



Are You



Draft Savvy?

By Zac Triemert

In an industry of high-quality, diverse beer brewed with passion, creativity and innovation, it is hard to imagine a less sexy topic than draft quality standards. However, it is one of the most important topics we all face as we bring our beer to our customers.

When beer drinkers have a sub-par beer at their local tavern or your brewpub, they do not blame the quality issue on poor draft maintenance, but instead blame the brewery for poorly brewed beer. And yes, it may be the brewery to blame, because it is up to us to change the draft quality standards in the beer community. We are fortunate to have many wholesalers and retailers who do a terrific job managing beer quality; however, there is more work to do. We need to educate our brewery partners who are not yet draft savvy and then hold them accountable.



In this vein, the Brewers Association Technical Committee is currently working on a number of key issues. These include, but are not limited to: keg theft, CO₂ quality and contamination, an orphaned keg return program, glass supply issues and a significant focus on draft quality standards (DQS). We have put together a sub-committee just to work on draft quality standard issues and it is so titled DQS. Within DQS we are considering every part of draft quality as an area for improvement, including:

- Draft system cleaning standards
- Draft system design
- Keg cleaning, filling and handling (brewery related; exempt from the wholesaler and retailer manuals listed below)
- Pouring and serving

The DQS committee has set out to clearly define the best practices in draft system design and maintenance, as well as pouring the perfect pint of beer. We have decided to create two manuals. One is specifically designed for wholesalers in states that allow them to manage the draft-cleaning program and for draft cleaning and install contractors in states that do not. This manual will be the more technical of the two, covering the technical aspects of draft system design and the cleaning chemistry for draft line maintenance. A second manual will be produced for retailers. This manual will discuss the important issues surrounding design and maintenance and will include more detail about pouring and serving beer, as well as possible tips on server training.

The DQS group has also expanded beyond the Brewers Association and has support from all corners of the brewing industry. The partnership with these breweries, importers and organizations will significantly increase the impact of our efforts and allow a better chance for a true paradigm shift in draft quality in the United States.

Draft System Cleaning Standards

I have had the opportunity to see the draft system maintenance requirements from some of the best craft breweries in America including Boulevard, New Belgium and Sierra Nevada, as well as our program at Upstream Brewing Company. (The three large brewers are sharing their programs as well; however, I have not seen the programs as of writing this article.) We all agree on one thing: the importance of cleaning draft lines every two weeks. This will help keep the biological load, beer stone and other debris in check. From here, the programs are all similar in principle, but slightly different in procedure. The draft line cleaning standards the DQS group will define and cover include, but are not limited to:

- Approved cleaning chemicals and concentrations
- Contact time
- Cleaning frequency
- Temperature
- Cleaning methods, for instance pressure pots versus electric pumps
- Specifics on cleaning faucets, keg couplers, foam detectors and other draft related equipment
- Record keeping

The DQS group is meeting regularly and debating the best cleaning program and language for each manual. I will list the areas that we all agree upon. As mentioned, draft lines and associated equipment should be cleaned every two weeks with an alkaline solution. The chemical contact time should exceed 15 minutes, following the manufacturer's recommendation for temperature and concentration. Beer lines should be cleaned with an acid solution on a regular interval. Cleaning with an electric pump is exceedingly superior to pressure pots. And a maintenance log must be kept and include

cleaning details, as well as hardware maintenance and replacement.

Draft System Design

Draft system design in principle is quite easy. An ideal draft system includes ample cold keg storage, barrier tubing, stainless steel hardware and an appropriate inert gas blend for the beer being dispensed. Unless the keg is directly underneath the faucet, glycol should be used within an insulated barrier tubing trunk line. The system may be equipped with foam detectors and beer pumps for long draft lines.

It is my opinion that all draft systems should be designed by draft equipment manufacturers and/or draft experts, not the local HVAC contractor. The reality of the matter is that there are many poorly designed and/or old draft systems in the market. Problems include degraded tubing and insulation, no glycol cooling, brass fittings, inappropriate gas blends and/or air compressors for beer dispense. Yes, I said air compressors for beer dispense. It is also a problem if an inappropriate gas blend is used. It has become relatively common practice for a high nitrogen blend (75 percent N₂ / 25 percent CO₂) used for serving nitrogenated stouts to be used for all beer. Too much nitrogen in your blend will result in poorly carbonated beer. (Henry's Law makes clear that if the partial pressure of CO₂ in the keg head space is lower than the equilibrium pressure of CO₂ in the beer, CO₂ will come out of solution.)

It is unrealistic to expect all accounts to immediately install a new dispense system. However, if the DQS manuals can promote proper cleaning and correct gas blends, we believe it will be a good start. Over time as new systems are installed

and old systems are updated, we hope that our recommendations become standard guidelines.

Keg Cleaning, Filling and Handling

The topic of cleaning, filling and handling kegs is currently outside the immediate scope of the manuals that the DQS group is developing; however, a discussion of draft quality would be incomplete without at least a brief mention. The process of cleaning kegs differs greatly among breweries of different size. Smaller breweries, such as Upstream, often have a hand-valve controlled, one- or two-head keg cleaner. There is room for operator error in chemical concentration, temperature and contact time. The keg cleaner has no steam sterilization or filling capability, but it does purge the keg with CO₂.

Alternatively, large breweries often employ a high-tech, fully automated keg cleaner and filler. This technology removes some of the potential operator error, but requires highly trained staff to manage the software and equipment mechanics. Regardless of the equipment and keg style used, there are a few important parameters to follow and audit.

As far as cleaning chemistry goes, cleaning a keg is similar to maintaining draft lines. A keg must first be completely purged of both beer and CO₂. Alkaline cleaners, such as caustic soda, remove organic and protein residue, including the biological load. Caustic cleaning is ineffective in a CO₂ environment (caustic is neutralized to form sodium bicarbonate). There are many different alkaline cleaning products on the market. The most important thing is to follow the manufacturer's recommendations when it comes to concentration, contact time and temperature. A chlorine solution around 400 to 800 ppm can be added periodically to remove the buildup of hop resins, tannins and glucans.

Acid cleaning follows the alkaline cleaning. Acid cleaners, such as nitric, peracetic or phosphoric acid, remove calcium oxalate (beer stone) and other inorganic compounds. Some of the high-tech keg cleaning equipment can accommodate multiple cleaning solutions. If your keg cleaner only has one chemical tank, such as the one Upstream uses, periodic acid cleaning is required. Please note that acid cleaning works best when the organic scale is removed first.

Chemical cleaning can be followed by steam sterilization. This is of course a great step if your brewery operation and keg cleaner allow. The final step is to purge your keg with CO₂, to reduce O₂ pickup in your beer.

It is important to audit your keg cleaning procedures. I recommend doing spot checks at an interval that reflects your production volume. Fill the spot check keg with a sterile saline solution and plate the solution on microbiological media that specifically check for production yeast as well as wild yeast and bacteria. Then remove the keg spear and do a visual inspection for debris and beer stone.

Filling the clean kegs is next. Kegs must be filled with cold beer from the bottom up. The CO₂ volumes must be correct and there must be cold storage for all the full kegs, even if the beer is flash pasteurized.

Managing timely pickup from the wholesaler becomes important depending on the production schedule and available storage space. The relationship you have with your distributor works best if you view them as your business partner. Once the distributor takes control of your beer, you must be confident they will care for your beer as if it was their own. They need to keep the beer cold at all times. They must ensure the retailers only purchase as much beer as they can store cold and sell within the beer shelf life. Again it comes down to education. Proper education of all your business partners, including your retailers, will pay dividends.

Pouring and Serving Beer

Training bartenders to pour a proper beer is easy to overlook. Again, the DQS committee is still discussing the finer points in this area. The topics of concern are glassware, pouring and daily system maintenance. We all know that all too often our well-crafted beer is served in a dirty glass. "Dirty" takes on several meanings: not properly sanitized or not properly rinsed. When I see lipstick and/or food particles on my beer glass, I am immediately disgusted. I'm sure I'm not alone here. The other issue is a sanitized glass with a beer-head-killing surfactant residue still in the glass. That just makes me sad. The DQS committee plans to include in the retailer manual a protocol including the do's and don'ts of glassware cleaning.

Pouring is a straightforward issue; awareness is the problem. When pouring a beer, do not put the beer or the beer glass in contact with the beer faucet. If the glass was cold frosted, rinse it out before filling. The reason is simple: sanitation.

The next pouring requirement for the bartender is to put a head on the beer. I'm sure we all have great bartender-pouring stories. My favorite example is when the bartender lets beer from a full pint pour down to the drip tray until the beer that *bad* a perfect head is now "flat topped."

Lastly is daily maintenance of the draft system, which goes beyond the system itself. Beer faucets and drip trays should be rinsed and wiped down daily. Any beer spills should be thoroughly cleaned and drains should be flooded with water. Fruit flies love beer and a fruit fly can carry microorganisms from a floor spill or a drain into a beer faucet. Furthermore, bartenders should rinse and wipe clean keg couplers every time they change out a keg. Keeping the cooler clean will pay nearly as many dividends as keeping your bar clean. Running a bar is no different than running a brewery: sanitation, sanitation, sanitation.

Moving Forward

The DQS committee faces many real challenges as we move forward with this project. Many retailer attitudes surrounding regular line cleaning only see the lost beer revenue. It is not our goal to alienate these retailers, but to educate them. Higher draft quality will result in higher volume beer sales, something that benefits everyone.

We as brewers know that a draft system should be designed with all stainless steel fittings, temperature controlled barrier tubing and a proper inert gas delivery system. The reality is that many retailers have draft systems with brass fittings, old and degraded draft lines and air compressor delivery systems. Here too we hope to promote that quality will bring volume and volume equals revenue.

As we move forward with this education process we are fortunate and proud to be supported by many of the big players in the brewing industry. With this level of support, we truly believe that we can make a positive and lasting impact on draft beer quality.

It is our goal to put together guidelines that are easy to understand and to put into practice for all wholesalers and retailers. Furthermore, we hope that all new and rebuilt draft systems will be constructed in a manner that best suits beer quality. We believe that there will be both immediate and long-term benefits from this project. This initiative started with the BA; however, it will take the continued support of everyone involved in brewing, distributing and retailing beer to ensure that draft beer quality becomes a point of excellence in the U.S.

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