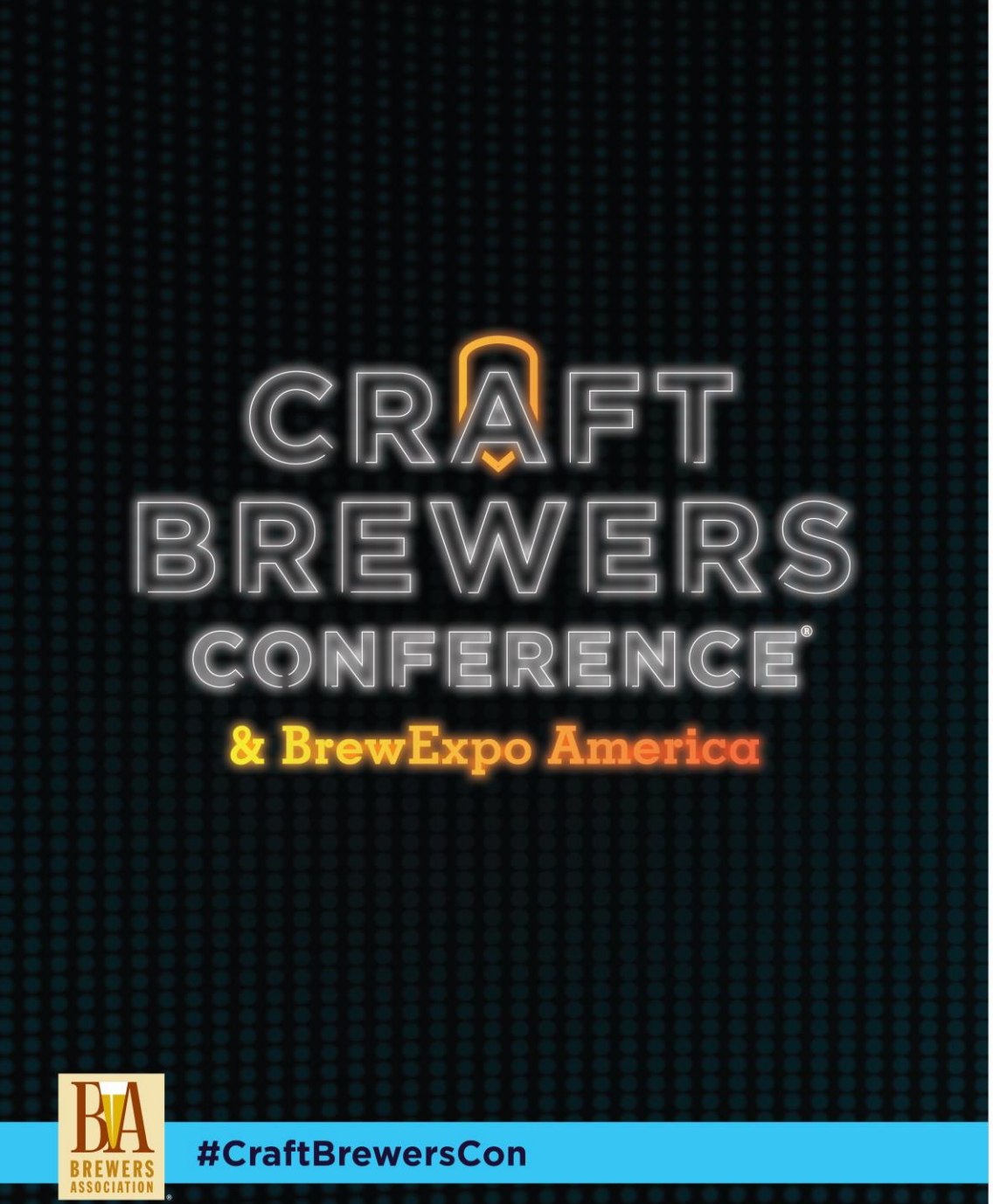


# Draught System Cleaning

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

Learn how recirculation works, how it differs from other methods, what makes it safer, how to multitask, clean systems with an odd number of lines and how to work with different add-on 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: A Journey from Keg to Glass

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 or CTRL + Click on hyperlink below for your copy today.*

https://www.brewersassociation.org/educational-publications/draught-beer-quality-manual/

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& BrewExpo America

# Draught Line Safety for Adjacent Workers Course






Course Instructor
**Matt Stinchfield**
*BA Safety Ambassador*



By **Kaylyn Kirkpatrick**
*Director of Education*

https://www.brewersassociation.org/edu/online-courses/#tab-linecleaning

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# Safety First!

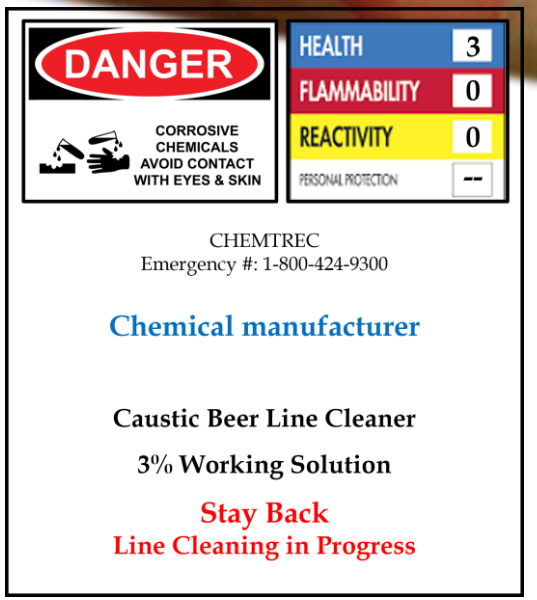



## Always...

- Wear Eye and Skin Protection
- Only Mix Approved Chemicals
  - Caustic – removes organic residue
  - Acid – removes inorganic build up / beer stone

***NEVER mix the two together!!!***

- Alert people around you



*Why Clean?*

# A Clean Beer System Equals Repeat Sales!

**"Beer-Spoiling bacteria will ruin a beer's flavor and aroma"**

- Brewers Association



**This will lead to...**

- Loss of repeat business
- Loss of potential sales

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# 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"






# Carbohydrate protein and other compounds create a breeding ground for spoilage bacteria...

- Pediococcus
- Lactobacillus
- Lactic Acid
- Acetobacter

- ✓ Buttery flavors from diacetyl
- ✓ Sour milk or cheese or even buttery flavors
- ✓ Sour, where sourness was not intentional
- ✓ Vinegary taste from acetic acid

Biofilm buildup



# 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




Draft System Cleaning | New Glarus Brewing Co. | Ben Geisthardt

# Safety, Testing and Essential Tools...




*Ph Paper, Titration Kit, Line Markers, Keg Chalk, PPE - Personal Protective Equipment, Thermometer & wrenches.*

# Key Components for Recirculation…



*Recirculation pump,*
*Chemical,*
*Jumper hoses,*
*Flushing couplers &*
*Drain line*



F

A

S

T

What is the "Fast"est way to clean Beer Lines?

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# 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.**

# Carbon Dioxide at Draught: Safe Handling and Staff Training



Safety First!





By **Bridget Gauntner**
*Bell's Brewery*

https://www.brewersassociation.org/brewing-industry-updates/carbon-dioxide-at-draught-safe-handling-and-staff-training/

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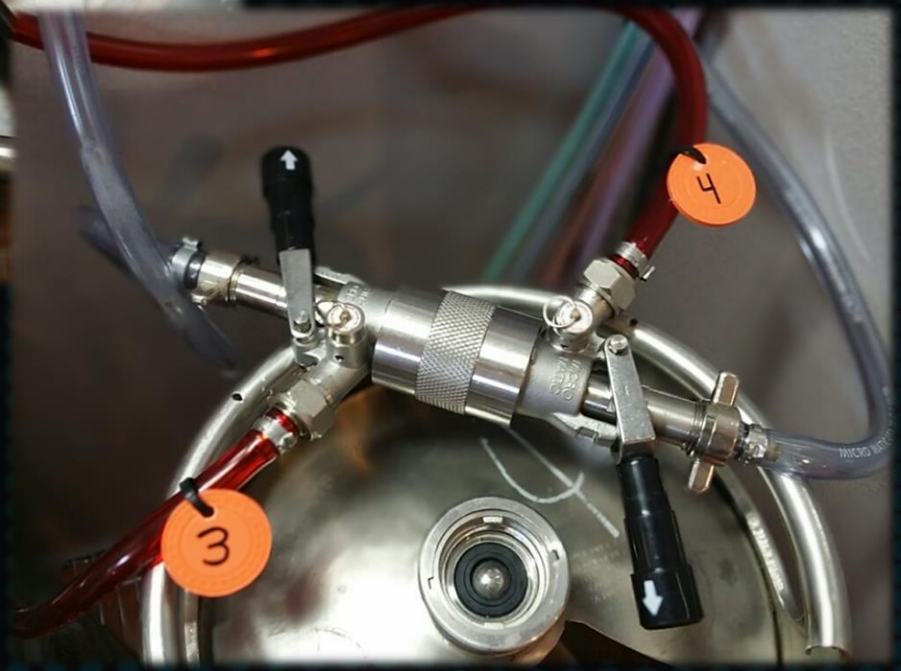
# Set up starts in the cooler






# Faucet Removal & Tower Set-up…







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# Initial prep & Tower set-up…

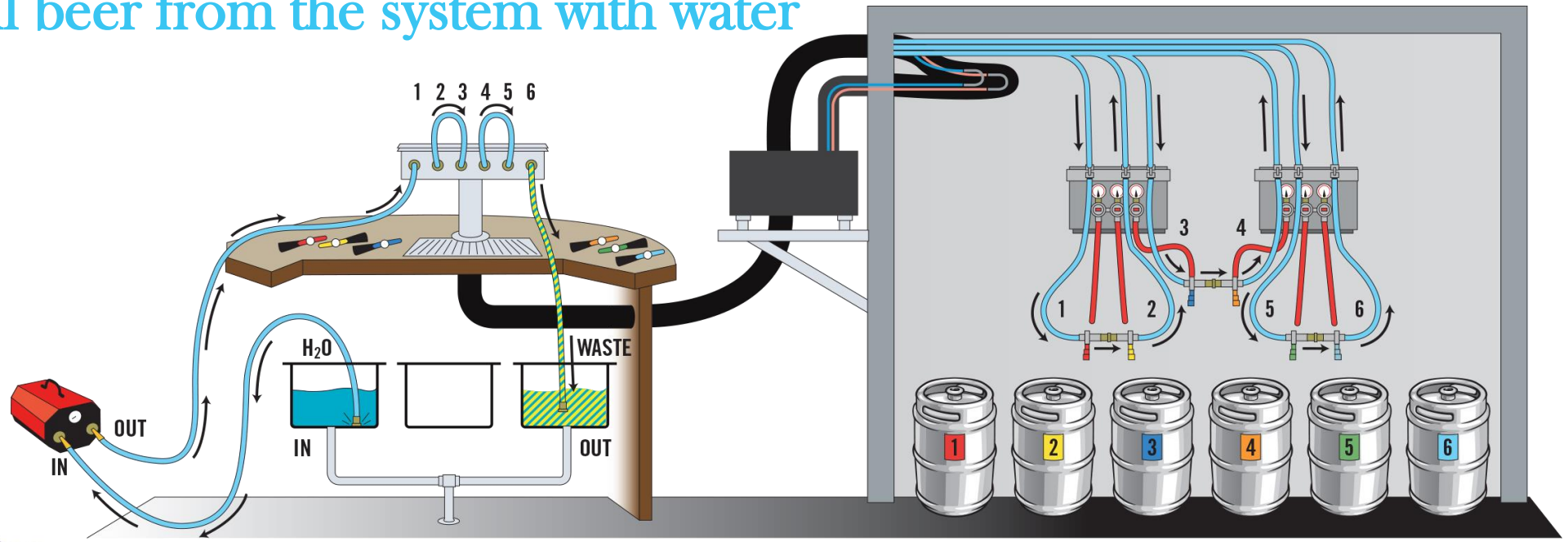
## Step 1. –

- **Prime the pump** – Before hooking up to the tower
  - » Less stress on the pump
- Remove faucets and hook up pump and jumper lines to the tower
- Flush all beer from the system with water



*If done correctly you will never see this…

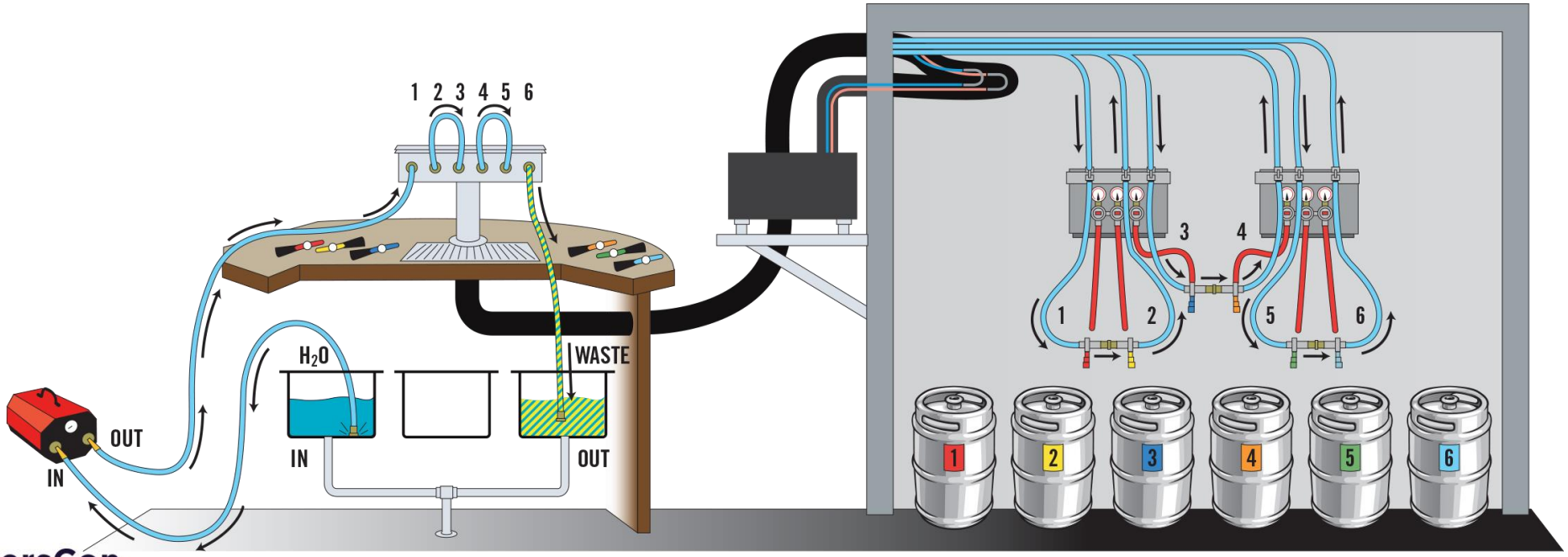
**Ever!**



# Initial check… (Goes along with initial prep)



- Inspect flow direction (Make sure flow is going all one direction)
  - Alternate the cleanings flow (direction) bi-weekly
- Work pump up to a set point of 40-45psi
  - Ideal chemical recirculation should be faster than the flow of beer. (2oz. + a sec.)
    - This may not be obtainable for all systems.
- Check for leaks around the tower and inside the cooler
- If F.O.B.'s are installed your will want to open the drains to fill them.



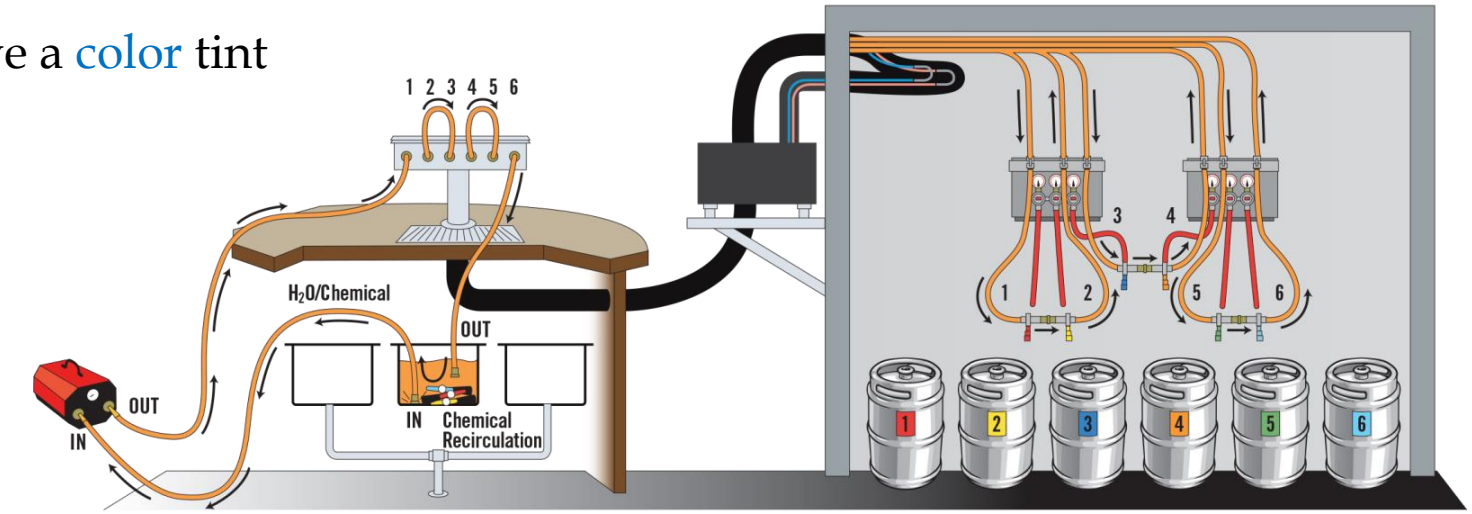
# Caustic Chemical Cleaning & Flush

*Chemical should have a color tint

## Step 2.

### Insert a 2-3% Caustic Solution

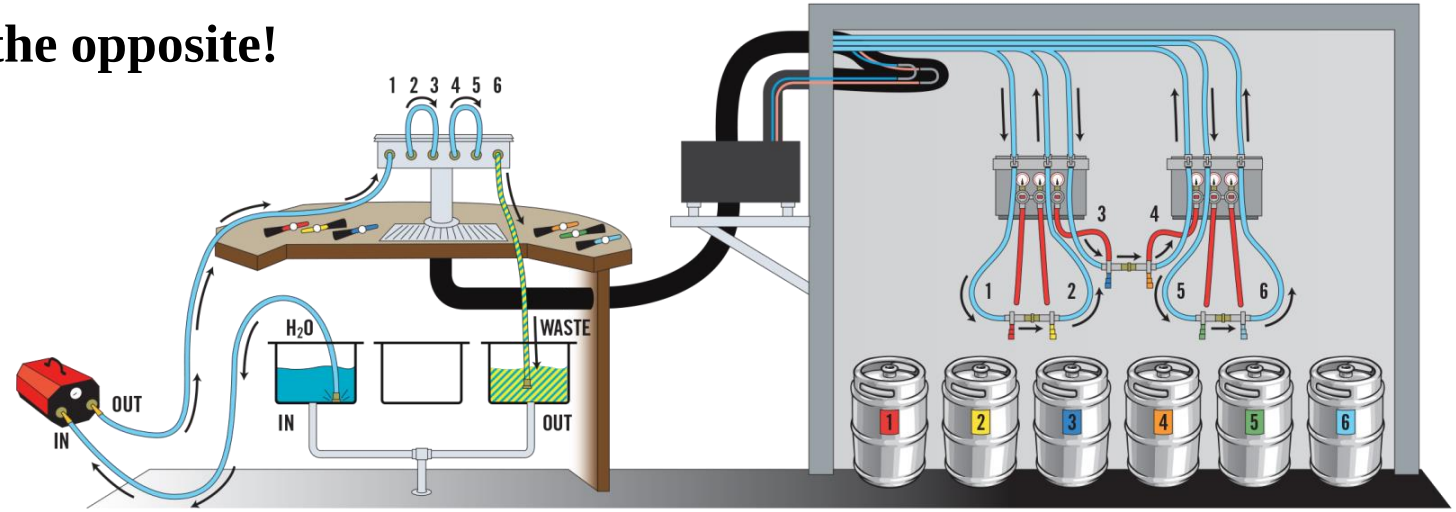
*Minimum 15 Min.*
*Chemical contact time*

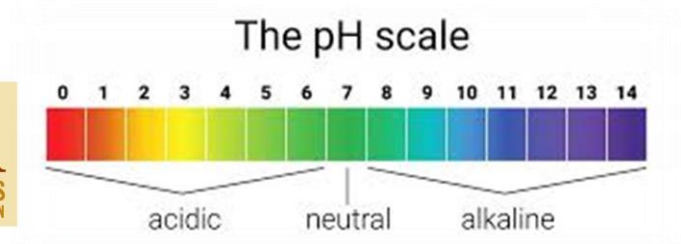



***Always add chemical to water, not the opposite!**

### Flush system with water until pH neutral "7".

*Use pH Paper to confirm*



# 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.





# 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.**

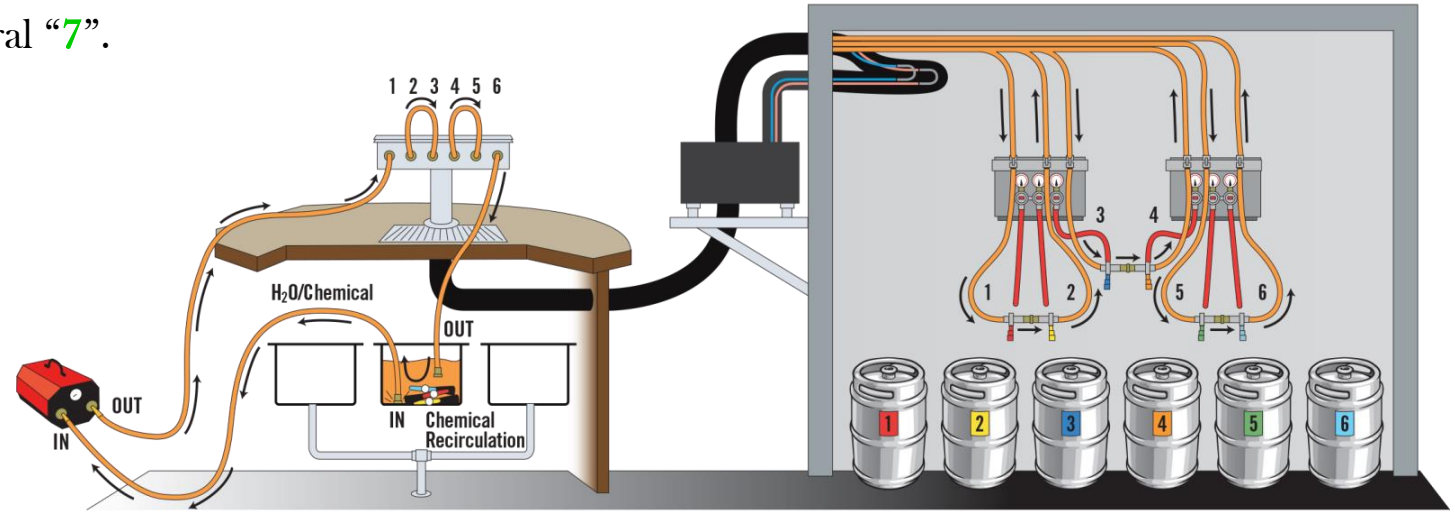
# Quarterly Acid cleaning & flush

This is done in addition to your Caustic cleaning and after you have flushed the lines with water until pH neutral "7".

## Step 5.

### Insert a 1-2% Acid Solution

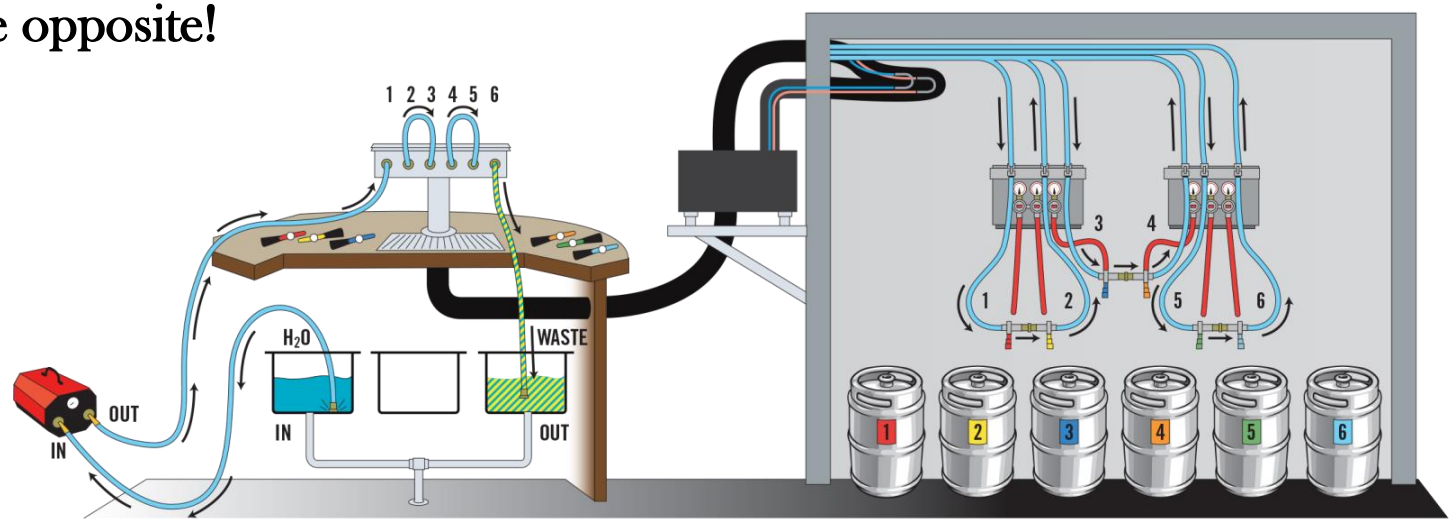
Minimum 15 Min.
Chemical contact time

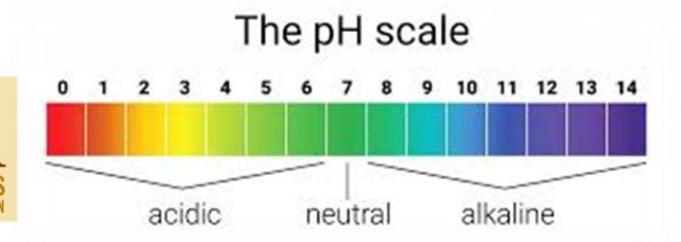



*Always add chemical to water, not the opposite!

### Flush system with water until pH neutral "7".

*Use pH Paper to confirm*

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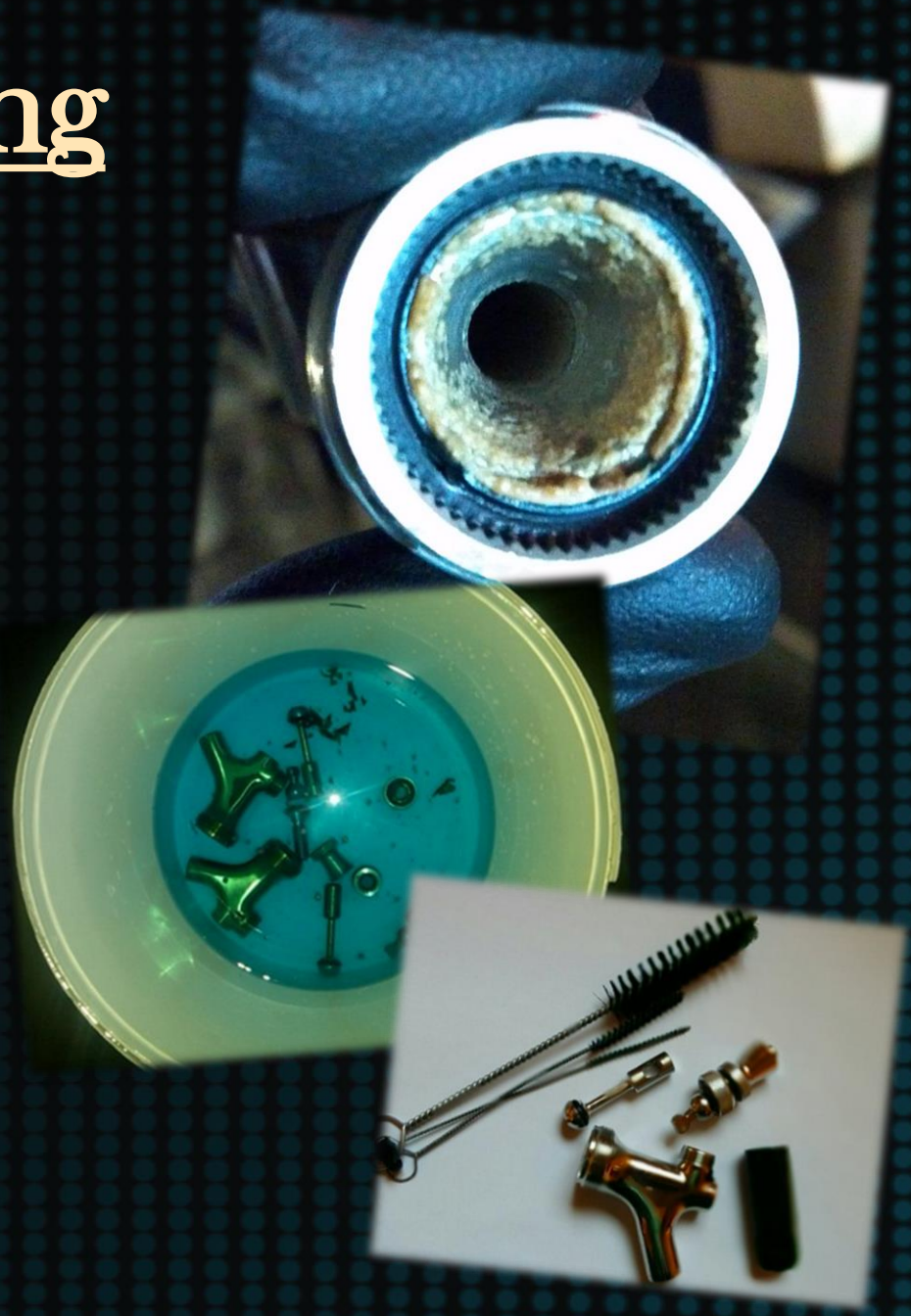
# Re-circulation = Multi-tasking





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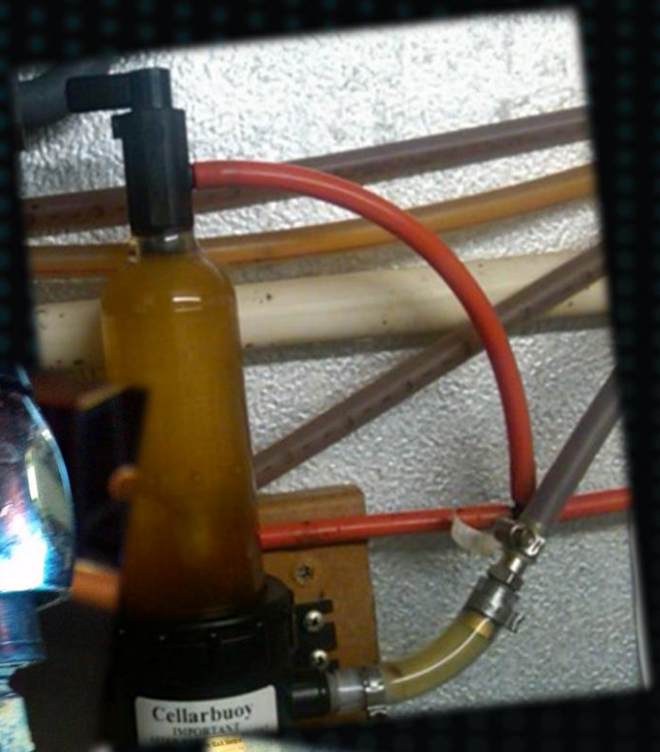









*Know how to mix up a 2-3% Caustic Solution



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# Excessive build up in beer lines due to ineffective cleaning...



Video

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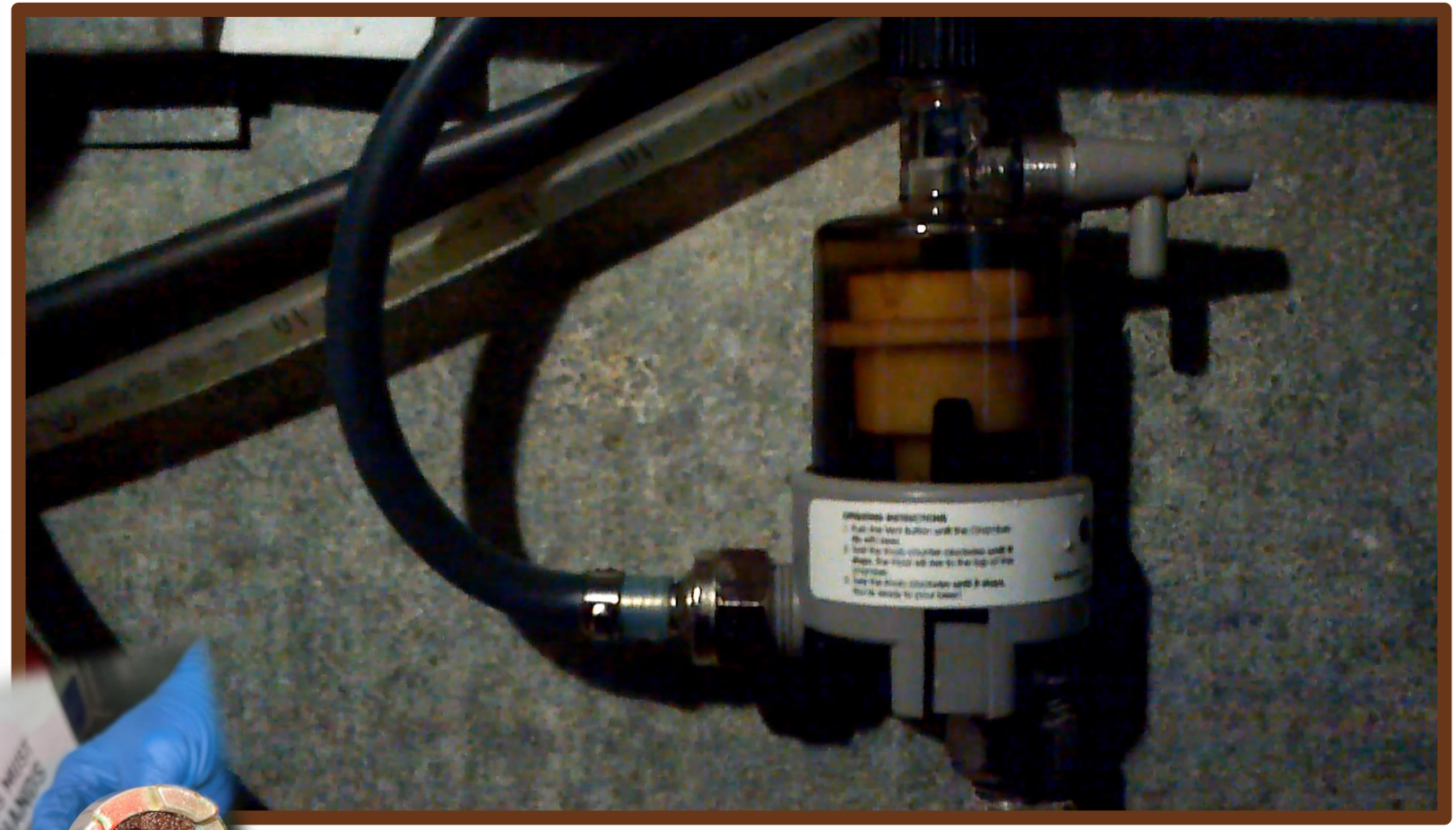
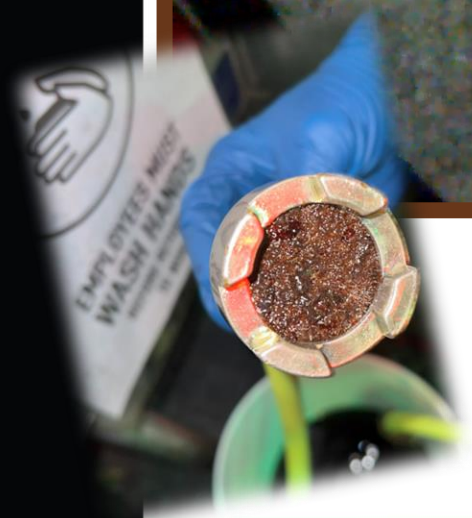
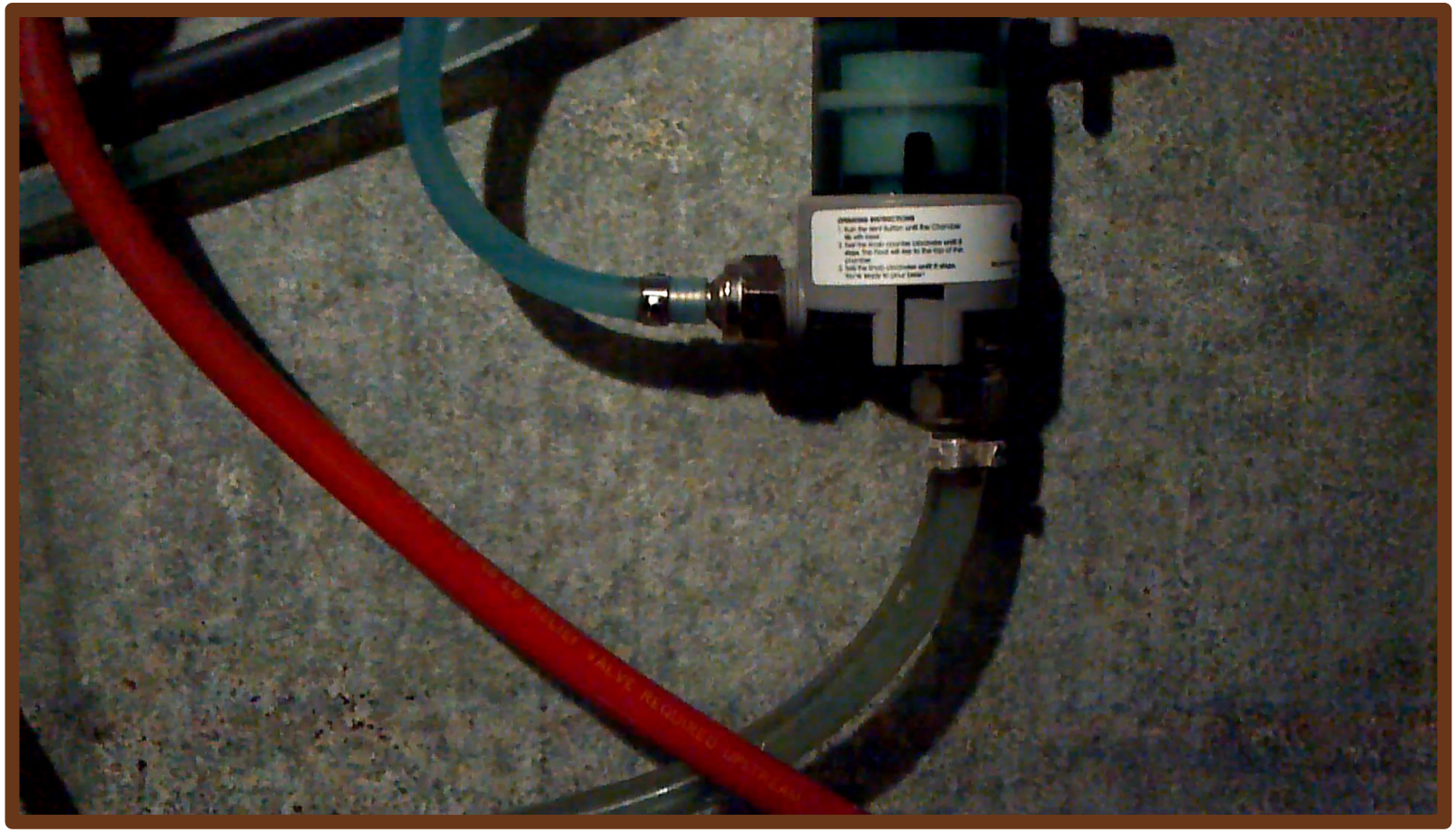
# Large Deposits being pulled out of the system!





Video

Free of any organic buildup!



Video

# The BA recommends you clean components at every cleaning







## Neglected Faucet Issues:

This should never happen...

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# The BA recommends you completely breakdown and clean components semi-annually





## Foaming Issues:

Was missing an O-Ring, replaced after inspection

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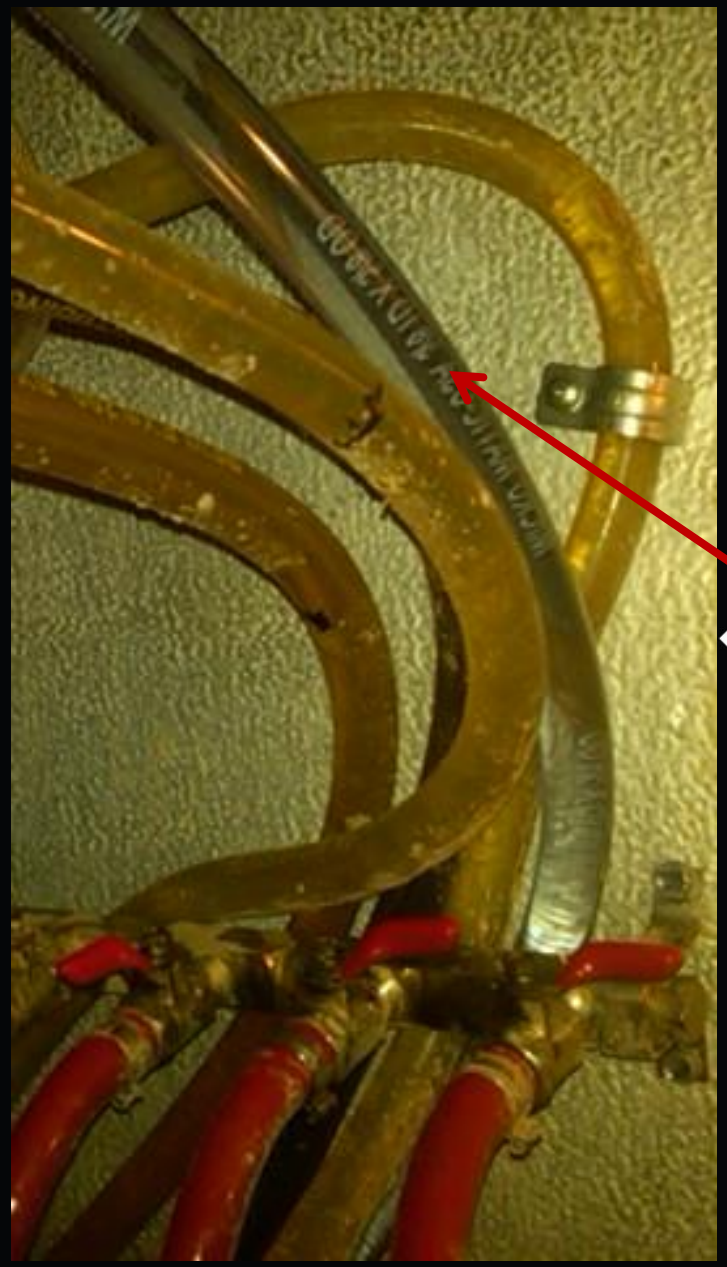
# F.O.B's ( Foam On Beer devices)



The Brewers Association recommends full disassembly and cleaning semi-annually.





*New line installed*

# Maintenance

## For consistent results…

The Brewers Association recommends to

**Replace jumper and direct draw box lines yearly.**

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# 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*

## Line Cleaning Log

BAR NAME The Library Bar

| DATE | INITIALS | ACID/CAUSTIC | LIQ. TEMP. |
|---|---|---|---|
| 2/3/24 | BG | C | 37° |
| 2/17/24 | JB | C | 37.5° |
| 3/2/24 | BG | C/A | 37.5° |
| | | | |

**Document your work**



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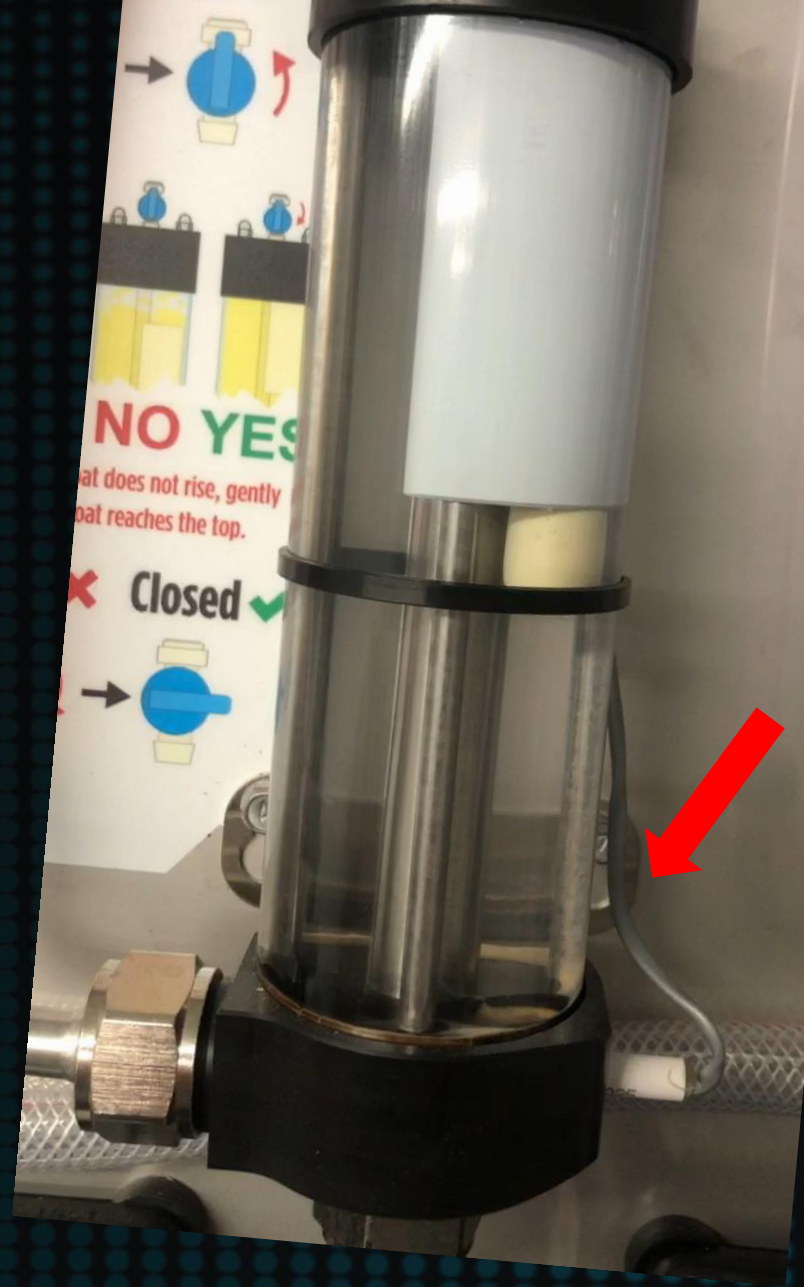
# Add-on cleaning methods:

## Sonic Cleaners –

The Brewer's 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."



# Recap

# By the Book...

## What are the maintenance recommendations

- ✓ **Clean** your beer lines a minimum of every **14 days**
- ✓ **Disassemble** & clean faucets at **EVERY** service
- ✓ **Purge** beer from system with **water**
- ✓ Use a 2%-3% caustic in solution at 80˚F - 110˚F
- ✓ Chemical contact times
  - Minimum 15 minutes for pump cleaning
  - Minimum 20+ minutes for static cleaning
- ✓ **Flush** caustic solution with cold water until Ph neutral "7"
- ✓ **Detail / Clean** 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-annually -** Every six months
  - Disassemble, service and hand clean all couplers and F.O.B.'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

*For Questions or comments please email at bgeisthardt@newglarusbrewing.com*

## Best Practices for Cleaning Your Draught System

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# DRAUGHT LINE SAFETY COURSE

**Certificate-Based Program**

**100% Online**

**Course Description**

Two online courses offer content tailored specifically for line cleaning operators or beer service professionals. Learners will develop and test their knowledge of safe work practices in compliance with Occupational Safety and Health Administration (OSHA) regulations.

**Learn more at**
**BrewersAssociation.org**

