BROTHER® HL-L8350 SERIES TN331/336
TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS

BROTHER TN331/336 TONER CARTRIDGE

REMANUFACTURING THE BROTHER HL-L8350 SERIES TN331/336 COLOR TONER CARTRIDGES

By Mike Josiah and the Technical Staff at UniNet

The Brother HL-L8350 printer engine is based on a new 32ppm black and color, 2400 x 600 DPI color LED engine. The machines come standard with 128Mb (expandable to 384Mb) of memory, and all run off a 400 MHz processor. All models come standard with duplexing built in, and some have wireless interfaces. With print speeds of up to 32ppm and retail pricing starting at USD$349.00, these machines have become very popular.

The toner cartridges do not have a reset chip on them, but do have a reset gear that must be positioned properly for the machine to accept it as a new cartridge. The proper reset position of the gear will be covered later in this instruction. The gears themselves can be a bit confusing as there are different configurations worldwide. Basically, the Standard Yield cartridges (1.5 or 2.5K) color or black, use a **White** reset gear; High Yield cartridges (3.5 or 4k) color or black, use a **Gray** reset gear; and Extra High Yield cartridges (6k) color or black, use a **Black** reset gear. All three gears are slightly different. Starter cartridges do not come with a reset gear. Any starter cartridge can be converted to a standard, High Yield or Extra High Yield cartridge. In different areas of the world, different yields are available so there is not a separate color reset gear, nor a separate black reset gear.

Below is a chart of which cartridges are used in what location, the part numbers, and yield. The gear that should be used for each is indicated by the yield...

North, South & Central America Region (USA Brother.com)

Standard Yield	TN331	C/M/Y	1,500 pages
Standard Yield	TN331	K	2,500 pages
High Yield	TN336	K/C/M/Y	4,000 pages
Extra High Yield	TN339	K/C/M/Y	6,000 pages (HL-L9200 only)

European Region (UK Brother.com)

Standard Yield	TN321	K	2,500 pages
Standard Yield	TN321	C/M/Y	1,500 pages
High Yield	TN326	K	4,000 pages
High Yield	TN326	C/M/Y	3,500 pages
Extra High Yield	TN329	K/C/M/Y	6,000 pages

Asia & Oceania Region (HK Brother.com)

Standard Yield	TN351	K/ C/M/Y	1,500 pages
High Yield	TN359	K/C/M/Y	6,000 pages

Asia & Oceania Region (Australia Brother.com)

Standard Yield	TN341	K	2,500 pages
Standard Yield	TN341	C/M/Y	1,500 pages
High Yield	TN346	K	3,500 pages
High Yield	TN336	C/M/Y	4,000 pages

Japan Region (Japan Brother.com)

Standard Yield	TN391	K	2,500 pages
Standard Yield	TN391	C/M/Y	1,500 pages
High Yield	TN396	K	4,000 pages
High Yield	TN396	C/M/Y	3,500 pages

When the printer senses a new toner cartridge, the printer bias voltage is set to a specific high voltage. As the cartridge is used, the bias voltage is reduced gradually down to a lower voltage. This process is necessary because according to Brother, a new toner cartridge has a tendency to print light. As the cartridge is used, the density increases (lower voltage = higher density). To keep the density level even throughout its life, the density bias voltage is reduced accordingly. Each time a new cartridge is installed, the reset gear engages the gear train. The rib on the reset gear pushes down on the new toner sensor. The bias voltage is then reset, and the cartridge page count is reset to zero. All three cartridges have different stages set for the bias voltage, that's why there are three different gears.

While the cartridge yield is stated in pages printed, it actually is based on the revolutions of the developer roller. The larger the run, the better the yield. There are roller cycles for every print job and automatic ones as well; there is the warm-up cycle, color registration cycle, developer bias cycle, etc. As these cycles are normally run once per job, the bigger the print job, the better the yield. There are multiple revolutions for each cycle and some will run upon turning the printer on or opening the front cover. They can range from 35 rotations to as much as 262 rotations for each function so you can see how they can add up quickly. Brother has charts that cover different sized print jobs and how they relate to the total effective yield.

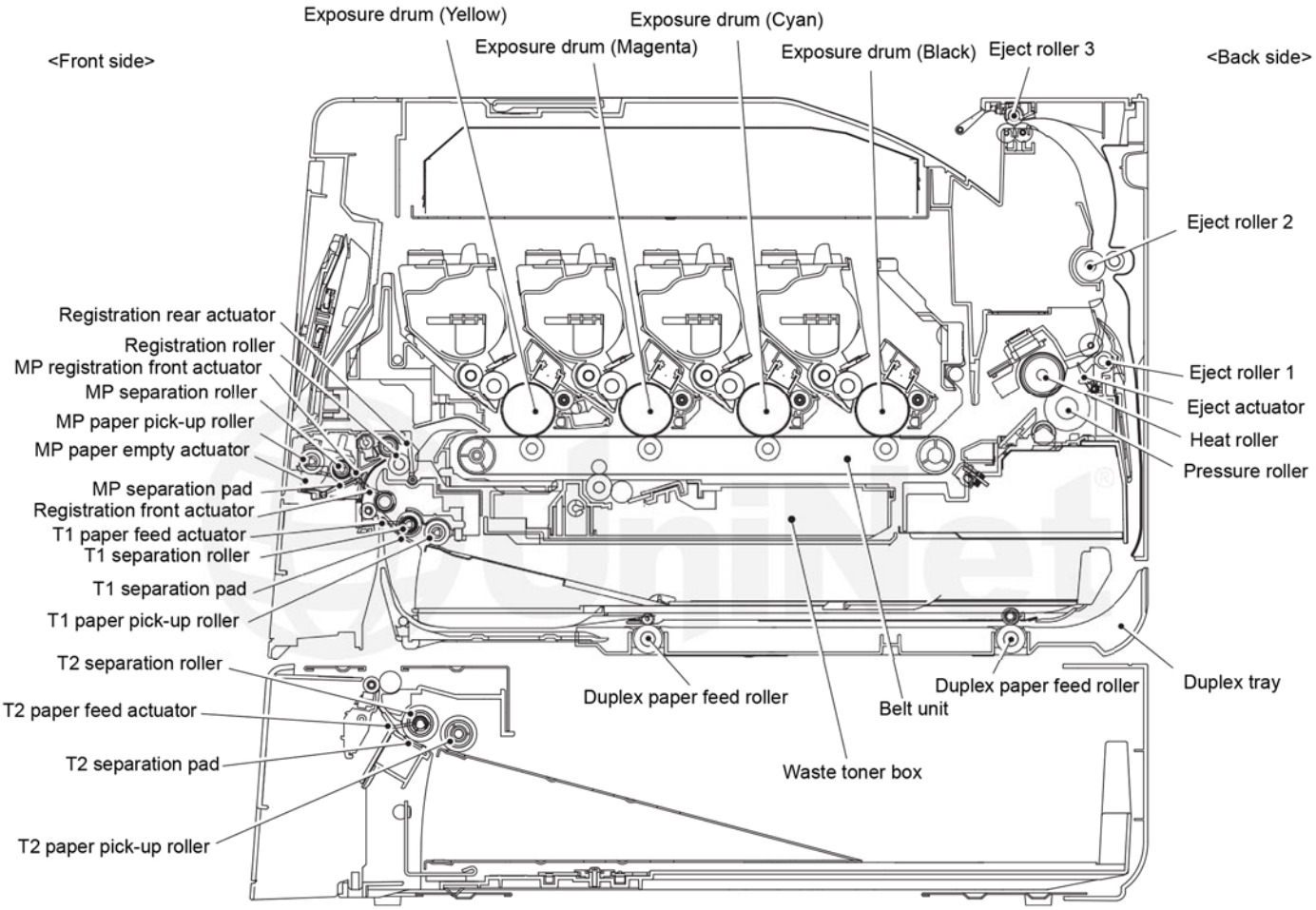
CURRENT MACHINES RELEASED SO FAR

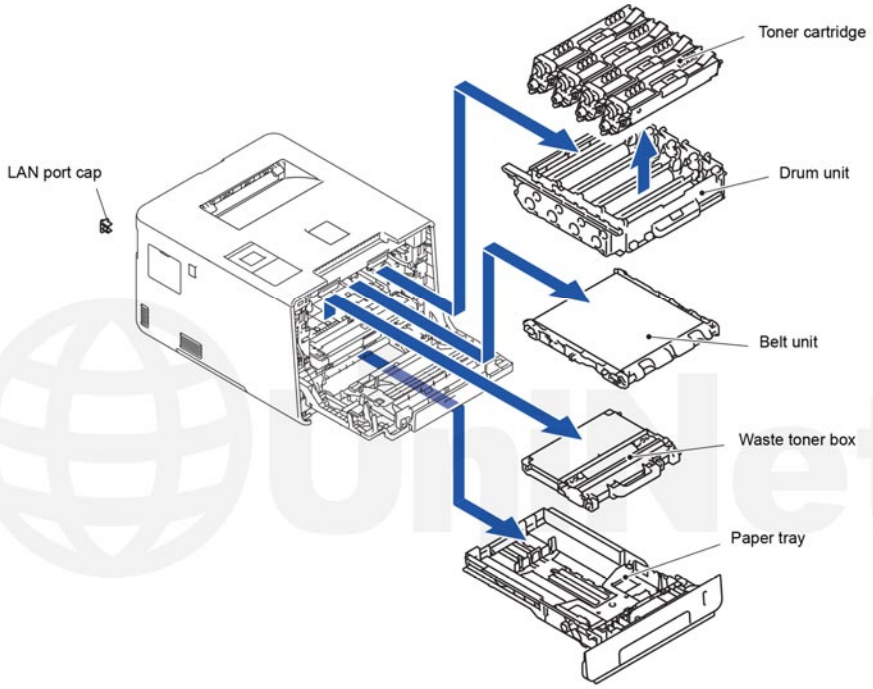
HL-L8250CDN
HL-L8350CDW
HL-L8350CDWT
HL-L9200CDWT
DCP-L8400CDN
DCP-L8450CDW
MFC-L8600CDN
MFC-L8650CDW
MFC-L8850CDW
MFC-L9550CDW
MFC-L9550CDWT

OTHER CONSUMABLES USED IN THESE MACHINES

DR-331CL	**US**	**Drum Unit**	**25,000 pages**
DR-321CL	**EU**		
DR-351CL	**HK**		
DR-341CL	**Australia**		
DR-391CL	**Japan**		
BU-320CL		**Belt unit**	**50,000 pages**
WT-320CL		**Waste toner box**	**50,000 pages**

Shown is a broad overview of the printing process and the different component locations. As you can see, these machines use a single-pass type system...





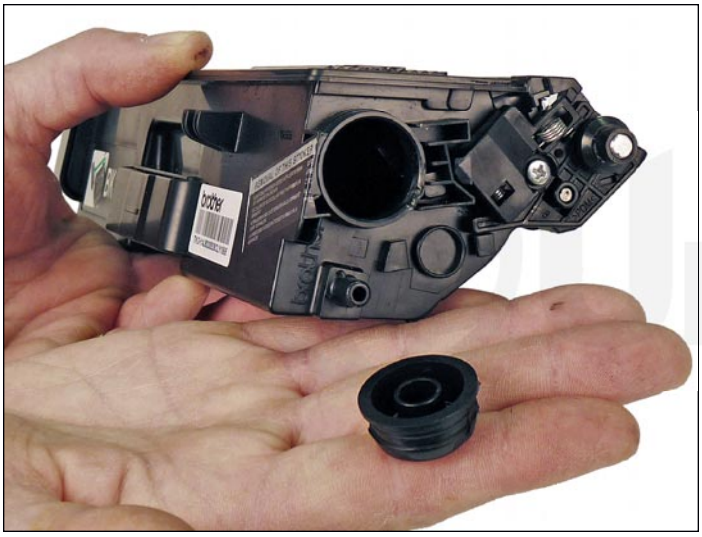
How to run test pages and cartridge troubleshooting will be covered at the end of this article.

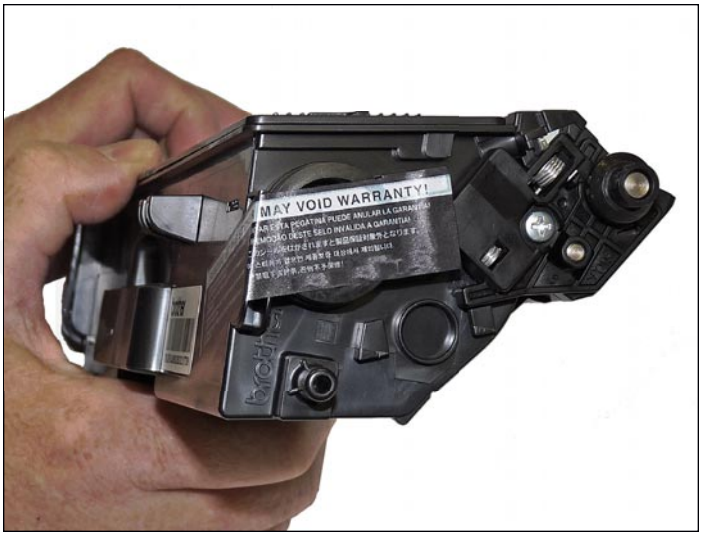
REQUIRED TOOLS

1. Toner approved vacuum
2. Phillips head screwdriver
3. Small jewelers type common screwdriver

REQUIRED SUPPLIES

1. Toner for use in the Brother HL-L8350 - Choose the correct color and gram weight toner for your cartridge
2. Reset gear for the starter cartridge (see text above)
3. Lint free cotton cloths

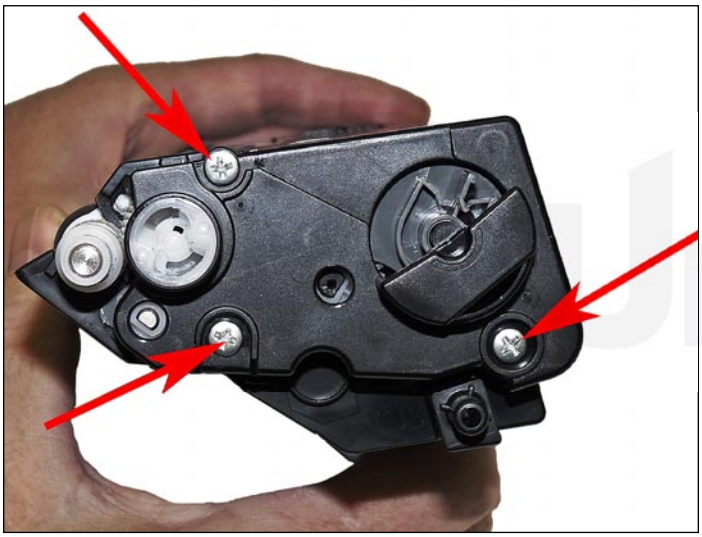




1. Vacuum the exterior of the cartridge. Be careful not to damage the developer roller as it is exposed.

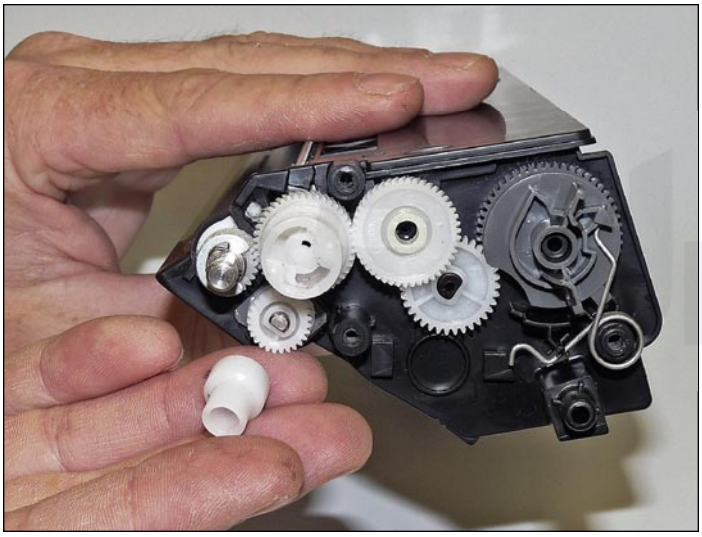
2. Remove the fill plug from the toner cartridge. Dump the remaining toner and vacuum/blow out the cartridge.

There will probably be a label over the fill plug. It comes off with a little alcohol and a lint free cloth or cotton swab.

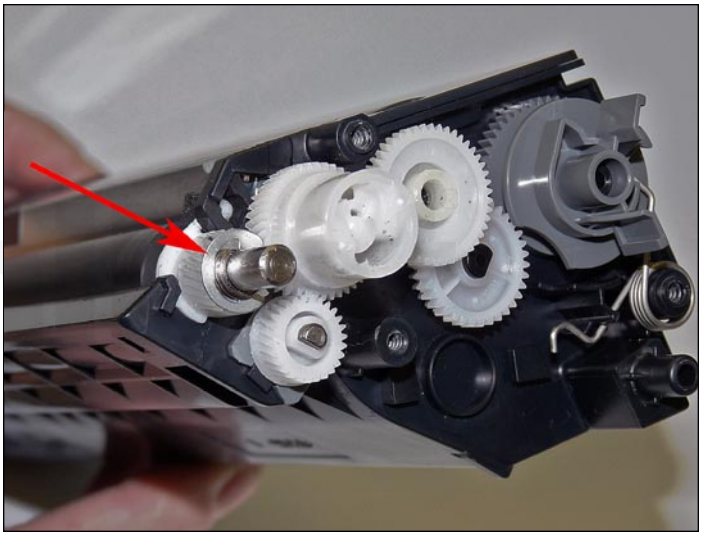


3. Remove the three screws on the left (gear side) end cap.

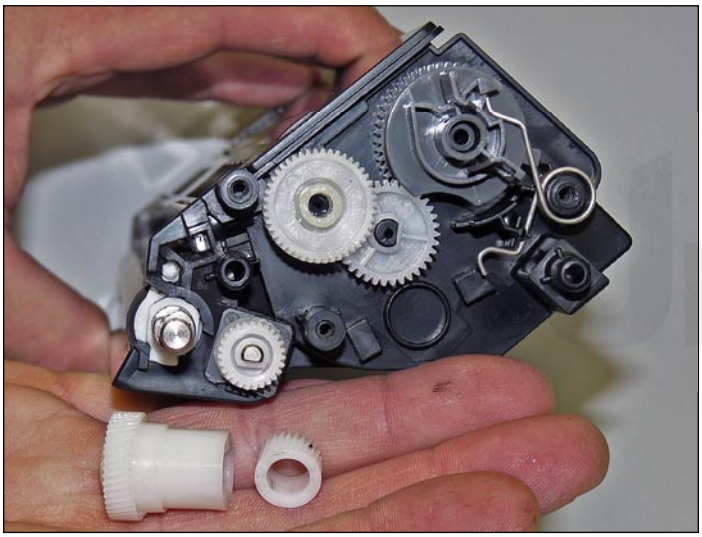
4. Remove the end cap.



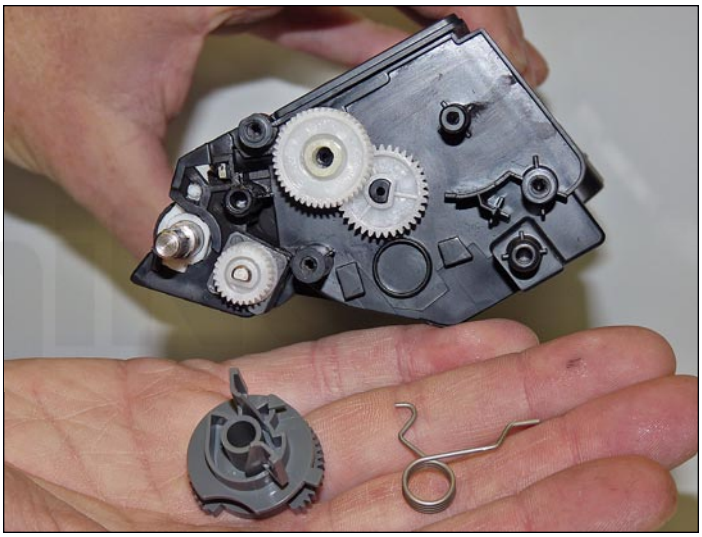
5. Pry off the white developer roller bushing.



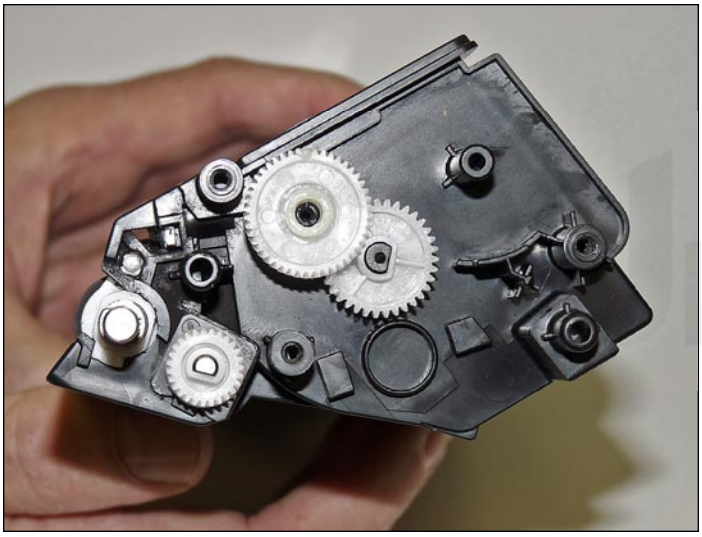
6. Remove the E-ring.



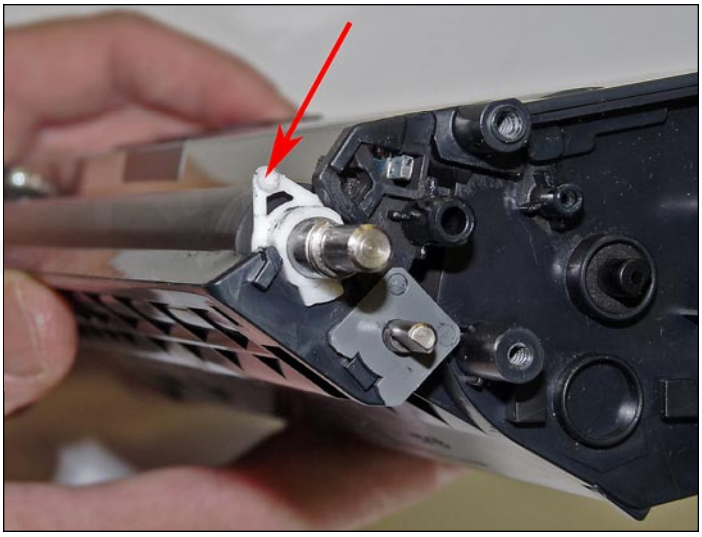
7. Remove the large white drive gear and the developer roller gear.



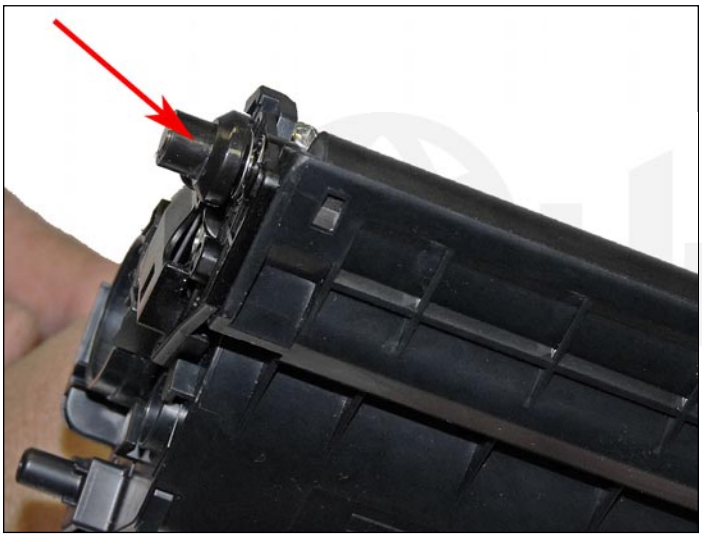
8. Remove the reset gear and spring.



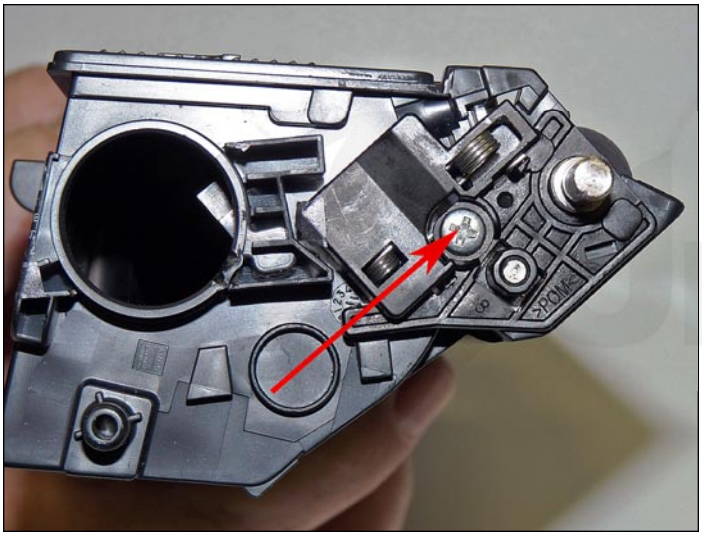
9. Remove the three remaining small white gears.



10. Move the white plastic locking tab on the right side of the developer roller to the up position.



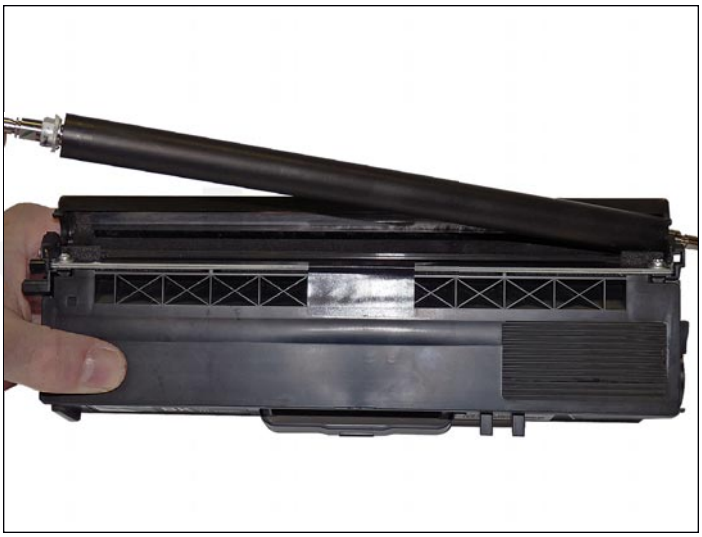
11. Gently pry off the black bushing on the opposite side of the developer roller. Be careful not to lose the spring!



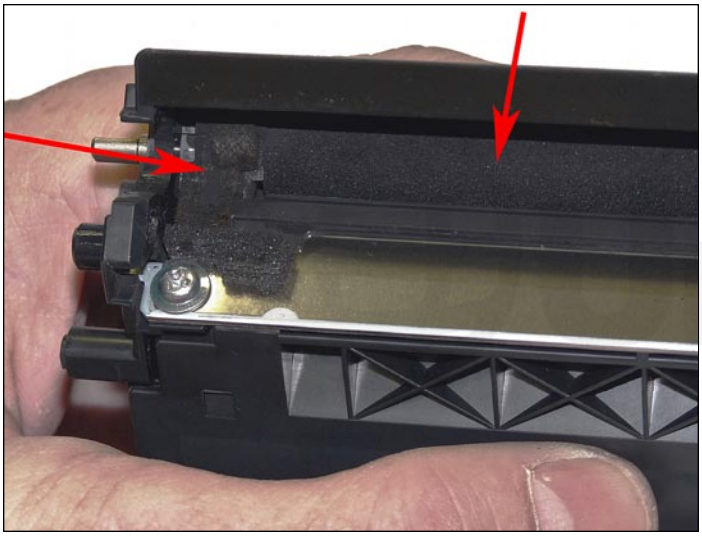
12. Remove the screw and contact side end cap for the developer roller.

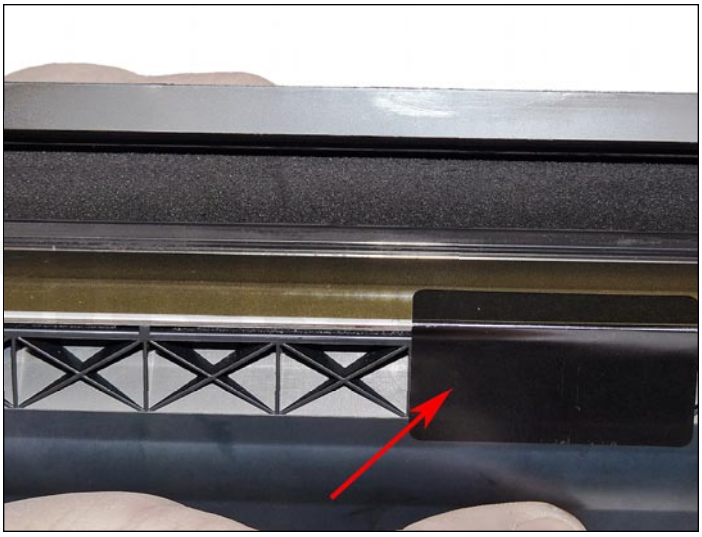
13. Be careful of the spring contacts!

Clean them but do not remove them.



14. Remove the developer roller.

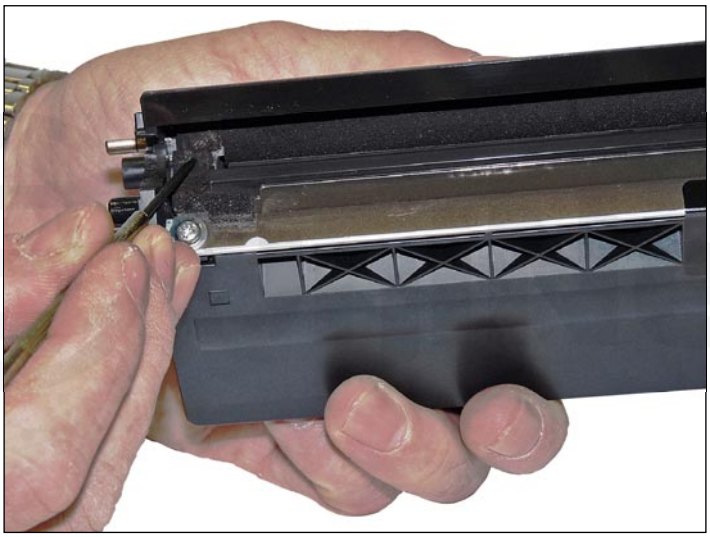




15. Carefully vacuum/blow the cartridge clean. Note the tape on the middle of the blade to keep it flat.

Use only low-pressure air! High-pressure air can cause leaks in the seals.

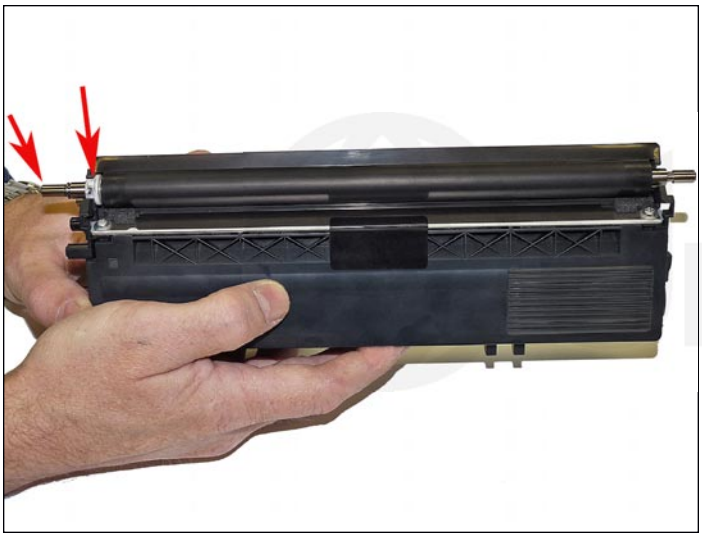
Be sure to rotate the foam feed-roller so it is fully cleaned.

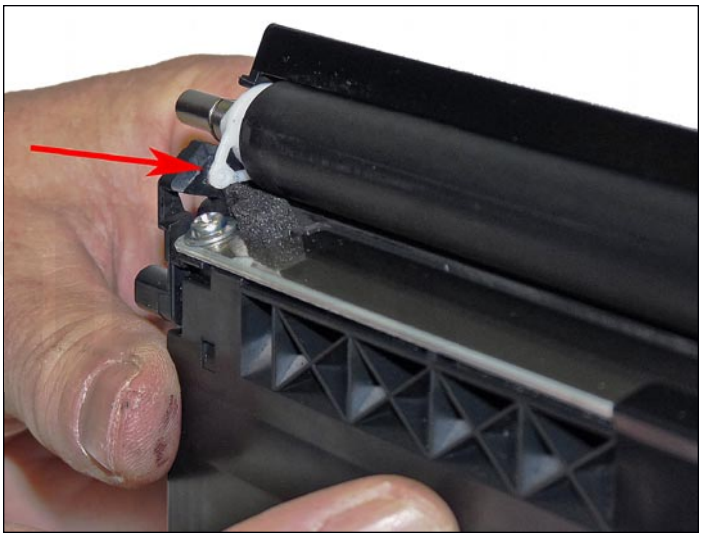


16. Vacuum/blow the doctor blade. We do not recommend that the doctor blade be removed, as the developer roller felt seals would be disturbed. Once a new blade is available, great care will have to be taken not to tear the seals causing a leak. The doctor blade can be easily cleaned by blowing the excess toner off, and wiping down with a lint free cloth. Be very careful not to leave any lint behind and do not use any chemicals to clean it!

17. Inspect the developer roller felts. If they are compressed (shiny), gently rough them up with a small screwdriver.

18. Clean the developer roller with a lint free cloth. Do not use any chemicals to clean the roller. A dry, clean, lint free cloth will work fine.

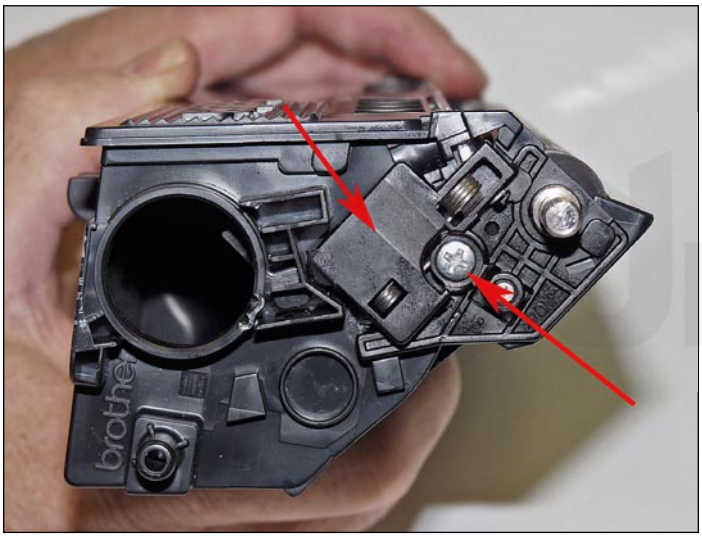




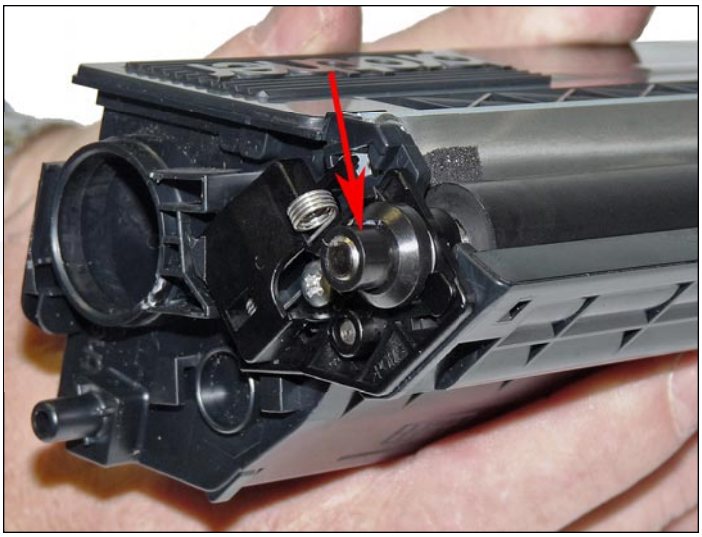
19. Re-install the developer roller (long end to the gear side, and white lock pointing up).

Make sure the white lock fits into the groove.

Turn the lock towards the doctor blade until it locks in place.

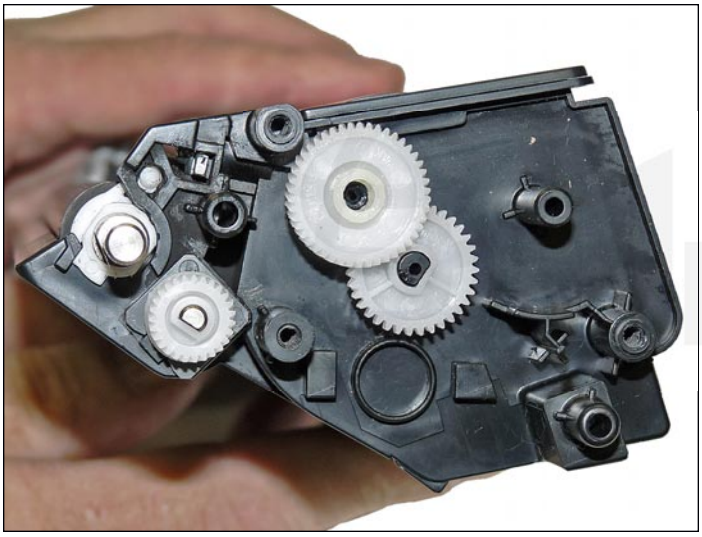


20. Install the end cap and screw.

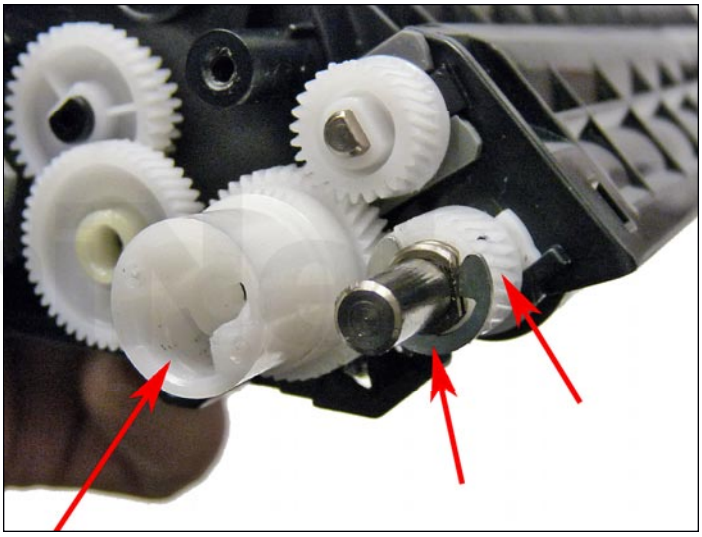


21. Install the spring and bushing.

Make sure the bushing moves freely.



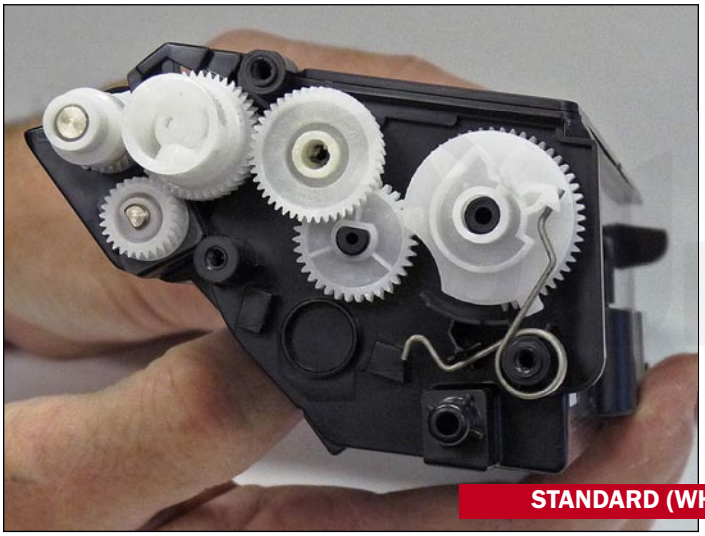
22. Clean the gears, making sure that they have no toner on them. This is a good time to also check the gear shafts to make sure there is enough grease. If the shafts appear dry, or the grease is contaminated with toner, clean the shaft and inside of the gear. Replace the grease with white lithium grease. Install the three small gears as shown.

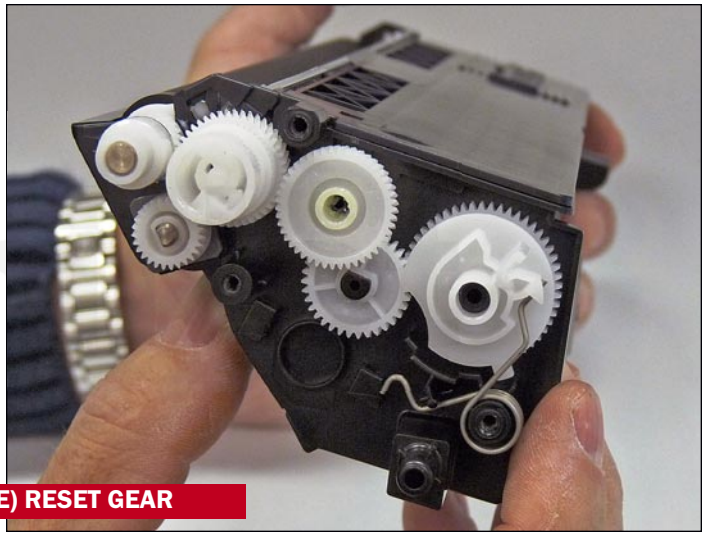


23. Install the developer roller gear and the drive gear.

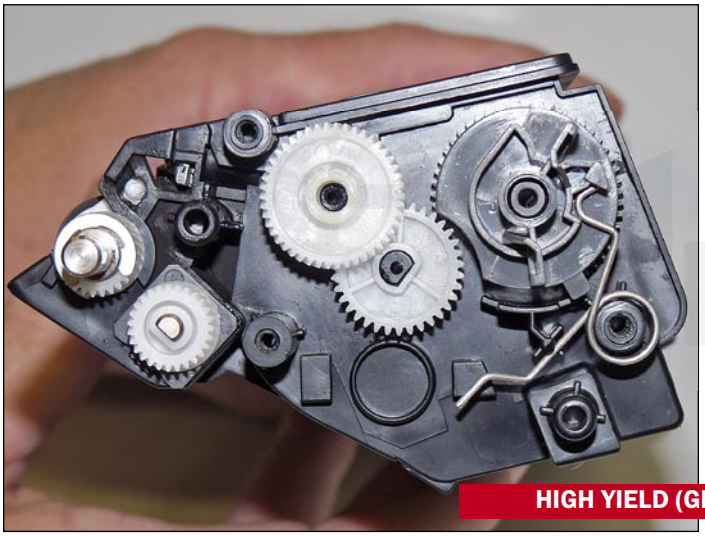
Install the E-ring.

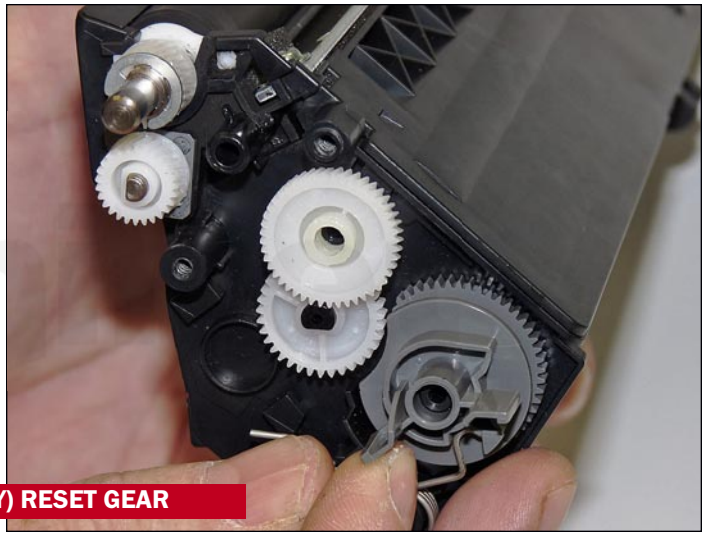
24. Set the reset gear and spring as shown. The tail of the spring fits into a notch at the base of the gear. Starter cartridges do not come with this gear, but it can be added and the starter cartridge used as a High Yield or Extra High Yield cartridge. They are simple to install. The spring position is straightforward. Just remember to have the reset gear teeth just start to engage the gear train as in the pictures...



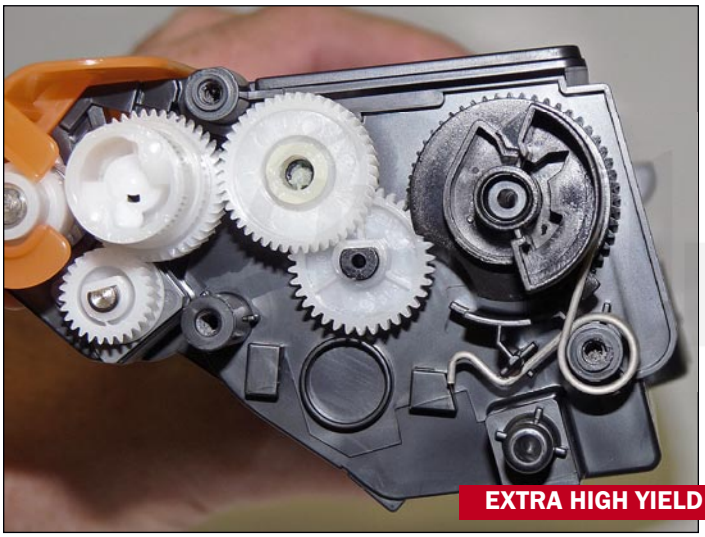


STANDARD (WHITE) RESET GEAR

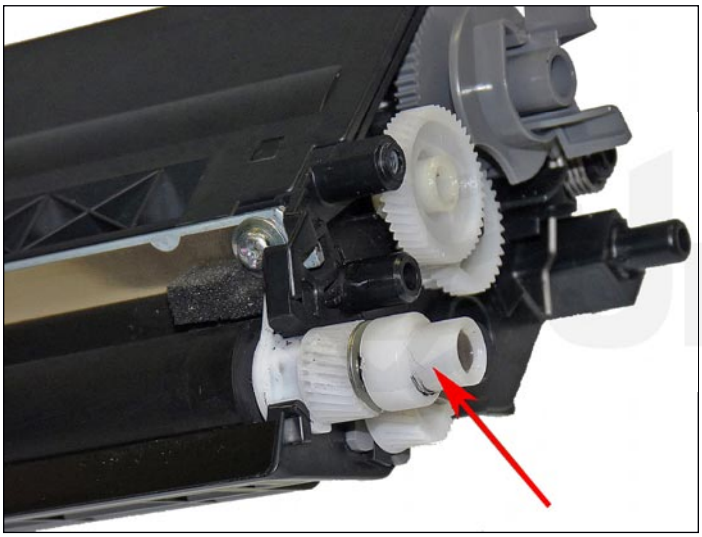




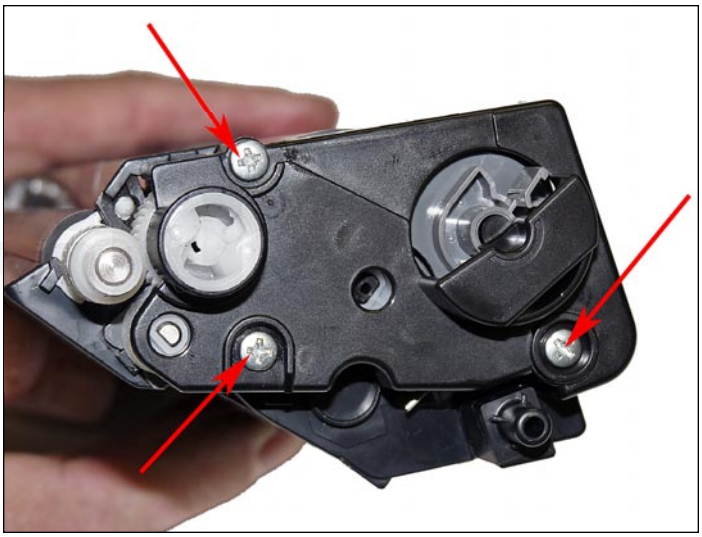
HIGH YIELD (GRAY) RESET GEAR



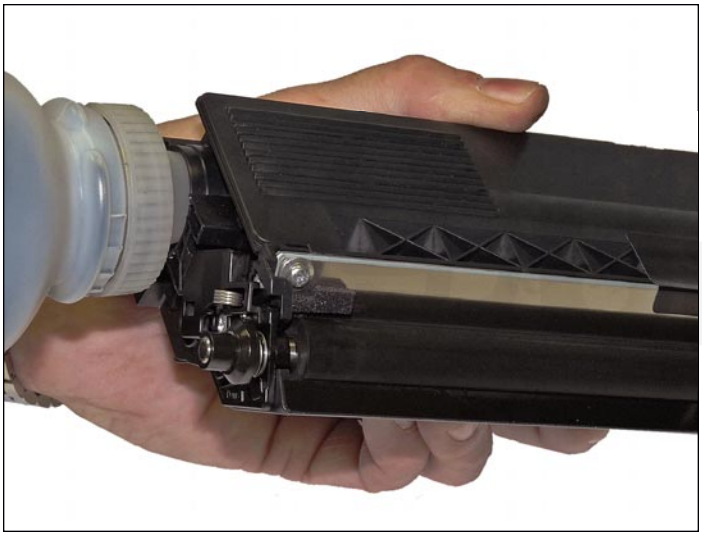
EXTRA HIGH YIELD (BLACK) RESET GEAR



25. Install the developer roller bushing.

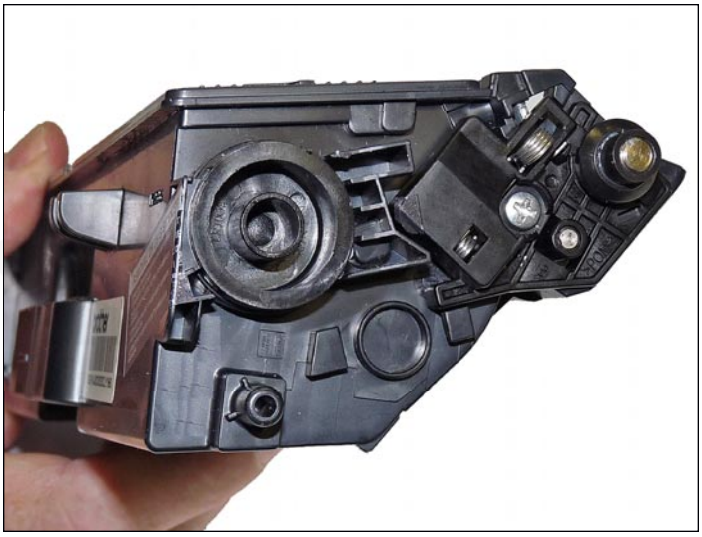


26. Install the gear cover plate, and three screws.

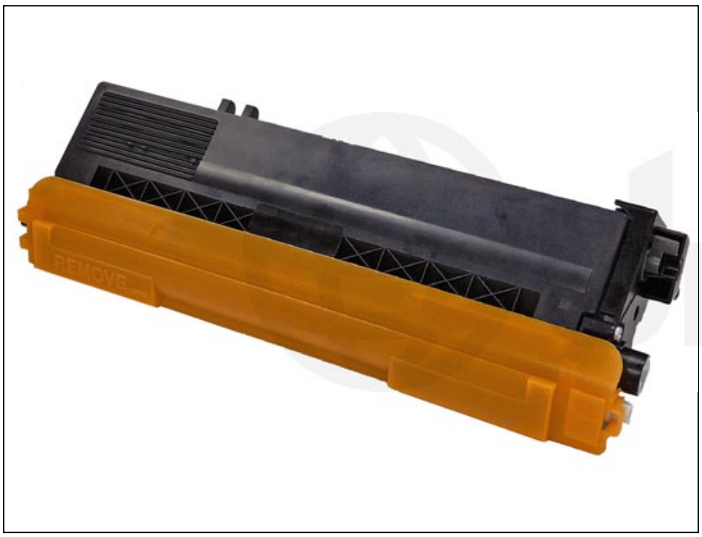


27. Fill the cartridge with the appropriate color and amount of toner for use in the Brother HL-L8350.

28. Replace the fill plug.



29. Wipe the cartridge down to remove any remaining toner dust.



30. Install the developer roller cover. This is important as the developer roller is exposed and is easily damaged or contaminated.

MACHINE TROUBLESHOOTING

The machine error codes are self-explanatory, so there is no need to go into them here.

REPETITIVE DEFECT CHART

Developer roller	**30.0mm**
OPC drum	**94.0mm**
Upper fuser roller	**78.5mm**
Lower pressure roller	**78.5mm**