



# TECHNICAL DOCUMENT

## Disassembly Instructions

### EP (CX style) & PC-2000 Style Toner Cartridges

These instructions cover the disassembly of the EP (HP 92285A) and the PC-2000 (Canon F41-2302) style toner cartridges. These cartridges are the original "all in one" cartridges that started the toner cartridge re-manufacturing industry. Although these two cartridges may look similar, they are completely different, and are not interchangeable. The EP cartridge has EP printed next to the color wheel, and the PC-2000 cartridge has PC printed next to the color wheel. The toners used in these cartridges are totally opposite, the EP cartridge uses a negatively charged toner, and the PC cartridge uses a positively charged toner.

The purpose of this disassembly is to vacuum out toner that will have spilled inside the cartridge during shipping and/or rough handling, to clean the debris cavity and to fill the toner supply housing with new toner. The disassembly can also be used to examine the internal parts of the cartridge for possible damage should the printing of the cartridge be poor and not correctable by other means. It should be also noted that the Wiper Blades should be changed on the first cycle. The OEM Blades are failing prematurely, usually during the first cycle.

This procedure should be read in it's entirety before proceeding with the actual recycling process.

#### Required Tools

The tools needed to successfully and safely recharge toner cartridges are as follows:

Toner approved vacuum. The Atrix HCTV toner vac, -OR- our Atrix AAA portable vacuum.

Some type of approved toner vacuuming system is important because toner consists of very fine particles that will pass right through a normal vacuum filter, and blow out the exhaust, creating a real mess.

T-10 tamper proof Torx bit

A small screw driver (Common Style)

A Phillips head screwdriver.

Curved Needle Nose Pliers

Pin Pulling Pliers (PP-3) or (PP-900) Screw Starter

#### Supplies Needed

Black toner (1138 for EP, and 9170 for the PC)

Sealing strip

Seal insertion tool (IT-1), Only necessary if using the SS-CXOP seal

Black Poly Bag

Felt Wand

Wiper Blade

Long Life Drum (DCXG for EP, DPC2000G For PC)

Recovery Blade (RB-CX) [Optional]

### Prepare Work Area

- 1) Before proceeding with the following procedure you should have a work area available with approximately 4' x 3' clear space. It should be covered with some disposable paper since toner will spill on this area. It is recommended that brown craft paper be used and taped to the work area. This will hold the paper in place when trying to vacuum toner from the paper.
- 2) An empty garbage can with a strong plastic liner should be adjacent to the work area to empty used toner. It should be at least 2' deep to prevent toner from clouding up and over the top of the bag during disposal.
- 3) Have a few rags available and some disposable paper towels in case of toner spillage. TM-1 Toner Magnet cloths are perfect for this.
- 4) The work area should be capable of being ventilated, if by accident toner becomes dispersed into the air. An exhaust fan in one window is recommended for ventilation.

If the circulation of air in the work area room is combined with other rooms in the building, toner dust may be carried into the other rooms. A separate and isolated HVAC system is recommended for the work area room.

### Disassembly

- 1) Vacuum the exterior of the toner cartridge.
- 2) Turn the cartridge up side down (label side down) and turn so the end of the cartridge which has the RED-Green Indicating Wheel faces towards you. Remove the two Tamper Proof Torx screws which hold the side cover in place using the T-10 Torx bit. Remove the side cover by pressing up on the tab with a small screw driver and rolling the top of the cover toward you.

**Important:** Before proceeding with the next section it is recommended that you draw a picture indicating the placement of various parts you will disassemble, or have another cartridge available for reference during re-assembly.

- 3) Remove the two springs, one on the left side and the other at the lower center of the end of the cartridge under the Side Cover just removed. Remove the Red-Green Indicating Wheel assembly by pressing in on the two interlocking tabs on either side of the assembly with a small screw driver and pull the assembly towards you. The tabs are located on either side of the seam where the clear cover meets the black cover.
- 4) Remove the Phillips head screw located toward the lower section of the Metal Bracket Assembly , (on some older style cartridges their are two Phillips heads screws to remove.)
- 5) Pull the center Metal Bracket Assembly straight out towards you. This is a small metal bracket with a center pin which rides inside the photo-conductive drum. A 12" Long Metal Plate from under the cartridge will also be removed with this assembly.
- 6) Remove the plastic Photo-conductive Drum Cover Release Lever arm to the right of the center assembly just removed.
- 7) Pull out three plastic Pins by inserting either the screw starter (PP-900), or the Pin Pulling Pliers (PP-3), into the center of the pin and then pulling the pin out. One large pin and two small pins each with a hole in the center must be removed. Be careful not to damage these Pins since they must be reused.
- 8) Turn the cartridge around and remove three more identical Pins on the opposite end of the cartridge.

### Remove Debris Cavity

- 1) Turn the cartridge until the handle faces you, the label side should still be facing down. Make sure that the Photo-conductive Drum is as far to the right side as possible.
- 2) The Debris Cavity is the cavity closest to you and will be removed first. Pry up on the right side of the Debris Cavity using a small screw driver but do not force it up. It should be free and will move easily. After the right side is up about 2 " you can move the entire Debris Cavity to the right and out of the cartridge.

## EP (CX style) & PC-2000 Style Toner Cartridges (Continued)

### Remove Photo-conductive drum

1) Pull the Photo-conductive Drum Cover towards you and out of the way of the photo-conductive drum. Remove the drum by sliding the drum towards the left and then straight up holding both ends of the Photo-conductive Drum. Do not touch the Photo-conductive Drum surface if possible and do not wipe it with a dry cloth. Carefully vacuum the drum surface, being very careful not to let the Vacuum hose come in contact with the Photo-conductive Drum. Blow off any remaining dust from the Drum using a can of compressed clean air.

**CAUTION:** Be very careful not to tilt or shake the can while spraying, as the propellant may spray out of the can, and possibly ruin the drum.

2) Place the Photo-conductive Drum in a soft lint free cloth and then into a dark colored bag or cover from bright light by some other suitable means. Again, do not rub or wipe the Photo-conductive Drum with a dry cloth as this may scratch its surface. If there is any matter on the drum that must be cleaned off, use 99% pure Isopropyl alcohol (FR-8 Film Remover) and a soft cotton pad (PW-96) to lightly wipe the drum surface. Always handle the Photo-conductive Drum with the utmost caution, since if damaged it is costly to replace.

### Remove Toner Supply Housing

1) Remove the Toner Supply Housing from the cartridge by lifting straight up and out.

2) Vacuum out the remaining Cartridge Housing being very careful around the corona wire area. This area is protected by a metal mesh plate on EP (CX style) cartridges which looks like a criss-cross fence. Do not use a cotton swab on this plate since the cotton will get caught in the criss-cross areas. There is no plate covering the corona wire on PC cartridges.

This wire can be cleaned by using FR-8 Film Remover and a Cotton Swab (CT-100) carefully running it along the wire and wire guide. Then a can of clean compressed air should be used to blow any dust or toner left on the wire. Be certain to blow away from yourself and only after all heavy signs of toner have been removed. Always wear and use Eye and Breathing protective apparatus.

### Cleaning the Debris Cavity

1) Remove the two Phillips head screws on the out side surface of the Debris Cavity. These screws are the smaller ones and located on the plastic area.

2) Remove the two Phillips head screws on the Wiper Blade. Clean and place the two plastic and foam spacers aside. Discard the Wiper Blade.

3) Dump out the spent toner from this housing and vacuum the entire housing. It is not recommended that the OEM Wiper Blades be re-used, even for 1 cycle.

**NOTE:** Be very careful not to bend or otherwise damage the small thin recovery blade located next to the Wiper Blade. If this blade is bent down lower than the height of the wiper blade, toner will accumulate on top of the blade and spill into the printer. If the blade does get bent, it may be possible to carefully bend the blade up equal to or slightly higher than the Wiper Blade. If the Recovery Blade cannot be repaired, replace it with our part # (RB-CX).

### Cleaning the Toner Supply Housing

The toner supply housing consists of the toner supply, magnetic roller and doctor blade which mounts directly above the magnetic roller. The space between the magnetic roller and doctor blade is 0.010" and controls the thickness of the toner applied to the roller. The doctor blade has nylon spacers at each end which insures a proper gap setting. If this blade is removed and then re-installed the nylon spacers must be held in contact with the magnetic roller when tightening the screws holding the doctor blade. If the spacers look worn or are missing use our GG-5 Gapping Gauge and set the gap at 0.010".

## **EP (CX style) & PG-2000 Style Toner Cartridges (Continued)**

Before cleaning the toner supply, first rotate the magnetic roller by hand and observe the layer of toner applied to the magnetic roller. The toner should form an even consistent layer of toner with no clumps or lumps showing. Should the layer of toner be thicker in some areas the magnetic roller should be cleaned using alcohol (FR-8 Film Remover). Always remove the roller for cleaning and make sure it is completely dry before re-installing.

8.1) Remove the fill plug on the end of the Toner Supply Housing. This housing contains the magnetic metal roller and the toner supply area. Dump the toner out of this housing and save or discard as desired. Vacuum the outside of the housing and the magnetic roller. Hold the vacuum hose to the fill hole and turn the roller a few times until the entire roller is clean. It is also a good idea to blow down both sides of the Magnetic Roller with a can of C-1270 Compressed Air while vacuuming to aid in the cleaning process. Be very careful not to damage the small clear plastic strips which ride on the end of the roller.

8.2) Insert the Seal SS-CX plastic sealing strip into the end of the Toner Supply Housing. Push all the way in and be certain good contact is made with the far end of the housing.

The sealing strip should seat approximately 1/4" into the far end. To be certain that it has seated correctly you can remove the Doctor Blade located above the magnetic roller. This will allow you to see inside the Toner Supply Housing. If you are using the SS-CX clear plastic seal insert it until the line across the tab is reached. When replacing the Doctor Blade be certain it is positioned close to the magnetic roller. The nylon bushings on either end maintain the proper gap between the Doctor Blade and Magnetic Roller.

If you are using the SS-CXOP seals, follow the insertion instructions that were provided with them. (Doc.# 1030)

8.3) Pour the new toner into the fill hole, and replace the fill hole cap. Make sure that the cap is fully seated, and that there are no leaks.

### **Replace Toner Supply Housing, Photo-conductive drum and Debris Cavity**

1) Place the Cartridge Housing in front of you with the handle towards you. Replace the Toner Supply Housing into the Cartridge Housing and replace the two larger size plastic Pins on each side of the cartridge. Push in part-way by hand. You can push these pins in all the way by using the T-10 Torx bit on the screw driver handle as a convenient push tool. The torx bit fits in the pin hole nicely.

2) Pull the Photo-conductive Drum Cover towards you as it pivots on each end. Remove the Photo-conductive Drum from the dark bag, and replace into the Cartridge Housing right side first. Keep the drum as far to the right side as possible. Be certain the gears mesh properly. Push the Photo-conductive Drum Cover over the Photo-conductive Drum.

3) Install the Debris Cavity left side first. Install the 4 small size plastic Pins two on each end. Push in part-way by hand. You can push these pins in all the way by using the T-10 Torx bit on the screw driver handle as a convenient push tool.

4) Turn the cartridge so the handle is to your right side and the end of the cartridge which has the springs faces you.

5) Lift this end of the cartridge up temporarily to insert the 12" Long Metal Plate into the opposite end of the cartridge and then hold it in place using your left hand on the cartridge and thumb on the 12" bar. Release the spring tension from the release lever on the Metal Bracket Assembly. Insert the pin of the Metal Bracket Assembly into the hole in the cartridge end and into the center of the photo-conductive drum. As the Metal Bracket Assembly is pushed in all the way it must interlock with the 12" Long Metal Plate you are holding in place. This bar 12" will pivot at either end of the cartridge.

6) Install the Phillips head screw which holds the pin assembly in place.

7) Replace the two springs and Photo-conductive Drum Cover Release Lever.

8) Reset Red-Green Indicating Wheel assembly by removing the clear cover and turning the indicating wheel CW when facing you. The small gear next to the wheel gear should be removed for this. The wheel gear has approximately a 1/4" notch, which serves as a starting point, and ending point. Do not force the gear past this notch, simply turn it to the opposite end and replace the small gear. Replace the clear cover.

9) Replace the Red-Green Indicating Wheel Assembly into the cartridge with the black side of the assembly facing 2 O'clock.

## **EP (CX style) & PC-2000 Style Toner Cartridges (Continued)**

10) Replace the Side Cover getting the tab to interlock first and then turning the cover up. Replace the two side cover screws.

11) Test the operation of the Photo-conductive Drum Cover by pressing on the Release Lever. The cover should move away from the drum with no binding.

12) When transporting the cartridge it is best to keep the toner supply area facing down and the debris cavity facing up. This is the normal position the cartridge is in when placed in its original box with the lettering in its normal vertical position.

### **Resetting the Counter on F910 FAX Machine Cartridges**

The counter for FAX cartridges is located toward the back of the cartridge. It is a small black plastic square held on to the cartridge by three screws. This counter must be reset or the fax machine will not print.

10.1 Take out the three screws from the counter and remove the counter from the cartridge.

10.2 Gently pry the cover off the counter and place aside.

10.3 Carefully pick up the white gear, and set the two stop pins underneath, and to the right side of the stop bar.

10.4 Carefully replace the cover, and re-mount to the cartridge.