

# RICOH® AFICIO SP 4100

## TONER CARTRIDGE REMANUFACTURING INSTRUCTIONS



RICOH AFICIO SP 4100 TONER CARTRIDGE

# REMANUFACTURING THE RICOH AFICIO SP 4100 TONER CARTRIDGES

By Mike Josiah and the Technical Staff at UniNet

The Ricoh SP 4100 series of printers are based on a Ricoh 31-36ppm, 1200 x 600 dpi engine. All models have a first page out in less than 6.9 seconds. Not seven seconds, but 6.9 seconds. How's that for being specific?

These are not the easiest cartridges to do, but if care is taken they are not too bad and the profits are nice! Care must be taken not to disturb the doctor blade as it is very difficult to set back properly. The entire doctor blade assembly can be removed though, so it's not a problem. These cartridges also use a chip that must be replaced each cycle. There is a HY and a LY cartridge and both have a different chip. To install the replacement chips you will need to unsolder the old chip and solder on the new one. The HY cartridges only work in the 4100N and 4110N, the LY only in the 4100NL.

## MODELS IN THIS SERIES

Ricoh Aficio SP 4100N KP (uses high yield cartridge and chip only)

Ricoh Aficio SP 4100NL (uses low yield cartridge and chip only)

Ricoh Aficio SP 4110N KP (uses high yield cartridge and chip only)

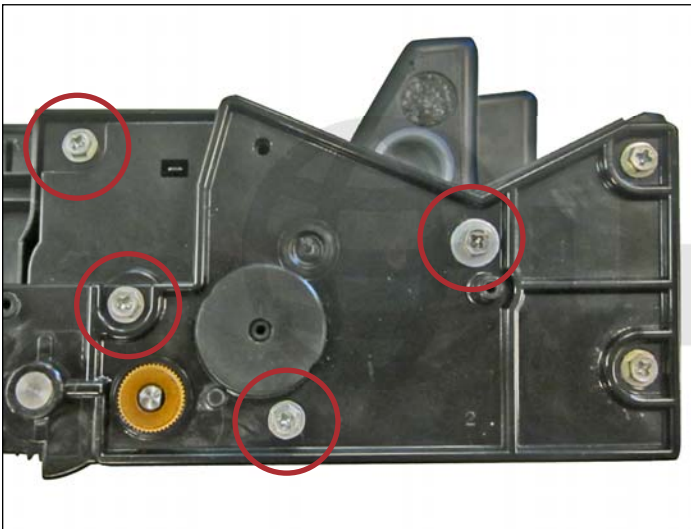
The Ricoh low yield cartridge (403073) is rated for 7,500 pages at 5% coverage, and the high yield cartridge (402809) is rated for 15,000 pages at 5%.

## REQUIRED TOOLS

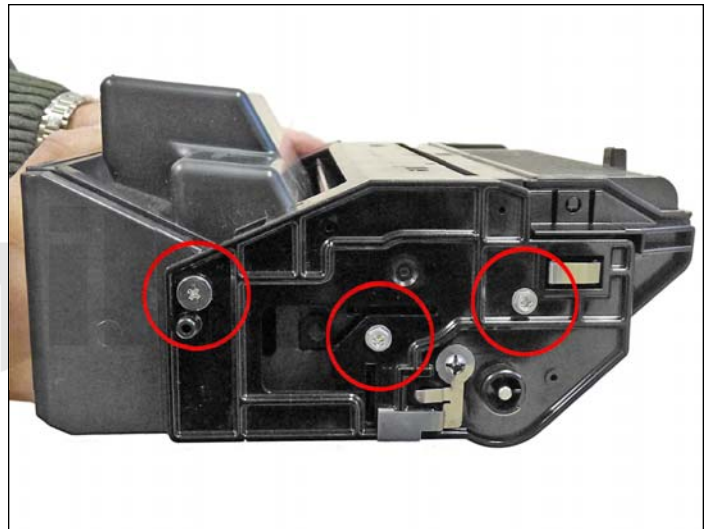
1. Toner approved vacuum
2. A small common screwdriver
3. A Phillips #1 head screwdriver
4. Needle nose pliers
5. Soldering Iron and associated tools/supplies

## REQUIRED SUPPLIES

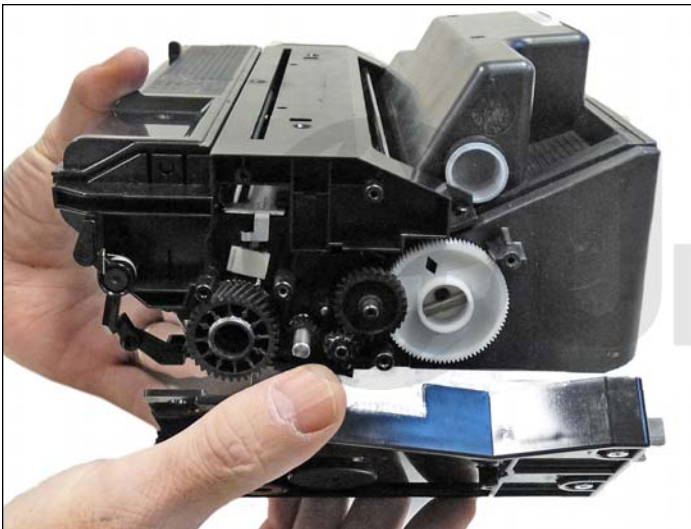
1. New toner for use in Ricoh Aficio SP 4100 (LY or HY load)
2. New developer for use in Ricoh Aficio SP 4100 (same for both LY & HY)
3. Developer sealing strip
4. Toner hopper sealing strip
5. LY or HY replacement chip
6. Drum padding powder
7. PCR cleaner
8. Conductive grease



1. Clean the exterior of the cartridge. Place the cartridge with the handle facing you. On the left side, remove the three small screws and one large screw.

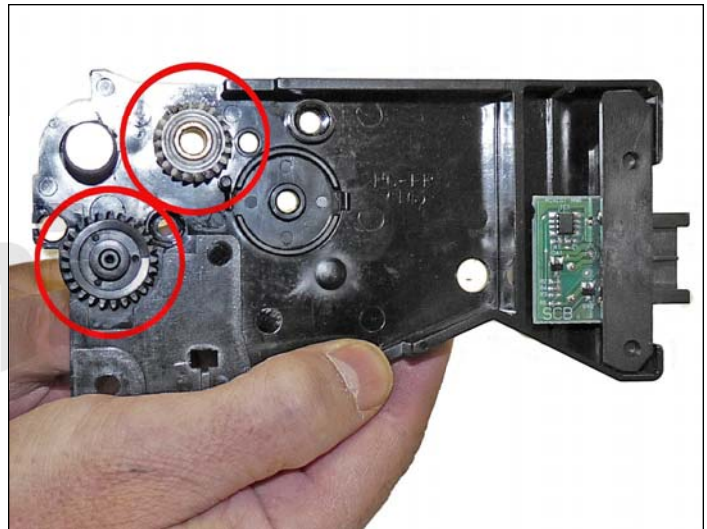


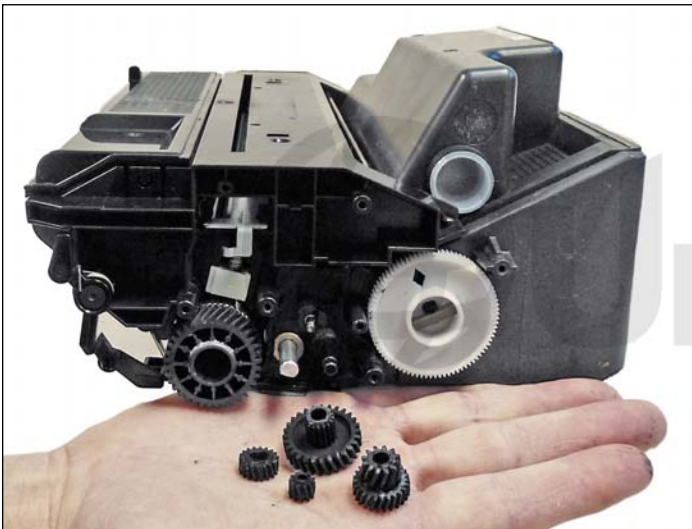
2. On the right side, remove the two small screws and one large screw.



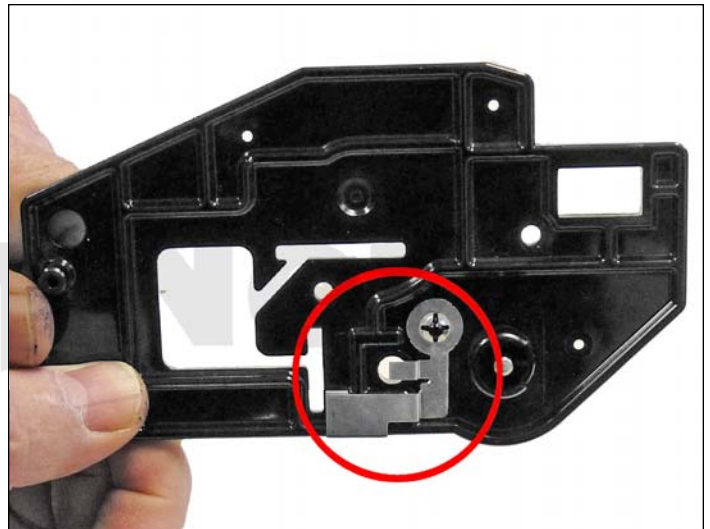
3. Remove the gear side end cap.

The two gears may stay on the end cap when removed.





4. Remove the four loose gears.



5. On the opposite side, carefully pry off the end cap.

Leave the contact plate alone. It looks like it must be removed, but it does not.

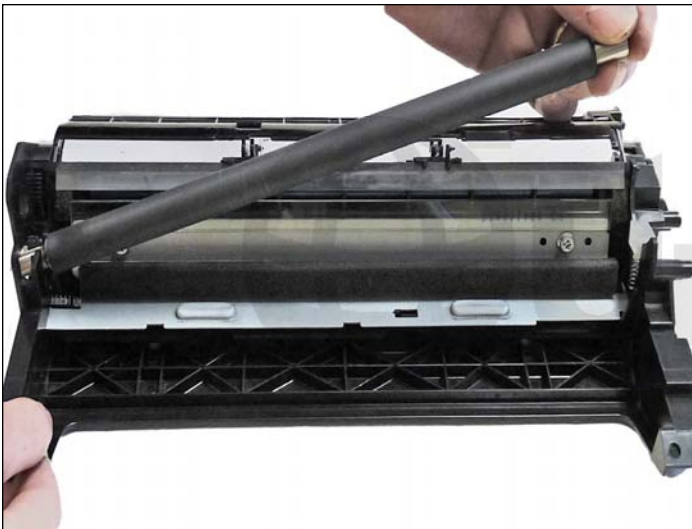




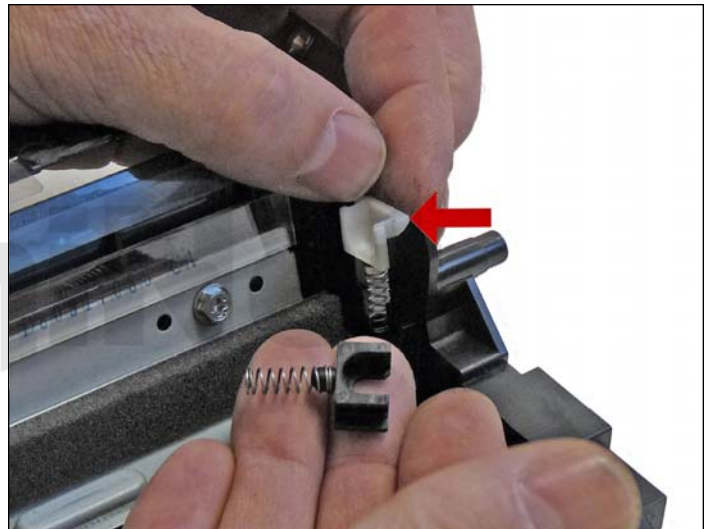
6. Separate the two halves.



7. Remove the drum.



8. Remove the PCR.

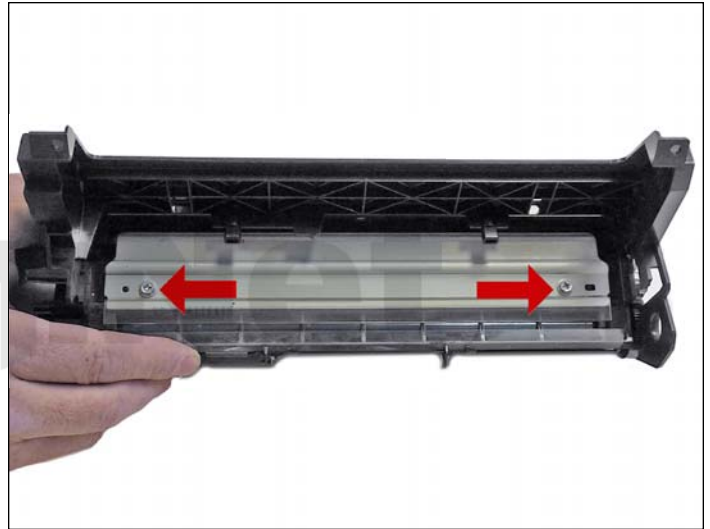


9. Remove the PCR holders.



10. Remove the wiper blade shield.

Slide it over from the bent side.

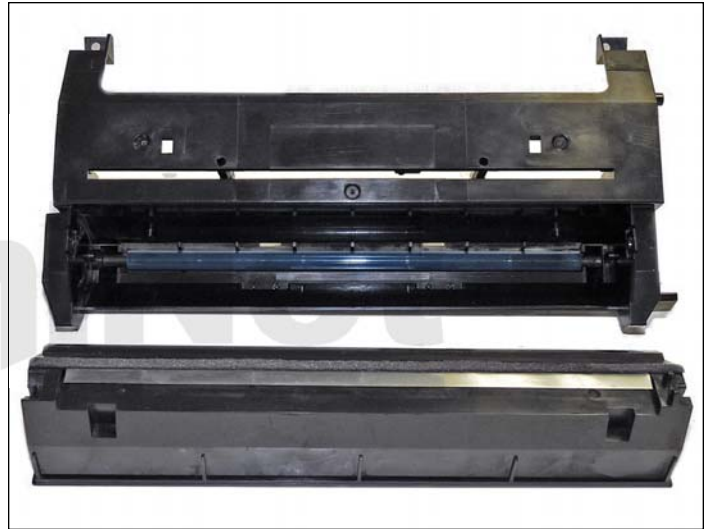


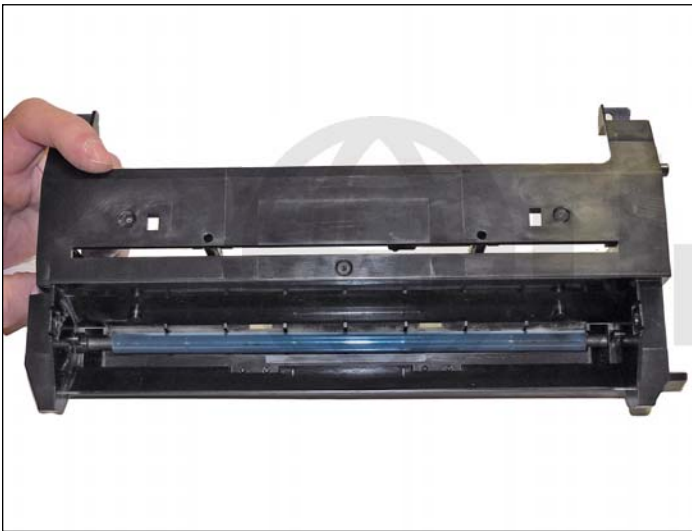
11. Remove the two wiper blade screws and wiper blade.



12. On the top of the waste chamber sides, pull out on the tabs and remove the waste hopper.

Clean out all remaining waste from the hopper.



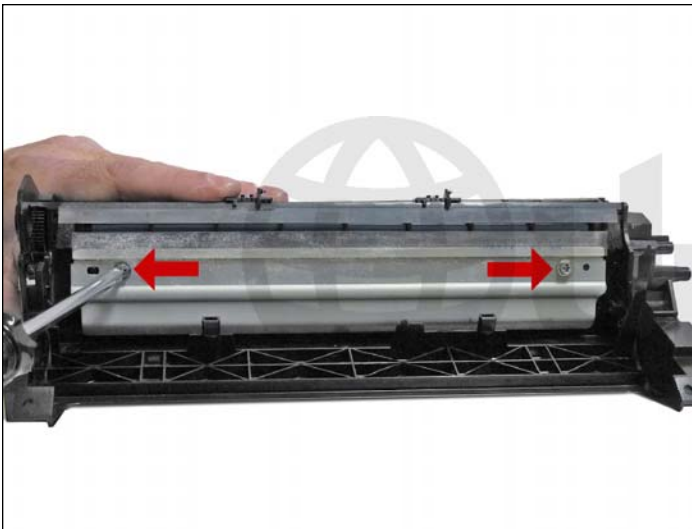


13. Clean out all the waste toner from the cleaning roller and lower waste section.



14. Install the upper waste hopper.

It should snap in place.



15. Coat the wiper blade with your preferred lubricant and install the blade. Install the two screws.





16. Install the wiper blade shield, left (bent) side first, through the hole on the side the cartridge. Slide the flat side out the slot, making sure the spring is engaged. Make sure the blade slides back and forth on the spring when done. The plastic tab in the center should fit into the rectangular slot of the shield.



17. Install the PCR holders and cleaned PCR.

If they do not fit easily, they are on the wrong side.

The side of the PCR with the pointed shaft should go to the black holder.





18. Install the drum and place the waste chamber aside.

Put the large gear to the gear side of the cartridge.



19. Remove the fill plug from the toner hopper.

Dump out any remaining toner.

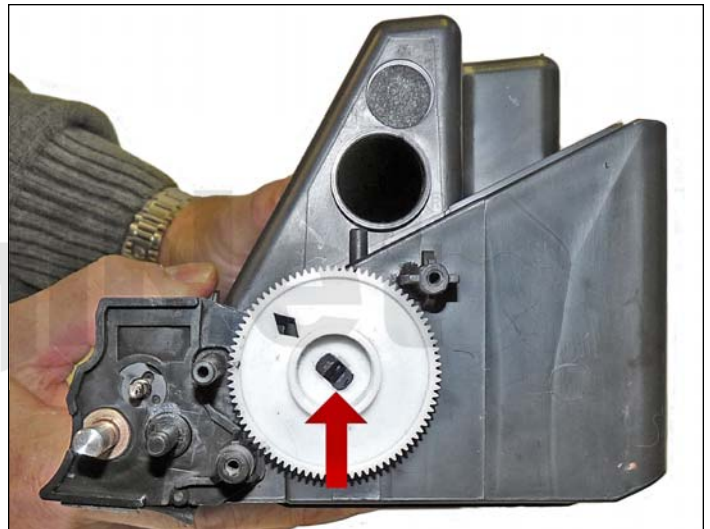
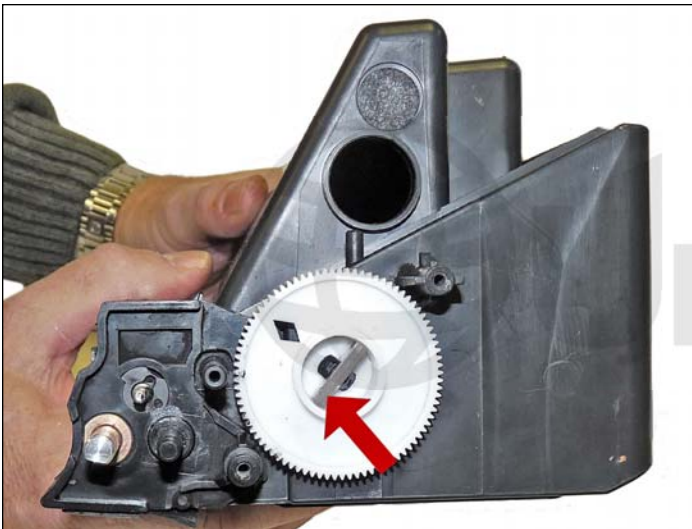


20. It is best not to remove the doctor blade as it is very difficult to get back in the right place. The entire magnetic roller section will be removed in the next few steps, so is possible to clean all the old toner/developer out.



21. Lift up plastic bar next to all three tabs.

Remove the developer hopper.

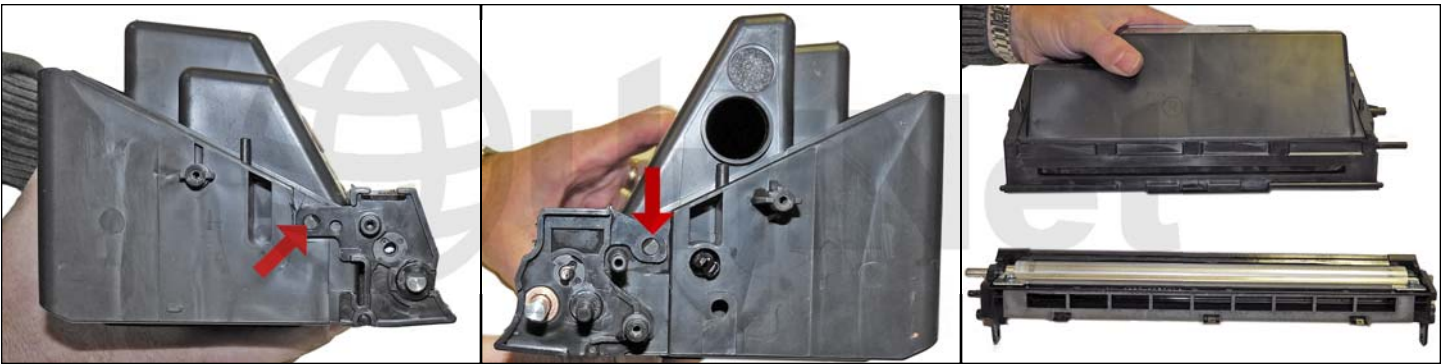


22. Remove the metal bar from the large white gear.

Press in on the locking tabs and remove the gear.



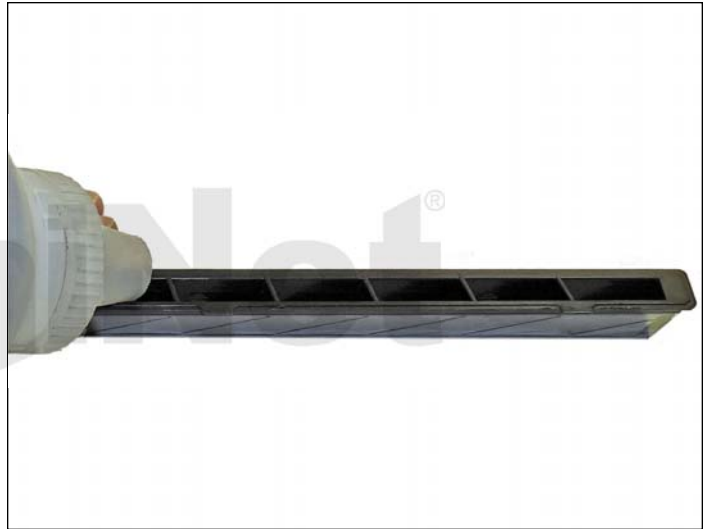
23. Remove the sealing tape from the bottom of the hopper.



24. Pry up the tabs on both sides of the cartridge to remove the upper magnetic roller section.



25. Vacuum/blow out all remaining toner/developer from both sides of the hopper.



26. Fill the developer section with the new developer.

Make sure you keep all chambers evenly filled!



27. Install the seal on the developer hopper as shown, Make sure the tail is over the non-gear side.

To snap the hopper in place, line up the top three tabs and press the hopper down to lock in place.







28. Install the seal on the toner section as shown.

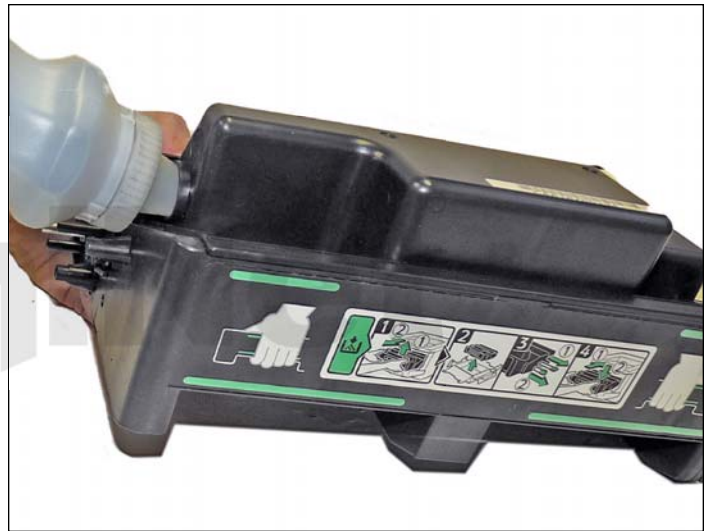
Make sure the tail is over the non-gear side of the hopper.



29. Snap the magnetic roller section in place.

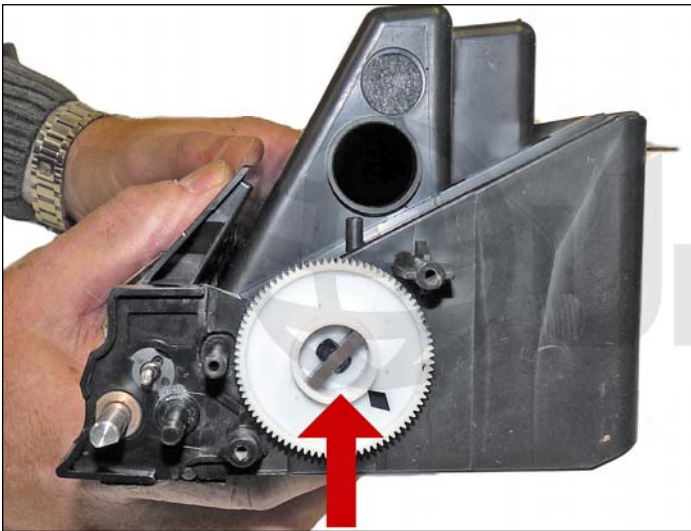


30. Replace the bottom tape seal. If it does not stick, activate the glue with alcohol or use black electrical tape. It's best to use the better rubber kind, not vinyl tape.

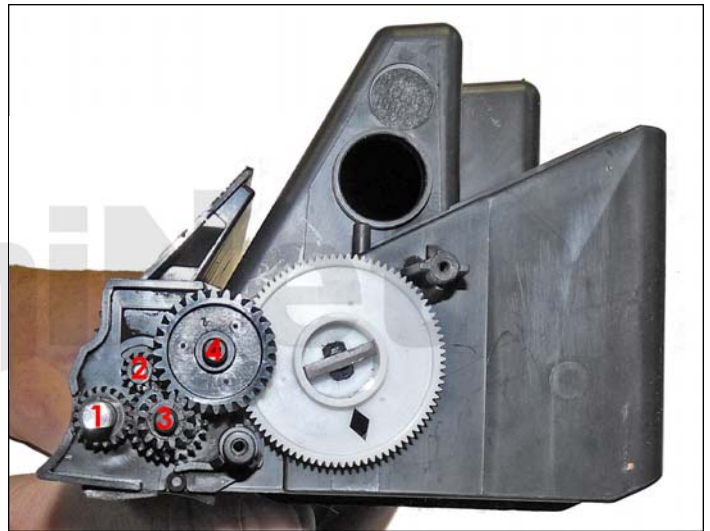


31. Fill the hopper with toner for use in Ricoh SP 4100.

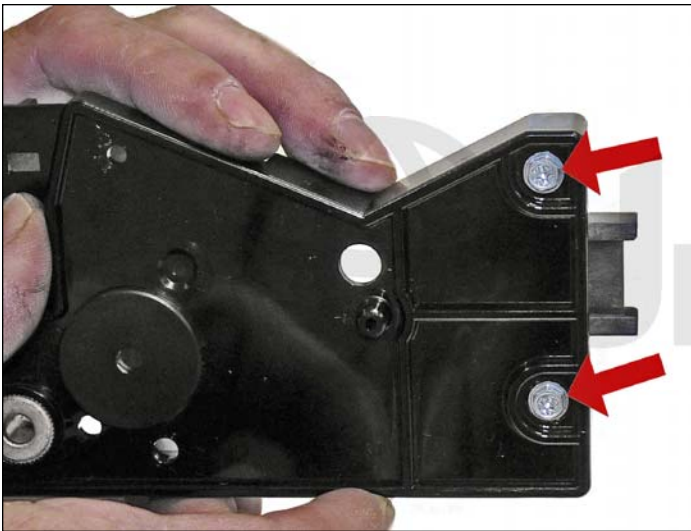
Replace the fill plug.



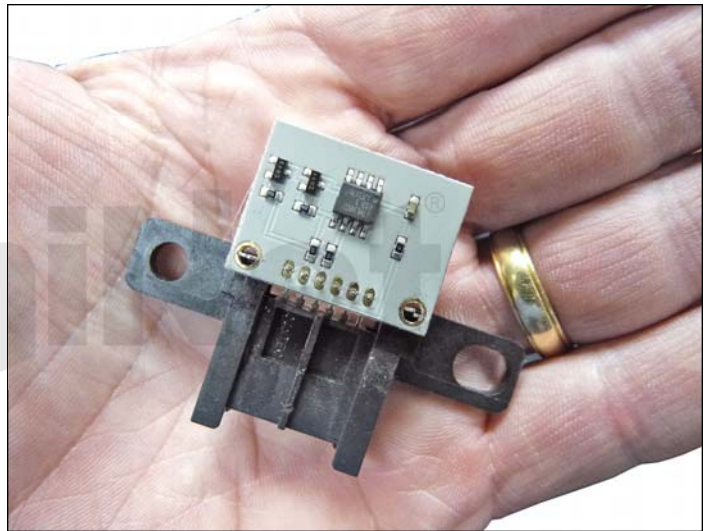
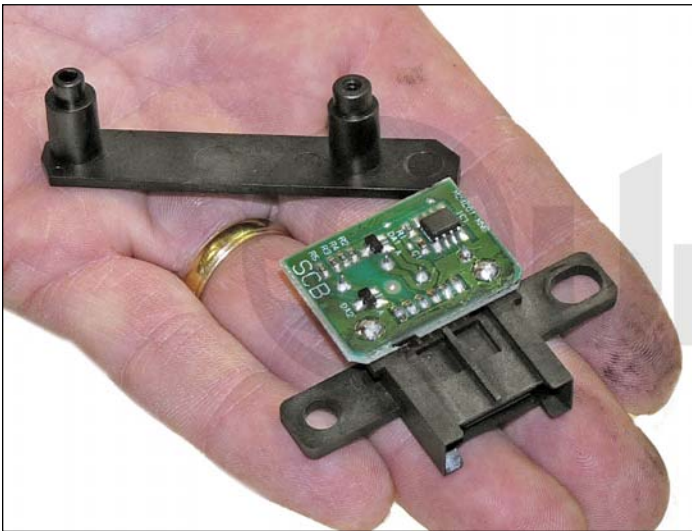
32. Replace the large white gear and the metal insert.



33. Install the gears as shown.

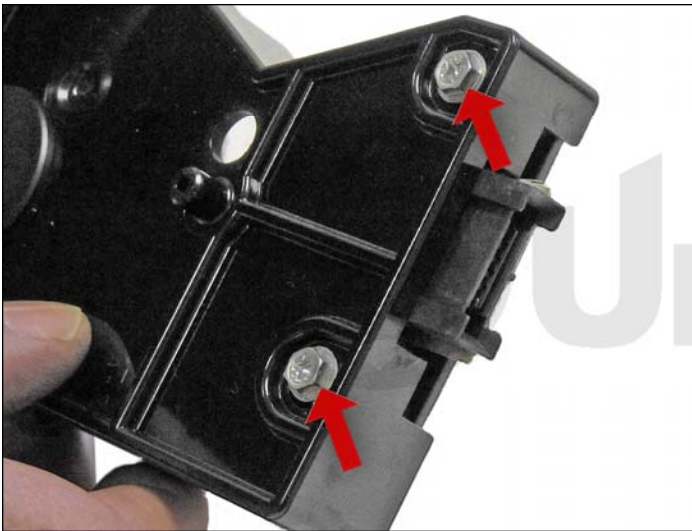


34. Remove the two screws on the gear end cap. Remove the back holder and remove the chip assembly from the end cap.



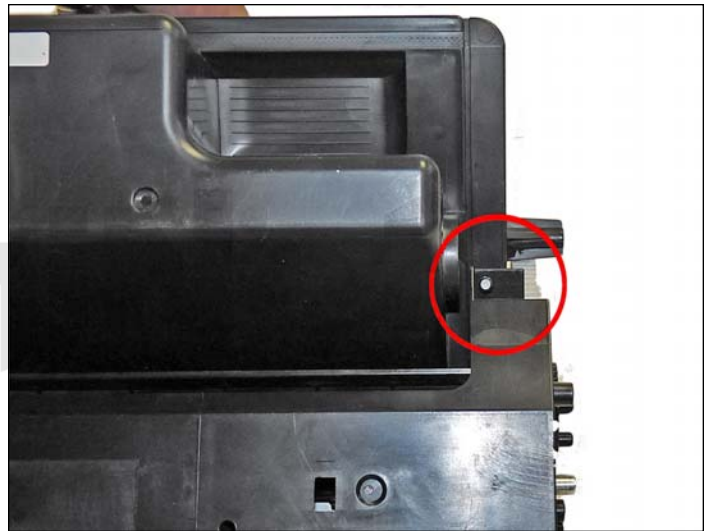
35. Unsolder the old chip from the holder and solder the new chip in place.

Be careful not to use too much heat!



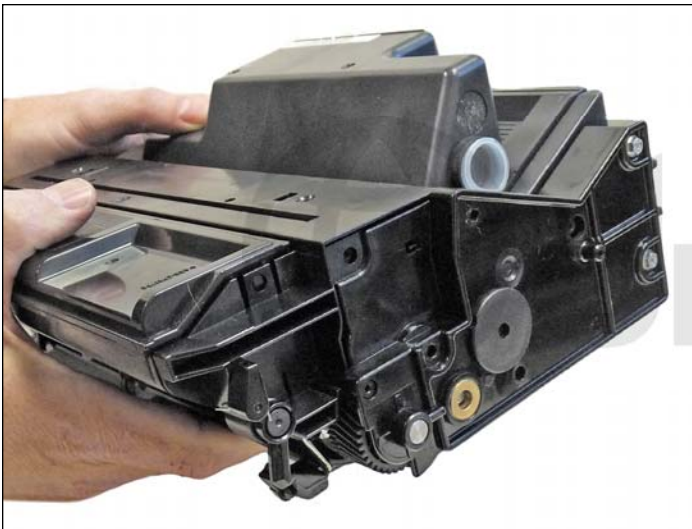
36. Install the chip assembly, back holder, and two screws on the gear side end cap.





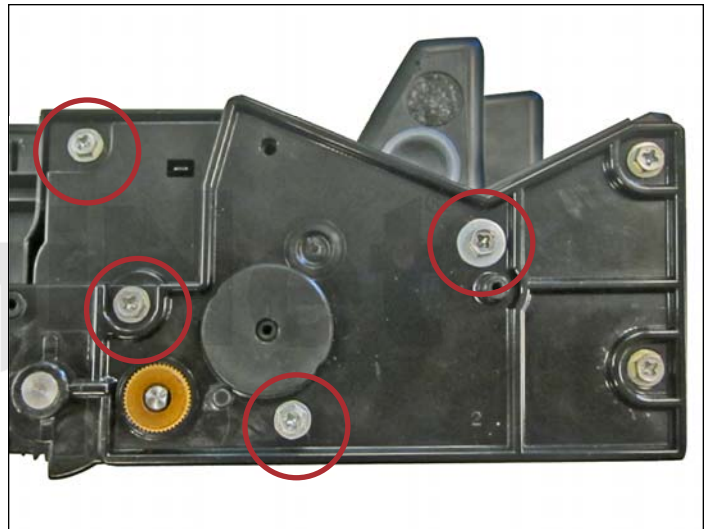
37. Place the two halves together.

Fit the waste chamber tab over the post on the toner hopper.



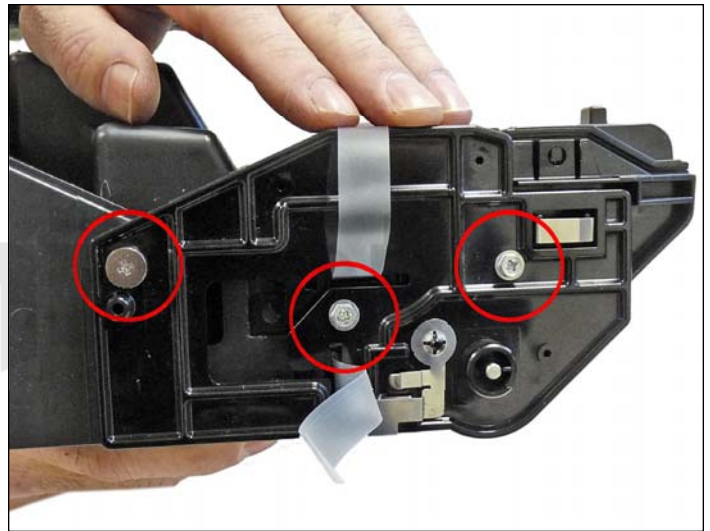
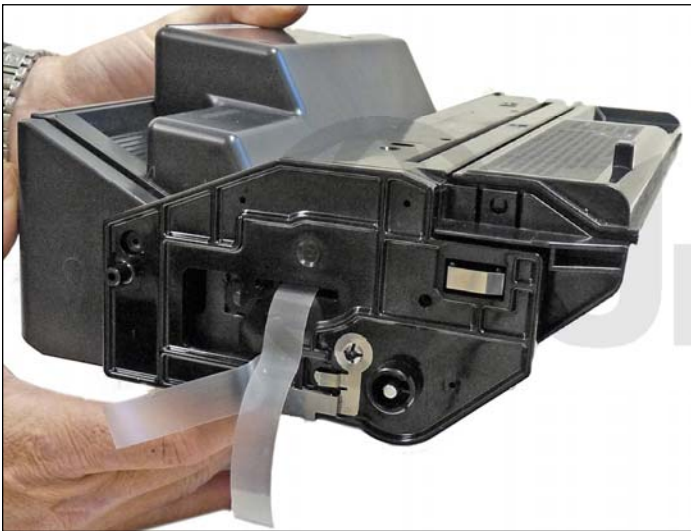
38. Install the gear side end cap.

Rotate the drum a little so that all the gears mesh properly.



39. Install the three small screws and one large screw as shown.





40. Install the contact end cap and three screws (two small and one large).

**REPETITIVE DEFECT CHART**

<b>Upper fuser roller:</b>	<b>105 mm</b>
<b>Lower pressure roller:</b>	<b>100 mm</b>
<b>OPC drum:</b>	<b>94 mm</b>
<b>Transfer roller:</b>	<b>50 mm</b>

**ERROR CODES**

The error codes used in this series are all self-explanatory, so there is no need to list them here.