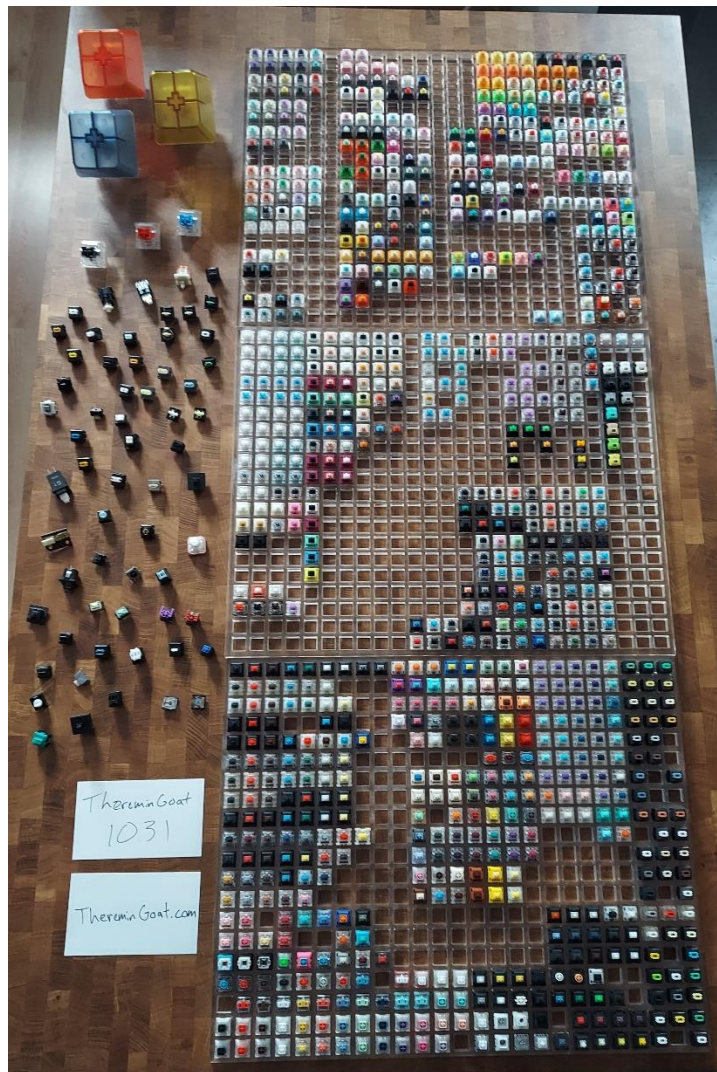


## Holy Panda X Switch Review

-ThereminGoat, 03/01/2022

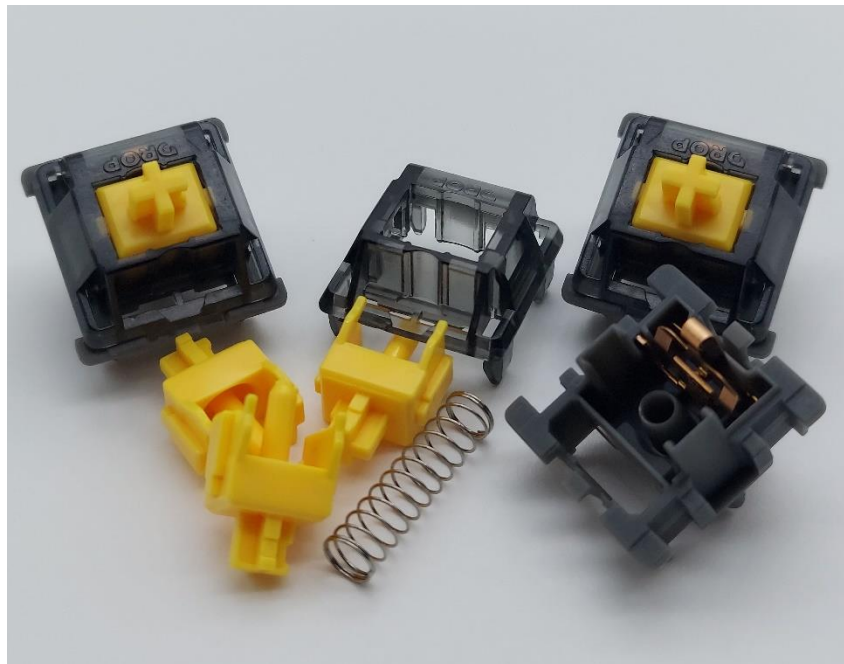
Well hey there. In anticipation that this review may end up being one of my more popular ones, given the plethora of opinions people are having on these switches within the community already, I figured I'd open with a tiny bit of an introduction to those of you who are new to the website. For those of you who have not read any of my reviews prior, or may have only caught bits and pieces of ones here and there - my name is ThereminGoat and I'm a collector of and reviewer of mechanical keyboard switches. While I've been involved in the mechanical keyboard community at large for somewhere between four and five years now, I've been collecting switches and more specifically writing in-depth reviews of them over the past couple of years. As you can see in the rather old collection family photograph below from sometime in the middle of 2021, my switch collection has grown to become just a bit expansive in that short span of time.



**Figure 1:** In the current state, basically all of those open slots you see are entirely filled and then there's even more than that...

While in that photograph I had over 1,000 unique, different mechanical keyboard switches, my collection has continued to grow to where it now sits – officially catalogued with over 1,300 unique switches and increasing by the week. (In fact, I'll be updating this catalogue and this collection family photograph with over 200 backlogged switches here in a week or two when my fourth display tester finally arrives at my place!) As a result of the knowledge I had picked up and connections that I had made with people throughout my time of collecting switches, I felt compelled to start writing these documents as a way to not only preserve my own knowledge, but to also disseminate a much-needed understanding of the complexities of modern, MX style keyboard switches to the community at large. While I by no means find my content exhaustive nor encyclopedic, I try my hardest to pack in as much historical and objective detail into every bit of my content as I can so that anyone who stumbles across it can benefit the most from it. And yes, it is all available entirely for free and sans any form of advertisement as I don't think that it is in proper form to profit off of a community resource as such.

In addition to my long form reviews, which you clearly seemed to have found here now, I would encourage you to check out the 'Archive' tab on the top right corner of the webpage as it contains links to various other pieces of content I do as well. Alongside each review, I post a single-page, significantly more bathroom-break friendly summary scorecard over on my GitHub which has been gaining increasing amounts of attention recently. Additionally, I store measurement details about switches, free to use photographs, and publishing-day drafts of all of my reviews under that same Archive tab as well. As of the time of writing this review, I'll have over 150 scorecards, 100 switches measured, and over 300 photographs all on top of the 68 long-form documents hosted right here on this website. That being said, though, I think I've gone on a bit too much about me and should probably move onto the switches that you and I are here for.

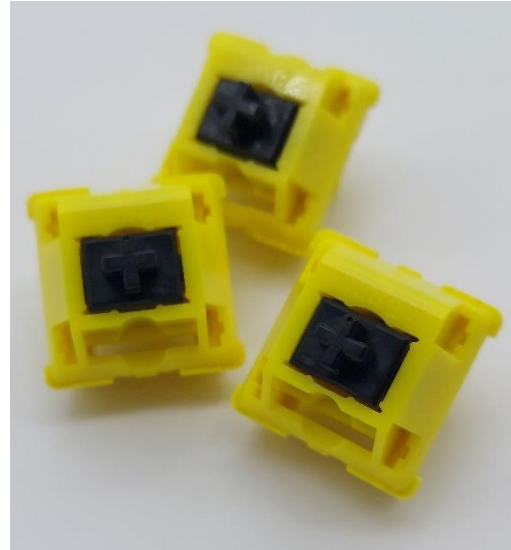


**Figure 2:** Holy Panda X switch and components.

## Switch Background

*Note:* Traditionally, I try and focus the ‘Switch Background’ sections that I write onto more objective truths, details, and historically verifiable points of interest rather than on hearsay or personal opinions. While I will strive to do that where I can here, there are sections of this background which will reference my personal opinions on a topic as well as private conversations which I’ve had with executives at Drop that I am otherwise unable to publicly display.

With that precursory disclaimer out of the way, I can honestly say that I don’t know where explicitly to start on this one. While normal switch reviews have at least months, if not years worth of untraced historical context that can be lent to them here, the saga of ‘Holy Pandas’ has been something that I’ve beaten seemingly to death here with not one or two, but now *four* articles released on them including this one into the fold. In the more compendium-style document of ‘The Pandaverse’, I step through the majority of Panda, Holy Panda, and Panda-adjacent switches to have been released (or only even thought about in some instances), though admittedly this isn’t the most up to date. Even though there’s only a small handful of readers out there right now who could call me out on what specifically I am missing in that document, I’m more than glad to point out to the broader audience here that that list doesn’t include Ethereal Pandas, nor the latest pressings of BSUN-made, YOK inspired Panda switches, such as their ‘Yellow Panda’ switches which were run basically without any interest from the community at large whatsoever. This lack of update to this document in recent times isn’t accidental on my part, either.

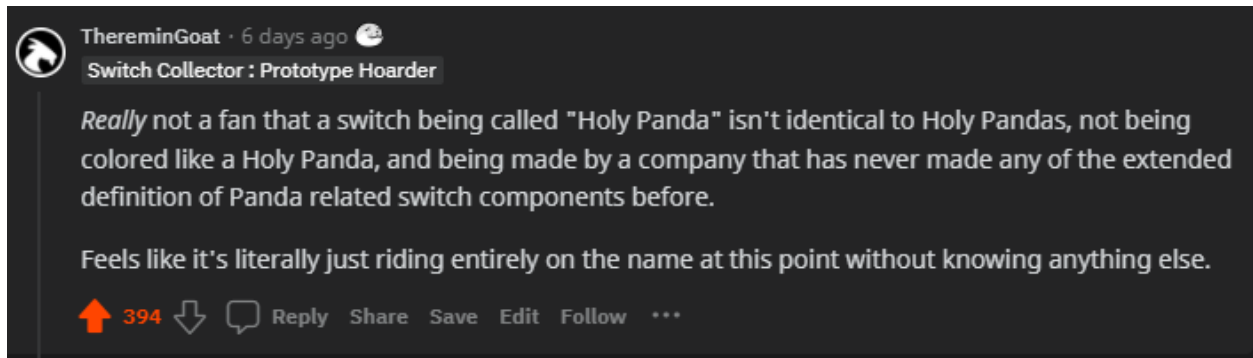


**Figure 3:** BSUN Yellow Panda switches.

As someone who takes switches entirely too seriously already, on top of being a pretty literally-minded, Type A capra, the derivatives upon derivatives of Holy Panda that were being released nearly weekly when I was updating that document drove me a tiny bit crazy. To me, the Holy Panda switch has always consisted of a Halo True (or Clear) stem in an Invyr Panda housing and will only ever consist of that combination. Extending this definition of what makes a ‘Panda’ switch to YOK-made Pandas was already a stretch for me personally, and further deviations beyond this with Ethereal Pandas, Kailh Polia stems as Halo True alternates, and second or third generation BSUN molds that resemble nothing like their originals nor the Invyr Pandas that ‘inspired’ them really turned me a bit sour to the idea of Pandas. The ‘Panda’ switches being released at that point in time had hardly looked nor felt like the original Invyr Pandas and Holy Pandas and made seemingly no attempts at being representative of these originals as far as I could discern. In a way, it had very much felt to me as if the ‘Panda’ name had become hijacked for zoomer-targeted advertising in order to sell switches based on nothing other than the name and reputation of the switches, alone. While I was perhaps a bit isolated in that personal opinion on Pandas at that point in time, I certainly do not seem to be as isolated in it any longer.

Rolling the clock back exactly 8 days ago from when this review was first posted, Quakemz, of TopClack fame, announced via Reddit a new ‘Holy Panda X’ switch that was being made in collaboration with Drop. Pictured amidst a black package bearing Drop’s name and logo, the grey, black, and yellow colored switches were described to be the “modern day versions” of the classic Holy Panda switch. Being the first person to actually create a Holy Panda and to coin the frankenswitch with its now immortalized name, it wasn’t entirely all that surprising Quakemz would be the one to announce this latest iteration of the switch. However, as he went on to provide some more context about these switches and the way in

which they were designed, he was utterly and completely drowned out. Both in this initial Reddit thread, as well as the subsequent announcement page on Drop that went up a day or two later, the switches were effectively blasted by the community at large for the same criticisms that I had had with prior Panda-derived switches. While there were simply too many variations of these opinions to share them all here, the concerns were initially focused on the fact that these switches did not look like Holy Pandas at any level of detail, with minor concerns of this being a ‘cash grab’ sprinkled in for flavor. I also may have leveled similar concerns regarding the design of these switches in this initial post too.



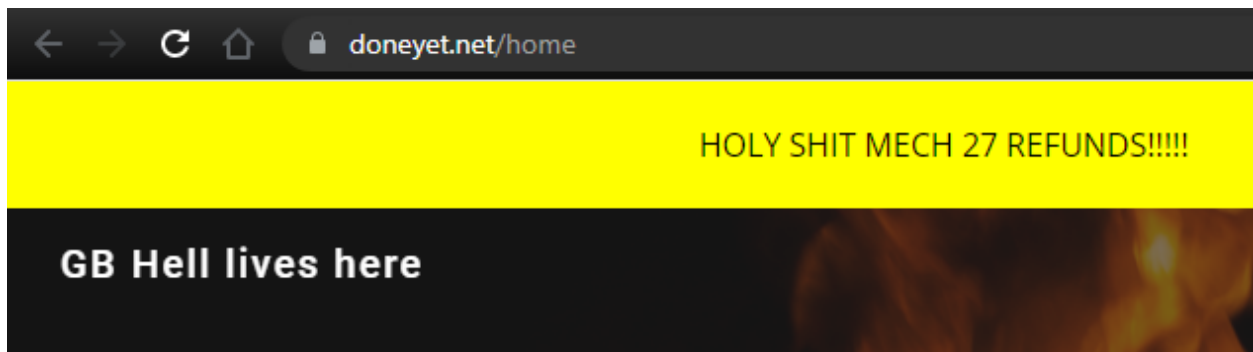
**Figure 4:** "I did not have opinion-based relations with that post."

That is not to say, though, that these were the only concerns surrounding the Holy Panda X switches that were being leveled by the community in these initial announcement threads. Focused more on Drop as well as in private channels via platforms such as Discord, an equal number of community members were subsequently dissatisfied that a user by the name of Mech27 would also be royalties from their input and collaboration with Drop on the Holy Panda X switches. While one would reasonably think that Mech27, as well as Invyr, would rightfully receive royalties on these switches as they were the original designers of the Invyr Pandas, this completely glosses over the *other* projects with which Mech27 was involved – namely that of the Mech27 TKL V2.



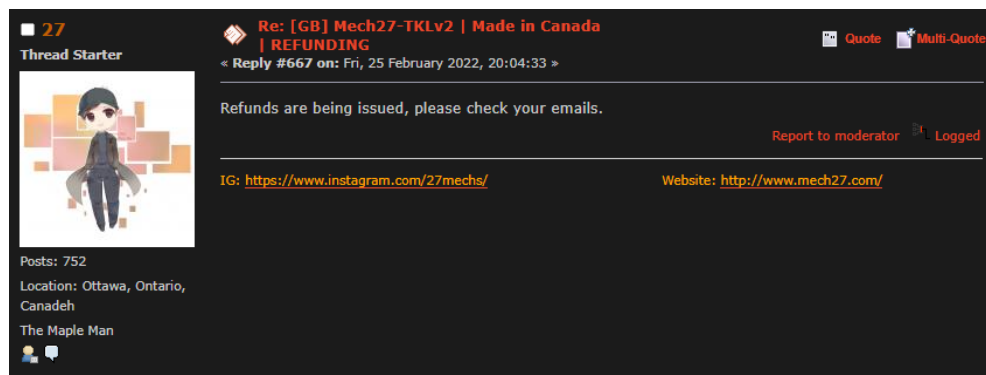
**Figure 5:** Mech27 TKL V2 promotional image from original Geekhack groupbuy thread.

First started as a groupbuy on November 06<sup>th</sup>, 2017, the Mech27 TKL V2 was an entirely Canadian made TKL that was to be the second of Mech27's keyboard designs to hit groupbuy. Coming with fairly bog-standard options for the time in which it was released, this maple leaf engraved TKL with minor design flair had a 50 unit MOQ raffle setup and a pricing of \$399.99 USD pre-shipping. While the initial comment updates on the Geekhack groupbuy page where this was sold indicated that the boards were made and picked up from the manufacturer by January 5<sup>th</sup> of 2018, a decent handful of users never received their keyboards from 27. Further compounding this issue, these users never received refunds either no matter how hard of an attempt they had made to make contact with Mech27. As a result, the Mech27 TKL V2 groupbuy went on to become one of the more infamous groupbuy "exit scams" in the community's history, alongside that of the Bunnylake's Keyboard Yoga Club and JaxxStatic's SCIF-bound Rukia R2 sale, to name a few. And at least up until the last handful of days as of writing this review, the Mech27 TKL V2 stood up on that mantle seemingly poised to be there for the rest of eternity.



**Figure 4:** A particularly interesting community member-made website tracking some of these famous exit scams.

At this point, you're probably wondering how much further the drama digs in beyond this point for the Holy Panda X switches, as the last few paragraphs could be easily mentally pictured as a runaway car with the brakes entirely blown off. However, as far as the major points of dissatisfaction raised by the community at large are concerned, this is the most up to date and comprehensive list of grievances in the short week and change that these switches have been around. In fact, some of the aforementioned drama in the past few paragraphs has already been publicly resolved – namely that of the Mech27 TKL V2. In a move absolutely unprecedented in the community's history, Mech27 posted on the TKL V2 groupbuy thread on February 25<sup>th</sup>, 2022 that refunds were finally being issued to users who didn't receive their keyboards, four long years after the groupbuy had started. While this has done nearly next to nothing to change people's personal opinions of Mech27, it is still one small, historically significant event that attempts to alleviate some of the drama posed by these switches thus far.



**Figure 5:** Mech27's Feb. 25th, 2022 announcement of GB refunds being issued.

Attempting to double down on my luck and see if there was any other further interesting details which I could squeeze into this review, or perhaps an alleviation of more of the switch-focused concerns raised by the community at large, I reached out to Drop in order to ask some questions about the Holy Panda X switches. Specifically, I was interested in trying to understand more about the design, naming, and overall marketing of these switches, which was very much in line with my initial concerns I had raised in Quakemz's post. In the couple of conversations I've had with them in recent days, the rationale for calling these switches as 'Holy Pandas' even though they don't attempt to look like nor one-to-one emulate the original Holy Pandas was described in a way that appears much less malicious than the community had initially ascribed to Drop. Rather than simply attempting to extort the Holy Panda name for cheap marketing and easy profits, Drop genuinely appears to have wanted to make an improved, Holy Panda-esque switch that made up for performance issues in previous iterations of the switch. In addition to discussing their desire to want to physically improve the Holy Panda switches, a surprising amount of our conversation was geared around the idea of 'intellectual property' and that of designers getting their due compensation for their work. Being an ever relevant, and increasingly prevalent topic of conversation in the community as of late, I was told that they saw the releases of many of the Panda derivatives that I had taken issue with as effectively similar to that of cloned keycap sets – these were the ideas of Invyr, Mech27, and Quakemz which were being used without their credit, support, nor due compensation. So, in order to make better on both the intrinsic design features as well as the extrinsic factors surrounding the switch, the idea was set in motion within Drop to bring on the original Panda and Holy Panda designers as collaborators who would receive fair royalties for their design for the first time ever in the history of Holy Pandas. In fact, this is the first time I've heard of something to this effect *ever* happening in switches.



**Figure 6:** At least there wasn't any drama about this promotional image as it is insanely good looking.

Taking stock of the wounded and injured at the end of the retelling of all of this, I can certainly say that this is a switch history left unfinished at the time of writing this. While the Mech27 concerns were marginally amended with the refunding of the TKL V2 groupbuy spots to those who never received their keyboards, the general community at large doesn't seem to have moved on from the first set of concerns that I had discussed with Drop above. Even though Drop has published several 'stories' in addition to their sales page in which they attempt to explain some of the context that I have provided from our conversations above in the previous paragraph, I'm not entirely certain that this won't be the first time that many people are made aware of such sentiments and intentions by Drop purely based on the fact that people who are upset with them aren't likely to read their marketing material further. Additionally, Drop has seemingly played it mildly conservative with their marketing and community outreach since the first few warning shots of drama were fired, and thus the general dissemination of this intent is a bit lacking by all standards. While one could easily see this as Drop refusing to address these concerns, based on my conversations with them, I'm more inclined to think that this was a move to avoid drama escalation to the point of extremity ala Glorious Pandas and their release. (It does seem strikingly funny, as a side note, that any modern reincarnation of the Holy Panda switches seems to bring with it unending amounts of drama.) Without much more information on any of these storylines in front of me, though, I feel inclined to do my hard pivot here into the more concrete historical details surrounding the Holy Panda X switches.

According to the Drop sales page for the Holy Panda X switches, which are also dubbed ‘HPX’ in short, design of the switches began around 2020 with a focus on improving upon present issues in previous versions of Holy Panda switches. Taking on collaborations with Quakemz, the creator of the first Holy Panda switches, and Invyr and Mech27, who created the original Invyr Pandas, the team sought out to improve smoothness, factory-lubrication, and consistency in their new Holy Panda-inspired switches. Named ‘Holy Panda X’, these Holy Panda-inspired switches featured a 3.5 mm travel distance and a 65g. bottom out spring while also being lubed with a moderate amount of factory lube on the leaves and stems of the switches. The HPX switches were first sold on March 1<sup>st</sup>, 2022 for a short period of time in a pre-order phase at \$29 per pack of 35 switches (\$0.83 per switch), with prices increasing to \$35 per pack of 35 switches after the pre-order window. While it is currently unknown, it is historically implied that these will be regularly stocked on Drop’s website for an indefinite length of time in similar fashion to their Massdrop x Invyr Holy Panda switches released previously.

## Holy Panda X Switch Performance

### Appearance

At the highest level, the Drop Holy Panda X switches do not appear anything like that of what their name implies, as so many people have astutely pointed out in their initial announcement thread. Rather than the traditional off-white housings with peachy tan colored stems, the HPX switches feature opaque, dark grey nylon bottom housings, translucent black polycarbonate top housings, and golden-yellowish colored stems. Featuring a raised ‘DROP’ nameplate, these Gateron-made switches are historically interesting as they are only the third time in the history of Gateron’s public switch releases in which they’ve had switches *not* featuring exclusively ‘GATERON’ nameplates. (The other two are that of Zeal’s Clickiez switches and Rantopad Oranges.)

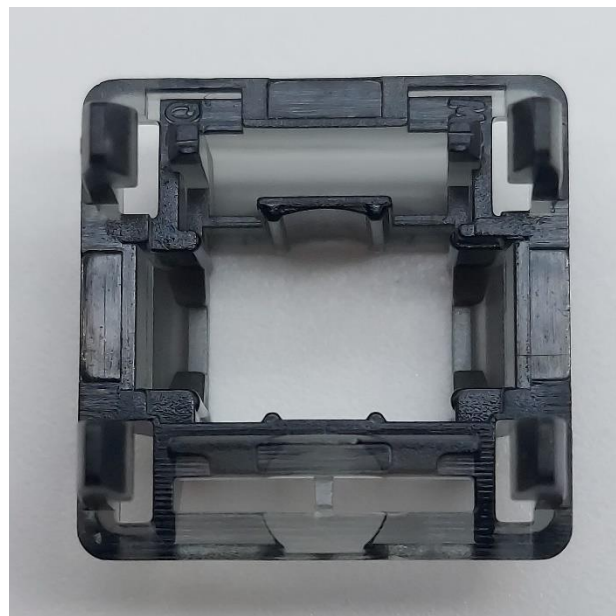


**Figure 7:** The only three public Gateron switches to date to feature non-Gateron nameplates including Rantopad Orange, Zeal Clickiez, and Holy Panda X.

Looking more closely at the details of the top housings, the external designs are rather plain with exception of the aforementioned unique nameplate design. It's also worth noting here that in addition to 'DROP' being used as the nameplate, it is stylized in the same design as their current company logo and is also inverted, facing away from the stem like many other modern Gateron-made releases. The other external feature worth noting is that of the wide, thin LED slot with a thin bifurcation in the middle, still allowing for a wide range of through-switch LED capabilities. Internally, the top housings don't appear to have any strikingly unique details to them, though I for some reason can't get it out of my head that the upper edge underneath the nameplate region seems minorly different. Beyond this, there are two, single letter, internally facing mold markings in these same upper corners underneath the nameplate as is common with the vast majority of switches released throughout 2021.



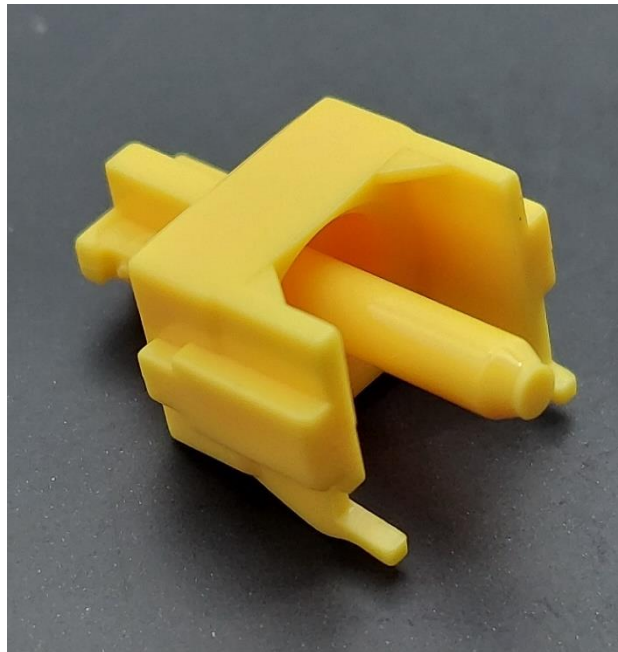
**Figure 9:** Holy Panda X top housing external design featuring inverted and stylized 'DROP' nameplate and bifurcated LED slot.



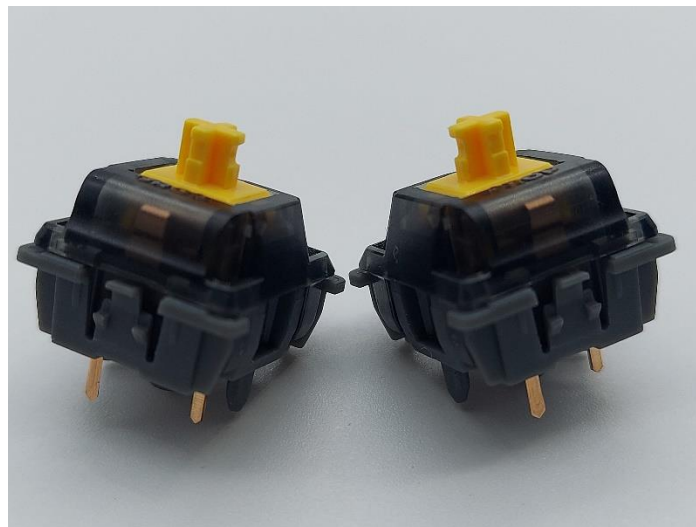
**Figure 8:** Holy Panda X top housing internal design featuring two single letter mold markings in the upper left- and right-hand corners.



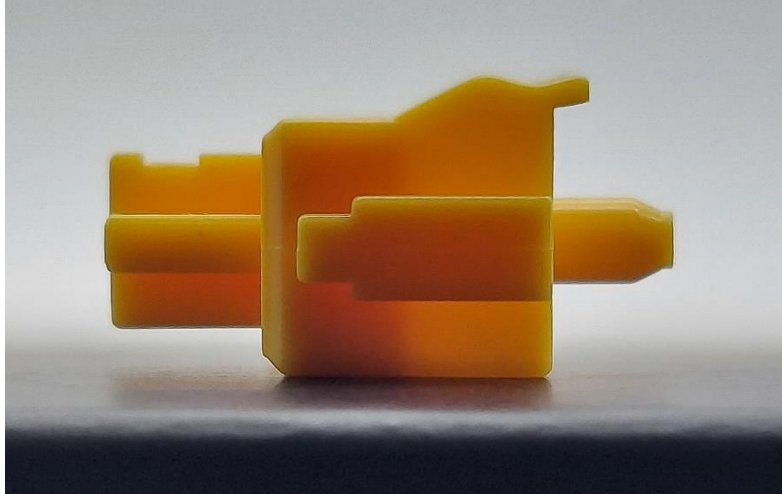
Moving next to the stems of the Holy Panda X switches, I am presented with several minor details which indicate to me that these stems are from an entirely new mold and don't appear to line up with any previous Gateron switches. The first two details, in particular, which stood out to me upon inspecting the stems were those of the significantly longer slider rails and their incredibly subtle taper. Neither of these features have been seen prior in any switches from what I can recall, much less together before in the same stem if they do exist elsewhere. Additionally, the corner edging on the backplate of the stems as well as the fact that the stems contain slight recesses cut into *two* of the four keycap mounting edges further contribute to their unique designs. While all switches in my batch appear to have one of these recesses in the North side that is always smooth in the indentation, there appears to be an equivalent amount with East and West side grooves which have the injection molding sprue mark in them as per usual.



**Figure 11:** Holy Panda X stem backside showing uniquely edged corners, long slider rail length, and subtle slider rail taper.

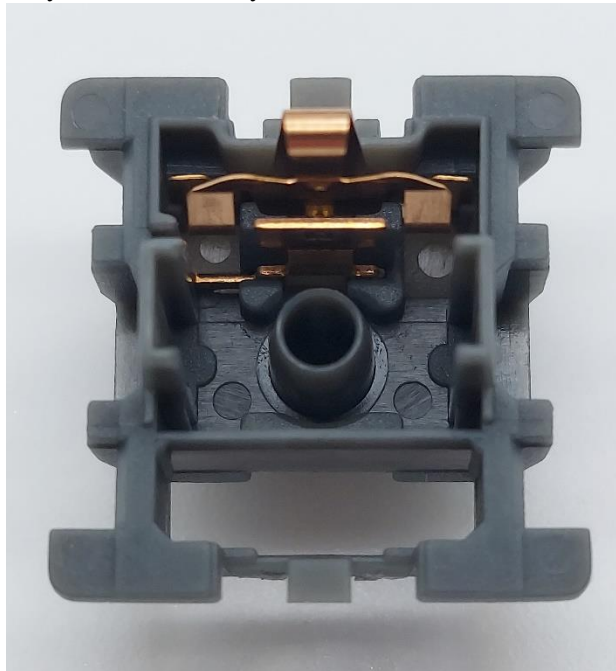


**Figure 10:** Comparison of N/W and N/E stem indentations in Holy Panda X switches. Both switches are from the same stock, as delivered box.



**Figure 13:** Holy Panda X stem wide shot showing tactile bump, central mast taper, and large slider rail length.

Moving finally to the bottom housings of the Holy Panda X switches, these are by far the least interesting with respect to mold details out of the components of the switch. Internally, features of a central ‘hill style’ bottoming out dampening pads, central mold ejector circles, and a south side spring collar have all previously been seen in other Gateron switch releases. Additionally, the four ejector mold circles on the upper rim and wide-open LED slot are also non-unique but relevant to note. Externally, the HPX switches come in five-pin configuration only, with a pair of upright, single letter mold markings above the LED region corners and the sideways ‘GATERON’ anticounterfeit lettering between the pins. It’s also worth noting that the bottom of the central pole region does *not* contain an ‘X’ on it, which Gateron has previously made indicative of the molds used in their recent Gateron X switches. The usage of ‘X’ in the ‘Holy Panda X’ name as well as Gateron being the manufacturer of these switches has led many individuals to mistakenly assume that they would thus feature the new X molds.



**Figure 12:** Holy Panda X bottom housing internals showing mold ejector circles, padded bottoming out region, and south side spring collar.

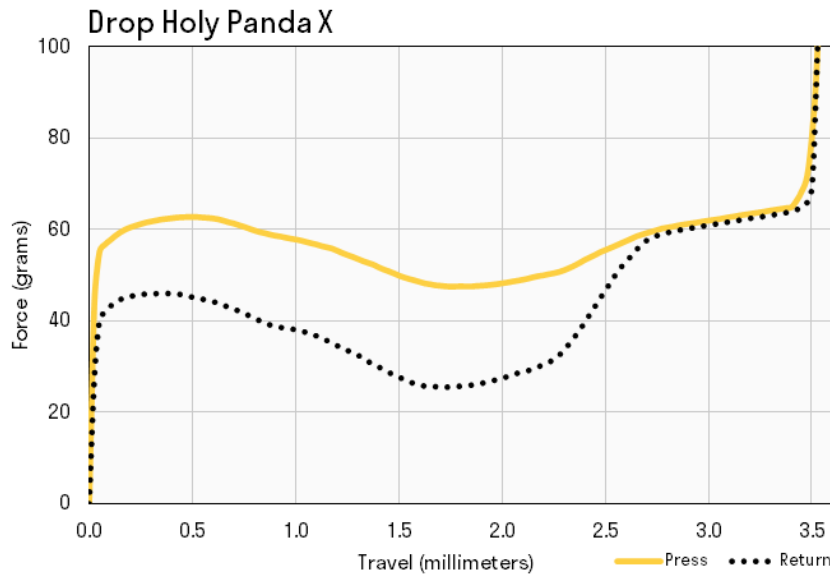


**Figure 14:** Holy Panda X bottom housing externals showing single letter mold markings and 'GATERON' anticounterfeit lettering between the switch pins.

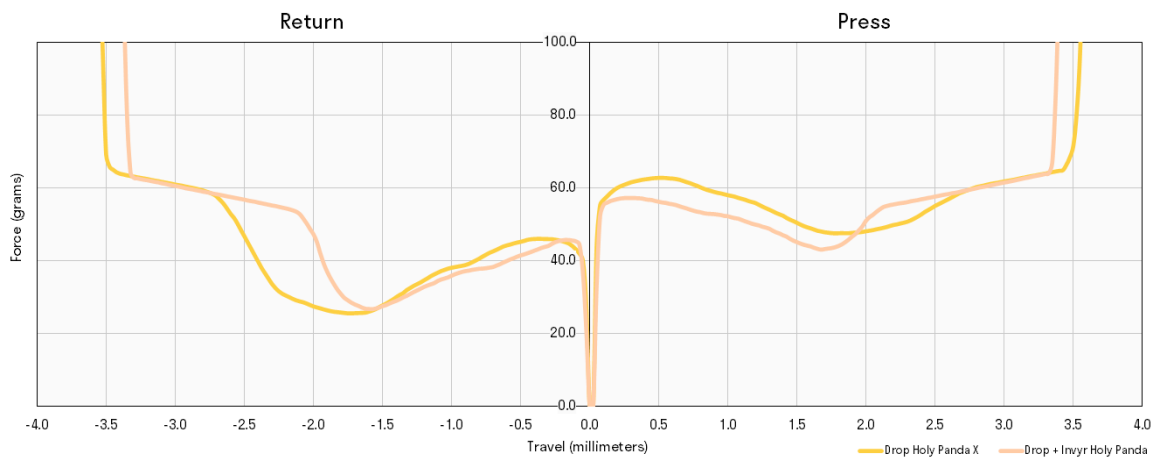
### Push Feel

The first and most distinctive detail that jumped out to me when I first tried these switches was simply how clearly their tactile bump and overall feeling was inspired by Holy Panda switches. In fact, even without contextually knowing this relationship, the high set and forceful but rounded tactile bump these switches possess is perfectly in line with canonical expectations of Holy Panda switches. With effectively no linear pretravel region and perhaps only a slight budge towards the tactile event in some switches, the bump itself constitutes the majority of the downstroke, occupying nearly 2.5 mm of the switch's 3.5 mm total travel distance. Interestingly, the return tactile bump is equally as long as the downstroke, though it feels subtly more sharp at slower activation speeds than that of the downstroke tactile bump. That is not to say that it necessarily feels as if there is two distinct tactile bumps throughout the stroke of the switch, rather it is that the upstroke feels a tiny bit more prominent and sharp than that of the downstroke bump.

Beyond the tactile bump, the bottoming out and housing collisions of the switch are both pretty surprisingly well balanced and free from thin and plasticky feelings. Occupying a nice middle ground between traditional nylon-like 'thick' housings and polycarbonate-like 'thin' housings, the polycarbonate over nylon material design feels cohesive and not anything like what their bill of materials would imply. Additionally, the switches are fairly smooth, all things considered, though they definitely still do have a *lot* of the switch's 'character' in their feeling as well. The marketing which Drop has posted for these switches, as well as my conversations with them has led me to believe that the light factory lubrication\* specifically chosen for these switches was intentionally done so which explains my experience above. The rationale for this decision was to provide a fairly smooth stock switch to those who would not modify their switches while still allowing room for more involved enthusiasts to make changes without having to completely clean off every stem. Additionally, this smoothness is rather consistent across the entirety of the batch I received and there's no glaring issues with variation in this across the batch of switches I received.



**Figure 16:** Holy Panda X solo force curve as provided by Drop in their February 27th, 2022 update.



**Figure 15:** Holy Panda X and Massdrop x Invyr Holy Panda 'butterfly' style force curve as provided by Drop in their February 27th, 2022 update.

Attached above are the force curves for the original Massdrop x Invyr Holy Panda and Holy Panda X switches, as provided by Drop in their February 27<sup>th</sup> update post on their sales page. The differences with respect to bottoming out and overall tactile bump shape and feeling in direct comparison are more evident here than perhaps via my comparison section down below. Additionally, I wanted to include these force curves primarily for that of the rather unique, 'Butterfly' style design demonstrated in the last force curve in Figure 18. In a completely non-traditional fashion, Drop separated the upstroke and downstroke curves into different quadrants in a 'butterfly' style display rather than the traditional upstroke on top of downstroke style force curve. While clearly an aesthetically driven feature more so than it is a functionality driven one in the comparison between only two switches, I quite frankly am a fan of this style and would like to see some more force curves adopt this in the future.

\*Upon editing this section of the review before final posting, I wanted to note that the factory lubrication used in these switches must be *extremely* thin or via a new formulation that I've not seen prior. While some of the stems definitely had visual residue on them, I had quite a hard time physically seeing any lube on the stems at all, even under harsh lighting conditions. While this certainly does sit as a bit of a question mark in my mind to date, the smoothness of these switches still stands as described and speaks for itself.

### Sound

Of all of the solid design points marketed as being targeted by Drop in their announcement posts, one of the areas which was entirely lacking was any stated attempt at modifying the sound of the Holy Panda X switches relative to their predecessors. To that end, the HPX switches appear to suffer the most in this category relative to that of all the other ones which I've outlined above. The housing collisions are fairly muted and unnoticeable, though due to them coming behind a rather leathery, decently medium-loud tactile bump that constitutes the majority of this switch. While this interface between the stem legs and leaves were told to me to have been lubed, which has historically been done to improve the scratchiness and harshness of strong tactile switches, it doesn't appear to have had much of an impact here if present. Additionally, accenting the scratchy tactile bump overtones is that of undertones of a fairly pingy spring. While definitely annoying in stock form, the HPX do at least appear to do at least appear to be consistent across the entirety of my batch received making this appear not a manufacturing mishap or oversight.

### Wobble

In terms of stem wobble, there's effectively none to any sort of appreciable degree which would bother anyone who would use these in a build. Even though recent Gateron switches have been improving upon stem wobble as a whole compared to releases pre-2021, this is distinctly better in both N/S and E/W directions than what I recall of previous Gateron switches. Just a tiny bit more wobbly in the E/W direction than the N/S direction, the stem wobble is also rather consistent across the entirety of the batch that I received and no top housing wobble was present in any of the switches even after having opened and closed them a few times.

### Other

While not the most common of sections to see in my reviews, the informal 'ooh fancy packaging' section returns to this review as Drop has customized boxes for the Holy Panda X switches. Coming in packs of 35, these simple white on black boxes feature a top-down switch image with the Drop logo and Holy Panda X on them. Inside each box is a white plastic 'GATERON' switch tray with accompanying clear plastic top. Even though this is definitely on the cheaper end of holders which companies provide switches in, the fact that it has a tiered interior such that all switches can only be correctly oriented one way is both a neat feature and a subtle detail that I rather appreciate.



**Figure 17:** Drop's Holy Panda X sales box and accompanied plastic holder tray.



**Figure 18:** Close up of the tiered wells in the plastic switch holder tray provided in Holy Panda X packaging.

Measurements

<b><i>Holy Panda X Measurements</i></b>			
	<b>Component</b>	<b>Denotation</b>	<b>mm.</b>
Stem	Front/Back Plate Length	A	7.18
	Stem Width	B	5.54
	Stem Length with Rails	C	8.54
	Rail Width	D	2.22
	Center Pole Width	E	1.89
	Rail Height	F	5.48
	Total Stem Height	G	12.68
Bottom Housing	Diagonal Between Rails	L	9.41
	Interior Length Across	M	9.51
	Rail Width	N	2.58
	Center Hole Diameter	O	2.24
Top Housing	Horizontal Stem Gap	X	7.73
	Vertical Stem Gap	Y	6.04
Methods	Number of Switches Used		3
	Replication Per Measurement		3

## Break In

<b>Holy Panda X - Break In Testing</b>			
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			

*Oh yeah, that's right.* Given my recent acquisition of a switch break-in machine, I felt it would be nice to correspondingly work in its usage into reviews in which I've received significantly enough switches to test them out using this device. The device that I acquired, which came from DingKeyDesigns, is set to activate at a rate of 17,000 presses per hour (or around 4 per second) with which I've planned the following testing procedure:

- Place equivalent amounts of switches on both outer sides of the pressing plates with a balance set of junk switches on the insides to allow the machine to run. This should be done to equalize the weighting on either side such that one set of switches are not being pressed 'harder' than the others.
- Run the switches in half hour increments, making sure to stop for at least 10 minutes in between half hour sessions in order to allow the motor to rest and for me to get some damned peace and quiet in my studio apartment.
- Repeat this process over three distinct periods of time with three different batches in order to allow for comparisons between them. The current plan is to run batches for 1 hour, 2 hours, and 3 hours for comparisons at 17,000, 34,000, and 51,000 actuations, respectively

In addition to this new review feature and procedure which will be present, when possible, you can also see the 'Break In Card' at the top of this section which features a color-coding chart for quick comparisons between points of interest between switches of various trial times. Darker colors (and proportionally increasing numbers of + and/or - signs for my colorblind audience) refer to stronger changes in that performance characteristic *relative to stock switches*. This will hopefully allow for an understanding of how the stock switches will wear in and change over time as I currently only review stock, as delivered switches. (How the switches break in will also *not* be being used in the scoring of the switches in any capacity.)

## Break In Notes:

### 17,000 Actuations

- Very surprisingly, there was an increase in both N/S and E/W stem wobble versus the stock, as delivered HPX switches. That being said, the difference was not so drastic as to likely become problematic to users, but it was noticeable, nonetheless.
- The overall smoothness of the switches was improved a bit with break in, but a slight increase of the aggressiveness to the scratchy end of the tactile bump balanced out this benefit a bit.

### 34,000 Actuations

- While the spring ping got a tad bit worse at 34,000 actuations than 17,000 actuations, it didn't increase by significantly enough to make the switch overall sound worse as the housings sound slightly more bass-centered and deeper than before.
- The harshness of the leathery tactile bump has become more evident with usage up to 34,000 actuations as to affect the overall Push Feeling a bit for the worse whereas it didn't for the 17,000 actuations set.

### 51,000 Actuations

- Rather surprisingly, the stem wobble got noticeably worse here at 51,000 actuations than at the prior testing points and compared to the stock format. While still not in a severely problematic state at this amount of actuations, it would lose a few points on a 'Wobble' section of a scorecard in this state versus the stock state.
- Unsurprisingly, the push feel and sound of the tactile bump and spring continue on as expected without much noticeable change between here and prior testing points.

## Comparison Notes to Other Notable Tactile 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 Holy Panda X side by side.



**Figure 19:** Switches for comparison. (L-R, Top-Bot: Zealio V1 Redux (67g), Salmon, Gateron Kangaroo Ink, Neapolitan Ice Cream, Kiwi, Massdrop x Invyr Holy Panda)



### Zealio V1 Redux (67g.)

- In terms of tactile bumps, not only are the Holy Panda X switches moderately more tactile than the Zealio V1 Reduces, but they also have a significantly longer feeling tactile bump.
- The stem wobble on the stock Holy Panda X switches is ever so slightly better than that of the Zealio V1 Redux switches in both N/S and E/W directions, as well as in terms of cross-batch consistency.
- In terms of overall smoothness, the stock HPX switches are noticeably more smooth throughout the entirety of the stroke than the Zealio V1 Redux switches.

### Salmon

- The most noticeable difference between these two switches is that the bottoming out of the Salmons onto the center pole is significantly more sharp than that of not only its own tactile bump, but also that of the bottoming out of the HPX switches by comparison.
- The Holy Panda X switches are definitely less wobbly than the Salmon switches, and this is especially noticeable with respect to the difference between them in the N/S direction.
- With respect to overall smoothness, the Holy Panda X switches are also smoother than the Salmon switches in stock form.

### Gateron Kangaroo Ink

- While the Holy Panda X switches feel slightly heavier at the tactile event than the Kangaroo Ink switches, the Kangaroo Inks feel just a bit more ‘snappy’ and with a smaller, tighter tactile bump than the Holy Panda X switches do.
- In terms of stem wobble, the Holy Panda X switches have the Kangaroo Inks significantly beat in both the N/S and E/W directions.
- The housing collisions, and especially the topping out in the Holy Panda X switches is significantly more firm and thick feeling than that of the Kangaroo Inks even though they are made of polycarbonate.

### Neapolitan Ice Cream

- Of all the non-Holy Panda based switches on this comparison list, the Neapolitan Ice Creams have by far the most comparable tactile bump in terms of overall strength.
- Much like with the Salmons, though, the Neapolitan Ice Cream switch bottoming out feels significantly more sharp and pointed than that of the Holy Panda X bottoming out.
- In both the N/S and E/W directions, the stem wobble on the HPX switches is better than that of the Neapolitan Ice Creams.

### Kiwi

- While both switches are definitely *smooth* in stock form, the Kiwi switches have a noticeably more ‘hand lubed’ feeling than that of the HPX switches, and have much less of what I’ve called the ‘raw switch character’ in the review above.
- In terms of the tactile bump, the HPX switches feel as if they have a longer tactile bump as well as one which is more ‘punchy’ and forceful than that of the Kiwi switches.
- The Holy Panda X switches are far and away the louder of these two switches, even at low typing speeds and in relatively insulated build setups.

### Massdrop x Invyr Holy Panda

- The in stock, “non-frankenswitch” Massdrop x Invyr Holy Pandas are noticeably more scratchy than that of the HPX switches, and especially so in the non-tactile bump part of the stroke.
- There is basically no comparison in stem wobble between these switches, either, as the HPX switches are leagues better in both the N/S and E/W directions.
- In a very hand wavy, potentially confusing sort of comparison, the HPX switches feel like a ‘tighter and more cleaned up’ Massdrop x Invyr Holy Panda, and especially so when comparing the tactile bumps and stem wobble between the two.

### **Bonus Round**

Because why not? I’ve already blown past normal word count here *and* added a new section so there’s no reason to stop short at only six comparisons today.

### Glorious Panda

- The tactile bump force is actually rather surprisingly comparable between these two switches, with the Glorious Pandas being just a tiny bit punchier and the HPX switches being just a slight bit wider in their tactile bump.
- The Holy Panda X switches blow the Glorious Panda switches out of the water with respect to the stem wobble in both the N/S and E/W directions.
- In terms of smoothness throughout the stroke, the Glorious Pandas are definitely scratchier than the HPX switches.

### OG Invyr Holy Panda

- Entirely as expected, the original, unlubed Invyr Holy Pandas are significantly more pingy *and* scratchy than the HPX switches. With a decent job of hand lubing, though, these original Holy Pandas could become comparable to the HPX switches in their stock form.
- Of all of the switches on this list, these two probably have the most similar feeling length of tactile bump, which isn’t all that surprising if Drop set out to mimic and slightly improve upon the original switches, I suppose.
- The housing collisions on the original Holy Panda switches are a tad bit more sharp feeling than that of the bottoming or topping out of the Holy Panda X switches.
- This is the only switch in this entire review that deserves the Holy Panda name, in my opinion.

## 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.

Holy Panda X		
<i>Switch Type: Tactile</i>		<i>Gateron</i>
31	/35	Push Feel
23	/25	Wobble
5	/10	Sound
13	/20	Context
4	/10	Other
76	/100	<b>Total</b>

### Push Feel

With a high set, strong but not overpowering tactile bump that lingers throughout the majority of the 3.5 mm travel distance, the Holy Panda X switches sit just on the fringe of ultra-high tactile switches while dodging issues common to that region. Additionally, a set of surprisingly well-balanced housing collisions and smoothness further demonstrates the attention to detail here, with only a slight scratchiness to the tactile bump and subtle ping in the spring being the push feel issues in stock form.

### Wobble

These switches have only the faintest amounts of stem wobble in the N/S and E/W directions, with no top housing wobble nor variability on either of these points across batches of switches.

### Sound

Perhaps the most disappointing aspect of these switches overall, the stock sound is primarily driven by overtones of a leathery, scratchy tactile bump accompanied by undertones of subtle spring ping. Counter to this, though, the balance, firmness, and muted tones of the polycarbonate top housings and nylon bottom housings do well compared to previous switches to use these.

### Context

With a company as large as Drop, stock, availability, and general community awareness are basically null points, contextually. The biggest issues that currently will drive acceptance of these switches is the associated drama surrounding their release and designs as well as the steep price points at both pre-sale and release, with the former driving off many old enthusiasts and the latter being concerning for newer audiences.

## Other

While I can certainly appreciate the intentions and practices of Drop with respect to designing this switch and allotting royalties to its creators for the first time ever, the name of 'Holy Panda' simply still doesn't strike me as fitting of these switches and feels like a marketing ploy.

## Statistics

Average Score			Holy Panda X		
26.5	/35	Push Feel	31	/35	Push Feel
16.7	/25	Wobble	23	/25	Wobble
5.6	/10	Sound	5	/10	Sound
12.8	/20	Context	13	/20	Context
6.0	/10	Other	4	/10	Other
67.6	/100	<b>Total</b>	76	/100	<b>Total</b>
Holy Panda X Overall Rank			T-#23/152 (76/100)		
Holy Panda X 'Hard' Rank			T-#7/152 (59/70)		
Holy Panda X 'Soft' Rank			T-#98/152 (17/30)		

## **Final Conclusions**

In a very transparent view of how I normally sit down and write reviews, I typically write everything up to this point linearly as you read it at home and then take a short hour or two break before writing my final thoughts on a switch in this section. For some reviews, I take this this time to get photos together, and in others I do the dishes or whatever other household chores I have left for me to complete on the weekend. For this review, however, I needed a serious drink. The entire story of these switches, from the community driven blitzkrieg of drama, to the actual in-hand performance of the switch, and the sheer timing of it all in just 8 days since their first announcement is honestly something I've never experienced with a switch nor any review prior – and it has certainly been exhausting. To be entirely honest, I certainly hope I *don't* feel this weird mix of emotions about a switch or review any time soon again, either.

Looking purely at the objective, switch driven performance of the Holy Panda X switches, and apart from the contextual concerns regarding them, Drop did a pretty remarkable job at hitting the performance points they had openly targeted for. While they did appear to leave some design issues on the table such as the spring ping in the switches and just how scratchy the actual tactile bump feels, their initial goals of improving the consistency and smoothness were incredibly well met and exceeded my personal expectations that I had formed of them prior to getting them into my hands. Additionally, the firm, muted, and very well-balanced polycarbonate over nylon housing design was a welcome surprise given just how often otherwise solid performing switches have been absolutely crippled by this combination of housing materials. As well, compared to other recent Gateron switch releases which have

featured many notable improvements, the Holy Panda X switches are competitive on pretty much all stock performance metrics save the factory lubing application. And for all of the strong, well-designed, and surprisingly strong performing aspects of this switch, I am glad that Drop went down the endeavor of getting the molds carved out and these switches made.

On the more contextual side of things, though, the Drop appears to simply have done more damage than one could have possibly imagined upon the announcement of these switches. Sure, I will take the aside here to point out both how historic and appreciated the decision to provide Quakemz, Invyr, and Mech27 with royalties is for the community and switches alike, but that is about the extent to where the 'good' ends. A fairly bold design choice in calling switches that don't appear like Holy Pandas by the name of 'Holy Panda X', while also having them made by Gateron, who has never made any Panda switches prior, has left the community pretty strongly against the idea of the switches, regardless of their acceptance by the original designers. As well, I suspect that as the price of these are announced shortly before this review is published that the backlash from the community will only further grow beyond its current uproar. How Drop will manage this is completely left to the imagination. While small steps have been taken by Drop and associated parties regarding some of the community's concerns to the switch and its related details, how strongly this will weigh against the sheer in-hand performance of the switches will most certainly be interesting to see.

Personally, my feelings about these switches straddle the same sort of implied fence that I had built up over the last few paragraphs of this 'Final Conclusions' section. On one hand, I'm very well impressed with the performance aspects of these switches and think that they are both excellent tactile switch options and competitive with current releases from other, various manufacturers and vendors on their performance metrics. That being said, though, the naming convention and color scheme of these switches still is resoundingly upsetting to me. While I do genuinely think that Drop had good intentions here, and that their choices regarding the involvement (and compensation) of the original designers is both welcomed and extremely significant for the community at large, the execution simply opened too many cans of worms, dug too many holes, and has appeared to have upset a not insubstantial amount of the community for one reason or another. Honestly, a rose by any other name would smell as sweet, and as a result of all of these extrinsic issues, I think the Holy Panda X will end up being an interesting test of just how much what happens within the switch molds matters when compared to that which happens outside of them.

## 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!**

## **Further Reading**

### Drop Holy Panda X Sales Page

Link: <https://drop.com/buy/drop-holy-panda-x-mechanical-switches/story#story>

Pre-Sale Wayback: <https://web.archive.org/web/20220227090456/https://drop.com/buy/drop-holy-panda-x-mechanical-switches/story>

### Quakemz's Holy Panda X Reddit Announcement

Link: [https://www.reddit.com/r/MechanicalKeyboards/comments/sxztef/holy\\_panda\\_x/](https://www.reddit.com/r/MechanicalKeyboards/comments/sxztef/holy_panda_x/)

Wayback:

[https://web.archive.org/web/20220227090535/https://www.reddit.com/r/MechanicalKeyboards/comments/sxztef/holy\\_panda\\_x/](https://web.archive.org/web/20220227090535/https://www.reddit.com/r/MechanicalKeyboards/comments/sxztef/holy_panda_x/)

### Keebtalk New Drop 'Holy Panda X' Switches Discussion Thread

Link: <https://www.keebtalk.com/t/new-drop-holy-panda-x-switches/16748>

Wayback: <https://web.archive.org/web/20220227090626/https://www.keebtalk.com/t/new-drop-holy-panda-x-switches/16748>

### Invyr's Storefront

Link: <https://invyr.com/>

Wayback: <https://web.archive.org/web/20220227090710/https://invyr.com/>

### Mech27's Storefront

Link: <https://mech27.com/>

Wayback: <https://web.archive.org/web/20220227090745/https://mech27.com/>

### Mech27 TKL V2 Geekhack Groupbuy Page

Link: <https://geekhack.org/index.php?topic=92451.0>

Wayback: <https://web.archive.org/web/20220227090852/https://geekhack.org/index.php?topic=92451.0>

### "GB Hell" Unofficial Tracker

Link: <https://www.doneyet.net/>

Wayback: <https://web.archive.org/web/20220227090940/https://www.doneyet.net/>