



Home	New Arrivals!	Company Info	Publications	Special Features	Contact Us
----------------------	-------------------------------	------------------------------	------------------------------	----------------------------------	----------------------------

TECHNICAL DOCUMENT



- [Overview](#)
- [Required Tools](#)
- [Materials Needed](#)
- [Disassembly](#)
- [Printer Settings](#)
- [Common Cartridge Problems](#)
- [Machine Error Codes](#)

Remanufacturing the Samsung ML-1750 Toner Cartridge

DOC-0332

OVERVIEW



First released in March 2003, Samsung ML-1710 and ML-1750 Printers are based on one of Samsung's newest engines. The ML-1750 series runs at 17 ppm with a maximum resolution of 1200 dpi.

These cartridges are very similar to the SCX-4216, but there are differences. The main difference is that the SCX 4216 cartridge has a fuse to reset the printer. The ML-1710/1750 does not. There is a spot for the fuse on the ML-1750, but it is not used. There are also some cosmetic differences. Figures 1 & 2 show the differences between the two.

These cartridges do not have a drum cover, and come new with a piece of heavy paper taped around the cartridge. (See Figure 3) All new cartridges opened so far have shown some toner leakage on the drum that would have shown on any prints.

The standard cartridge (Samsung part# ML-1750D3/XAA) comes new with 90g toner, and is rated for 3,000 pages at 5% coverage. If you look at the cartridge, it appears that Samsung has discovered our industry, the top of the cartridge is embossed with Samsung all over it. Samsung cartridges also all now come with a card that states the cartridge is a genuine Samsung. This card also gives the Model #, Serial #, and Production date. See Figure's 4 & 5



FIGURE 1



FIGURE 2



FIGURE 3



FIGURE 4



FIGURE 5

REQUIRED TOOLS



- Toner approved vacuum.
- A small Common screw driver

- A Phillips head screwdriver
- Needle nose pliers

MATERIALS NEEDED

- 90g Toner
- Conductive Grease
- Drum lubricating powder

DISASSEMBLY

1. Place the cartridge with the handle facing up. Remove the 5 top cover screws. See Figure 6
2. On the front edge of the cartridge, there are two tabs. Press these two tabs in, and lift the front edge of the cover up. See Figure 7
3. Next to the handle of the cartridge to the right and left, there are 2 more plastic tabs. GENTLY press them in, and remove the cover. See Figure 8

CAUTION: The upper half of the toner hopper is being removed. If there is a lot of toner left in the hopper, it can dump out all over! Vacuum the hopper clean.

4. With the toner hopper away from you, remove the three screws on the left side end cap. Remove the end cap. See Figure 9



FIGURE 6



FIGURE 7



FIGURE 8

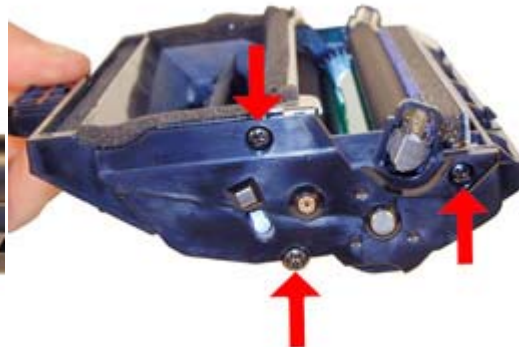


FIGURE 9

4. Remove the three screws on the right side end cap. Remove the end cap. See Figure's 10 & 11

5. Also on the right side there is a series of gears under the end cap. Make a note of the location of each gear, and remove them. See Figure's 12 & 13



FIGURE 10



FIGURE 11



FIGURE 12

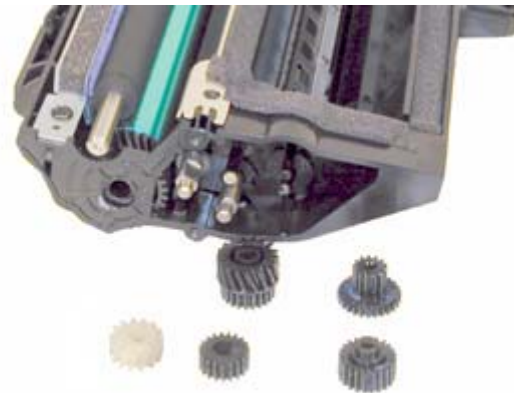


FIGURE 13

6. Remove the PCR. See Figure 14
7. 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.

8. There are 2 screws on the PCR cleaner Assy. Remove them and gently pry the blade up. Note that there are not any alignment tabs or posts to worry about. This PCR cleaner also has what can be considered a wiper blade. It is a very flimsy blade attached to the metal bar. Wipe this blade down with a clean lint free cloth before re-installing. See Figures 15 & 16
9. It is very important that the PCR cleaner be cleaned. Vacuum or blow off any residual toner from the foam/felt.
10. With the PCR Cleaner Assembly removed, the drum can easily be removed by lifting it out. See Figure 17

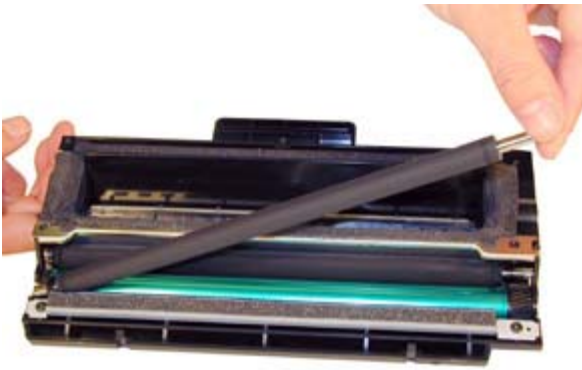


FIGURE 14



FIGURE 15



FIGURE 16



FIGURE 17

11. Clean out any remaining toner from the cartridge.
12. Press in on the bottom tab of the Developer roller plate (Right Side) to release it. See Figure 18
13. With a small common screwdriver, press the entire plate towards the edge of the developer roller cavity, and lift up. There is a tab on the top of the plate that has to be released. The Plate should come loose. See Figure 19
14. Gently pry out the roller plate from the cartridge. The foam seal, and plastic flat washer will come out with it. Be careful not to damage the foam seal, or loose the flat washer. See Figure 20
15. Remove the Developer Roller. Be careful not to damage or lose the flat washers on the roller. See Figure 21



FIGURE 18

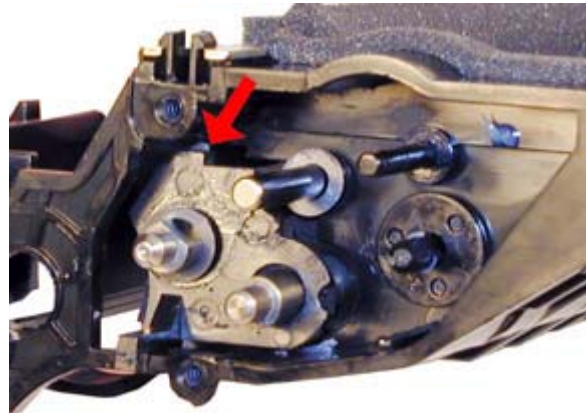


FIGURE 19

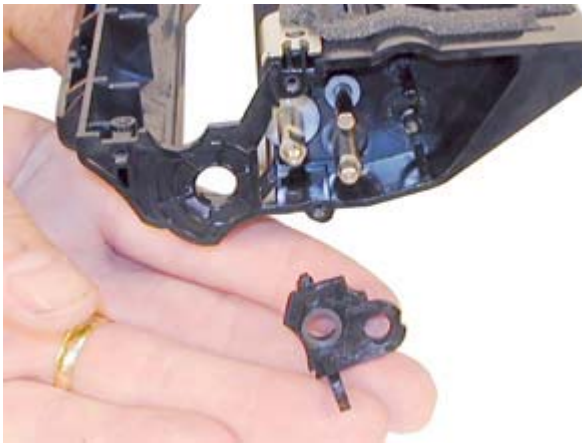


FIGURE 20

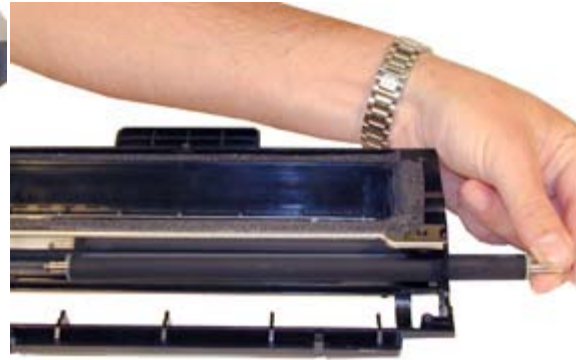


FIGURE 21

16. It is highly recommended that the Doctor Blade be cleaned. Failure to do so will cause streaking. The Doctor Blade can be cleaned with out removing it. 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. Removing the blade is difficult because of the foam seals attached. If the seals are torn, the cartridge will leak. That is why we do not recommend it. Once replacement Dr. Blades are available, they will have to come with replacement foam. See Figure 22
17. Replace the Developer roller, and flat washers. See Figure 23
18. If no grease is left on the gears and gear shafts, or it is contaminated with toner clean it all off. Replace it with white lithium grease. Be sure to clean and grease the gear shafts, and inside the gear. See Figure 24
19. Replace the roller plate and 5 gears. When installing the plate, do the opposite of how it came out. Keep it towards the front edge so that the small tab on top fits behind the wall of the cartridge. Look carefully at the picture of the gears. Each gear must fit in this exact way. The gears labeled in order of installation. See Figure 25



FIGURE 22



FIGURE 23

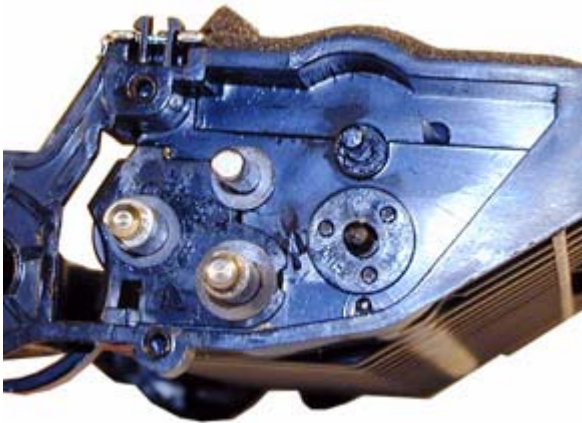


FIGURE 24

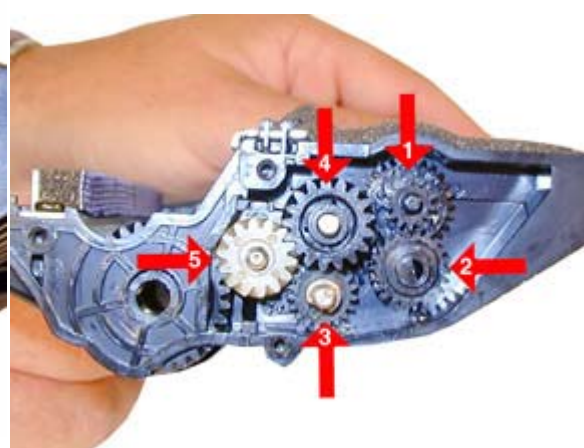


FIGURE 25

20. Install the new drum in place. See Figure 26
21. Install the PCR cleaner Assy. and two screws. See Figure 27

22. Clean the conductive grease off the left side (Non Gear) end cap and replace with fresh grease. Replace the end cap and three screws. See Figure 28
23. Install the PCR. Make sure that the PCR gear is on the correct side and that the shaft is in the PCR holder. See Figure 29



FIGURE 26



FIGURE 27



FIGURE 28



FIGURE 29

24. Install the right side end cap, and screws. Make sure the PCR fits correctly in its holder, and all the gears are aligned. See Figure 30
25. Fill the hopper with 90g of toner. See Figure 31
26. This can also be done through the fill plug, but the fill plug tends to leak and will probably have to be sealed with silicon.
27. Carefully snap the cover on making sure all the tabs lock in place. See Figure's 32 & 33
28. Install the five screws in the top cover. See Figure 34



FIGURE 30



FIGURE 31



FIGURE 32



FIGURE 33



FIGURE 34

PRINTER SETTINGS



All the printer settings are changed through the printer driver properties. The Graphics tab has the resolution settings, as well as the toner save function. From this same tab, if you click on Advanced Options, you now have access to the Darkness settings.

COMMON CARTRIDGE PROBLEMS



Even Light Prints: Check to see if the Toner Save feature has been enabled. The Toner Save light will be on. This is accessed from the printer driver properties. (See "Printer Settings" above).

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 40mm.

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 78mm.

Light Damaged Drum; This will show up as a shaded area on the test print that should be white. Again this will repeat every 78mm.

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 45mm

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 Online light 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. (Helpful isn't it!)

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

If the Online light is on blinking Green, and the toner save light is off, there could also be a number of problems/reasons. If the printer is receiving data, the Online/Error LED will blink slowly. If the printer is printing, the Online/ Error LED will blink fast. The Online/ Error LED will also blink if it is in the manual feed mode, and no paper is in the manual feeder, or if the "Cancel" button was pressed while the printer was receiving data.

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