shown. See **Figure 24**

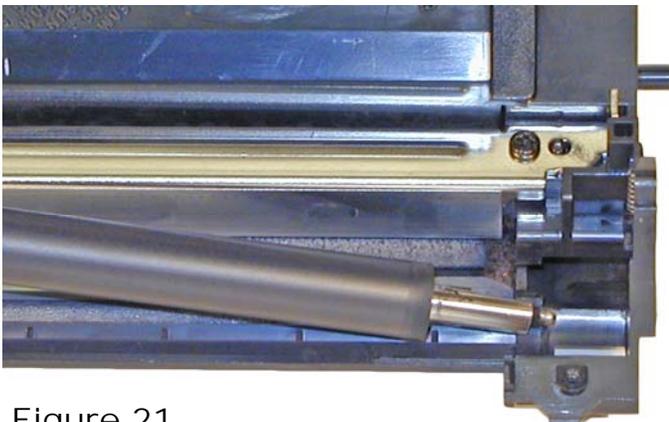


Figure 21

21) Install the roller plate. Route the tail of the spring so that it sits on top of the plate and is in contact with the shaft of the developer roller. Lock the plate in place with the tab. See **Figures 22 & 23**

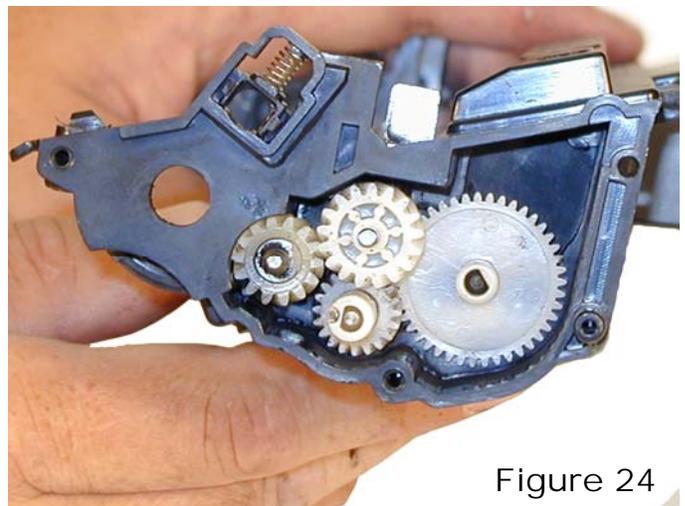


Figure 24

24) Install the drum in place. See **Figure 25**

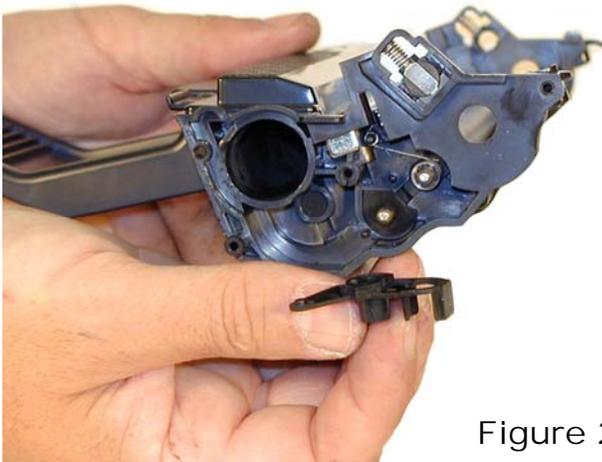


Figure 22

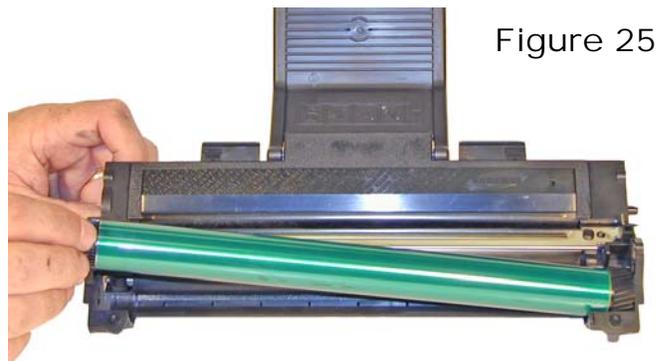
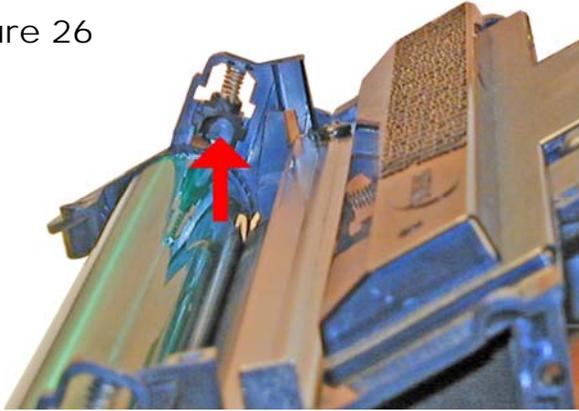


Figure 25

25) Clean out the old conductive grease from the PCR contact hub and replace with new. A small amount of grease is fine, more is not better when it comes to

conductive grease. See **Figure 26**

Figure 26



26) Install the PCR by sliding it through the non contact side, and into the contact hub. See **Figure 27**

Figure 27



27) Fill the hopper with the appropriate toner. Replace the fill plug, check for leaks. See **Figure 28**

Figure 28



28) Install the gear side end cap, and 2 screws. Make sure the PCR fits correctly in its holder, and all the gears are aligned. See **Figure 29**

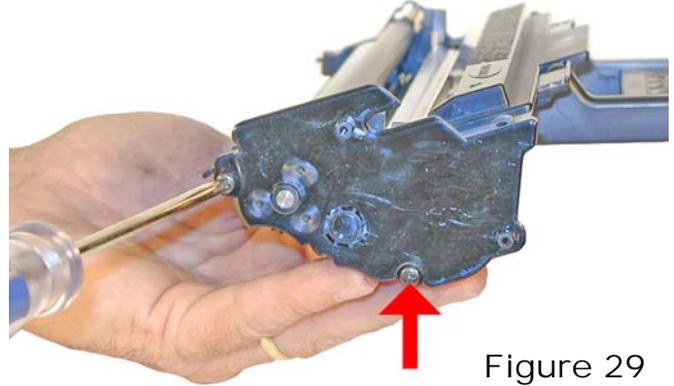


Figure 29

29) Install the waste chamber by sliding the tab through the slot in the end cap. Rotate it down, and install the two screws. See **Figure's 30 & 31**

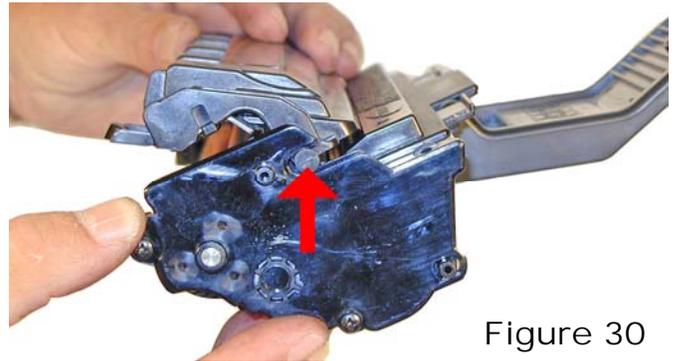


Figure 30

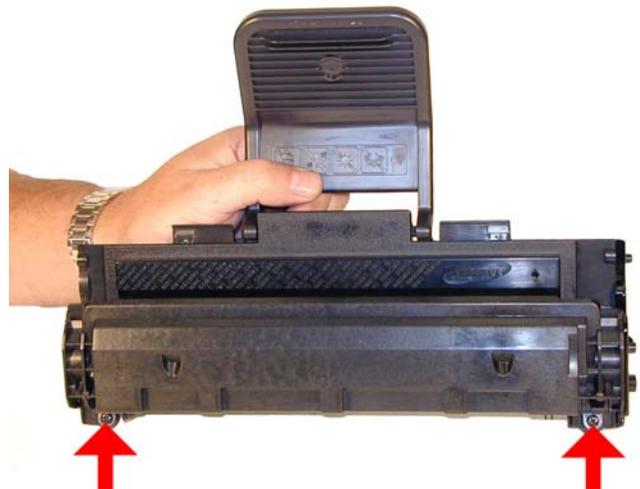


Figure 31

30) Install the remaining end cap and two screws. Make sure the end cap sits flush with the rest of the cartridge. See **Figures 32 & 33**

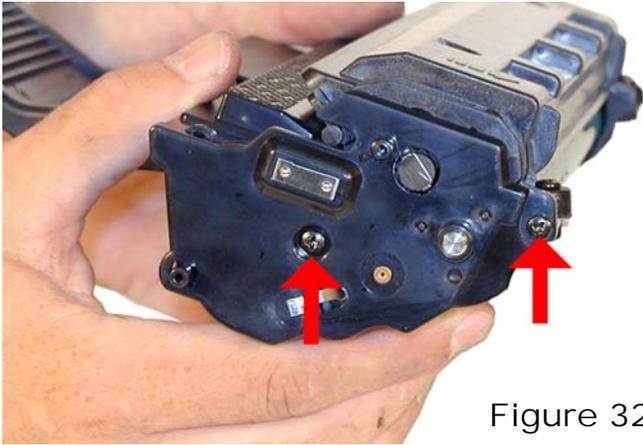


Figure 32

Figure 33



31) If your cartridge has a fuse, it needs to be replaced. Replace the fuse located on the right front of the cartridge (with the handle away from you). The ML-2010 does not use a fuse, and no other machines/cartridges are available yet (9/2005), but the slot for a fuse is there so it is possible that some of these cartridges will use one. See **Figure 34**

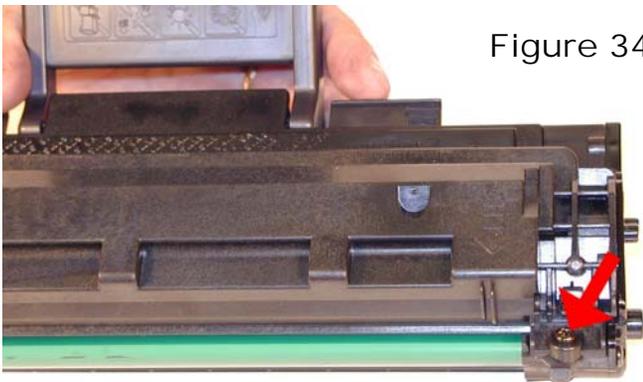


Figure 34

Printing Test Pages:

Demo Page

Press and hold the "CANCEL" button for 2 seconds until all the LEDs blink slowly. A demo page will print out

Common Cartridge Problems

Repetitive Defect Chart

PCR	38mm
Developer Roller	44mm
OPC Drum	75mm

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 38mm.

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 75mm.

Light Damaged Drum; This will show up as a shaded area on the test print that should be white. Again this will repeat every 75mm.

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 44mm

Machine Error Codes:

These machines do not have a display panel. They use a series of LED's to indicate a problem. There are two lights on the control panel, the ONLINE/ERROR, and the TONER SAVE lights. The TONER SAVE light is a Green LED, and the ONLINE/ERROR LED is a two color LED, Red and Green.

The user manual for these machines only has very basic information listed as follows:

If both lights are blinking, the machine has problems and needs service. (Don't you just love these helpful notes!)

If the On Line/Error light is on steady red, and the toner save is off, there could be a number of problems. Either there is a paper jam, the front cover is open, the paper tray is empty, or the toner cartridge is empty.

The Transfer roller, paper pickup roller, and the fuser are all rated for 50,000 pages

