

# TECHNICAL GUIDE

THE RECYCLER

TECHNICAL GUIDE

Remanufacturing the HP Colour  
LaserJet Enterprise 600  
M651/M680 Series black and  
colour toner cartridges



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## Remanufacturing the HP Colour LaserJet Enterprise 600 M651/M680 Series black and colour toner cartridges

The M651/680 series of multifunction colour laser printers are based on a 45ppm black and color 1200 x 1200dpi engine, 4,800dpi with RET. The cartridges are all-in-one type cartridges consisting of the toner supply, drum, and waste chamber.

The M651 and M680 share the same black cartridge, but use different colour cartridges. The method to remanufacture them all is the same, but the colours use different chips and have different yields.

### The printers based on the M651 engine are the:

HP Colour LaserJet Enterprise M651n  
 HP Colour LaserJet Enterprise M651dn  
 HP Colour LaserJet Enterprise M651xh

### The cartridges used in the M651 machines are the:

CF320A (Black) 652A	11,500 pages	\$206.99 (list*)
CF330X (Black HY) 654X	20,500 pages	\$271.99 (list*)
CF331A (Cyan) 654A	15,000 pages	\$379.99 (list*)
CF332A (Yellow) 654A	15,000 pages	\$379.99 (list*)
CF333A (Magenta) 654A	15,000 pages	\$379.99 (list*)
CE265A (Toner collection unit)		\$17.99 (list*)

### The printers based on the M680 engine are the:

HP Colour LaserJet Enterprise M680dn  
 HP Colour LaserJet Enterprise M680f  
 HP Colour LaserJet Enterprise M680z

### The cartridges used in the M680 machines are the:

CF320A (Black) 652A	11,500 pages	\$206.99 (list*)
CF320X (Black HY) 653X	21,000 pages	\$249.99 (list*)
CF321A (Cyan) 653A	16,500 pages	\$335.99 (list*)
CF322A (Yellow) 653A	16,500 pages	\$335.99 (list*)
CF323A (Magenta) 653A	16,500 pages	\$335.99 (list*)
CE265A (Toner collection unit)		\$17.99 (list*)

\* Pricing current as of March 2015



### REQUIRED TOOLS

- 1) Toner-approved vacuum
- 2) A small screw driver (common style)
- 3) A Phillips head screwdriver
- 4) Needle nose pliers
- 5) Spring hook

### REQUIRED SUPPLIES

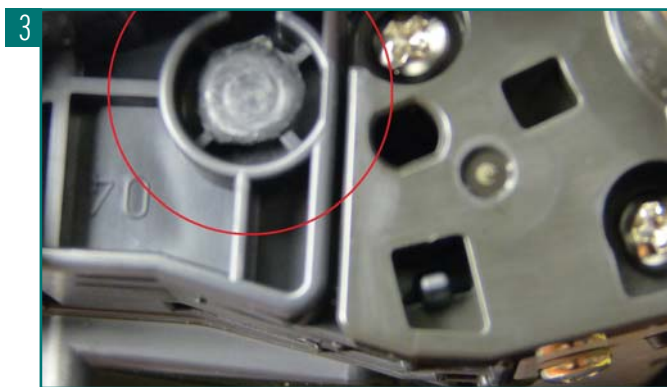
Toner for use in the HP M651/M680 series  
 New replacement chip  
 New long life drum  
 New wiper blade  
 New developer roller sealing blade (optional)  
 New recovery blade (optional)  
 Drum cover  
 Lint-free cloths  
 Conductive grease  
 Isopropyl alcohol  
 Cotton swabs

The pins in these cartridges are stepped. In other words the outside is thicker than the inside. To remove the pins, you must carefully shave the plastic away from the pins. The procedure is described below

- 1 Remove the spring from the label side of the cartridge (see Figure 1).



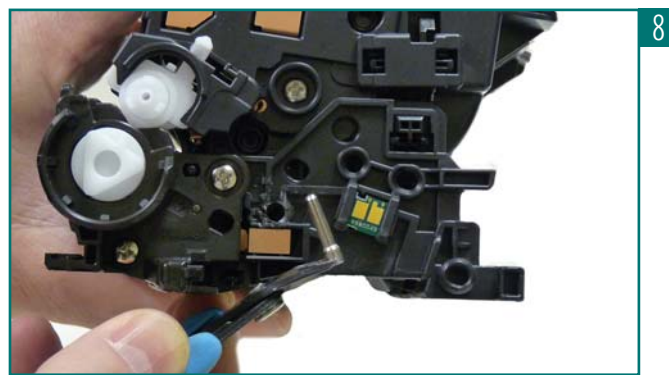
2 With a razor knife, carefully shave the plastic from the heads of the hinge pins on both sides of the cartridge (see Figures 2, 3, 4 and 5).



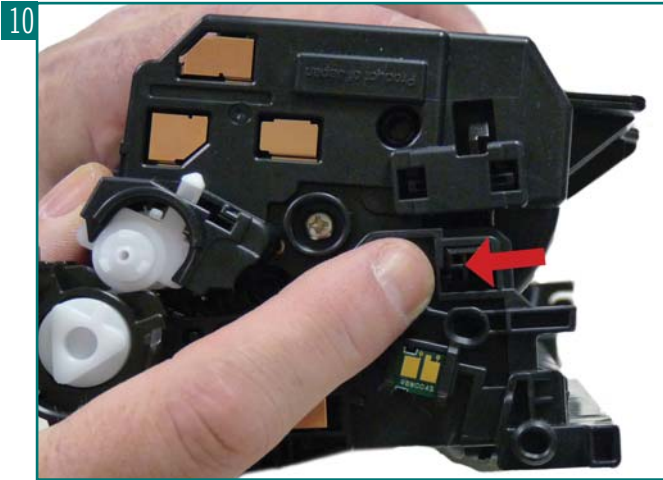
3 On the label side only, drill a shallow hole on each side of the pin as shown in Figures 6 and 7.



4 Remove the pins with flush cutting wire cutters. The smaller pin fits on the contact side of the cartridge, and the long pin on the label or gear side (see Figures 8 and 9).



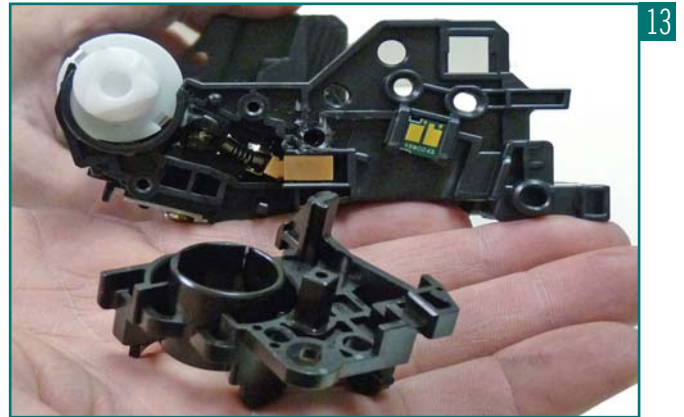
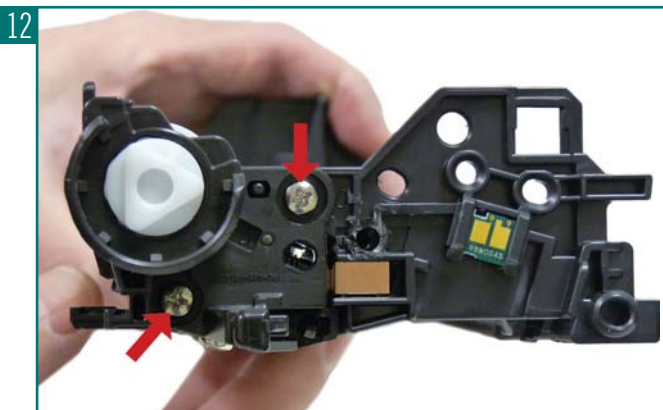
5 On the gear side, press in on the plastic locking mechanism (see Figure 10).



6 On the opposite side lift up on the black lever. Lift the two halves apart (see Figure 11).



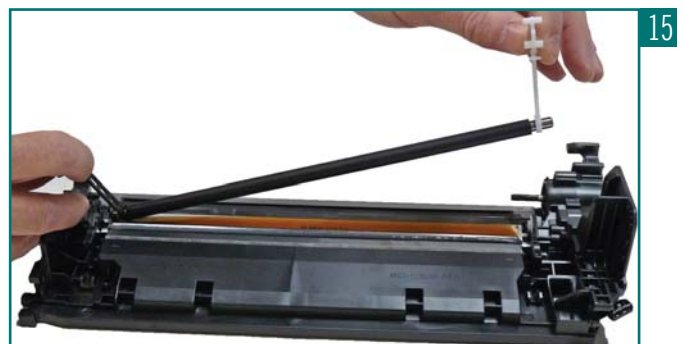
7 On the waste chamber, remove the two screws from the drum gear end cap. Press in on the tab as shown and remove the end cap. There is no need to remove the opposite side end cap (see Figures 12 and 13).



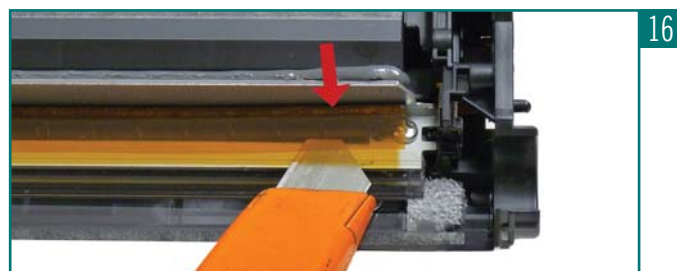
8 Remove the drum (see Figure 14).



9 Remove the PCR by lifting up on the black and white PCR locking arms. Remove the PCR assembly (see Figure 15).



10 To remove the wiper blade, the amber film assembly needs to be removed. Slide a razor knife under the plastic mounting bar, and remove the assembly (see Figures 16 and 17).



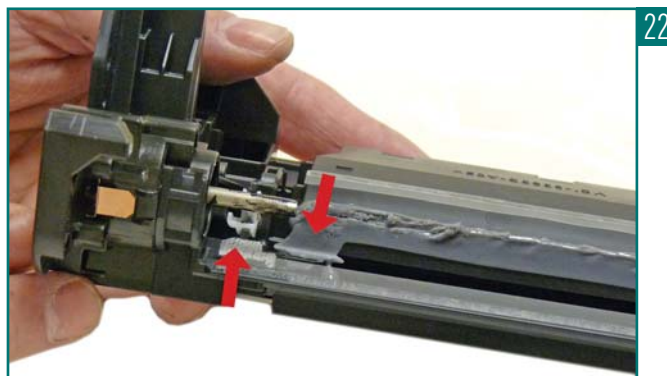


**11** Remove the two screws from the wiper blade. Slide the razor knife along the back edge of the blade to release it from the glue. Remove the wiper blade (see Figures 18, 19 and 20).



**12** Clean out all the waste toner from the chamber. Try not to get any toner on the WB seal if possible.

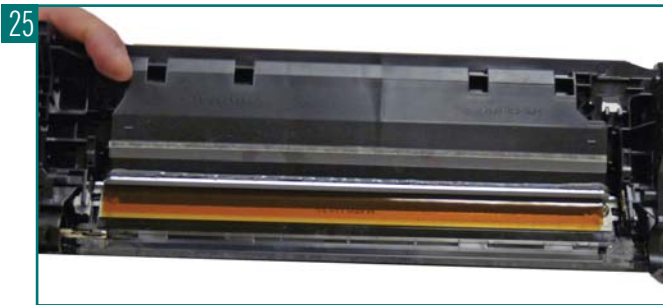
**13** Clean the felt seals on each end of the wiper blade. If the WB glue has toner on it, clean it off with alcohol and a foam swab. If it does not become sticky again, it needs to be removed and a good silicone caulk used to seal the blade off. GE 100 percent silicone and Phenoseal are two good brands for this (see Figures 21 and 22).



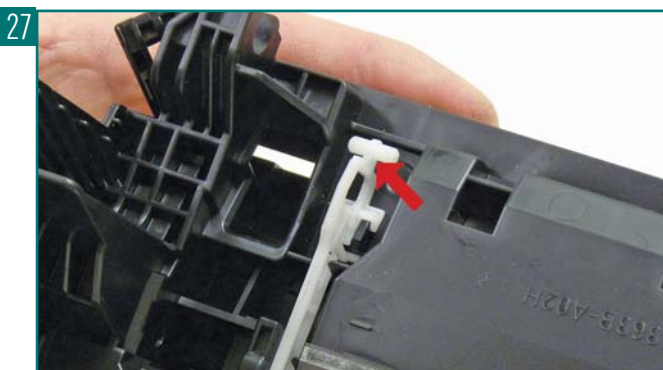
**14** Install the new wiper blade and two screws. If you removed the WB glue, seal the back edge of the blade with the silicone now (see Figures 23 and 24).



**15** The amber film assembly is held in place with double sided tape. If this is not sticking or a new wiper blade is being used, replace the tape. Replace the film assembly (see Figure 25).



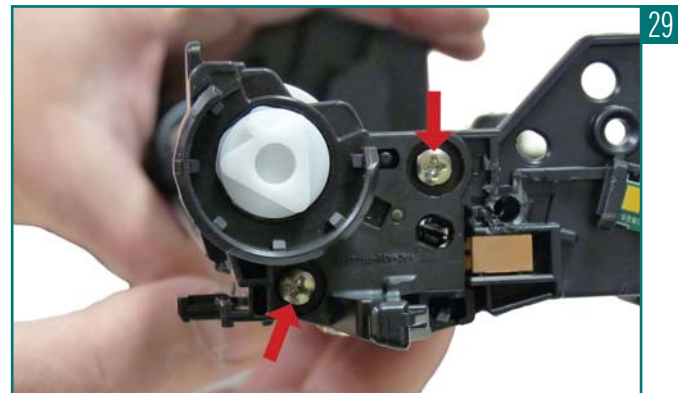
**16** Clean the PCR with your preferred cleaner and install in the cartridge with the PCR holders. Make sure you lock the locking arms in place (see Figures 26 and 27).



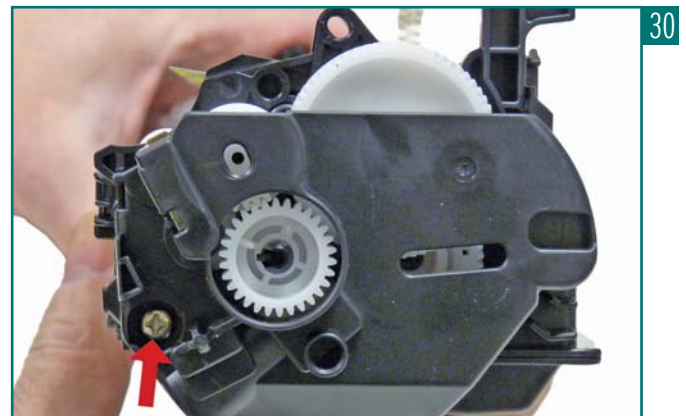
**17** Install the drum. Short hub side onto the long drum ground pin (see Figure 28).



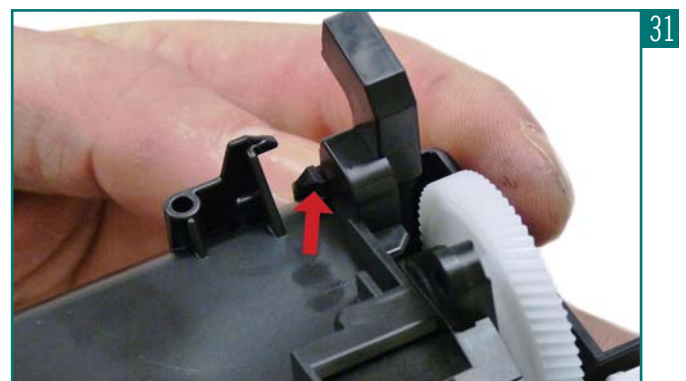
**18** Install the end cap and two screws (see Figure 29).



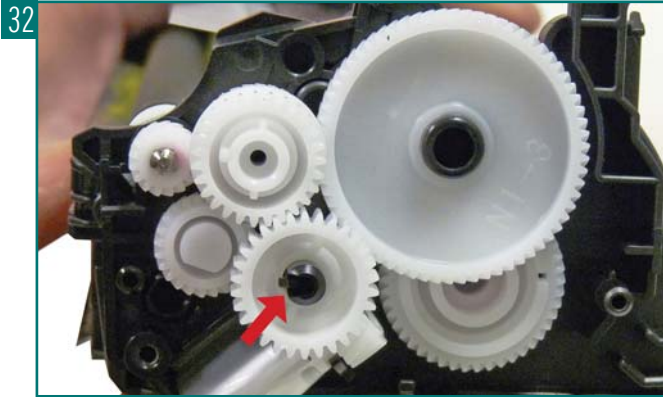
**20** On the supply chamber, remove the screw from the gear side end cap (see Figure 30).



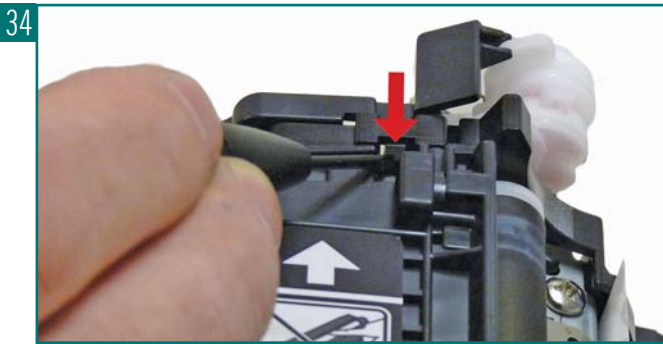
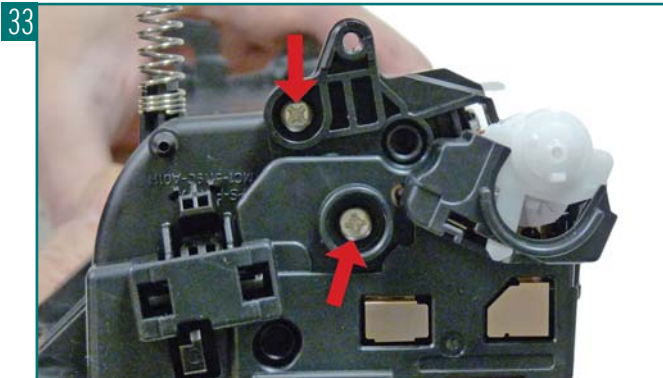
**21** Press in on the tab and remove the end cap (see Figure 31).



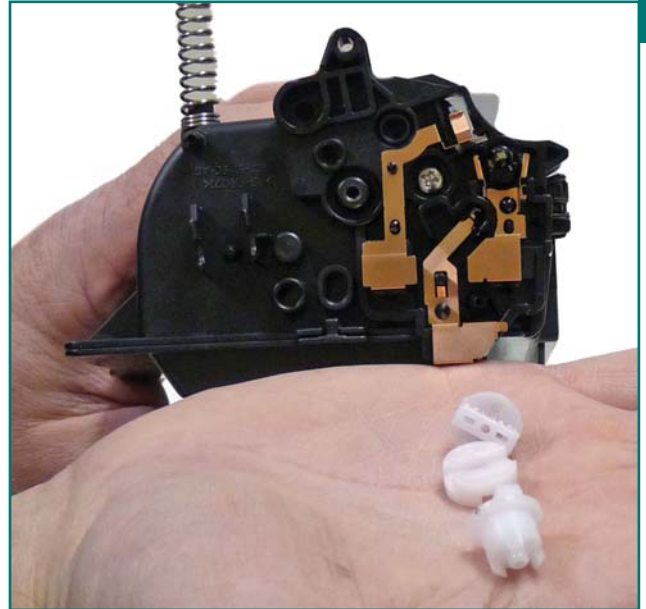
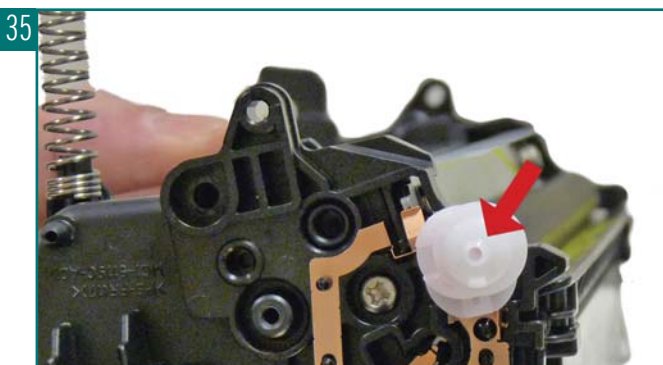
**22** On the centre gear, press on the locking tab to release the gear. Remove all the gears as shown except for the mixing blade gear and the sealing strip gear. The mixing blade gear is attached to the mixing blade inside the hopper and is very difficult to re-attach properly (see Figure 32).



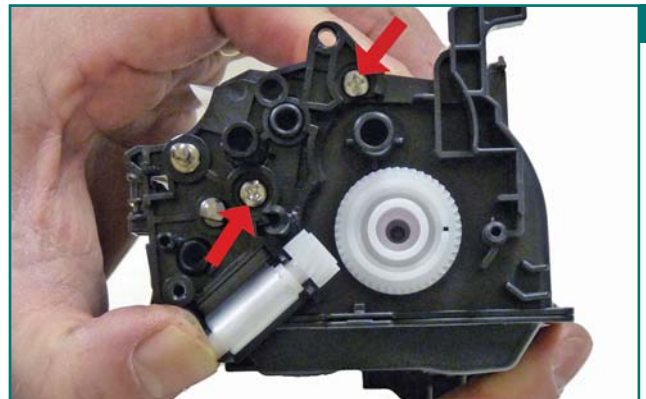
23 On the contact side, remove the two screws, press in on the tab and remove the end cap (see Figures 33 and 34).



24 Remove the three developer roller drive gears (see Figures 35 and 36).



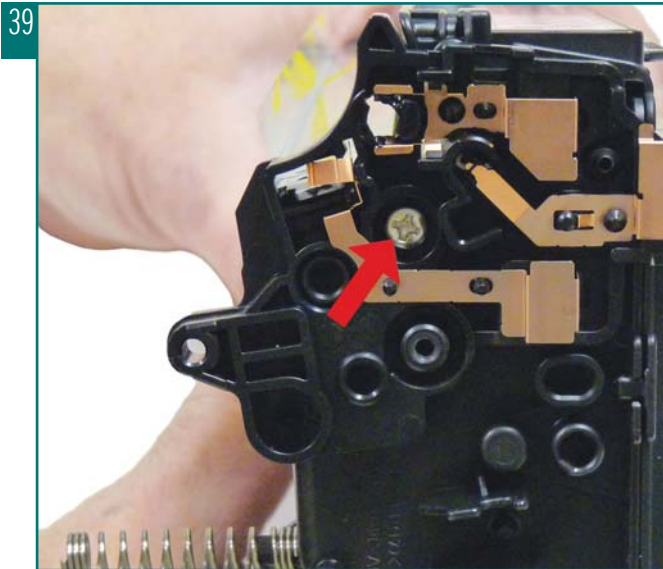
25 On the gear side inner end cap, remove the two screws and end cap (see Figure 37).



26 Remove the developer roller (see Figure 38).



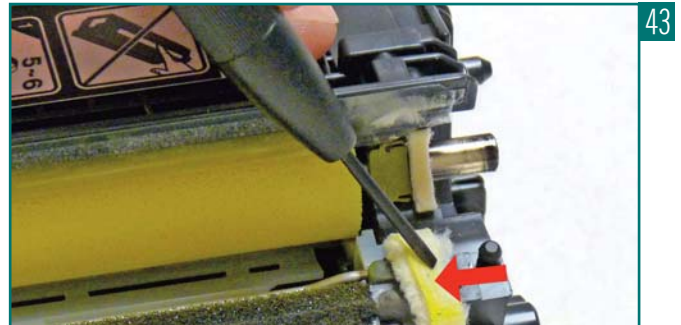
27 Remove single screw and contact side inner end cap (see Figure 39).



28 Remove the two screws from the doctor blade and start to lift the blade up. There is glue on either end of the blade. As you lift the blade up, slice the glue away from the blade with the razor knife (see Figures 40, 41 and 42).



29 On the right side of the chamber, lift up the felt developer roller seal. Lift it from the front side and lay it over the back (see Figure 43).



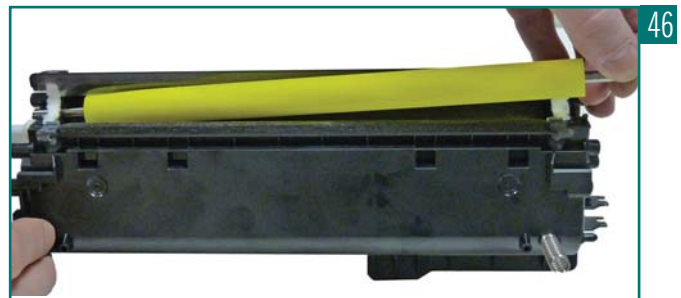
30 Remove the white felt washers from both sides of the feed roller (see Figure 44).



31 Pry out the rubber feed roller bushing from the right side (see Figure 45).



32 Remove the feed roller (see Figure 46).

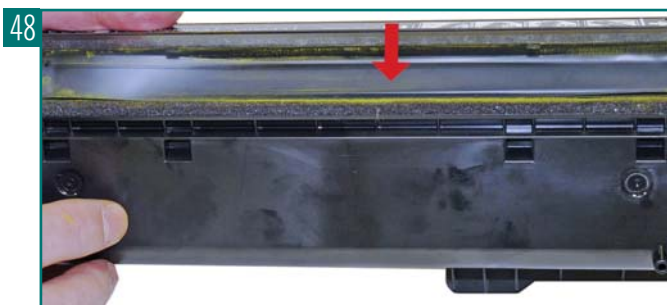




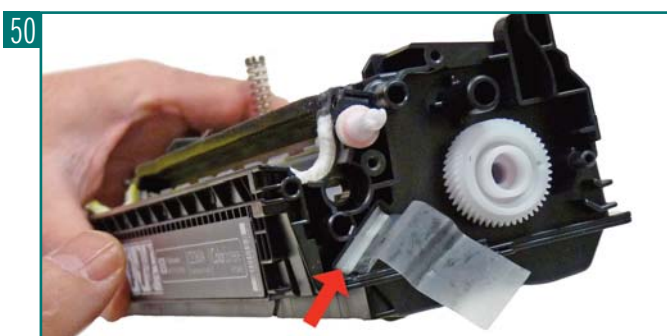
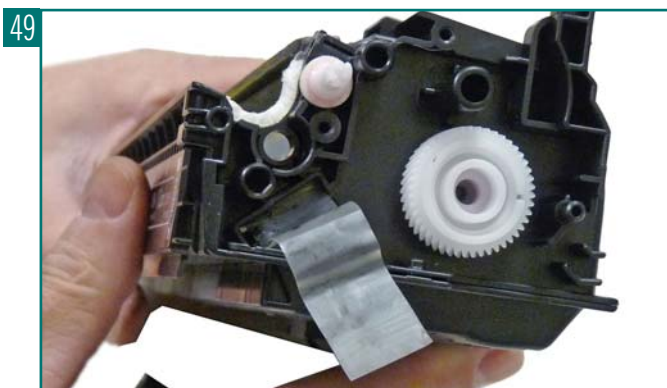
**33** Clean out the remaining toner and fill with the correct colour of toner for use in the M651/M680 series toner (see Figure 47).



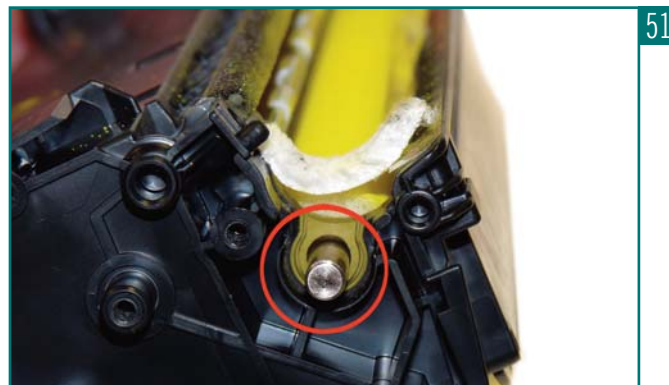
**34** When a seal is available, install the seal onto the seal rails. Pull the release tape off one-inch at a time and press the seal in place as you go (see Figure 48).



**35** Remove the seal port and slide the seal pull tab through the slot. Install the seal port (see Figures 49 and 50).



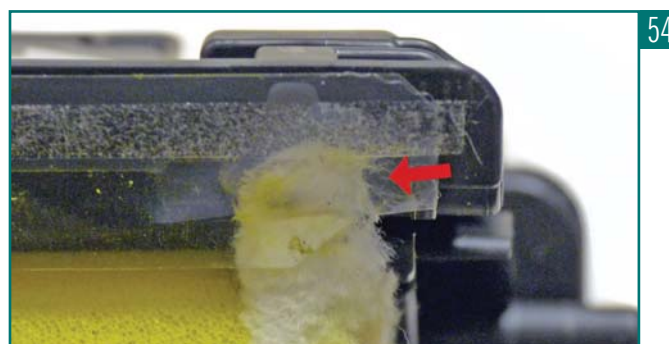
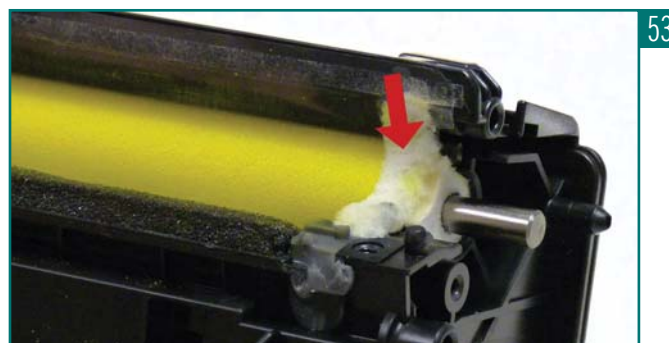
**36** Install the feed roller and rubber bushing (see Figure 51).



**37** Install the feed roller felt washers (see Figure 52).



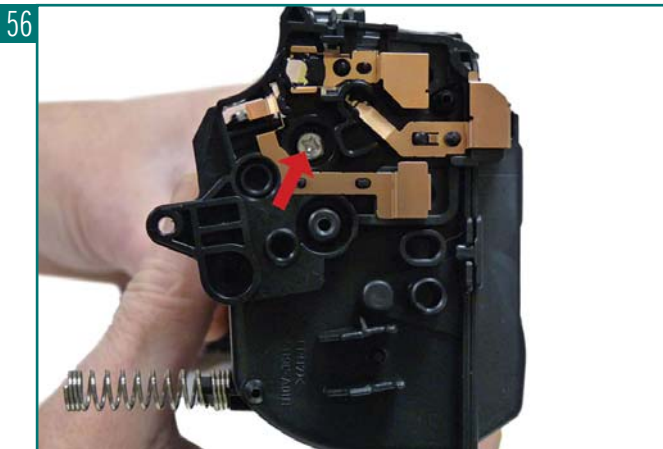
**38** Press the developer roller felt seal back in place. Make sure it fits under the retaining blade. If needed, clean the adhesive with alcohol and a foam swab (see Figures 53 and 54).



39 Use the appropriate shims to gap the blade and install the doctor blade and two screws. Make sure the sticky seals on either end of the blade seal correctly. If the material is no longer sticky, clean it with alcohol or replace it with a small amount of silicon (see Figure 55).



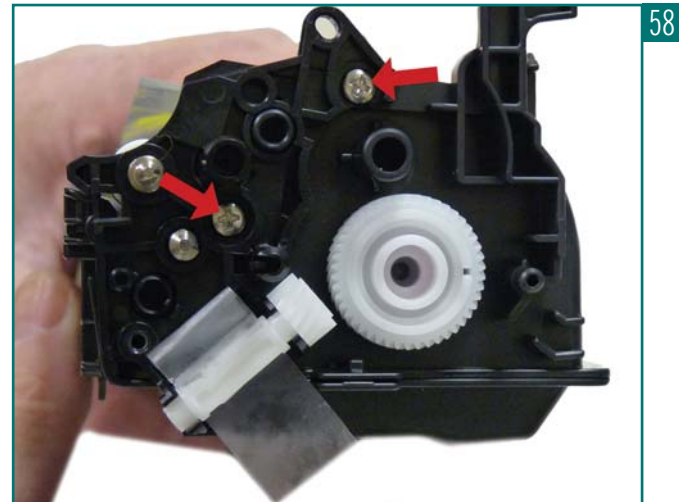
40 Clean the contacts and replace the conductive grease on the inner contact end cap. Install the inner contact end cap and screw (see Figure 56).



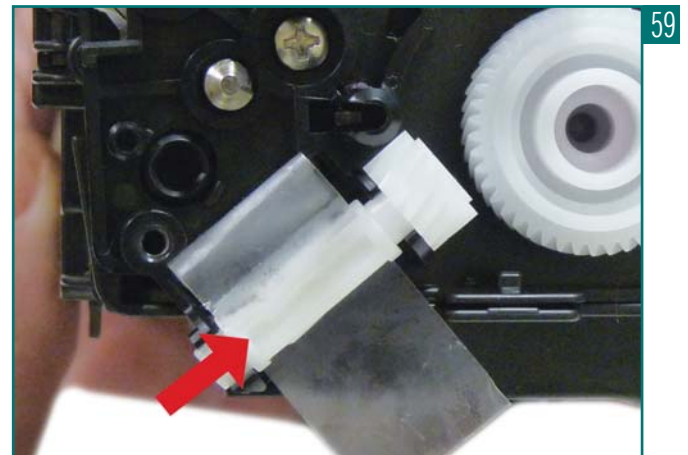
41 Install the cleaned developer roller (DO not use any chemicals to clean this. A lint-free cloth works fine) (see Figure 57).



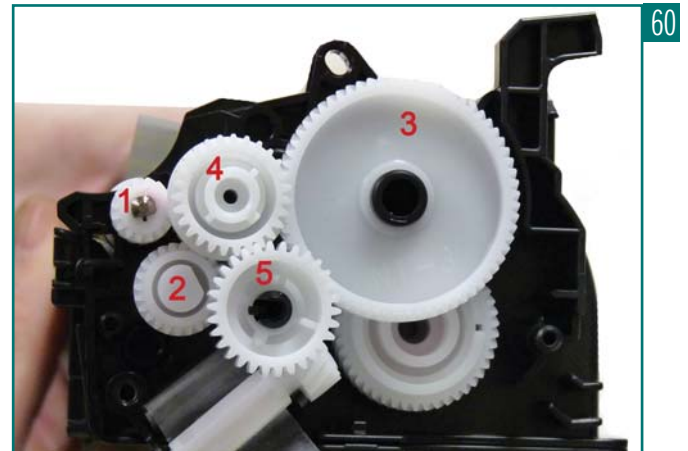
42 Install the inner gear end cap and two screws (see Figure 58).



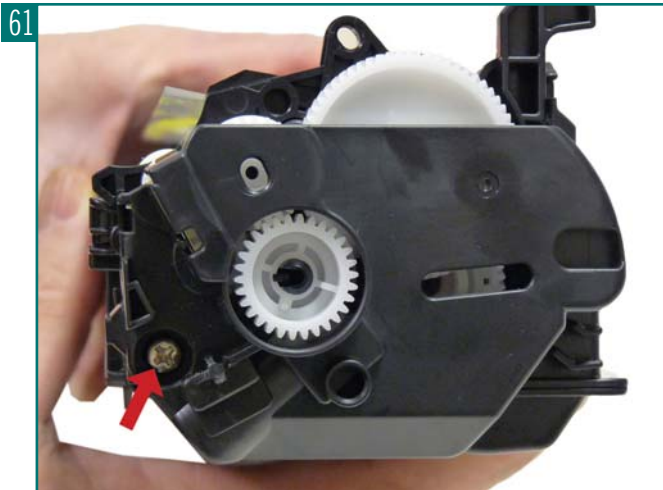
43 Install the gears in the order shown. If you installed a seal, slide the seal end through the take-up gear and wrap the loose tail tight on the roller (see Figure 59).



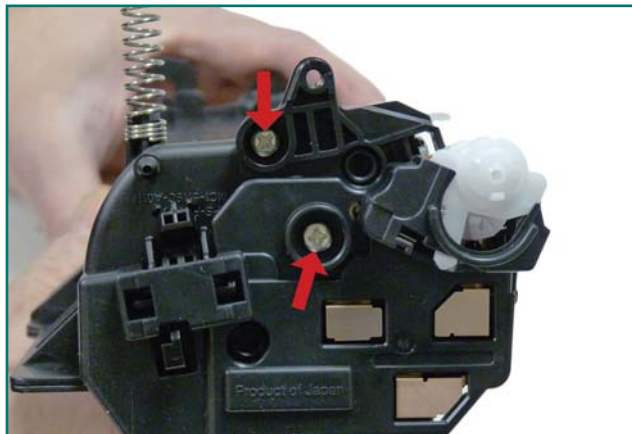
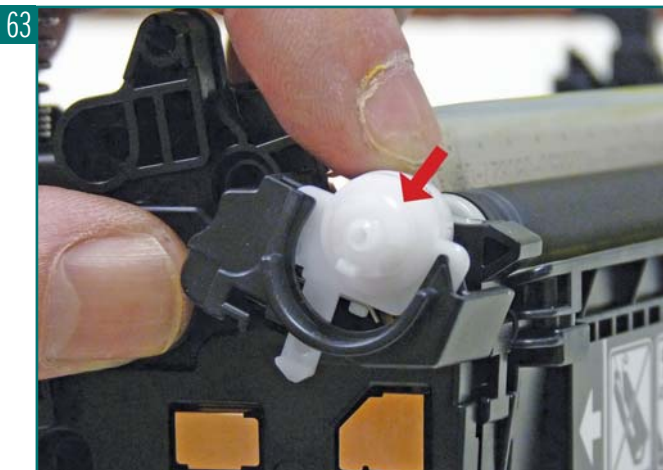
44 Install the remaining gears in the order shown (see Figure 60).



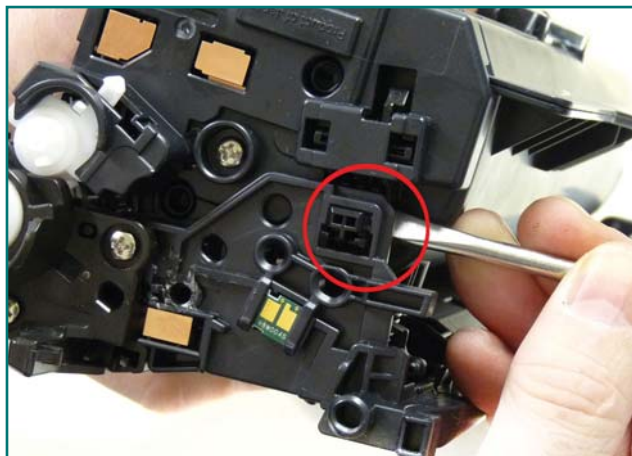
45 Install the outer gear end cap and screw (see Figures 61).



46 Place the triple gear on the developer roller shaft and fit into the spring assembly on the end cap. Install the opposite side end cap and install the screw (see Figures 62, 63 and 64).



47 Place the two halves together contact side first. On the gear side, press the lever in place. On the contact side snap the lock up into the end cap (see Figures 65 and 66).



48 Install the two pins; the large pin to the label or gear side of the cartridge (see Figure 67).



49 Install the spring (see Figure 68).



50 Remove the chip by cutting the plastic off the edges of both side of the chip (see Figure 69).



51 Remove and replace the chip. Make sure you have the correct colour chip and the correct series (see Figure 70)!



52 If the new replacement chip is loose in the slot, close off the top edges with small amounts of hot glue.

53 Install the drum cover on to the cartridge (see Figure 71).



**Repetitive defect chart:**

Distance	Our description
27.0mm	Primary charge roller
32.0mm	Developer roller sleeve
44.0mm	Secondary transfer unit
51.0mm	Primary transfer roller
63.0mm	Secondary transfer backing roller
76.0mm	OPC drum
76.0mm	Fuser sleeve
80.0mm	Fuser pressure roller