Draught System Cleaning

An in-depth look at BA-recommended line cleaning methods and how to implement them into today’s dynamic draught environment.

Learn how to confirm chemical concentrations via titration, clean systems with an odd number of lines, and work with novel draught equipment such as “sonic cleaners.”

Cleaning draught systems properly is the only way to ensure brewery-fresh beer tastes great at retail!
Draught Beer Quality Workshop

For all the latest in updated information regarding System Maintenance and Cleaning or anything else related to draught beer dispense,


*Click on or Right Click to open hyperlink below.


Extended Draught System - Shutdown


Extended Draught System - Re-Opening

Draught Beer Quality Workshop
Brewers Associations Best Practices

Monday, April 27th 2020 3PM – Neil Witte / Addressing Draught Beer Dispense Issues

Tuesday, April 28th 2020 at 3PM– Ben Geisthardt / Cleaning Best Practices in Today’s Market

Wednesday, April 29th 2020 at 3PM – Matt Meadows / Glassware Styles and Presenting Draught Beer

Thursday, April 30th 2020 at 3PM – Bridget Gauntner & Ken Smith / Demystifying Dispense Gas

Friday, May 1st 2020 at 3PM – Jaime Jurado / Calculating Proper Balance and Pours
Ben Geisthardt
Field Quality Specialist / Sales Team Member
New Glarus Brewing Company, Wisconsin

Ensuring Line Cleaning Best Practices in Today's Market
Safety First!

Always...

- Wear Eye and Skin Protection
- Only Mix Approved Chemicals
  - Caustic – removes organic residue
  - Acid – removes inorganic build up
  NEVER mix the two together!!
- Alert people around you
A Clean Beer System Equals Repeat Sales!

“Beer-Spoiling bacteria will ruin a beer’s flavor and Aroma”
- Brewer’s Association

This will lead to...
• Loss of Repeat Business
• Loss of Potential sales
What are we Cleaning???

- Sugar
- Hop resin
- Cereal protein
- Minerals
- Yeasts, Bacteria & Flavors from previous beer

Biofilm / Beer Stone “Residue”

- Food for Microbes
- Sticky
- Gummy
- Hard
- Continued Fermentation & Unexpected Flavors

Draft System Cleaning | New Glarus Brewing Co. | Ben Geisthardt
<table>
<thead>
<tr>
<th>Condition</th>
<th>Temperature</th>
<th>Pressure</th>
<th>Equipment</th>
<th>Improper Pour</th>
<th>Glassware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild Beer</td>
<td>Too Warm</td>
<td>Too High</td>
<td>Needs Cleaning</td>
<td>Check Pour</td>
<td>Ice Inside Of Glass</td>
</tr>
<tr>
<td>Beer, when drawn, is all foam, or too much foam and not enough liquid beer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Beer</td>
<td>Too Cold</td>
<td>Too Low</td>
<td>Needs Cleaning</td>
<td></td>
<td>Detergent Film Inside Of Glass</td>
</tr>
<tr>
<td>Foamy head disappears quickly; beer lacks brewery fresh flavor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloudy Beer</td>
<td>Too Cold</td>
<td>Contaminated CO₂ Gas</td>
<td>Needs Cleaning</td>
<td></td>
<td>Needs Cleaning</td>
</tr>
<tr>
<td>Beer in glass appears hazy, not clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>False Head</td>
<td>Too Warm</td>
<td>Too Low</td>
<td>Check Pour</td>
<td></td>
<td>Household Detergent And Dust</td>
</tr>
<tr>
<td>Large soap-like bubbles, head dissolves very quickly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What are the hallmarks of a good beer bar?

In a good beer bar, it’s all about **Quality**. And it’s so easy. It takes three things: the **Right Temperature**, **Pressure** and **CLEAN LINES**. It’s frustrating to me how many bars can’t accomplish those three things.

- Jon Taffer
Recirculation Cleaning

An AB Study entitled Ensuring Draught Beer Quality concluded the following...
“A beer line cleaner’s effectiveness, in part, is contingent upon a rapid, turbulent solution flow of at least 10 minutes for optimum removal of biological residue. The effectiveness of a turbulent flow of beer line cleaning solution is eighty times greater than a static, beer line “soaking.”

*Anheuser-Busch Study - 1991 Edition
Safety, Testing and Essential Tools...

Ph Paper, Titration Kit, Line Markers, Chalk Markers, PPE & Tools
More tools of the Trade...

Recirculation Pump, Jumper hoses, Connectors & Drains
What is the Best Way to clean Beer Lines?

Frequency
Minimum
Every 14 Days

Action
Recirculation / Static Soak

Solution
2% - 3%
Sodium or Potassium Hydroxide
80° F to 110° F

Time
Chemical Contact Time
Recirculation / Static Soak
15+ Min. / 20+ Min.
Set up starts in the cooler
So what if we only have 3 lines to clean???

You will then use a “Y” Style set up and you are still able to re-circulate.

Out of frustration for cleaning odd numbered draught systems twice, I came up with this “Y” coupler in order to clean all the lines at once, while still being able to recirculate mechanically.

The addition of a split drain hose with a shut off reduced my need to carry additional drain hoses as well as bringing the lines back together for one single outlet.
Tower set up & Initial prep

Step 1. –

• Prime Pump – Less stress on the pump
• Hook up the tower
• Flush all beer from the system with Water
Initial Check…  (Goes along with initial prep)

- **Inspect flow direction** (Make sure it is going the correct way)
  - Alternate the Cleanings flow (direction) bi-weekly
- **Work pump up to a set point of 40-45psi**
  - Ideal chemical flow should be 2x the beer flow at 2gal./min.
    - This may not be obtainable for all systems.
- **Check for leaks around the tower and inside the cooler**
- **Inside the cooler you will want to fill F.O.B.’s if they are utilized**
Multi-tasking...
Line Cleaning Myths!

• The Hotter the Water = The Cleaner the line?
  - Can cause lines to delaminate and break down.
  - Can also cause lines to expand / Burst.

• Higher the Pressure = The better the clean?
  - This can cause lines to expand and create bacterial growth points
  - This can also cause lines to burst.
Excessive Build up to beer lines due to Ineffective cleaning...

Video
Caustic Chemical Cleaning & Flush

Step 2.
Insert a 2-3% Caustic Solution
Minimum 15 Min. Chemical contact time

Step 3.
Flush Caustic Solution until water is pH neutral
A Titration Device

Gives you the ability to check your % of Caustic in Solution.

Testing Options -
full %’s or down to .1%’s

This helps maintain consistency when Cleaning.
A Titration Device

1. Dropper of 0.5 ml diluted with Water
   To make a 5 ml solution

2. Barium Chloride 10% – Add 10 drops
   Clouds the Mixture

3. Phenolphthalein Indicator 0.5%
   1 drop – Turn Solution Pink
   Indicator for Caustic in Solution

Mixed Caustic in Solution at 3% ???
Now we test...
A Titration Device

Final step is to add drops of Hydrochloric Acid 3.6N One drop at a time

Testing for this current video is going by One Drop = a full percent.

Each drop equals a full % or less of Caustic in Solution.
Final step is to add drops of Hydrochloric Acid 3.6N One drop at a time

Testing for this current video is going by One Drop = a full percent.

Each drop equals a full % or less of Caustic in Solution.
Quarterly Acid Chemical Cleaning & Flush
This is done in addition to your Caustic Cleaning.

Step 5.
Insert a 1-2% Acid Solution
Minimum 15 Min. Chemical contact time

Step 6.
Flush Acid Solution until water is pH neutral
Large Deposits Being pulled Out of the system!

Video
Free of Any Organic Buildup!

Video
BA Recommends you Breakdown Components – Semi-Annually

Foaming Issue:

Missing O-Ring
Replaced after inspection
F.O.B’s (Foam On Beer devices)

Brewer’s Association recommends these be disassembled and cleaned Semi-Annually.
Maintenance

For Consistent results...

The Brewer’s Association recommends
Replace Jumper and Direct
Draw Box lines Yearly.
Documenting your results

This gives you a visual tracker showing changes in Glycol temperature, what service was completed, who was there last and on what date.

<table>
<thead>
<tr>
<th>DATE</th>
<th>INITIALS</th>
<th>ACID/CUSTIC</th>
<th>LIQ. TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/22/18</td>
<td>BG</td>
<td>C</td>
<td>37°</td>
</tr>
<tr>
<td>9/05/18</td>
<td>JB</td>
<td>C</td>
<td>37.5°</td>
</tr>
<tr>
<td>9/19/18</td>
<td>BG</td>
<td>C/A</td>
<td>37.5°</td>
</tr>
</tbody>
</table>


#CraftBrewersCon
Other tools of the trade...

Static Cleaning Tools
Other Cleaning Methods:

Sonic Cleaners –

The Brewers Associations stance on Sonic Cleaners is this...

“Devices that purport to electrically or sonically clean draught lines are not a suitable substitute for chemical line cleaning. Although some sonic cleaners may inhibit bacteria and yeast growth, they have little to no cleaning effect on draught system hardware and fittings.” “A maximum two-week chemical line cleaning cycle is recommended on all draught systems regardless of the use of a Sonic Cleaner.”
Other Cleaning Methods:

**Sponges -**

“Mechanical cleaning” is the scrubbing of the inside of a beer line with the use of a small sponge.

- Use extreme caution when using this method.
- Couplers and F.O.B.’s must be **Removed** in order to use this method.
Warning!!!

*Shown here a Sponge cleaning which resulted in a completely plugged line. This had to be cut out to regain flow.*
Recap
By the Book...

What are the Maintenance Recommendations

✓ Clean Beer Lines a Minimum of Every 14 Days
✓ Disassemble / Clean Faucets at EVERY Service
✓ Purge beer from system with Warm Water
✓ Use a 2%-3% Caustic Solution @ 80˚F-110˚F
✓ Chemical Contact Time
  • Minimum 15 Minutes for Pump Cleaning
  • Minimum 20 Minutes for Static Cleaning
✓ Flush caustic solution with cold/ph neutral Water
✓ Detail all Components that touch beer
✓ Quarterly - Every three Months
  • Clean with and Acid Treatment in addition to your Caustic cleaning.
    • Flush with clean water in between cleanings. Never mix Chemicals!
✓ Semi Annual - Every six months
  • Disassemble, Service and hand clean all Couplers and FOB’s.
✓ REPLACE lines with flavor change / 10+ yrs. of service
  • Jumper Lines and Direct Draw Box lines should be replaced yearly.
✓ Post documentation of draught system maintenance
Thank you & Cheers

Ben Geisthardt
Field Quality Specialist / Sales Team Member
New Glarus Brewing Company, Wisconsin
Help me improve this class

1. Was the information taught in this class?
   A. Too Basic
   B. Too Difficult
   C. Appropriate

2. Quality of Presentation? (Verbal, Written Material & Videos)
   A. Excellent
   B. Good
   C. Fair
   D. Poor

3. Anything I covered that you would like more Information on?

4. Information you would like to see me cover?

Please email me at bgeisthardt@newglarusbrewing.com