

## HP Color LaserJet 3000, 3600, and 3800 Series Printer - Toner Cartridge Shutters not closing/opening



**Security Level:** For HP and Channel Partner Internal Use

**Date Written/Updated:** September 19, 2006

### Document Summary

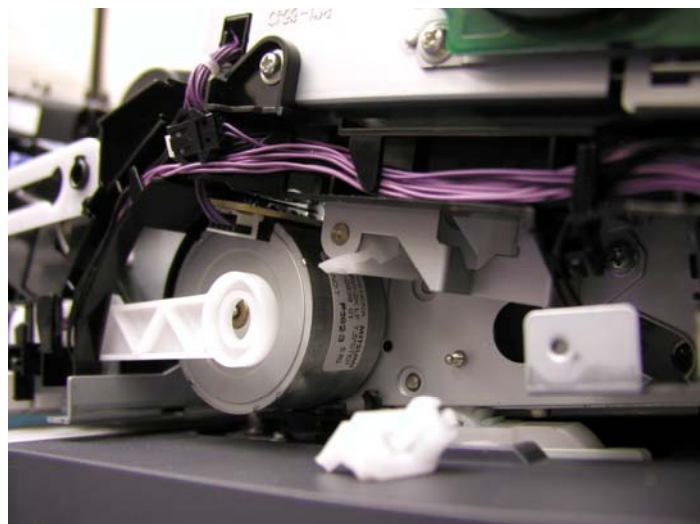
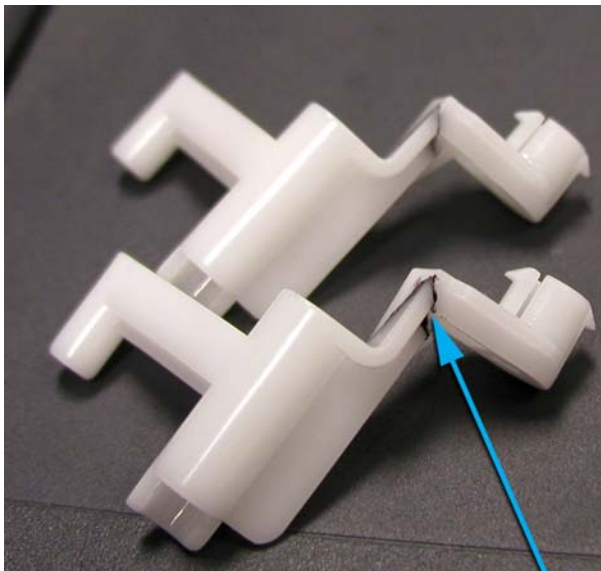
- ✓ Customers may experience trouble with shutters on the toner cartridges not opening or closing
- ✓ Follow the troubleshooting steps below to determine the root cause

### **Issue Description:**

The customer may experience issues with the toner cartridge shutters not opening or closing when opening or closing the front door.

### **Solution or Workaround:**

- Reseat all the cartridges
- Check for a broken part that controls the movement of the cartridge engagement arm, the cartridge shutters, and the OPC drive. (See picture below – it outlines where the break occurs in the picture to the left, and where this part is located for the picture on the right. The red arrows show where the part should be.) You can easily check this without taking off the covers by reaching over to the white rod arm on the right hand side of the ETB, and “wiggle” it. If it moves easily, then this part is broken. Replace this part if broken ([RC1-6645-000CN](#)).



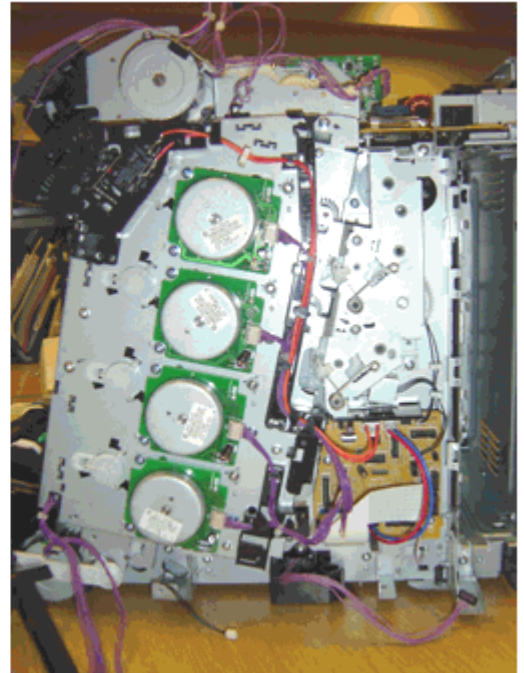
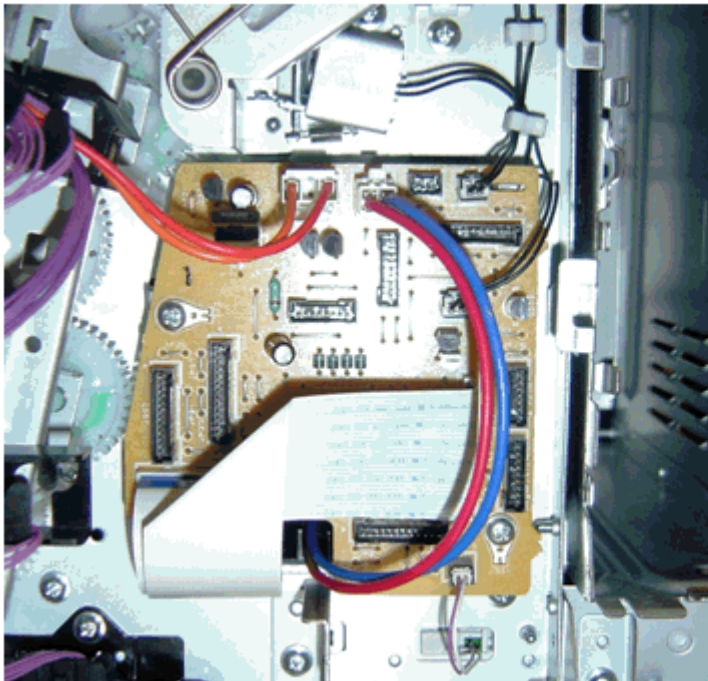
**NOTE: If these break, this can also cause a 10.92.XX error.**

In order to replace this part, please see the documentation below.

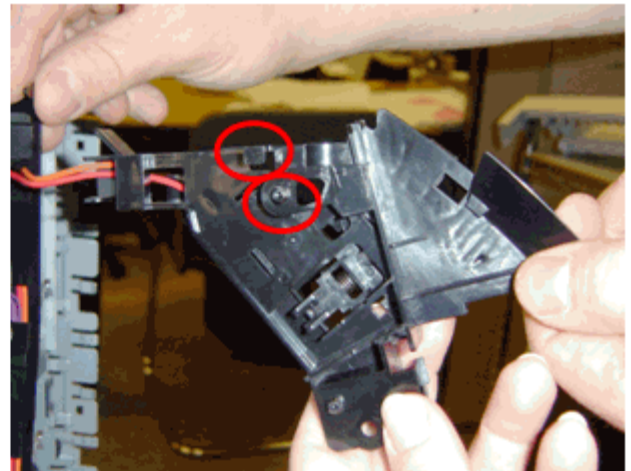
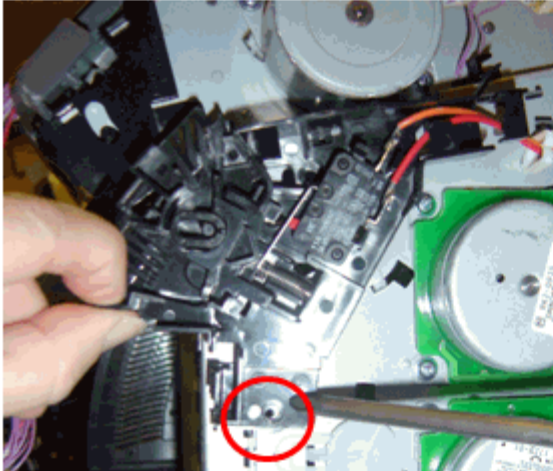
### **SERVICE ACTION**

**To Be Performed By:** Service Technicians

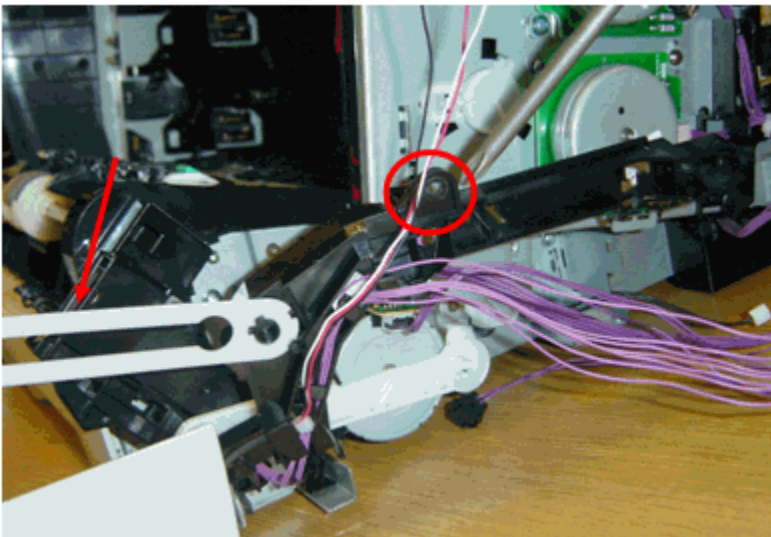
1. Remove the toner cartridges and ETB.
2. Remove the upper cover (Page 80 in the Service Manual).
3. Remove the right cover (Page 87 in the service Manual).
4. **For duplex models:** Remove the wires to the duplex fan in the front cover. Simply follow instructions 5 and 6 on page 77 – 78 in the service manual. This allows for easier removal of the cable harnesses.
5. Unplug the following connectors from the driver PCA and remove the wires from the cable harnesses: a. J209, b. J406, c. J404, d. J213, e. J207, f. J203, g. J402, h. J206, i. J410, j. J208.



6. Remove the interlock switch assembly by removing the one screw attaching it to the chassis. Be aware of the clip at the top and the alignment knob when removing the assembly.



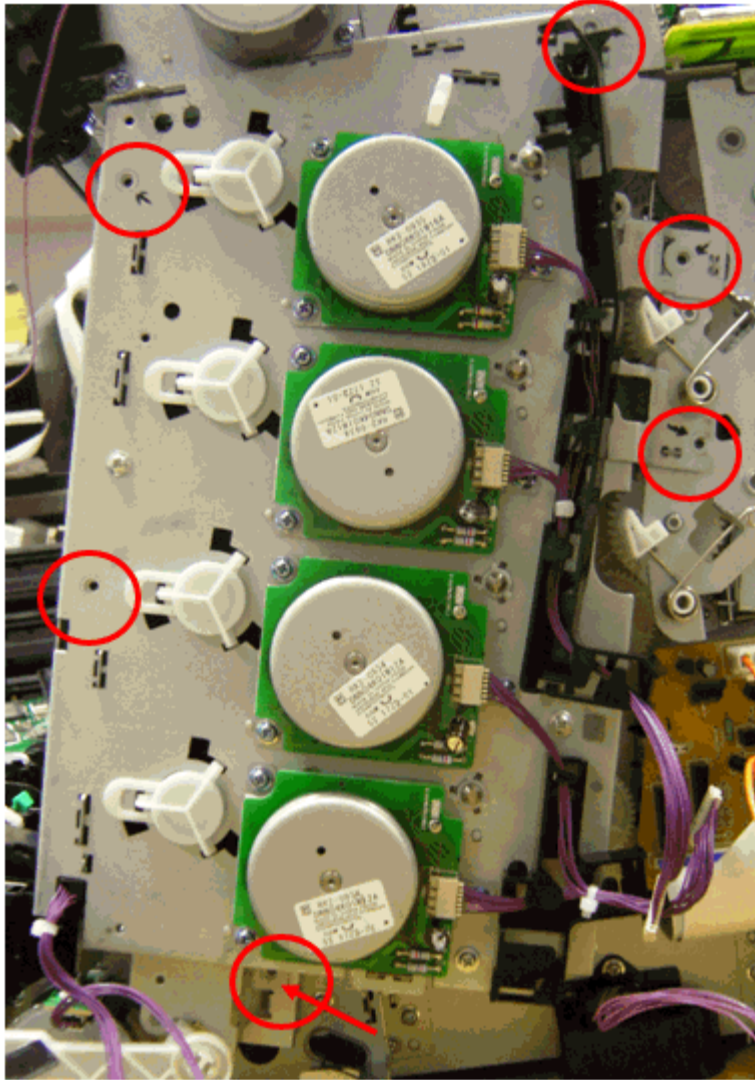
7. Remove the bottom cable harness. There is one screw at the top to remove. Hint: when you reinstall the guide, make sure that the rear locking tab is seated in the sheet-metal chassis. (See page 120 - 121 in the service manual). It may be necessary to disconnect the white door latch from the front door. (Notice the red arrow call-out).



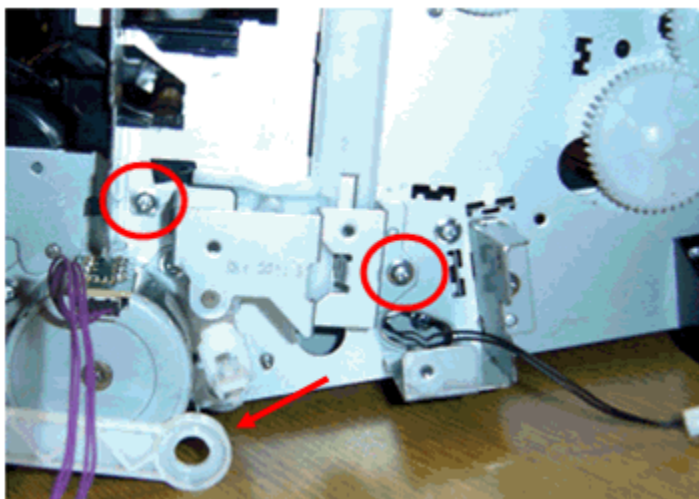
8. Remove the main drive assembly (MDA). There are six screws attaching the MDA to the chassis. Carefully note the locations of the screws to be removed.

**CAUTION:** Removing the incorrect screws could lead to opening up the MDA, requiring a unit replacement!

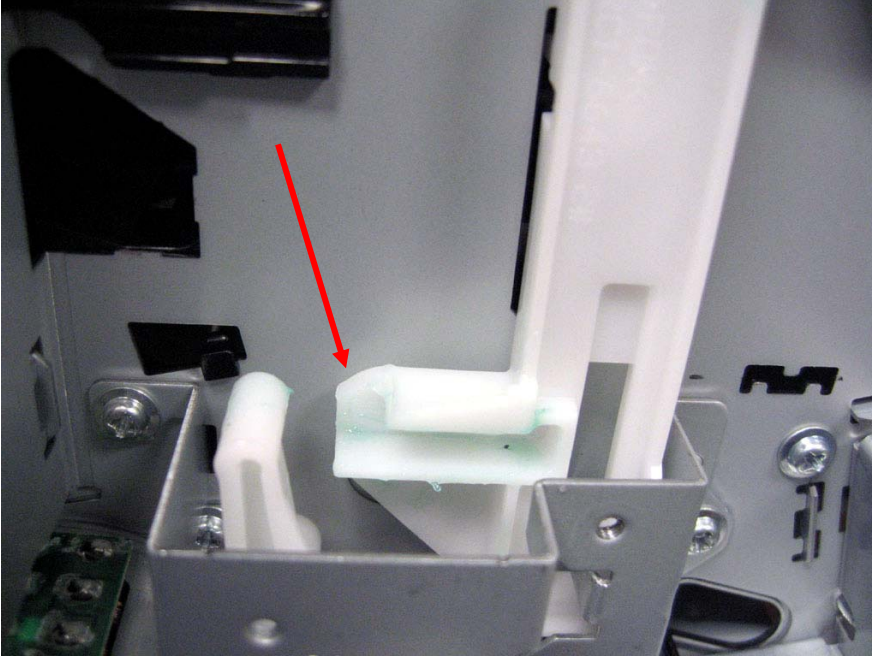
**NOTE:** Two gears may fall off, there are instructions in step 16 on how to align them during the re-installation process.



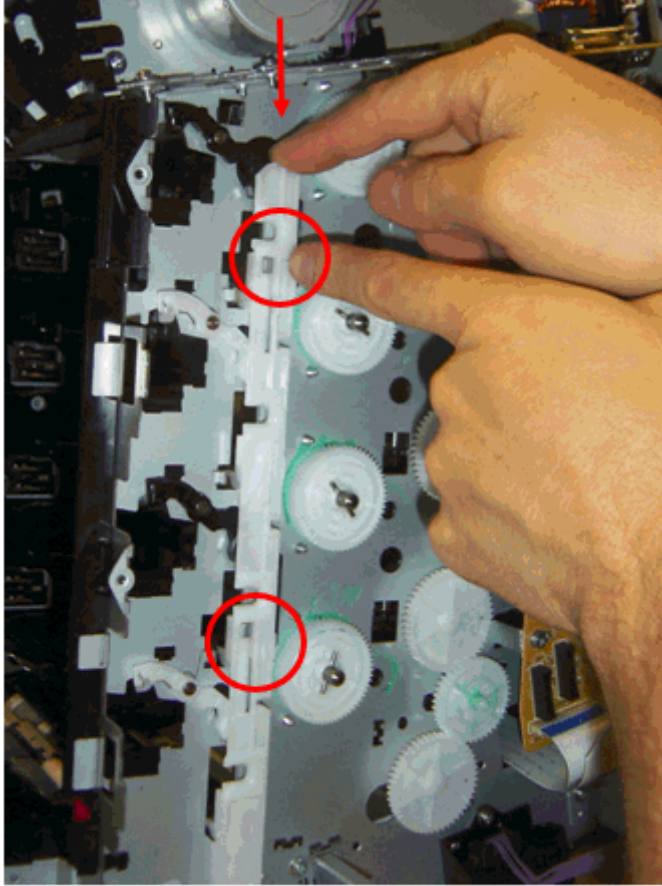
Remove the metal case by removing two screws. Remove the White Link Arm (see arrow in figure below)



9. At this point, check to see if the white slide lever is broken. If the lever is broken (see picture below), replace it with part number [RC1-6643-000CN](#).

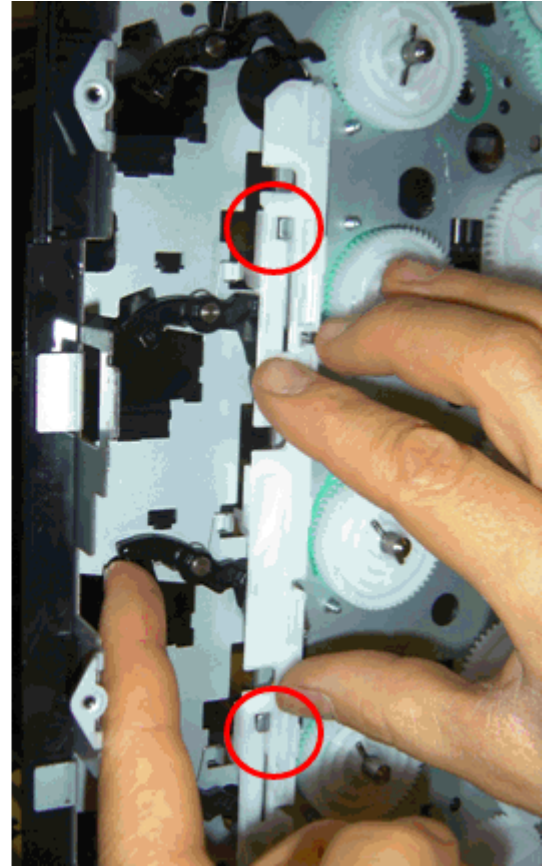
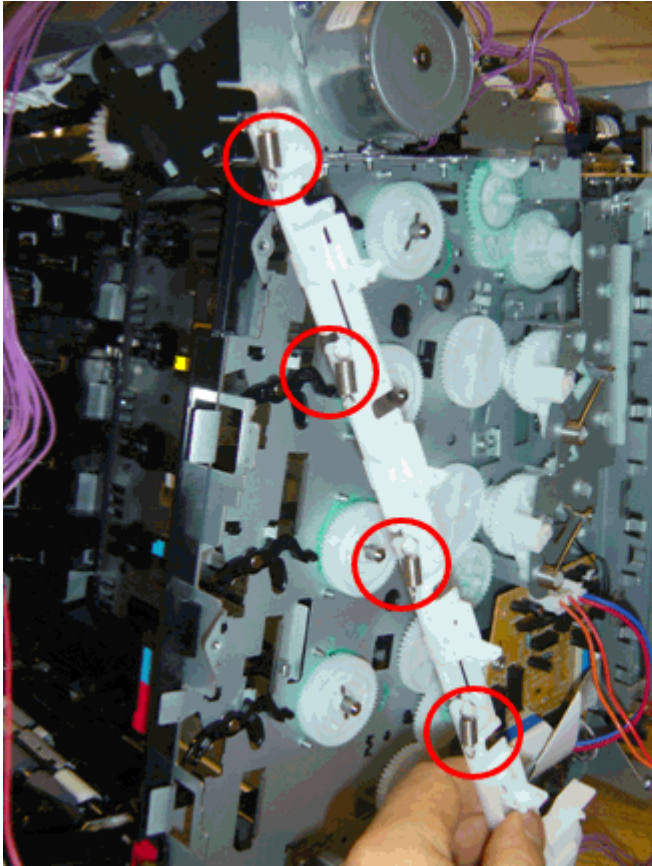


10. Remove the white slide lever by pushing down from the top to release it from the two tabs. Carefully remove the lever by pulling out, be aware that four springs are attached to this lever and the individual cartridge locks.

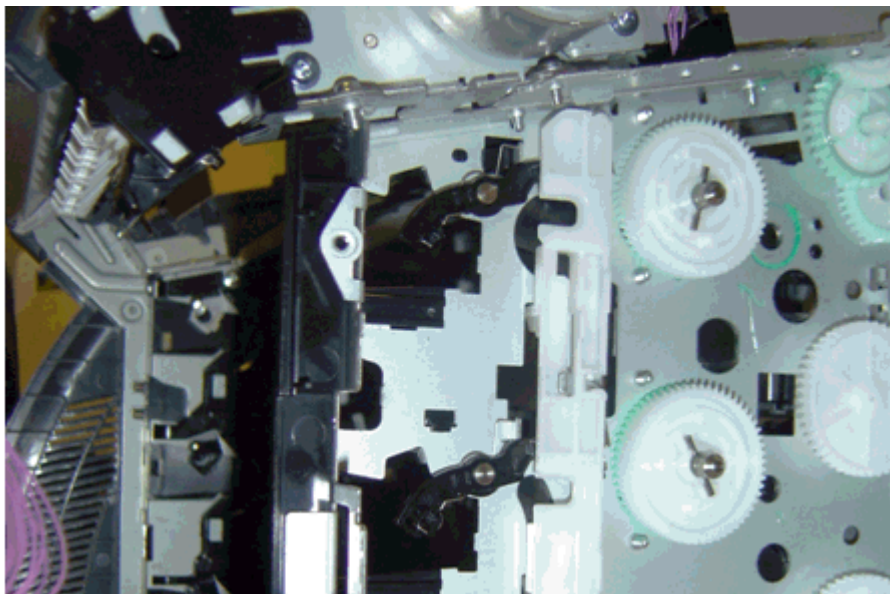


**To reinstall and perform the correct timing for different parts, follow these procedures:**

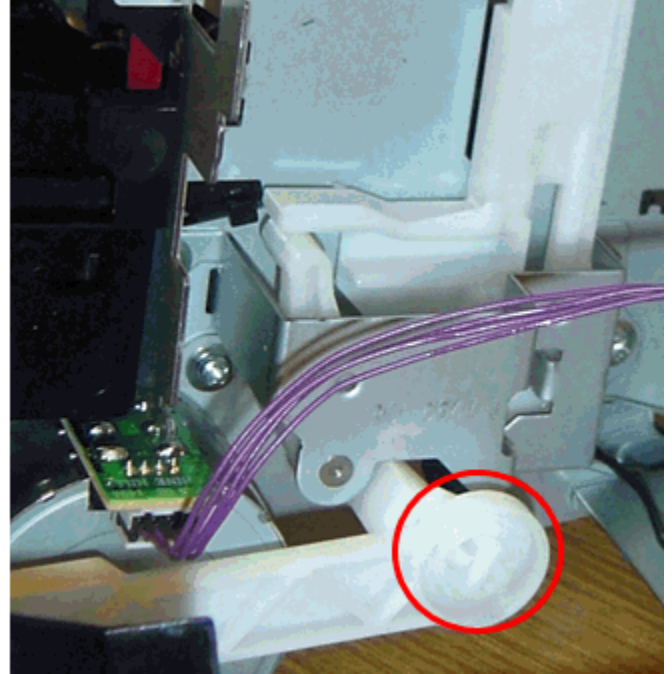
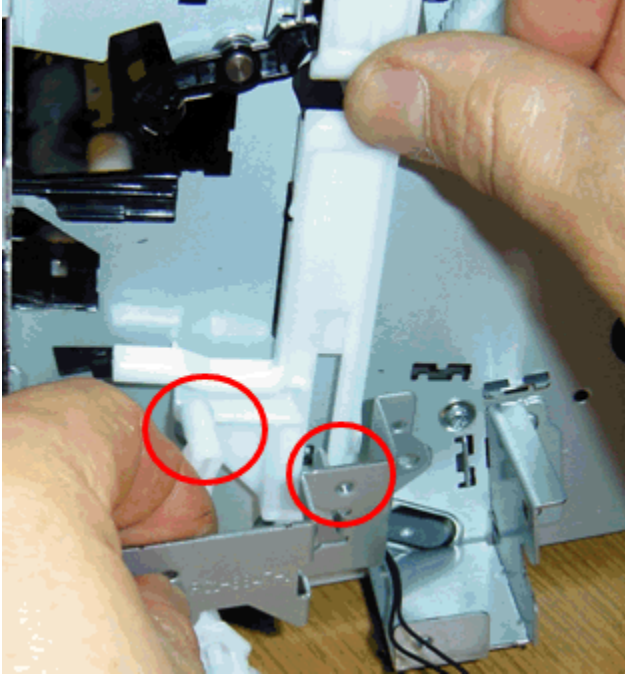
11. Attach one end the four springs to the white slide lever and install the lever back into the machine. (\*\* Attach the other end of the spring in step 14.) Place the white slide lever so the two metal tabs are in place (circled below), then adjust all the black cartridge locks to be “under” the tabs on the white slide lever. Bend the top of the white slide lever out to put the top black cartridge lock in place. Slide the white slide lever up when all the black cartridge locks are in place.



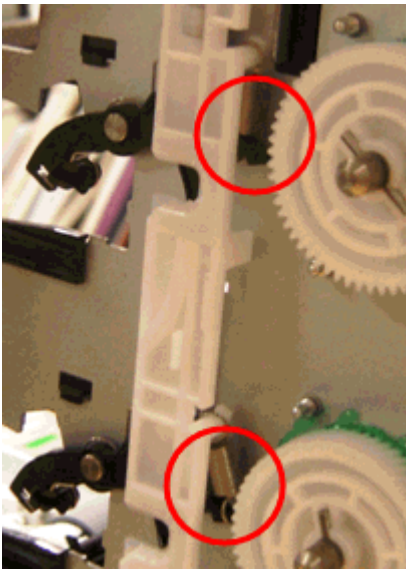
12. The slide lever and cartridge locks should look like the picture below when all is in place.



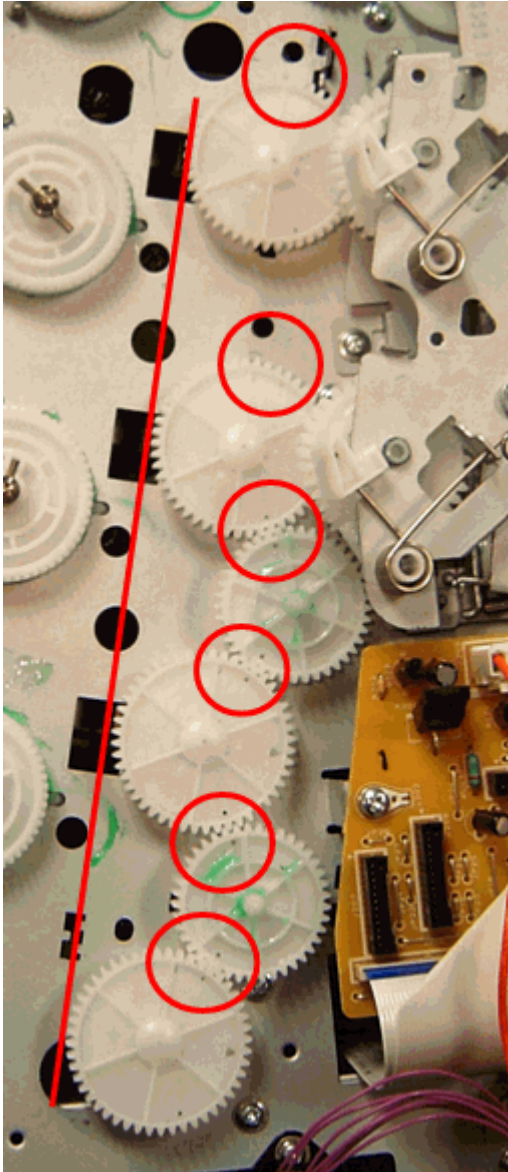
13. Lock the white slide lever in place by installing the metal case and white plastic piece. Make sure to insert the flange of the sheet metal in the slot on the sheet metal, and place the white shaft in the white slide lever. Reconnect the white arm to put tension on the white slide lever.



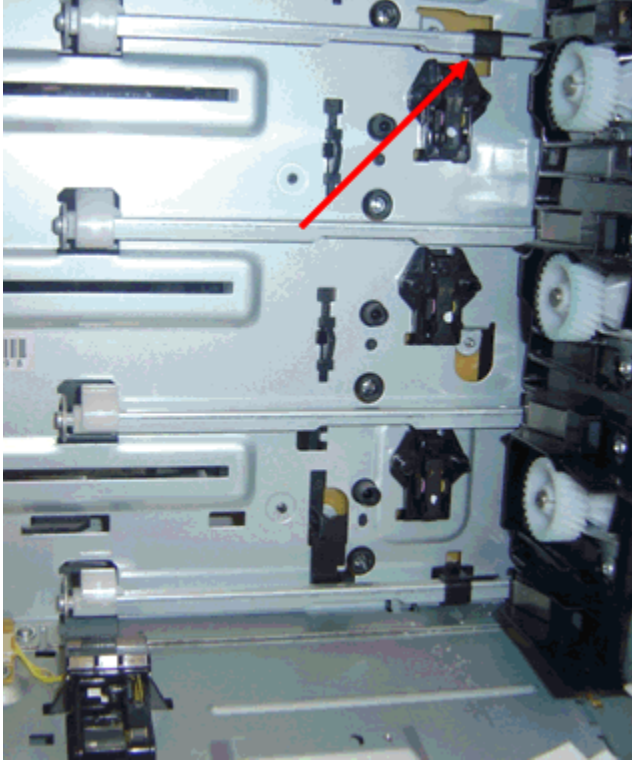
14. Connect the four springs on the white slide lever to each of the individual cartridge locks (start from the middle ones, it is easier that way). You will need needle-nosed pliers with pointed tips. The spring on the top is attached; the one on the bottom is not attached. Move the ETB guide to the up (vertical) position to help with removing and re-installing the Main Drive Assembly.



15. Make sure the gears are aligned properly before installing the main drive assembly. The four large gears should be in an approximate line (see picture). The top two large gears have an oval hole that aligns with a triangle stamped into the sheet metal. The two small gears to the right (they may fall off when removing the MDA); align with the three large bottom gears. Notice the two holes on each of the small gears align with the small holes of the large gears.



**NOTE:** If this procedure has been properly followed, in the back of the printer, you will see the 4 white cams that control the movement of developers (see figure below). On the top and bottom shafts, you can see a black plastic part that has a flag associated with it. The top flag is for the black cartridge, the bottom flag is for all the color cartridges. Also, note that the white cams are all at different degrees of rotation. This reduces the force required to drive the motors when turning the cams. Metal shafts should be oriented with the empty space downwards.

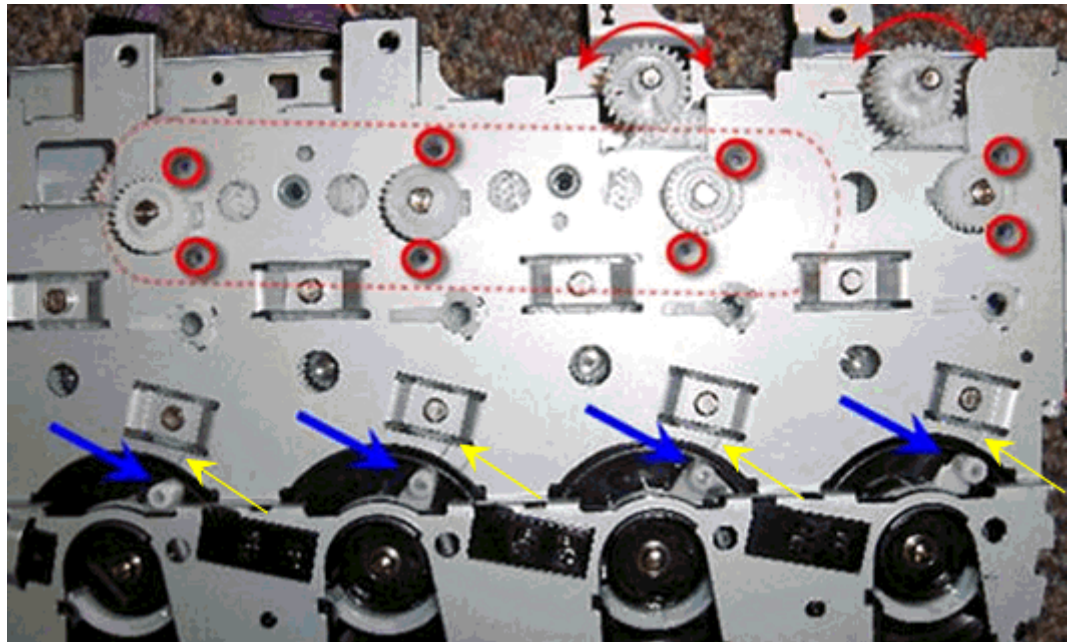


16. Prepare the MDA for installation. Two areas must be checked:

- a. Make sure that all the white shafts are pushed to the right (clockwise) when the MDA is oriented as shown below (See the blue arrows in the image below.). The shafts are aligned correctly in the picture.

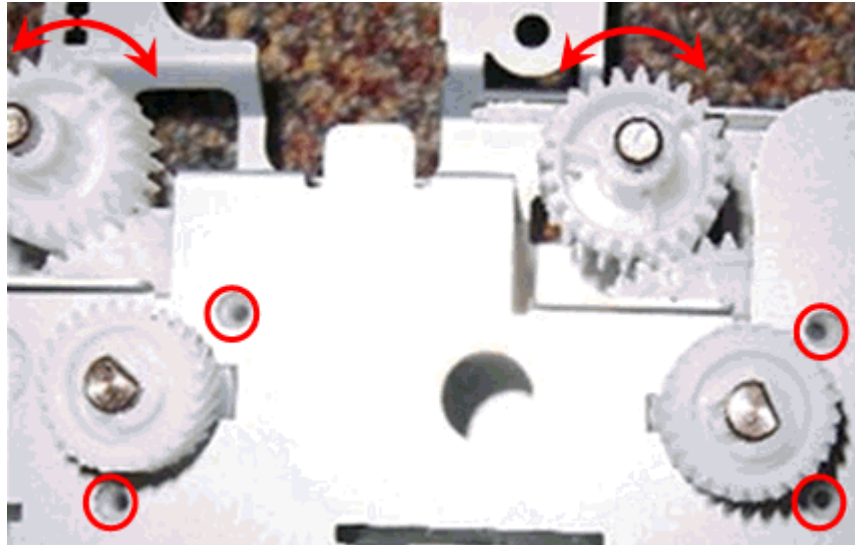
**NOTE:** It is important that the ETB guides are in the up position to make installation of the MDA smooth.

**Hint:** Rotate the shaft all the way to the right side first (as far as possible) then push them back a little to the left they will come to a hard stop. *Leave them there.* Look at the lines marks on the metal frame of the MDA (yellow arrows).



b. Next, pay attention to the area marked with the two red arrows, enlarged in the picture below. It is possible that during the handling of the MDA one or both of these two gears can be mis-positioned by accident. If this happens, one or more of the color planes could be missed during printing.

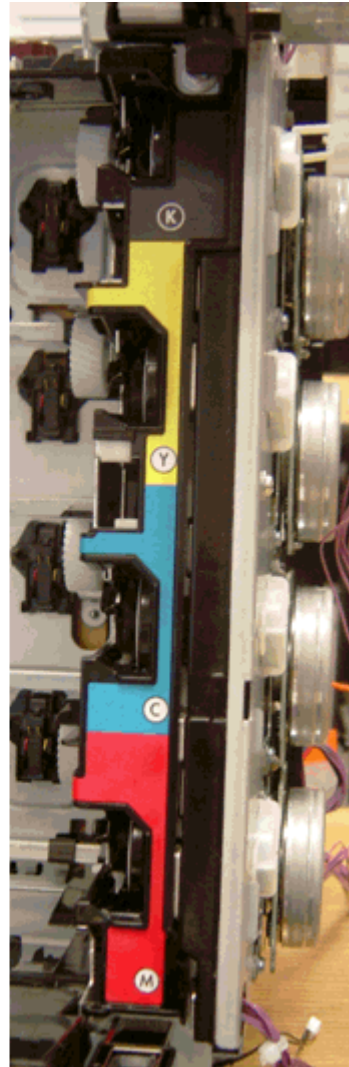
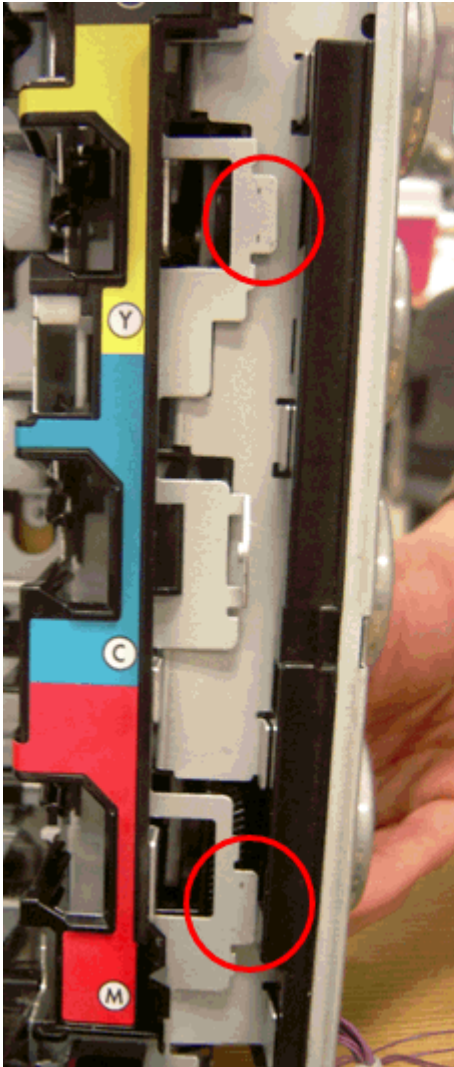
- ☞ The gear on the right controls the black cartridge; it drives the larger gears to right below it to the right.
- ☞ The gear on the left controls all three of the color cartridges; it drives all the remaining three larger gears, the one directly below it and the two to the left. (Indicated by the dotted oval in the picture above).



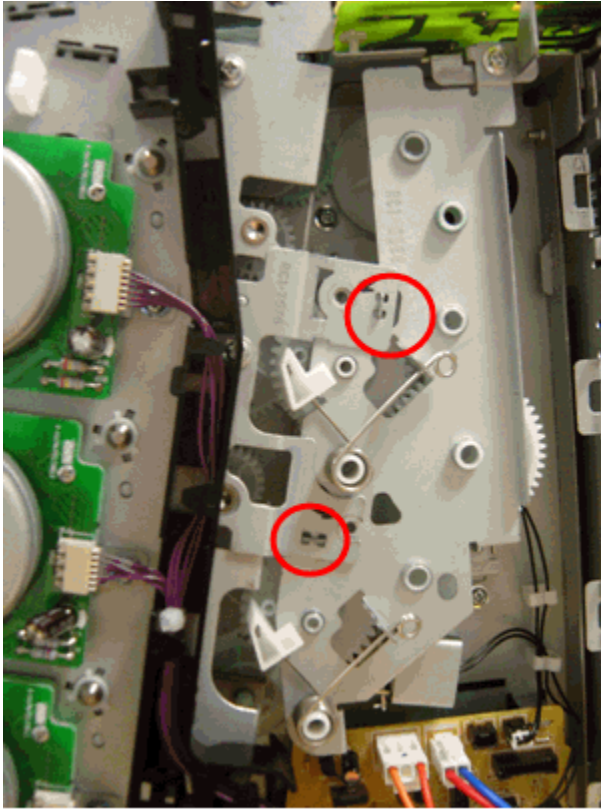
Check if they are properly aligned as follows:

Both gears can be rotated either way to properly correct the MDA gears alignment. The images above show how to verify if the gears are correctly aligned. The two holes from larger gears should both be showing as *illustrated by the red circles*. (The large gears are under the frame and driven by the smaller gears.)

17. With the above in alignment, install the main drive assembly. Start at the left side, inserting the MDA into the metal slots and rotate it into position. Place a screw in the upper right corner of the MDA to help keep it in place if the MDA doesn't fit flush when first installing it. This gives access with both hands to "jiggle" it into place.



18. Make sure the clips are pushed in and the MDA is seated properly.



19. At this point, reverse steps 7 on down. This will have the printer back up and running. Remember to correctly thread the cables through the wire harnesses properly!

**NOTE:** The connector to the top cover is different between the simplex and duplex models. The duplex has a larger connector, while the Simplex is much smaller.

If you experience the following issue after installing the new cartridge locks, here's how to troubleshoot:

AISS Main Drive Ass'y (MDA) rework possible side-effects	
Possible Failures After Rework	Troubleshooting
13.01.00/13.02.00	Check connection 1 (see #1 in Figure 1)
Close Top Cover/ Close Front Door	<ul style="list-style-type: none"> <li>• Check connection 4 (see #4 in Figure 1)</li> <li>• Check connection 3 (see #3 in Figure 1)</li> </ul>
Insert or Close Tray 2	Check connection 2 (see #2 in Figure 1)
<ul style="list-style-type: none"> <li>• 10.92.XX</li> <li>• Noise From Main Drive</li> </ul>	Check the cartridge bottom lock (see #5 in Figure 2) Remove the MDA and check all the Gears Alignment and

**AISS Main Drive Ass'y (MDA) rework possible side-effects**

<b>Possible Failures After Rework</b>	<b>Troubleshooting</b>
Assembly <ul style="list-style-type: none"> <li>• PQ-defect (i.e.: wrong color, Missing color pane, process CPR)</li> <li>• 54.XX Error</li> </ul>	correct as instructed. (for details, see steps 16 and 17 above and re-check the MDA alignment as shown in Figure 3 below)  For noise specifically, check the Cartridge Drum Sensors on the MDA (see Figure 4)
59.C0 Error	One of the two drive gears on the engine is NOT correctly inserted. Remove MDA and re-align gears as instructed (see step 16 above)

Figure 1: Troubleshooting connection checkpoints

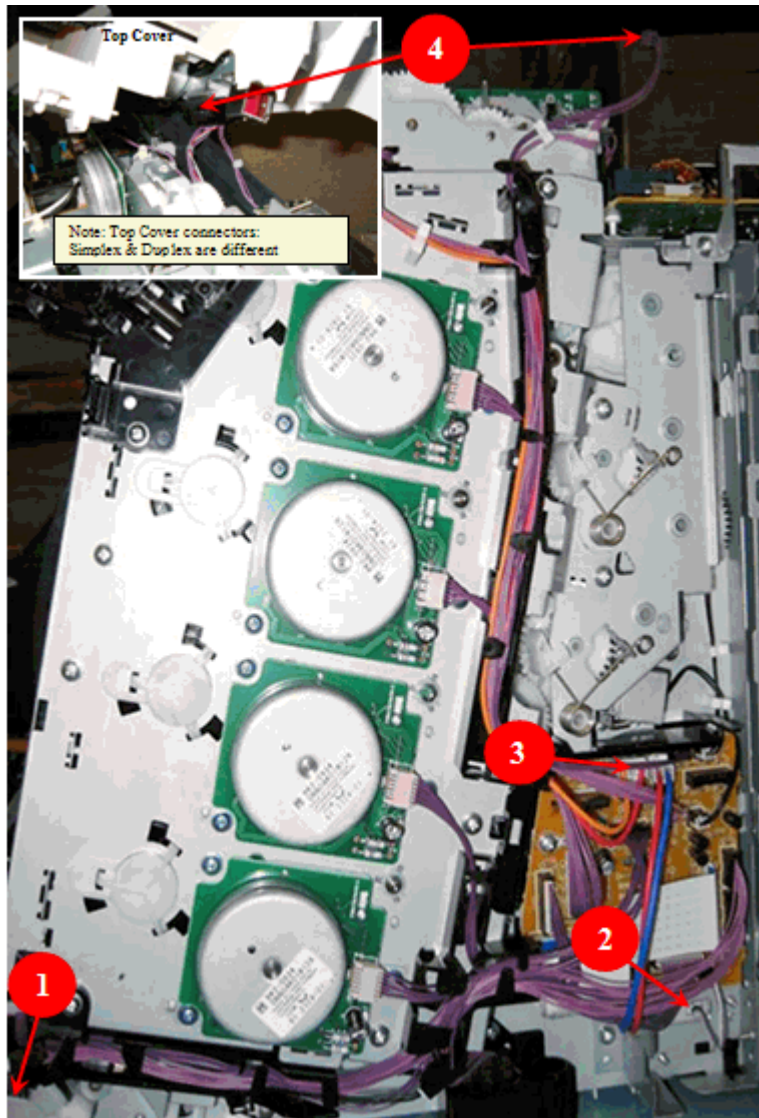


Figure 2: Troubleshooting lock position

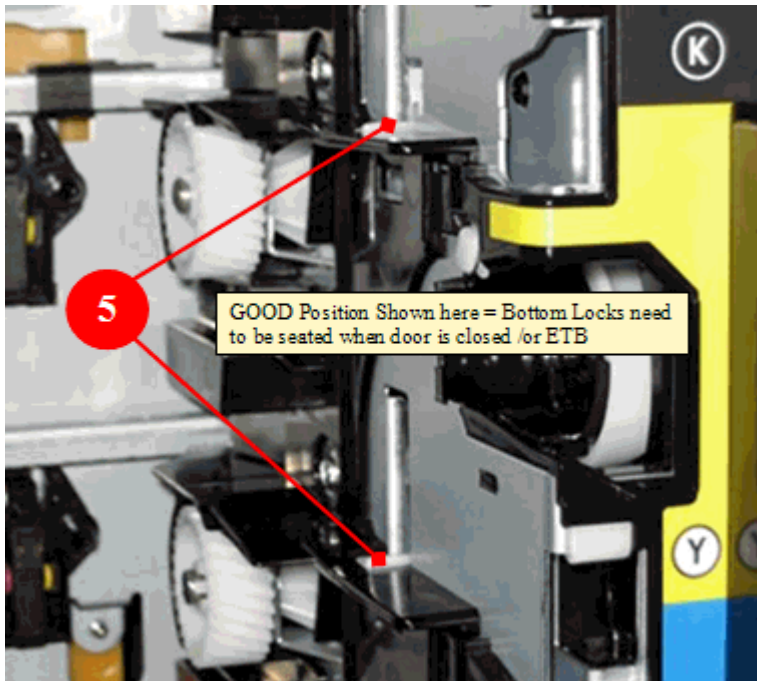
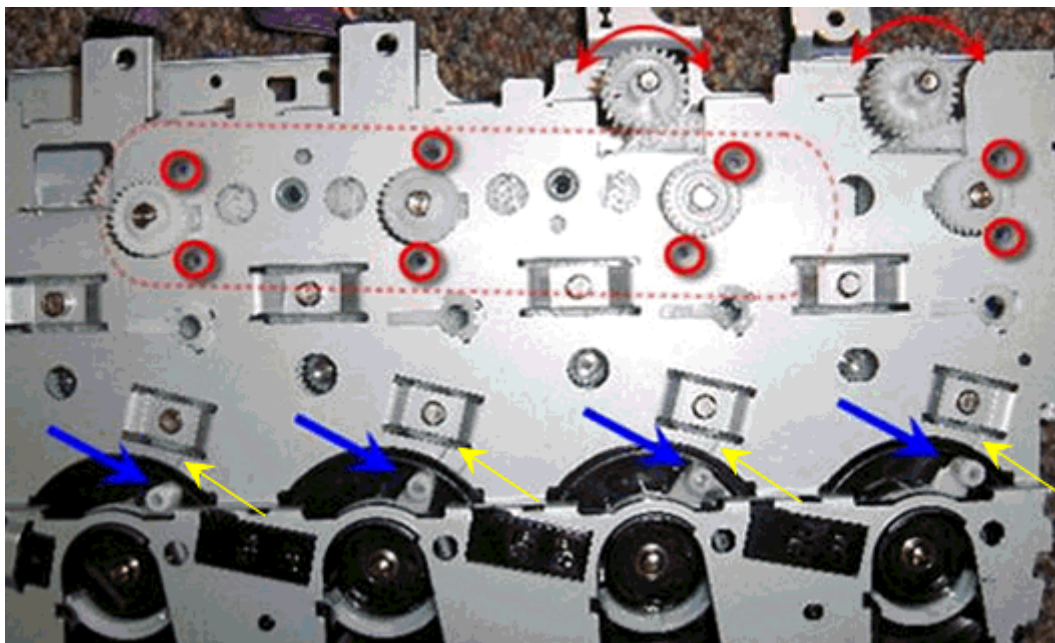
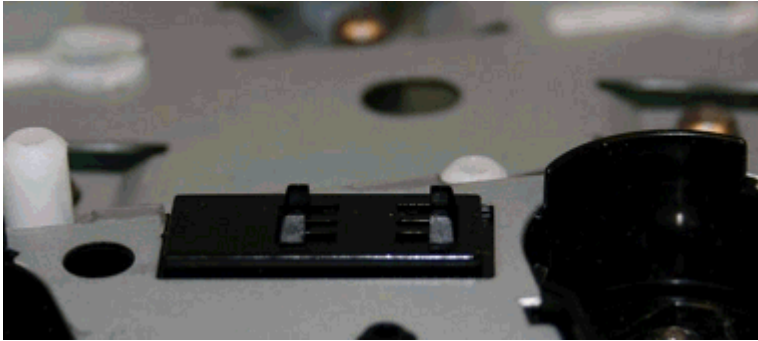


Figure 3: Troubleshooting gear alignment



**Noise-** Check the Main Drive Assembly to see that the cartridge drum sensor is correctly seated. See the picture below for the proper orientation of the sensor. There are 4 of these (one per drum) on the MDA.

**Figure 4: Troubleshooting cartridge drum sensor**



**Document Attributes**

**Product Models:** CLJ3800 models, CLJ3600 models, CLJ3000 models

**Product Numbers:** Q5981A, Q5982A, Q5983A, Q5984A, Q5986A, Q5987A, Q5988A, Q7533A, Q7534A, Q7535A, Q7536A