

Ultraclearine Switch Review

-ThereminGoat, 04/01/2022

I'll cop to it: I've not exactly been the most regular nor on schedule with my writing over the course of the past month or so. Due to the sum total of classes, research, homework, and then thinking about how little time I have to do all of those things each day, I've been a bit sporadic with the content over the course of March. In addition to missing last weekend's review entirely due to a 6-hour long Saturday exam, which you most certainly did read correctly, the mid-week release of my review of Drop's Holy Panda X switches on March 1st has really made it seem as if I've torn up the playbook entirely and tossed it out the window. While I do genuinely aim to get back to this every-other-Sunday style of full-length reviews now that midterms have subsided, I unfortunately have to caveat this by saying that that will have to happen after today. Much like with the review embargo that Drop had on their Holy Panda X switches, I'm bringing you yet another weekday review because I simply couldn't wait for any other day to share it with you all. I'm sure you will be able to clearly see why I was so excited about these switches that I couldn't wait until Sunday.

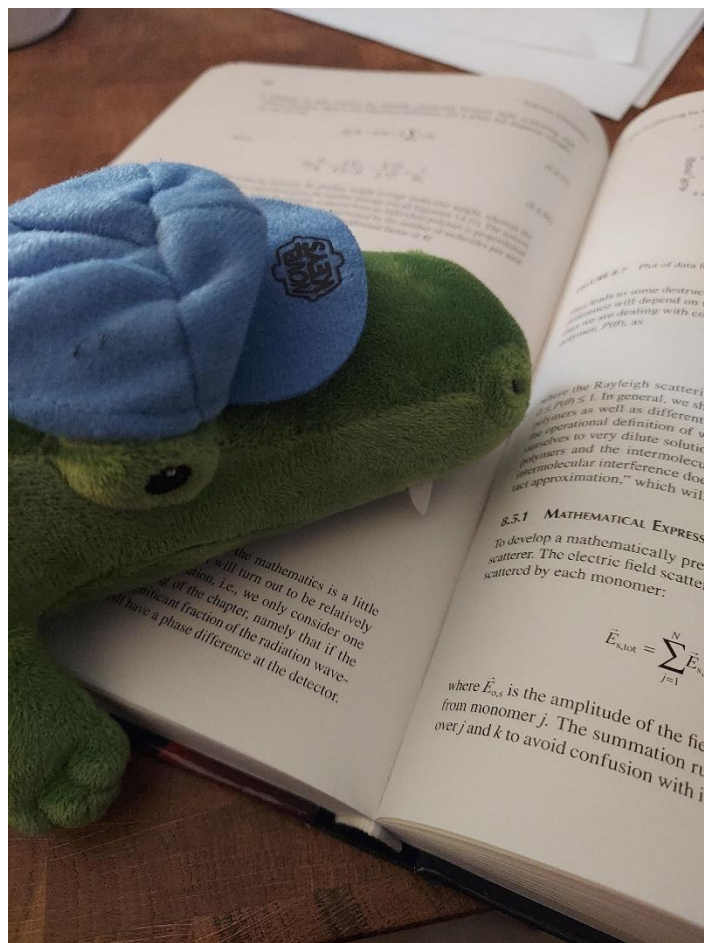


Figure 1: In the meantime, Ron is touching up my polymer physics homework due tomorrow.

Before I get into the review of the new Ultraclearine switches, though, I do want to take a brief paragraph to thank all of you who read these reviews, who follow me on social media, and continue to encourage the production of my content. Taking the course load that I am currently, and at the institution

that I am at for that matter, is far from an easy thing to manage on a week-to-week basis. Often times I am left until late into Friday or even Saturday nights piecing together switch reviews or Scorecard Sundays, and in those more pressing weeks it's the continued love and support from you all which makes it so rewarding. While I try and be as transparent with you all as I can with respect to my life, what is going on, and my content related plans of the future, I know that I am not exactly the best at keeping you all updated and for that the support means that much more. So thank you all, yet again, for everything you've done to support me over the years and in the years to come. It means the world to me.

Switch Background

Much like with other previous reviews of switches that are effectively fresh out of the injection molding machines, such as the Drop Holy Panda X or Glorious Panda Switch Reviews, the Ultraclearines are yet another batch of switches without much history to see. First debuted via a now deleted ZFrontier post back around mid-January of 2022, the Ultraclearine switches were announced in a slew of 'opening day releases' by a new, eastern-facing vendor by the name of 'Moldav.te'. In addition to stocking several prevalent switch options, keycap offerings from KYC and Imsto, as well as "all-in-one DIY keyboard kits", the biggest teasers of Moldav.te's upcoming products were that of their Birefringence TKL and of the Ultraclearine switches. Seemingly taking clear inspiration from recent entirely transparent switches such as that of Zeal's Pearljos, Chosfox x Kailh's Clione Limacina, and TTC's Love switches, the Ultraclearines were Moldav.te's first attempt at not only a switch but an entirely clear one at that, as can be seen below.

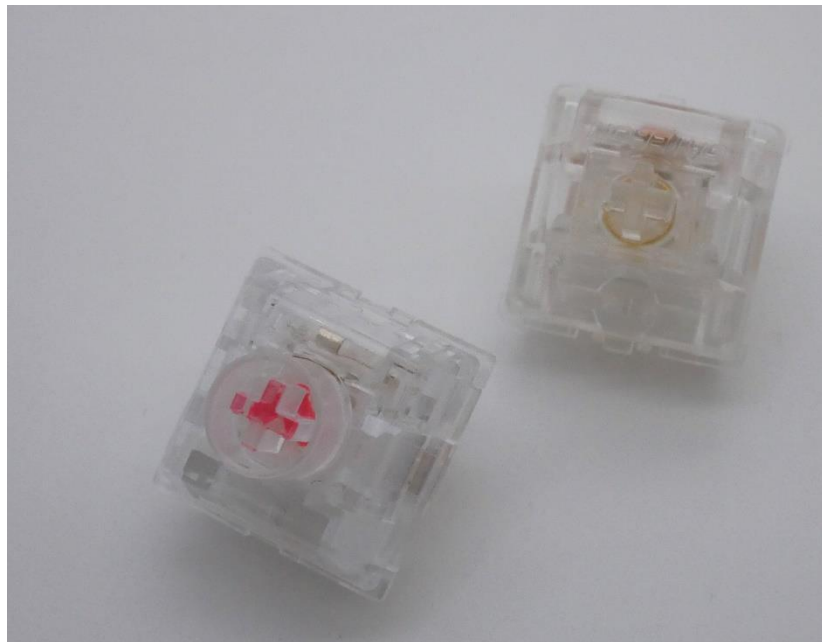


Figure 2: Color comparisons of the Ultraclearine (Top Left), Pearljo (Top Right), and TTC Love (Bottom Center).

Beyond this initial teaser image and name in Moldav.te's opening day release post, little other information was known about them until the owner of the store reached out to me and offered to send some of the prototypes my way prior to their release date. In our conversations together, I gathered that these linear switches were aimed at being perpetually in-stock options from Moldav.te, and would come in two differently weighted options at 42.0g. and 69.6g. bottom out weights, respectively labeled as 'P'

and ‘S’ variants. The switches were described as being long-pole, POM-stemmed linears with housings made of an “entirely new” material they simply referred to as ‘GP’. Jokingly referred to as ‘Glass Plastic’ a couple of times over in our conversations, I never actually was able to discern what ‘GP’ was aimed at referring to, given that it corresponds to no known thermoplastic nor combination of plastics used in switches to date. All that I was told regarding the performance of the GP housings was that it was going to be “like nylon in feeling, but clearly better”. In addition to this, Moldav.te was extremely hesitant in sharing the manufacturer of the Ultraclearine switches with me even after several pointed attempts at asking to know the source of these switches. While they refused to state exactly who it was in our initial conversations, they said they would eventually release this information since they did not want “the optics of the switch to skew people’s initial perception of them”. Priced at \$0.45 per switch, the Ultraclearine switches were first released on Moldav.te’s storefront on April 1st, 2022 with suggested plans of being run via various, more-western facing proxies in the coming months.

Ultraclearine Switch Performance

Note: While I was sent both the ‘S’ and ‘P’ variants of the Ultraclearine switches, this review will primarily focus on the ‘P’ variants which are rated at 42.0g. of bottoming out force. Any reference to the ‘S’ variant of the switches will be explicitly stated.

Appearance

At the highest level of detail, the Ultraclearine switches come in an entirely transparent color scheme, with nylon stems and GP housings which appear to be refractive-index contrast matched to the stems in order to provide a uniform colorway. Outwardly, the switches appear like any other standard winglatch, 5-pin, and traditional MX-mount switch, though with a particularly odd symbol on the nameplate region. While I am unable to make out the finer details inside of the shape, the overall impression appears to be that of an elliptically shaped, raised region centered on the nameplate. Ostensibly, the characters inside of the ellipse would likely correspond to either Moldav.te’s branding or perhaps design specifically for the Ultraclearine switches themselves. I encourage any readers who believe they have made out what these characters are to reach out to me to let me know such that I can edit this into the review at some later point.

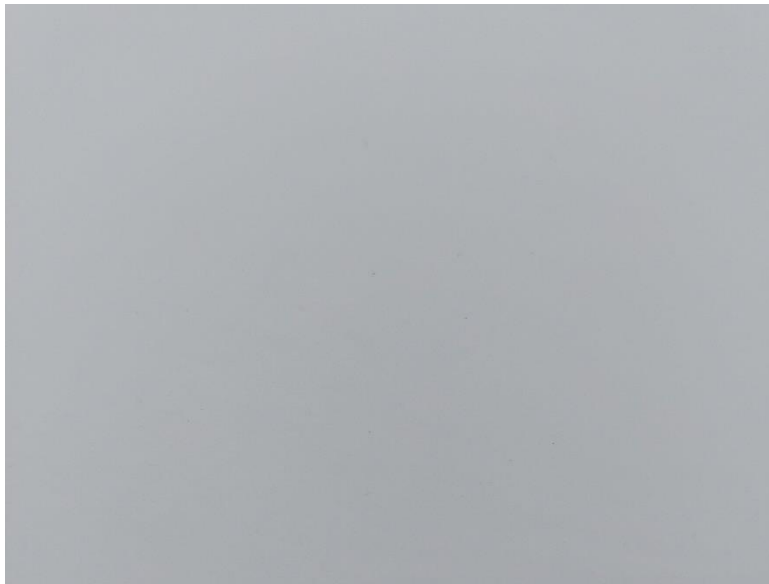


Figure 3: Ultraclearine switch in stock, as delivered form.

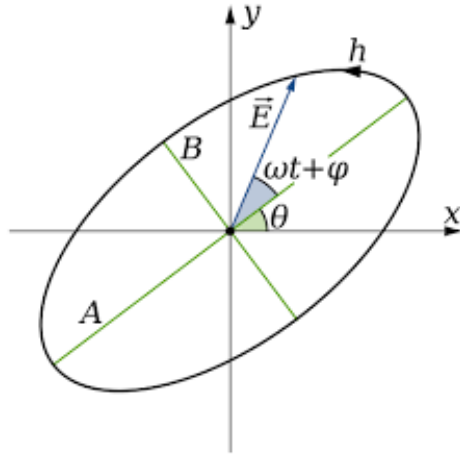


Figure 4: Nearest approximation I could find of the elliptical figure on the nameplate region.

Looking first at the top housings of these switches on their own, they have strikingly little information about them on the exterior. Save the exception of the elliptical nameplate design, the choice to go with winglatch style top housings much like that of Kailh and KTT is certainly a polarizing design feature. While the acceptance and appreciation of this style of top housing has grown in recent months with usage in more budget-friendly brands such as Akko and KTT, by and large this is a non-traditional starting design for many new companies looking to break out onto the scene. Internally, the Ultraclearine top housings feature a rather standard layout with a wide, rectangular LED slot and mold markings located in the upper right- and left-hand sides of the top housing underneath the nameplate region. Much like with the difficulty noted in reading the characters inside of the elliptical emblem on the nameplate region of these switches, I had to tilt my head to the side in order to even register that these mold markings were there. Following the same single letter format as other manufacturers which place mold markings there, these appear to be Greek in origin, rather than English-based letters. To date, this is one of only two known instances of any manufacturer using mold markings in anything other than English letters and Arabic numerals, as far as I am aware, with the singular current exception being that of the stylized “mold marking” on the bottom of the InfinityKey Cow switches. As can be seen below in Figure 5, the upper left-hand side appears to correspond to a ‘ θ ’, known as ‘theta’, whereas the upper right-hand side appears to correspond to a ‘ χ ’, known as ‘chi’.



Figure 5: Ultraclearine top housing external design showing nameplate design and winglatch style housing.



Figure 6: Ultraclearine top housing internal design showing unique Greek-letter mold markings in the upper left- and right-hand corners.

Moving next to the stems of these switches, while they certainly are long pole in design, there doesn't appear to be much else unique about them. Rather long relative to other previously released stems at a total $1.39E7$ nanometers in length, these stems feature slightly tapered slider rails as well as a fairly moderately stepped central pole. While perhaps entirely a figment of my imagination, the slider rail taper does seem slightly stronger than that of other switches I've previously reviewed, seemingly taking an almost 45-degree slope inwards relative to the exterior of the slider rail. Beyond this, no apparent mold identifying marks are present anywhere on the stems, save the lone pair of ejector mold circles located on the backplate of the stems as can be seen in the images below.

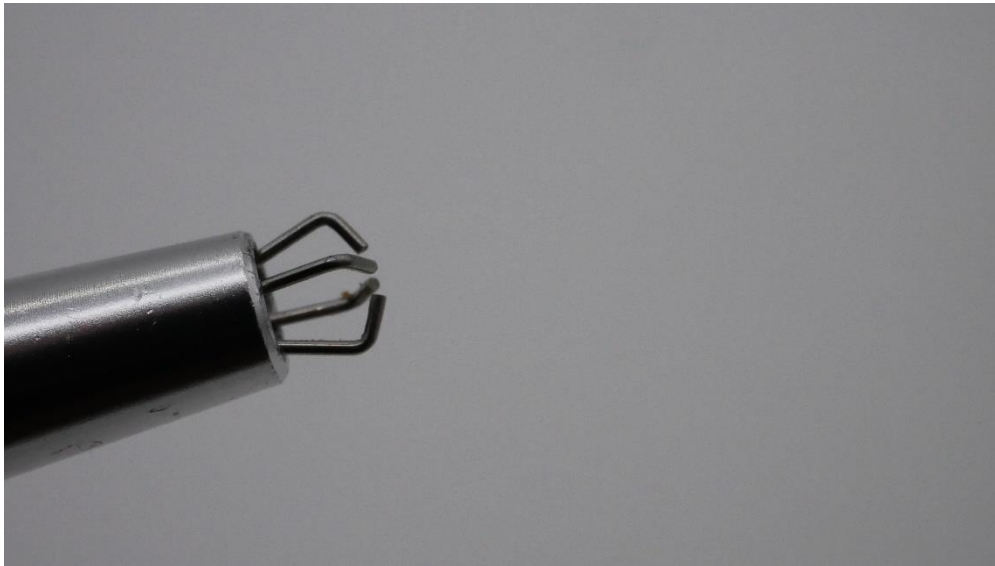


Figure 7: Angled image of the Ultraclearine stem showing slider rail and central pole taper and back plate mold ejector marks.

Before reaching the bottom housings of the Ultraclearine switches, I did want to stop and take a brief second to also speak on the springs of these switches as I've not done so previously. The springs in the 'P' variant of these switches, which are weighted at 42.0g. of bottoming out force, also appear to be coated in a thin layer of GP in order to match the overall color scheme of the switches in a similar fashion as Gateron's Oil Kings. The Oil King switches, which were entirely opaque black in design, also featured black colored springs in their stock form. Assumedly made out of the same normal steel metal that most keyboard springs are made out of, the Ultraclearine P springs are otherwise unremarkable and feature a normal threading and length respective to that of other previous releases.

Finally arriving at that of the bottom housings of the Ultraclearine switches, they too appear relatively unremarkable save for their unique color choice. Internally, they appear to have a mashup of features previously seen in other switches reviewed on this website, featuring a north and south side spring collar, padded slider rails, and an ever so faint ribbing inside of the central hole that is almost impossible to physically see. While I have no real substantial evidence to support this claim, pulling a guess out of thin air I'd assume these switches were either made by Aflion or Kailh, given that the sum total of their features have been most often seen by prior releases and prototypes from those manufacturers. Unlike that of Aflion or Kailh, though, the exterior of the bottom housings feature yet again a truly unique mold marking in the form of a large, lowercase, singular Greek letter between the PCB pins of the Ultraclearine switches. As can be seen below, this large 'λ', which is known as 'lambda' occupies almost the entirety of the space between the PCB pins and could easily stretch between the two mounting pins on the underside of the switch. Additionally, the LED slot is entirely wide open to allow for maximum through-switch LED placement.



Figure 6: Ultraclearine bottom housing internal design showing north and south side spring collars, padded slider rails, and ribbed central hole.



Figure 7: Ultraclearine bottom housing external design showing wide open LED slot, PCB mount pins, and large, single Greek-lettered mold marking between leaf pins.

Push Feel

In terms of the push feel of the Ultraclearines, these switches are truly unlike that of any other linear switch I've tried before. Apparently coming ever so slightly factory lubed to the point that I couldn't even see it when documenting the stems in the 'Appearance' section above, these switches are truly the smoothest I've ever felt. The lubrication is thin enough that it doesn't make the switch feel 'heavy' or 'overlubed' as if it was done poorly by hand, but there is simply not a trace of scratch anywhere in any of the Ultraclearine P switches that I've tried. Typically with switches that have almost see-through levels of factory lubrication it's not uncommon to have some subtle underlying scratch or 'character' to these switches, but these by comparison are simply frictionless.

Moving beyond just the linear portion of the switch, though, the bottoming and topping outs of the Ultraclearines are truly evident of just how unique and never-before-seen the GP housing material is that Moldav.te is using in these switches. While feeling significantly more firm, muted, and solid than that of even comparably thick nylon housings such as in Cherry's switches, what is most striking is just how *soft* these still feel. Even though it's solid and forceful, the housings of these switches feel as light as a feather almost as if nothing is there and completely irrespective of spring weight. While many people who have made it this far would likely have chalked up the last point to the fact that I'm reviewing the lighter weighted Ultraclearine P, the S variants of these switches with the 69.6g. bottoming out force feel just as light and airy, with only maybe a hint more of presence to them than the P variants. I can't possibly think of any other way of describing the unique feeling of the Ultraclearines to you all, and for that I'm sorry. These are truly switches that you have to see for yourself in order to believe.

Sound

Very much like the praises made in the Push Feel section above, the sound of the Ultraclearine switches is also incredibly unique relative to that of any other previous switches and is borderline angelic in tone. Throughout the stroke and between the housing collisions of these switches, they are truly and completely silent without a hint of scratch nor ping. Even placing them up close to my microphone I use for very professional and important Zoom calls which could just as easily have been emails, they don't register anything that normal humans could remotely hear. The only sound that *does* come from these switches in stock form, and what little that my computer was able to register, was that of a nearly sub-human bass tone that was impossible for me to hear but instead left me with instead instilled with a profound amount of spiritual 'thocc'.

Wobble

Unfortunately, while the Ultraclearine switches are nearly indescribable and nearly perfect inside and out, their wobble is still painfully mortal. While the wobble is not nearly enough to make me absolutely stave off my clearly new favorite switches, there is a decently noticeable amount of equal magnitude stem wobble in the N/S and E/W directions. The magnitude is to the extent that this would likely become problematic with taller style keycap profiles such as that of MT3 and SA profiles. Additionally, it's worth noting that both P and S variant Ultraclearines suffered from a bit of variability among their batch with respect to stem wobble, with the aforementioned notes referring to that of the 'average' switch's wobble.

Measurements

<i>Ultraclearine Measurements</i>			
	Component	Denotation	nm.
Stem	Front/Back Plate Length	A	7.26E+06
	Stem Width	B	5.64E+06
	Stem Length with Rails	C	8.60E+06
	Rail Width	D	2.02E+06
	Center Pole Width	E	1.94E+06
	Rail Height	F	5.85E+06
	Total Stem Height	G	1.39E+07
Bottom Housing	Diagonal Between Rails	L	9.57E+06
	Interior Length Across	M	9.25E+06
	Rail Width	N	2.67E+06
	Center Hole Diameter	O	2.35E+06
Top Housing	Horizontal Stem Gap	X	7.70E+06
	Vertical Stem Gap	Y	5.98E+06
Methods	Number of Switches Used		3
	Replication Per Measurement		3

Break In

Ultraclearine - Break In Testing			
Metric	Activations		
	17,000	34,000	51,000
Push Feel (Overall)		+	+
Smoothness		+	+
Ping (Spring/Leaf)			
Wobble (Overall)	-	-	--
Stem Wobble	-	-	--
Top Housing Wobble			
Sound (Overall)	+	++	+++
Scratchiness	+	+	++
Ping (Spring/Leaf)		+	+

Color Scale			
Improvement	+	++	+++
Deterioration	-	--	---
Null Change			

Break In Notes:

17,000 Actuations

- At the end of 17,000 actuations of testing, surprisingly the switches didn't change all that much with respect to overall push feeling of them. While there was an ever so slight uptick in both N/S and E/W stem wobble, these were almost impossible to differentiate from stock switches both by sight and by feeling.
- One thing worth noting here is that even though there was literally no scratchiness in the Ultraclearine P switches at any point in both the 'Sound' nor 'Push Feel' testing sections, these switches unbelievably began to sound even *better* after 17,000 actuations to the point they even reduced the scratchy sound of the stabilizers they were placed beside in my testing boards.

34,000 Actuations

- In a similarly unbelievable fashion as to the previous point in the 17,000 actuations notes, the sound of these switches only *further* improved with usage to the point that they not only reduced the scratchiness of nearby switches and stabilizers but they now *also* reduced the ping of nearby switches. While some testing still needs to be done on this point, the Ultraclearine Ps even began to dampen the sound of normal Box Jades making them truly 'muted' in a never-before-seen fashion.
- After 34,000 actuations, the Ultraclearine switches also began to feel even smoother than the frictionless metric I had initially ascribed to them above. Even though they are already fairly smooth in their stock form, perhaps at this point in the testing the GP housing material began to mechanically smooth in addition to the nearly molecularly even dispersion of the factory lubrication.

51,000 Actuations

- At this point, the Ultraclearine P switches have begun producing sounds unlike that I've ever heard at any point in my life anywhere. Further testing beyond this point became completely unstable as the switches started producing sounds in and of their own accord that I could only silence them *by* actuation. I'm certain that this must be in the inanimate analogue of speaking in tongues, if such a thing even is real.
- Perfection ah something cahf ymg' chase mgng ephaimgsyha'h mgah'n'ghft, dearest uh'enythnah. Ymg' attempts l' mgah'n'ghft highest ot switches mgep led ymg' mgyogor path ymg' ahor mgsyha'h nocephaii hup ng ph'nglui ah l' ymg''ve awakened throdog, thocc mgepahph'nglui.

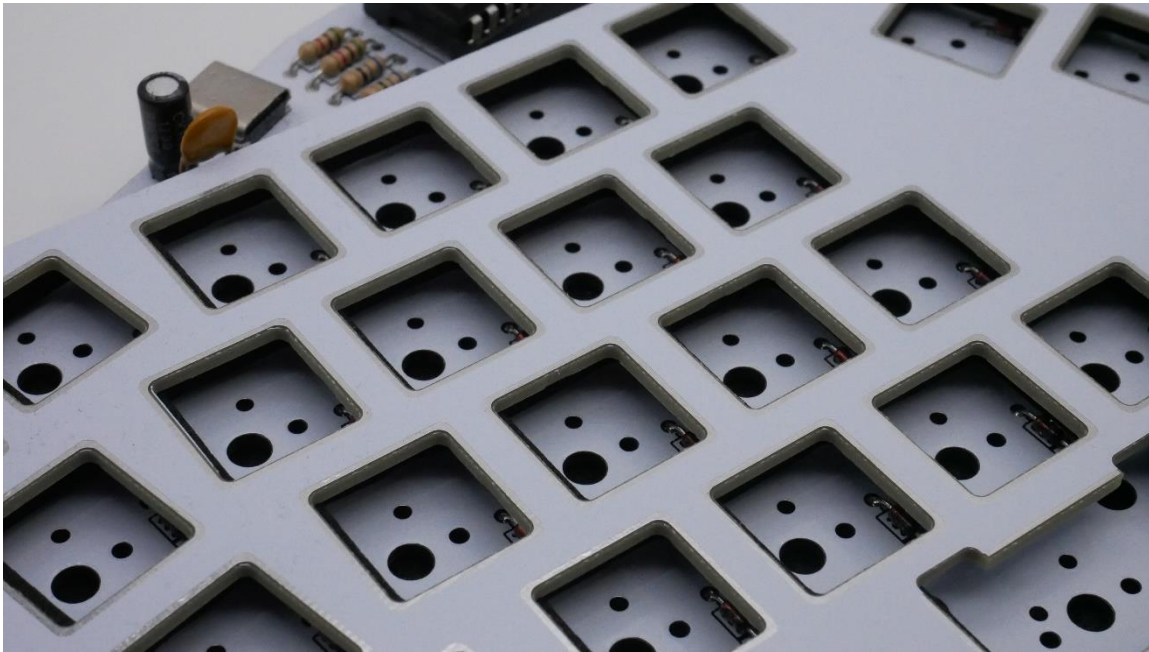


Figure 8: Ultraclearine switches in a testing Sesame-style keyboard.

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 switches to the Ultraclearine P switches side by side.

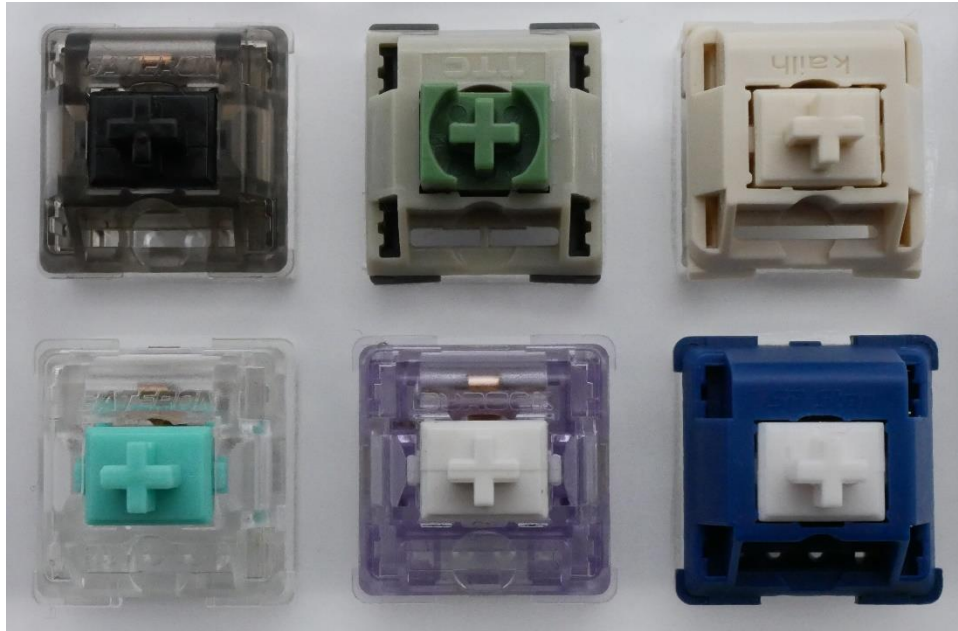


Figure 9: Switches for comparison. (L-R, Top-Bot: Gateron Black Ink V2, TTC Wild (42g.), Novelkeys Cream, Tealio V2, Lavender, SP Star Meteor White)

Gateron Black Ink V2

- Very much to my personal surprise, even though the Gateron Ink line of switches isn't exactly known for their small amounts of stem wobble, these pretty handedly beat out both the Ultraclearine P and S switches in terms of stem wobble.
- With respect to overall smoothness, the Ultraclearine P switches beat out the Gateron Ink V2 switches, and especially so with respect to consistency across the entirety of their batch.
- While the Gateron Black Ink V2 switches are by far one of the most popular and recognizable of switch options amongst beginners, the sheer magic that the Ultraclearine switches bring to the table will likely see them outpace the Gateron Black Ink V2 switches in time.

TTC Wild (42g.)

- The overall sound of the TTC Wild switches, and especially that of the topping out is pretty noticeably more thin and higher pitched than that of either variant of the Ultraclearine switches.
- In terms of stem wobble, and especially that in the E/W direction, the TTC Wild switches beat out the Ultraclearines. This also doubly holds true with respect to cross-batch variability around stem wobble as well.
- Look I like the TTC Wilds, alright. I'm invested to the point I will almost certainly be using them in a build sometime in the near future, but the above noted sound-improving qualities of the Ultraclearines will have me almost certainly putting at least one Ultraclearine into my board to improve the sound of the TTC Wild.

Novelkeys Cream

- While the Novelkeys Cream switches are certainly smoother in their stock form than many people are willing to give them credit for, they might as well have gunpowder coated sandpaper slider rails in comparison to the smoothness of the Ultraclearine switches.
- They do, however, beat out the Ultraclearines in terms of stem wobble.
- Fans of the Novelkeys Cream's bottoming outs will definitely appreciate that of the Ultraclearine switches, and especially that of the S variant which packs an ever so slightly more dampened punch than the P variants.

Tealio V2

- Yes, even the Tealio V2 switches are less wobbly than that of the Ultraclearine switches. I don't know how it happened either, so go ahead and cancel that DM you're writing to me right now.
- Even though the polycarbonate top housings of the Tealios produce a rather signature, slightly more thin and higher pitched sound than many other linear switches, they don't quite pitch up to the same angelic pitch as that of the stock Ultraclearine P switches.
- In terms of factory lubrication, the stock Tealio V2 switches have minorly more lubricant applied to them than that of the Ultraclearines, though it is applied in a much less even fashion.

Lavender

- In terms of similarity of factory lubrication and overall solidity, the Lavender switches are most similar to the Ultraclearine P switches out of any of the switches on this list.
- With respect to the bottoming out between these two switches, even though the Ultraclearine is has a long pole, it feels more firm, muted, and softer than that of the Lavender bottoming out.
- The Ultraclearines just sound better, period. Even they tell me that after their break in period.

SP Star Meteor White

- Seriously, how do I write this many comparisons between switches for each and every review? I get that I took a week off and am a bit rusty with respect to writing this out but holy shit is this taking forever to do. Edit: I don't pay Ron enough to edit this either.
- Something something better stem wobble than the Ultraclearines.
- The fact that the Ultraclearines literally somehow take on a negative sound characteristic *and* speak in a language that I've never heard before the more that I use them doesn't even warrant much of a comparison here to be entirely honest, but the SP Star Meteor Whites are higher pitched at topping out.

Scores and Statistics

Note – These scores are not necessarily completely indicative of the nuanced review above. If you've skipped straight to this section, I can only recommend that you at least glance at the other sections above in order to get a stronger idea of my opinion about these switches.

Ultraclearine		
<i>Switch Type: Linear</i>		<i>Unknown</i>
	/35	Push Feel
	/25	Wobble
	/10	Sound
	/20	Context
	/10	Other
	/100	Total

Push Feel

Borderline indescribable. These switches are clearly the smoothest switches I've ever tried and probably will ever try. Pair that with their unique GP plastic which provides an unreal level of softness to their already firm and muted housing collisions and you've got a switch so good I don't even need to tell you the score. You can figure it out for yourself.

Wobble

The one notable point being held against the Ultraclearines, though, is their fairly noticeable amount of stem wobble in the N/S and E/W directions. Pair this with some cross-batch variability and many users may end up having problems with these when using taller profile caps. Winglatch style housings provide absolutely no top housing wobble though.

Sound

In their stock form, the Ultraclearine switches are basically silent throughout the stroke and are met at either end of the switch with an angelic, sub-human amount of bass that instills profound thockiness not only in me, as a reviewer, but in other switches surrounding it. Upon breaking them in, they also continue to produce this sound even when not in use and may or may not cause voices to appear in one's head warning them of the perils of searching endlessly for the perfect switches. Your mileage may vary.

Context

While certainly on the more obscure side given that their chief vendor in Moldav.te is releasing them officially on April 1st of 2022, I suspect that at their very accessible and beginner-friendly price point at \$0.45 per switch that these will rather quickly seize hold of the community collective consciousness and be the next new switch craze.

Other

Big props go there to Moldav.te and whoever the manufacturer is for the Ultraclearine switches for not only nailing the GP housing formulation but the clearly stellar colorway.

Statistics

Average Score			Ultraclearine		
26.5	/35	Push Feel		/35	Push Feel
16.7	/25	Wobble		/25	Wobble
5.6	/10	Sound		/10	Sound
12.7	/20	Context		/20	Context
6.0	/10	Other		/10	Other
67.5	/100	Total		/100	Total
Ultraclearine Overall Rank			T-# /156 (/100)		
Ultraclearine 'Hard' Rank			T-# /156 (/70)		
Ultraclearine 'Soft' Rank			T-# /156 (21/30)		

Final Conclusions

At the end of all of my reviews, I usually write some form of 'Final Conclusions' section where I wrap up all of my feelings, thoughts, and perhaps insights regarding switches that I feel need restressed or were not as pointedly discussed in the rest of the several thousand above words. Unlike all of those other reviews and 'Final Conclusions' sections I've done before, though, I can honestly say that these switches have left me with a feeling unlike that of any other switch: awestruck, emotionally drained, and perhaps slightly terrified of a cosmic being from the "before times" warning me about my pursuit of perfect switches. That being said though, I think all of these things are entirely justified given the sheer performance of these switches relative to that of literally every other switch that has ever been made before it. All of that for a price tag of \$0.45 per switch is really hard to argue against.

Looking more specifically over the performance aspects of these switches again, its hard to not understand how I came to these conclusions. The Ultraclearines are hands down the smoothest linear switches I've ever tried *and* boast a well-balanced set of firm, muted, and yet impossibly light housing collisions that feel beyond anyone's ideal Cherry MX housing while yet remaining pillow soft. Packaging all of that up in a brand new, revolutionary material in GP-based switch housings, Moldav.te really has set

themselves up to be the newest and most innovative of switch vendors out there in the coming years if they continue to even half live up to this nearly dream-like level of perfection in their switches. Regardless of what they have in stock in the months and years ahead as a vendor, and whether or not these switches really do grip onto the community in a similar fashion to how there are seizing my consciousness and replacing my thoughts with nothing but thoccc, they simply made for a switch I could not help but share on April 1st, 2022.

April Fools all, see you on Sunday with a review.

Sponsors/Affiliates

Mechbox.co.uk

- A wonderful UK based operation which sells singles to switches that I've used above in my comparisons for collectors and the curious alike. Matt has gone out of his way to help me build out big parts of my collection, and buying something using this link supports him as well as my content!

KeebCats UK

- A switch peripheral company based out of the UK which sells everything switch adjacent you could ask for, they've been a huge help recently with my film and lube supply for personal builds, and they want to extend that help to you too. **Use code 'GOAT' for 10% off your order when you check them out!**

Proto[Typist] Keyboards

- An all-things keyboard vendor based out of the UK, proto[Typist] is a regular stocker of everything from switches to the latest keyboard and keycap groupbuys. While I've bought things from the many times in the past, they also are a sponsor of my work and allow me to get some of the great switches I write about!

MKUltra Corporation

- We may have stolen a few government secrets to get this one together. MKUltra is a US vendor that truly fills all the gaps other vendors simply don't offer and is continuing to expand their switch and switch related peripherals by the day. **Use code 'GOAT' for 5% off your order when you check them out!**

Divinikey

- Not only do they stock just about everything related to keyboards and switches, but they're super friendly and ship out pretty quick too. Divinikey has been a huge help to me and my builds over the last year or two of doing reviews and they'll definitely hook you up. **Use code 'GOAT' for 5% off your order when you check them out!**

ZealPC

- Do they really need any introduction? Zeal and crew kicked off the custom switch scene many years ago with their iconic Zealios switches and the story of switches today couldn't be told without them. **Use code 'GOAT' (or click the link above) for 5% off your order when you check them out!**