

# WHY WE MAKE HAWKS THE WAY WE DO

If you want to design new lenses, you have to consider the characteristics of the format for which it will be used. You have to separate problems from what you want to protect or enhance. For example, if you are renovating an old church, you probably don't want to do it too perfectly. Maybe you see an old stone wall, and you say, "It's not perfect— but of course, that's the beauty of it." We are very deliberate about where there is room for improvement, such as speed, close focus, lens size, definition (at the top, bottom, and corners), matching lens sets, and so on. There is always room to improve, but, just as architects recognize what to keep and what to preserve when working on an older structure, we design and craft our lenses with the same understanding; the distinct character of the anamorphic format must be preserved.

We design and build Hawk Anamorphic Lenses. Most lenses today are well made. Following the same path of only making sharper and better lenses was not sufficient. A sharper lens does not automatically become a powerful, new tool for a cinematographer. Of course, sharpness is good to have, and Hawk lenses have extremely good definition and sharpness, but that is only part of the picture.

When we started in the '90s, more than 40 years had already gone into development of anamorphic lenses, but aspects of these lenses were still far from perfect. Lenses did not focus closely enough; they were too big, and you could see focus falling off quite easily. We wanted to improve those things.

An anamorphic lens, with its "squeezing" cylinder, develops a "fingerprint" which is unique. We try to keep that in our designs. When we see elliptical bokeh or slightly curved geometry, we don't regard them as defects that have to be eliminated. On the contrary, we understand that those are part of the language of anamorphic. If you photograph with spherical lenses, the image can seem flat and without surprises.

Anamorphic is like a roller coaster. When watching an anamorphic film, you probably would not be obsessing over line pairs in the very far corners of the screen. Hopefully, you are immersed in the story, dazzled by the widescreen cinematography, and embraced by the image. We have to recognize and accept that audiences love the many famous anamorphic films out there; all made using classic anamorphic lenses. We applaud the qualities that make those films classics, and those qualities are closely connected to lens characteristics, such as the curvature or a little bit fall-off in the corners which create that anamorphic fingerprint. If designers try to improve one of these lenses, they have to be careful not to improve everything. Otherwise, the distinct anamorphic fingerprint is lost.

The anamorphic look emphasizes the in-focus part of the image because there's a larger separation from the out-of-focus, so the in-focus portion automatically looks sharper, crisper, and more appealing. The eye likes to be cued by what is in-focus and what's not. If it's Super 35 and shot in spherical, the eye may start to search for the area of maximum sharpness, sometimes unsuccessfully. It's not always a pleasant experience. But in anamorphic, the in-focus area is easy to see. The second characteristic is how the out-of-focus areas look. The bokeh is completely different with an anamorphic lens. The out-of-focus highlights are oval and are created by the curvatures of the anamorphic lens element.

A spherical lens photographs everything as it is and tries to reproduce it as faithfully as possible. The anamorphic lens interprets reality. It tells us how the reality might look, but it's not recording the reality. Why is this format loved? Because of the organic look— not because things have been corrected the way we expect them to be on spherical lenses. When we make the Hawks, we improve certain parameters which we feel are lacking, but we do not try to "improve out" some of the original characteristics like curvature. Most of our lenses focus down to two feet, remarkably close for anamorphics, and we have several lenses where you can focus to the front glass element, yet all our lenses are designed to preserve that unmistakable anamorphic look.

Hawk is a family of lenses. Everything is assembled in our facility in Weiden, about 1.5 hours north of Munich. We produce many parts for

our lenses, and all the parts come from Germany— most from within 100 miles. Iris and focus rings are all in the same position. We have internal focusing (cams and cam followers). There are basically two front diameters, one for the wide lenses in the V-Lite series and one for the medium and long ones. You can easily attach clip-on matte boxes, and even if you over-tighten the matte box, it will still not bind the internal elements. You can interchange the focus scales rapidly, easily, and precisely. The connection of the PL mount to the lens is unique in the Hawks. No screws directly penetrate the lens body. The PL mount is attached to an L-shaped stainless steel bracket that is held by a ring to the lens, resulting in the sturdiest construction in the industry.

The Hawk design is the only design that has parallax-free witness marks on both sides. The focus ring and the barrel with the witness mark are on the same plane. We use a unique paint on the lens, which has a matte finish. It's a special industrial paint that is baked on after glass-pearl blasting and anodizing. We then apply high-contrast, highly-visible yellow paint to the engraved lens markings.

The serial number is positioned prominently in order to find it easily since it is often needed for delivery notes. Plaques mounted on both sides of each lens unmistakably display the focal length for quick identification. All of these details are designed to improve an assistant's ability to work quickly and effectively on or off the set.

Our custom-designed lens cases hold both lenses and accessories. These cases are very small and are designed for locations, studios, and camera trucks, and the cases use minimal room on an assistant's cart. These cases then fit into larger, tougher cases for shipping. Camera crews want small cases, but shipping requires more foam, more protection, hence larger cases. A&J Cases in Los Angeles produces all our cases, and so far, they have built over 3500 cases for us.

A rental house is not a laboratory. If you have to open up a lens, it should not be sealed in a way that you would have to send it back to the factory for repair just to maintain tight tolerances. A lens designer should consider parameters appropriate to our business and avoid making overly complex lenses that are difficult to service. Our mechanical design ensures that maintenance is easy for rental houses even with limited possibilities.

In addition to primes, we make front anamorphic zooms. Rear anamorphic zooms (and primes) do not have oval bokeh or the classic look. Because the cylinders are at the rear, they stretch the image vertically in a process similar to using a 1.4x or 2x extender— but only on one axis. The image is already made by the taking lens; it's an aerial image. You cannot influence it because stretching takes place after the lens. You cannot influence how the bokeh or distortions look from the back.

Hawks are all the same family of lenses. They are made by one company— and one group of designers— us. That's why they match so well. Camera crews do not have to hand pick our lenses so that the lenses match. Problems in matching occur with sensitive designs and when lenses suffer from wear and tear, but the Hawk design is highly robust, so every 50mm lens will be the same. This is also true for every 65 mm lens and so on.

We consider cinema lenses as tools for a rental business. Lenses are constantly shipped forth and back, and they have to be serviced by rental houses. We took that into consideration and developed a robust, not overly-designed, straight-forward, mechanical concept for the Hawks. Once a lens is manufactured and assembled, it will maintain its quality over its lifespan. We did not want our Hawks to look good on paper but give us trouble in manufacturing. We also did not want our lenses to run into problems while on productions because they could not be serviced easily. Preventing downtime and delay on the set while providing cinematographers with exciting anamorphic tools is our goal. We make Hawks to improve on the tradition of anamorphic lenses and provide cinematographers with the tools that help them do what they do best... create art.

