

The Mighty, The Crafty, and the Firefly

Evaluating Portable Vaporizers

By O’S Comparison Shopper

Storz & Bickel, the German manufacturers whose “Volcano” popularized vaporization as a delivery system for herbal medicine, has two portable units on the market.

The “Mighty” is cordless and portable, but it is not really pocket size and would be more accurately described as a home / travel vaporizer. It is a reassuringly solid plastic unit, similar in size but a little thicker than a large-screen smartphone in a carry case.

It has a simple, symmetrically pleasing design with only three buttons, a small screen, and the integrated ‘cool unit’ mouthpiece to control and use the device.

A small orange, plastic tool to assist packing herb into the chamber (and removing it after use) is stored on the underside of the unit and can also be used to let the Mighty stand upright.

The Mighty we received was already charged and ready to use straight out of the box (although the directions call for six hours of charging). It also comes with an herb mill, an easy-fill bowl tool, a single dose herb cap, a concentrates pad, dedicated charger, cleaning kit and a complete replacement screen and gasket set. There were also clear quick-start instructions as well as a full manual and schematics for disassembly and cleaning.

Standard accessories include a slim-line carry case with an additional set of eight herb dose caps and a pocket, liquid-proof container with four dose caps and concentrate pads for oils or waxes.

The guide to using the easy-fill container was a little confusing and I opted to watch a Youtube tutorial. It’s actually a really simple process and the easy-fill tool is a great design feature. To get going you basically remove the mouthpiece by twisting it through 90 degrees and lifting away from the body to reveal the heating chamber in the center. The chamber holds approximately 0.3 grams of ground herb, which can be inserted directly or inside a dose cap **WHAT ADVANTAGE DOSE CAP?**

The Mighty can also vape oils and waxes (concentrates) placed on top of a concentrates pad directly into the chamber or also inside a dose cap. The mouthpiece is then twisted back onto the body, the mouthpiece straw swivels out and you are ready to vape.

Pushing the orange button on the side starts the unit and the temperature and battery level are displayed on the screen. Plus

and minus buttons allow the temperature to be set by 1 degree increments from 104° to 410° Fahrenheit (40° to 210° Celcius). The desired temperature is shown in white with the actual temperature shown in yellow above. When the correct temperature is achieved, the Mighty buzzes and vibrates to alert the user.

The Mighty can also be programmed for pre-set temperature plus a booster temperature to finish off a session. I have not explored this function as The Mighty is so easy to use and changing the temperature manually while vaping is not an issue. There is an auto shut-off function that kicks in (after several warning buzzes) to save the battery. Even after shutting down, the Mighty is good for one more hit from the residual heat in the chamber. Pressing the orange button again brings the Mighty back to life.

After many hours of relentless testing, my preferred temperature range for vaporizing herb is to start at 340° F (171° C) and then increase in increments of 5-10° F after two or three hits. I finish the bowl at 365° F (185° C). This is hot enough to vaporize all of the THC, CBD, CBN and most of the terpenes in the herb, yet without producing the tars associated with smoking.

At these temperatures the spent herb was evenly turned to golden brown without any dark or burned patches. Above 365° F (185° C) the vapor becomes harsh and acrid and the spent herb appears dark or even slightly burned. A fully packed chamber or dose cap (approx 0.3g) can produce around 12 to 15 good hits across a range of temperatures.

Playing around with temperatures between 310° – 350° F (154° – 175° C) results in certain terpenes evaporating before others, changing the flavor profile as you vape through the bowl.

Some terpenes such as a-Pinene and b-Caryophyllene vaporize below 350° F (175° C), so playing around with temperatures between 310° – 350° F (154° – 175° C) allows for certain terpenes to boil off before others, changing the flavor profile as you vape through the bowl. Similarly, Delta-9 THC begins to vaporize at around 311° F (155° C) with Delta-8 THC vaporizing nearer 350° F (175° C). CBD has a vaporization range between 320° -355° F (159°-179° C) and CBN boils at 365° F (185° C).

TERPENE	BOIL POINT
Linalool:	388° F (198° C)
β-Caryophyllene:	320° F (160° C)
β-Myrcene:	334° F (173° C)
D-Limonene:	349° F (176° C)
Humulene:	388° F (197° C)
α-Pinene:	311° F (155° C)

Concentrates are vaped at higher temperatures. Although the maximum setting of 410° F (210° C) is lower than the temperatures often used with a dab rig, it is hot enough to effectively vaporize most good quality concentrates. A pebble-sized dab or blob of concentrate needs to be placed on the top side of a concentrates pad and it is advised to hold or balance the Mighty upright, using the packing tool, while the unit is heating up. This lets the concentrate melt evenly into the pad.

Again, after relentless testing I decided the optimum is to start at the highest temperature setting of 410° F (210° C) until the concentrate starts to produce vapor and then drop the temperature to 390° F (198° C) and increase by 5° F increments every 2-3 of hits to finish at 410° F (210° C).

I found that when vaping either herb or

concentrates (and I tested wax, rosin and oil), across a range of temperatures, the Mighty consistently produced copious amounts of flavorsome vapours to great medicinal effect. The ‘cool unit’ mouthpiece works well and the vapor remains cool throughout use. Air is directed through chambers in the mouthpiece, giving it time to cool before reaching the lips.

A well-packed bowl of herb or concentrate can satisfy several vapers (or one determined vaper). If vaping solo and you want to pack a smaller amount of herb, then use one of the dose caps with a concentrate pad inside. GRAPHICS This will allow half the usual amount of herb (approx 0.15g) to be packed into the dose cap without it being too loosely packed to allow for good heat convection through the herb.

The Mighty is an extremely well designed vaporizer and it delivers on all levels. It looks great. Its solidity makes it comforting to hold, oddly reminiscent of smoking a pipe and drinking a pint at the same time.

The Mighty packs two internal, rechargeable batteries. A full charge almost always lasts me a day and with a 45-minute recharge time and the ability to vaporize while charging, even from a totally dead battery, there is virtually no down time. The vapor flavors delivered consistently by the Mighty are the best I have ever tasted from a cordless unit. It is easy to use, easy to load and the easy-fill container makes life even easier when packing herb either directly into the chamber or into the dose caps. Most importantly, it unleashes the desired medicinal effects from the products vaporized.

I was initially skeptical about the dose caps, but found them to be useful. The dose cap carry cases hold herb and concentrates, ready to load without any mess or fuss. You simply twist off the mouthpiece and take out the old dose cap, put a new dose cap in and away you go. The herb container holds up to nine dose caps and the liquids container holds up to four concentrates dose caps, more than enough for a day. I also think that when vaping both herb and concentrates, the metal dose cap helps maintain a steady temperature and enables smoother vaporization overall. The dose cap also protects

the heating chamber screen from debris and helps keep it clean.

The Mighty goes from room temperature to 345° F (174° C, the point at which I start toking) in just over 60 seconds. It can take another 30-45 seconds before delivering full-strength vapor. The bowl can be consumed in under five minutes, although one can just stop after a few hits and then resume later. The Mighty will turn back on at the temperature setting at which it was turned off.

Cleaning the Mighty is easy and there is a schematic showing how it disassembles. Most parts will wipe clean with an alcohol pad or using the plastic tool or brushes provided to clear solid matter. The Mighty also comes with a complete replacement gasket and screen kit. After several weeks of use, I have cleaned it twice with an alcohol wipe, more because I felt I should rather than needing to.

The Mighty has recently come down in price from around \$450 to \$399.

The Crafty

The Crafty is basically a smaller, single battery version of the Mighty. The heating chamber is the same size as the Mighty’s even though the ‘cool-unit’ mouthpiece is smaller (and possibly a little less cool across a full bowl although it still works well). The Crafty is 1/3 narrower and 1/4 shorter than The Mighty, as it doesn’t have controls or a read-out screen on the unit. Instead, the Crafty uses a smartphone app and Bluetooth to control the temperature, set LED brightness, and check battery level.

Other than that, the Crafty functions in exactly the same way as the Mighty and contains exactly the same kit inside the box. The bowl packing tool is housed on the side of the Crafty and covers the micro USB port. The Crafty has the same temperature range as the Mighty, is also adjustable by 1° F increments and has a programmable pre-set plus booster **WHAT MEANS**

The Crafty, being smaller and lighter than the Mighty, can be classed as a pocket-sized, portable vaporizer. It is also comfortable to hold and produces good quality, flavorsome vapor across a range of temperature settings.

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Pocket-ability and versatility in charging are the only advantages The Crafty has over the Mighty. It takes nearly twice as long to heat up — 105 seconds to go from room temp to 345° F (174° C) and another 50 seconds before it produces quality vapor. Once going, the Crafty performs well, and yields around 12 decent hits. With continual use, the vapor becomes a little warmer than the Mighty's and the unit heats up around the chamber. The auto shut-off also starts to kick in more regularly. UNCLEAR

The Mighty's two internal rechargeable batteries usually lasted the day (medium to high use) on a single charge. Low to medium use enabled me to go two days between charges. The Crafty, with one battery, lasted half as long on a full charge.

Both the Mighty and the Crafty have pass-through charging, which is really useful when the battery dies mid-vape. The can be plugged in immediately on a dead battery. The Crafty needs to be charged for 20-30 minutes before it will work on pass-through.

The Mighty has a dedicated proprietary charger and can be fully charged more quickly than the Crafty — 45 minutes vs almost two hours. The Crafty uses a micro USB, which can be handy.

The Mighty's size allows for temperature control buttons and read-out screen to be on the unit itself. The Crafty relies on a smartphone app to control the temperature show battery life etc. Many vaporizers in the Crafty's size and price point now use Bluetooth and an app to control functions such as temperature control to save cramming buttons or unreadably tiny screens onto smaller units.

The Crafty is a solid, portable vaporizer that offers Storz and Bickell's reliability and quality of design and components, It's just that the Mighty is...well Mightier.

Tips

There are several easy to find Youtube tutorials that talk you through the use of the Mighty or the Crafty and their components. Tips I garnered:

- When vaping herb directly in the chamber, don't pack it too tightly as the unit uses hot air convection, however when packing herb into a dose cap it can be packed more tightly.
- When vaping concentrates ensure that the concentrate pad is placed into the chamber with the concentrate on top. This allows it to soak into the pad and enables a smoother vaporization without oil pooling into the bottom of the heat chamber and burning or clogging the screen.
- Place the dose cap into the chamber with the lid up. Lid down is much harder to remove and sometimes the lid sticks and is destroyed removing it!
- If you want to pack a ½ bowl, use a dose cap with a concentrate pad inside and pack the herb on top of the pad and vape as usual.
- It is recommended that dose caps and concentrate pads be used only once, but they re-use easily and can also be cleaned up with ISO alcohol. Just remember to evaporate the alcohol off before re-using.
- After the auto shut off switches the Mighty or the Crafty off there is enough residual heat for another hit.

Firefly 2

The Firefly 2 (FF2) is a work of art, it arrives boxed like a high end smartphone and is as beautiful as its packaging suggest it should be. The sleek body fits snugly in the palm of your hand and slips equally easily into a pocket. The FF2 is made of metal and feels extremely sturdy but not too weighty (It is some 55% lighter and 1/3 smaller than its predecessor, the FF1). The lid attaches

to the body by magnets so it's easy to remove and snaps positively back into place. Inside is the heating chamber at one end and mirrored insides line the vapour pathway above and below. A borosilicate glass window in the lid allows you to see into the heating chamber at all times, while keeping everything airtight inside. The control buttons are on either side of the body and are touch sensitive with no need to press down. An LED in the lid shows when the unit is on.

The FF2 comes with a charging dock and USB 3.0 cable, an extra battery, 3 concentrate pads and a cleaning kit with alcohol wipes and a brush. Also included is a plastic stirring tool. The charging dock is a cradle for the entire unit and charges with the battery inside the FF2. The charge time is around 45 minutes. To change batteries the bottom panel slides off and the battery is easily removed and replaced.

As an accessory, we received a compact carry case that holds the FF2 safe from scratches and other damage. The case has belt loops and could be easily worn that way. My only complaint is that the carry case isn't designed to hold anything other than the FF2 and you may want other components such as battery, charger and concentrate pads out and about as well.

The FF2, like many other vaporizers of its size class and including the Crafty, keeps the body small and uncluttered by using an app and Bluetooth to fine tune the heat settings, watch the battery level or customise other features. The app provides access to a great deal of information about the FF2 such as how to get started, instructional videos, FAQs, product support and the on-line shop. However I was unable to successfully download the manual.

It was worth watching the instructional videos and also reading through the FAQs as the FF2 is not a standard vaporizer. It uses a fast heat convection method and is able to heat up the chamber extremely rapidly. However to work well the herb needs to be coarse ground or torn and left loosely packed into the bowl to allow heat to flow easily. This is almost the exact opposite of other vaporizers I have used, where the material needs to be finely ground and packed tightly. The FF2 holds only about 0.15g comfortably in the chamber (most portable vaporizers, including the Mighty and Crafty, hold 0.3g) yet delivers a surprising amount of vapour from such a small amount. And if 1 bowl isn't enough, it's a very easy process to restack and go again. I was able to get around 5-6 decent hits from each bowl, once I had mastered the coarse grind, loose pack. Allowing for the size of the bowl, that's on par with Crafty.

Once the bowl is loaded and the lid snapped firmly back in place you open the app and Bluetooth. Initially the FF2 needs to be paired with the phone, an easy process and then you can pick a heat setting. There are 6 settings available. 5 for herb and also a concentrates setting.

Low	340 F (171 C)
Medium Low	360 F (182 C)
Medium	380 F (193 C)
Medium High	400 F (204 C)
High	420 F (215 C)
Concentrates	500 F (260 C)

The temperatures in most settings are higher than the range I used comfortably with the Mighty and Crafty, however as the heat system is so different and so much quicker I found I was using most settings except High. Whilst you can get big clouds of vapour, at that heat it is much harsher and you also get fewer hits per bowl and

reduced battery life. The spent weed was quite dark and a little burned at that setting and I prefer the lower temp settings up to Medium, although Medium High is also satisfying for thicker vapour with a good taste still.

To get going you now activate the FF2 by covering the buttons on the unit. The default setting is to cover both buttons at once to activate the FF2 and this can be customised to either button or both through the app. The LED starts to pulse on and off for a few seconds and then becomes a solid green light (you will also see the heating chamber glow orange within a few seconds of operation). You then wait another couple of seconds and take a draw. The optimum draw is a steady breathe in for around 10 seconds, then release the buttons and continue to inhale a further couple of seconds. At the lower temperatures it may take a hit or 2 before the vapour gets going, however the FF2 heats up so quickly that this is not an issue. The other distinct difference with the FF2's heating system is that it also cools down rapidly so you can literally have a couple of hits and then put the FF2 down until later. You don't need to finish the bowl as you do with the other vaporizers and even if you do, its half the size bowl of most so this is an economical way to vaporise herb. You do need to agitate and stir the herb in the bowl every couple of hits to get the most out of it.

For concentrates you need to place a concentrate pad into the heating chamber and push it firmly into place before adding a pebble or blob of concentrate onto the pad. Replace the lid and select the concentrates setting from the app. This time you want to take short cigar puffs until the vapour starts and then longer hits. The FF2 vaporizes concentrates extremely well producing quality, flavoursome and thick vapour. It handles concentrates better than the Crafty and even surpasses the Mighty in this respect, most likely due to its ability to reach high temperatures rapidly and at 500 F (260 C) is at a perfect temperature for concentrates. The Crafty and Mighty can only reach 410 F (210 C).

It did take me a few days of practising to learn the ways of the FF2, it isn't as easy to use initially as the Mighty and Crafty were. However once you realise that this is a radically different heating system and needs to be approached that way it falls into place. The FF2 delivers plenty of medicinal vapour across a range of temperatures and in lightening quick time. On Medium Low, the FF2 goes from cold to ready in under 15

seconds add 2 seconds and 10 for the draw plus 2 and you have a decent vapour hit in under 30 seconds from cold. That is way faster than either the Crafty or the Mighty. The additional battery is a good touch and necessary as the FF2 is power hungry. I was able to complete around 4 1/2 bowls per battery so found myself switching the battery without fail during a day. However as the cradle requires the battery to be in the FF2 to charge it's not possible to charge the dead battery and still use the FF2. So you inevitably end up with 2 dead batteries and then need to charge both! It takes approx 45 mins to charge each battery. My only other gripe is that the stirrer tool should be made of metal. Beyond this I am liking the FF2 better each day I use it. It's extremely easy to clean by just brushing out the heat chamber and wiping the mirror surfaces and glass with an alcohol wipe and the mouth piece pulls off and can be brushed or cleaned with alcohol. As a portable vaporizer the FF2 ticks all boxes. It's small and lightweight, comes with an additional battery as standard and it is really fast to deliver tasty, tasty vapour from a remarkably small amount of herb or concentrate.

Tips:

- Watch the videos and read the FAQs
- Coarsely grind or tear the herb and pack loosely.
- Agitate the herb in the chamber regularly by either slapping the unit against your palm or opening and stirring the bowl. This gets the most out of each bowl.
- Clean regularly.

The Verdict

Having used all 3 devices over some time and in a variety of settings it's hard to pick an absolute winner. At it's price point and as a truly portable pocket vaporizer, the FF2 definitely takes the prize. It's stylish and well built and delivers tasty vapour on demand and heats up super fast. It was the cheapest unit and it definitely outperformed the Crafty across the board and was a winner for concentrates against the Mighty too. However for absolute quality and flavour from herb the Mighty was definitely the best of the 3 and it's battery power unbeatable too. It lasted a day or more and you can still use the Mighty while it's charging, even from a totally dead battery. With a 2nd battery though, the FF2 performed for twice as long as the Crafty and can charge both batteries in less time it takes the Crafty to charge its one, even though the crafty can be used while charging after 30 minutes or so. In an ideal world I would use the FF2 for concentrates and the Mighty for herb whenever and wherever possible.



DOSE CAPS in slim-line carry container enable user to pack bowls in advance of a trip and quickly replace for quick, easy no-mess change —out with the old in with the new packed bowl.