Laserons and UHMWPE Stem Review

-ThereminGoat, 1/21/2020

Switch Backgrounds

Over the first few weeks of 2020, things are certainly shaping up to be the year of Durock/JWK by and large, with few exceptions. Switches such as Silent Alpacas, Keebwerk's Tacits[1], and JWK's Rara switches have all made sale appearances through the beginning of the year with little comparable competition except for the new Equalz Tangerine V2 switches. (I do have plans to write a review for those switches, though currently they are in the mail from my proxy.) However, one of the more interestingly hyped switches towards the end of 2019 – KBDFans' 'Laserons' - have all but faded into obscurity with new decade and recent sales.

Without a name firmly set in stone yet, these MiTo Laser inspired Gateron recolors first made rendered appearance via KBDFans' Instagram page in late September of 2019. The pair of linear switches in the renders boasted solid purple colored housings with one having a cyan colored stem and the other with a pink stem with the obvious intent of matching Laser's legends for both alphas and modifier keys, respectively. Soon after this release, rumors had swirled that these were going to be Gateron linear recolors and thus picked up the obvious amalgamation of a name, 'Laserons'. These were to be the first recolored Gateron linear switches for sale since the Linjär groupbuy which was conducted by u/Emir earlier in 2019. Alongside the Instagram post, a sales page was erected on KBDFans with more details and an initial sales date of 'Black Friday' or Friday, November 27th of 2019. Additionally, reviews of these pieces were quickly put up by the likes of randomfrankp and TaehaTypes on YouTube demonstrating the boards in separate builds.

Rather than run a limited time groupbuy format, KBDFans opted to stock these pieces as part of their switch lineup and currently still have them for sale at $0.65 per piece, with a minimum order quantity of 10 switches. The first switches began to be received by customers in the middle to end of December of 2019.

Figure 1: Picture of Cyan and Pink KBDFans Laserons (Shoutout to randomfrankp for getting these to me!)

[1] The decision to sell your very first switches as otherwise unproven pieces from a company who has never made them before, with no marketing, no publicly displayed samples, and no prototypes sent to public figures while simultaneously charging Zeal level pricing is not advised for any distributor. (P.S., Keebwerk, you are not Rama nor Zeal so please stop acting like it.)

Laseron Switch Performance

Of the pair of Laserons, the Cyan is the lighter in weight, containing a 60-gram linear spring which is slightly heavier than the Gateron Yellow molds which were used as a basis of these recolored switches. The Pink Laseron switches featured an even heavier, 70-gram linear spring making them heavier than any stock, normally colored Gateron linear switch. (As a point of reference, Gateron Black switches have a 60-gram spring.) Much like the similar Linjär switches, which were also Gateron Yellow recolors, the Laserons featured a gold-plated spring.

Appearance:

Obviously, being that these switches were designed in mind of matching the Laser colorway from MiTo's keycap sets, the primary concern regarding appearances is how closely they match the keycap set. The opaque purple housings were aimed at matching the base keycap color of the alpha keycaps while the stems were meant to match the legend colors of the keycaps. The cyan colored stem was aimed at matching the alpha legend colors whereas the pink legends were aimed at matching the modifier and novelty keycap legends.

Looking at the render that was put up on MiTo's Instagram page shortly after the announcement of these switches by KBDFans, the render appears to quite closely match these color schemes and definitely drew some interest with their initial appearance. However, upon receipt of these switches, which I graciously obtained from randomfrankp, they do not quite live up to the intended color scheme. While the stems are nearly spot on matching to the corresponding legend colors, the housings are drastically lighter and almost a completely different shade of purple from the alpha keycap color. While the Laser keycaps have a much more dark, blue-heavy purple color, the Laseron switches appear to have a much lighter, red-heavy purple color. Being that I am a switch collector and *not* a keycap collector, I can't say what purple colored keycaps these switches would more closely match – but I can say they do not appear to match Laser's deep purple at all. In fact, I'd argue that Zeal's heavier tactiles have a stem color closer to Laser's base color than the Laserons do.

Figure 2: MiTo's Instagram rendering of Laserons (Left) versus live color comparison (Right).

Push Feel:

The feel of these switches is certainly well within the bounds of expectations for a Gateron yellow recolor. They feel decently smooth but with a bit of scratch toward the end of the stroke that definitely is noticeable. Unlike Gateron Yellows, though, and according to the KBDFans' sales page, the stems of these are factory lubed, and with respect to that I'm rather surprised as they feel just as scratchy as Gateron Yellows without lubrication. Deviating from my normal practice of only conducting reviews

of ‘as is’ switches, I was tempted enough to clean the stems and add a small quantity of Krytox 205g0 to the stems and rails in order to see if it improved the scratchiness with decent results. (This was done after all of my other analyses discussed below). This 205g0 application did well to reduce a majority of the scratch in the switch, as was expected. Also, worth noting, is that there is a pretty distinct and clean difference between the spring weights of the pink and cyan versions.

Sound:

I’m really grasping at straws to say much more than the obvious about these switches – they sound like Gateron Yellows. They’re decently quiet but there is a solid amount of sound that is produced by the late stroke scratch and there is the smallest bit of spring ping that is noticeable if you increase the speed of actuation of the switches. Due to the weight, the Cyan switches have a slight bit less of a deep body to the sound than the Pinks – whereas the Pinks could be comparable to stock Linjär switches.

Wobble:

The wobble on both of these switches were identical, so when I refer to the wobble in this section, I am referring to that of both Cyan and Pink Laserons. There is a slight bit of N/S wobble that will likely be negligible with keycaps on though I can state that this aspect has certainly improved since the Linjär switches. The E/W wobble of these switches are pretty much nonexistent and is similar in magnitude and feel to other high-end linear switches on the market currently.

Other:

When compared to other linear switches on the market, I am not entirely surprised that they are not among the most popular at the current moment. The rise of Durock and JWK linears has certainly put Gateron switches on the backburner in terms of quality at their price range, but among the recolored Gateron switches I think they stand as a very valid and reasonable option. Additionally, the color of the housings of these pieces, as well as their overall compatibility being Gateron branded, potentially could make them of some greater value to frankenswitch building. Overall, these switches, in my opinion do deserve *some* more attention then they are currently getting, but not much more.

Comparison Notes to Other Notable Linear Switches:

Note – These are not aimed at being comprehensive comparisons between all factors of these switches as this would simply be too long for this writeup. These are little notes of interest I generated when comparing these pieces to the Laserons side by side.

Linjärs:

- The sound of as-is Linjärs is much more like the Pink Laserons than the Blue Laserons, but altogether has a slightly deeper sound than both of the Laseron switches.
- Very similar in terms of stock feel, though the Linjär switches certainly do have a bit more scratch than the Laserons.

C^3 Tangerine V1.5s, Black Bottom:

- The Tangerines feel significantly better stock than either of the Laserons switches, with both less of a scratch sound to the ears as well as an overall smoother feel.
- The Tangerines, though, appear to suffer from a bit more N/S wobble than the Laserons and is starting to border on an amount that may be noticeable with keycaps on.
- There is a distinctly snappier and thinner sound in the C^3 Tangerines, though this is likely due to the difference in density of the top housings as compared to Laserons.

Cherry MX Blacks:

- Cherry MX Blacks appear to have a much heavier initial stroke versus the Laserons switches. While neither of these switches boast a progressive spring, and MX Blacks are heavier, it is certainly a much more noticeable weight in the initial stroke than the Laserons.
- The sound is much closer to the Laserons than the C^3 Tangerine switches.
- Cherry MX Blacks have a much more noticeable E/W wobble but a comparable amount of N/S wobble.

Alpacas:

- The Alpacas, which also come factory lubed, feel distinctly smoother than Laserons and this is easily reflected in both the feel and the sound.
- There is distinctly less wobble in both N/S and E/W directions than the Laserons.
- Comparing these switches to Laserons certainly does put into perspective *why* Durock and JWK produced linears are taking so much more of the community's attention at the time of this writeup – they simply outclass Gateron.

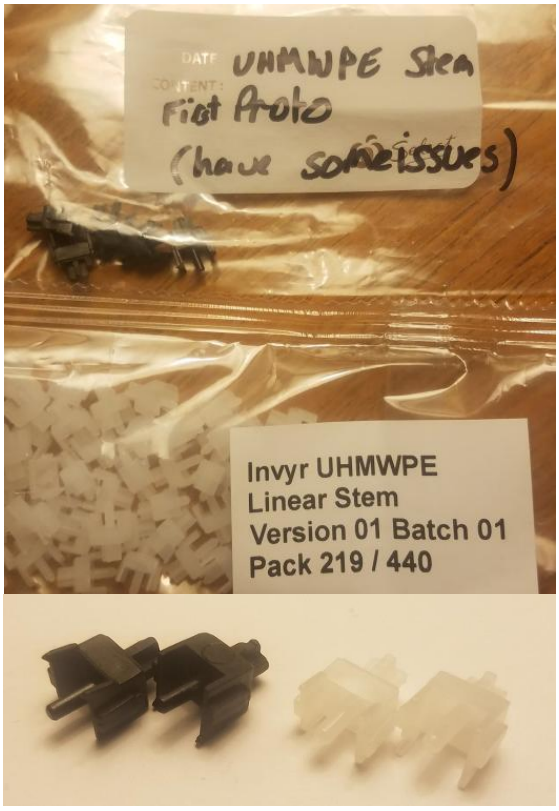
… and a bit more

It would be quite easy to cut the review here, as this is normally what I do for reviews, though being that these are not quite as popular of pieces I feel the need to discuss a new, much more interesting prospect on the horizon that I wouldn't write a singular review for – UHMWPE stems.

UHMWPE Stems Background

One of the most interesting things surrounding switches in 2020 has not quite yet reached nearly as much attention as Durock and JWK – UHMWPE stems. UHMWPE, which is short for Ultra-High Molecular Weight Polyethylene, are new, aftermarket stems designed by Zisb, otherwise known as Invyr, who is the mind behind arguably one of the most influential modern MX switches of all time. What is interesting and little known about these stems, though, is that they are a product of the Durock/Stealios Controversy, and without the initial public backlash toward Durock switches, these may not have ever seen the light of day.

Very soon after it was publicly discovered that Durock was behind the fake Zealios pieces, Zisb as well as u/brimstoner, who are both a part of KeyboardTreehouse, attempted to run an interest check to buy pieces from Durock. However, this was met with a strong amount of backlash and so much so, in fact, that they ended up choosing to go about their own ways and work on their own, separate projects. While brimstoner chose to go on and work on keyboard designs, both for the Australian community and the community at large, Zisb chose to move on to his own project – the result of which were UHMWPE stems. Additionally, worth noting here, I was quite aware of these from the start of the project as I had reached out to Zisb around that time in order to talk about other switch related details. This has actually resulted in me obtaining a set of the very first molded UHMWPE test stems, which were carried out in black rather than their modern, clear counterparts as you can see in the photos to the right.



As can be seen in the previous pictures, I ordered a pack of these UHMWPE stems as soon as they went up for sale (Version 01 Batch 01 Pack 219/440) and was immediately a bit intrigued about the stems upon opening the package. At first glance, the actual material itself has a slight lubricity to it that is not seen in traditional POM stems and feels quite light and as if it could be warped rather easily with any force applied. However, these concerns immediately faded once they were placed in switches. I initially tested the stems in Durock housings, Gateron housings, Inks, and Creams and found that for all of the pieces tested, the initial scratch was reduced, and overall smoothness of the pieces were dramatically increased. In fact, I noticed the largest improvement for Novelkeys' Cream switches, which were almost night and day difference in terms of feel. In further testing, I've found that this translates to needing even less lubrication on the stems than would otherwise be needed for more traditional, POM based stems.

In order to make this segue more cohesively fit into the writeup, as well as actively address the benefits of these stems, I took the UHMWPE stems and placed them into the Laserons to test their results. Simply placing these stems in the housings, without the use of any lubrication or further modification of the switches, nearly eliminated the scratchiness both in sound and feel that I outlined above. In addition, the wobble doesn't suffer at all and is practically the same for the UHMWPE stems as well as the stock Cyan and Pink stems.

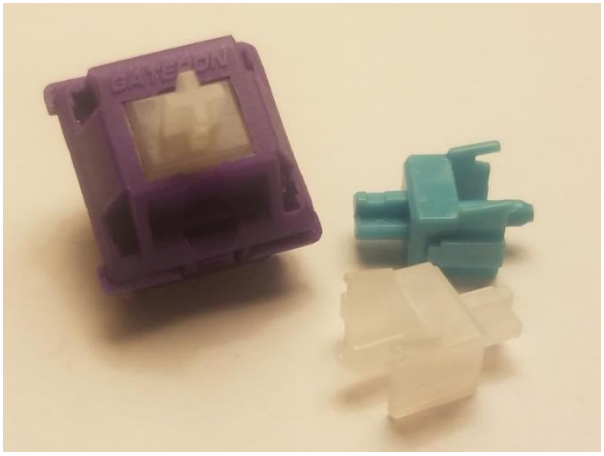


Figure 4: Cyan Laseron switch with UHMWPE stem swap.

Final Conclusions

While I've previously mentioned that I feel the Laseron switches deserved marginally more attention, and especially with respect to their potential use as frankenswitch housings, I do not feel the same at all about UHMWPE stems. These aftermarket stems are going to be, or rather should be, one of the biggest and best things within switches at the beginning of this upcoming year. For a relatively cheap per piece cost, these stems can turn pretty basic linear switches with middle of the road qualities into high end, impressive switches that are 'worth writing home about'. In fact, I've put what little money I have where my mouth is and gone on to use these stems in a build, pictured below. While you can feel free to roast me in DMs over my choice of kit (ThereminGoat#2561), I stand by that the switches are absolutely end-game linear pieces largely due to the UHMWPE stems.

Board:
Vortex Race 3 (Originally contained MX Blues)

Keycaps:
GMK Laser Gaijin
Mitowaves Novelties

Switches:
Novelkeys' Kailh Creams
70g. Novelkeys Springs
UHMWPE Stems (Version 01 Batch 01 Pack 219/440)
Spring base lubed with Gazzew's custom lube blend
Sliders and stems lubed with Krytox 205g0

Top Typing Speed: 104 WPM, Average ~85-90 WPM

Further Reading:

KBDFans Laseron Sale Page:
https://kbdfans.com/collections/switches/products/kbdfans-x-mito-custom-laser-switches

MiTo Laseron in Board Render:
https://www.instagram.com/p/B5QPa1hH9Sh/?hl=en

KBDFans Laseron first render:
https://www.instagram.com/p/B3BFeA2nM55/?hl=en

randomfrankp's Laseron YouTube Video:
https://www.youtube.com/watch?v=uXWF69gom-0

TaehaType's Laseron YouTube Stream (Queued to Time):
https://youtu.be/pgX8VA_MpPo?t=2699

MiTo's Personal Website, Laseron Page:
https://mitormk.com/laserons/

u/solracarevir's PSA about MiTo Cyan Laserons better matching GMK Skeletor:
https://www.reddit.com/r/MechanicalKeyboards/comments/elw0eo/psa_mito_laserons_perfectly_match_gmk_skeletor/

u/solracarevir's NYM96 Laseron Build:
https://www.reddit.com/r/MechanicalKeyboards/comments/enw1q0/nym96_gmk_skeletor_gateron_laseron/

u/RedRaiderJoe27's Cyan Laseron Preonic Build:
https://www.reddit.com/r/MechanicalKeyboards/comments/enda4e/laseron_cyans_on_preonic_rev3_my_first_noncherry/