

# 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,

Please consult your  
Draught Beer Quality Manual – Fourth Edition.

\*Click on or Right Click to open hyperlink below.

[https://www.brewersassociation.org/educational-  
publications/draught-beer-quality-manual/](https://www.brewersassociation.org/educational-publications/draught-beer-quality-manual/)

**Extended Draught System - Shutdown**

[https://www.brewersassociation.org/brewin  
g-industry-updates/draught-quality-  
recommendations-during-extended-bar-  
restaurant-shutdown/](https://www.brewersassociation.org/brewing-industry-updates/draught-quality-recommendations-during-extended-bar-restaurant-shutdown/)

**Extended Draught System - Re-Opening**

[https://www.brewersassociation.org/brewin  
g-industry-updates/best-practices-in-  
preparation-for-re-opening-after-extended-  
draught-system-shutdown/](https://www.brewersassociation.org/brewing-industry-updates/best-practices-in-preparation-for-re-opening-after-extended-draught-system-shutdown/)



# Draught Beer Quality Workshop

## Brewers Associations Best Practices

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

**Tuesday, April 28<sup>th</sup> 2020 at 3PM– Ben Geisthardt / Cleaning Best Practices in Today's Market**

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

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

**Friday, May 1<sup>st</sup> 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



Caustic Burns!



*Why Clean?*

# 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





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

## Biofilm / Beer Stone “Residue”





# Common Draft problems...

COMMON DRAFT PROBLEMS					
Condition	Temperature	Pressure	Equipment	Improper Pour	Glassware
 <b>Wild Beer</b> Beer, when drawn, is all foam, or too much foam and not enough liquid beer	Too Warm	Too High	Needs Cleaning	Check Pour	Ice Inside Of Glass
 <b>Flat Beer</b> Foamy head disappears quickly; beer lacks brewery fresh flavor	Too Cold	Too Low	Needs Cleaning		Detergent Film Inside Of Glass
 <b>Cloudy Beer</b> Beer in glass appears hazy, not clear	Too Cold	Contaminated CO <sub>2</sub> Gas	Needs Cleaning		Needs Cleaning
 <b>False Head</b> Large soap-like bubbles, head dissolves very quickly	Too Warm	Too Low		Check Pour	Household Detergent And Dust



# Interview with Jon Taffer of Bar Rescue

- Kate Bernot from Draftmag.com

**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*





F

A

S

T

What is the Best  
Way to clean Beer  
Lines?

# Frequency

Minimum  
Every 14 Days

## Action

Recirculation / Static Soak

## Solution

2% - 3%

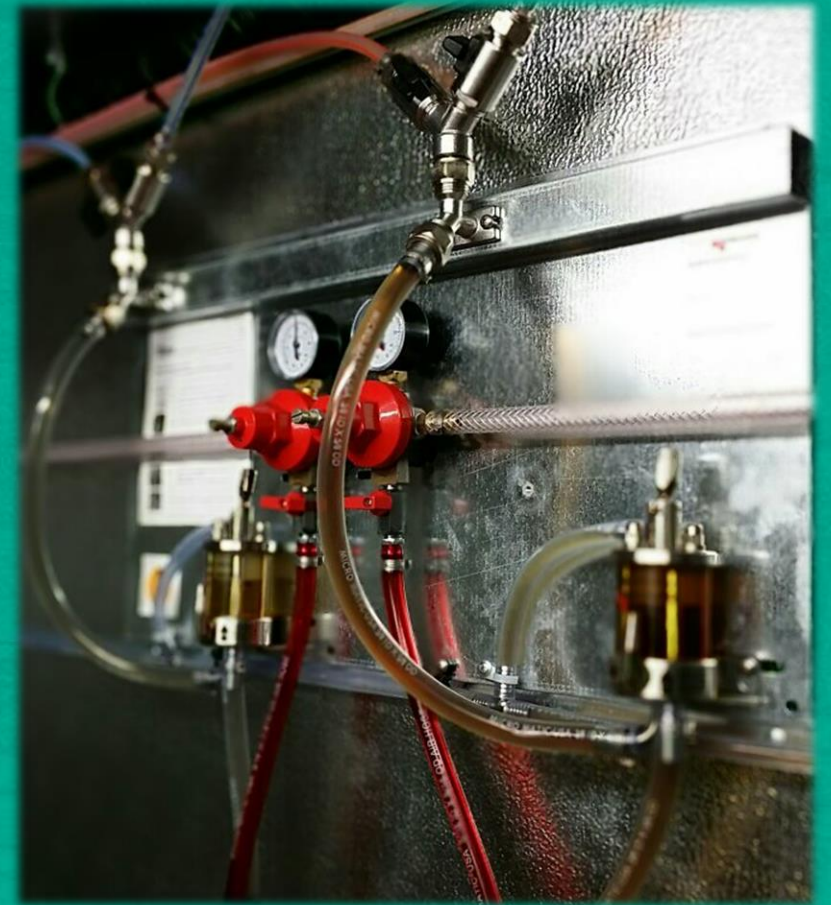
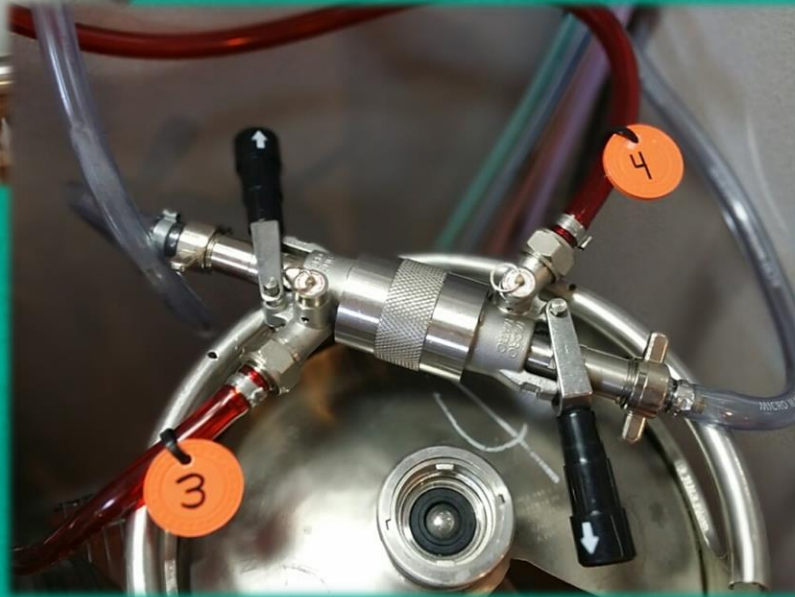
Sodium or Potassium Hydroxide  
80° F to 110° F

## 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.

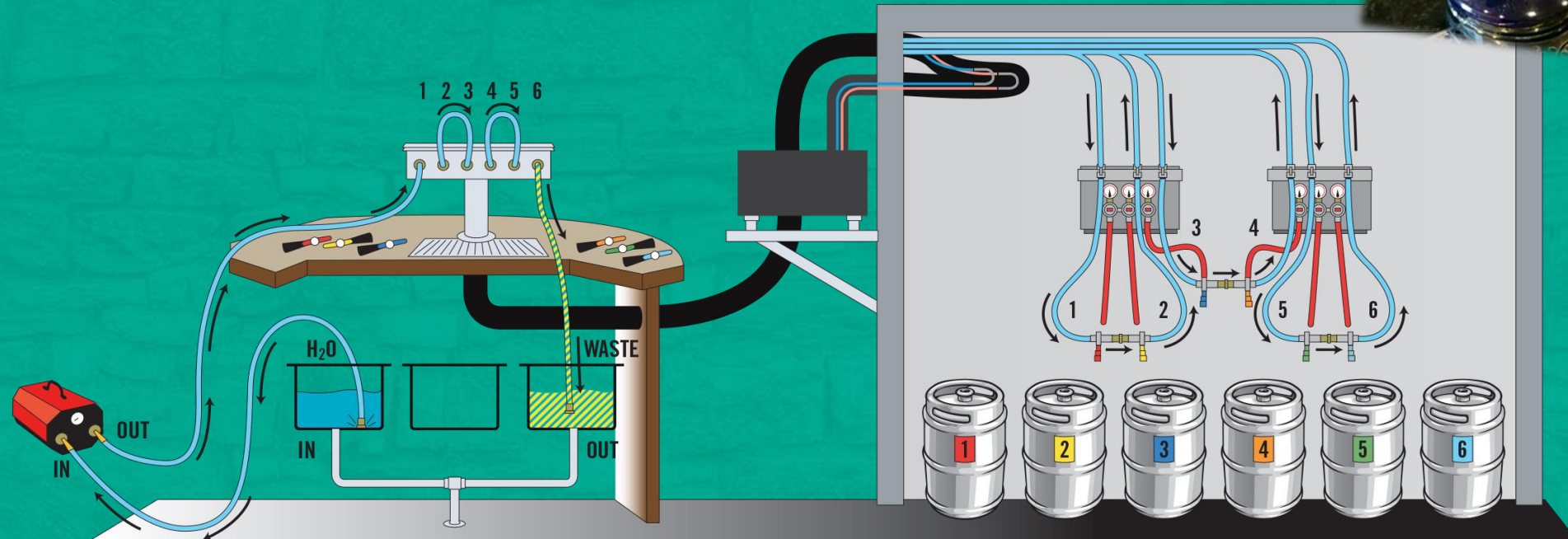




# Tower set up & Initial prep

## Step 1. -

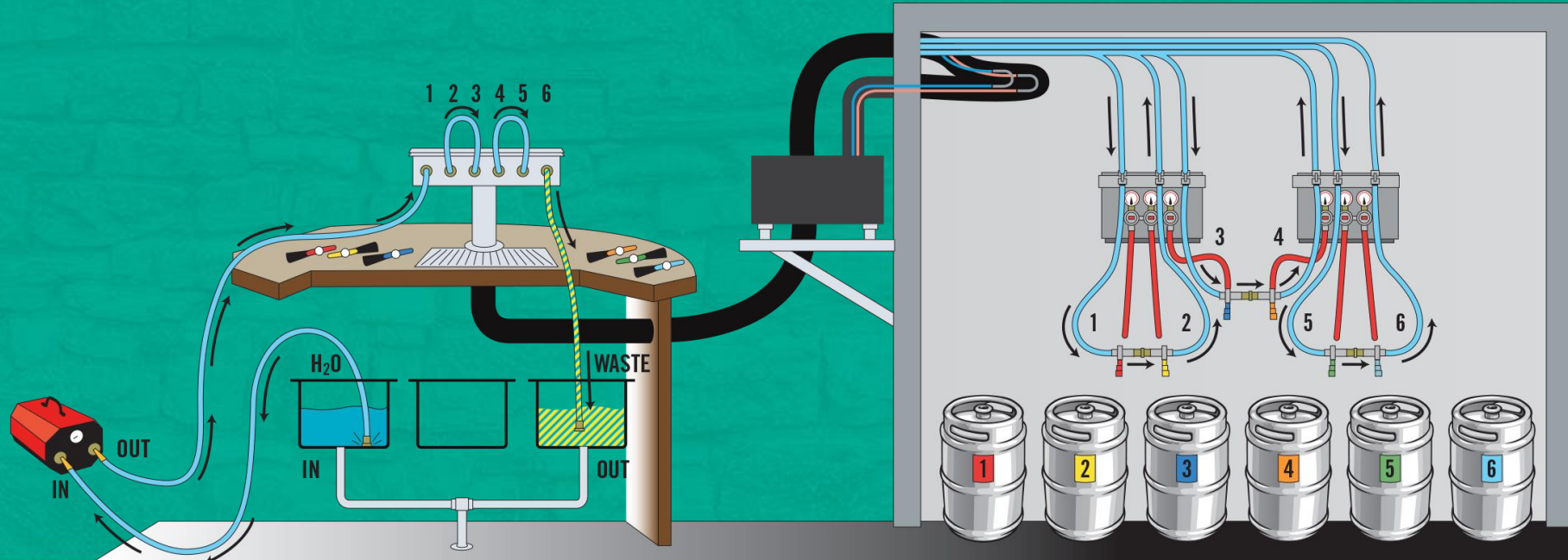
- Prime Pump – Less stress on the pump
- Hook up the tower
- Flush all beer from the system with Water





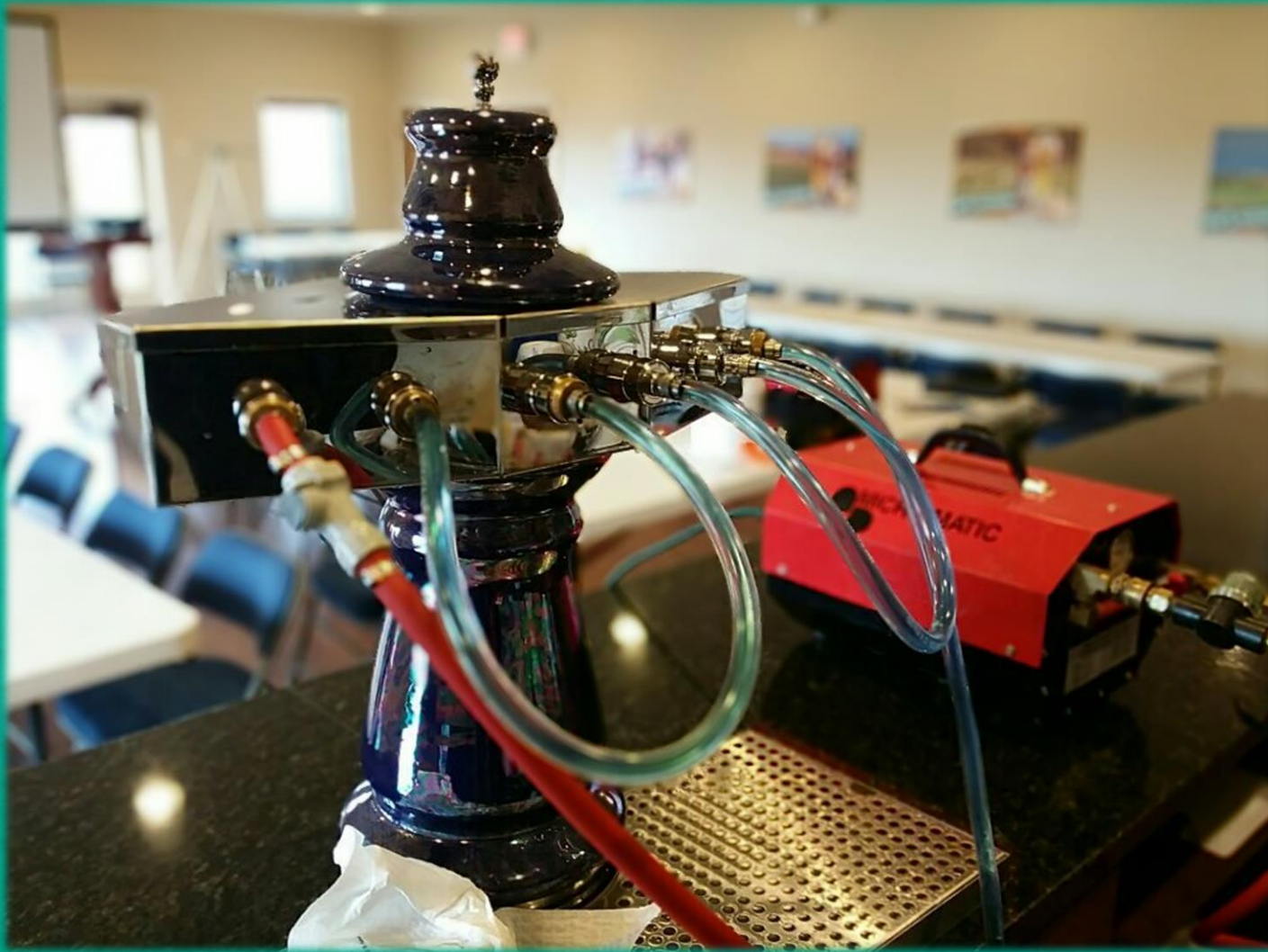
# Initial Check... (Goes along with initial prep)

- **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

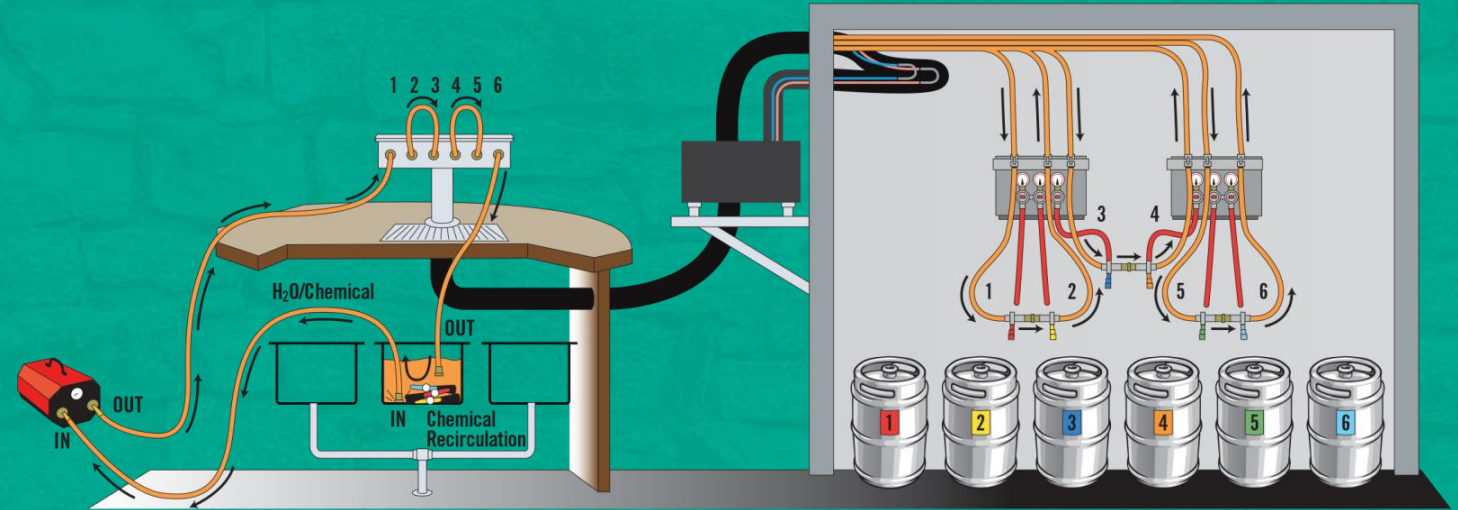


# Caustic Chemical Cleaning & Flush

## Step 2.

Insert a **2-3% Caustic Solution**

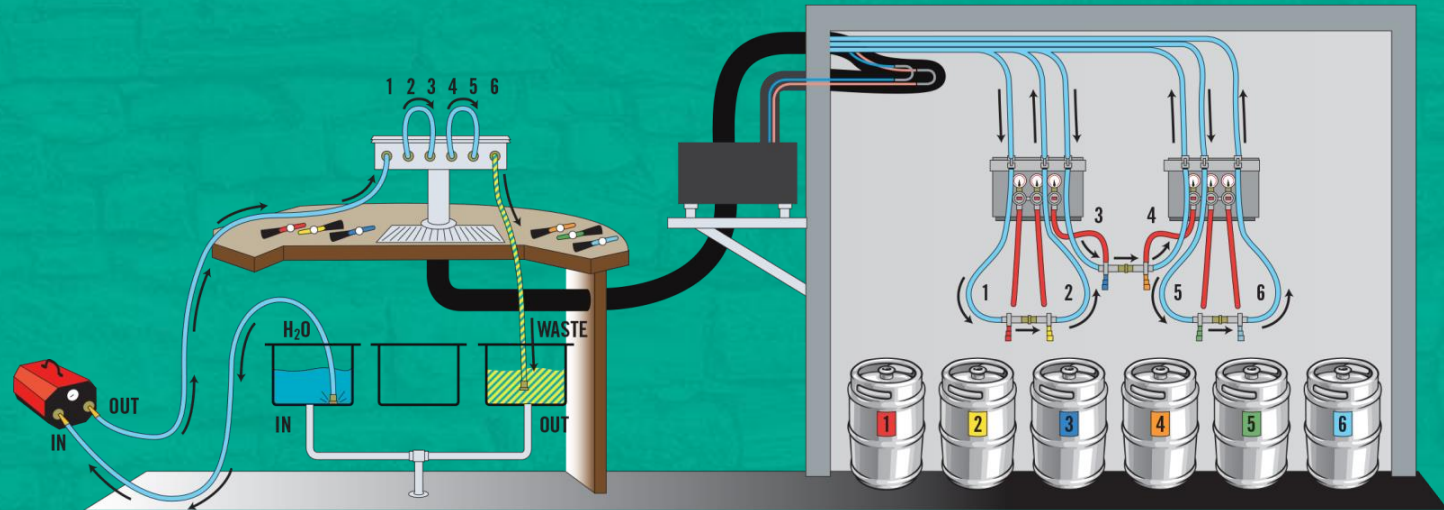
Minimum 15 Min.  
Chemical contact time



## Step 3.

Flush **Caustic Solution**

until water is  
pH neutral



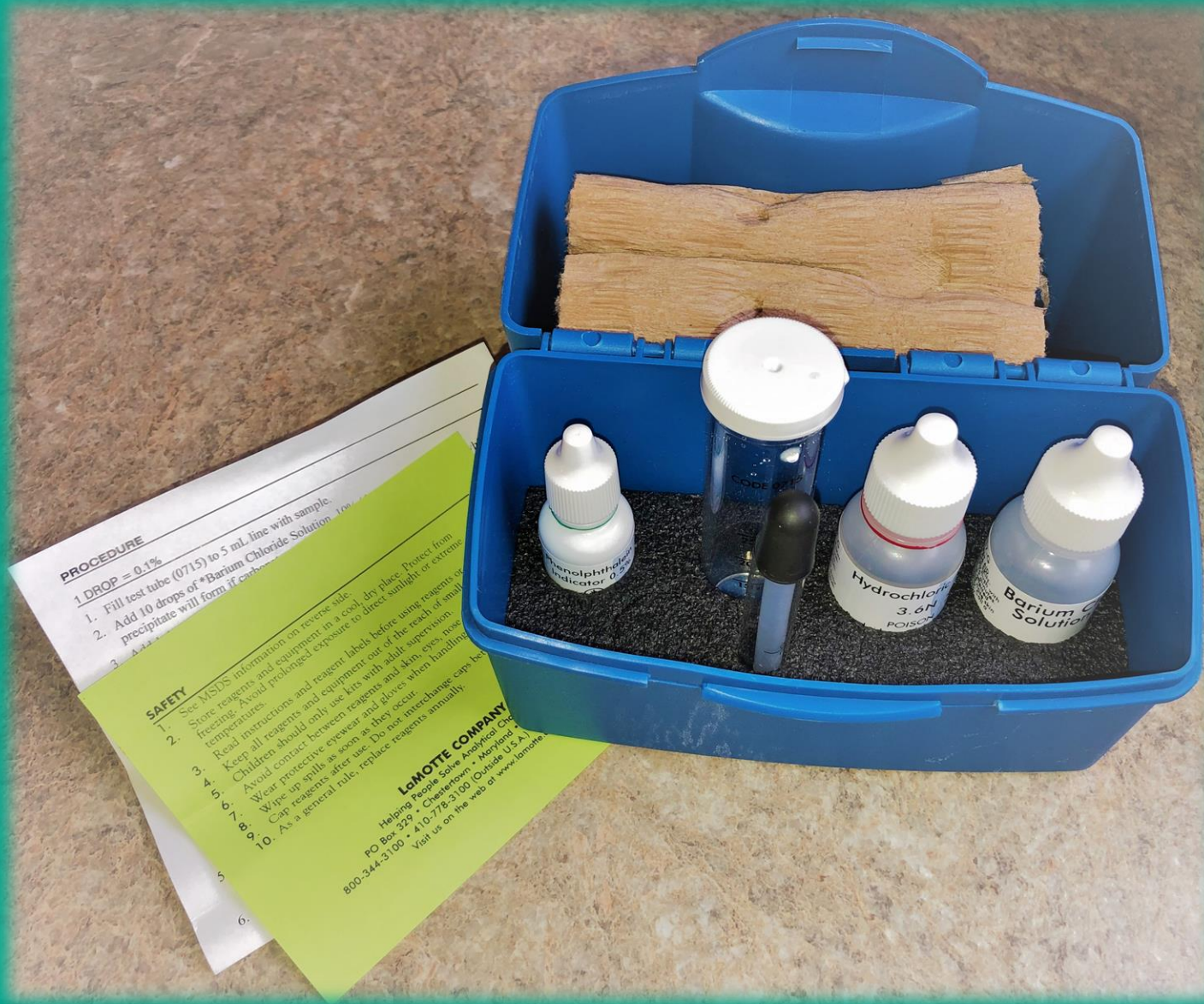


# A Titration Device

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

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

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



# 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.



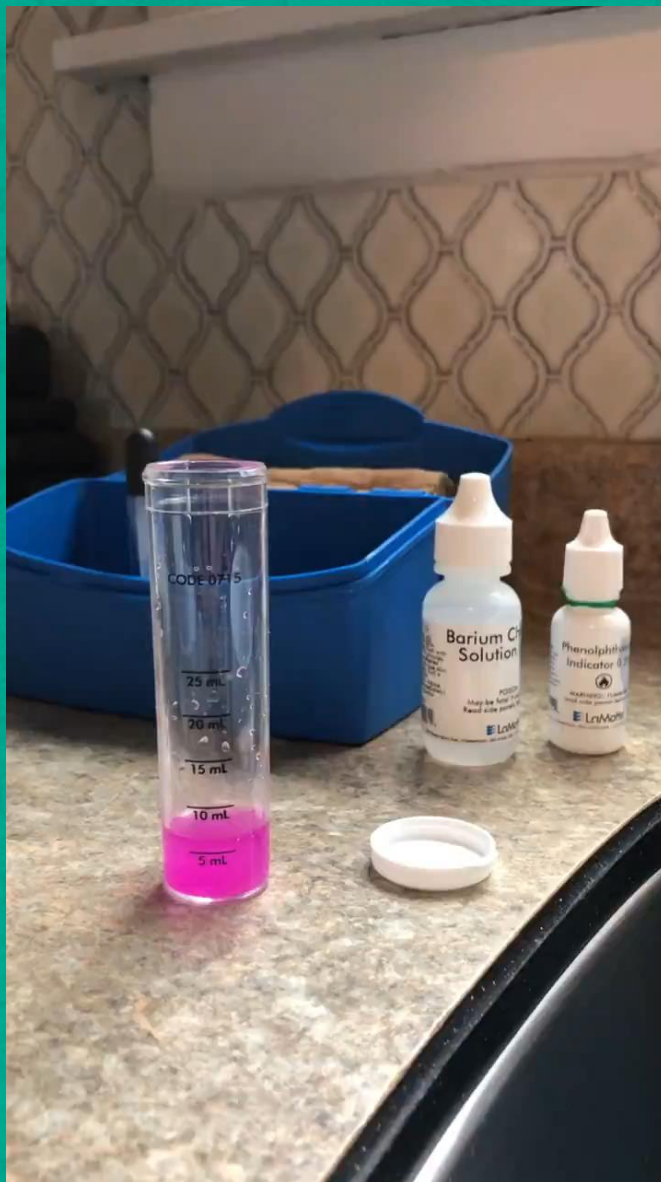


# A Titration Device

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Video



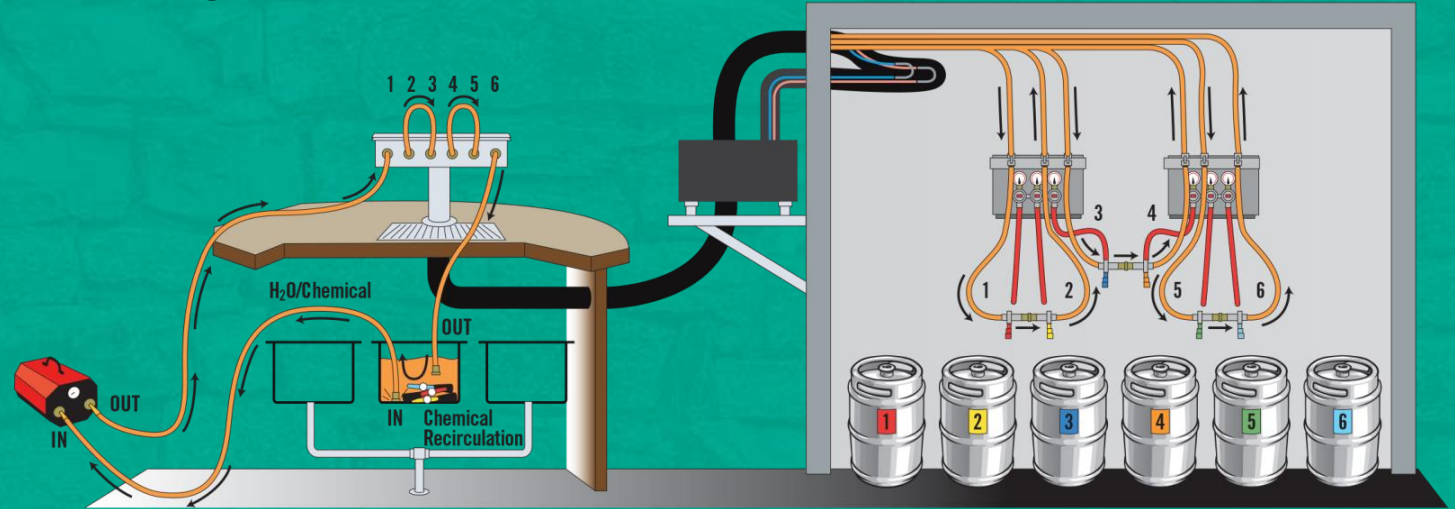
# Quarterly Acid Chemical Cleaning & Flush

This is done in addition to your **Caustic** Cleaning.

## Step 5.

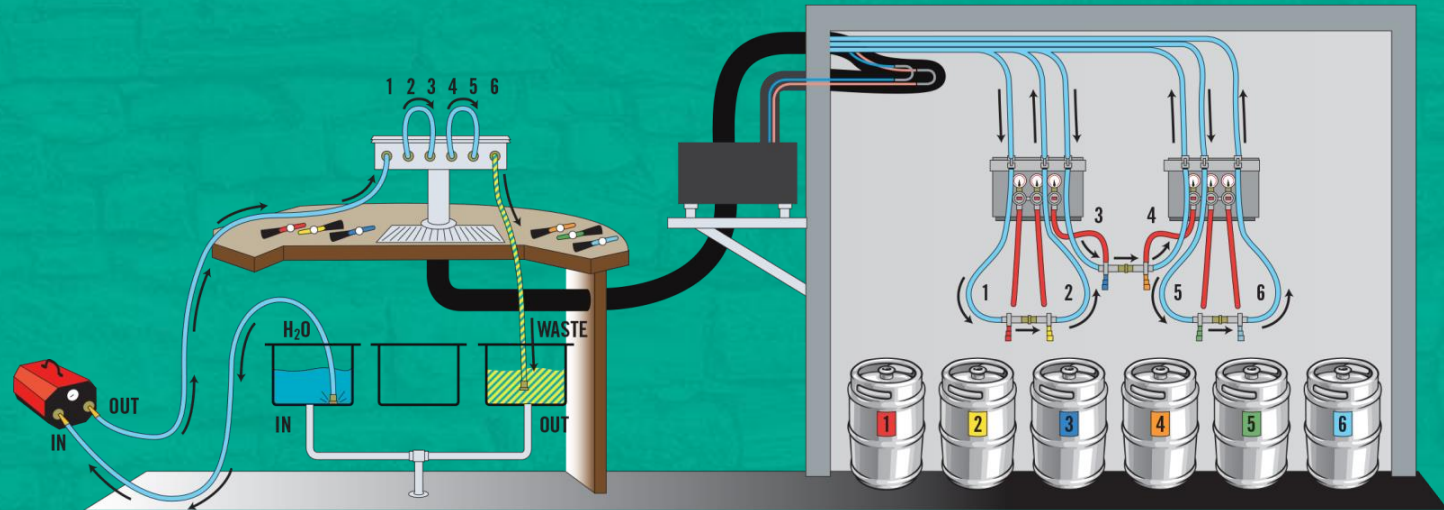
Insert a **1-2% Acid**  
Solution

Minimum 15 Min.  
Chemical contact time



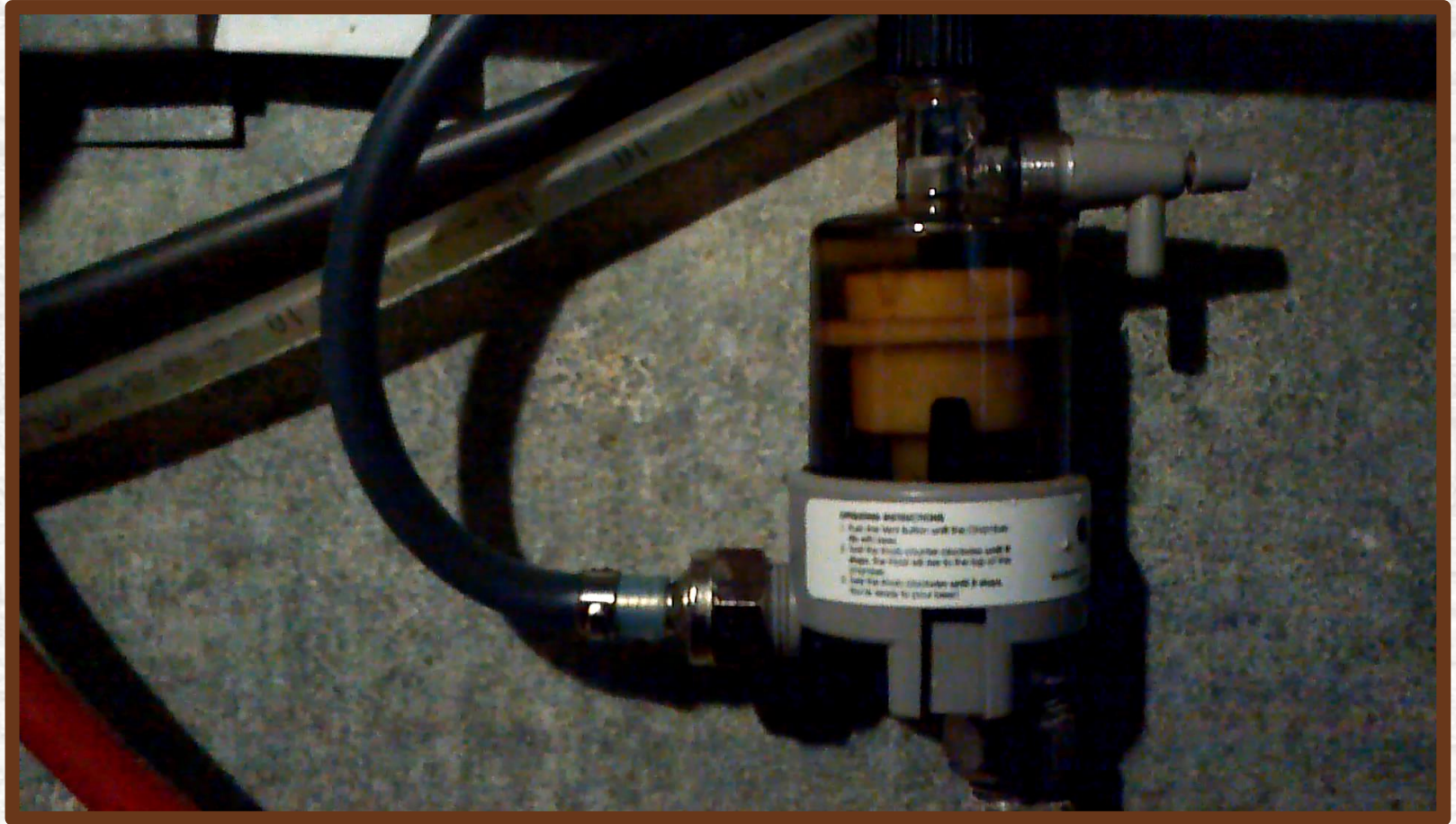
## Step 6.

Flush **Acid** Solution  
until water is  
pH neutral





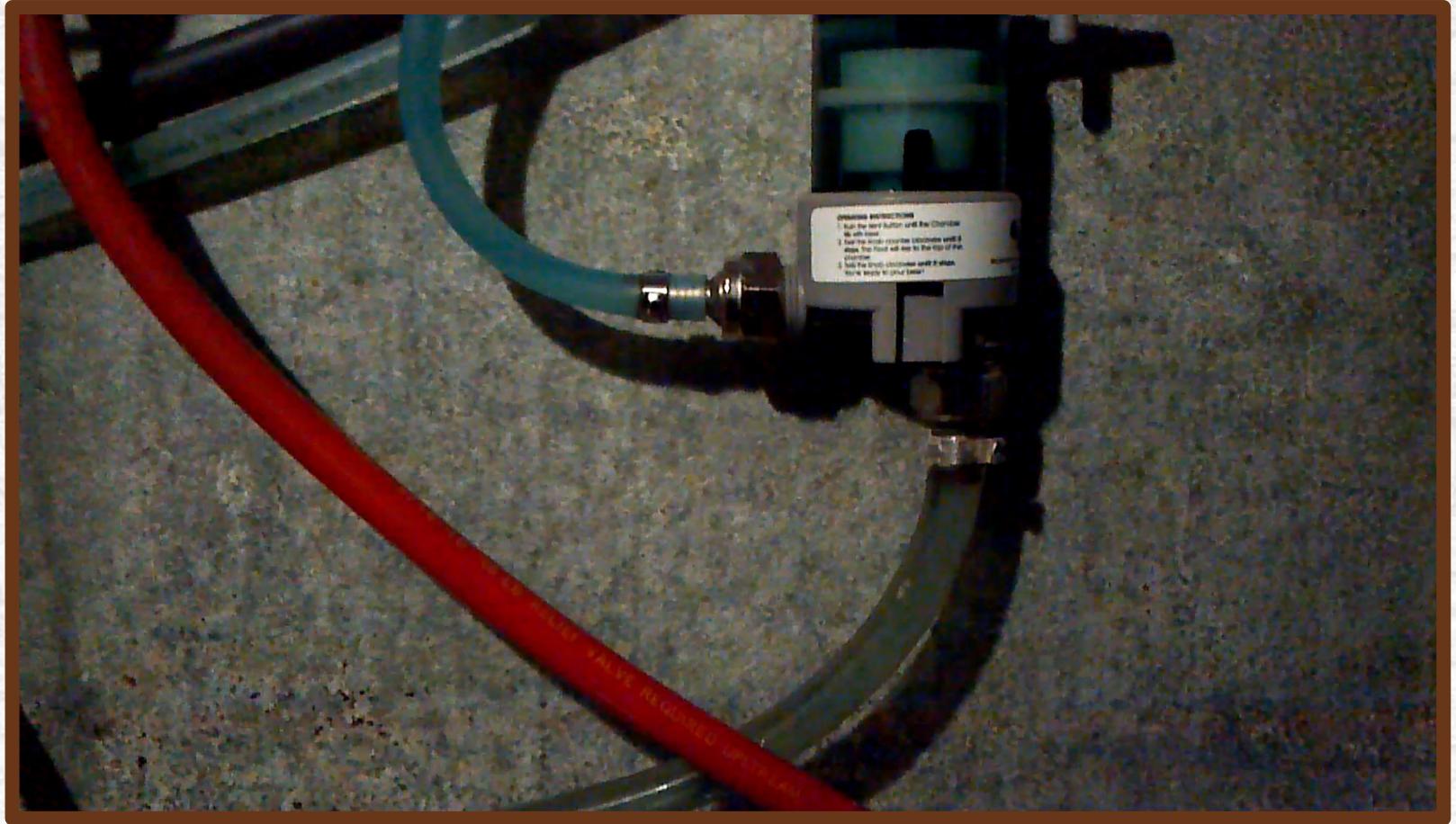
Large Deposits  
Being pulled  
Out of  
the system!



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.



New Line  
installed



# 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.

*\*Printable Copy available on page 79  
of The Draught Beer Quality Manual  
Fourth Edition*

#CraftBrewersCon

## Line Cleaning Log

The Library Bar

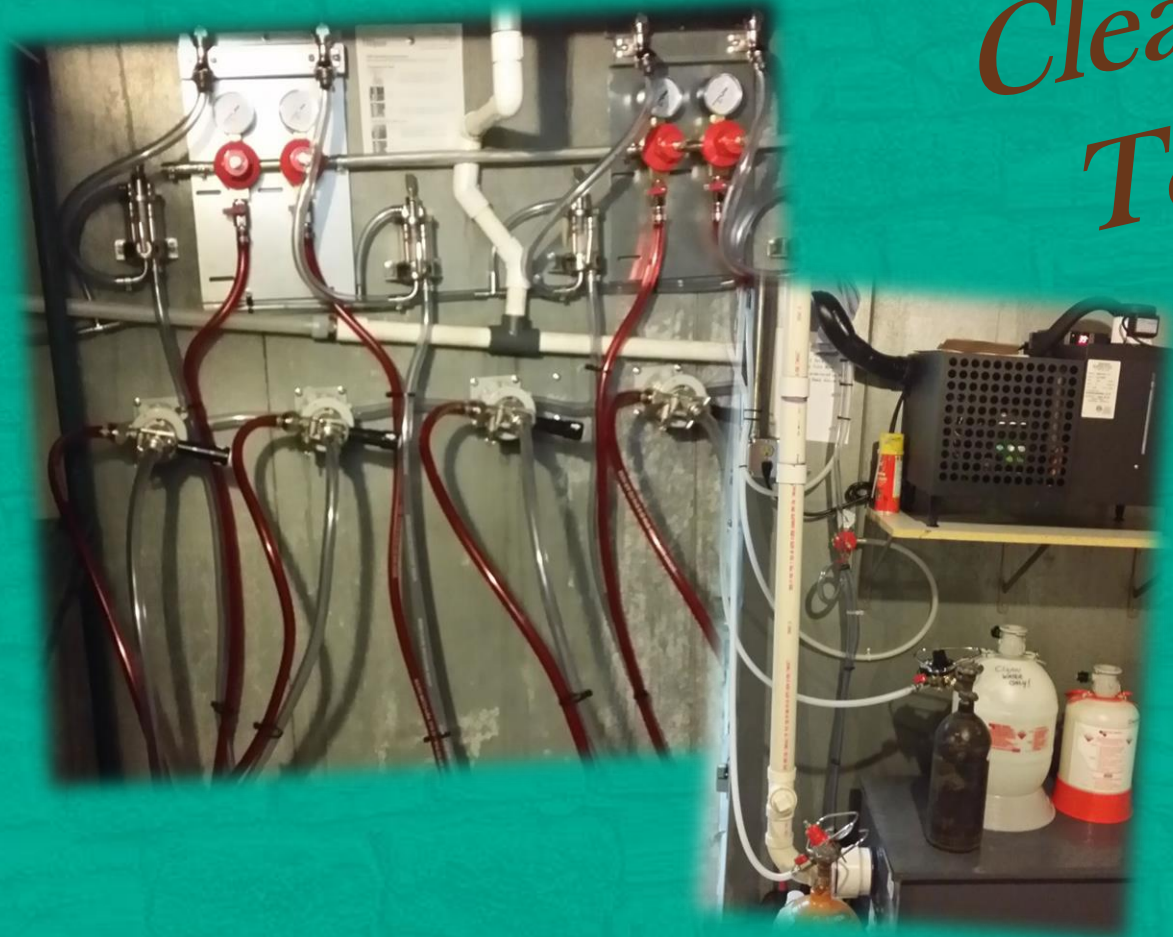
BAR NAME	DATE	INITIALS	ACID/CAUSTIC	LIQ. TEMP.
	8/22/18	BG	C	37°
	9/05/18	JB	C	37.5°
	9/19/18	BG	C/A	37.5°

Document your work



# 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.”



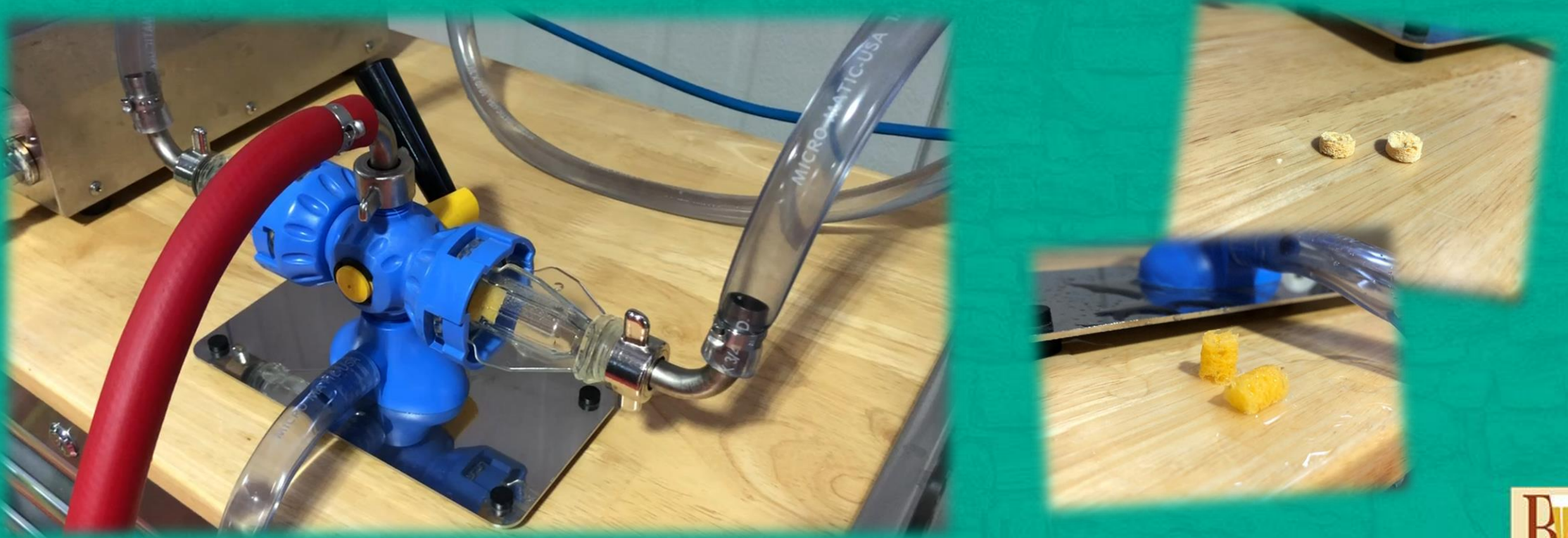


# Other Cleaning Methods:

## 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](mailto:bgeisthardt@newglarusbrewing.com)