THE SAMSUNG ML-3650 TONER CARTRIDGE

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Remanufacturing the Samsung ML-3650 Toner Cartridge

The Samsung ML-3650 Toner Cartridge

T he Samsung ML-3650 printers are based on a Samsung 35 ppm, 1200 dpi engine. These machines are one of Samsungs first attempts to compete head on with HP for high speed business printers. The warm up time from power on is 40 seconds, and the time for first page out is 9 seconds or less. The Fuser assembly and various rollers are rated for 150,000 pages.

The machines based on the ML-3560 engine are the:

ML-3560
ML-3561N
ML-3561ND

As with the ML-6060, these cartridges are at the same time deceptively easy and deceptively difficult to remanufacture. These cartridges have to be taken apart and put back together in a certain way. If you do not, the cartridge will at some point fall apart with parts coming out all over, and you will be left wondering where they go. Trust me…

There are two cartridges available for this series, the ML-3560D6 cartridges are rated for 6,000 pages at 5% coverage, and the ML-3560DB cartridges are rated for 12,000 pages.

In addition to an adhesive sealing strip, these cartridges also use a shipping lock. This lock keeps the developer roller away fro the drum, and helps prevent the developer roller from getting a flat spot during storage. It is very important that the shipping lock be installed.

Lastly, these cartridges also use a chip. The chip must be reset or replaced in order for the printer to accept the cartridge. The good news here is that there are Reset boxes available that can reset the OEM chips!

Required Tools
Toner approved vacuum.
A small Common screw driver
#1 Phillips head screwdriver
Needle nose pliers
Spring Hook
Samsung reset box if not replacing the chip

Required Supplies
3560 toner, 330g for 12k cartridge, 165g for 6k cartridge
New Wiper Blade
New OPC Drum
New Developer Roller
New Supply Roller
New PCR
New Dr. Blade
Sealing Strip
Shipping lock
Replacement chip (If not resetting the OEM chip)
Drum lubricant
PCR Cleaner
Conductive grease

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1) Clean the exterior of the cartridge.

2) Place the cartridge with the handle facing up and close to you. (The waste is away from you). See **Fig. 1**

Figure 1

Figure 4

3) On the right side remove the drum cover arm. See **Figure 2**

5) Remove the two screws on the left end cap. See **Figure 5**

Figure 2

Figure 5

4) Remove the same from the left side, remove the drum cover. See **Figures 3 & 4**
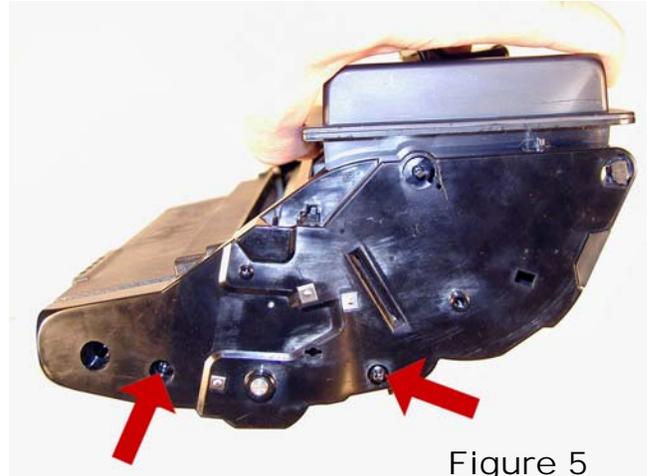
6) Remove the two black screws from the right side end cap. Do not remove the gold colored screw. See **Figures 6 & 7**

Figure 3

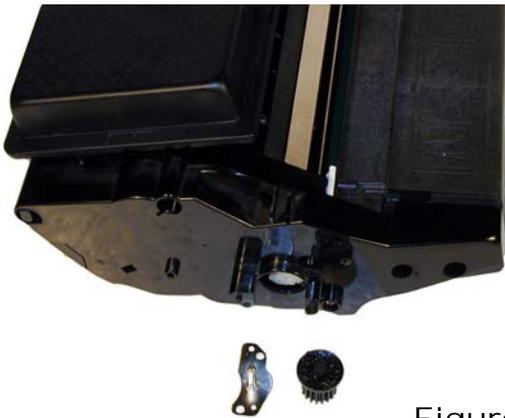**Figure 6**

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Figure 7

8) With a spring hook, remove the 2 springs from the back of the toner hopper. One on the left and one on the right side, about 1 inch from the back edge. See **Fig. 10**

ML–3560DB/SEE

S/N: KRE1JC9603398BDJ78Y9C0061
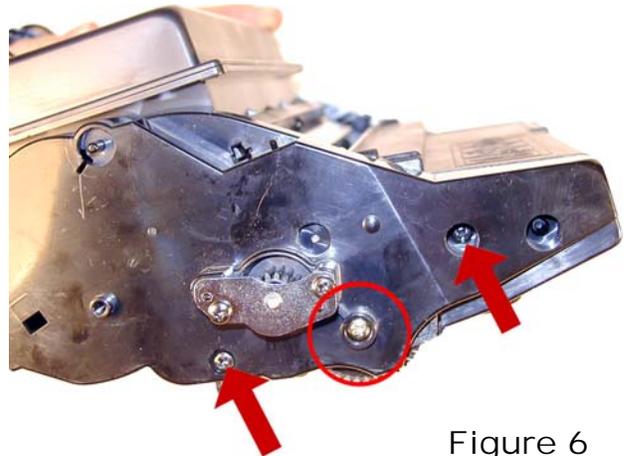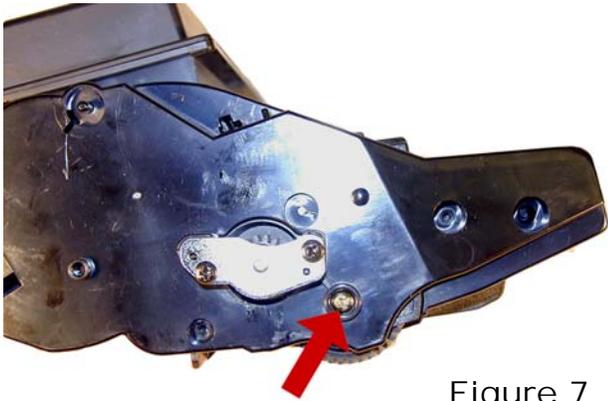
Figure 10

7) Remove the 2 screws on the metal plate. Remove the plate and gear. See **Figures 8 & 9**

Figure 8

9) Carefully rock the left side end cap until it comes free from the cartridge frame. Turn the back edge up so it comes free from the hopper. The spring and possibly a small gear will fall from the cartridge. The installation of both parts will be shown later. See **Figures 11 & 12**

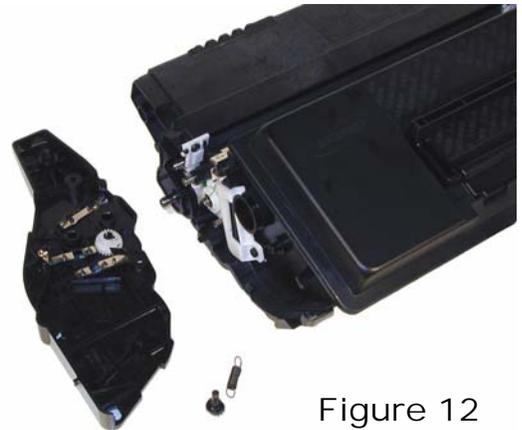**Figure 11**

Figure 9

Figure 12

10) Slide the metal rod located above the developer roller away from the remaining end cap to free it from the end caps. See **Figure 13**

Figure 13

11) Remove the toner hopper from the frame. **Fig. 14**

Figure 14

12) On the waste hopper. remove the gold colored screw from the drum axle, work the waste section away from the frame. See **Figure 15.**
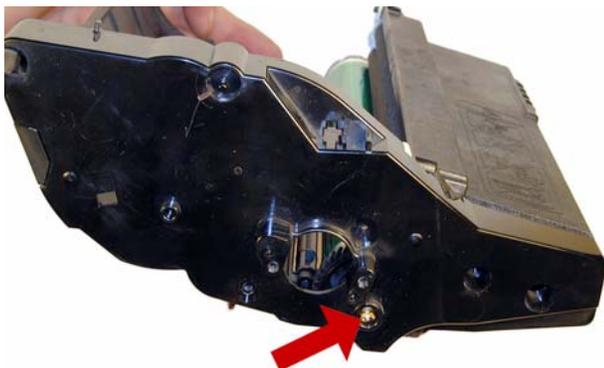
Figure 15

13) remove the waste section from the frame. See **Figure 16**

Figure 16

14) On the waste section, remove the drum axle by pulling it out from the small straight gear side. Note the conductive grease on the large helical gear side of the axle. See **Figure 17**

Figure 17

15) Remove the drum See **Figure 18**

Figure 18

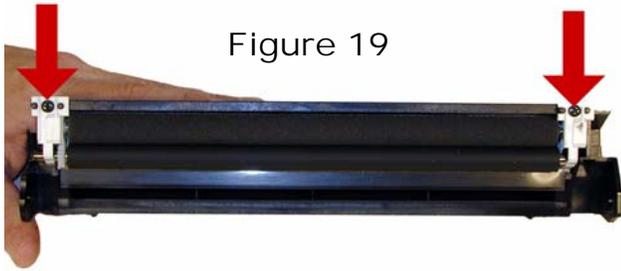16) Remove the 2 screws on the PCR assembly. See **Figure 19**

Figure 19

17) Pry up the white plastic holders and remove the PCR assembly. See **Figure 20**

Figure 20

18) Remove the two screws on the wiper blade. Remove the blade. See **Figure 21.**

Figure 21

19) Clean out all the waste toner.

20) Install the new wiper blade and 2 screws. See **Figure 22**

Figure 22

21) Slide the holders off the PCR assembly, and clean the PCR with your preferred PCR cleaner. Blow off the PCR cleaning roller too. See **Figure 23.**

Figure 23

22) Re-assemble the PCR assembly and install it in the waste hopper. Install the 2 screws. Make sure it's not upside down! See **Figure 24**

Figure 24

23) Install the drum and drum axle. Large gear to the non gear side of the PCR. Slide the drum axle through the large gear side. Keep the conductive grease to the large gear side. See **Figures 25 & 26**
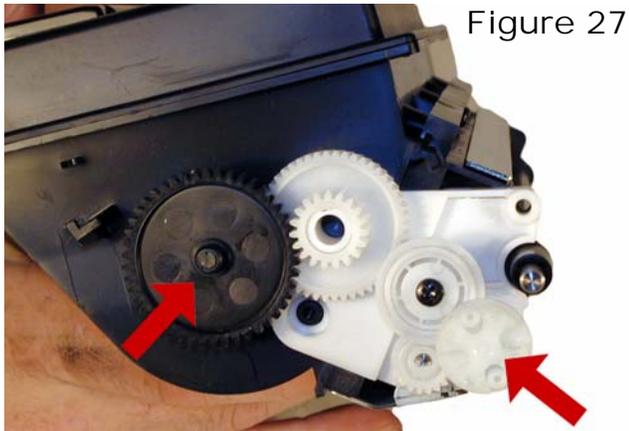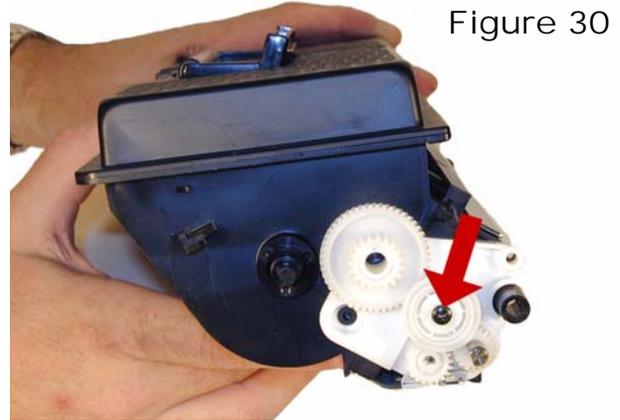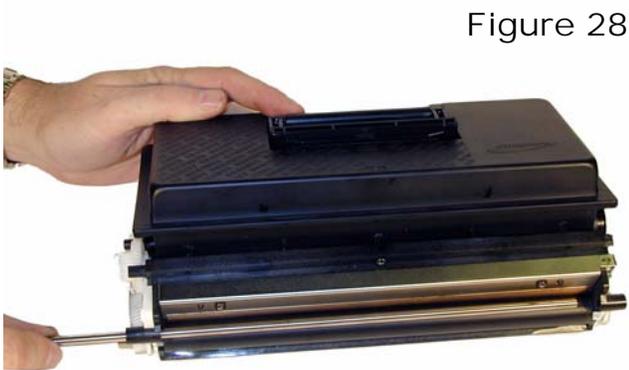
Figure 25

Figure 26

24) Place the waste hopper aside.

25) On the toner hopper, remove the large black gear and small white gear from the developer roller shaft. See **Figure 27**
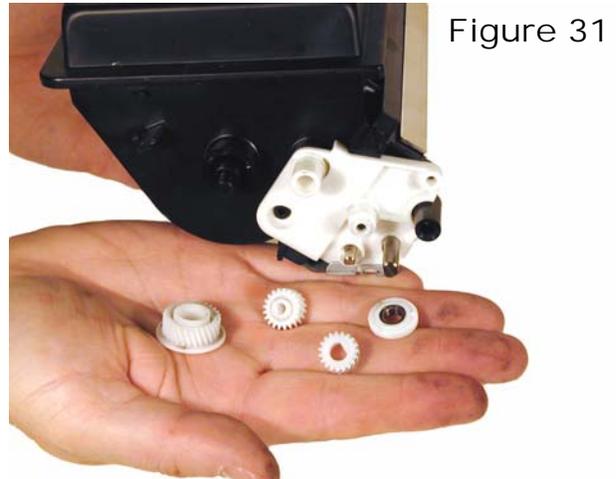
Figure 27

26) Slide out the metal bar. See **Figure 28**
27) Remove the fill plug, and dump out all remaining

Figure 28

toner from the hopper. Vacuum clean. See **Figure 29**

Figure 29

28) Remove the screw from the middle white gear. See **Figure 30**

Figure 30

29) Remove the remaining 3 gears and the bearing. See **Figure 31**
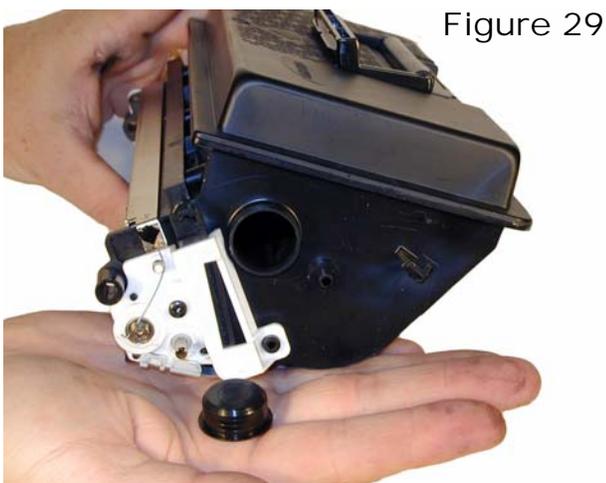
Figure 31

30) Remove the bottom metal plate. Carefully pry it off the locking tabs located one on each side, and one in the middle of the hopper. See **Figures 32, 33 & 34**
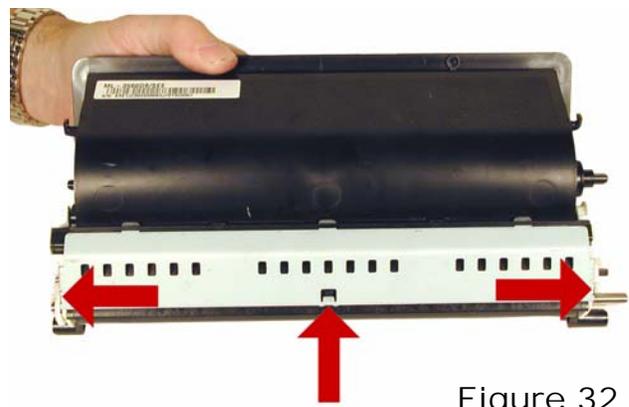
Figure 32

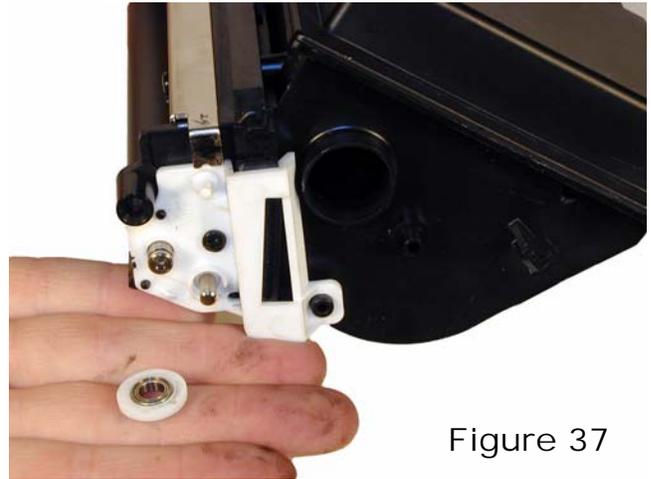SUMMIT TECHNOLOGIES

Figure 33

Figure 36

Figure 34

31) Remove the white plastic end cap. See **Figure 35**

Figure 37

34) Remove the screw and the white plastic alignment plate. **Figure 38**

Figure 35

32) On the opposite side of the hopper, release and remove the small spring. See **Figure 36.**

33) Remove the bearing. Note: this bearing can be hard to remove! Carefully pry it off. See **Figure 37**

Figure 38

35) Remove the developer roller. See **Figure 39**

Figure 39

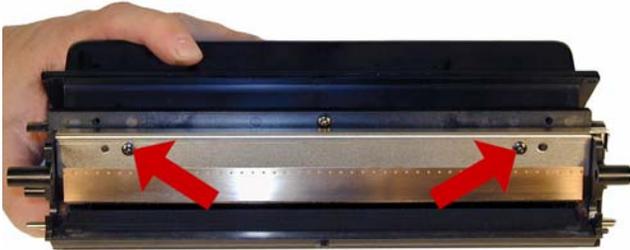36) Remove the 2 screws and the doctor blade. See **Figure 40**

Figure 40

37) Remove the center screw from the toner hopper. The top half of the developer roller assy. will now come free. See **Figures 41 & 42**
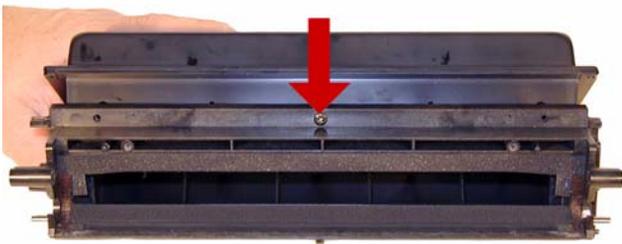
Figure 41

Figure 42

38) Clean out any remaining toner from both halves of the assembly. Make sure the foam seals are clean. If the supply roller is worn, it can easily be replaced now also. See **Figure 43**

Figure 43

39) Install the seal fold over the pull tab so it sits over the foam edge seal. Slide the tab through the slot. See **Figure 44**

Figure 44

40) Slide the seal tab out the slot of the top cover. Set the three plastic tabs into their slots, and rotate the top cover down into place. Install the screw. Make sure the cover locks into place! Check the seam on the end of the hopper to be sure. See **Figures 45 & 46**
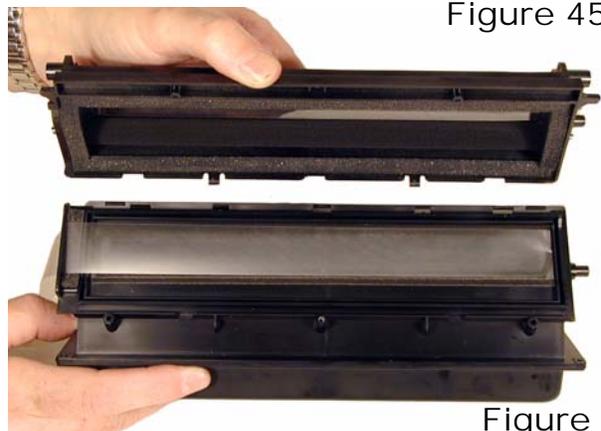
Figure 45

Figure 46

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41) Clean or replace the doctor blade. Install with the two screws into the hopper. See **Figure 47**

Figure 47

42) Install the developer roller long shaft side to the gear side of the hopper. (NON fill plug side) See **Figure 48**
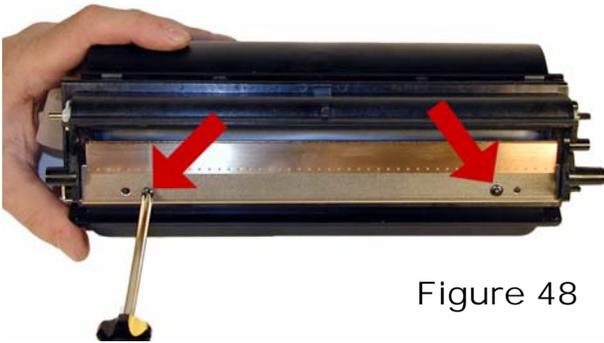

Figure 48

43) Install the white plastic alignment plate and the screw on the fill plug side See **Figure 49**

Figure 49

44) Install the white plastic alignment plate on the gear side See **Figure 50**

45) Install the bearing onto the developer roller shaft of the fill plug side. See **Figure 51**

46) Install the small spring as shown onto the developer roller shaft. See **Figure 52**
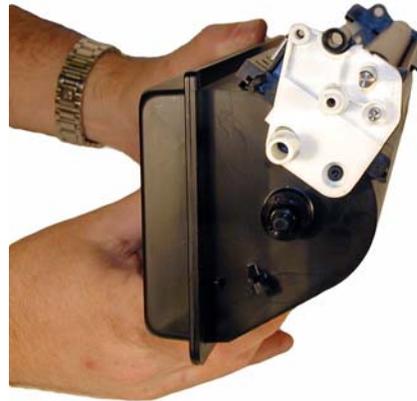

Figure 50
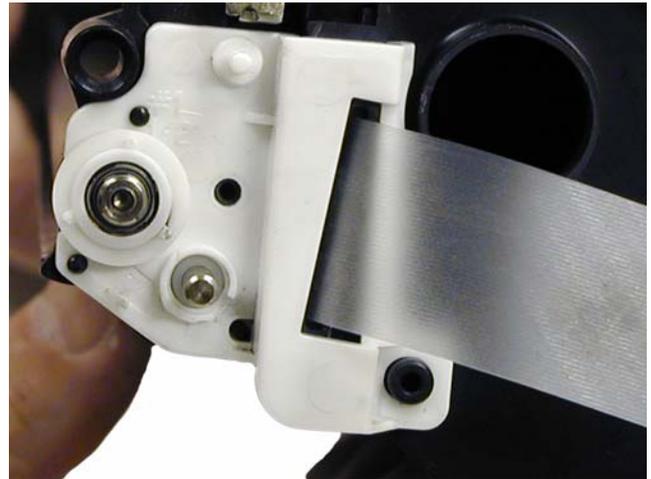

Figure 51

Figure 52

47) Install the bearing onto the developer roller shaft, gear side of the hopper. See **Figure 53**
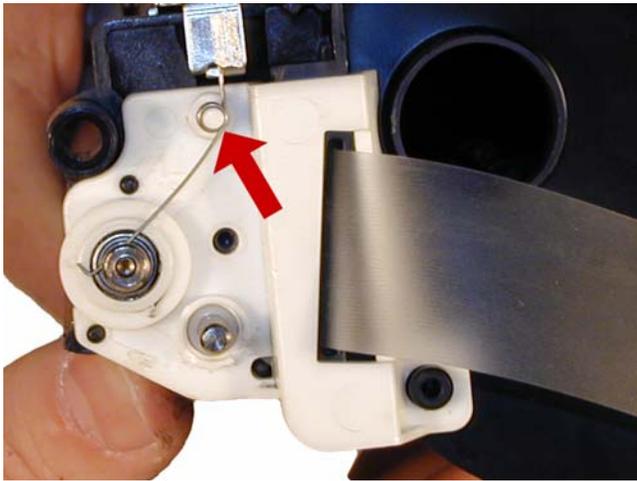
Figure 53

48) Install the three white gears as shown. See **Fig. 54**

Figure 54

49) Install the center white gear and screw. See **Fig. 55**
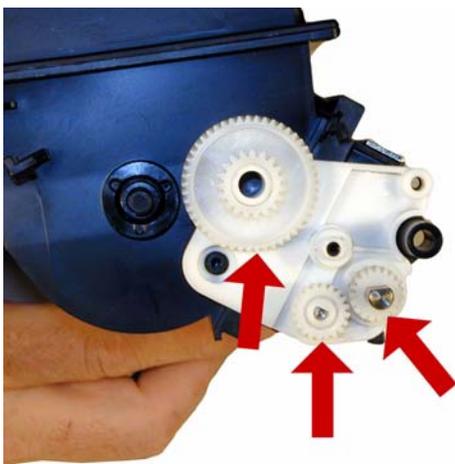

Figure 55

50) Install the large black gear, and the small white drive gear. See **Figure 56**
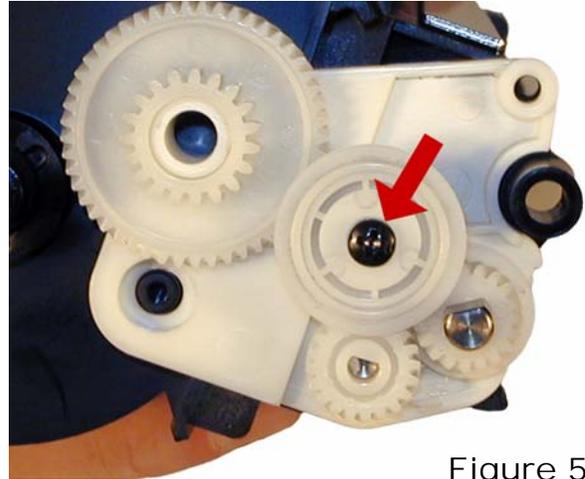

Figure 56

51) Install the bottom metal plate. Insert the three tabs first and rotate into place. Make sure all three locks snap into place! (2 sides and middle). See **Figure 57**
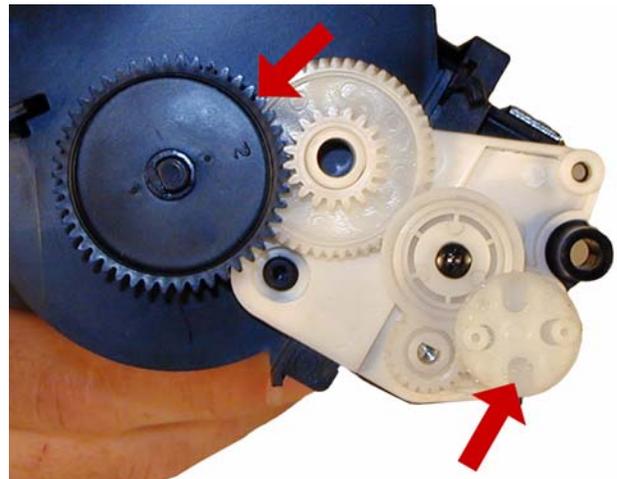

Figure 57

52) Fill the hopper with 3560 toner, 330g for the 12k, 165g for the 6k. Replace the fill plug, check for leaks. See **Figure 58**

Figure 58

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53) Install the waste chamber into the frame. See **Figure 59**

Figure 59

54) Install the gold screw into the drum axle. **Fig. 60**

Figure 60

55) Make sure the small round black plastic rod is in place, install the small drive gear. (This is the gear that came loose when the end cap was removed). See **Figure 61**

Figure 61

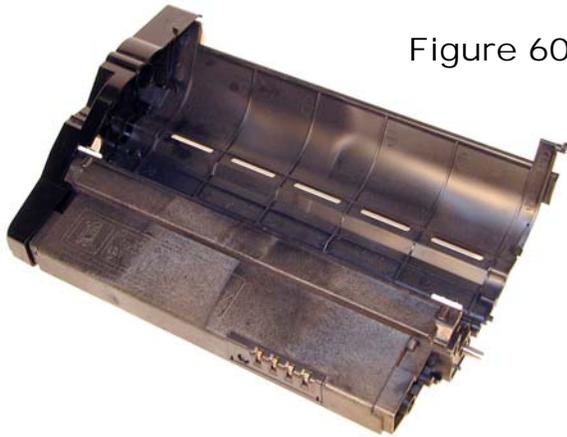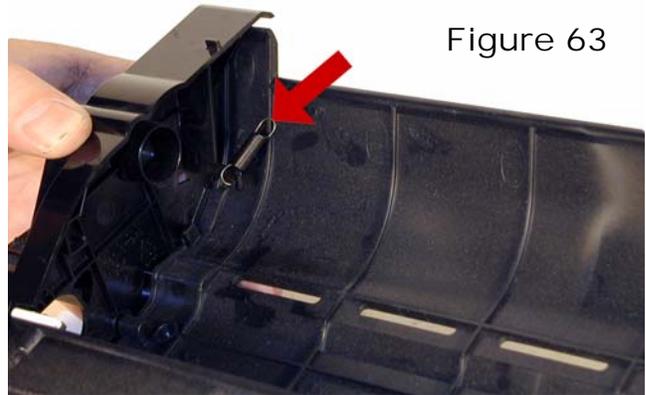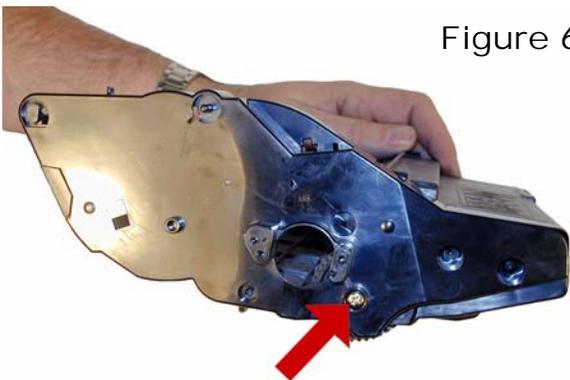56) Install the hopper spring onto the end cap. See **Figure 62**

Figure 62

57) Place the hopper partially into the frame, hook up the spring onto the hopper. See **Figure 63**

Figure 63

58) Partially install the metal rod on the toner hopper. Seat the hopper into the end cap, and seal the metal rod. Make sure the rod is seated into its hole, and the white drive gear is centered into the 1 inch hole. See **Figure 64**
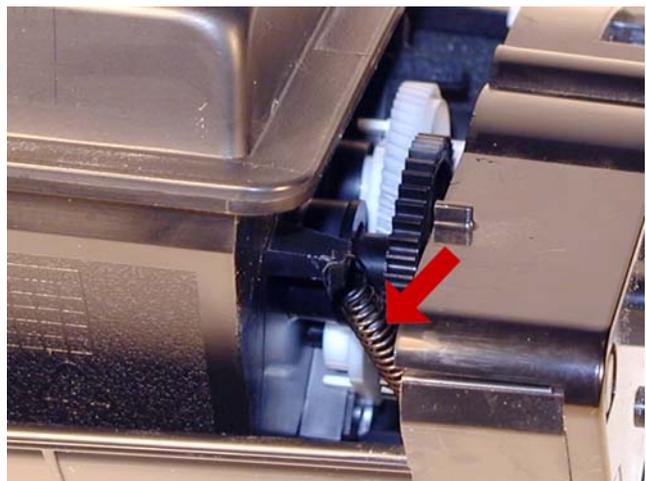

Figure 64

59) Rotate the remaining end cap and partially install on the frame so that the rear tab locks into place. See **Figure 65**
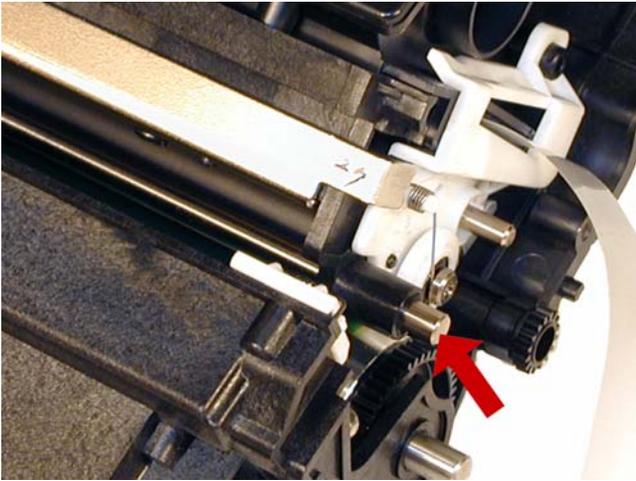

Figure 65

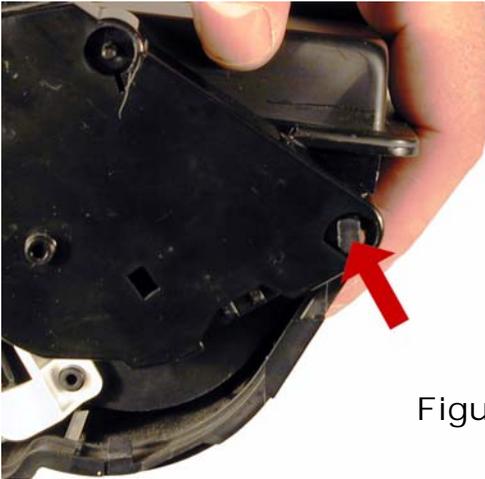60) Install the spring from the end cap to the hopper. See **Figure 66**

Figure 66

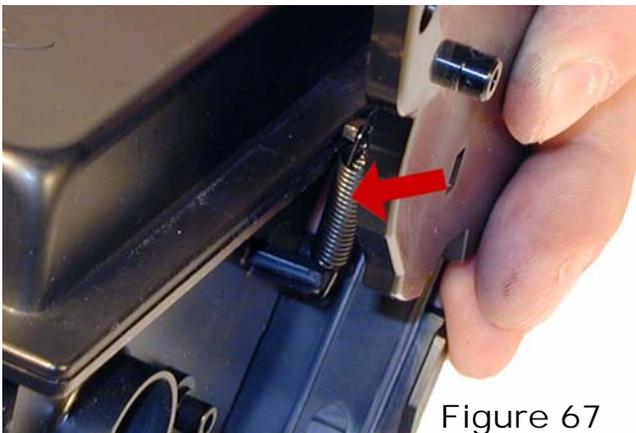61) Pull the seal tab through the end cap seal slot. See **Figure 67**

Figure 67

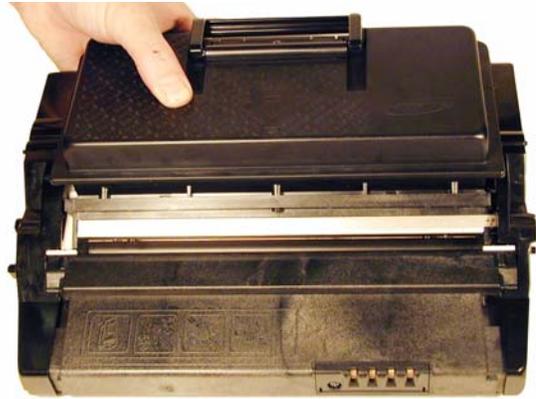62) Align and snap the end cap into place. See **Fig. 68**

Figure 68

63) Install the drive gear, metal plate, and two screws. Make sure the tabs on the back of the black drive gear fit into the slots in the white drive gear. See **Figures 69 & 70**

Figure 69

Figure 70

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64) Install the two screws into the left side end cap. See **Figure 71**
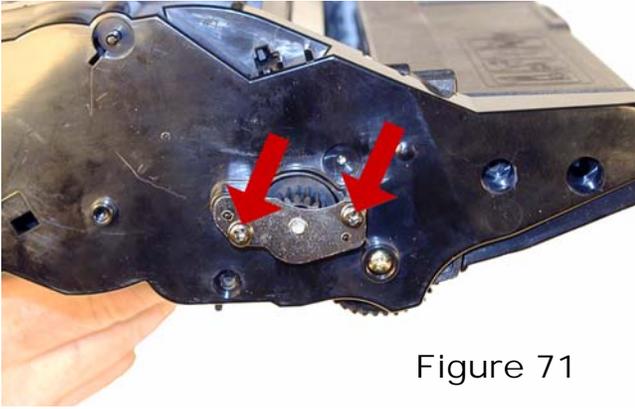

Figure 71

65) Install the two screws into the right side end cap. See **Figure 72**
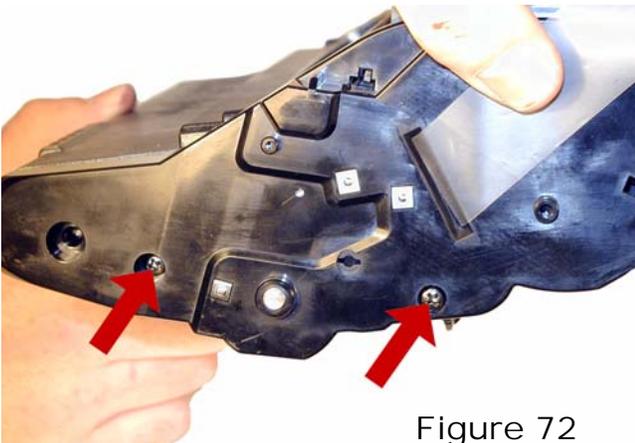

Figure 72

66) Install the drum cover arms. Place the arm into place, and rotate the tail of the springs so the fit into their respective slots. See **Figure 73**
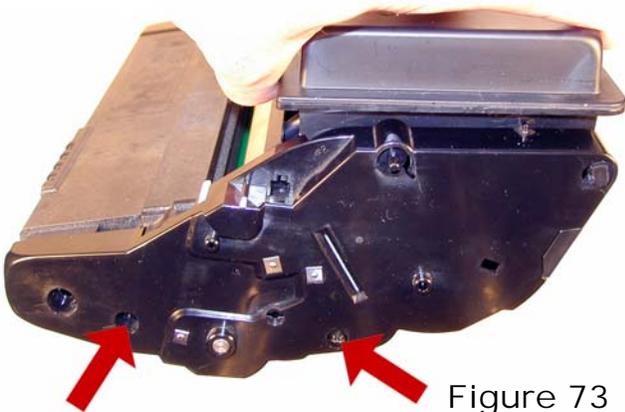

Figure 73

67) Install the shipping lock. See **Figure 74**

Figure 74

68) Remove the screw and cover for the chip. Replace the chip. See **Figure 75**

Figure 75

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Repetitive Defect Chart:

PCR   38mm
Developer roller 43mm
Supply Roller   45mm
Transfer Roller 55mm
OPC Drum   95mm
Upper Fuser Roller   126mm (Mark on the front of
the page)
Lower Fuser Roller   126mm (Mark on the back of
the page)

Printing Test Pages

Press the MENU button until "Information" appears on
the display. Press the right or left arrow until the desired
test page appears on the display. The options are the
Configuration page, menu map, Demo page, and font
pages.

Changing the Print Quality settings:

Press the MENU button until "GRAPHICS" appears on
the display. Press the right or left arrow until the desired
menu appears on the display. The resolution, Image
Quality, Density, and the Toner Save can all be
accessed from this menu.

Common Error Codes

The error codes are all followed by text explanations so
there is no need to go into them here except for one.

7.4.4.3 Replace Cartridge: The printer counts the
revolutions of the drum. When that count reaches
183,600, the replace cartridge code appears on the
display. Low toner comes on when the OPC cycles
reach 162,000. It is not totally dependant on the toner
level. If there is still toner, and these counts are
reached, the message will display, and in the case of
replace cartridge, the printer will shut down.