

# CRAFT Beer

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## 2018 BEST IN BEER

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## An Arsenal of Hopping Gear

There's more than one way to get hops into a beer, and there's a new solution for infusion at each step of the brewing process.

### Hop Cannon

An alternative to dry hopping through the top port of a fermentation vessel, the hop cannon holds a dry-hopping charge and uses a blast of CO<sub>2</sub> to propel the hops into a fermentation vessel (usually through the blow-off port). The hop cannon provides a popular way to reduce the dangers of dry hopping large tanks.

### HopGun

[braukon.de/en/hopgun/](http://braukon.de/en/hopgun/)  
BrauKon's HopGun is an alternative to typical gravity-fed in-tank dry hopping. It uses a sealed pressure vessel to hold a dry-hopping charge that is mixed with fermented beer and recirculated through the fermentation vessel to achieve the desired levels of aroma and flavor without adding bitterness, dissolved oxygen, or off-flavors from too-long contact with green hops material.

### HopRocket

[blichmannengineering.com/products/hoprocket](http://blichmannengineering.com/products/hoprocket)  
The HopRocket is a homebrew-scale solution offered by Blichmann that infuses hops into hot wort when placed between the brew kettle and the wort cooler. It can also double as a randall (see below).

### Hop Torpedo

The hop torpedo is a proprietary system designed by Sierra Nevada's Ken Grossman (on a cocktail napkin if the story is to be believed) that works similarly to the HopGun. Whole-cone hops are added to the stainless-steel vessel and fermented beer is recirculated from a tank through the Torpedo to create favorites such as Torpedo Extra IPA and Celebration.

### Randall

[dogfish.com/shop/barware/randall-30](http://dogfish.com/shop/barware/randall-30)  
Popularized by Dogfish Head Brewery, a randall or "randallizer" infuses hops (or other flavorings) into beer at the time of dispense. Draft beer is pushed through a chamber that holds the hops (or other flavoring addition) and directly into a glass or growler.



**Above** » The result is "a consistent, efficient dissolving of the oils and aromas from hop pellets." **Opposite** » Brewers around the world are adopting this equipment with great success.

and aromas from hops pellets." The HopGun allows the dry-hopping additions to be purged with CO<sub>2</sub>, and the closed-loop setup means less oxygen is introduced to the beer, and there's a more consistent dissolution of hops pellets than with traditional methods.

### One More Task

"It is so frustrating to a brewer to see intact hops pellets after dry hopping," says Tim Harbage, Head Brewer at Figueroa Mountain Brewing Co. in Buellton, California. Figueroa Mountain added a HopGun sized for 100-kilogram hops additions with their new 60-barrel BrauKon brewhouse in mid 2018, and the brewing team took several months to develop their standard operating procedure for the HopGun. Used primarily on batches in the brewery's larger fermentation vessels (up to 240-barrel tanks), the biggest downside of the HopGun, Kevin Ashford, the brewery's creative director, says, is the time to get it cleaned and set up to run. "It's one more task added to a brewer's task list," he says. The added time and effort don't make sense when working with smaller tanks and smaller hops additions. "You should be feeling pain from your dry-hop routine before you add a HopGun to the equation," he says.

It can also be a tricky system to integrate into your cellar, as the Brouwerij West team found out on the third batch processed with their HopGun. "It's a bit like Apollo 13," Mercer says, and not just because of the HopGun's rocket-like shape. Once the vessel is loaded and purged and the beer flow starts, you feel like you're on your own,

and any problems that emerge have to be solved with quick thinking and ingenuity.

Get something wrong and excess pressure will blow off from a port at the top of the HopGun, spraying a hops-dense slurry onto the cellar floor.

### Singing in the Hops Showers

"We took a lot of hops showers during our first batches," says Max Shafer, Head Brewer at Roadhouse Brewing Co. in Jackson Hole, Wyoming. Roadhouse has a pair of HopGuns, one for their 7-barrel brewpub system and another matched with the 30-barrel production brewery. "It was a lot of trial and error at first, and it helped to have two people working on it," he says. But once the wrinkles in their process were ironed out, the benefits outweigh the extra time spent cleaning the HopGun. Shafer says they've reduced their dry-hop additions by up to 30 percent for some beers, and residency time in fermentation vessels has dropped from five days to just two or three. "Our guys aren't on ladders opening the tops of tanks anymore," he says, and the added safety, better quality, and increased efficiency from the HopGun is "totally worth" the initial challenges.

After a couple of hops showers of his own and a lengthy day of monitoring pressures and flow rates through the HopGun, Brouwerij West's Mercer was still feeling excited about his HopGun. Before he purchased the unit, he'd traveled to Jackson Hole to shadow the Roadhouse team using their HopGun, and he knew patience in dialing it in would be rewarded. Based



But it's not just hops that are going into the HopGun at Left Hand; they also use it to add coffee to beer. Prior to the HopGun, coffee additions took several brewers five to seven days for each batch. Using the "coffee cannon" as they call it, one brewer can do the coffee addition in about six hours—and it takes half the coffee to get the flavor they're looking for.

on what he saw—both via analysis of DO levels and sensory evaluation—in the first two batches of hazy IPAs dry hopped with the HopGun, he has committed to the technology and is even considering purchasing a second, larger HopGun.

"We get more of what we want from the hops with less contact time, and we're lowering DO and finishing beer quicker," Mercer says. Making better beer is his number one priority, and the HopGun is providing that with "a more intense hops aroma and a cleaner, brighter hops flavor," and, he hopes, better package stability.

While the learning curve is frustrating and time-consuming, the production team planned for challenges with extra time in the schedule and a willingness to dump any batches that were not up to standards. Mercer is also hiring a new head brewer and an experienced cellarman to fill gaps in his team's knowledge and skills. "We're only in our third year brewing here," he says. "We don't have it all figured out."

### HopGun with a Twist

At Left Hand Brewing Company in Longmont, Colorado, the HopGun is a trusted piece of hardware. One of the largest units produced by BrauKon with a hops capacity of 200 kilograms, Left Hand's HopGun is hard plumbed into the cellar and fully integrated with the brewery's control and automation software. Director of Brewing Matt Thrall says a change in Left Hand's portfolio with more focus on dry-hopped beers necessitated a change in dry-hopping techniques, and a good relationship with BrauKon meant the HopGun was the right solution for the brewery. They'd had good experience with BrauKon support in the past. "We knew what we were getting into and knew it would take some time to get our process down," Thrall says. "But BrauKon is a smaller company, and if something goes wrong, you can pick up the phone and call Germany."

Left Hand runs their HopGun a little differently. Besides being computer controlled

and hard piped, the big gun has two pumps to operate it—one to push and one to pull the beer. "It's phenomenal," Thrall says. "It's the best way we've found to add flavors to a beer." After dialing in the system and working with the sensory program, Thrall has reduced the dry-hop additions by 15 percent and plans to reduce them further.

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### Old School, New Technology

Mercer has long had reverence for the breweries of Belgium, and he was inspired by visits to Rochefort and Rodenbach. He learned not just to respect traditions but to embrace technology as even the Trappist breweries had.

"You visit the Old School breweries in Belgium, and you expect to see the old methods, but really these are cutting-edge breweries," he says. With Brouwerij West, Mercer is compelled to keep improving the product, and the HopGun is the latest addition to his toolkit. "Brewing is art and science," he says, "but it's mostly science, and I want to take the path that science and engineering provide."