

COOKE TOUR LEICESTER APRIL 2019

By Zoe Goodwin - Stuart ACO

It was now time to move through to the factory floor to witness the first process of the lens manufacture. Every single lens that leaves this factory is hand built by skilled technicians. Master crafts men and women, though these finely honed skills are coupled with modern methods and machinery, which are so precise it's hard to comprehend.

Our tour starts in the polishing room where glass chucks and bought in from two different suppliers. For obvious reasons the glass is larger than required as grinding and polishing will make each piece smaller. This rough glass is opaque and this takes us on to the polishing. State of the art multi-axis CNC machines are used and each piece of glass is placed on a head and polished to the correct shape and thickness. Moving on from here was the real treat as Cooke don't only use modern technology but in tandem use polishing machines that date back to the early 1900s.

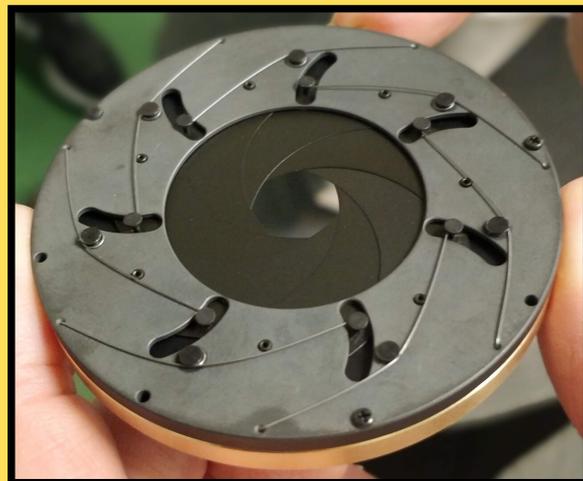
A technician makes sure each lens is brushed with an abrasive and that the process is carefully monitored. Both of these processes are used, as they are specific to certain areas of the polishing.

Once polishing has finished they are painted with a black peelable coating for protection. Still at this stage it is unknown if any microscopic faults or imperfections may lie within the lens.



Having recently been accepted into the Association of Camera Operators I was thrilled to be invited to the Cooke Lens factory in Leicester as my first ACO event. Greeted by fellow members Jamie Harcourt, Rodrigo Gutierrez and Lucy Bristow we were soon dressed in white coats and introduced to our guide Alan Merrills, COO at Cooke.

A brief history of Cooke from Alan begins in 1893 where they famously started making telescopic lenses, which eliminated softness at the edges. Then, in 1921, Cooke began making their well-known Speed Panchro Series I lenses, which cemented "The Cooke Look" and laid the foundation for some of the greatest lens making in the world of cinematography. If you've ever shot on a Cooke Lens then it almost certainly has come from this factory. There's so much history in and around the reception and Alan's office, it certainly peaked all of our excitement.



Coating is the next stage where Alan explained to us that we could not view this as it occurred in a clean room. However, we were told that the lenses are now placed on trays and slotted into a machine which chemical dusts each lens with what can only be described as Cooke's "Secret Sauce". It's basically where the lenses get most of their signature characteristics. This takes place within a vacuum so that the chemical compound rises in the machine coating each lens. The lenses are then turned over and the process is repeated. Next was the edging room where again some of the traditional crafting techniques are on show. The lens is placed onto a chuck using an age-old process of warming a tar stick and carefully rubbing a small amount of the tar onto the chuck.

Therefore creating a malleable adhesive which the lens can stick to whilst its optical centre is found by eye. This makes sure that the optical centre lines up with the actual centre of the lens. From here now the lenses are on the chucks they can be edged to the exact sizes required. The lenses are now blackened around the edges to prevent unwanted light refraction when finally mounted within the lens housing. Another process done completely by hand. I'd just like to mention at this point, that during each of these processes the lenses are cleaned more times than one could count. It is a painstaking job and is as important as all the manufacturing.

Quality Control was our next area of interest. This is as the name suggests is where each piece of glass is individually checked and evaluated. Each one must be up to the Cooke standard otherwise it doesn't make it through to the following assembly room. A hive of activity and where finally all the elements are put together and insured that all of them fit together perfectly. These are then taken apart and once again a cleaning process occurs this time hydrosonically and in a dust free environment.

Only one technician then assembles each lens. This is in order to maintain ultimate quality control. Technicians measure the full throw of each lens in terms of focus so that each measurement can be truly exact. Cooke does not make batches of lenses. Each Lens is made to order so they are all made in one go to insure the consistency of those lenses.



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One of the most beautiful parts of the lens almost everyone on the tour could agree on was the handmade iris. They are so delicate and intricate. Interestingly enough each wire that opens and closes each leaf is a guitar string..

Each lens then completes its journey by being etched and having its engraved numbers and lettering hand painted with the signature yellow, white and red paint. There are no lenses on shelves here waiting to be sold. Each lens is made per order. For example each Anamorphic SFi (special flare) will have a totally different flare, completely unique to that lens.



The tour over we were invited into the testing room where lenses were shown to us on a projector to really show us the gorgeous focal drop off each Cooke Lens has.

From S4's to Panchros to the new anamorphic full frame we were gifted with seeing them all. Each lens truly is handcrafted to perfection and the amount of care and precision that goes into each one is incredible.

We were then ushered upstairs to a boardroom for a debrief, Q & A and an introduction to Cooke's new website and social media platforms. Carey Duffy, Head of Sales Europe showed us some really interesting information, videos, interviews, camera tests and technical information. All can be found on Cooke's website and social media platforms. Finally, we were gifted some imperfect lens glass and the all-important Cooke badge. Coming back into the reception where Cooke's Oscar for Outstanding Scientific and Technical Achievement in Cinematography sits in a glass cabinet you really understand how and why this award is so deserved. For some of us we are lucky enough to have shot on Cooke lens, some even luckier ones own a set of Cookes. But, however we get to shoot with these lenses, coming to see how they are crafted into being, truly is a memorable experience.

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