Pilot Chute Venting

*__This is a working document. As people inevitably point out my mistakes I will make edits, and hopefully, over time, this will become a good reference. I welcome all critique. Please let me know if you notice anything.__

There are currently three main styles of pilot chutes on the market for BASE Jumping. They are:

1- Unvented
2- Apex Vented (AV)

3- Ring Vented

In this short article we are going to compare them to each other and give some recommendations for their applications.

Construction

There are a few things that will be consistent across all designs.

1- They all have a ZP topskin which is sewn to a mesh bottom skin.
2- They all have reinforcement tapes sewn onto the ZP, and the mesh, to give stability.

For a detailed explanation on the above watch **this video**

Please keep in mind when reading the words like 'faster, stronger, more, less etc' that they are in comparison to each other. We are in a game of splitting hairs.

Pilot Chute Handles

It's quite common for PC's to come with some kind of handle. There are no real pros/conns in my opinion. They are just personal preference and do nothing in terms of adding or subtracting performance of the pilot chute.

The types of handles you'll see are:

Soft cap, external PVC, Internal PVC (not pictured)

Unvented

Construction: A single, circular piece of ZP secured with tapes.

Application: Unvented PC's are usually used for Static Lines, PCAs, or Go n Throws where you want to be open as fast/high as possible. They are usually only available in 46", and 48" sizes but manufacturers will make them in other sizes upon request, if you have a good reason for wanting it. Because there is no vent, no air is lost during inflation, so an unvented PC will start the extraction sequence sooner than a vented PC of the same size. Without a vent to help stability these PC's tend to oscillate (orbit) more often, and can generate off headings. So in theory you are sacrificing heading performance for opening altitude when you choose an unvented PC (if free falling)

These are usually the cheapest because they require the least construction time.

Pros

-Strong pull force -Low hesitation rate

Conns

-Unstable

Want a little more detail? Watch **this video**

Apex Vented

Construction: A single, circular piece of ZP is secured with tapes and a mesh vent is installed in the center of the ZP .
When inflated this is the Apex of the pilot chute hence the name - apex vented.

Application: Apex Vented PC's are used for all kinds of jumps and vary in size from 32" to 46" depending on the application. The vent in the center (Apex) allows some air to escape during inflation which helps stability (less likely to oscillate) but it also reduces pull force.

We recommend using Apex Vented PC's for terminal jumps, as well as solid slider down jumps.

Pros

-More stable - in comparison to an unvented PC of the same size.

Conns

-Reduced pull force - in comparison to an unvented, or ring vented PC, of the same size.
-Increased hesitation rate - in comparison to unvented, or ring vented PC, of the same size.
-Less stable in comparison to a Ring Vented PC

Want a little more detail? Watch **this video**

Ring Vented

Construction: 12 individual pieces of ZP are sewn together with a vent placed approximately 10" from the apex of the PC. This design was made famous by Asylum Designs in 2004 and was christened The Toxic.

Application: Ring Vented PC's are pretty much used for all types of jumps in BASE but a few things to consider are:

1- For terminal jumps you are so far away from the object (in theory) that a potential offloading isn't 'as much' (careful) of an issue so you may wanna save yourself some cash and just get an apex vent.

2- For static line jumps you could potentially snag the PC on something so maybe you don't want your beautiful expensive PC for that.

3- For slider down jumps where off headings are not really a worry (bridges with wide open LZ's and Antennas with tailwind) I would recommend just using your apex vented PC and save your ring vent for solid objects.

With all that in mind there is no technical reason to not use a Ring Vented PC for everything - the only downside is they are more expensive.

Pros

- most stable when compared to unvented or apex vented
- pull force is arguably equal to that of an unvented PC
- minimal air loss during inflation
- very low hesitation rate

Conns

-most expensive

Want a little more detail? Watch **this video**

Thank you for taking the time to read this. I hope it was helpful.

If you have any feedback I'd love to hear it.

Email me: admin@basegear.net