

## E16/31 ENGINE

### Copiers:

PC -300, 310, 320,  
325, 330, 330L, 720,  
740, 745, 770, 775,  
785, and 790

### OEM INFORMATION:

#### E16

**Part #:** F41-8802-700

**Gram Load:** 80gm

**Yield @ 5%:** 1600 copies

**Copies per min:** 4 cpm

#### E31

**Part #:** F41-8801-710

**Gram Load:** 150gm

**Yield @ 5%:** 3100 copies

**Copies per min:** 8-12 cpm

### Tools & Supplies Required:

Needle nose pliers  
#1 Phillips screwdriver  
Damp cloth  
Vacuum or compressed air  
Conductive grease  
Anhydrous Isopropyl Alcohol  
Q-Tip™, or other cotton swabs  
Toner Hopper Seal  
Toner

**FUTURE  
GRAPHICS**

**Los Angeles**  
800-394-9900  
818-316-0656

**Atlanta**  
877-676-4223  
770-516-9488

**Austin**  
800-908-9892  
512-990-7220

**Miami**  
800-595-4297  
305-594-3396

**Toronto,**  
877-848-0818  
905-702-9916

# E16/E31

## Step 1

As furnished by the OEM, most E16, E31 cartridges are held together with plastic clips. However, if the cartridge has been remanufactured before, it may have three or more screws (usually Phillip head) on the outside that must be removed first.

(See photo #1, #2)

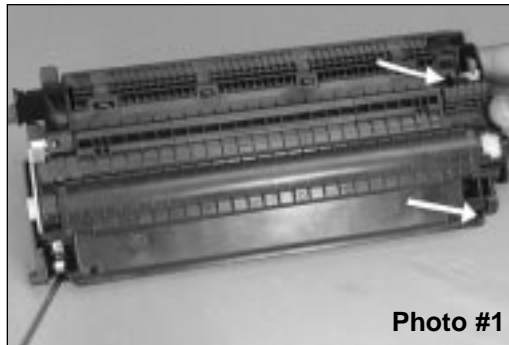


Photo #1



Photo #2

## Step 2

Place the cartridge, top down, on the worktable with the drum up and the drum gear to you left. Pry loose the four clips facing you starting with the one on the drum gear side. This can be done with a

small flat-blade screwdriver, taking care to avoid breaking the plastic cartridge clips.

## Step 3

Rotate the cartridge clockwise until the drum gear is away from you and pry loose the clip below the white plastic plate.

## Step 4

Next, rotate the cartridge so the drum gear is closest to you. Now pry loose the clip located under the metal axle. At this time also locate and loosen the clip in the recessed area to the right of the stirring paddle gear.

## Step 5

Now, work your way around the cartridge, carefully prying the two halves apart using your flat blade screwdriver. Do not separate the two halves until you complete the next step.

## Step 6

Pull the drum cover back and hold it in position using your thumb. Now, work your way around the cartridge again to make certain all your clips have been released. Separate the waste hopper from the toner hopper. Toner will spill everywhere.

**Step 7**

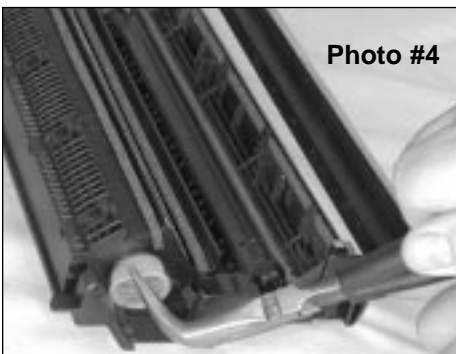
Remove the PCR (see photo #3) and set aside. Dump the toner out and clean all parts thoroughly with a vacuum or compressed air.



**Photo #3**

**Step 8**

The cartridge must be sealed before toner can be installed. Remove the fill plug (see photo #4) and clean the surface to be sealed with cotton swabs and alcohol.



**Photo #4**

**Step 9**

Remove the non-stick backing from the adhesive seal and lay it in place with the tail dangling away from the plug end (See photo #5).



**Photo #5**

**Step 10**

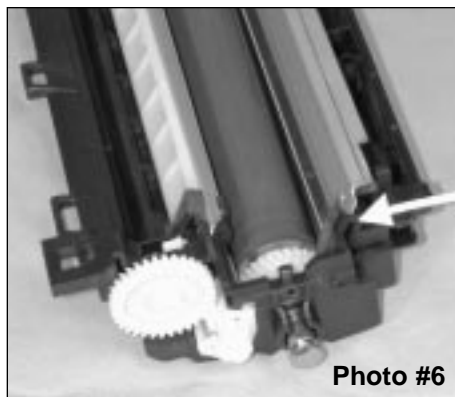
Fill the hopper with toner using a funnel cap and then reinstall the plug.

**Step 11**

Clean the PCR with a damp cloth and allow drying. Clean the PCR saddles with a cotton swab and alcohol and add a small amount of conductive grease, then reinstall the PCR. Set the toner hopper aside.

**Step 12**

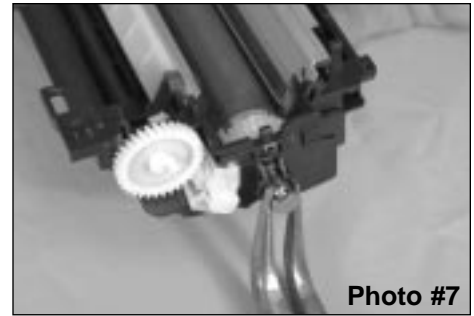
Using your #1 Phillips screwdriver, remove the two screws holding the wiper blade to the waste hopper. Now apply outward pressure towards the non-gear side of the waste hopper in order not to break the plastic guides (arrow) (See photo #6). Then remove the wiper blade.



**Photo #6**

**Step 13**

Remove the metal axle by inserting your flat blade screwdriver in the slot of the axle and using it as leverage against the side of the waste hopper. At this point you can use your needle nose pliers to grab the axle and complete the removal. (See photo #7)



**Photo #7**

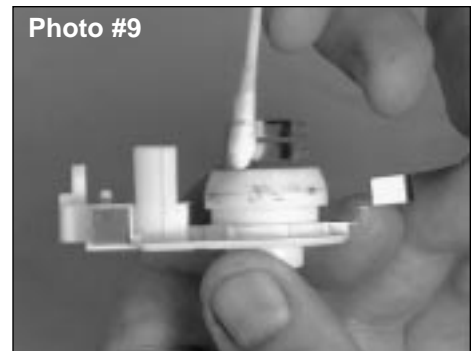
**Step 14**

Rotate the waste hopper end for end. Locate the white clip that is part of the large white side plate and loosen it. (This clip helps hold in place). Now, pry it off the large white side plate (See photo #8). Clean off



**Photo #8**

the old conductive grease from these surfaces and replace it with new conductive grease (See photo #9).



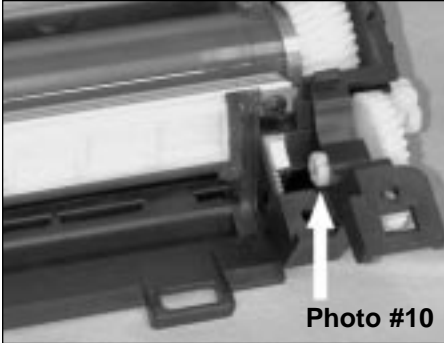
**Photo #9**

**Step 15**

Grasp the drum gear, lift it up, and pull the drum straight out. Wrap the drum in protective cloth or paper and set it aside.

**Step 16**

Remove the white stirring paddle gear (See photo #10).



**Photo #10**

Locate and remove the magnetic roller housing just forward of the stirring paddle gear. (This white piece has two small clips be careful not to break these off.) Use your flat blade screwdriver to release these clips (See photo #11). Inside you will find a small white bushing that is easy to lose



**Photo #11**

(See photo #12 - see arrow). Set both aside.



**Photo #12**

**Step 17**

Next, using your fingers grasp both ends of the magnetic roller and with a little upward force push the magnetic roller outward (See photo



**Photo #13**

#13). In this step try not to damage the lower mylar strip. Remove both magnetic roller bushings. Clean the magnetic roller with magnetic roller cleaner. Clean magnetic roller contacts with a cotton swab and alcohol (See photo #14). Clean the doctor



**Photo #14**

blade with a soft cotton cloth (See photo #15).



**Step 18**

Put the mag bushings back on the magnetic roller and install the assembly, gear end first, and snap it into position. Next, place the small white bushing in the magnet roller housing (See photo #12), then slide it into position on the end of the mag roller shaft and it will lock into position.

**Step 19**

Clean the drum with isopropyl alcohol, allow it to dry and cover it with padding powder. Press the drum down into position with the drum gear and magnetic roller gear meshed.

**Step 20**

Reinstall the large white side plate with its metal drum ground contacts and magnetic roller bias contact, aligning the flat side of the magnet shaft

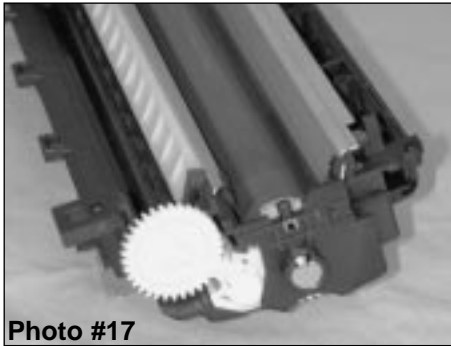


**Photo #16**

with the flat portion of the side plate opening (See photo #16). Reposition and snap both metal contact points into place.

**Step 21**

Reinstall drum axle on the drum gear side by pressing it flush with your thumb (See photo #17).



**Photo #17**

**Step 22**

Slide the wiper blade down into position (See photo #18) (tab in slot) and reinstall the two Phillips screws. Turn the drum 360° to remove excess padding powder.



**Photo #18**

**Step 23**

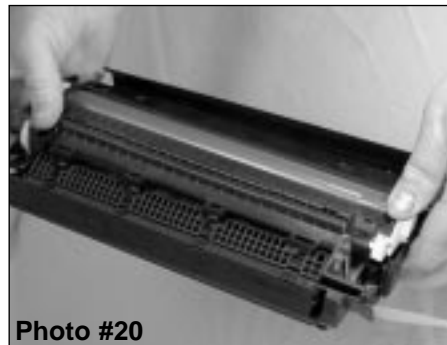
Returning to the toner hopper, make sure the tail end of the seal is tucked behind the fill plug (to hold it in position) as shown (See photo #19).



**Photo #19**

**Step 24**

Align the two halves, toner hopper and waste hopper, to each other and press them together until you hear it snap into place.



**Photo #20**

Review the cartridge with out tilting it up on end to see if you have completely snapped it together (See photo #20).

**Comparing Operating Specifications**

Cartridge Type/Model	OEM Ctg. #	CPM	OEM No. of Pages @ 5%	OEM Density	Toner Fill (grams)	Drum Diameter (mm)	Drum Length (mm)	PCR Rubber (mm)	PCR Shaft Length (mm)
E16 (F41-8802-700)	E16	4	1600	1.38	80	24	257	223	240
E31 (F41-8801-710)	E31	8-12	3100	1.40	150	24	257	223	240