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Technical Guide

Remanufacturing the Brother HL-L 6200 series toner cartridge TN-820/850/880



By Mike Josiah and the Technical Staff at Uninet

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Released in February 2016, the Brother HL-L6200 printer engine is based on a new 48 to 52ppm, 1,200dpi laser engine. These machines have a first page out in less than 7.5 seconds, and come standard with 256MB of memory depending on the machine. All the machines in this series so far also have duplexing built in. The starter cartridge does not come with any reset gears.

There are four different toner cartridges available for these machines. The TN-820 is rated for 3,000 pages, the TN-850 is rated for 8,000 pages and the TN880 is rated for 12,000 pages. Then there is also the TN890, which is rated for 20,000 pages, but will only fit into the HL-6400 and MFC-L6900 series of machines. There are different part numbers for these cartridges depending on your region. There are no part numbers listed for Asia/Middle East/Africa and Oceania, as at the time of writing they have not been released there yet. The part numbers are as follows:

	Standard (STD)	High yield (HY)	Super high yield (SHY)	Ultra high yield (UHY)	Standard drum	High yield drum
N/S America	TN820	TN850	TN880	TN890*	DR820	DR820
Europe	TN3430	TN3480	TN3512	TN3520		DR890*
Asia/ ME/Africa						DR3400
Oceania						

* The UHY cartridges will only fit into the HL-L6400 and MFC-L6900 series of machines.

Figure 1 shows a starter cartridge fill plug, while Figure 2 shows a replacement cartridge fill plug. It has a built-in shaft for the reset gear - replacement fill plugs/reset gear kits are in development and should be available as you read this.

FIGURE 1

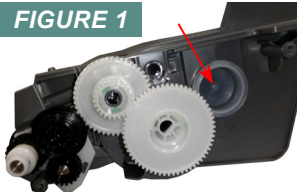
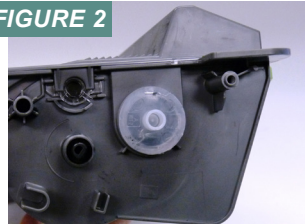


FIGURE 2



Current machines released so far* for this series are:

HL-L5000D	HL-L6300DW	MFC-L6750DW
HL-L5100DN	HL-L6400DW	MFC-L6800DW
HL-L5200DW	HL-L6400DWT	MFC-L6900DW
HL-L5200DWT	DCP-L5500DN	MFC-8950DW
HL-L6200DW	DCP-L5600DN	MFC-8950DWT
HL-L6200DWT	DCP-L5650DN	
HL-L6250DW	MFC-L6700DW	

*As of 1 April 2016

There is a reset gear that resets the printer each time a new toner cartridge is installed. In our machine, the starter cartridge was a TN-820 and did NOT have a reset gear installed. The TN-850, TN-880 and the TN-890 cartridges use different reset gears. These different gears are how the machine knows if there is a STD, HY, SHY or UHY cartridge installed. New replacement reset gears should be available as you read this.

Reset gears serve two purposes. First they reset the printer, so it knows a new toner cartridge was installed. Secondly they tell the printer which cartridge was installed. When the printer senses a new toner cartridge, the bias voltage is set to a high voltage. As the cartridge is used, the bias voltage is reduced gradually down. 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. To keep the density level even throughout its life, the density bias voltage is reduced accordingly. Each time a new cartridge is installed, the bias voltage is reset to the high voltage point, and the cartridge page count is reset to zero. Since different yields would dictate different decreases in density over time, Brother uses different reset gears which tell the printer how fast to reduce the bias voltage.

REQUIRED SUPPLIES

- Toner in the appropriate load for use in the Brother HL-L6200 series of cartridges
- Replacement fill plug and reset gear (if necessary)
- Developer roller cover
- Dedicated developer roller cleaner (not alcohol!)
- Lint-free cotton cloths
- Toner magnet cloths
- White lithium grease

REQUIRED TOOLS

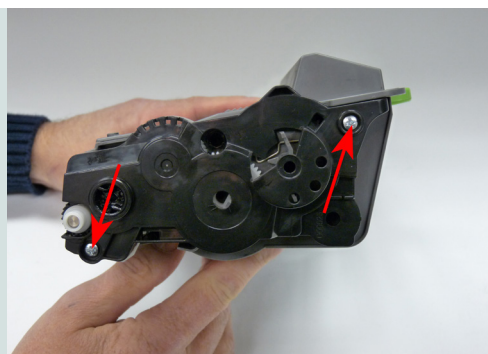
- Toner-approved vacuum
- Phillips head screwdriver
- Small common jewellers' screwdriver
- Needle-nose pliers

STEP ONE

Vacuum the exterior of the cartridge.

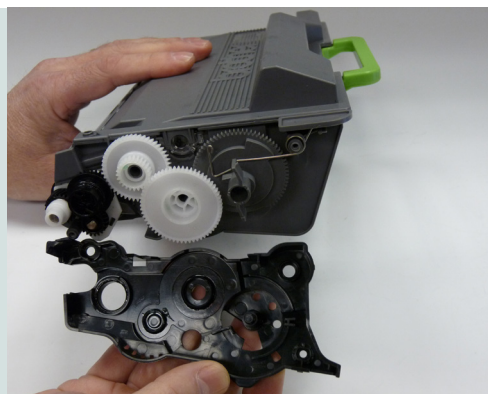
STEP TWO

On the GEAR SIDE, remove the two screws on the end cap.



STEP THREE

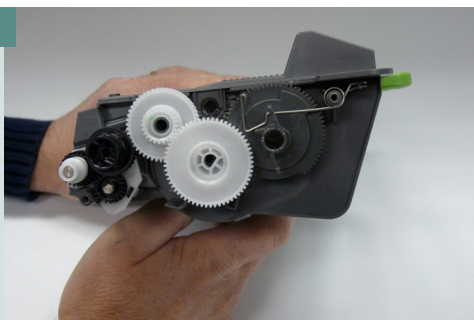
Remove the end cap.



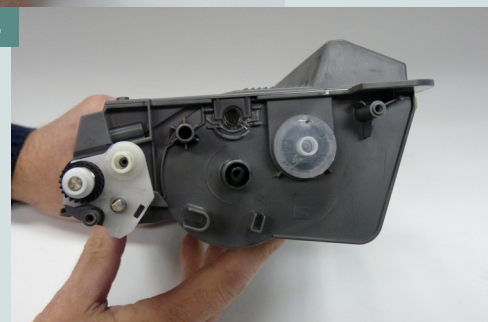
STEP FOUR

Remove the five gears and spring as shown (see Figures A and B).

A



B



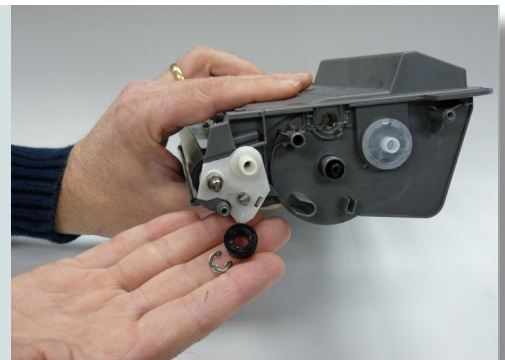
STEP FIVE

Remove the white plastic spacer from the developer roller shaft.



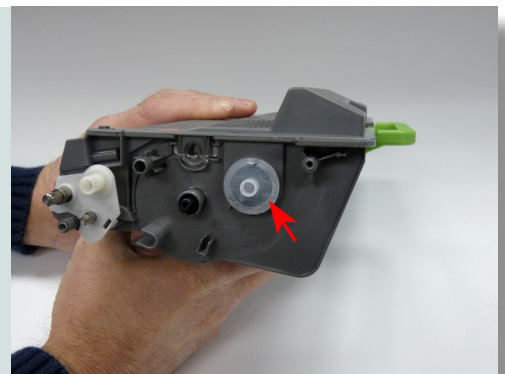
STEP SIX

Remove the e-ring and the developer roller drive gear.



STEP SEVEN

The fill plug is welded in place. It can be removed but will leak afterwards. It should be left in place until a new replacement plug is available.



STEP EIGHT

On the non-gear side of the developer roller remove the screw, pry up the locking tab and remove the bushing plate (see Figures A, B and C).

A



B

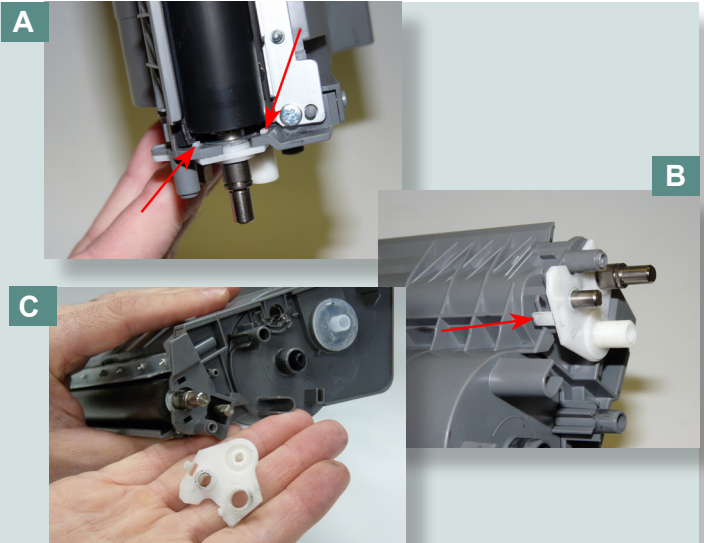


C



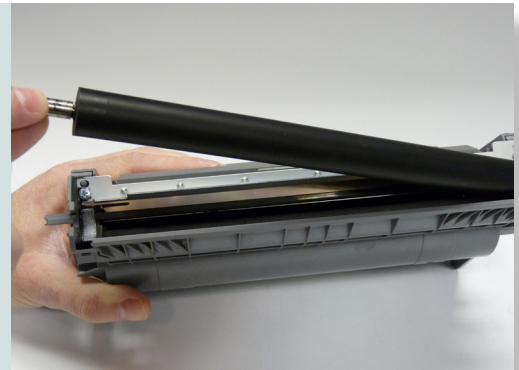
STEP NINE

On the gear side of the developer roller, press in on the two locking tabs, pry up the third and remove the white plastic bushing plate (see Figures A, B and C).



STEP TEN

Remove the developer roller. Dump the remaining toner and vacuum/blow out the cartridge.

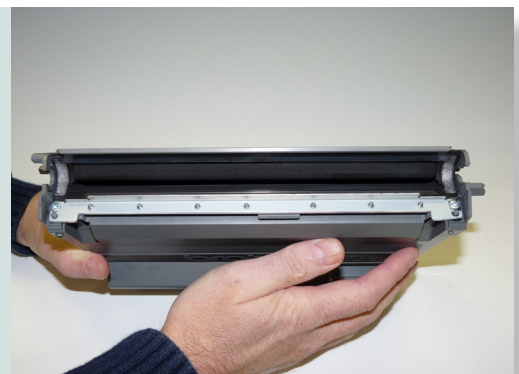


STEP ELEVEN

Vacuum the doctor blade and foam feed roller clean. Until new blades are available, we do not recommend that the doctor blade be removed or the developer roller felt seals disturbed. 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!



STEP TWELVE

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



STEP THIRTEEN

Clean the developer roller with a lint-free cloth and a dedicated developer roller cleaner. Do not use any chemicals other than a dedicated developer roller cleaner to clean the roller.



Any type of alcohol cleaner will strip the conductive coating off the roller.

STEP FOURTEEN

Fill the cartridge with toner for use in the Brother HL-L6200 series of toner cartridges.

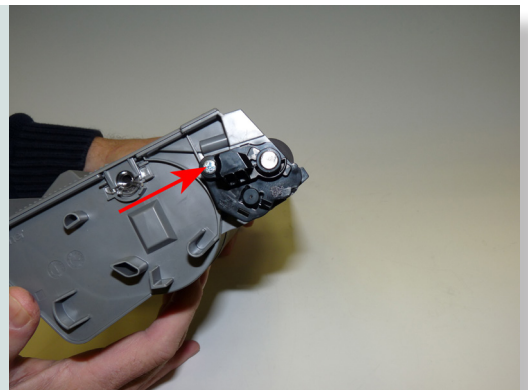
STEP FIFTEEN

Re-install the developer roller with the long shaft to the gear side.



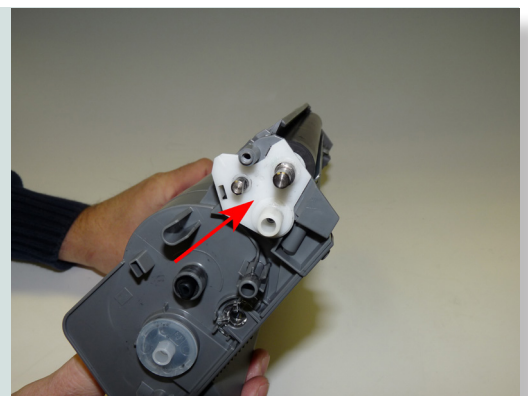
STEP SIXTEEN

Install the non-gear side developer roller bushing and screw.



STEP SEVENTEEN

Install the gear side developer roller bushing. Make sure it snaps in place.

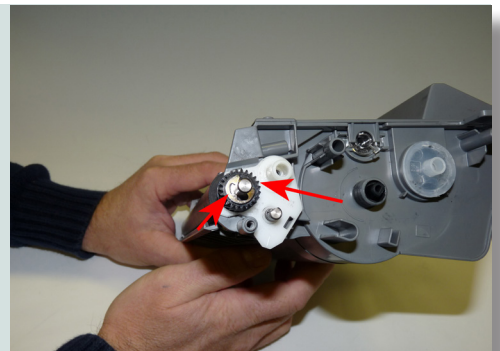


STEP EIGHTEEN

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.

STEP NINETEEN

Install the developer roller gear, e-ring and white axle spacer.

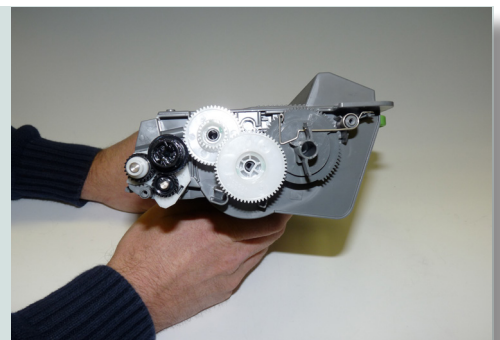


STEP TWENTY

The cartridge we are remanufacturing is a starter cartridge and did not come with a retaining plate, reset gear or spring. These items need to be installed for the printer to accept a starter cartridge as new.

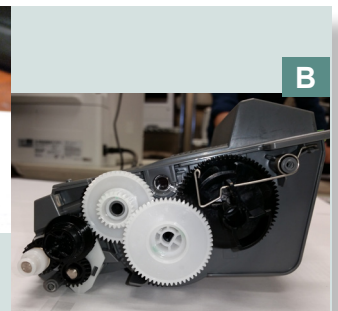
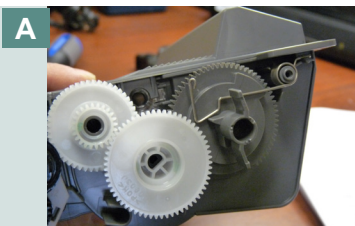
STEP TWENTY-ONE

Install all the gears as shown.



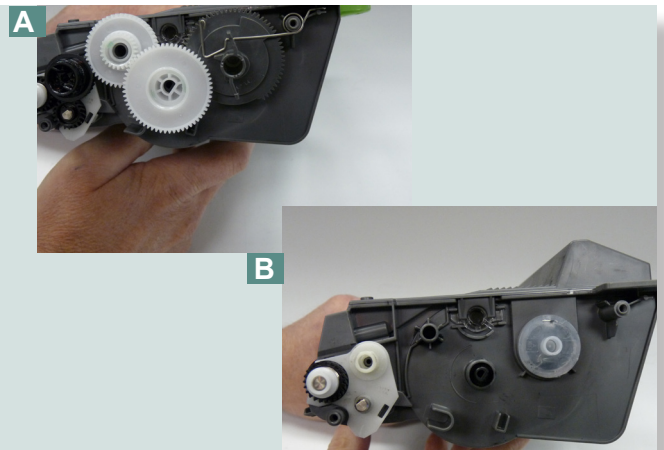
STEP TWENTY-TWO

Depending on the cartridge you have, set the reset gears as shown (see Figure A for the TN-880, and Figure B for the TN-850).



STEP TWENTY-THREE

Install the gear side end cap and two screws. Make sure the reset gear is still in its proper place (see Figure A and B).



STEP TWENTY-FOUR

Wipe the cartridge down to remove any remaining toner dust.



Be careful not to touch the developer roller!

STEP TWENTY-FIVE

Install the developer roller cover.



Test Pages (HL-L6200 series)

- Take the machine offline by pressing any of the arrows.
- Press the up or down arrows until you see 'Machine Info'.
- Press OK.
- Press the up or down arrows until you see 'Test Print'.
- Press OK.
- The page selected will print.

Test Pages (HL-L6400 series)

- Press the 'Settings' icon until you see 'Machine Info'.
- Press 'Test Print'.
- The page selected will print.

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