

Hydro Dynamics, Inc.

Harnessing the Power of Cavitation



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First ApoWave Hop Extraction Cavitation System to be Installed at Witch's Hat Brewing Company



Witch's Hat Brewing Company Logo with owners Ryan and Erin Cottongim
(Images courtesy of Witch's Hat Brewing Company)

South Lyon, MI – The [ApoWave© hop extraction technology](#) will have its first commercial installation at [Witch's Hat Brewing Company](#) in South Lyon, MI. Witch's Hat's award winning beers are sold around Michigan as well as its own bar at the brewery. The ApoWave© equipment is expected to be installed in the next couple weeks with the first "cavitation" beers available shortly after.

Witch's Hat Brewing Company was the first brewery to conduct onsite R&D with the ApoWave© technology, so it is very fitting that they will also be the first commercial location. Brewing since 2011, Witch's Hat is known for its exceptional commitment to quality beers, especially its Train Hopper IPA. Ryan Cottongim, co-owner of Witch's Hat stated, "We are very excited to introduce the Apowave© unit into our brewery. Our customers, along with the rest of the craft beer world, are always on the hunt for the hoppiest beer out there. We hope that this unit will allow us to continue to push

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the boundaries of what a hoppy beer is and to do it without being wasteful, especially considering the rarity and shortages with hop varieties."

The ApoWave© technology is powered by the ShockWave Power™ Reactor (SPR™) cavitation technology by [Hydro Dynamics, Inc.](#) (HDI) and marketed by [Apotek Solutions LLC](#) (Apotek). The SPR™ harnesses the normally destructive power of cavitation and controls it so its pressure fluctuations can be used for increased hop flavor extraction. With the proliferation of microbreweries the demand for hops and the prices have increased. When the SPR™ technology is applied to the different processes within the brew-house, combined with expertise in hop utilization, it allows brewers to produce bitter beers with 50% to 90% less bittering hops and 50% to 75% less aroma hops for dry hopping.

About Hydro Dynamics

Hydro Dynamics, Inc. is located in Rome, Georgia and is the developer and manufacturer of the cavitation based ShockWave Power™ Reactor (SPR™). The SPR™ equipment uses the physical phenomenon of cavitation, normally known as destructive force, and harnesses it to solve critical industrial mixing, extraction and heating problems. The technology The SPR™ can now be found on four continents in applications ranging from biodiesel production to hops extraction for beer. Learn more at: www.hydrodynamics.com.

About Apotek

Apotek Solutions LLC was formed by a group of Engineers and process experts with more than 50 years of combined experience in the food and beverage industry. Apotek specializes in applying new and unique technologies to current process systems for cost reduction, product improvements or development of products that were not previously available due to process limitations. From improvements to existing product lines to complete turn-key operations, we have installations throughout the United States, as well as countries such as Brazil, Chile, Colombia, UK, Turkey, Italy, Hungary, Switzerland, Finland, Saudi Arabia, Hong Kong, Thailand and Taiwan among others. Learn more at: <http://www.apoteksolutions.com>.



ShockWave Power™ Reactor in ApoWave System and typical brewing hop pellets.