

## Cleaning Your Glass

When searching for information on the internet you get some questionable responses, some weird responses, some funny responses and some great responses... the problem the one searching is how do you figure out from the menagerie of responses which is "best"... welcome to the internet. A question was recently asked on Snipers Hide about how do you clean your glass which prompted my response. I will preface this article by saying that I have a professional photography background so in dealing with camera lenses and, later on, digital sensors (or rather the glass that covers the sensor) you have a very similar system to what we have in all optics - glass elements that have multicoating applied with lenses exposed to the outside. While most manufacturers today use techniques with both glass and multicoating that help resist against scratches and water build up, any surface is prone to being scratched and a scratch is permanent, once there it cannot be fixed other than sending to the manufacturer, so the very first priority when considering cleaning the front or rear objective of your expensive optic is to reduce the possibility of scratching that surface. Dust may seem harmless enough, but even the tiniest dust spec can cause a scratch so I go through the following steps in order to minimize damaging the glass on my optics. That being said, I would not fret at having some light scratches on your front or rear objectives as they will most likely not adversely affect the IQ of your scope.

### STEP 1 - Does the glass really need to be cleaned?

The first step is to assess whether or not the glass surface actually needs to be cleaned. There is no need to "assume" you should clean your glass, take a look at it and if at first glance you don't see much (a few dust particles are not going to hurt the view through the scope) then don't sweat it and keep on shooting, in fact, your glass can get pretty dirty before your eye will start to notice a degradation.

### STEP 2 - Clean the glass without touching it

As others have mentioned, before you wipe your glass with anything it is crucial that you remove as much debris as possible without actually touching the glass. I typically use a can of compressed air, the kind you can get at Costco, Walmart, Best Buy, et al. I also understand that some would not recommend compressed air as there can be additives that might make their way onto the glass surface, also, if the can is used improperly you can end up spraying the liquid fluorocarbons (or whatever they're using these days) onto the glass surface so proceed with caution and make sure you don't shake the can or use it at an angle that would allow the liquid to spray out as not only can it leave a residue that takes more effort to clean but is also extremely cold and has the potential to crack your glass on a hot day. If the compressed air makes you nervous I highly recommend the American Recorder Tech Deluxe Large Sensor Cleaning Kit that you can get from a good camera store, what I like about this kit is the portability of the small CO2 blaster and the specialized CO2 cartridges it comes with (WARNING: DO NOT USE REGULAR CO2 CARTRIDGES AS THEY CONTAIN OILS AND CONTAMINANTS) and the same rules apply as the compressed air so be careful not to spray out the liquid. This kit also has an optical cleaning fluid and some swab wipes; however, the fluid it comes with is not very quick drying and I prefer optical cleaners that dry a bit quicker (see next section). But this is a handy little kit to keep in your range go bag. Another great option that doesn't require any kind of compressed gasses is the Rocket Blaster which is just a photographic quality bulb that sucks in air and blasts it out when you squeeze the bulb (just make sure you keep it clean and away from dirt and dust - I keep mine in a ziploc bag). I do not recommend the blasters that have the brush heads and those brushes are prone to collect debris that can then be transferred back to the lens at a later time. So now that you've cleared your glass surface of as much debris as possible without touching it, if you still notice some schmutz on the objective you may need to go to the next step. One final hint, if you're using an ARD or sunshade off the front objective remove it before blasting air because these items will help to trap debris inside which could find their way back onto the objective.

### STEP 3 - Clean the glass surface with a lens cloth or cotton swab

Can you use your shirt or cotton rag to clean your lens? Sure you can; however, we are trying to remove contaminants not add them, your shirt could have oils from your skin, dirt that the wind has blown on it or that you picked up by leaning against something, etc. so it's typically unwise to use a regular cloth or t-shirt to clean. Can you use a micro fiber cleaning cloth, again yes, but any cloth holds the potential of collecting other contaminants over time so I prefer to use disposable cloth wipes that you use once and toss. My preference is to use Pec Pads, I have been using these for years with great success, they are lint free and non-abrasive and should be available at a local camera store, they come in a plastic wrapper but I also store mine inside a ziploc bag as added protection to help keep dust away. My first line of defense when using the cloth to get some spots off the lens is to use my breath to form a light film of condensation on the glass surface which I then wipe off in a circular motion working my way from the center out. If the schmutz persists it's time to go to the final step. Warning, when using any cloth it is very important that you keep your fingers on the opposite side of the lens cloth because your fingers/skin contains oils which can smear your glass surface, never turn the cloth over to use the other side when you've already placed your fingers on that side because the cloth can now transfer those oils. Sometimes there may be just a "spec" on the glass surface that doesn't require you to wipe the entire surface, in these instances you can use a cotton swab, I prefer the 6" swabs with wooden handles as these give me more distance and are more sturdy than something like Q-tips, and I believe the cotton they use in these swabs is more free of lint and debris, I also keep these swabs inside their bag with only a small hole cut in the corner so I can remove one at a time and eliminate the possibility of contaminants getting on them. Tip: these swabs are also great for cleaning rifles and pistols in hard to reach places.

#### STEP 4 - Use a quick dry liquid safe for coated optics

I do not recommend using a store bought window cleaner or even water (unless you are using distilled water) as these can contain ammonia (can be harmful to multicoatings) and dissolved solids. There are two liquids that I prefer, the first is from Lens Clens and is specially designed for multicoated glass surfaces, it is a great liquid that dries quickly and I will apply just a drop or two on a 4x4 pec pad and start from the center and work my way out in a circular motion. The second liquid I recommend is Visible Dust Sensor Clean Solution which not only has cleaning properties but also dust repellent properties and anti-fogging capabilities. When you first wipe the glass with the moist cloth you might notice some streaking of the liquid, this is okay, once the liquid dries I then use a dry pec pad to wipe from center out and that removes any residue the liquid may have left. Using this method, I have been able to restore my glass to its original clean state with minimal effort. One final thought, do not overdo it on how much liquid you use with a lens cloth or swab, just one or two drops is more than enough, in fact, I've had my 1-3/4 oz bottle of Lens Clens 1 for over 10 years now and I've only used half of it which is mostly due to step 1 and 2 above as 90% of the time a blast of air will clean the surface sufficiently enough and if I don't have to touch the glass surface with anything then that is the best option.

So in summary:

1. Does the glass really need to be cleaned?
2. Most of the time a blast of air is sufficient to clean the glass surface of any debris
3. Use a lint free, disposable lens cloth or high quality cotton swab
4. Use a liquid made for multicoated glass surfaces that dries quickly

Here are some links that may help you search online for some of the items referenced above:

- American Recorder Tech Deluxe Large Sensor Cleaning Kit (<https://www.adorama.com/cpsckdl.html>)
- Rocket Blaster (<https://www.adorama.com/gtrabm.html>)
- PEC\*PAD 4x4 nonabrasive lens cloth (<https://www.adorama.com/cppecpp.html>)
- 6" Cotton Swabs with wood handles (<https://www.adorama.com/sipur8062wc.html>)

- Lens Clens 1 for Coated Optics (<https://lensclens.com/product/lens-clens-1/>)
- Visible Dust Sensor Clean Solution with dust repellent properties and anti-fogging capabilities (<https://www.adorama.com/cpvsc8.html>)