



Fading Red Tones on Color LaserJet 2600s

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HP Color LaserJets 2600n, 1600, and 2605 share the same basic Canon engine design. One aspect of the design brings the common problem of scanner optic degeneration due to dust buildup on mirrors and lenses. Since the most vulnerable mirror reflects its laser beam to the magenta toner cartridge, red tones are the first to show fading. Colors shift: purples turn blue and oranges turn yellow.

Fading reds, like death and taxes, are to be expected sooner or later—sooner in dirty environments. HP has not documented a cure. Its service literature does not cover removing, let alone cleaning, the laser/scanner assembly. Nor does HP sell replacement units.

The best test for faded colors comes from the "config report," printed from the control panel menus: Press Select (check mark key) twice, then the right arrow key twice, then Select. Blocks of color along right and left sides of the config report show fading if present.

The following procedure leads you through removing and cleaning the laser/scanner assembly, along with an explanation of why reds suffer first, followed by yellow, cyan, and finally black.

Removing printer covers

NOTE: Removing left and right printer covers precedes removing and cleaning the laser/scanner assembly. For efficiency and professionalism, place screws removed with the items in some logical way.

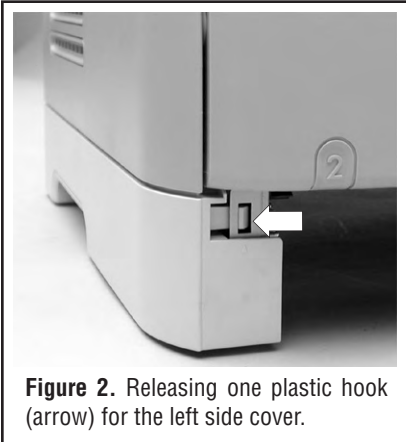
Removing the left side cover

1. Remove one 3-mm silver screw from the hand hold of the left side cover, shown in Figure 1.



Figure 1. Removing the left side cover screw (circled).

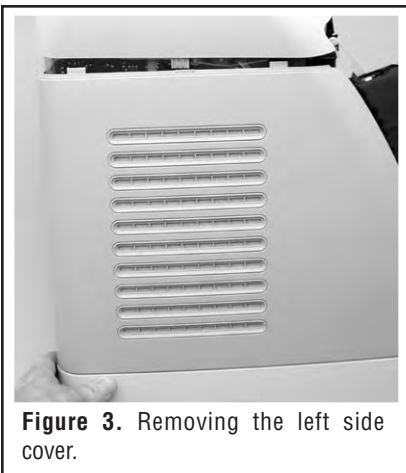
2. Release one plastic hook from the left front corner as shown in Figure 2.



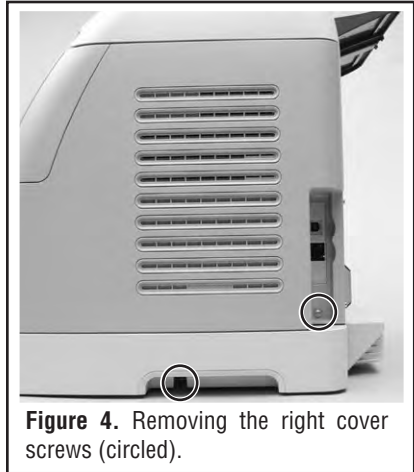
3. Pull the bottom of the left side cover away, then lower the cover from the tabs along the top edge as shown in Figure 3.

Removing the right side cover

1. Remove two 3-mm silver screws,



one from the hand hold of the cover and the other below the network port, each shown in Figure 4.



2. Open the front door.
3. Twist the front edge of the cover forward and outward to free the cover as shown in Figure 5.



- Lower the cover from the tabs at the top, free of the printer.

Removing the rear cover

- Remove the paper cassette.
- Pull the face-down extension out and away as shown in Figure 6.



Figure 6. Removing the face-down tray.

- Squeeze together the sides of the paper cassette flap at the rear of the printer and remove the flap.
- Remove nine silver screws, circled in Figure 7, from the rear cover.
- Pull the rear cover out at the bottom and off.

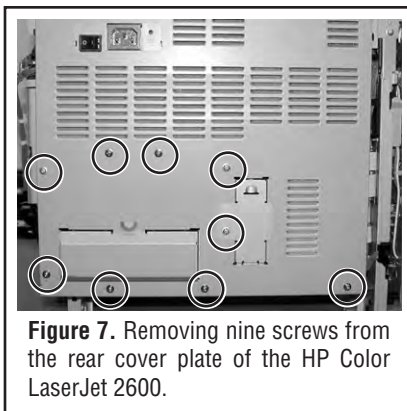


Figure 7. Removing nine screws from the rear cover plate of the HP Color LaserJet 2600.

Removing the laser/scanner assembly

- Unplug all wire plugs from formatter and DC controller *except* those with "no-no circles" over them, as shown in Figure 8.

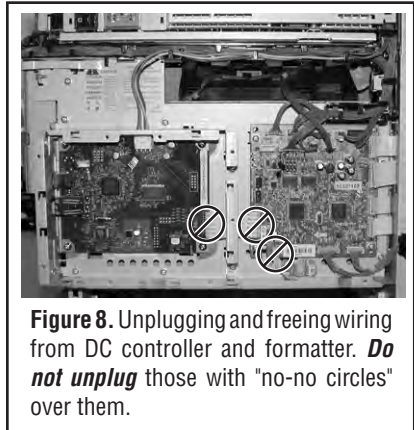


Figure 8. Unplugging and freeing wiring from DC controller and formatter. **Do not unplug** those with "no-no circles" over them.

- Work all wiring cables unplugged in Step 1 free from the DC cable holder (upper right) and upper cable holder along the top edge of the shield plate, as shown in Figure 9.
- Remove the DC cable holder, circled in Figure 9. Arrows in the figure show where to probe the retaining hooks for removal.
- Shift the upper cable holder, shown in Figure 10, left and pull the holder free and out.
- Remove 11 screws, circled in Figure 11, securing the shield plate. Remove the plate with formatter and DC controller.

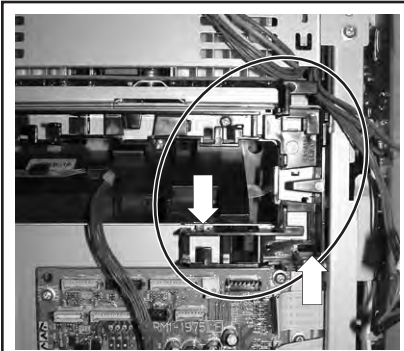


Figure 9. Removing the DC cable holder (circled) from the shield plate. Arrows indicate the plastic hooks to probe. Pull downward to remove holder.

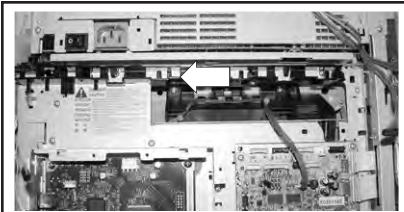


Figure 10. Removing the upper cable holder by shifting it left and out.

10. Unplug two flat wiring cables, indicated by arrows in Figure 12, from the right side of the laser/scanner assembly.
11. Tip the printer up high enough to remove the bottom left laser/scanner screw, circled in Figure 12.

NOTE: For whatever reason, HP (Canon) did not install a screw at the lower right hole of the laser/scanner assembly.

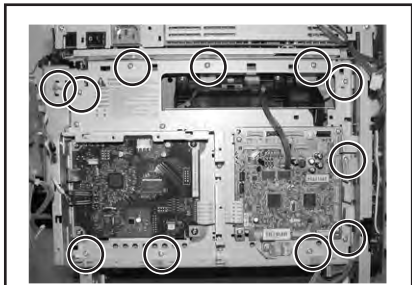


Figure 11. Removing 11 screws from the HP Color LaserJet 2600 shield plate.

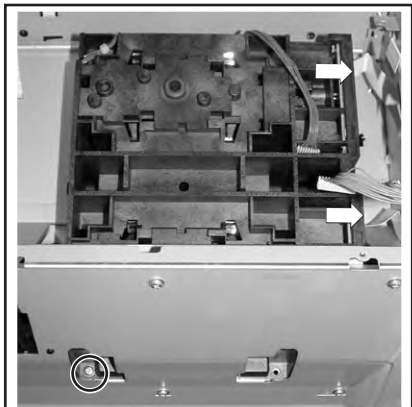


Figure 12. Removing one screw from the bottom left of the laser/scanner.

12. With the printer seated normally, remove two screws, circled in Figure 13, at the top of the laser/scanner assembly.
13. Remove the laser/scanner assembly.

Cleaning scanner optics

1. Turn the laser/scanner assembly over and remove the shutter spring, shown by an arrow in Figure 14.

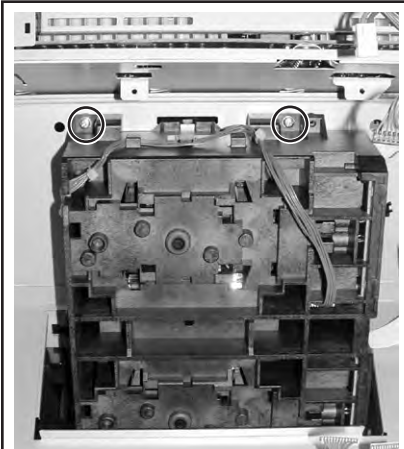


Figure 13. Removing two screws (circled) from the top of the laser/scanner assembly.

2. Remove one 3-mm, black self-tapping screw, circled in Figure 14, from the laser/scanner cover.

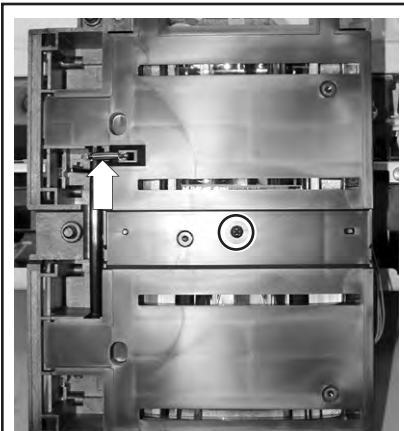


Figure 14. Removing the cover of the laser/scanner assembly. The arrow indicates the shutter spring and the circle, the cover screw.

3. Remove the laser/scanner cover, noting the two under lapping plastic tabs on the left side.
4. Using a powerful light source, observe the scanner optical lenses and mirrors shown in Figures 15 and close-up in 16.

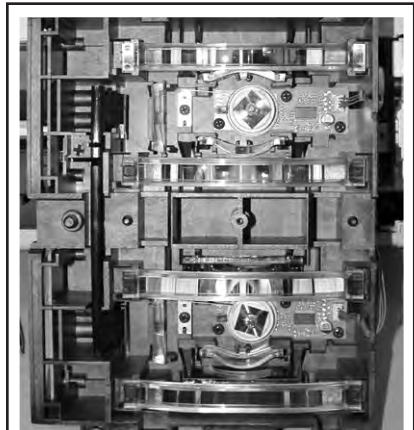


Figure 15. Internal scanner mirrors and lenses.

CAUTION: Cleaning scanner optical mirrors and lenses must be done very carefully, avoiding applying solvents unless absolutely needed. Never applying solvents to plastic compensating lenses. Use clean dry cotton swabs followed by compressed air. Avoid forcefully rubbing delicate optical surfaces.

5. Using clean cotton swabs, carefully and gently stroke the mirrors

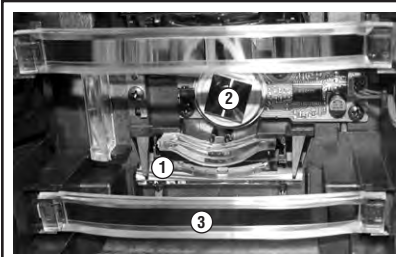


Figure 16. Scanner beam-to-drum mirror (1) [four in all], square polygon mirror (2) [two in all], and compensating lens (3) [four in all], three critical areas to clean for each of four areas of the scanner.

and lenses shown in Figures 15 and 16. Using a bright light, re-examine the surfaces for dust and treat the surfaces accordingly.

6. Reassemble the machine in reverse order with the following precautions:

Assembly precautions

- Ensure that the laser/scanner assembly seats squarely and completely in place before installing and tightening its screws.
- Ensure that the shield plate seats fully and correctly in its slotted keyways before tightening its mounting screws.
- Ensure that all wiring plugs are firmly seated.
- Avoid touching contacts of flat cable harnesses and ensure they are squarely fitted into their connector blocks before

pushing them fully in place.

Further explanation

Figure 17 shows the relationships of the laser/scanner assemblies to toner cartridges of four HP Color LaserJets. In each model, exposed beam-to-drum mirrors are shown in relationship with the toner cartridges stacked in respective order.

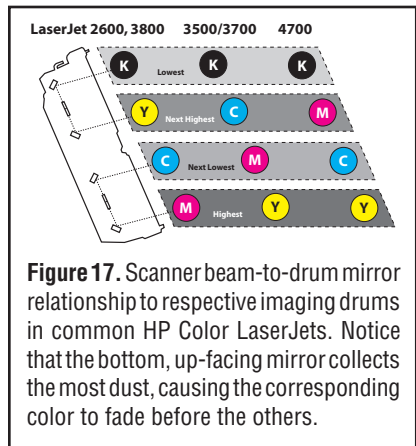


Figure 17. Scanner beam-to-drum mirror relationship to respective imaging drums in common HP Color LaserJets. Notice that the bottom, up-facing mirror collects the most dust, causing the corresponding color to fade before the others.

Shades show the dust collecting potential for each beam-to-drum mirror from highest to lowest, based on their respective position and orientation. Notice that black cartridges top the stack in all machines. The 2600/1600/2605 and 3000/3600/3800 Series show the same order, but otherwise the color cartridge order varies. In such configuration, oranges go yellow, purples go blue.

Those with yellow cartridges at the bottom, oranges go magenta and greens become more cyan.