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DRAUGHT BEER LINE CLEANING

WHAT'S THE DEAL WITH RECIRULATING PUMPS?

BRIDGET GAUNTNER

Field Quality Manager - Northeast .

NEW BELGIUM & BELLS BREWERIES

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National Director of Field Quality

NEW BELGIUM & BELLS BREWERIES

THE VITAL IMPORTANCE OF SAFE DRAUGHT LINE PROCEDURES

Jury awards $8M to man served chemical cleaning solution instead of beer at Henderson casino

MGN Online (Source: MGN)

By Chanel Ridley

Published: Mar. 21, 2022 at 5:08 PM EDT

LAS VEGAS, Nev. (FOX5) - A jury on Friday awarded $8 million to a man who suffered internal injuries after being served a chemical cleaning agent that was leftover in a tap lines instead of a beer at a Henderson casino, attorneys said.

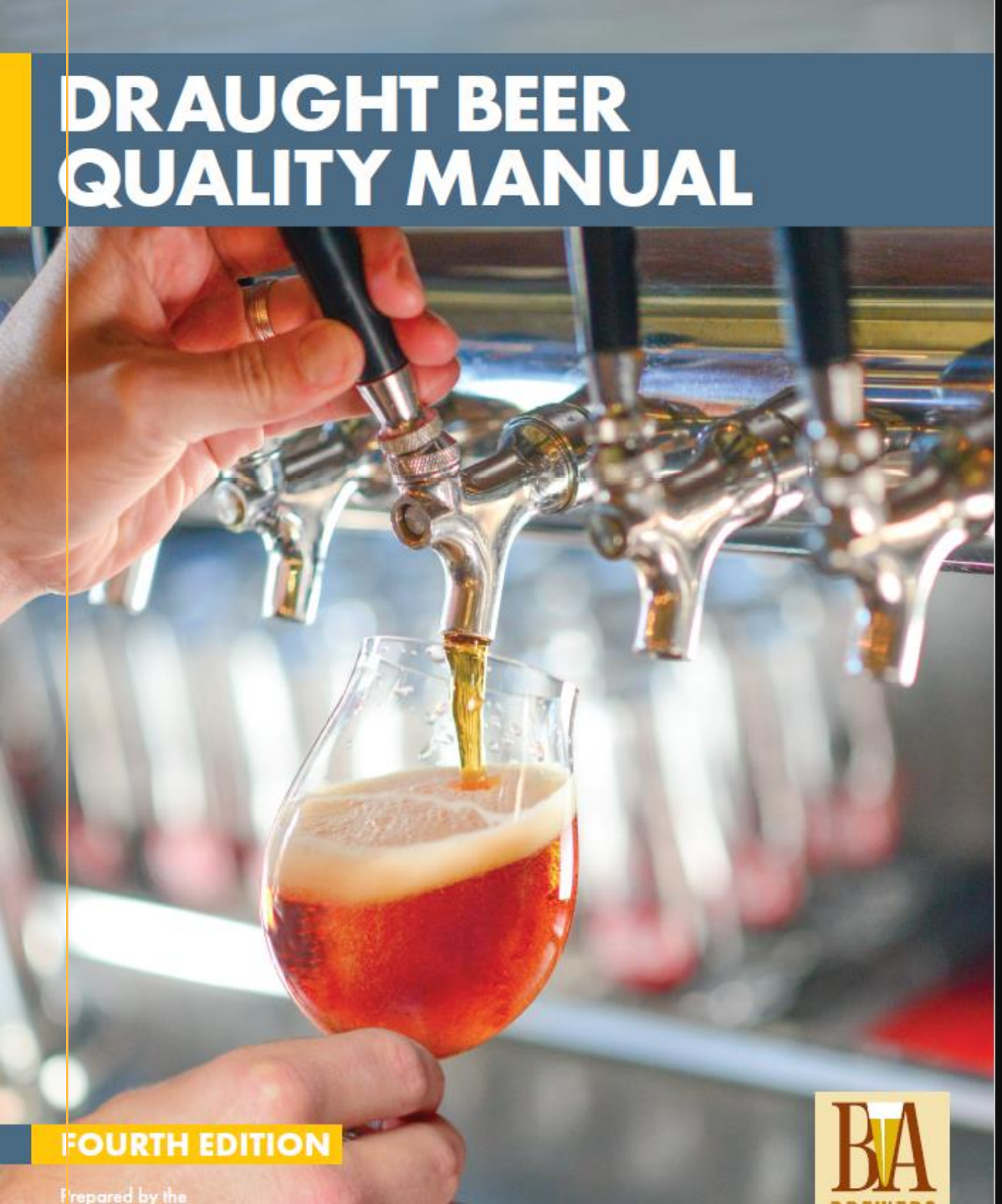
According to the man's attorneys, Dr. Lon Enwright, a 38-year-old special education teacher, was visiting Barley's Casino & Brewing in Henderson to watch a football game when a bartender offered him a sample of a Honey Blonde ale. However, instead of a beer, attorneys say Dr. Enwright was given a chemical cleaning solution instead.

Attorneys for the man, Rahul Ravipudi, Ian Samson, and Adam Ellis of Panish | Shea | Boyle | Ravipudi LLP, argued that staff knew the tap lines were out of service for cleaning. However, he was offered a sample anyway.

SAFETY MOMENT

- Free
- OSHA Susan Harwood Grant
- Comprehensive

SCAN ME

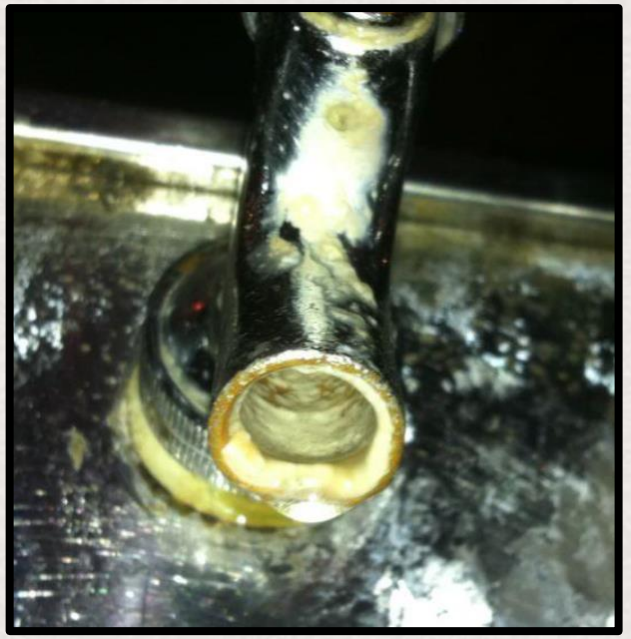


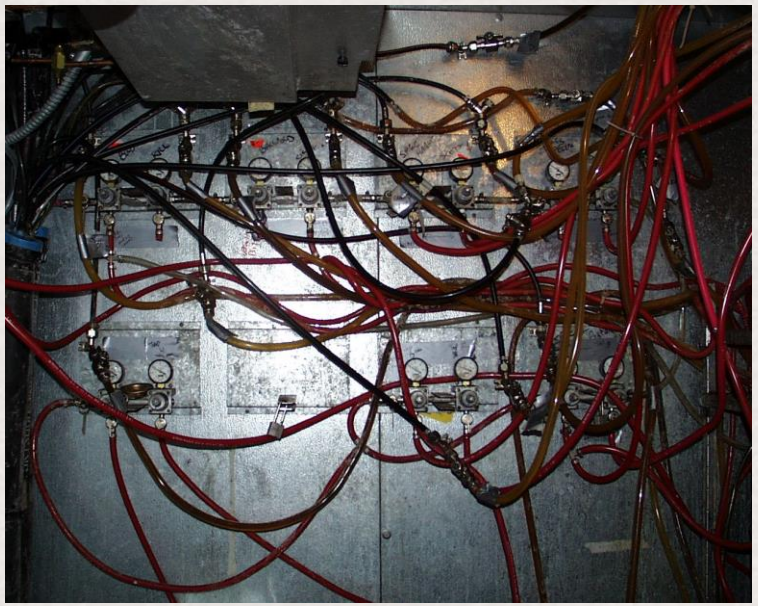
DRAUGHT BEER CHALLENGES

- What are we up against?
- What objections do you face?

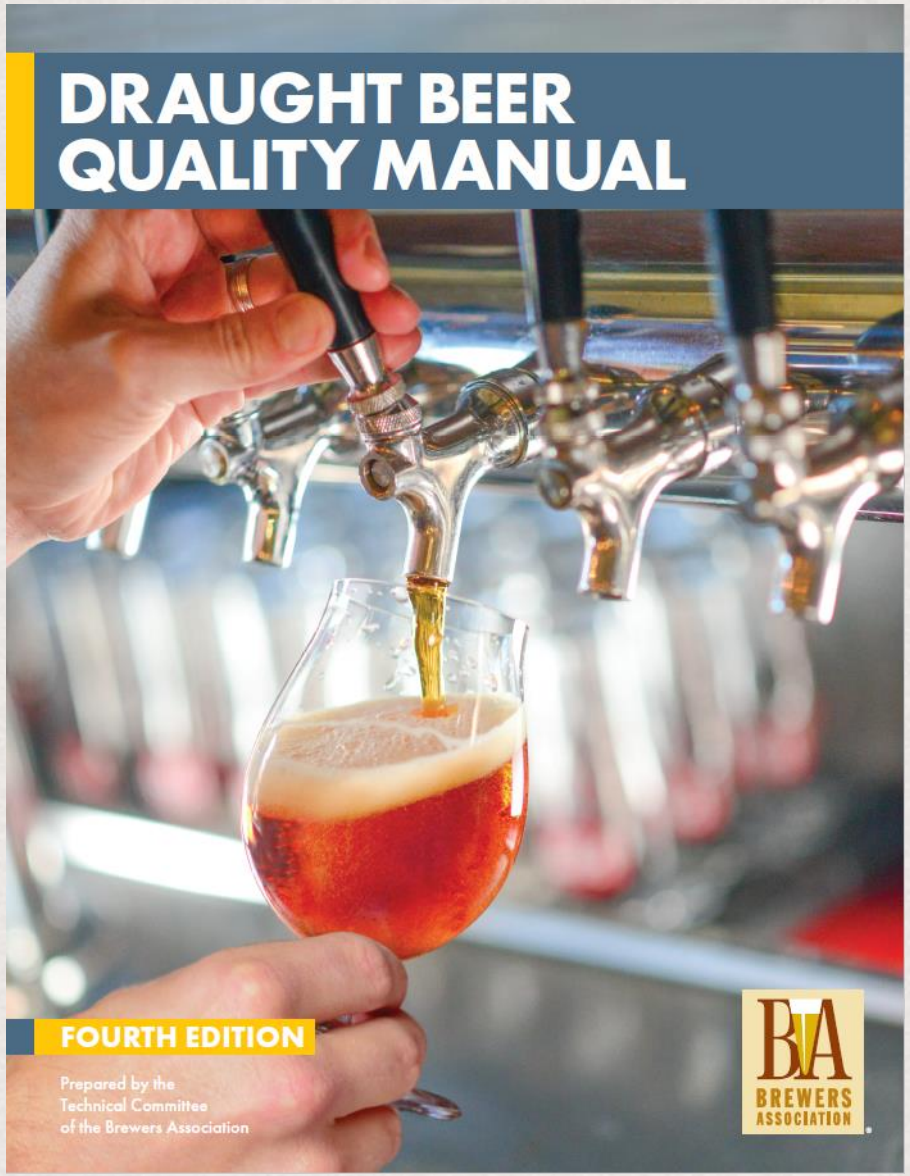
CONDITION & AGE OF SYSTEM…

HARDWARE CLEANLINESS...





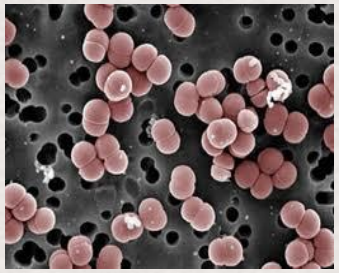
COOLER CONDITIONS...



Sonic Cleaners

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 or no cleaning effect on draught hardware and fittings. The success of sonic cleaners can be affected by the beer style and length of system, and can be interrupted by metal components in the system. Sonic cleaners may add some benefit to deter certain types of bacteria while having little to no effect on others. A maximum two-week chemical line cleaning cycle is recommended on all draught systems regardless of the use of a sonic cleaner.

MICROBIAL OFF FLAVORS



Pediococcus

Acetobacter

Diacetyl

- Anaerobic bacterial contamination
- Butter, movie popcorn, butterscotch
- Unhygienic conditions
- Prevented with proper line cleaning practices
- Requires a deep clean and equipment and line replacement to remove

Acetic Acid

- Aerobic bacterial contamination
- Vinegar, sour
- Unhygienic conditions in parts exposed to oxygen
- Starts in spill trays and floor drains
- Prevented and resolved with proper equipment cleaning practices

BIOFILM IN DRAUGHT TUBING

- Very difficult to remove
- Older tubing more susceptible

WHY TWO WEEKS?

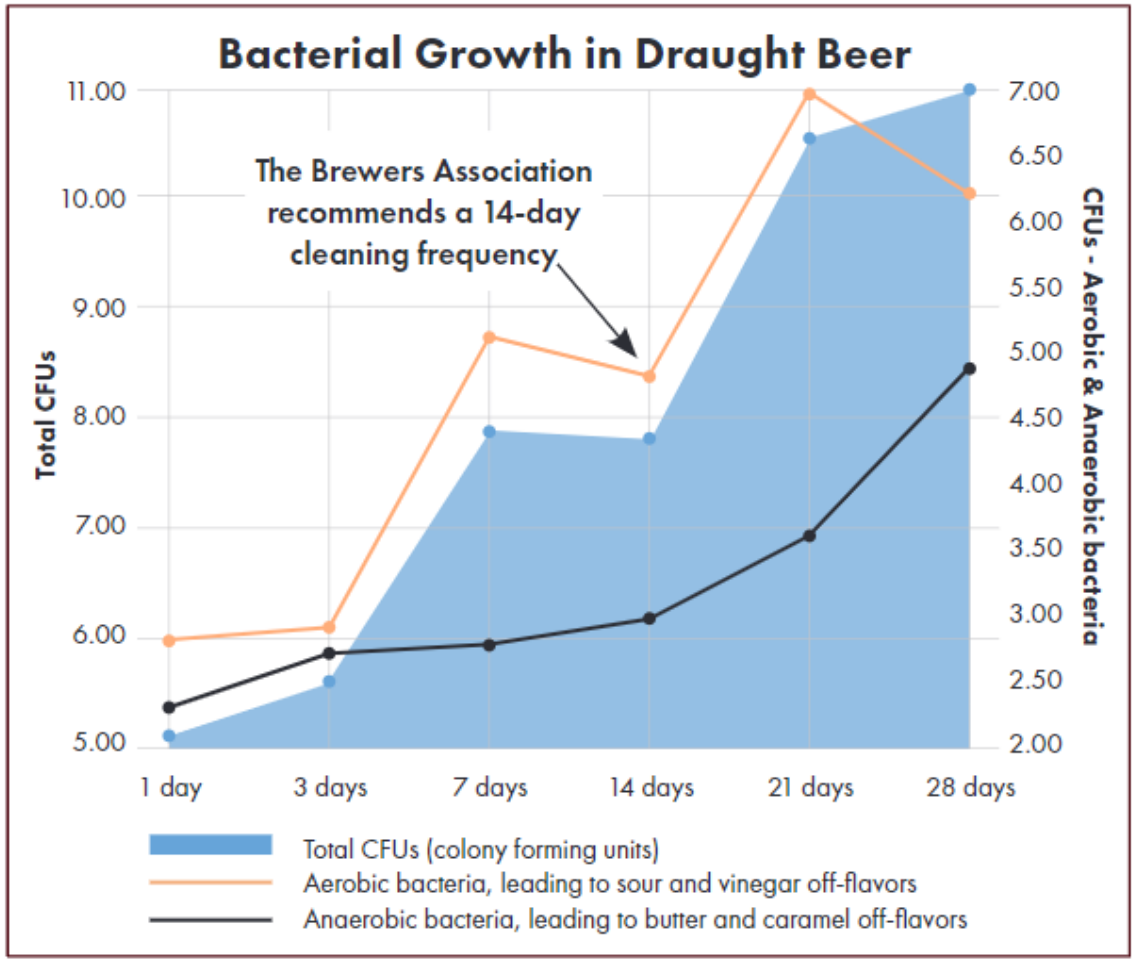


Figure 7.2. Bacteria can grow exponentially in uncleaned draught lines.
Graph adapted from E. Storgårds, "Microbiological Quality of Draught Beer—Is There Reason for Concern?" in Proceedings of the European Brewing Convention Symposium Draught Beer, Packaging and Dispense, Monograph XXV, Edinburgh, September 1996 (Nürnberg: Carl Getränke-Fachverlag), 92-103.

DRAUGHT SYSTEM CLEANING AND MAINTENANCE

EXPECTATIONS OF A SYSTEM SERVICE PROVIDER

Two-week Cleaning Cycle: All system cleaning service providers and wholesalers should have clearly posted documentation of line cleaning.

2%-3% Caustic: Draught systems should be cleaned with a caustic solution of 2% or greater for routine cleaning, or 3% for older or more problematic lines. Service providers should maintain a solution temperature of 80 to 110° F during the cleaning process. Systems should be pre-rinsed with water prior to introducing caustic chemical.

Recirculation Pump: Electric recirculation pump cleaning is the recommended cleaning method for all system types. Caustic solution should circulate through the lines at a minimum of 15 minutes at a flow-rate of up to 2 gallons per minute. If static of pressure pot is used (though not recommended) the solution needs to be left standing in the lines for no less than 20 minutes.

Hardware Cleaning: Service providers should disassemble, service, and hand clean faucets. Couplers and FOB's should also be cleaned of visible build-up every two-weeks.

Rinse: Entire system should be completely rinsed with cold water until pH matches that of the tap water to ensure all cleaning chemicals have been removed.

Quarterly: Draught beer lines should be de-stoned with an acid line cleaning chemical.

Semi-Annually: All coupler and FOB-stop devices should be completely disassembled and detailed.

STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

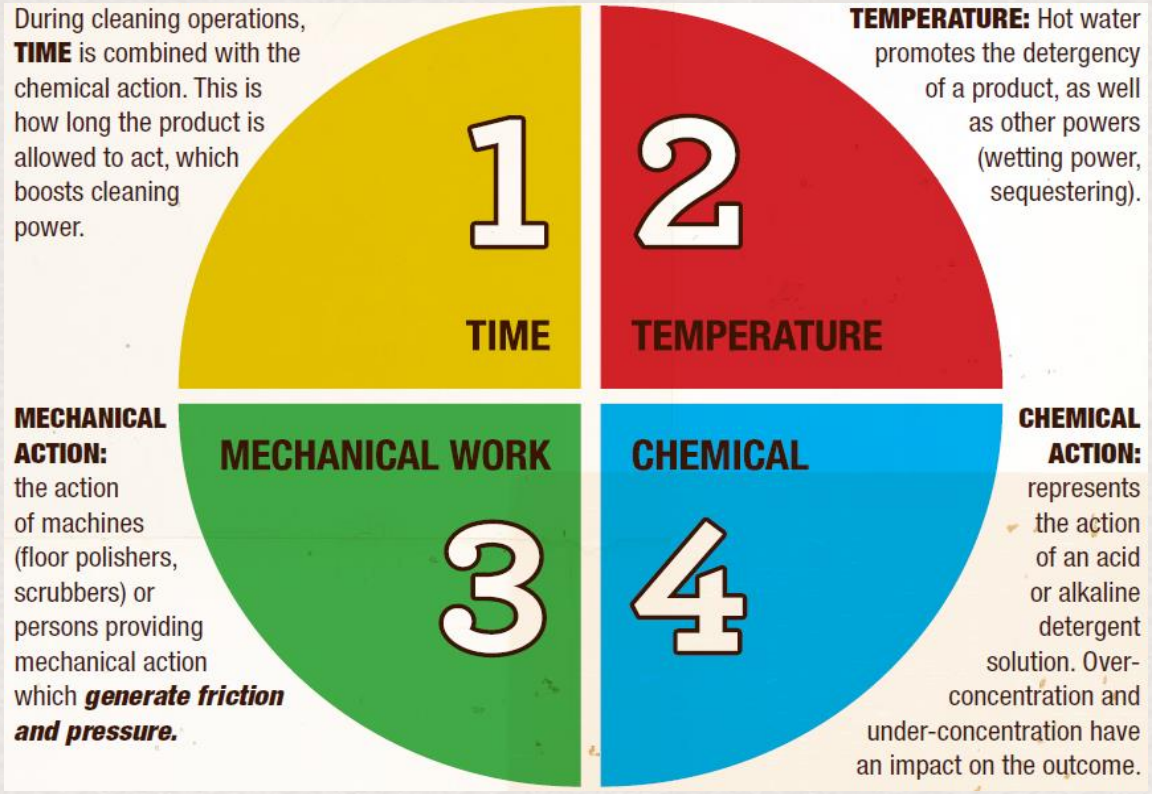
Wash your hands often with soap and water for at least 20 seconds.

cdc.gov/coronavirus

CS319178 May 12, 2020 4:01 PM

SINNER CIRCLE

In cleaning, the final result is influenced by ***4 interdependent factors,*** represented in the Sinner Circle.
If one factor is reduced, the loss must be compensated for by increasing one or more other factors.



Limitations

Time

- Always limited.

Temperature

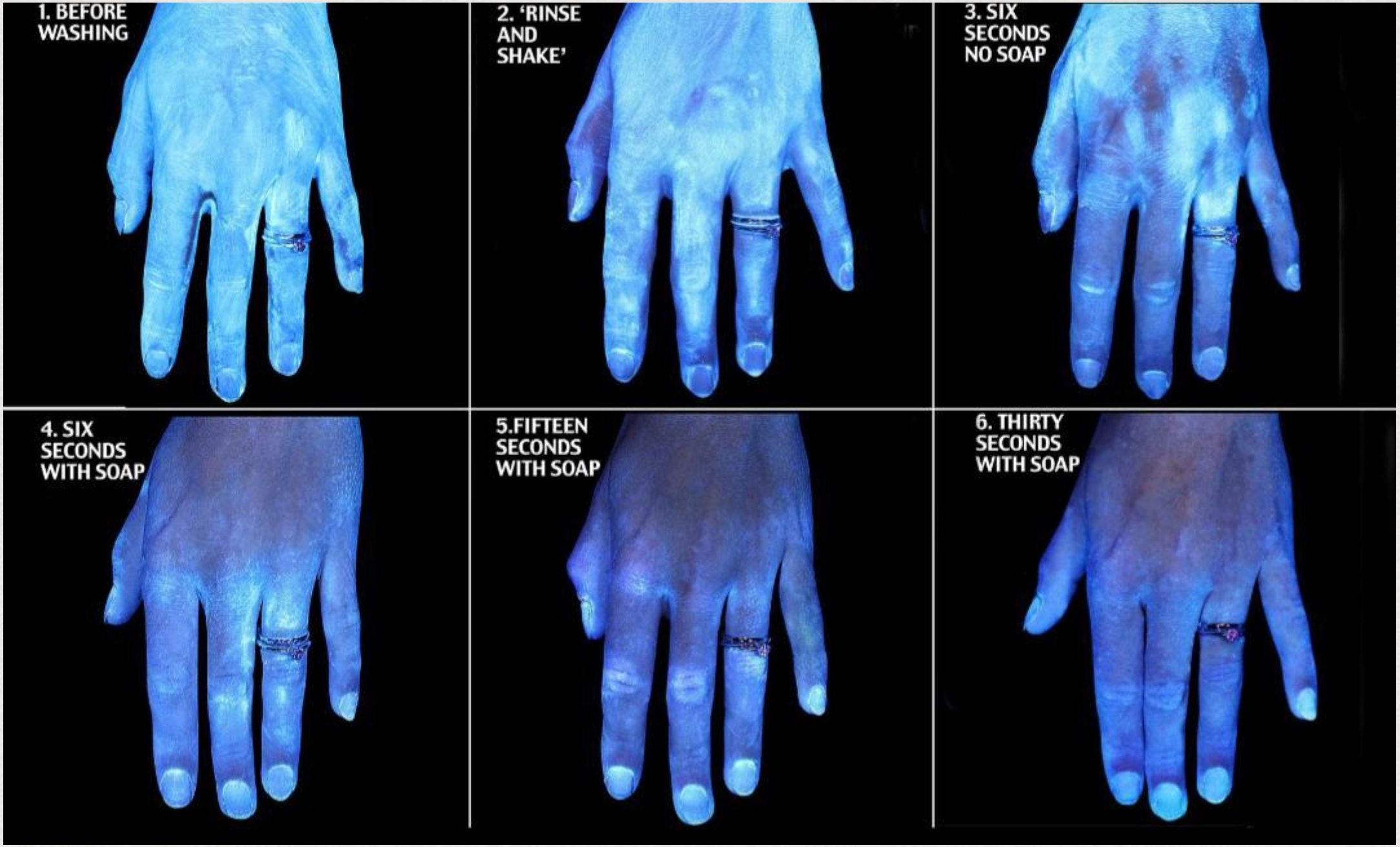
- Ability to withstand hot temperatures without damage.

Mechanical work

- Amount of power.

Chemical

- Wrong chemical, strength


1. BEFORE WASHING
2. 'RINSE AND SHAKE'
3. SIX SECONDS NO SOAP
4. SIX SECONDS WITH SOAP
5.FIFTEEN SECONDS WITH SOAP
6. THIRTY SECONDS WITH SOAP

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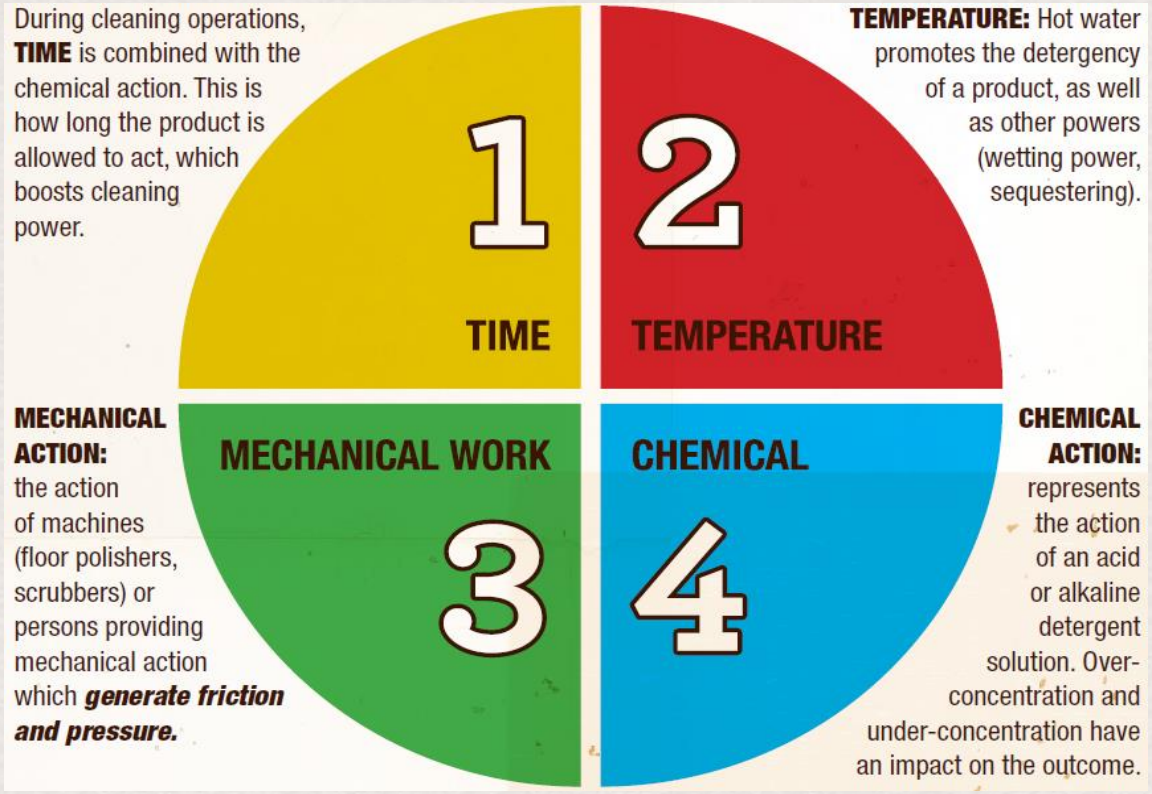

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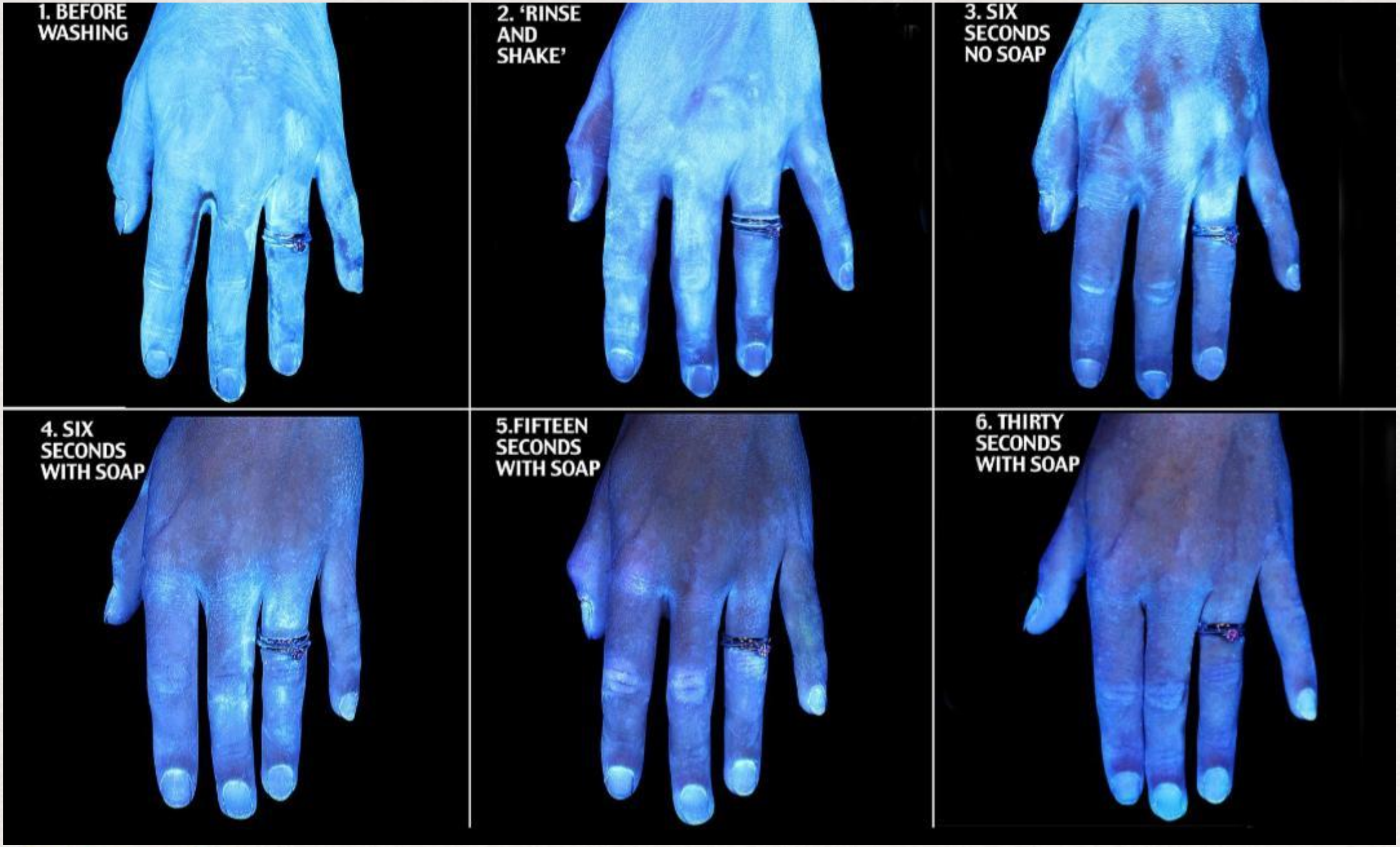
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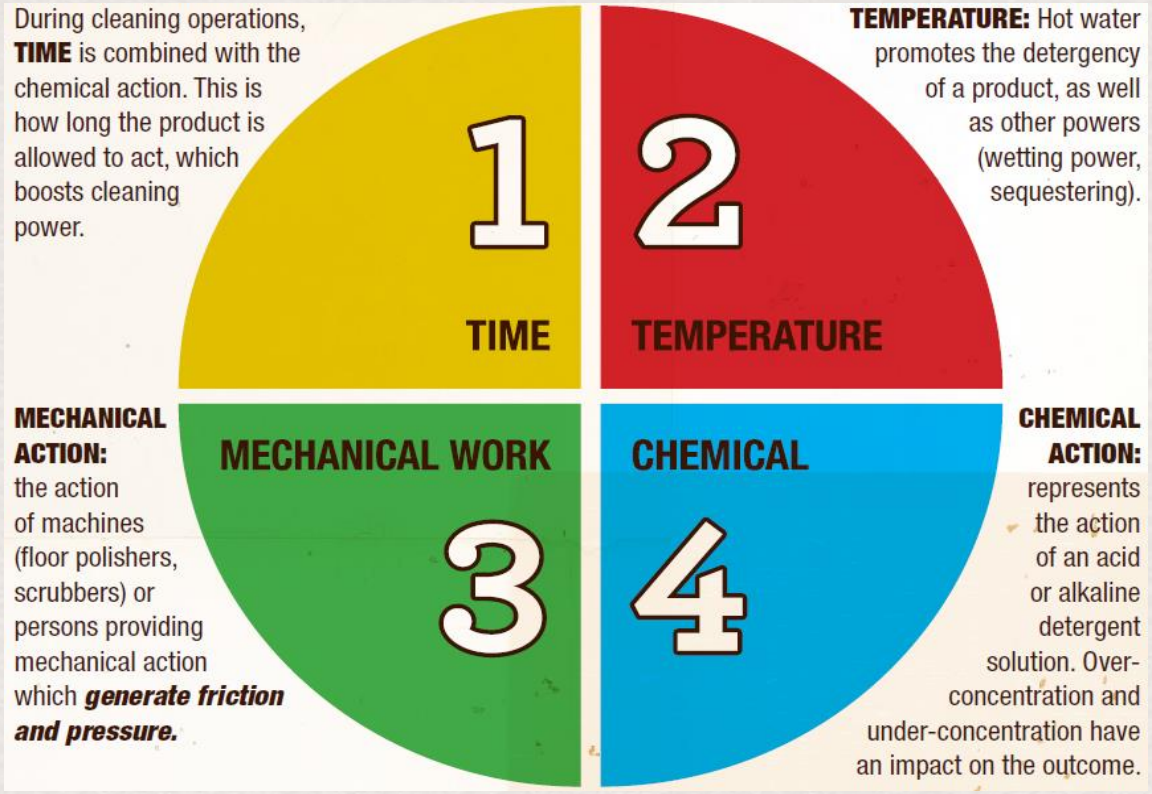

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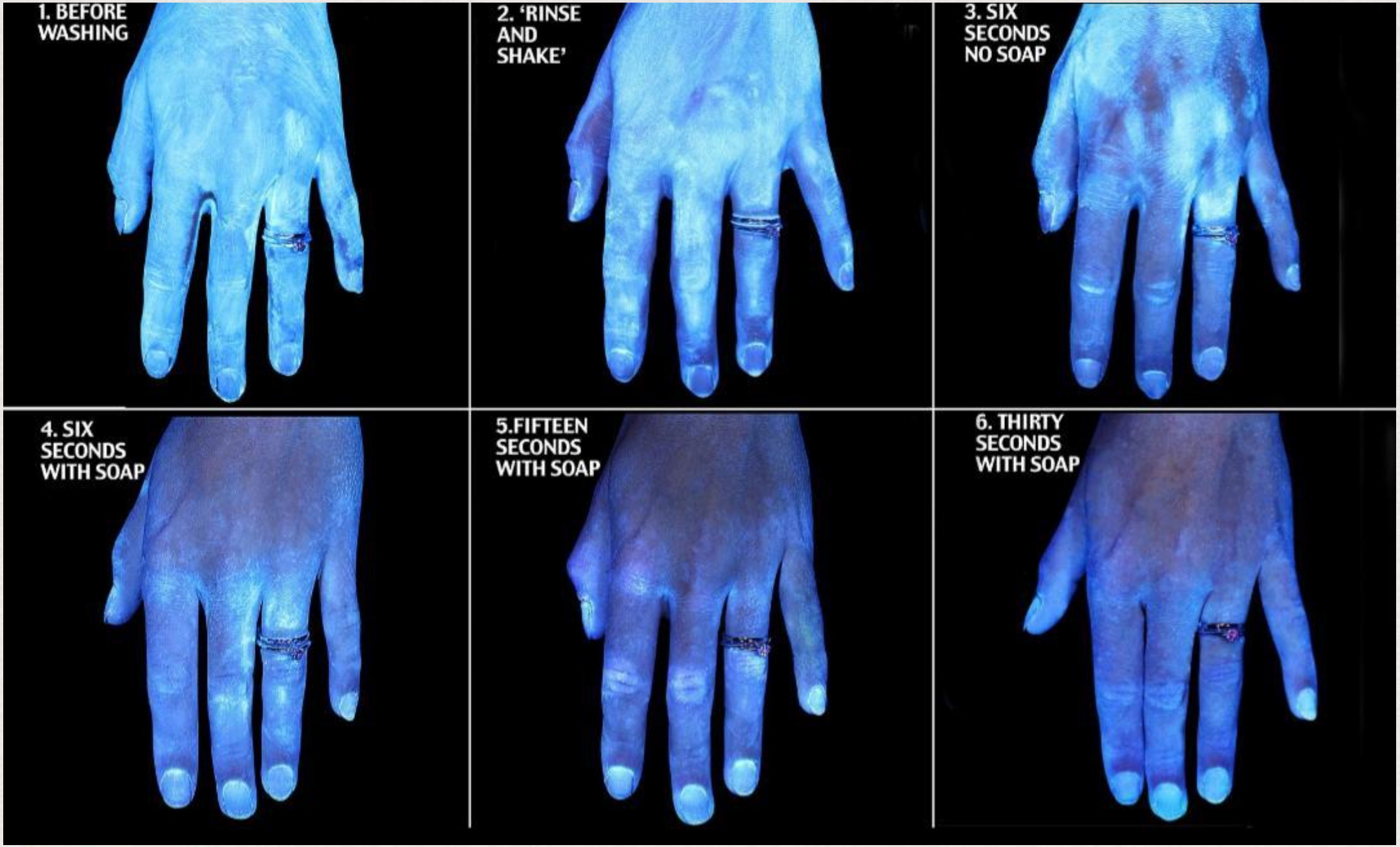
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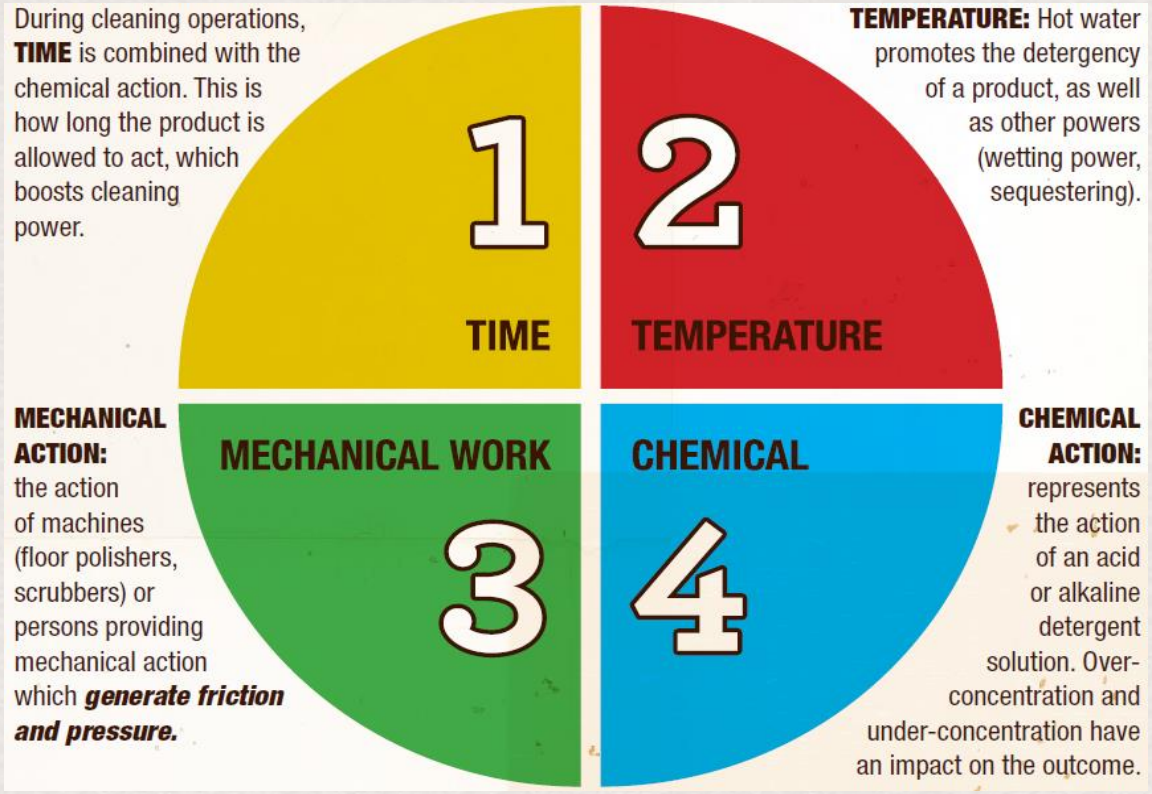

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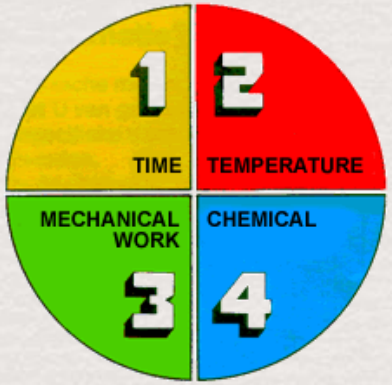
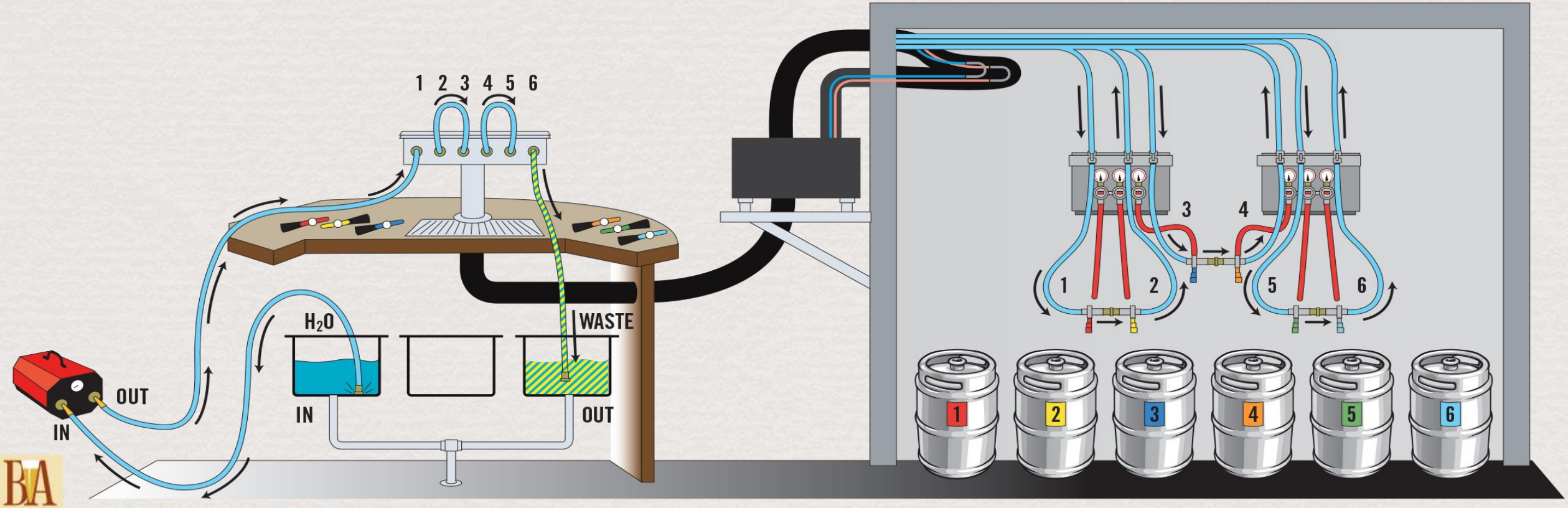
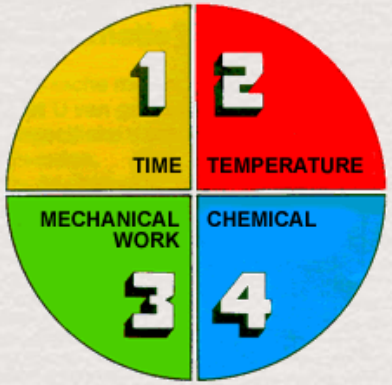


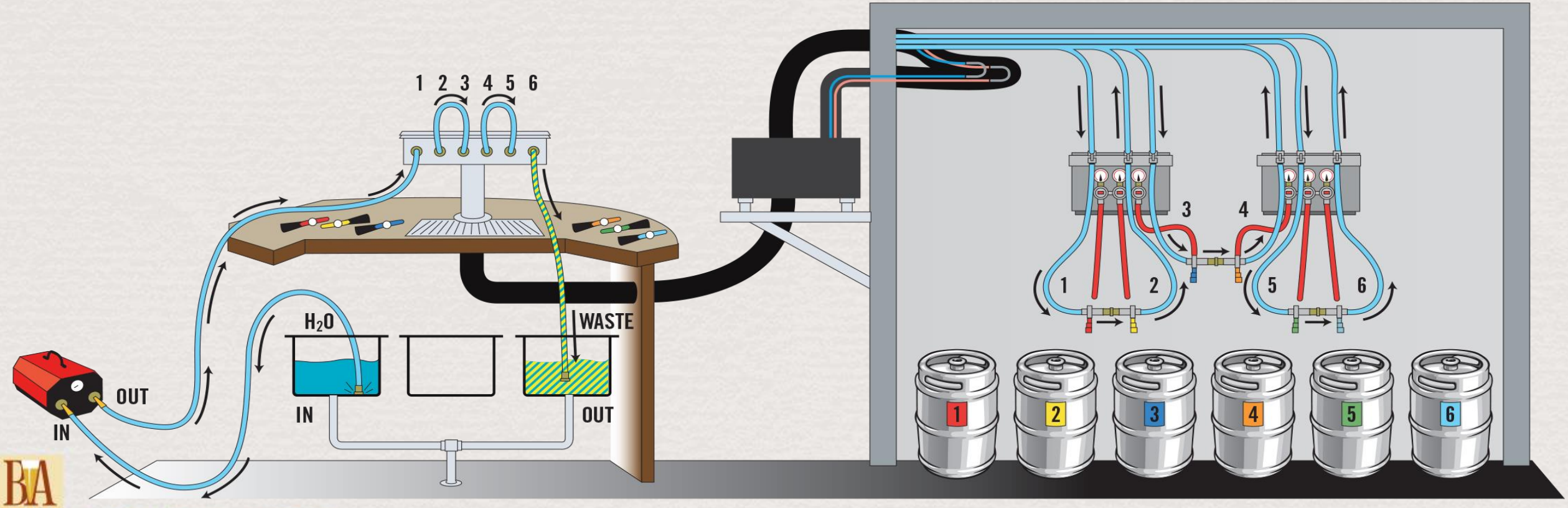
- Two Week Cleaning Cycle
- 15 Minutes of recirculation



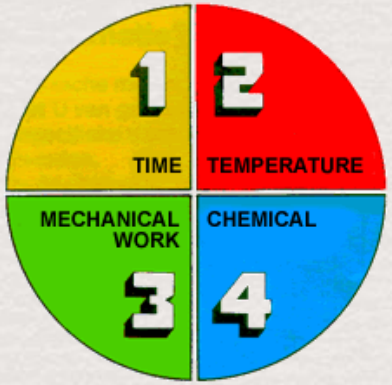
TEMPERATURE



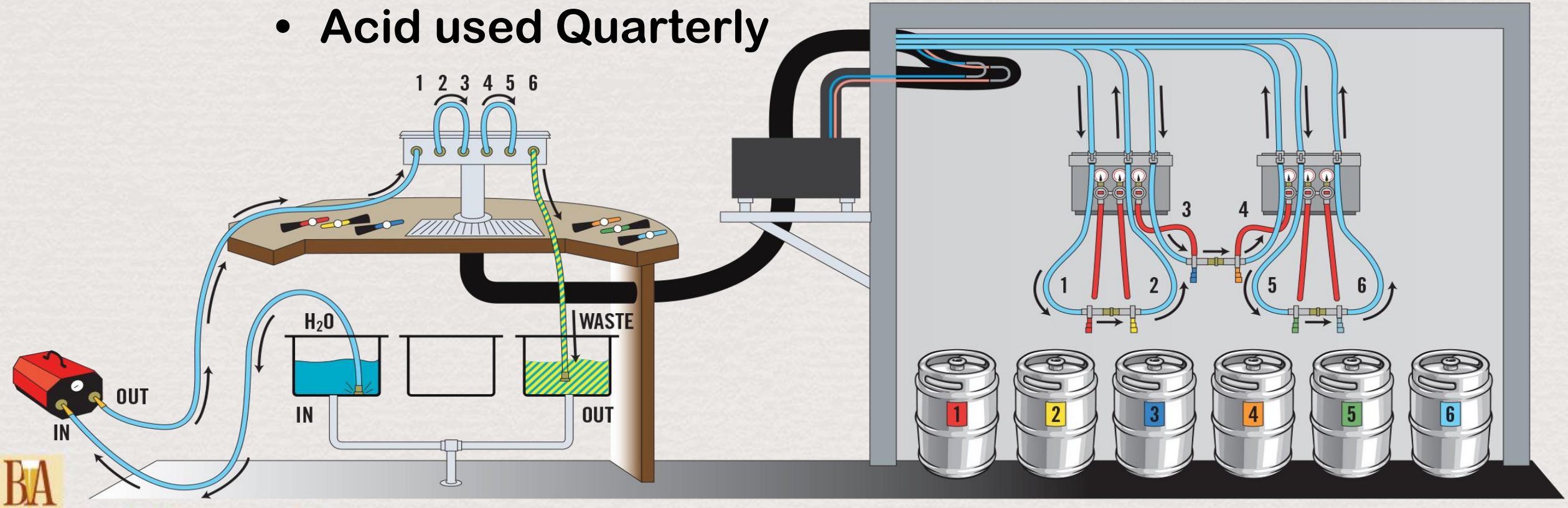
- Hot Tub Temperature
- About 100° Fahrenheit



CHEMICAL



- 2% to 3% Concentration
- Non-chlorinated Caustic
- Pre- and Post-rinsed with water
- Acid used Quarterly



CHEMICAL

- Caustic
  - Basic
  - Organic Material
- Acid
  - Acidic
  - Inorganic Material

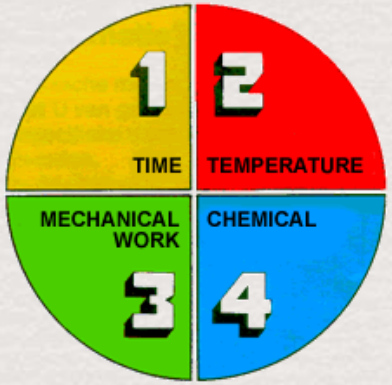
Acid is used on a Quarterly Basis

CHEMICAL

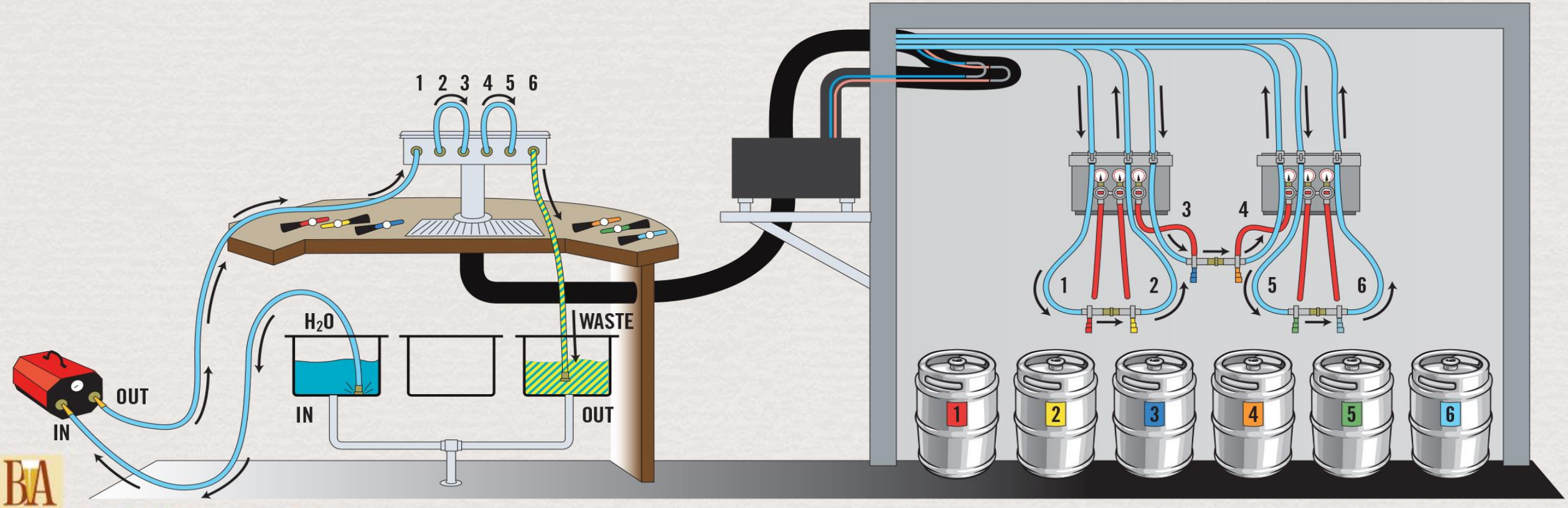
- 3oz / gal = 1% Caustic in Solution
- 6oz / gal = 2% Caustic in Solution
- 9oz / gal = 3% Caustic in Solution

*Keep chemical SDS handy

MECHANICAL WORK



- 15 Minutes of recirculation
- This is the recommended procedure on all systems



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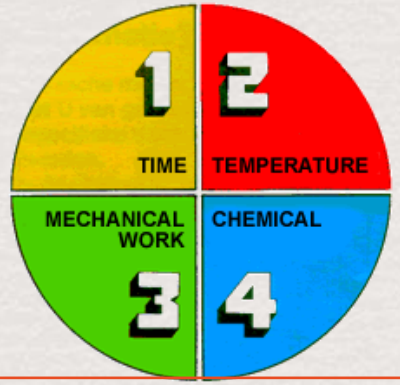


CANISTER

Pressure restricted to the regulator setting

Stagnant (no flow)

Time Consuming

Development of Carbonic Acid

PUMP

High Pressure

-1.5x flow-rate

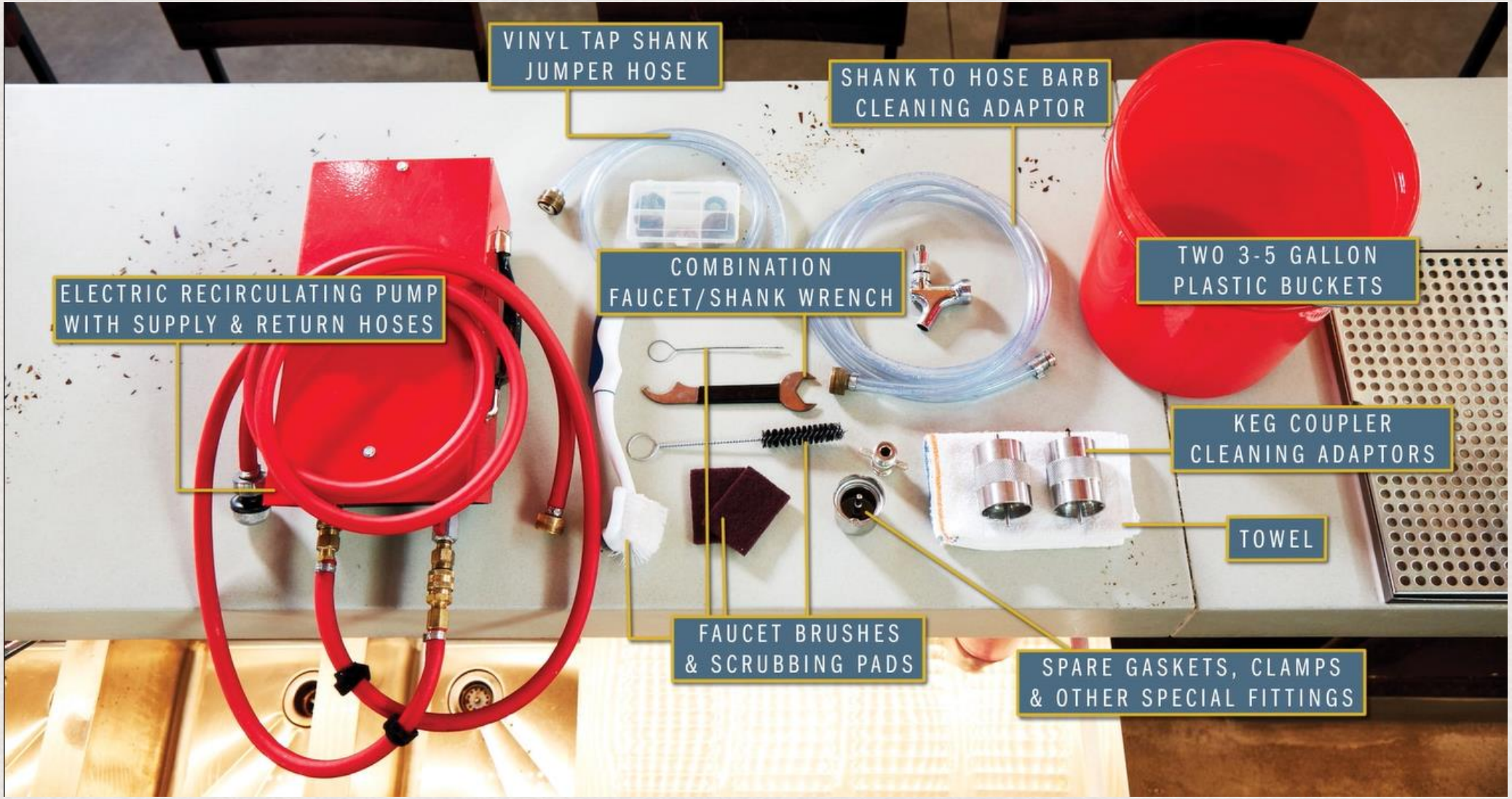
Mechanical Force

Time Efficient

Reverse Flow

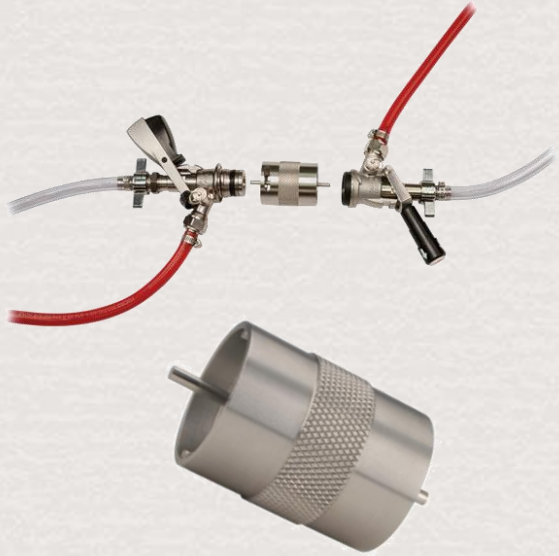
LINE CLEANING OVERVIEW

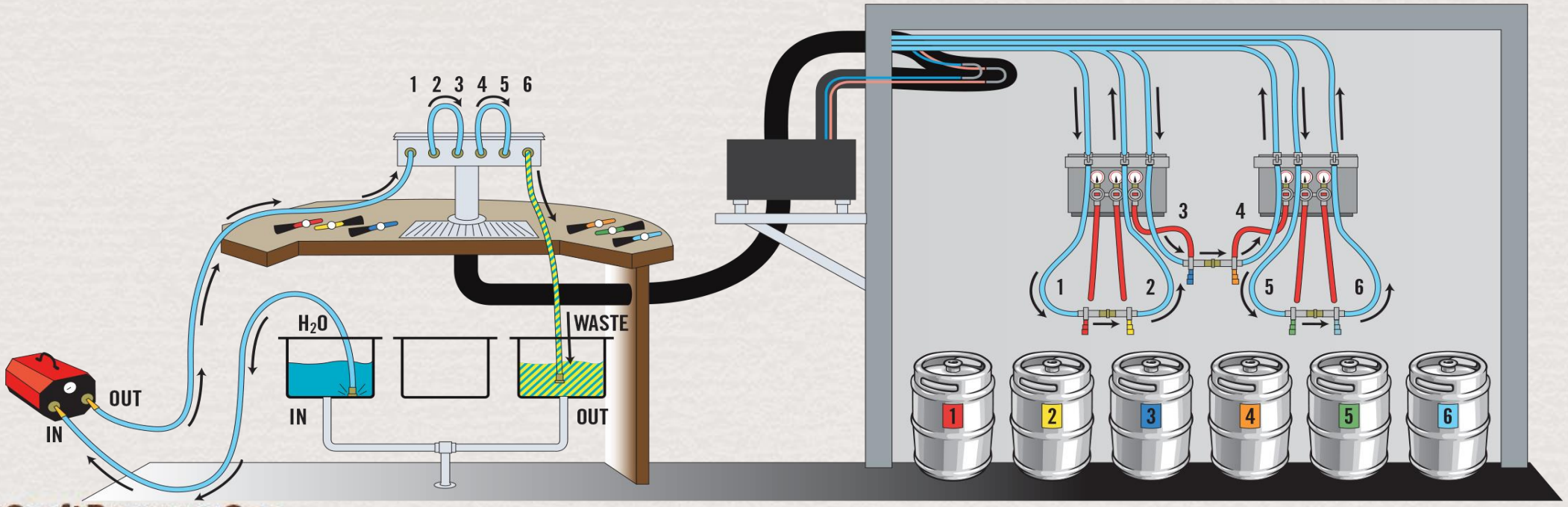
RECIRCULATION EQUIPMENT



INITIAL SET-UP

1. CONNECT KEG COUPLERS IN COOLER
2. REMOVE FAUCETS
3. CONNECT JUMPERS AND DRAIN LINE
4. PRIME PUMP AND CONNECT TO TOWER





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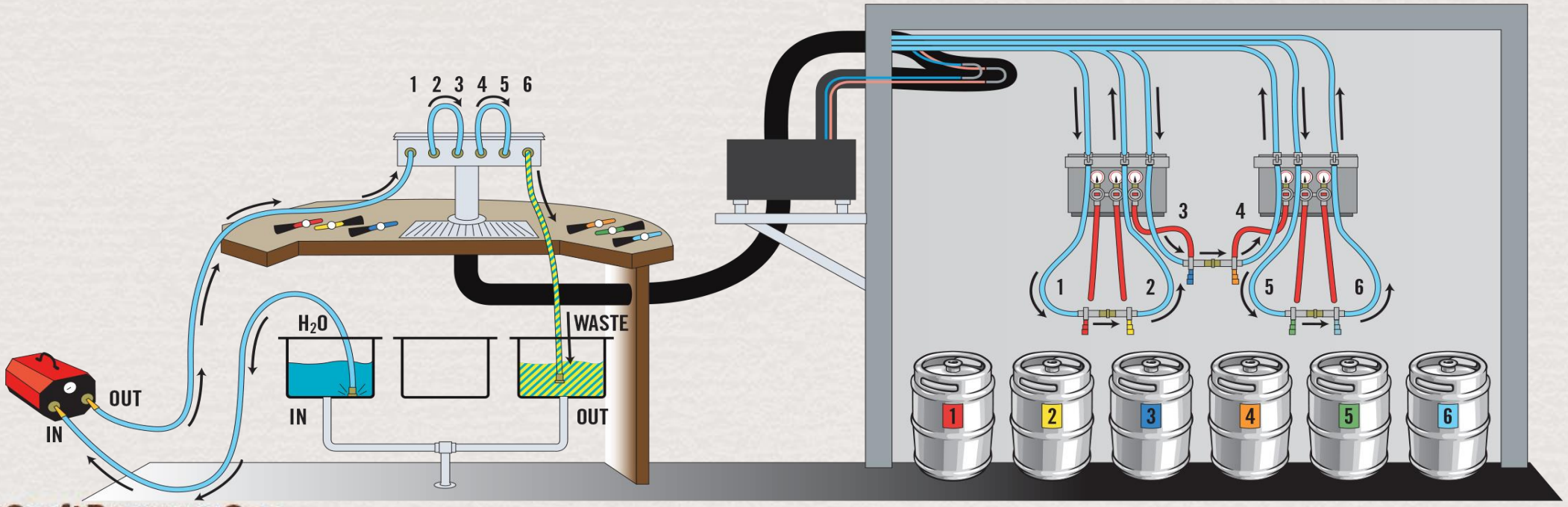
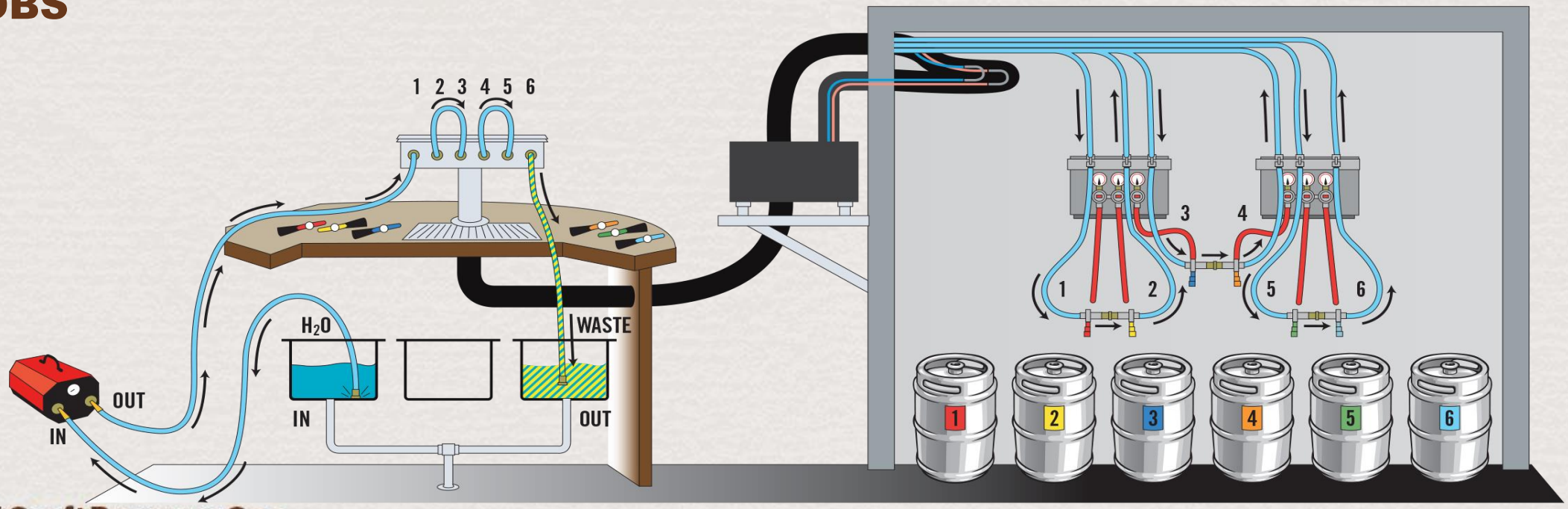


RECIRCULATION

1. FLUSH BEER OUT OF THE SYSTEM WITH WARM WATER
2. ADD 2% - 3% CAUSTIC TO THE SYSTEM
3. FORM A CLOSED LOOP AND RECIRCULATE FOR 15 MINUTES
4. DETAIL FAUCETS AND PURGE FOBS



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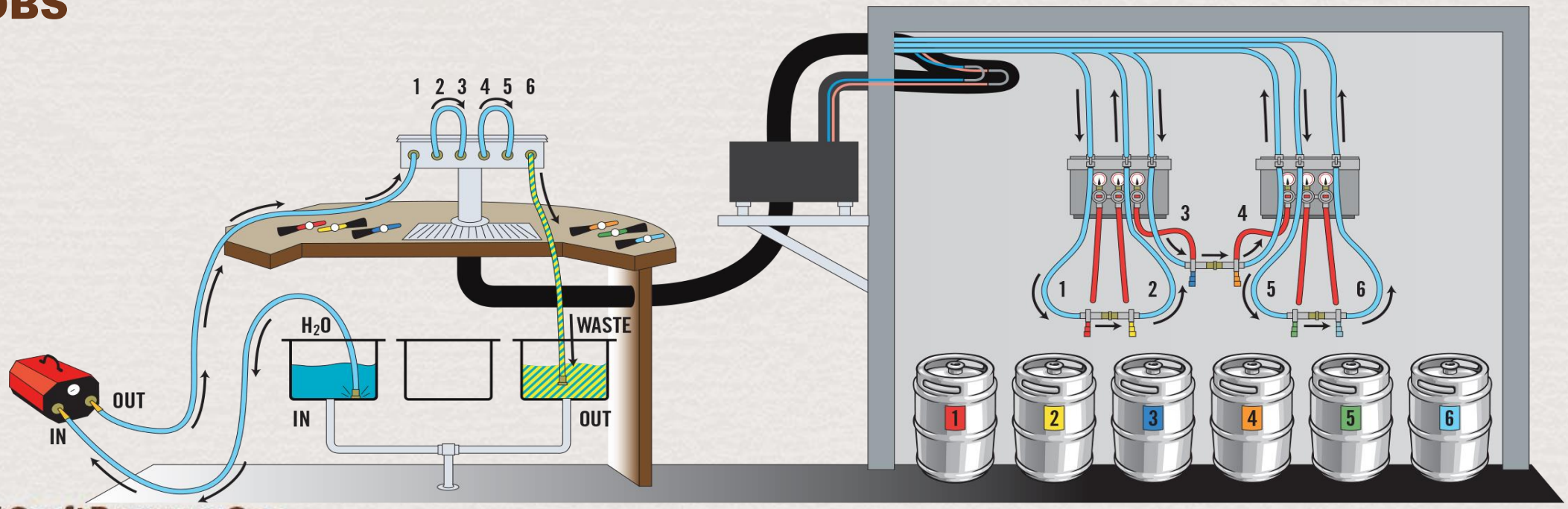
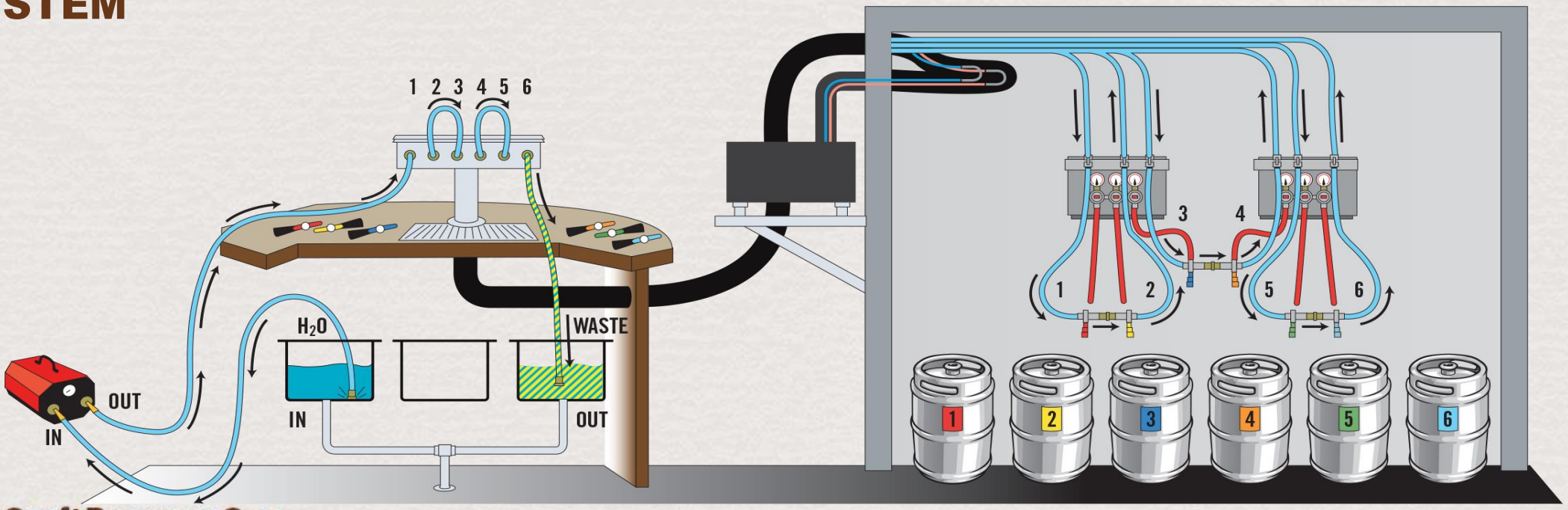


BREAKDOWN

1. FLUSH CHEMICAL OUT OF THE SYSTEM WITH COLD WATER
2. PH TEST RINSE WATER UNTIL PH NEUTRAL
3. REPLACE FAUCETS, RECONNECT KEGS, & RESET FOB'S
4. PULL FRESH BEER THROUGH SYSTEM



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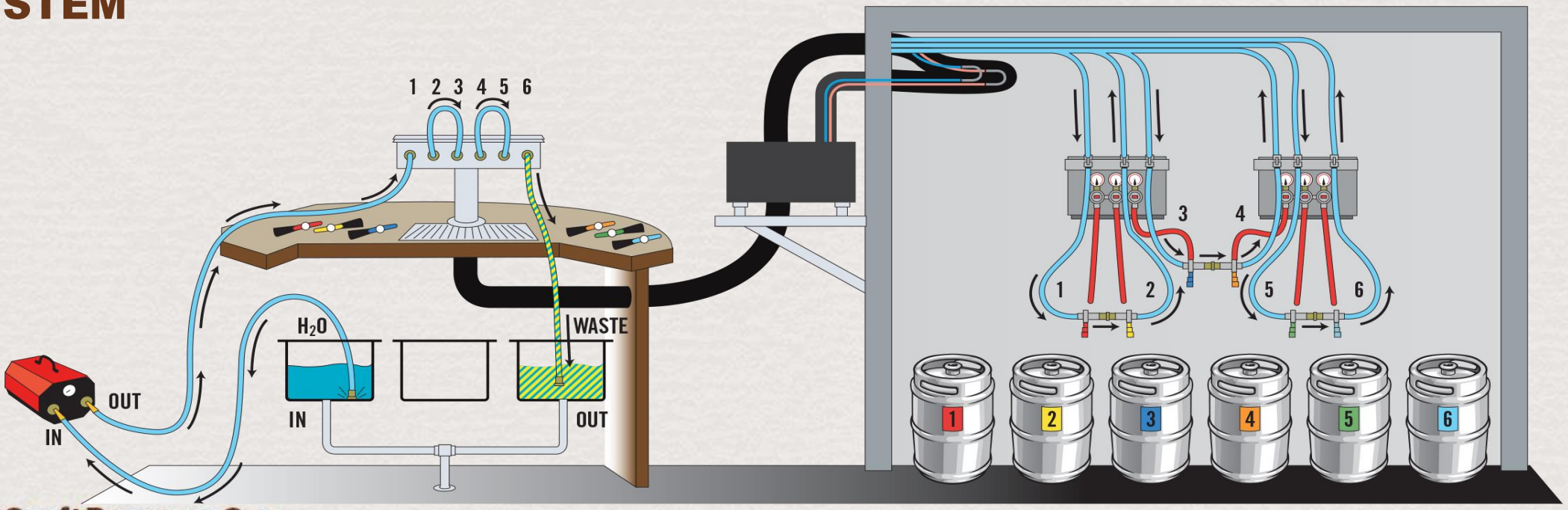
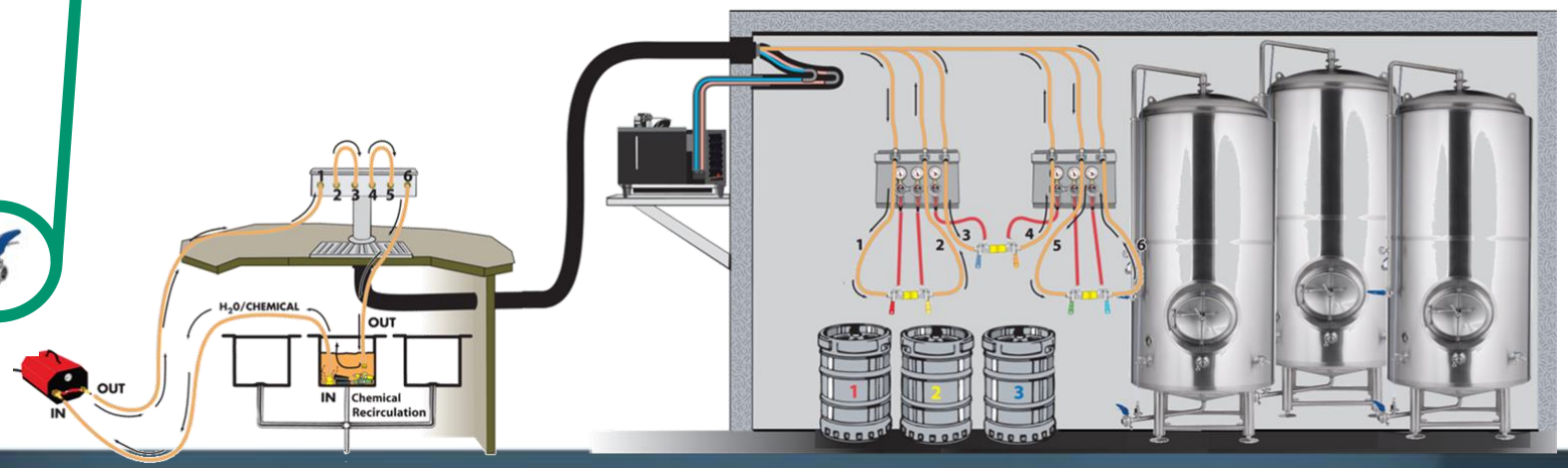


CUSTOMIZATION

- THREE-WAY COUPLER FOR ODD NUMBER OF LINES
- REVERSE FLOW VALVES FOR BEER PUMPS
- EXTENDED LENGTH COUPLERS FOR CHALENGING COOLER CONNECTIONS
- CONNECTING TO “U” AND “G” SYSTEM COUPLERS
- KEGS IN SERIES
- SPLIT LINES

Serving Tanks

1.5 in. Tri-Clamp x
Male Beer Nut Thread



Additional Resources

Recirculation cleaning video

Step by Step Recirculation PDF

Step by Step Static Cleaning PDF


Thank you!!!