

# Sensor Cleaning with the D-SLR Brush



Camera Check Point



# Using the D-SLR Sensor Cleaning Brush

**The DSLR Sensor Brush:** The two best tools recommended for the initial cleaning procedure are the D-SLR Brush and the Dust-Aid Platinum Wand. If you know that grit or fine sand grains have entered the camera, the brush is probably a **safer** first option as you want to remove as many hard particles as possible, before using other methods.

The **brush** consists of a set of very fine filaments, or hairs, which picks up loose dust particles from the sensor surface by static attraction. The brush barely touches the sensor as you whisk lightly across its surface, the static charge does the cleaning.

The following instructions describe the way we use the brush in our workshop, but you should also read the details included with the brush by the manufacturer.



**The FIRST step** in any sensor cleaning procedure is to **clean** the camera and lens **exterior**.

There is **no point** in cleaning the sensor only to have more particles get into the camera because of a dirty exterior.

**Camera and Lens Cleaning tips** are available on our main website, but in short, the idea is to make sure the **exteriors** of the camera and lens have been thoroughly cleaned **before** attempting to clean the sensor.

**Dust in the viewfinder:** Any bits you see as you look through the viewfinder **do not** appear on the image! They are specks of dust sticking to the surface of the focusing screen (which sits above the reflex mirror and prism), **not** the sensor.

If gentle air puffs do not shift them I recommend leaving them alone until such time the camera needs other service.

## The cleaning procedure:

Unfold a couple of fresh lens tissues on your working surface or mat. This is to place the brush on, to prevent contaminating it, as you proceed with the cleaning.

**Open the shutter in Sensor Cleaning mode** as instructed in your camera User Manual (*make sure the batteries are fully charged so the shutter will stay open long enough*).

Place the camera, **mouth down**, on the working mat or on some more unfolded clean tissues.

**In some cameras** you will notice that one side of the sensor has a wider border area. If this is the case in your camera I recommend that you sweep from the narrow edge side towards the wider edge. That way particles not removed on the first time will end up **outside the image area** and can often be puffed out.



**To use the brush** you must first **induce a static charge** onto the brush filaments. This is done by puffing **strong blasts of air** through the filaments, from **both sides**, several times.



The air blasts should be **strong enough** to **separate** the hairs as shown in the picture.

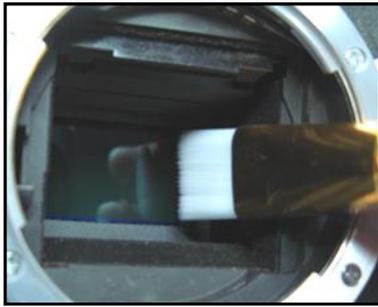
This will dislodge loose particles, remove any water molecules, and enhance the static charge of the brush.

A powerful **hand air puffer**, such as **Giotto Rocket Air**, provides good air flow without risk of contaminating the bristles. **Canned air should NOT be used**, unless the can is fitted with a filter, otherwise you risk contaminating the brush if any propellant is expelled.

Also take care **not to touch** the brush filaments with your fingers or the nozzle of the air puffer since any contamination will then be transferred to the sensor, making cleaning much more difficult and time consuming.



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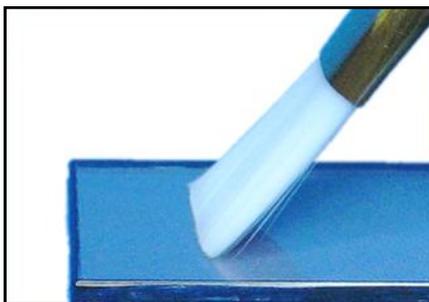
When the brush '**well charged**' turn the camera mouth up and gently *whisk* across the sensor surface from one side to the other. Try to avoid touching the sides of the mirror chamber or other parts of the camera that may contaminate the brush filaments.

**Recharge the brush**, at the same time puffing away particles picked up on the first sweep, then repeat the procedure. **Do not whisk** the surface **more than once between recharges** otherwise you may just deposit the dirt back inside the camera.

**Close the shutter** (turn the power off) and then fire the shutter a few times. Open it again in cleaning mode and, with the camera mouth downwards, puff out any loose bits that may have been dislodged by the shutter.

**Now is the time to expose a test image** and check the result. If the image is now clear the cleaning is done. If not you should **repeat the cleaning process** and then expose another test image. By **comparing the images** you can determine whether it is floating dust particles or if there are specks that appear to be *in the same spot* on all the test images.

**Specks stuck in the same spot** may require wet cleaning, whereas new loose dust particles indicate that more thorough body cleaning is needed. Ensure the mirror chamber is really clean, then try the brush again. If this doesn't work stronger measures may be needed, such as the Dust-Aid Platinum Wand or CCD-SWAB wet cleaning.



## How hard should you press?

It is not the sweeping action that removes the particles, but the **static charge**. Only a **very light whisk** across the sensor, in one direction, once between each charge, is required.

You barely touch the sensor surface. With proper static charge loose particles will be attracted to the brush.

Any particles that may have been whisked to the edge, and not removed first time, can often be picked off by the brush tip after a static 'recharge'.



**Cleaning the brush:** When the brush becomes dirty after repeated use or contaminated by accidentally touching the filament, cleaning is necessary to avoid smearing the sensor.

Our workshop method is to use **lukewarm filtered water** in a small clean container (about 500ml) with a teaspoon of neutral detergent such as Johnson's Baby Shampoo or a few drops of plain dish detergent.

**Swish the brush** around *vigorously* in the solution then shake the liquid off the brush. Repeat this action a few times.

**Rinse** the brush in clean water until **all traces** of detergent

has been removed.

**A final rinse** in filtered or distilled water is recommended. Shake off excess water, then place the brush between a few sheets of lint free lens tissue paper, and leave it to dry.

**When fully dry** the filaments may appear to be stiff, but a few blasts of air from your puffer will return the normal softness. Your brush is now ready for your next cleaning job.

If the brush has been contaminated by oily matter it may need rinsing in a spirit before washing it the normal way. In the workshop we use **Shellite** (available from hardware shops) for rinsing off oily deposits. Shellite is safe to use with the brush, but do not for prolonged soaking.



# The recommended order of cleaning!

Having cleaned hundreds of cameras we have established an effective order in which to proceed. The order can be divided into 3 main steps each with its own sub steps. A complete Step-by-Step Chart is available on the member's support site, but here's a brief outline:



## 1. External body cleaning:

- a. **Clean the camera body and lens thoroughly.** Brushing off all dust and cleaning the external body parts. This should be done *before* removing the lens from the body.
- b. **Remove and clean the lens.** This is to prevent introducing dust into the mirror chamber when you later remount the lens.
- c. **Clean the mirror chamber.** Dust and fibres settle on the mirror, the sides and bottom of the chamber. Use the tools and methods described on the website or cleaning guide.



## 2. Sensor cleaning - dry method

- a. **Prepare an area** with plenty of light, a clean surface and free of draught. A table top covered with a fresh new sheet of white cardboard or butchers paper.
- b. **Perform initial dust out.** With the shutter open in 'cleaning mode' and the camera held with the lens opening facing downwards loose particles are puffed and tapped out.
- c. **Expose a reference test image.** Before further cleaning a test image should now be exposed so you have a reference to help determine the progress of your cleaning.
- d. **Using the D-SLR Sensor Brush or the Dust-Aid Platinum Silicone Wand** the first cleaning of the sensor filter surface is performed. Each method has its merits, but the brush is the recommended option where fine sand grains are present.
- e. **The second test image** is exposed and the result inspected. Often cleaning is complete but if not, the process is repeated and a new test image exposed and compared.
- f. **If spots or smears still appear** it means that something is **stuck** to the sensor filter surface and you now proceed to ...



## 3. Sensor cleaning - wet method

- a. **Using a new CCD Swab** or freshly prepared **Dust-Wand** moistened with cleaning fluid, the sensor surface is carefully wiped and a test image inspected.
- b. **Streaks or smears caused by contaminants** may require additional cleaning or a different cleaning fluid.
- c. **Difficult spots** are dealt with using a **Mini-swab**, if required. A final dust-out is done before a last test image is exposed and cleanliness confirmed.

