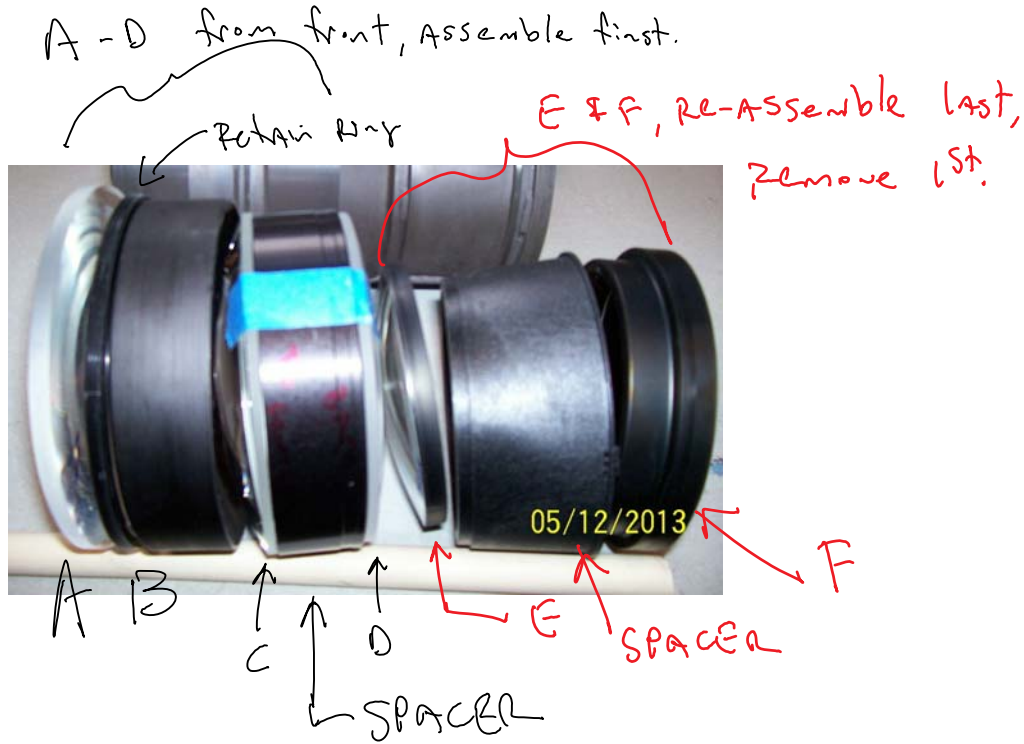


HD6C Lens Reassembly

Monday, May 13, 2013
12:00 PM

This is a rebuild of an HD6C lens. I think seeing how it goes back together will be helpful in understanding how to get it apart in the first place.

Here you can see the entire assembly. The left is the front or screen-end of the lens assembly. The right mounts to the PJ. At top left is the corner-focus assembly with lens "A". At top right is the mount in which center focus is controlled by moving the entire assembly to/from the tube face.



Here are all the lenses spread out. I have them screen-facing side (front) facing down to the table. A is a really funny profiled lens and is plastic. E and F are plastic. I can't recall, but I think the rest are glass. B, C, and D are beautiful to hold, B in particular.

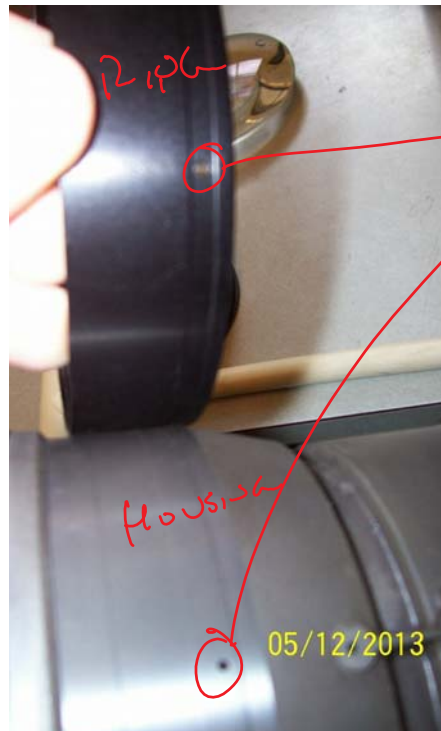


OK, now to the re-assembly process. First, keep in mind this is a trashed assembly and I had no interest in keeping things clean. If you plan on actually reusing the thing, good luck...better have a very clean area and some tight rubber gloves. You will need to put a piece of tape or a teeny tiny mark somewhere to keep track of which way of each lens faces forward. These pics may help if you screw up, but I didn't take them with that in mind, sorry.

STEP 1: lower lens D down into the housing. You will know when it is seated correctly. The aluminum lens housing has a recess to perfectly hold it.



Step 2: insert the spacing ring as shown. You will note there are two holes in the spacing ring and in the aluminum housing. Lower the ring in and align the holes. I bent a paper clip with need-nose pliers so that it went in the holes, but didn't touch the lens surface.



When ring is inside the housing, line these up & pin them as a temporary holder.

Step 3: I put 3M #2090 tape on the lens surface and made a little tab to hold lens C. I lowered the lens in. Lens C has to sit on the ledge such that the spacer ring goes around a little of the outside of lens C. This insures lens C stays centered and located correctly.





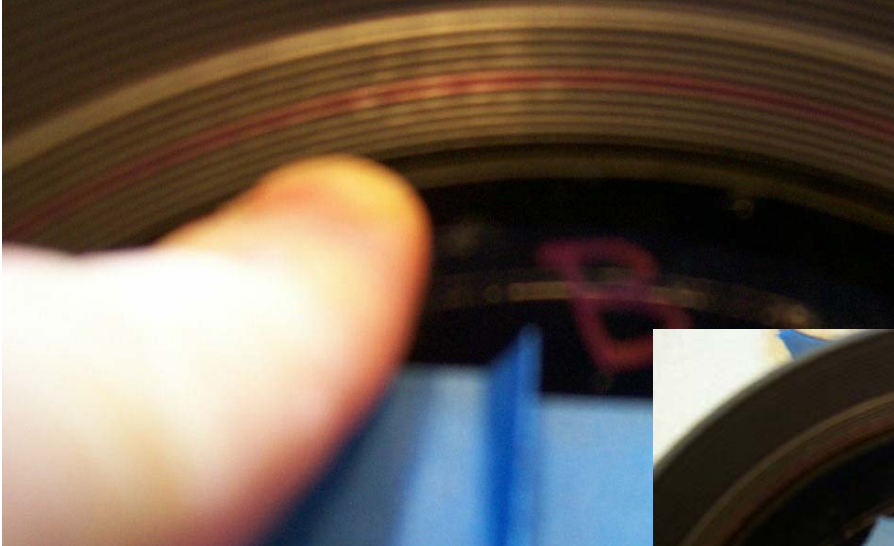
Here you can see what it looks like looking down into the lens assembly after the first two lenses have been installed.



Step 4: Lower lens B down into the housing. This one is tricky and really important. It is neat how lens B sits on lens C and mates to it. I found 3" wide 3M #2090 was good enough to lower lens B down into the housing; Lens B is very heavy. This is the hardest of all, because the air can just barely escape as the lens lowers and the machine tolerances are tight enough it can bind a bit if lowered askew. Incidentally, it is possible to assembly D, C, and B as a unit outside the lens and to install all three at once, but it takes some practice and I wouldn't recommend doing so on a "good" lens.

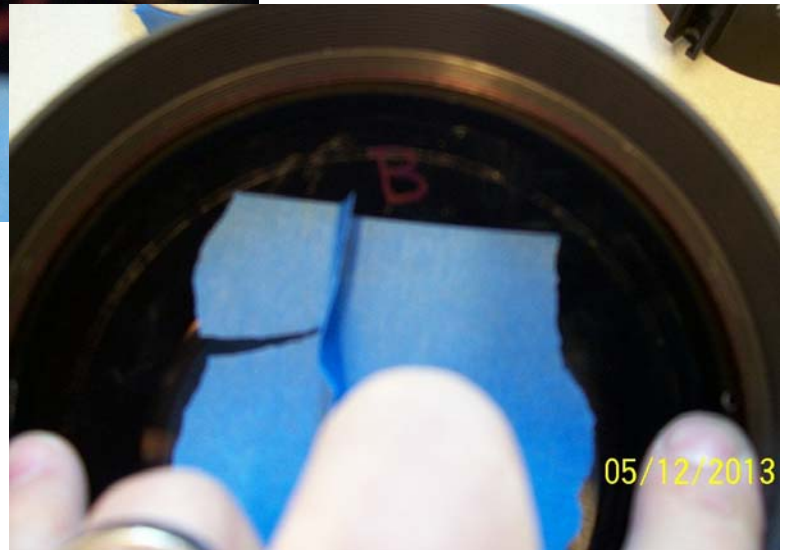


As with all things, I like to leave myself marks and breadcrumbs when disassembling something for the first time. You can see how a black sharpie left about a line on the threads - this was before I removed the threaded retaining ring. You might do the same. It is easy to not have lens B all the way down without knowing it. If you don't have lens B about 4 or 5 threads below your mark, you need to gently position everything. I tend to hold the housing with the front-end up, but if you gained facility in working with this, the housing could be held front-end down and use your other hand to raise the lens up into the housing. Either way, once you screw the retaining ring in, it is no longer an issue!



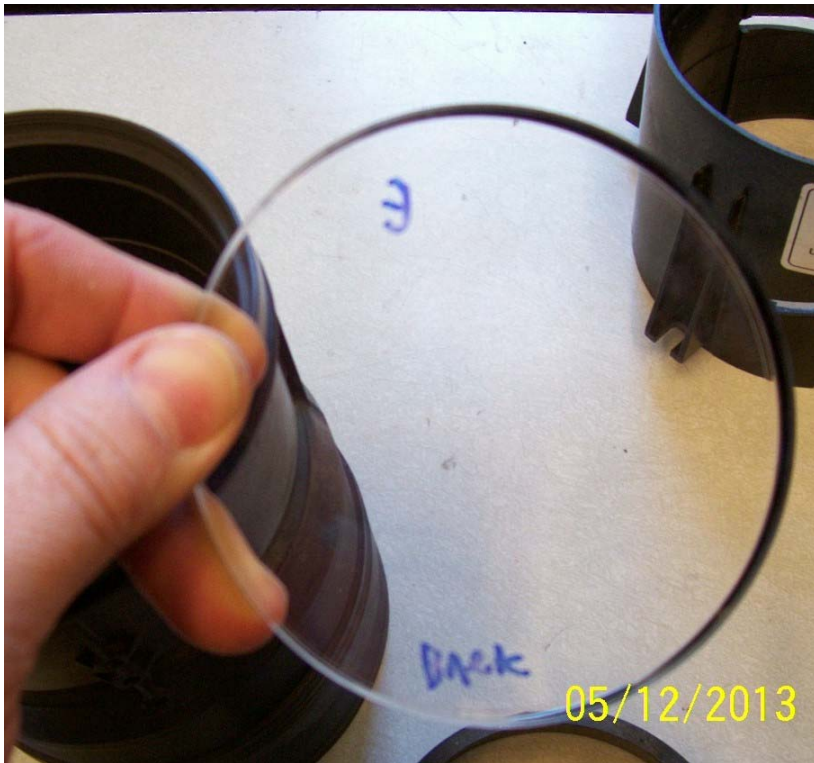
Step 5: screw in the retaining ring. Below you can see how the ring is down tight to lens B within the housing. The spanner holes are in the ring next to my little and index fingers. Screwing/unscrewing the ring is a PITA in so far as it goes around a bazillion times. A little piece of blue tape that you pull-around the ring goes much faster than a two-handed, gentle rotation method. Can't be down with one hand and the tool is good to un-slug/slug the ring. Factory tight is very tight and I scratched the lens trying to get it undone -- be careful!

As an aside, there is no reason to take lens A out of its corner-focus housing. The housing removes by unscrewing the little threaded pegs that the nuts that lock your rotational setting in place.



Ok, Now onto replacing the back two lenses -- E and F.

Step 6: Place lens E down into the back of the housing. It nests in a little groove and you will be able to see/feel it is sitting flush.



Here is what I see after E has been set in place.



Step 7: lower the plastic spacer in. Lens F will sit on this.



Step 8: After the plastic spacer/collar has been inserted, set lens F into the collar.



Step 9: screw-in the metal retaining ring for lens F. I seemed to have misplaced it, so sorry, no picture.

Step 10: re-install the plastic rings around the metal housing. Each threads itself onto the metal housing. Also, screw back-in the little studs that are used to tighten/pinch the plastic housings in order to preserve your focus adjustments once complete.

Step 11: Adjust the focus rings back to the marks you remembered to make, grab a cold beverage, and enjoy.

Cheers! Matt in Pittsburgh