THE HP LASERJET M5025 / M5035 TONER CARTRIDGE

DOC# 0384

By Mike Josiah and the Technical Staff at Summit Technologies

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Remanufacturing the HP LaserJet M5025/M5035 Toner Cartridge

The HP LaserJet M5025/ M5035 Toner Cartridge

First released in December 2006, the HP LaserJet M5025 series of printers are based on a 1200dpi, 25/35ppm wide format Canon engine. The 5025 is 25ppm, and the 5035 is 35ppm. This series is an MFP version of the LaserJet 5200. In fact the cartridges are very similar. They are not however interchangeable. **Figures 1-6** show some of the physical differences between them. As with all the new HP cartridges, these cartridges use a chip to monitor toner low functions. The cartridge for the M5025/5035 series is the Q7570A, and is rated for 15,000 Pages at 5% coverage. No "X" cartridges have been released at this time.

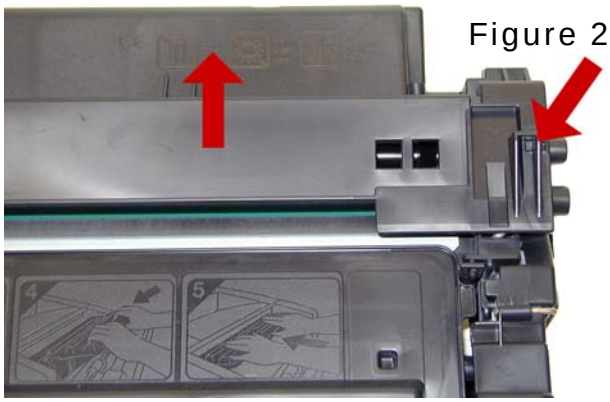

Figure 2

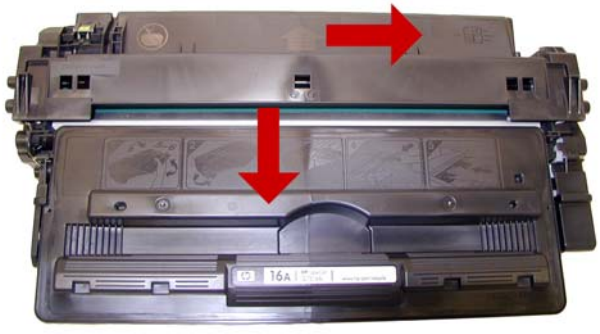

Figure 1

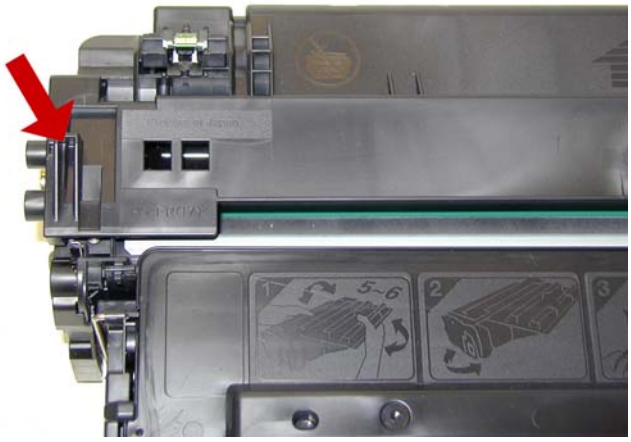

Figure 3

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Figure 4

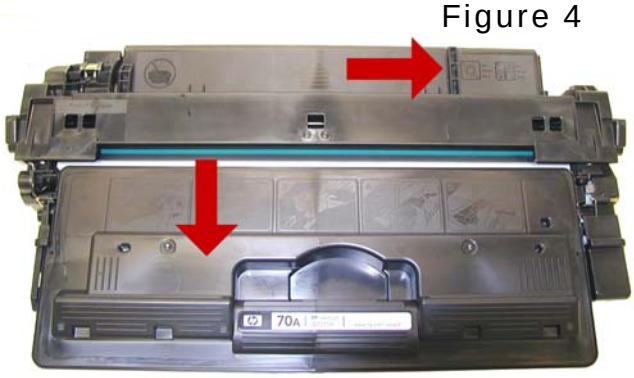


Figure 5

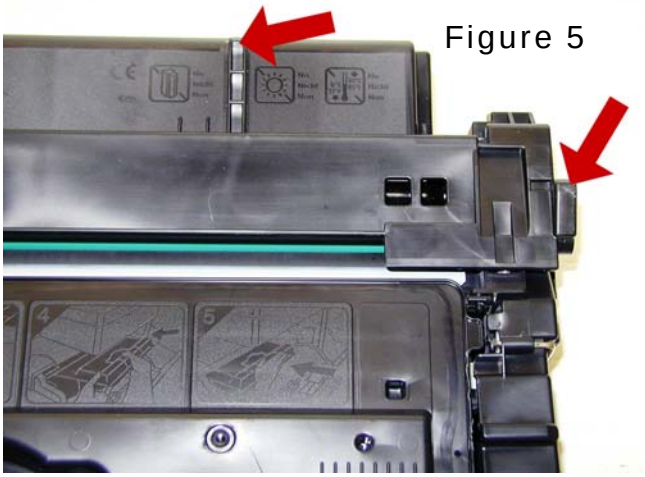
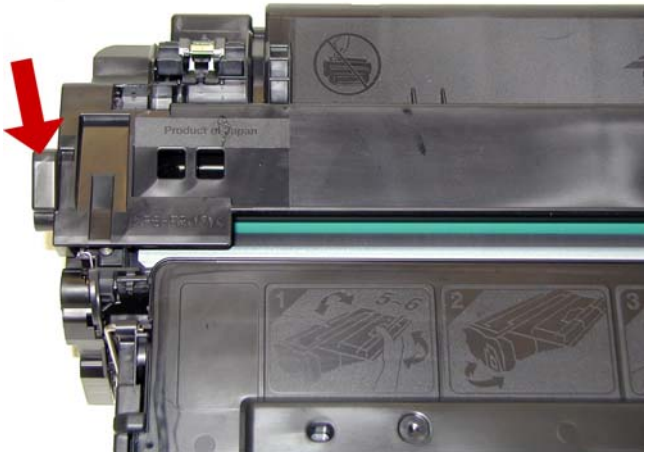


Figure 6



The LaserJet M5025/5035 series of printers all use a 460 MHz processor and the most basic unit has 256Mb of DDR memory. The entire series also comes with a 50 sheet ADF and a color flat bed scanner. Depending on the model, some also have fax, duplex and stapling capabilities. The entire series has a monthly duty cycle of 200,000 pages/month. In contrast to that number, they also state a recommended monthly page volume of 12,500 pages. That's quite a difference in numbers and they (HP) never explain the discrepancy.

The Q7570A cartridge has listed on the HP web site at a price of $170.99**.** (Pricing as of January 2007).

So far the LaserJet 5025/5035 series consists of the following printers:

LaserJet M5025 MFP, M5035 MFP, M5035x MFP, M5035xs MFP

Exactly like the LJ 5200 cartridge, in HP's further cost cutting/remanufacture thwarting plans they have eliminated all the screws that hold the supply hopper end caps on. They are now held on by plastic rivets. This is not too much of a problem, but it is a bit of a pain. We are working on new replacement end caps.

As with all other black HP cartridges, the chips on these cartridges do not shut down the entire cartridge, they disable the toner low features. The cartridge will run if the chip is removed, but the error message must be cleared first. As with past HP chips, the toner low function is disabled if a used chip is installed. The chips used are the new smaller type similar to the LaserJet 5200 and CLJ 2600 cartridges.

Printing test pages, cartridge troubleshooting as well as some simple machine troubleshooting is covered at the end of the article.

Required Tools

Toner approved vacuum.
A small Common screwdriver
A Phillips head screwdriver
Needle nose pliers
Wire Cutters
Dremmel tool with side cutting bit. (Hobby rotary saw)- See picture in article
Xacto knife with flat chisel type blade.

Required Supplies

Toner **715**g HP-5035 type (Preliminary weight)
New OPC Drum
New Wiper Blade
New PCR [Optional]
New mag. Roller [Optional]
New Dr. Blade [Optional]
99% Isopropyl Alcohol
Magnetic Roller Cleaner
Drum Lubricant
Conductive Grease
White Lithium grease

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1) Note on each end of the cartridge there are small silver pins. To separate the two halves these pins must be removed. Like the 96A/10A cartridges, these pins cannot be pulled out, or pushed in from the outside of the cartridge (the pins have heads on them). The only way to disassemble the cartridge without damaging it is to push the pins out from the inside. See **Figures 7, & 8**

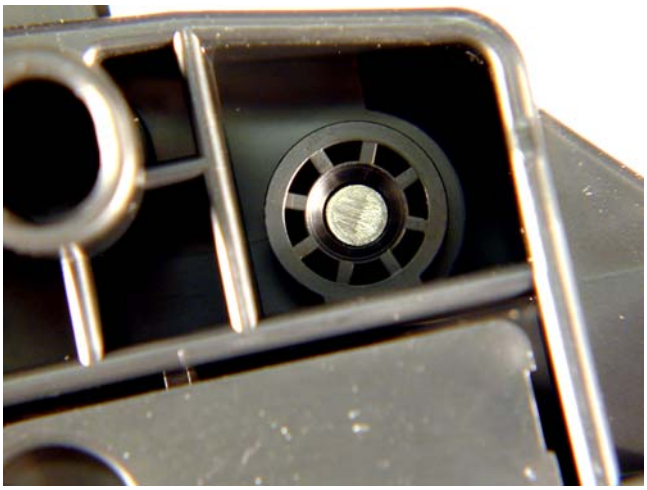

Figure 7

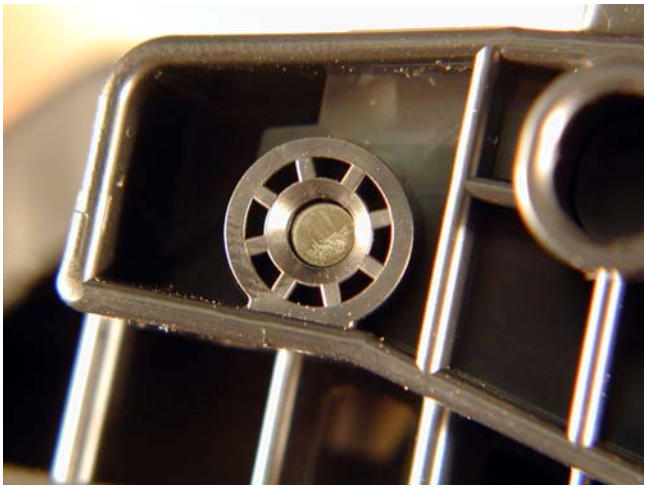

Figure 8

2) To remove the pins, 2 small holes must be cut. Cut the holes with the Dremmel tool, and a side cutting bit. See **Figures 9, 10, 11, 12, & 13**

Figure 9

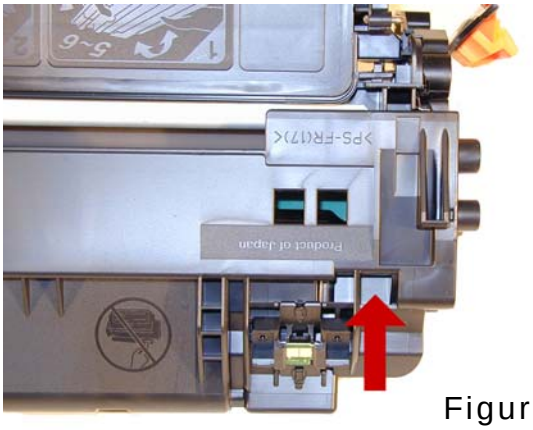

Figure 10

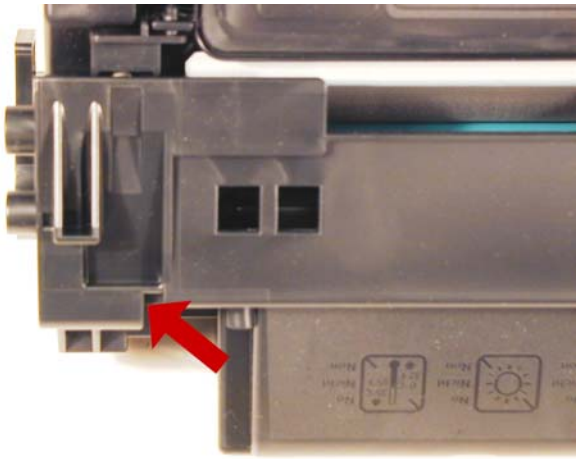

Figure 11

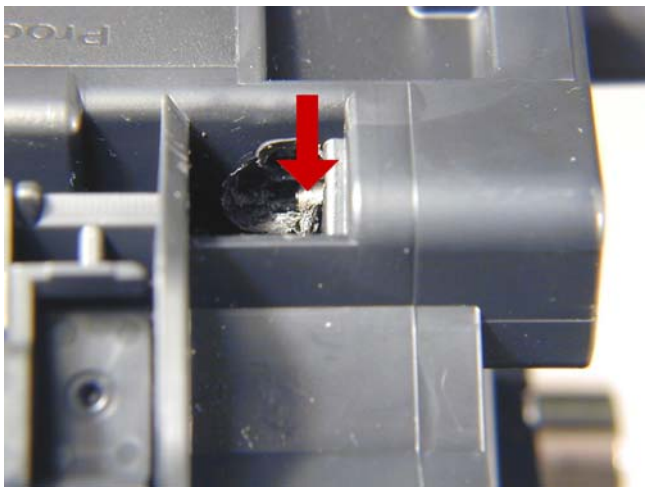

Figure 12

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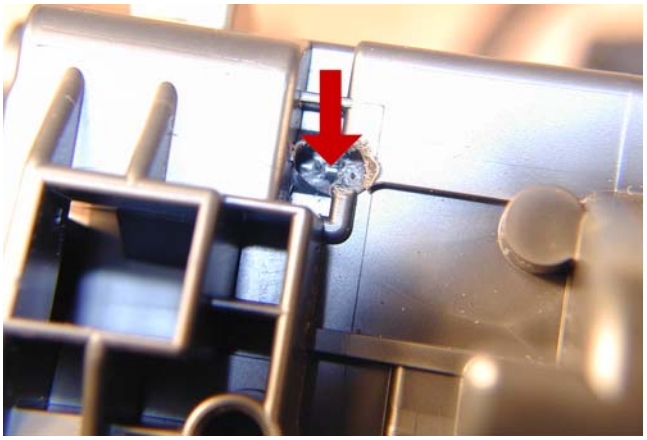

Figure 13

3) Push the pins out with either a jewelers screwdriver, or a modified spring hook. See **Figures 14, 15, & 16**

Figure 14

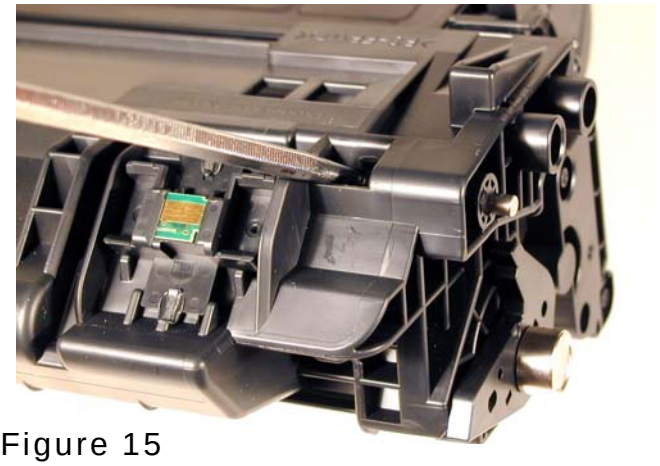

Figure 15

Figure 16

4) Separate the two halves See **Figure 17**

Figure 17

5) On the Waste section, take a common screwdriver and remove the Metal Axle pin/spring loaded cover located on the right side of the cartridge. This is the same type of drum axle pin that the 2400 series uses. It comes out easily enough, but be careful as it seems somewhat fragile. See **Figures 18 & 19**

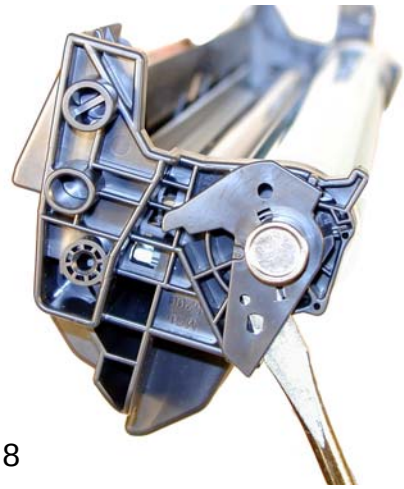

Figure 18

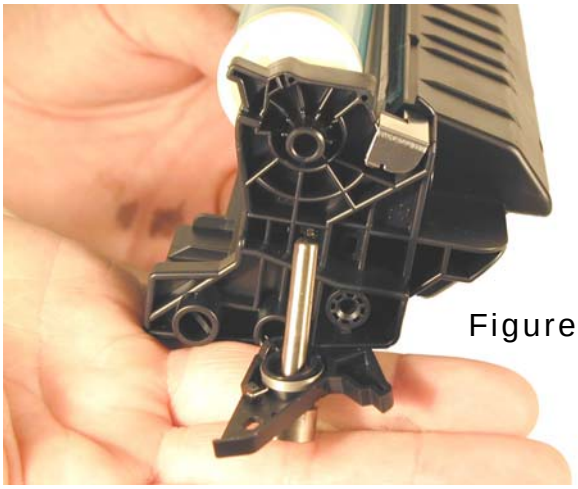

Figure 19

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6) Remove the Photoconductive Drum. See **Figure 20**

Figure 20

7) Remove the Primary Charge Roller (PCR), by prying it out of the clips on either end. Clean the PCR with your preferred cleaner and place the aside. See **Figure 21**

Figure 21

8) Remove the wiper blade and 2 screws. See **Fig. 22**

Figure 22

NOTE: Be very careful not to damage or distort the thin Mylar Recovery Blade next to the wiper blade. If this blade is bent or damaged in any way, it should be replaced.

9) Clean out any remaining waste toner. Make sure the foam seals under the wiper blade are clean and not damaged. See **Figure 23**

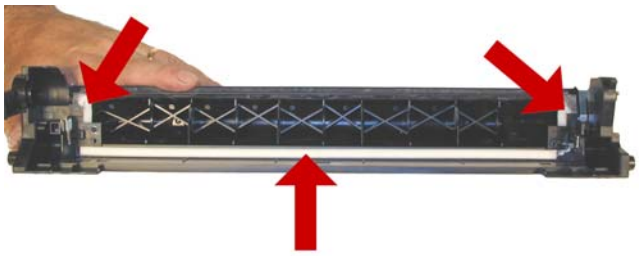


Figure 23

10)Lightly coat the new wiper blade with you preferred lubricant. Replace the Wiper Blade and 2 screws into the cartridge. See **Figure 24**

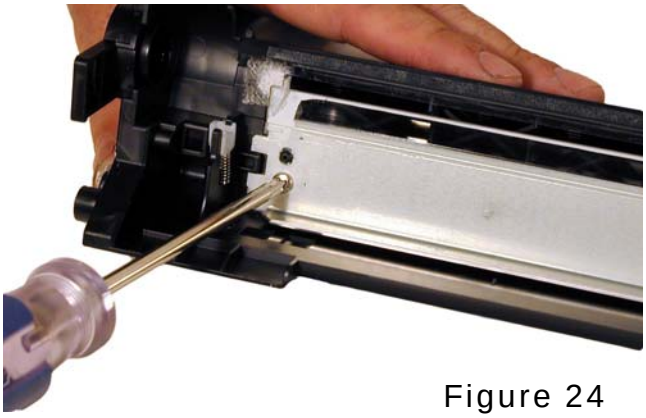


Figure 24

11) Clean the 2 PCR holders, and place a small amount of conductive grease on the black PCR holder, install the PCR. See **Figure 25**

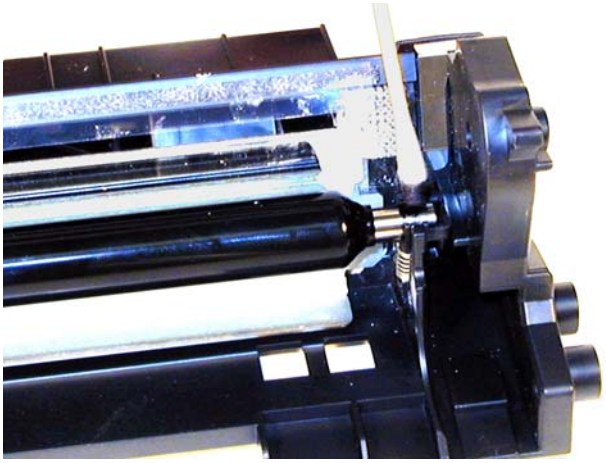
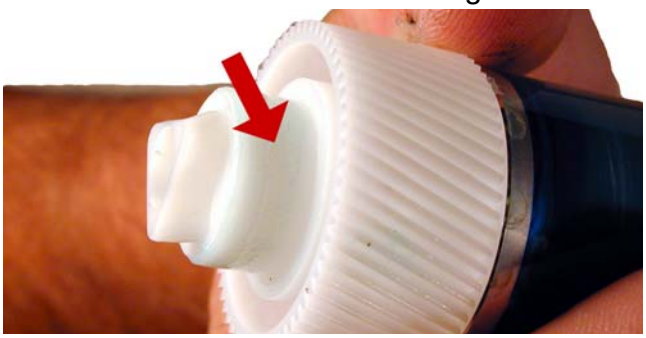


Figure 25

12) If you are re-using the drum, check to make sure the grease on the drum drive gear and hub is clean. If not remove it and replace. If the drum is new, install a small amount of grease. White Lithium grease can be used here. Install the drum. See **Figure 26**

Figure 26



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13) Install the spring in the holder as shown, install on the cartridge and set the tail of the spring so it drops into its slot. See **Figures 27 & 28**

Figure 27

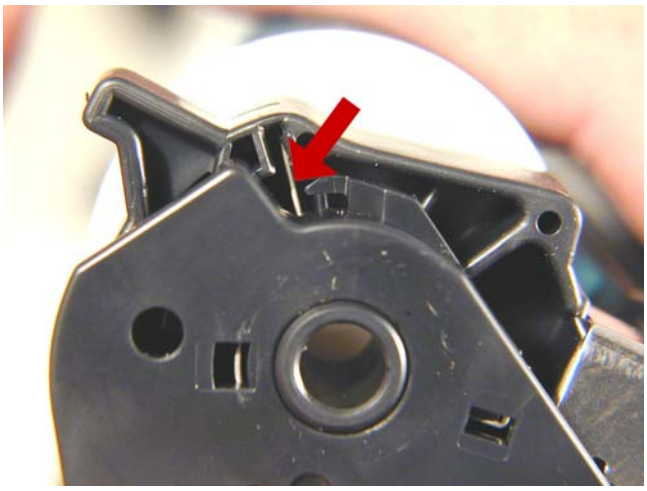

Figure 28

14) Replace the conductive grease on the end of the drum axle tip, and install on the cartridge. See **Figures 29 & 30**

Figure 29

Figure 30

15) Place the waste chamber aside.

16) Remove the drum cover by prying the spring loaded arm, and then carefully pry off the two metal bars out of their holders. The cover must be in the closed position in order to pry off the spring loaded arm. Be careful not to loose the spring! Both of the metal bars should be removed from the front not the end. See **Figures 31, 32, & 33**

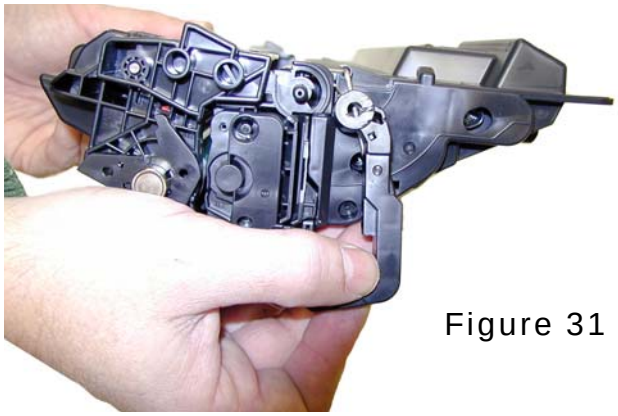

Figure 31

Figure 32

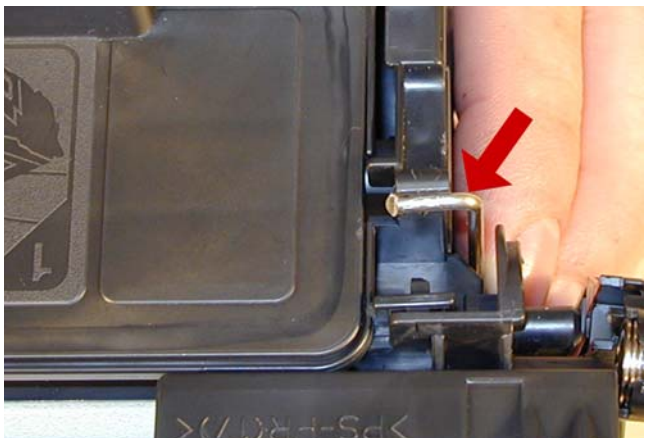

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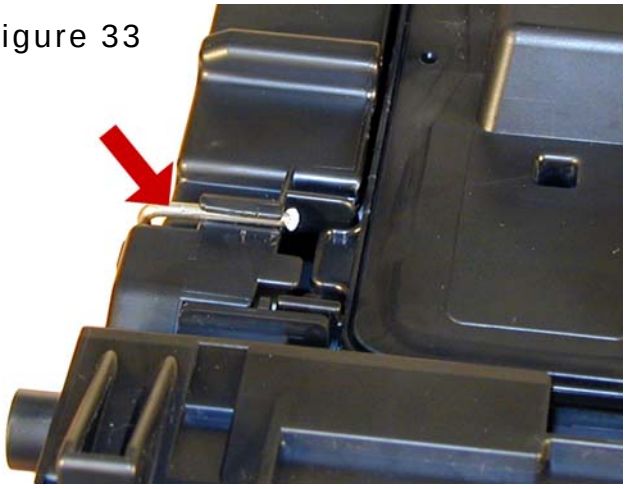
Figure 33



17) On the supply section, the end caps are held in place by a series of plastic rivets. They need to be cut off in order to gain access to the hopper. Only the gear side needs to have the rivets cut. In Figure 38 you see there are more rivets that would need to be removed, and in our preliminary tests, proper re-alignment of the end caps on that side is difficult to do. **Figs. 34 & 35**.

Figure 34

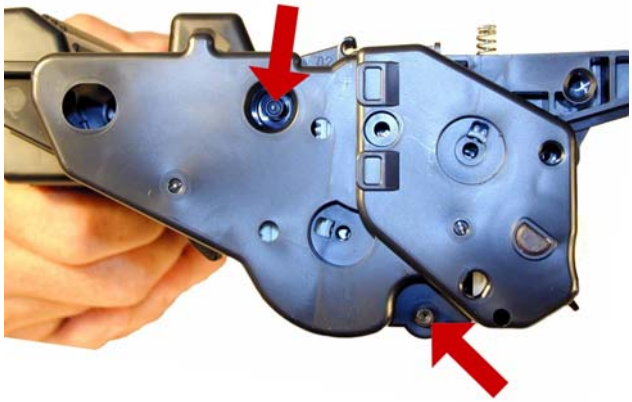
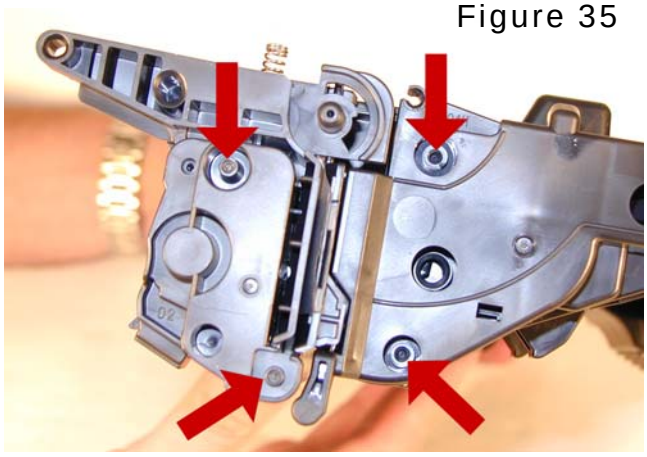


Figure 35



18) On the gear side only, take the Xacto knife with the chisel blade, and cut the small plastic rivet off. Insert a small self tapping screw to keep the end cap alignment properly set. Remove the screw. See **Figure 36**

Figure 36

19) Take the Dremmel tool again and cut away the recessed plastic rivet do not grind through the end cap! To separate the end cap from the cartridge, take a common screwdriver, pry up the end cap and slide the screwdriver against the shoulder. Press the screwdriver against the shoulder until it snaps free. Do the same for the small rivet. See **Figures 37, & 38**

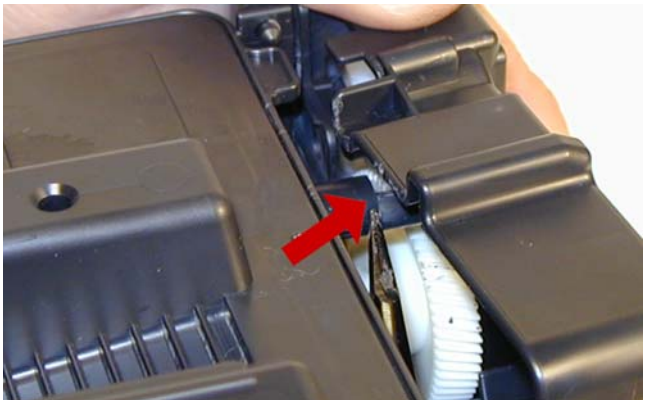


Figure 37

Figure 38

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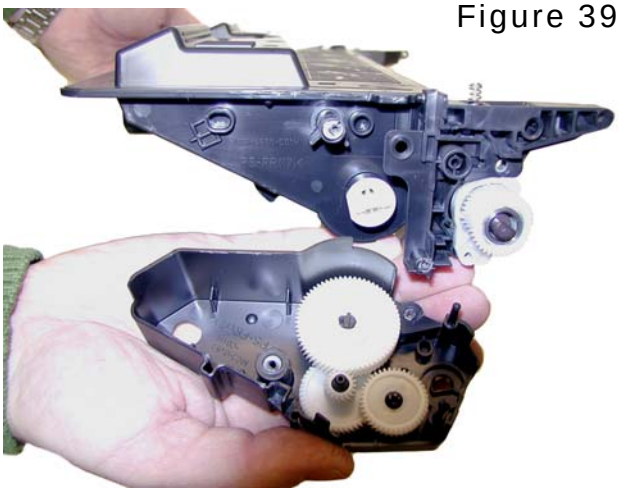
20) Remove the end cap. Note that the gears stay with it. See **Figure 39**.

Figure 39



21) Remove the magnetic roller assembly from the cartridge. See **Figure 40**.

Figure 40

22) Remove the 2 screws and doctor blade. See **Fig. 41**

Figure 41

23) Clean out any remaining toner.

24) There is no fill hole in these cartridges so it must be filled through the DB slot. Fill the cartridge with 715g (Preliminary weight) of M5025 toner. See **Figure 42**

25) If a seal is available, install it now.

26) Make sure the doctor blade seals are clean. Install the doctor blade and 2 screws. See **Figures 43 & 44**

27) Clean the mag roller contact plate on the end cap that is still on the cartridge. Replace the conductive grease. See **Figure 45**

Figure 42

Figure 43

Figure 44

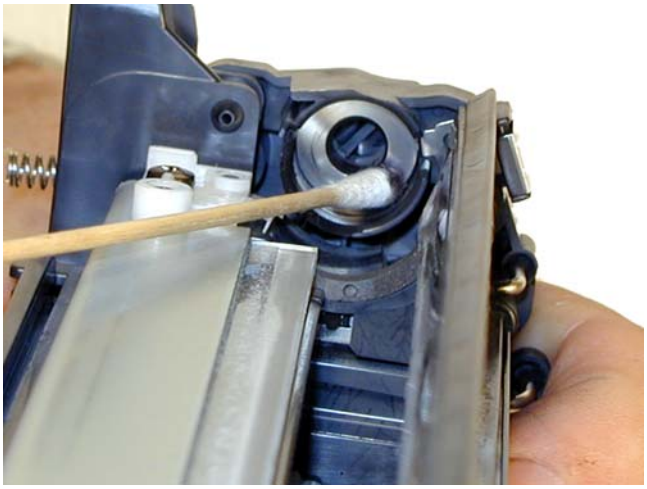


Figure 45

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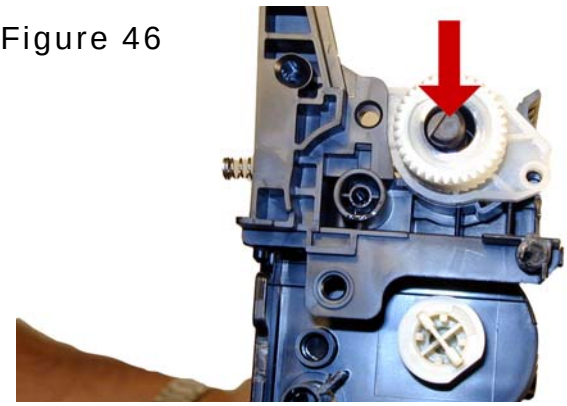
28) Clean the mag roller sleeve with a dedicated mag roller cleaner.

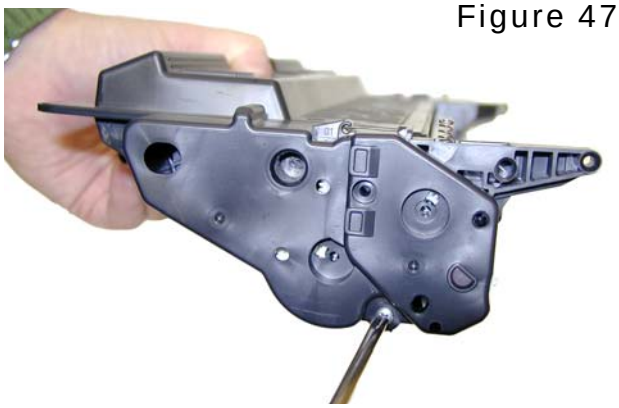
29) Install the mag roller. Turn the stationary magnet so that the keyed end will fit into the end cap. See **Figure 46**

Figure 46



30) Install the end cap. Hold it in place with the small self tapping screw used earlier. Drill a hole in the recessed rivet, and install a screw that is approximately ½" long. Make sure the screw size matches the drill size. See **Figures 47, 48**

Figure 47



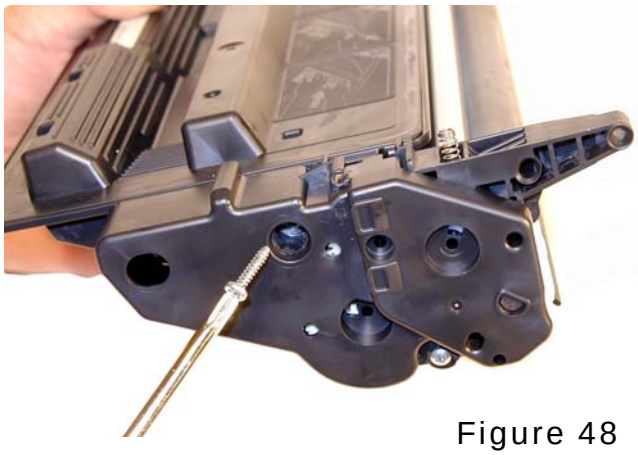


Figure 48

31) Place the 2 halves together. Make sure the springs are set, and install the 2 pins. See **Figures 49 & 50**

Figure 49

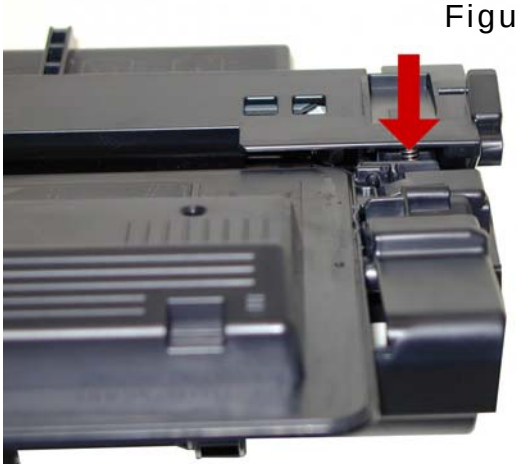
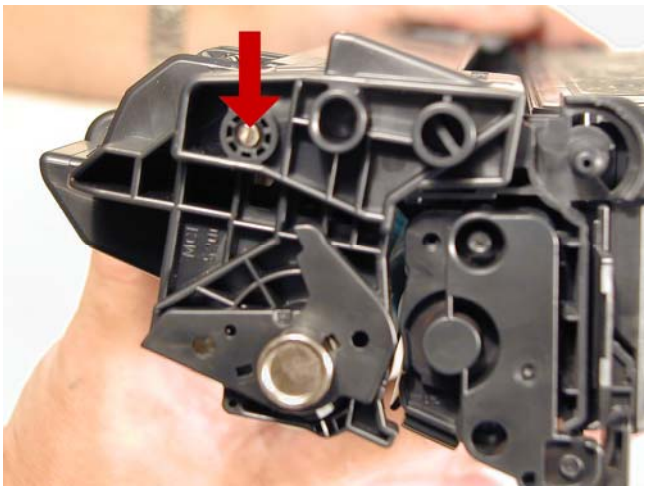


Figure 50



32) Install the spring in the drum cover arm as shown. Install the metal bar into the hole and slot. Install the arm. See **Figures 51 & 52**

Figure 51

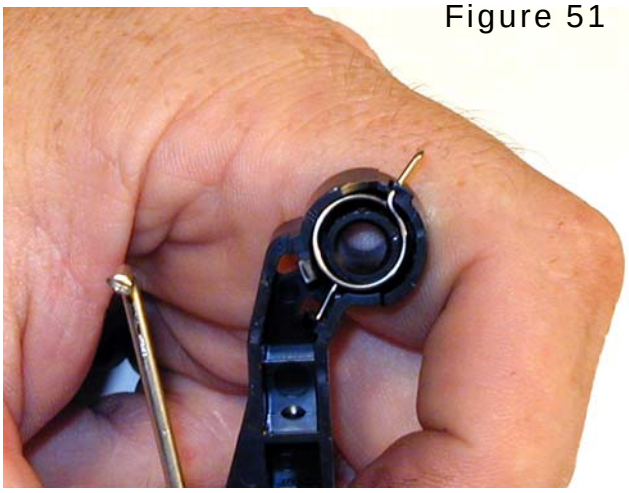


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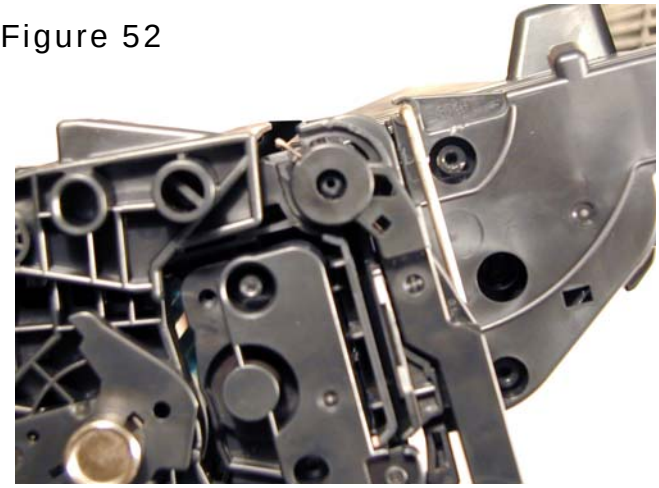
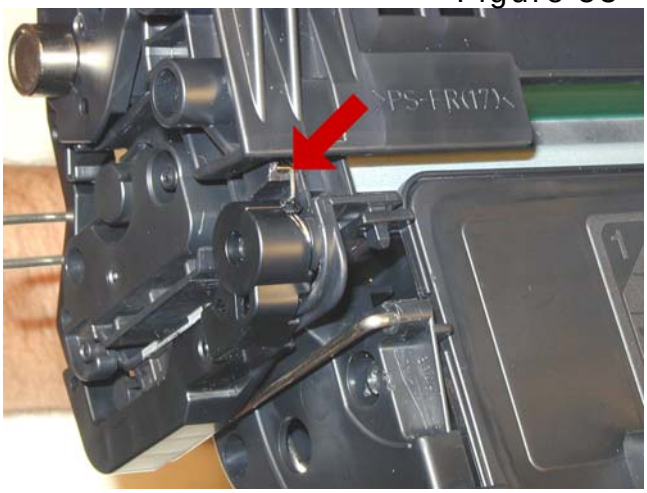
Figure 52



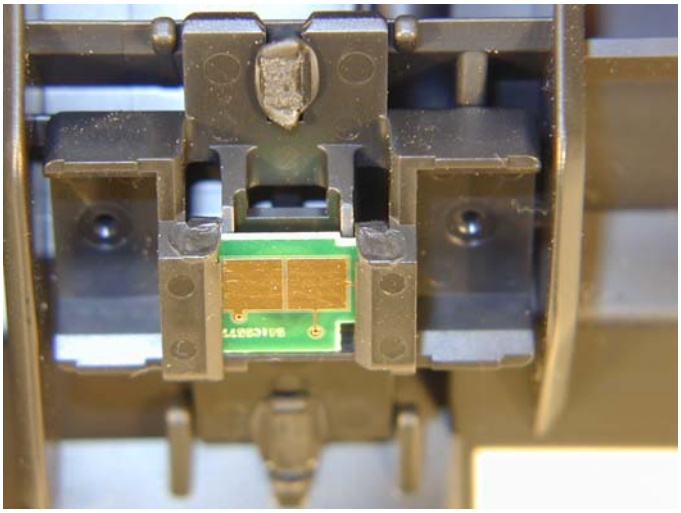
33) Release the tail of the spring so that the cover closes. See **Figure 53**

Figure 53



34) Replace the chip. See **Figure 54**

Figure 54



Changing the Printers Intensity (Density)

1) From the Home Screen, touch ADMINISTRATION.
2) Touch PRINT QUALITY.
3) Touch DARKNESS.
5) Change to setting preferred. The settings are from 1-5 5 being the darkest.

Printing Test Prints

There are a number of test pages that can be run from the menu. There is a “Menu map”, “Configuration Page”, “Supplies Status Page”, “Usage page”, File Directory, Fax reports, and the “Font list”. The Supplies Status Page or the Configuration page are the best to use. They have Solid Black, Gray Scales, and text.

1) From the Home Screen, touch ADMINISTRATION.
2) Touch INFORMATION.
3) Touch CONFIGURATION/STATUS PAGES.
4) Touch the page you wish to print.
5) Touch PRINT.

Cartridge Troubleshooting:

Repetitive defect chart:

96mm Drum
94mm Upper fuser Roller
75mm lower fuser Roller
58mm Mag
44mm PCR

A dirty or Bad Primary Charge Roller (PCR): this will show on the test print as vertical gray streaks down the page, as a gray background throughout the page, or as ghosting where part of a previously printed area is repeated. A hole in the PCR will leave a mark that repeats every 44mm. If there is a hole, this will eventually burn a hole in the drum, and ruin it.

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 96mm.

Light Damaged Drum: This will show up as a shaded area on the test print that should be white. Again this will repeat every 96mm.

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Worn-Out Drum: This will usually show up as shading on the right side of the page. It will usually start right from the edge of the page, and work in towards the center. The pattern will normally look like tire tracks.

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 that matches the defect.

Bad Magnetic Roller Bushing: When this round shaped bushing wears out, gray scale pages, and pages with heavy graphics will exhibit light and dark line across the page.

Printer Troubleshooting

Most of the error messages show on the display in plain English so we will not go into them here. Some of the more common numeric messages are as follows:

10.32.YY Unauthorized supply. A new non HP supply has been installed. Touch the OK button to clear.

10.XX.YY Supply Memory Error. Bad or missing chip

13.XX.YY paper jams in printer

50.X Fuser error, where X is:

Low fuser temperature
Low fuser temperature during warm up
High fuser temperature
Faulty fuser/power supply
Wrong fuser is installed
Open fuser, heating element broken
Fuser pressure release mechanism failure
Low Fuser temperature
High Fuser temperature

50.1 laser beam error.

52.XX.Y Scanner error

57.XX Fan Error, where XX is:

01 Duplexer fan
03 Fuser fan (Front fan)
04 Main fan (Rear fan)

59.XX Printer motor error where X is:

1) Main motor startup error
2) Main motor rotation error
3) Fuser motor rotation error
4) Fuser motor startup error

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