

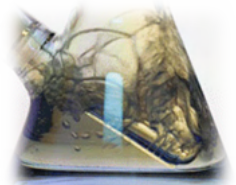
Get to know some **percolators** & their **functionality!**

When you're looking at **functional glass** with no knowledge of **percolators**, it can be intimidating. Don't buy or sell glass based off just aesthetics. Know how each twist, turn and divot can **enhance your smoking experience**.



To percolate means "filter gradually through a porous surface or substance" (*New Oxford American Dictionary*). This definition applies perfectly to the use of "percs" in water pipes! When you use a water pipe the "perc," functions as a porous object to filter smoke through, with water acting as the substance doing the filtering. The filter is created when bubbles are made. The more bubbles made, the more filtration is happening.

Diffusion in physics, is "**the intermingling of substances by the natural movement of their particles**" (*New Oxford American Dictionary*). When we are looking at percs, the "intermingling substances" are the **smoke and water**. The natural movement of the particles in the smoke (a gas) is to **form bubbles** in the water. The **perc forces the particles to break apart and form into smaller bubbles**, allowing the smoke to cool more efficiently.



Why are bubbles good?

As smoke is drawn through a water pipe, it is **trapped in bubbles**. When those bubbles are broken down the smoke is given **more surface area to cool down**. Remember the smoke can only be cooled by the area where it is touching the water (*surface area*).

Think of it like ice and how it melts. When you have a large ice cube it takes much longer to melt than an ice cube that has been broken down into lots of smaller pieces. When you break the ice cube, you **increase the surface area**.



Same idea with the bubbles. The more of the water you can expose the smoke to the **cooler, smoother** smoke you will enjoy. Various types of water pipes have different types of percs that create distinctive sized bubbles in variable quantities, each providing a different effect for concentrates and dry herbs.

Let's look at some of the most common percs you'll see in functional glass & how they work.

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BASIC DIFFUSER



Since diffusion is necessary to create a smoother smoke, you will find many pipes that have **basic diffusers as their only perc**. Basic diffusers come in many shapes and styles, but most commonly will be located at the **end of a down stem** (whether its removable or stationary) and appear as a **series of holes or slits**.



Why buy a basic diffuser? These little basic guys are great rigs. While simple, when using concentrates, sometimes simple is better. The less filtration you put your concentrate hits through, the more flavor to savor! Usually, you'll find this simple perc on little banger hangers or on mini rigs. Sometimes these percs can be seen in combination or leading up to other percs.



NATURAL PERC



Some water pipes use a simple natural perc to get the job done. A natural perc will be **just one opening coming from the down stem**, whether the down stem is stationary or removable. Most down stems with a diffuser will **also have a natural perc** at the bottom to allow maximum airflow.

The most common occurrence of this type of down stem perc is on **pull bowls**. Mostly found on imported soft glass, this stem is very inexpensive (and can be found accompanying glass in the same price range).

INLINE PERC

The inline perc diffuses to the max! You can almost always find this perc horizontal, but you can find it in many shapes and designs. Most of the time, the diffuser is made of multiple cuts down the stem that smoke is fed into. Holes or slits are usually facing downwards to optimize filtration.



The inline is commonly found at the beginning of the smoke trail, and is usually followed by another perc. By creating tons of smoke bubbles, this perc ensures a smooth smoke for concentrate and dry herb users. It is relatively easy to keep clean and makes for a beautiful bubble show when drawn on.

SHOWERHEAD

The showerhead perc is extremely popular and comes in many various forms. Generally, they will hold a **puck like shape** and feature a **series of slits to act as the diffuser**. Smoke generally **runs down into** the disk part of the perc. Due to the larger number of slits, the showerhead is **efficient in cooling and filtering smoke**.



This style perc is great for flower or concentrates. However, **beware the cleaning mess** of these percs that are fed directly from the downstem. Ash, resin and reclaim all build up and can easily clog the perc. **Using an ash or reclaim catcher** can help prevent hard to clean build up.

Sometimes the showerhead style is reimagined into what is sometimes known as a **"circ perc"** instead. In the circ, **smoke is fed from the side** rather than the top. This design may allow for easier cleaning and less mess. However, the efficient **functionality, is the same**.



Reverse showerheads are pretty much the same design as the original showerhead, but the **slits are only open on the top side of the disk shape**. While providing much of the same function as the original, this new take on the perc allows for **smaller bubbles** by restricting the slit size. *Smaller bubbles = more cooling, but smaller slits = restricted airflow*. All in all, it all comes down to **personal preference!**

MATRIX PERC

What makes the **matrix perc** special is the **grid design in the slits**. Maxtrix **can be fetured on any shape**, but the grid pattern slits are what hold it to its definition. Smoke generally comes from the top, and most of the time it is in a disk shape.



This perc is often seen **directly after a downstem**, when attached, or at the end of a downstem when removable. Small or large, the functionality of this perc is definitely good. Both **concentrate and dry herb users** will find the matrix enjoyable for their smoke sesh. Downside, due to the **small slits**, this perc does get dirty fast. So, regular cleaning is definitely essential. **Piece Water** is a good solution to keep build up from getting stuck to those intricate percs.

TREE PERC

The **tree perc** may be one of the most familiar percs for most people. It is commonly seen as an individual perc, or with two to three stacked on top of each other. It gets its name from the **long branch diffusers**. Unlike the inline diffuser, these branches will always be found **vertical**, surrounding the **iconic mushroom cap** and inner stem of the perc.



The larger airflow and intricacy make this perc a **little too complex for concentrates**. The tree perc would **lose flavor** that concentrate users seek. Too much filtration can also cause rigs to get **dirty prematurely**, consequently filtering most of your hit before it reaches the mouth piece.

This perc is **mostly found on large water pipes** and mostly **used with dry herbs**. Tree percs are usually found on the upper/mid part (neck) of the water pipe. Due to the nature of this perc, water will **hold at this perc** to enhance cooling. The larger airflow allows for **bigger rips**. Its mushroom cap shape also **stops loose bowl debris** from reaching the mouthpiece area. Stacking this perc makes for a smooth, bubbly hit!

FAB EGG



The **fab egg** could be described more as a rig style than a perc. They don't necessarily percolate the water but can act as a **wave braker**, initiating agitation. It also allows areas for smoke to **condense and expand**, another effective smoke cooling technique.



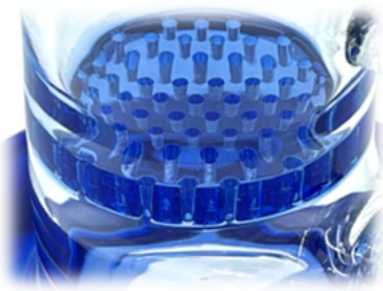
The name comes from the ornate decorative (and very very expensive), **Faberge eggs**. The holes in the design mimick the crystals adorning the decorative eggs. Some designs feature a split in the middle, similar to the opening of some of the faberge designs.

COIL



Coils don't serve much other function than **transporting** water and/or smoke through the pipe. This perc is usually pretty **fun to watch** as smoke runs through it, and after your hit as water runs back down into the base. Regular cleaning is recommended for this style due to the narrow passage.

HONEYCOMB PERC



Honeycomb percs, clearly, earned their name from their honey comb look. They will always be on a disk shape and have a series of holes to allow water through. Often found after a natural perc from a downstem (stationary or removable) this perc provides a thoroughly diffused hit. All of the holes **allow for the smoke to be broken up** so well that the smoke is cooled and super smooth (especially when you stack multiple in a row). Honeycombs **are even able to hold water at the perc's level** (most of the time) after a hit.

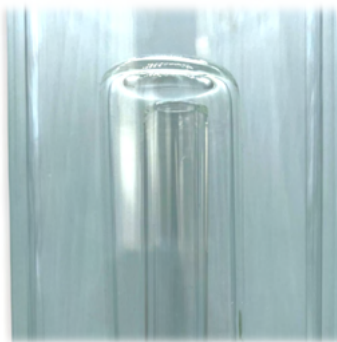
TURBINE PERC

Power your hit with renewable energy! The **turbine perc** might not be wind powered, but the draw is sure to renew your energy. This perc is always placed on a disk, usually found on the upper/mid part (neck) of the water pipe. Before this perc you will mostly find basic diffusers or natural percs. The disk features a **series of angled slits**, all following the same direction. These lines **promotes water agitation**, and the slant of them forces **the smoke to spin** as it moves upwards. As the smoke is spun, it cools, even without touching water. The movement of spinning, alone, is enough to help cool it.



When in combination with other water percs, the turbine makes a great addition to any rig or water pipe. Users of **both dry herb and concentrates** would find this perc to be beneficial to their smoke sesh. The narrow slits may cause a bit of build up in the long run for concentrate users, but as always regular maintenance makes the difference. Air flow may be somewhat restricted, always water test to get a good idea of how it draws.

DOUBLE CHAMBER (DOME PERC)



Double chambers hold water at higher levels than the base in the water pipe. Many percs that are not attached to the downstem will be **integrated with this design** to make them water functional. When you first fill a water pipe that has one of these, **try dry hitting** it to get the water levels perfect for the middle. The suction of the hit helps create a **vaccum seal** that traps the water in the desired location. Sometimes this perc is referred to as the **“dome perc”** due to it's dome shape.

RECYCLERS



Recyclers work in **partnership with a diffuser** to keep the smoke cooling in water **while it is transported** to the mouth piece. The recycler then **returns water to the base** so it can be used to cool the rest of the hit! The most common forms of this pipe look somewhat like a **hour glass** shape. Concentrate rigs are more likely to have just a diffuser and a recycler, while a dry herb water pipe would most likely have a recycler accompanying multiple other percs (like an inline diffuser, ice pinch or honeycomb). This perc is usually fairly easy to clean with salt agitation, but hard to reach areas may benefit from a soak n' rinse style cleaner.

Dual Recyclers use **two arms** to pull smoke up from the diffuser and backdown into the base of the pipe. This can help **increase the airflow** of the pipe. Some people enjoy the arms as easy grips for handling the rig.



In **Klein Recyclers** the return tube must be on the **inside of the rig, come out and feed back to the base**. This is a complicated process in glass blowing and is what makes this style of recycler unique. It also makes for a pretty display when smoke is drawn through it.

INCYCLERS



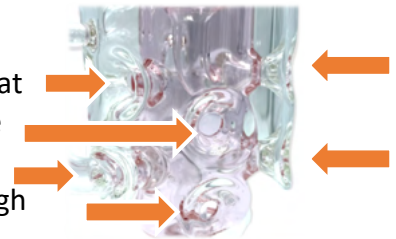
Incyclers work like a recycler, but instead of the water following tubes back into the base, **it uses holes at the top of the reservoir**. After you are done hitting, the rest of the water that didn't recycle through the holes will return down the pipe at the bottom of the reservoir. On a normal recycler, the holes would usually lead to return tubes.



More commonly seen on smaller rigs, this perc usually follows a basic diffuser. It is a perc that functions for both style users but leans in **favor of concentrates**. (great for terps).

SWISS PERC

Swiss percs have gained popularity over the past few years and have been incorporated into various water pipe designs. Originally in flat disk shape, to look like a **slice of swiss cheese**, the function can now be found embellishing straight pipes, rigs and more in all shapes in sizes. Traditionally the idea is to have a thin wall for the smoke to pass through that is **punched with holes**, only touching water at the bottom.



They function very similar to the fab egg, **agitating water at the bottom**, but primarily **expanding & contracting smoke** through the inner workings of the perc. This is the perfect hit for concentrate users!

ICE PINCH



Ice pinches are a chamber in the neck of a water pipe that allows for you **to place ice before the mouth piece**. Running smoke through ice **intensely cools** it. Downside to using the ice pinch is that once ice melts, it can cause your pipe to **overflow or splash back**. However, if you maintain your water levels, the cooling can definitely be worth your time!

Beware of the **false ice pinch!** Some of these divits are not what they appear to be. Chances are if the mouthpiece cannot fit an ice cube, its probably just a splash guard. While it might not be the function you wanted, these **little pipe dimples** serve a purpose. Similar to the idea of the swiss perc and fab egg, **expanding and contracting the smoke** through this pinch will help cool the smoke.



RING PERC / SPLASH GUARD



We aren't 100% sure the official name for this one (), but we are sure that this perc functions mostly to **prevent splashback** and **regulate the flow of water**. When water is pulled up during a hit, these **rings splash it back down** into the basin. Sometimes the design is used after a funnel or perc to help **regulate the flow of water** back into the base.

These **rings can cool smoke** by allowing space for the smoke to **spread out after restricting** it over, and over. This movement cools the smoke with air movement **instead of water** filtration. This perc can also be seen in **dry pipes**, functioning as an ash catcher (or scooby snack preventer). Many steam rollers and chillums use a single one.

The photo to the right features a water pipe from **Grav®**'s line of pipes that feature this perc exclusively, **Upline®**.





New designs and percs will continue to come out, but this reference should provide a **good basis of functionality** to refer to when you come across something new or obscure. Most percolaters that have been brought into water pipe designs serve one of two functions: **it looks cool or it cools smoke.**

Many new ideas we will see in the future will be innovations of ideas that are already being used. When you come across something you can't put the name on, **take a closer look.** There may be smaller parts making up the bigger picture. If all else fails, imagine how the functionality might work for you. Will it create small bubbles, spin the smoke or move water/smoke?

Knowing how all of the tubes and dimples on your piece could enhance a pipe's smoke sesh could make the **difference in your sell or buy.** Most people won't always recognize perc names, but explaining **why it works** can be what makes it click for someone else. Everything comes down to cooling, **just identify how it is done.**

The world is not limited to what we know though. We are sure to see new percs spring to the market over the next few months. If you find any percs not discussed in this post, please feel free to leave information in the comments for everyone else.

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