



Bey Star Forge

Newsletter of the Texas BeyBlade League & The Beyblade Institute of SPIN Technology

BEY BITS

Stamina-Type Beyblades Guide

There are many ways to go about winning a beyblade match. You can either knock your opponent out, survive your opponent's attacks, or outspin your opponent. In this article, I'll be explaining how to build and use a beyblade that will let you watch the smug expressions on your opponent's faces disappear as their beyblades run out of steam long before yours has even begun wobbling. This is the guide on how to build stamina type beyblades.

Part 1: Physics

First, a physics lesson. All beyblades are affected by this, so its a good idea to understand the physics that affects Beyblades to become a better blader. When you launch a beyblade, you transfer the energy from your arm pulling the ripcord into your beyblade. The launcher converts this energy from linear (traveling in a line) to rotational (spinning). The harder you pull your ripcord, the more energy you put into spinning your beyblade. Now, the important thing to remember from this is that: **you only have one opportunity to put energy into your beyblade.** After this moment, your beyblade will lose energy as it spins around the stadium, losing spin, and eventually coming to a stop. A stamina type beyblade tries to minimize the rate at which your beyblade loses spin. This is how they outlast all other beyblade types.

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Forge a shape or construct, putting parts or materials together to become stronger or more intense by applying heat or forces.

Texas Beyblade League & The Beyblade Institute of SPIN Technology
Present the:

Science of Beyblades Virtual Summit & App Competition

Saturday, February 20, 2021

10:00am – 12:00 Noon (CST)

UT Dallas NSBE Chapter's 14th Annual National Engineering Week Event

SIGN-UP: <https://docs.google.com/forms/d/1KDGdbIrYcGO4v1SOxBXUcyPYc2Rfaxn6zC5SXXoQDII/edit>

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So how do they do this? There are 3 factors that contribute to reducing spin loss in a beyblade: reducing friction, minimizing weight, and shape/weight balance.

Friction slowing down a beyblade is an easy thing to notice. Get a beyblade and two different tips. Make sure one is pointy and the other one is flat or made of rubber. Build the beyblade with the pointy tip and spin it in a stadium while starting a timer on your phone or computer. Stop the timer when the beyblade stops spinning. Retry the experiment with the flat tip instead and watch how much less time it takes for the flat tipped beyblade to stop spinning as compared to the pointy-tipped one. This is because the pointy tip reduces the contact surface the beyblade has with the floor of the stadium. Friction is dependent on this value. If you have less contact area, you get less contact friction, and your beyblade loses spin much slower. If you can get a tip that is free-spinning, this is even better, because a free-spinning tip reduces friction even more than a regular pointy tip. One important thing to note when selecting tips: if you pick something with a very narrow tip, the beyblade will have bad balance, and thus lose spin faster when spin speeds reduce. Try to get something that is a little wider than the narrowest tips.

Managing weight is also important for stamina type beyblades. Now there is a lot more complex math that goes into force calculations, so I'll try to give you only the important bits you need to understand. For math reasons, you want your beyblade to be as light as possible for the best stamina. This is because the force you put into your beyblade is fixed: you can only pull your ripcord so hard. This energy is then divided by the mass of your beyblade to determine how fast your beyblade spins. Spinning faster than the opponent's beyblade lets the stamina type beyblade outlast its opponent by starting at a higher spin speed. However, there is a big caveat (warning) that comes with reducing weight: if you make your beyblade too light, the air itself will start slowing your beyblade down faster than a heavier beyblade through something called air friction.

A good lower limit for many beyblades is 30 grams. If your beyblade weighs less than this, the air might slow you down too much. Try experimenting with lighter beyblades if you have the parts. Finally, balance. Balanced spinning is good for maintaining rotational energy. Balanced spinning is achieved with two things: smooth circular shape, and outward weight distribution. Smooth circular shapes, with no bumps or protrusions, are best for maintaining spin. Smooth circular shapes lose less spin when they're hit with other beyblades, which will help outlast opponents. These shapes are also good for reducing air friction, which stops the air from slowing down your beyblade as much as something with bumps. The other thing to consider is how the weight is distributed on your beyblade. For stamina types, you want the weight to be as far away from the middle as possible

This is because this outward weight distribution balances your beyblade like a tightrope walker using a bar to keep them upright (please don't try that at home). This allows them to stay upright at very low spin speeds, allowing them to squeeze out an extra 1-3 spins near the end of a

match. Armed with this knowledge, we can now go about building top-tier stamina beyblades!



Part 2: What are good stamina beyblades that you can build?

I will be the first to admit that my list is a bit outdated, but here is a list of the Metal Fight and Burst combos that make good stamina types. You don't have to follow them exactly, but they're a good demonstration of the principles I have highlighted.

Metal Fight:

- Phantom Hades 160PD
- Hell Kerbecs TR145WD
- Earth Cancer 230MB
- Phantom Bull/Gasher TH170D
- Duo (Stamina Mode) Cancer B:D
- Scythe (Stamina Mode) Bull/Kronos BD145EWD/EDS
- Libra AD145AS
- Genbull Genbull 85WD
- Phantom Sagittario II/Hades/Gasher B:D
- MF-F Twisted Bull/Aquario AD145WD/EWD
- Zirago Dragoon SA165EWD
- Flame Kronos 230EDS/CS
- Phantom Bull/Cygnus AD145SD/WD
- MF-F Scythe (Stamina Mode) Tempo W145WD

Burst:

- Acid Anubis Spread Yielding
- Drain Fafnir Outer Bearing
- Perfect Phoenix Wheel Atomic
- Dark Deathscythe Gravity Orbit
- Mirage Longinus Bearing 2D
- Blaze Ragnaruk Outer Orbit Metal
- Deathscythe Knuckle Revolve
- Cho-Z Spriggan Vanguard Bearing
- Perfect Phoenix Outer Xtend+

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I will also explain some of the stamina beyblades I use. These are not the best beyblades possible, but they're a good example of solid stamina beyblades. In Burst, I use Revive Phoenix 10 Atomic. Phoenix is mostly a defensive energy layer, but its circular shape gives it good stamina, especially without the armor. 10 is a great forge disk for stamina since it has a lot of outward weight distribution that helps stabilize it at low spin speeds. Atomic is the star of my combo, being a free-spinning base that reduces friction significantly, giving it very good stamina. In Metal Fight, I use Duo Bull T125 WD. Duo is a completely smooth, circular fusion wheel that excels at stamina. Its flowing shape reduces air resistance and enemy damage to a minimum, while its outward weight distribution keeps my beyblade stable at low spin speeds. The Bull energy ring is there to add more weight for defense purposes, since this beyblade is a kind of hybrid. I put T125 there because I liked the color, but other than that it has decent track height to prevent scraping, while being low enough to avoid attackers. WD is a good A tier stamina tip, since it is wide enough to provide balance, while giving a point for low contact area, which reduces friction. I like to sprinkle in some defensive capabilities into my stamina type beyblades. Attack types are a direct counter to this type of beyblade, so having an answer to them in the form of extra mass is always a good idea. This extra mass makes these beyblades harder to push around, allowing me to survive the assault that attack types dish out in the beginning of a match, and the extra stamina lets me out-spin them easily.

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Science of Beyblades Virtual Summit & Beyblade Burst App by Hasbro Competition

The UT Dallas Chapter of NSBE had the first event on campus to celebrate National Engineers Week with Lego and Beyblade competitions. Engineers Week is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing understanding of and interest in engineering and technology careers. Adapting to the COVID19 climate, we will sponsor a virtual event with presentations that explore some of the science elements inherent in Beyblade engineering and play. We will also host a virtual competition using the Beyblade Burst App by Hasbro with prizes & cash awards.

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<https://beyblade.hasbro.com/en-us/apps>



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The Duo Bull that I use for Metal Fight has won entire tournaments, and has been practically undefeated in 1v1 matches. This is partially because of the defense stamina hybrid design I have built into it, which allows it to withstand attack types, and out spin defense types. The only thing that can beat it on paper is a better stamina type, but I have faced those and won. This is because I can skillfully apply my beyblade to overcome situations. In this section, I will show you how I use stamina types to remain unbeatable in Metal Fight, while putting up a strong fight in burst.

First, you must identify what type of beyblade your opponent plans to use. This determines how you should respond to their strategy. I will cover the 3 common matchups you will face: Stamina vs Attack, Stamina vs Defense, and Stamina vs Stamina. Each match-up plays slightly differently.

For starters, Stamina vs Attack. This is the most disadvantageous match-up. Attack types can knock you around easily, since stamina types sacrifice weight and friction to maximize spin time. Your goal as a stamina blader is to predict where the opponent is going to launch towards, and what angle their beyblade is likely to take as it zips across the stadium. Launch away from the center of the stadium, where the opponent is likely to try to hit you at. If you can survive the first few passes/grazes/hits, it is very likely that you will win the match. Good luck dodging!

Second, Stamina vs Defense. This is the most advantageous match-up for the stamina type. However, don't drop your guard. Defense type beyblades have significant mass and big bumps that can give them a solid attack in the right hands. Since they will try to use an aggressive, attack-oriented strategy, your strategy as the stamina blader will be to predict and dodge the coming attack. Unlike attack types, which will remain threats even after the first few passes, defense types become harmless after the first pass. Have fun scoring these easy wins! Finally, Stamina vs Stamina. This is the trickiest match-up of all of them, because you have to make a judgment: based on its parts, is your beyblade better at stamina than your opponent's? If yes, pursue the avoidance strategy just like the other 2 cases. If your beyblade does not have enough stamina to beat your opponent head-on, you have to change your strategy. Adopt the more aggressive strategy, predict where the opponent will launch, and use all of your strength into hitting that beyblade out of the stadium. Pay careful attention to your opponent and make the right decision on which strategy to use when the time comes!

For balance types, identify which trait the balance beyblade favors on the enemy side, and act according to that attribute. To beat a stamina type, one needs to either hit it pretty hard, knock it out of the stadium, or smash it against the wall so hard that it loses all of its spin. Avoiding this situation is how stamina type bladers win entire tournaments.

Part 4: Conclusions

As we have seen in this article, Stamina type beyblades rely on reducing friction, minimizing weight, and managing shape/balance to be able to preserve the spin they receive upon launch. We went over possible stamina combinations in both Metal Fight and Burst, and I explained the stamina type beyblades I use. Finally, we covered matchups and how to approach situations with a stamina-type beyblade. With this information, you should be able to go build your stamina-type beyblade and win matches.

Good luck and Let It Rip!

Director's Arena: Notes, Comments, or Updates

Potential Competition Types

Consideration is being made to organize various types of club competitions:

Club Battles

Scheduled challenges and bey battles where one club faces a gauntlet of beyblade game modes against another club.

Club Royale

A club hosted gauntlet of challenges and matches that allows a limited number of register bladers from the TBBL community and other TBBL clubs to bey battle for prizes.

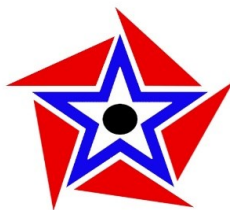
Official Tournament Matches

Individual, club, or team matches being conducted at scheduled club locations as part of a TBBL seasonal tournament.

Official Tournament Elimination Challenges

Seasonal tournament matches consisting of a gauntlet of challenges and bey battles that sets up 2-4 clubs/teams in competition for the right to advance in the overall seasonal tournament with multi-club/team challenge elimination.

The ***Texas BeyBlade League*** is an outreach initiative of the UT Dallas Chapter of the National Society of Black Engineers. It's purpose is to provide a place for students to develop and apply their knowledge of science, technology, engineering and math through the playing of Beyblade.



Official Social Media:

Facebook Group:

[Texas Beyblade League](#)

Youtube Channel:

[TX Beyblade League](#)

Instagram:

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