

TECHNICAL GUIDE

THE RECYCLER

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Remanufacturing the Samsung ProXpress M3320ND Toner Cartridge



By Mike Josiah and the Technical Staff at Uninet

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First released in August 2013, the Samsung ProXpress M3320 series of printers are based on a 35 to 42 ppm engine with a maximum optical resolution of 1200 x 1200 dpi. Certain machines have an enhanced resolution of 4800 x 4800 dpi. The first page out is stated to be under 6.5 seconds. Depending on the model number, other options/specs are available.

The MLT-D203E/L/S cartridges do not have a drum cover, and come new with a piece of heavy paper with a thin sheet of foam on the inside. The protective sheet is held in place by a shipping lock that holds the PCR away from the drum. This lock helps prevent flat spots that can occur during storage. (see Figures 65, 66 & 67)

One again there are no screws in the outside of the cartridge at all. There are plastic rivets that need to be cut off, holes drilled and screws installed to hold them back on. It's not a hard process and it's covered completely in the instructions. It is very important however that all three places on each end cap be drilled and screwed back in place. If this is not done, print defects such as banding will occur. (see Figures 1 & 2)

The standard cartridge (Samsung part #MLT-D203S) is rated for 3,000 pages. The HY cartridge (Samsung part #MLT-D203L) is rated for 5,000 pages, the Extra-High Yield cartridge (Samsung part #MLT-D203E) is rated for 10,000 pages, and the Ultra-High Yield cartridge (Samsung part #MLT-D203U) is rated for 15,000 pages. The Extra-High Yield "E" cartridges only work in the M3820, M3870, M4020 and M4070 printers, and the Ultra-High Yield "U" cartridges only work in the M4020 and M4070 printers.

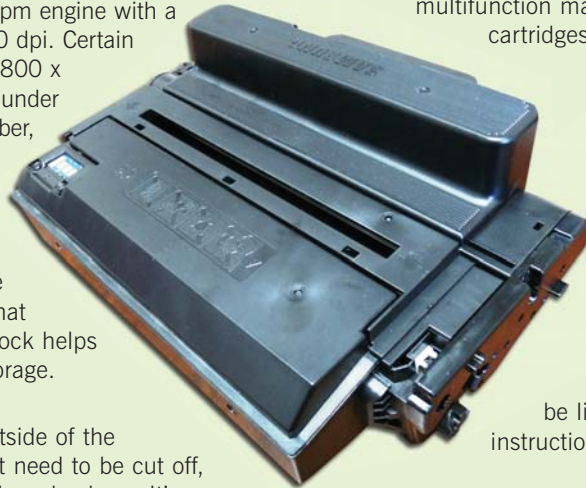
As with pretty much all cartridges these days, the cartridge has a chip and it has to be replaced each cycle. The OEM chips are regional, so be sure to get the proper chip for your region. The MLT-D203S has a list price of \$78.99 (€57), the MLT-D203L of \$116.99 (€84), the MLT-D203E of \$170.99 (€123), and the MLT-D203U of \$216.99 (€156)*

*Pricing as of March 2014

There are both standard lasers and multifunction machines that use these cartridges so far:

ML-M3320ND
ML-M3370FD
(Multifunction)
ML-M3820DW
ML-M3870FW
(Multifunction)
ML-M4020ND
ML-M4070FR
(Multifunction)

Print troubleshooting will be listed at the end of these instructions.

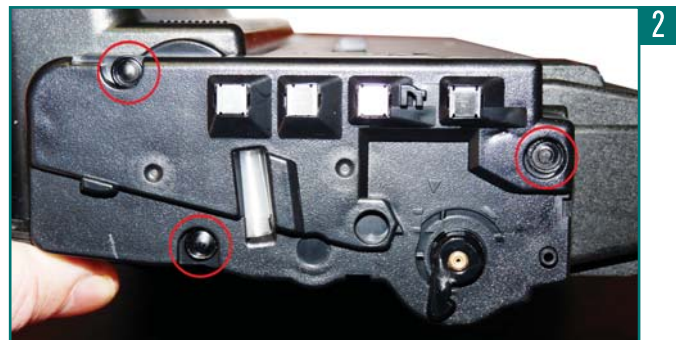
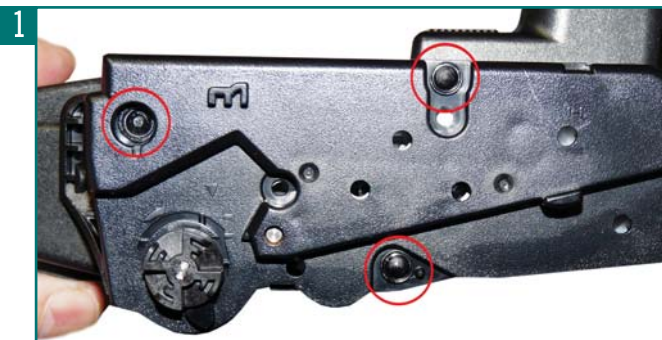


REQUIRED TOOLS

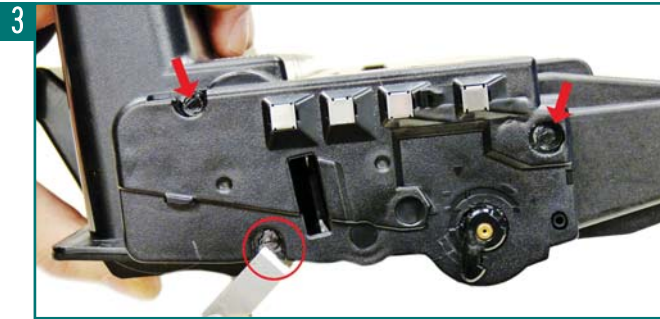
- 1) Toner-approved vacuum
- 2) A small common screwdriver
- 3) A Phillips head screwdriver
- 4) Needle nose pliers
- 5) Chisel-type razor blade knife
- 6) Hot glue gun

REQUIRED SUPPLIES

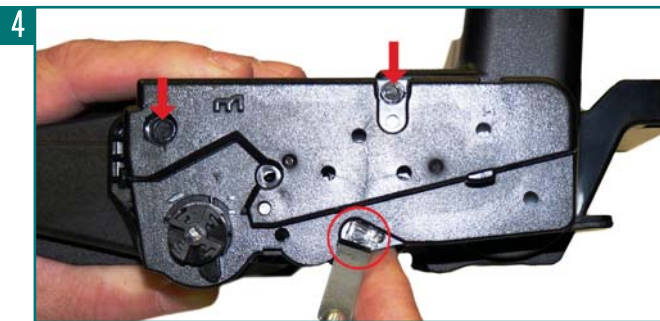
Samsung ML-3320 Toner
New ML-3320 replacement chip
(Check for the proper region and cartridge (S/L/E))
New OPC drum (Optional)
New developer roller (Optional)
New PCR (Optional)
New wiper blade (Optional)
New doctor blade (Optional)
Conductive grease
99 percent Isopropyl alcohol
Drum lubricating powder



1 On the contact side of the cartridge, slice off the heads of the three plastic rivets with a chisel blade knife. If your knife is too wide, you may find it necessary to drill out the upper recessed rivets on both sides. Leave the end cap on for now. See Figure 3



2 On the opposite side end cap, take the chisel blade knife and slice off the heads of the three plastic rivets. See above step for recessed rivets. Leave the end cap on for now. See Figure 4



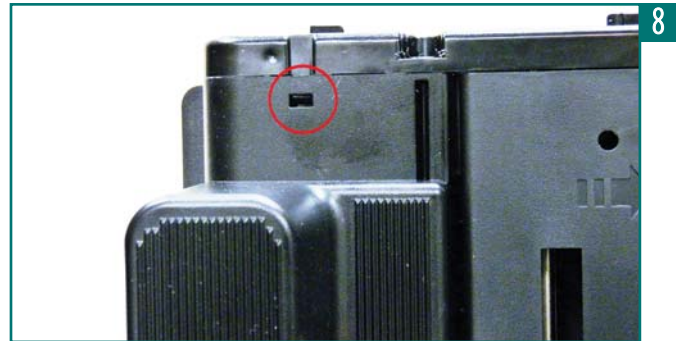
3 The drum axle arms on both sides of the cartridge stay with the end cap. There is no need to remove them. See Figure 5



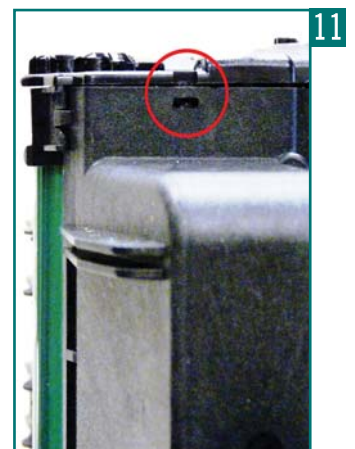
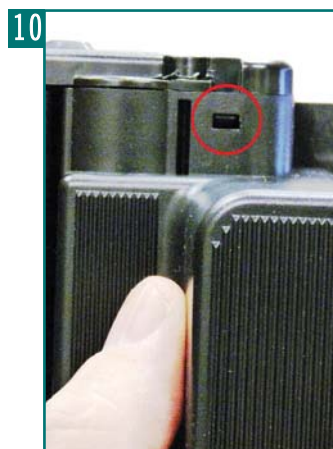
4 Remove the drum drive gear. See Figure 6

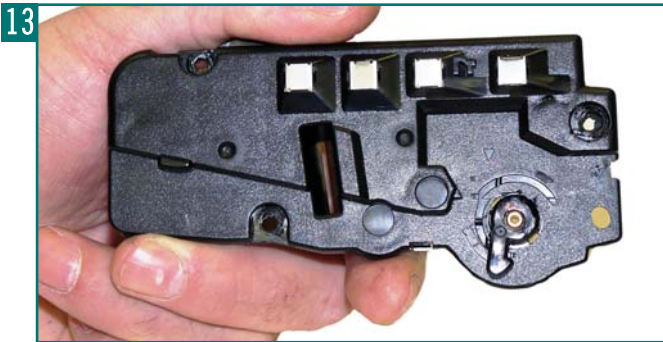
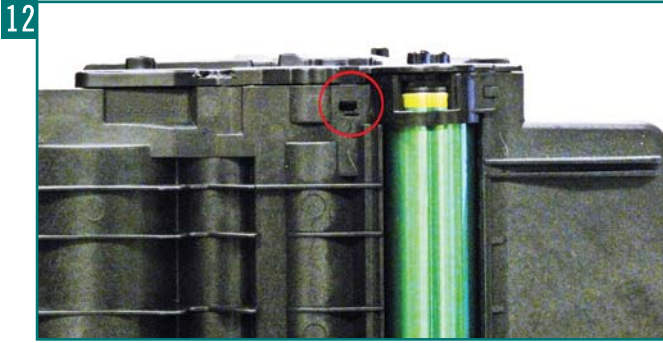


5 While still on the same side, locate the two tabs. Press in on each tab, and remove the end cap. The drum axle arm will come off with the end cap. See Figures 7, 8 & 9

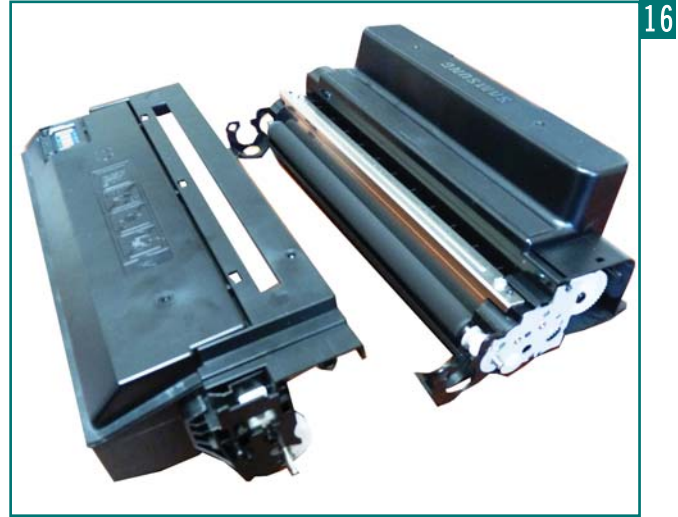
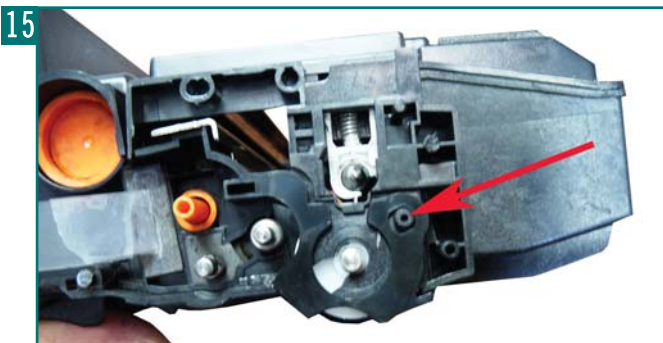
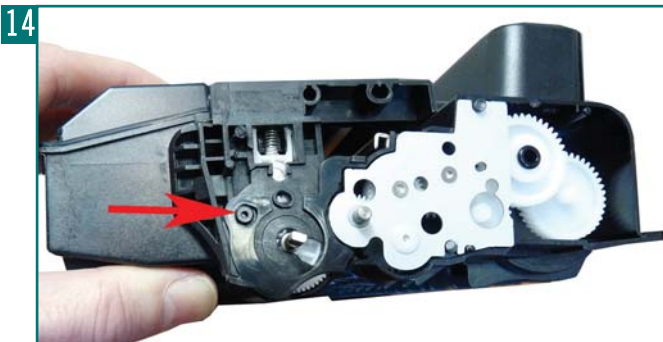


6 On the right side end cap, press in on the three tabs and remove the end cap. See Figures 10, 11, 12 & 13

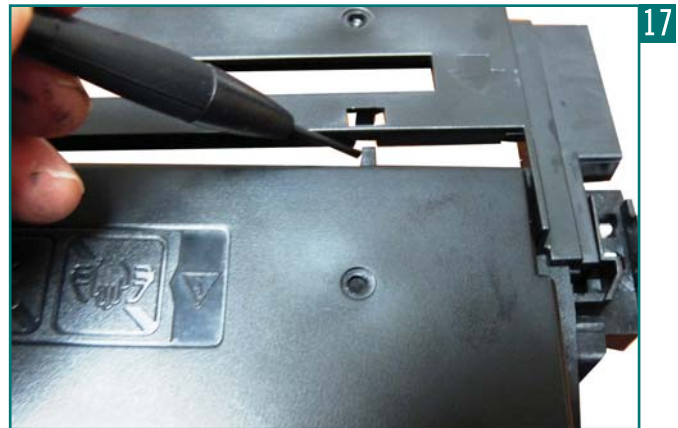




7 Gently pry up on the tabs on both sides of the cartridge and remove the waste hopper. Be careful to hold the drum so it does not become damaged. Remove the drum/waste assembly. See Figures 14, 15, & 16



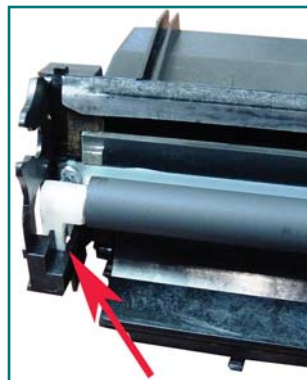
8 Pry off the middle cover/PCR cleaning assembly by pressing down on the three top tabs. See Figures 17 & 18



9 Remove the drum. See Figure 19



10 Remove the PCR from the assembly by prying up the two PCR holders on each side (they will come out with the PCR). See Figures 20 & 21



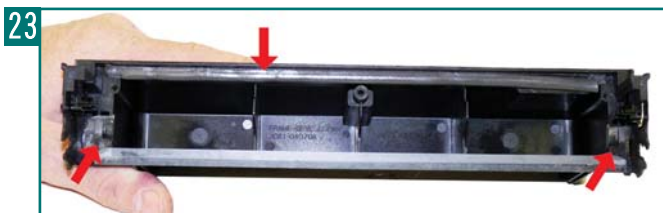
11 Clean the PCR with your normal PCR cleaner.

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.

12 Remove the two screws from the wiper blade, remove the blade. See Figure 22



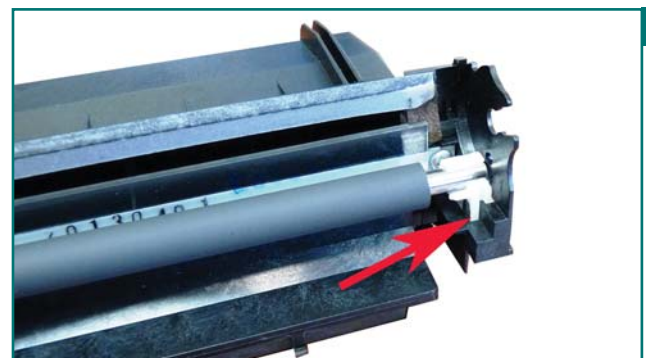
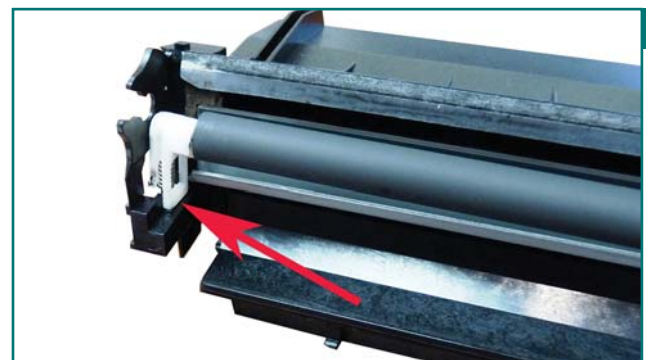
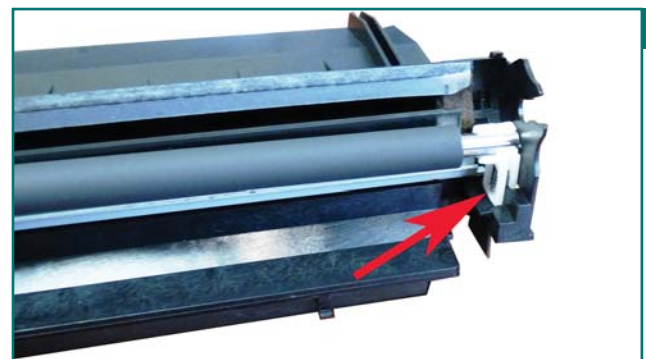
13 Clean out all the waste toner from the hopper. Make sure the seals are clean. See Figures 22 & 23



14 Install the new wiper blade and two screws. It is easier to install if you slide it in under the PCR holders. See Figure 24



15 Place a small amount of conductive grease in the holders, and install the PCR and holders. The holders will fit over their slots as you align them. Press them down and check to make sure the springs are working. See Figures 25, 26 & 27



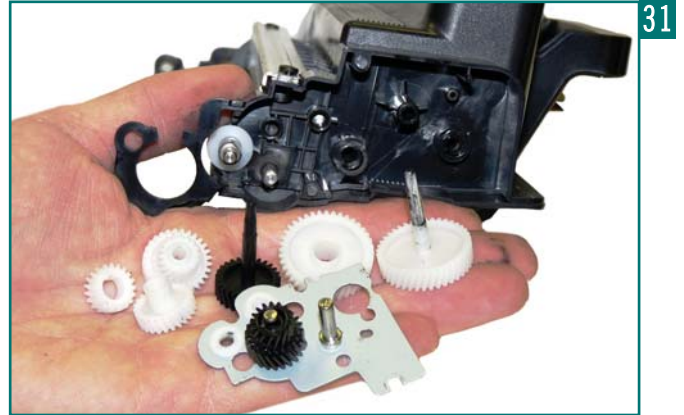
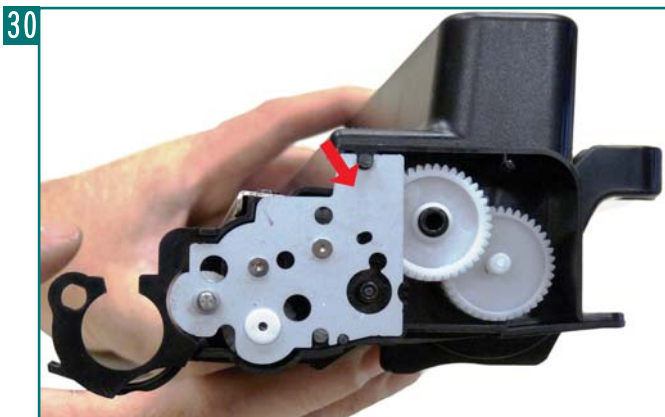
16 Install the drum with the large gear to the gear or non-chip side of the drum into the waste hopper.
See Figure 28



17 On the supply hopper, carefully pry out the fill plug and dump out any remaining toner. The fill plug can be difficult to remove as it is recessed. Take a small common screwdriver and work it around the edge, lifting slightly until it comes loose.
See Figure 29



18 Pry off the gear plate, then remove the gears.
See Figures 30 & 31



19 Remove the developer roller bushings from both sides.
See Figures 32 & 33



20 Remove the developer roller. See Figure 34



21 Remove the two screws from the doctor blade, then remove the blade. See Figure 35

25 Install the seal through the developer roller opening. See Figure 38



22 Clean out all the remaining toner from the hopper.

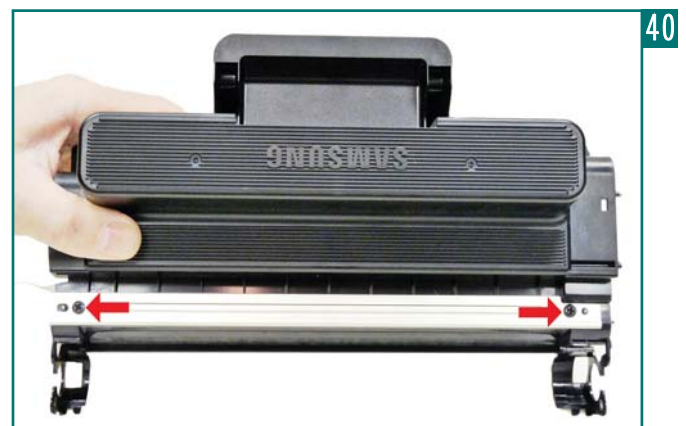
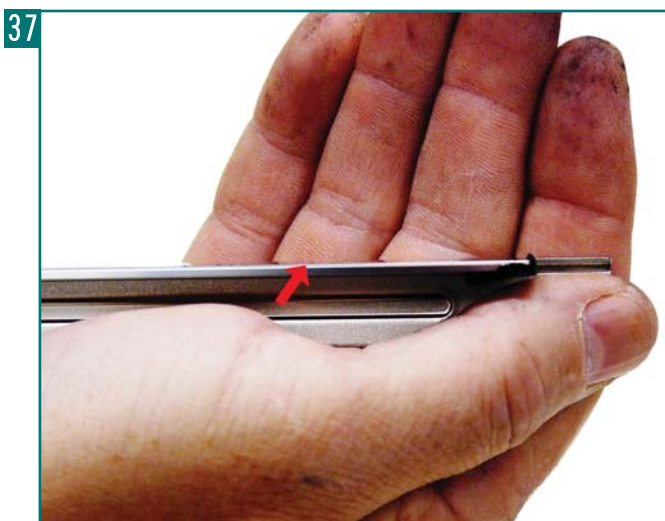
23 Make sure the doctor blade sealing foam and the developer rollers seals are clean and intact. See Figure 36

26 Pull the tail of the seal through the seal port. See Figure 39



24 Clean the doctor blade edge so there is no evidence of buildup along the edge. If any buildup exists, the cartridge will streak. No chemicals should be used. We have found using a clean ice cream-type wooden stick works great for scraping the blade clean without damaging it. See Figure 37

27 Install the doctor blade and two screws. See Figure 40



28 Clean the developer roller with a dedicated developer roller cleaner, and replace into the hopper. Place the long shaft side to the gear side of the cartridge. It should snap in place if installed correctly. See Figure 41



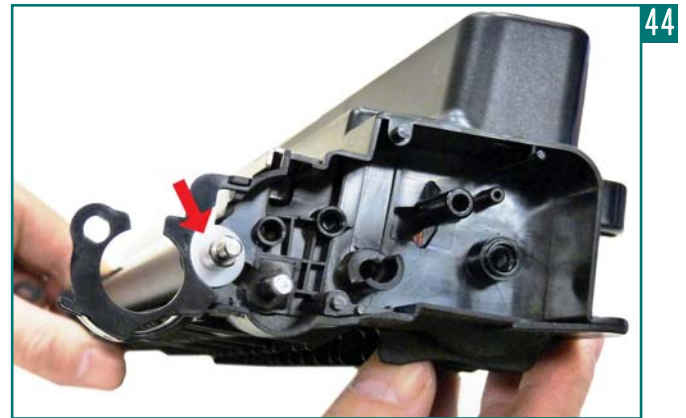
29 Clean and replace the conductive grease on the short shaft side of the roller. See Figure 42



30 Fill the hopper with toner for use in the Samsung ProXpress M3320, replace the fill plug and check for leaks. See Figure 43



31 Replace the bushings on both side of the developer roller. See Figure 44



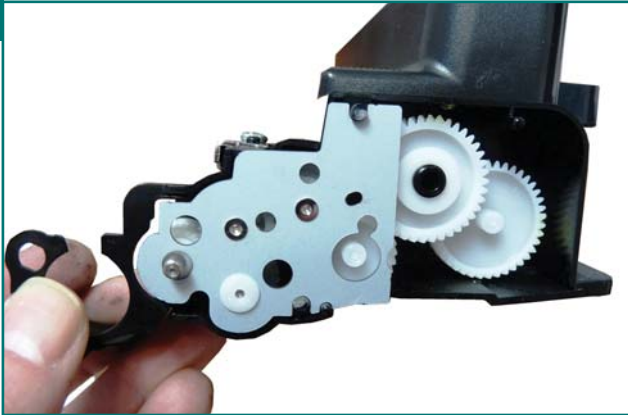
32 Install the gears in the order as shown. See Figure 45



33 Install the gear axle plate. See Figures 46 & 47

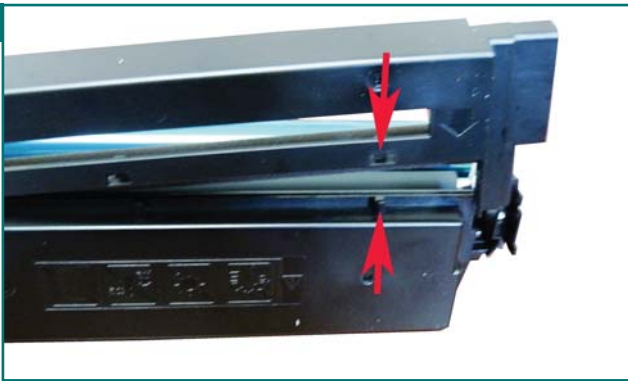


51



34 Blow off or vacuum the PCR cleaner and install the assembly back onto the waste chamber. Make sure the three tabs are locked in place. See Figures 48 & 49

48

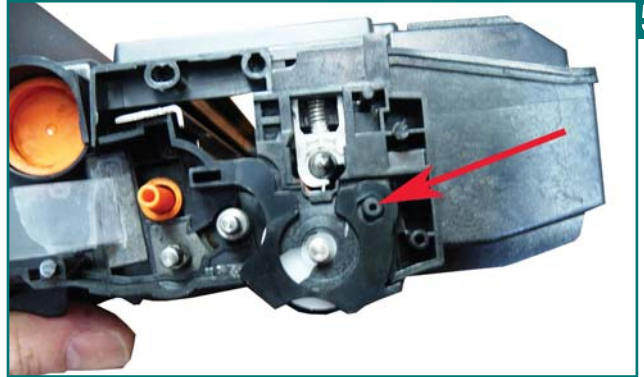


49

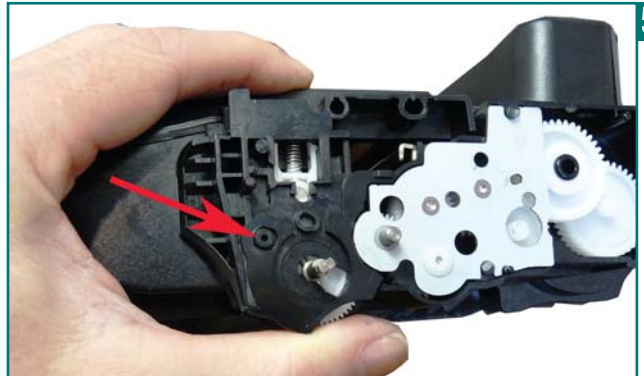


35 Fit both sides of the waste hopper tabs into the toner hopper. See Figures 50 & 51

50

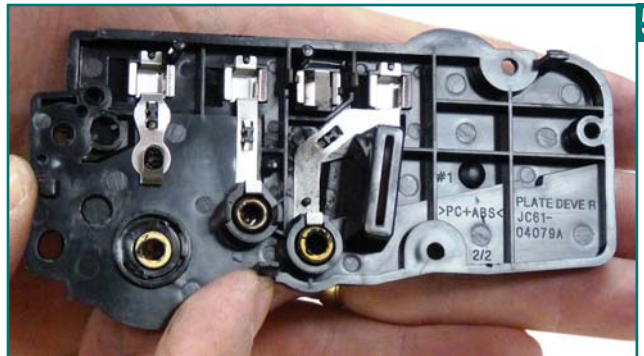


51

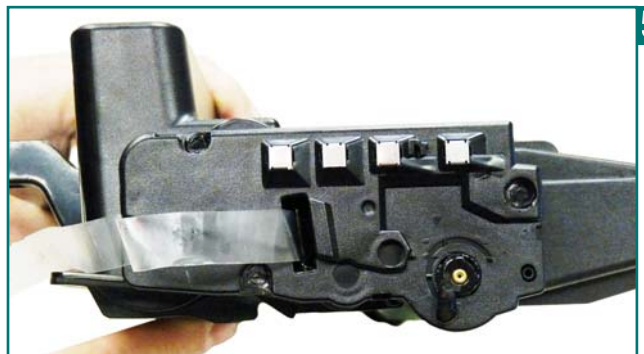


36 Clean the contacts on the left side end cap, and replace the conductive grease. Snap the end cap into place. See Figures 52 & 53

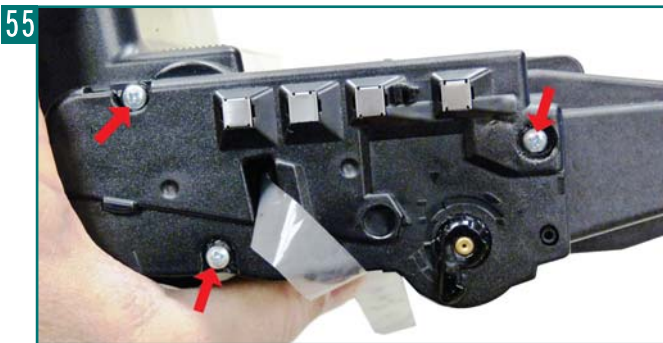
52



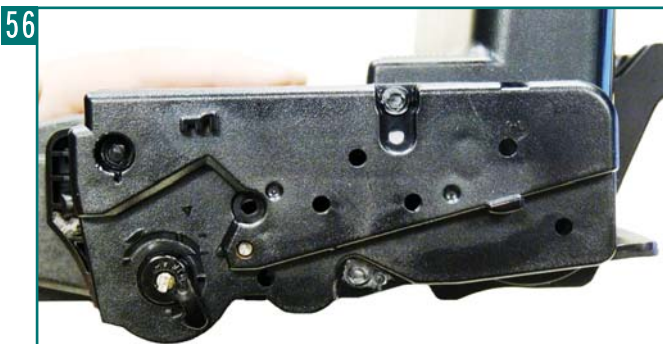
53



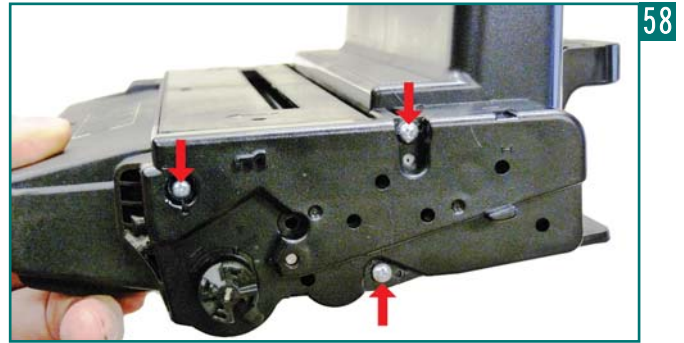
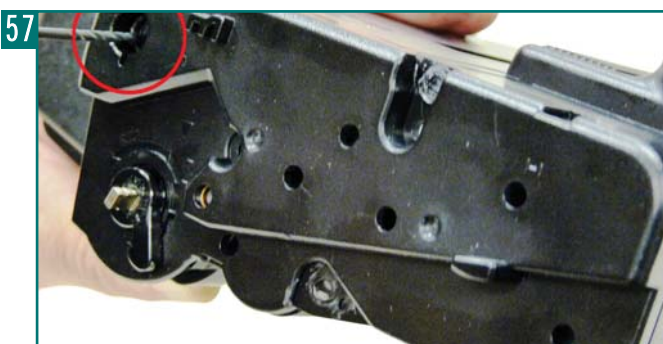
38 Drill three small holes that correspond to the screw size you're using. Install the three screws into the end cap. See Figures 54 & 55



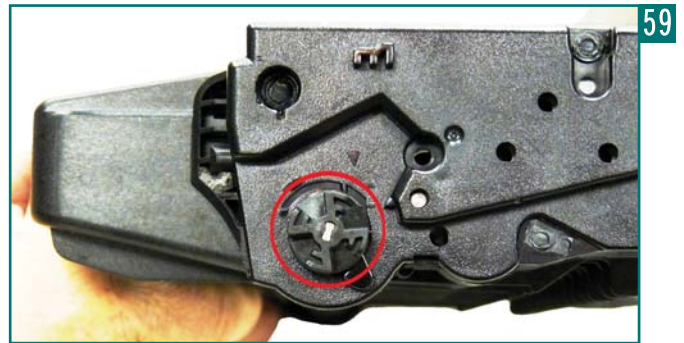
39 Clean the hubs on the gear or right side end cap. Snap the end cap into place. See Figure 56



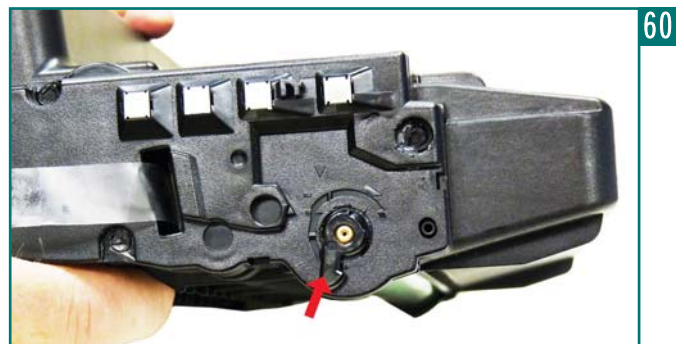
40 Drill three small holes that correspond to the screw size you're using. Install the three screws into the end cap. See Figures 57 & 58



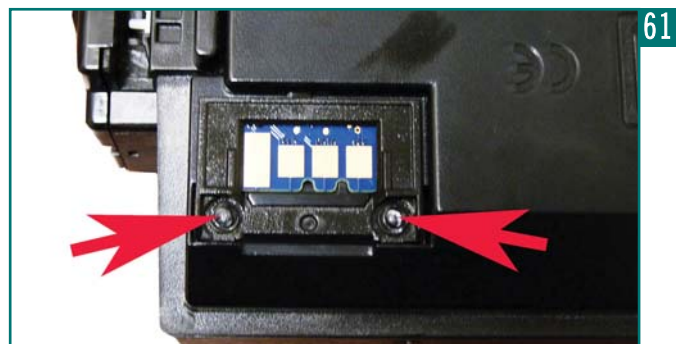
41 Install the drum drive gear. See Figure 59

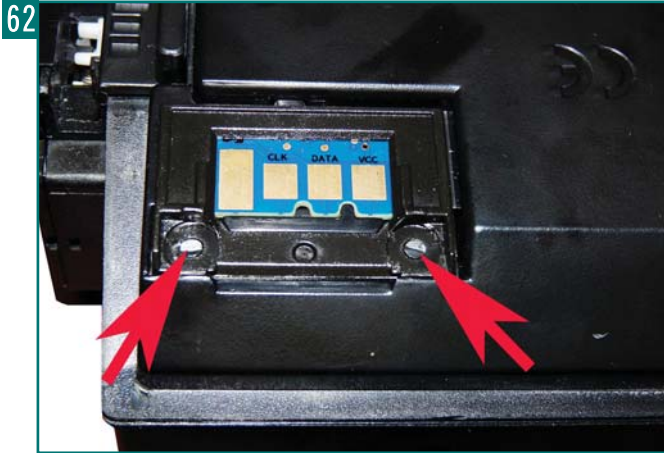


42 The drum separators are fixed to the end caps. They should be set as shown. These arms keep the drum and developer rollers separated until the cartridge is installed in the printer. See Figure 60

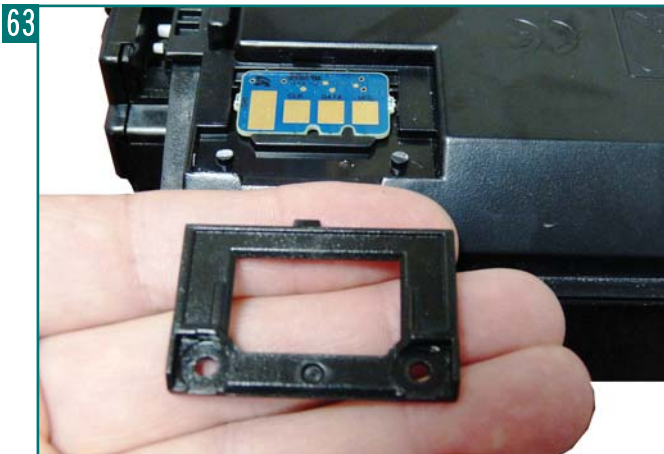


43 Slice off the two plastic rivets on the chip holder. See Figures 61 & 62

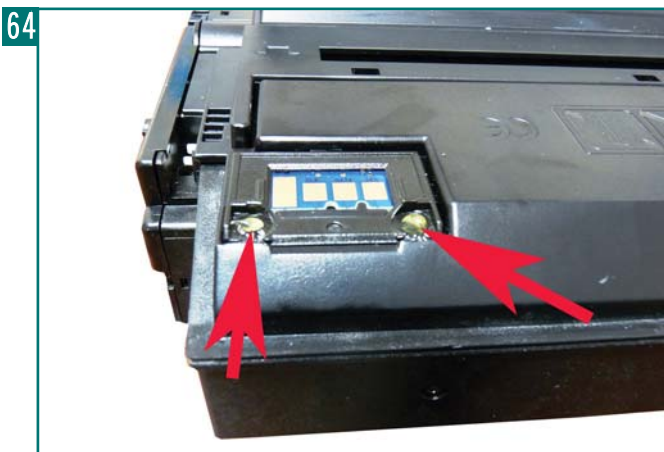




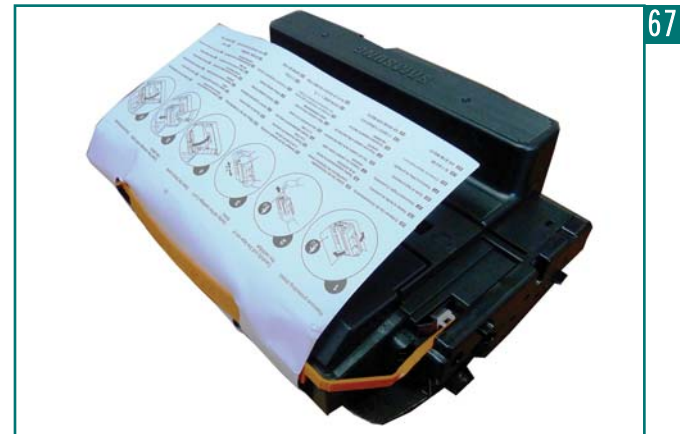
44 Remove the chip cover and replace the chip.
See Figure 63



45 You can drill and insert screws into the posts, but I think using a hot glue gun here will be better and allow the core to be used many times.
See Figure 64



46 Install both sides of the PCR lock into the PCR holders as show. This lock keeps the PCR from touching the drum and will help prevent flat spots on the PCR during storage. See Figures 65, 66 & 67



Repetitive defect chart:

Upper heat roller:	77.5mm
OPC drum:	75.6mm
Lower pressure roller:	75.4mm
Supply Roller:	49.0mm
Transfer roller:	47.0mm
PCR	37.5mm
Developer roller:	35.0mm

Printing test pages

Depending on the model of machine you have, there are different control panel configurations. To have test prints run on the laser printers, press the Menu button and scroll to the INFORMATION menu. From there you can select the Menu map, configuration, supplies info, demo, fonts etcetera.

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