

**Application Note**

Cleaning CCDs

Alan Holmes – October 31, 2002

- 1) Get a can of compressed air from a photo store, as well as a small camera hair brush
- 2) Thoroughly clean and dry the brush using isopropyl alcohol
- 3) Remove the front plate of the camera, and rotate the shutter out of the way by hand. Caution: while the camera is open be very careful to avoid activities that could spark the inside of the camera with static. Just sit in your chair. If you have to get up and get something, discharge your body to a metal surface (not the camera) after sitting back down.
- 4) Tilt the camera up to face horizontally and blow out the entire chamber with the compressed air. Finish with a blast right on the CCD from a half inch away. Be VERY careful not to tip the can of compressed air past 45 degrees as often an oily liquid will come out that is hard to clean off.
- 5) If you have a dust particle that will not blow off, poke it loose with the brush. They cling to the surface due to static, so you may end up just pushing them under the light shield where they are out of the way. The static forces are quite strong!
- 6) Replace the front lid after insuring the O-ring is still in its groove.
- 7) The whole process should only take 5 minutes, but the desiccant will need 24 hours to fully purge the chamber of water. If you have the lid off for 4 hours, you will need to rebake the desiccant and the chamber will take four days to purge, as the circuit boards apparently absorb moisture.
- 8) If you have a few small dust specs, don't worry. it is almost impossible to get them all and a flat field will take care of them well.

-Do not use liquid of any sort when cleaning. There is no grease on the CCD window - they are clean when they leave here. Liquid tends to glue down the dust particles and wick under the light shield where you can't dry it out. It is also very difficult to get it clean around the light shield edges. If liquid is necessary for cleaning, return your camera.

-The inside and outside chamber window is easily cleaned with a cotton swab or Q-tip and a little isopropyl alcohol. Use one end of the Q-tip to swab it with alcohol and the other to dry it. Never re-use a Q-tip.