

## Avoiding Dirty Photos!

**Disclaimer...** *I have cleaned my digital cameras countless times and never had a problem. However, I have no control over what you may do and therefore, I can not accept any responsibility for any damage you might cause to your camera. By using these products, you do so at your own risk*

When it comes to cleaning, our digital cameras are different in many ways from a film camera. The point & shoot type camera is sealed and requires nothing more than keeping the lens clean for which lens tissue and fluid or a microfiber cloth will do the job.

In an SLR camera however, a pivoting mirror covers the film or digital sensor until the moment of exposure. As you take pictures and change lenses, you introduce contamination from dust or even moisture such as rain into the mirror box area.

With a film camera, dust may have landed on the film, but once you advanced to the next frame, the dust was essentially “gone”. Another, more serious point of entry was the film transport area and camera back. A piece of grit or sand on the pressure plate could scratch the entire roll of film.



On a digital SLR, we no longer have the transport area and pressure plate to worry about. But we do have a “sensor” which took the place of the film. The sensor is fixed; it does not move. So any contamination landing on it remains there until removed.

The sensor is the most expensive and fragile element in your camera. Dust on the sensor shows up in your photos typically as a round, black out-of-focus spot, especially in sky areas. While you can “fix” these later in Photoshop, it is best to promptly correct the problem, or better, prevent it. Although we say “sensor”, we are actually cleaning a filter above the sensor.

**Every digital SLR WILL get dust:** It is just a matter of when.

To check your sensor, take a shot of a light colored object like a blue sky, smooth white wall, clean piece of white paper or even your laptop computer screen. Use a telephoto lens if possible, stop down to the minimum aperture and focus to the closest setting. Over-expose about 1 f-stop to keep the whites from turning gray. Examine the image in your browser or Photoshop. You may need to adjust the Levels to better see dust spots. If you are in the field, use the “magnify” function on your camera and scroll around. Any contamination will easily show up.

Before going out on any shoot, I give the camera and sensor a few shots of air to hopefully dislodge any dust particles. With the lens removed, the camera facing downward and the mirror raised, blow some air inside to dislodge dust. When choosing an air blowing device, keep in mind the fragile nature of the sensor. **Do NOT use canned air!** Canned air contains a propellant and chemical residue. If that gets onto the sensor, you could incur a large repair bill and may even ruin the camera. **So DON'T use it!**

A rubber squeeze bulb like the Giotto Rocket Blower is my first choice to produce a fairly strong stream of air. Regular use will usually keep the sensor clean. The longer dust sits on the sensor, the more strongly it “welds” itself down.

Obviously, you need to raise the mirror to access the sensor area. Some folks put the shutter in “B” and hold the shutter release down to keep the mirror up but this is not the best choice. If your shutter finger moves off the button, the mirror comes down striking the nozzle of the cleaning device and causing damage. Second, this method has current flowing to the chip, creating a static charge which can attract dust.

A better method is to use the sensor cleaning function of the camera. Check the instruction book to see how to perform this; it is often a “custom function”. This keeps the mirror up until you cancel the function. Also, current does not flow to the sensor. Be sure the battery is fully charged or use the AC adapter to prevent a sudden mirror drop. Don't let the nozzle tip contact the sensor or the mirror.

Despite your best efforts, you will eventually get something on the sensor which the squeeze bulb is not strong enough to remove. At this point, I might try a CO<sup>2</sup> dust gun. This device is quite a bit more powerful than the squeeze bulb but can not be carried on an airplane. This may resolve stubborn bits of dust. Be careful to just spray the sensor area and not the sides of the mirror box as the strong blast can dislodge lubrication from the mechanism and deposit it on the sensor.

The next level of cleaning involves “touching” the sensor. The SensorKlear pen works well, is good for up to 50 cleanings and can travel on an airplane. Another possibility is a D-SLR Brush. This special brush allows you to remove dust particles with no liquid. You “charge” the brush with air and it “sucks” up the dirt as you brush the sensor. It is inexpensive, quick to use and can also travel on a plane. As with the CO<sup>2</sup> gun, you must be careful not to drag lubrication oil onto the sensor. The brush should be periodically cleaned. The SensorKlear is somewhat “stronger” than the brush. I like to have both on hand.

Sooner or later though, the above methods will fail. Generally, you now need a “wet method” which uses methanol on a soft swab. The most cost effective wet method uses a rubber spatula, the “Sensor Wand”. You wrap it with an 8 cent PecPad (or ProPad) tissue and use UltraPure or Eclipse fluid. Talk about inexpensive! I now carry 3 SensorWands in my bag, plus extra PecPads and Eclipse. Technically, you can carry up to ½ oz of UltraPure or Eclipse on a plane. As I write this, Eclipse 2 has been announced for use on the Tin Oxide CCD's used by Sony and Canon's new 400D/Xti Rebel DSLR cameras, among others.

No matter what methods you choose, **cleaning materials must be with you at all times. Dust WILL occur during most important photo shoot...** So learn to deal with it.

### Recap: use a “stepped” approach, in this order

1. Frequently use blower bulb
2. Stronger air blast such as CO<sup>2</sup> gun (optional)
3. Brush device
4. SensorKlear Pen device
5. Wet cleaning should be last.

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See Also: [www.cleaningdigitalcameras.com](http://www.cleaningdigitalcameras.com)