

ATTACK OF THE LOCK-NESS TAGOUT MONSTER!



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Taming of the S.H.R.E.W.



- Learn how to create lock out tag out (LOTO) procedures
- See useful examples from others
- Determine whether equipment lockouts can be defeated
- Place value on other safe work practices
- Explore how to define adequate training and the value of that training
- Learn how to investigate to find corrective actions

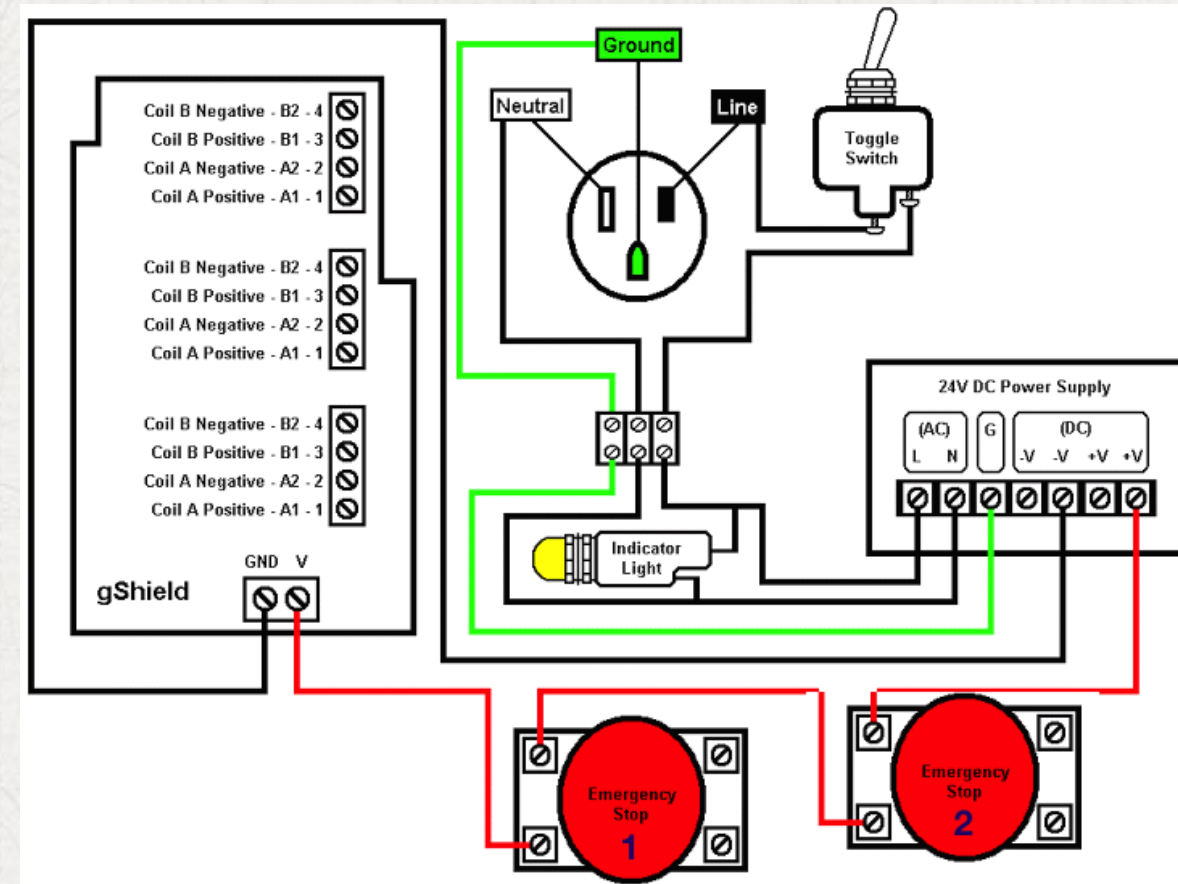
Energy Isolating Device:

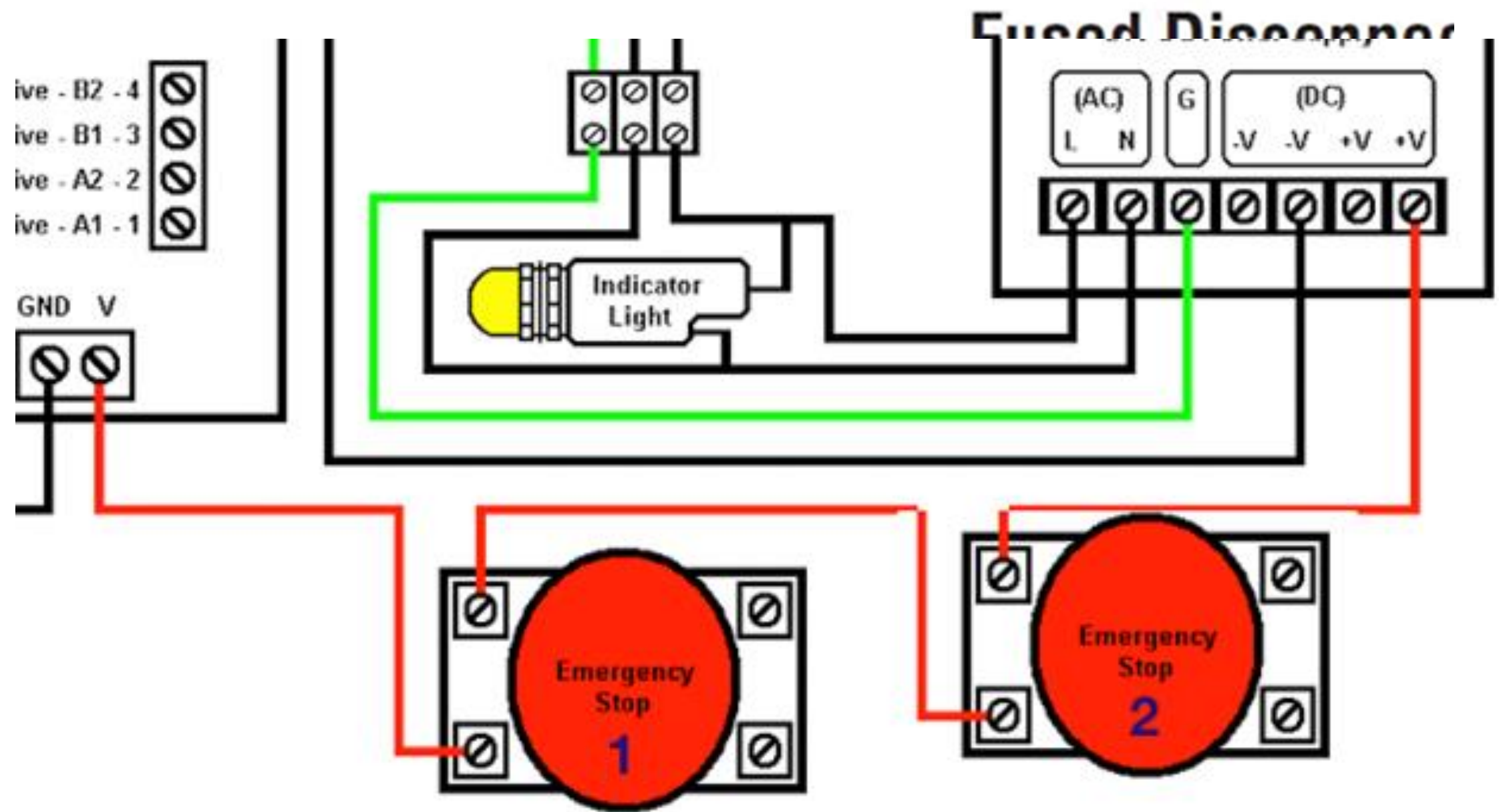


- Mechanical device that physically prevents the transmission or release of energy, including but not limited to:
- a manually operated electrical circuit breaker;
- a disconnect switch;
- Manually operated switch that **disconnects all circuit conductors** from all ungrounded supply conductors;
- a line valve;
- a block;
- and other devices used to block or isolate energy
- NOTE: push-button selector switches and other control-type devices **are not energy-isolating devices.** (Emergency stops)

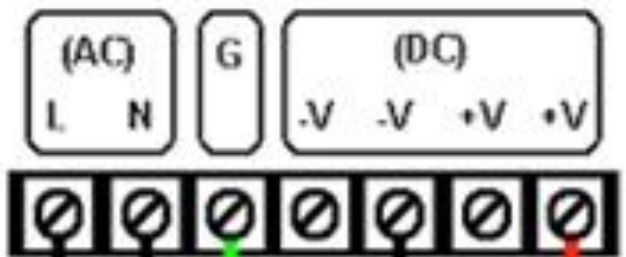
E-stop is not Energy Isolating Device

- Does not isolate other hazards
- Is not a disconnect





Fused Disconnect



FUSE

Compliance vs. Assessment

- Compliance
- Assessment
- Assess hazards to eliminate them
- Document the assessment

Basic requirements of effective program

1. Company Policy and Program
 2. Written equipment procedures
 3. Training
 4. Annual auditing
 5. LOTO equipment and devices
- “Written specific” is required and is a common OSHA citation
 - Training is required and is a common OSHA citation
 - Discuss the LOTO equip and devices you use

A corporate policy



- Written Policy is clear and easy to understand (not lawyer talk).
- Like your LOTO procedures, policy is dynamic and changes with you.
- Give to Authorized employees and require they understand it
- Discuss entire program so they know how to lock out your equipment
- Tell when to lock out your equipment.
- Include name(s) of person allowed to lock out

Machine specific procedures

- This is most difficult to comply with and most cited of CFR 1910.147.
- Mistake: simple equipment like exhaust fans, bench grinders and drill presses require machine specific procedures.
- Each machine must meet 8 criteria to be exempt from a pre-written machine specific procedure. CFR 1910.147(c)(4)(i)
- Can lead to \$120,000 fine per piece of equipment without procedure.
- **WORSE: SOMEONE COULD DIE**

Training



- Training is **required** for all authorized and affected employees
- This training is kept **current with changes** in your program
- I **recommend annual** training for all authorized employees.
- **Must discuss** info from your annual audit
- Use a **quiz** to confirm and document comprehension.

How long must training be?

Annual auditing



- Audit each authorized **employee**
- Audit each LOTO **procedure**
- Must audit every year to make sure the **equipment hasn't changed**
- Confirm the procedure is **still accurate**.
- **Test** at least annually to confirm Authorized employees understand how to and when to, properly apply LOTO.

LOTO equipment/ devices



- The necessary tools to lock out WILL REQUIRE MORE than just locks.
- LOTO Hasps and lock boxes are necessary if MORE THAN ONE PERSON works on the equipment.
- Everyone has to be authorized and trained to YOUR PROCEDURE
- All authorized employees MUST BE PROTECTED BY THEIR LOCK when working on equipment.
- Dozens of specialized devices designed to work on specific valves, breakers and connectors.

LOTO equipment & devices



- Evaluate and purchase devices **easiest to use, best for** your needs.
- Use the breaker Lock out device **designed to fit** your specific breaker.
- Pulling the fuse is **not enough** for LOTO.
- Must install device that **prevents** accidental release or re-energization.
- **Re-usable** tags clearly define your LOTO, are easy and inexpensive.

Excuses for failure to LOTO

- There are **NO HAZARDS** here that require lock out
- **An easier way** to do my work, so I create my own procedure that eliminates guards, locks, etc., **BUT** allows the energy to stay on
- **Too much time** to get the equipment, follow procedures, apply equipment,
- **Too much time** to restore power, put everything back away, and go back to work

Eliminating the Excuses



The “CLOSE AT HAND” rule:

The equipment to LOTO is right at the equipment for fast easy use.

SCARY!!

The value of other safe work practices

- ELECTRICAL SAFETY PROCEDURE
 - Only COMMERCIAL OR INDUSTRIAL electricians do my work
 - NO ONE WORKS ON ANY equipment that is energized
 - No one uses a VOLTAGE METER
 - No one opens an ELECTRICAL PANEL

The Brewpub's dishwashing machine... and the dishwasher

- THIS IS A TYPICAL routine maintenance or repair type task



Can equipment lockouts be defeated?



Example injury?

- What went wrong
- What steps should occur here.
- Defined as a non-routine task



“Mash tun and the mop” Near miss

- An event occurs
- **By luck,**
you aren't hurt



Lock out required?



I can't!



Build a procedure



Build a procedure

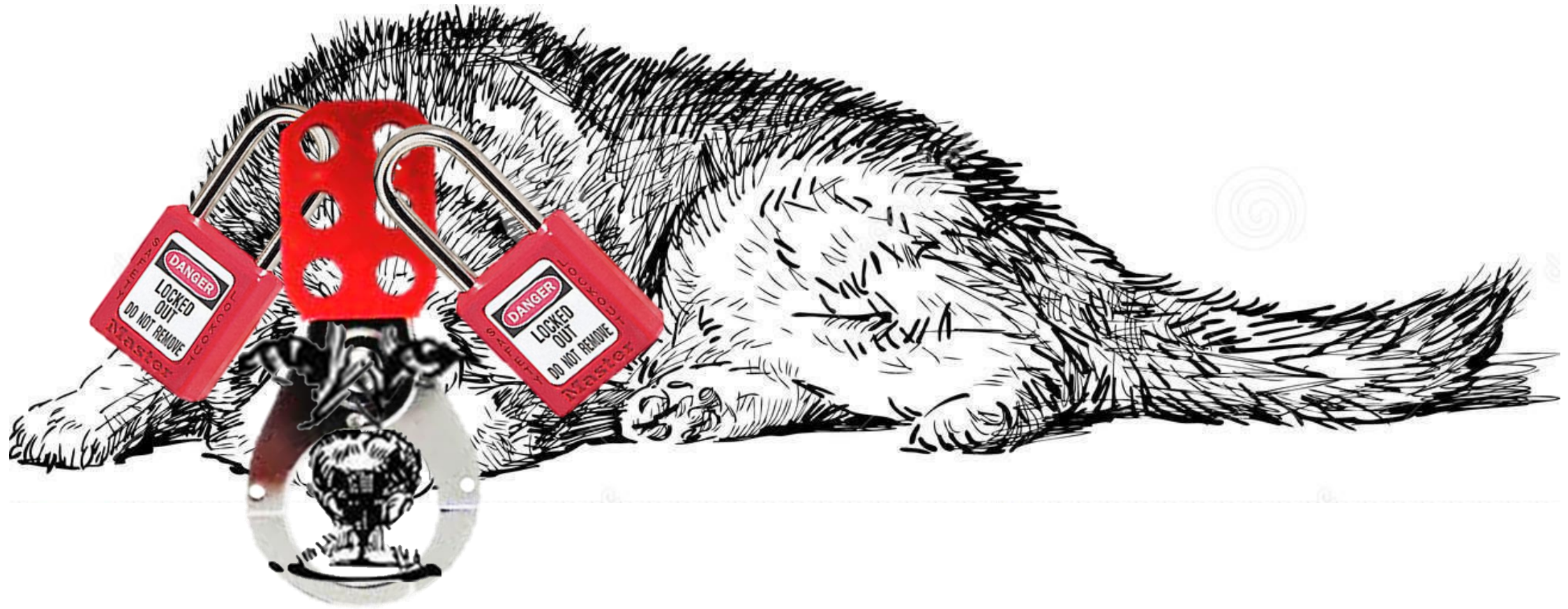


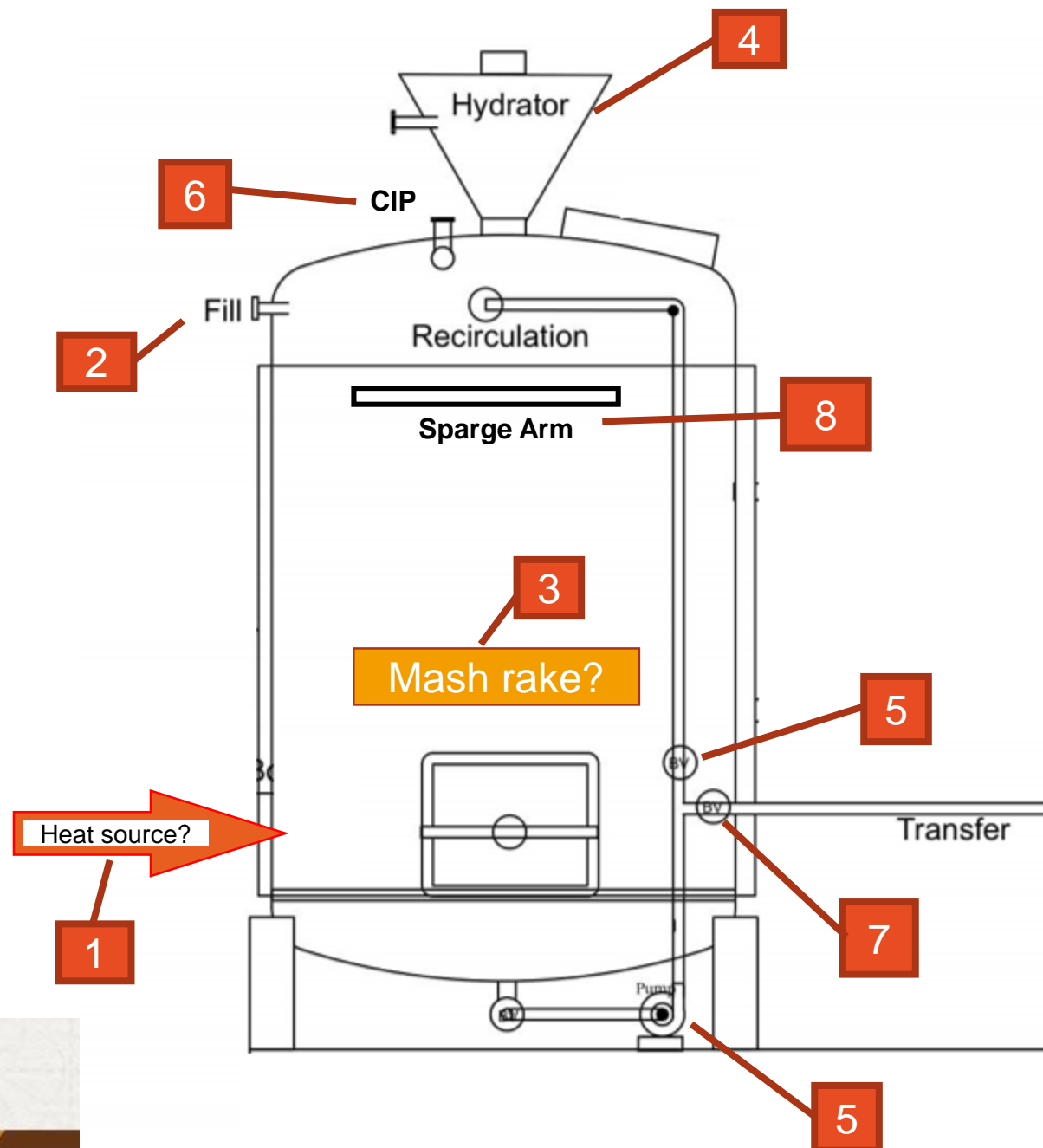
#CraftBrewersCon

Build a procedure



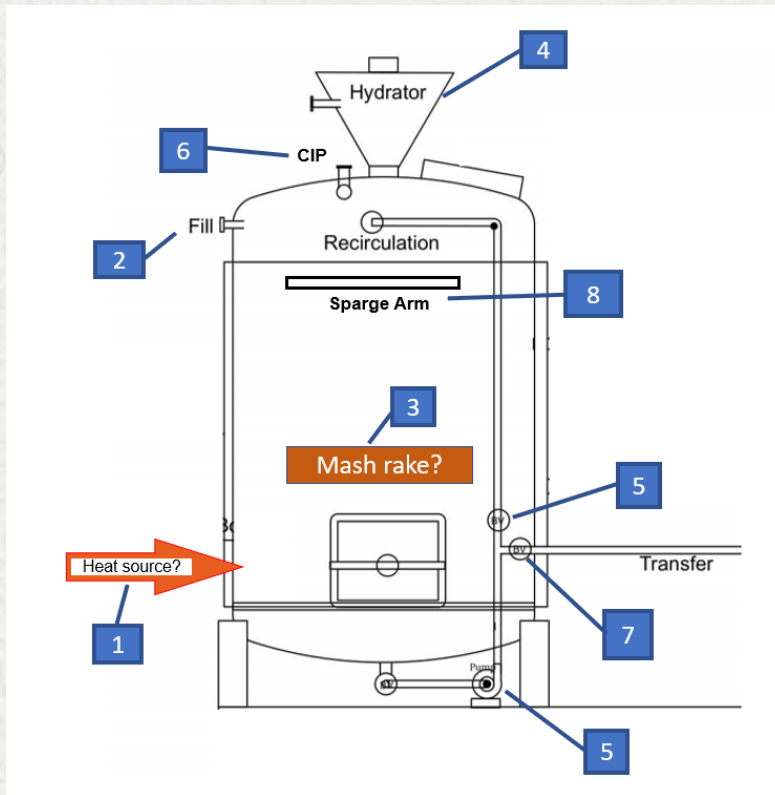
Taming of the S.H.R.E.W.





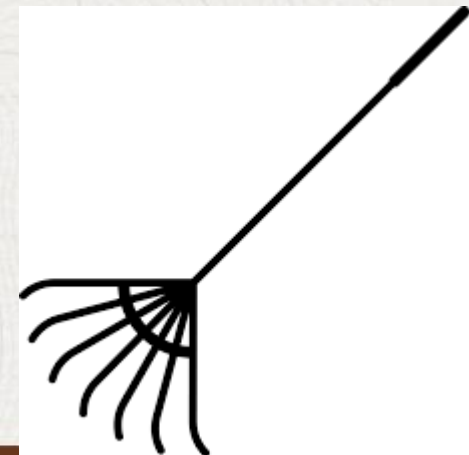
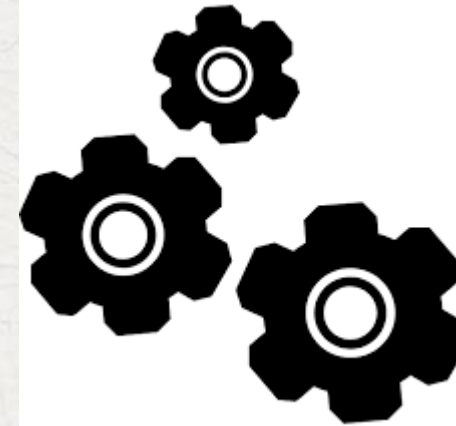
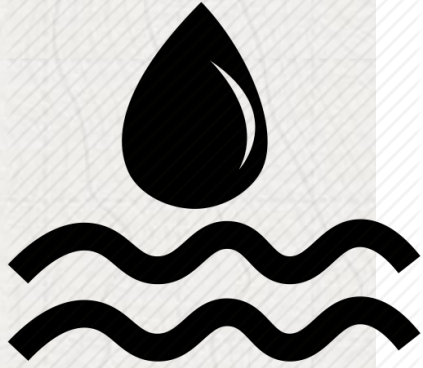
Points to Lock Out

- What are the hazards of each
- Why is it a hazard

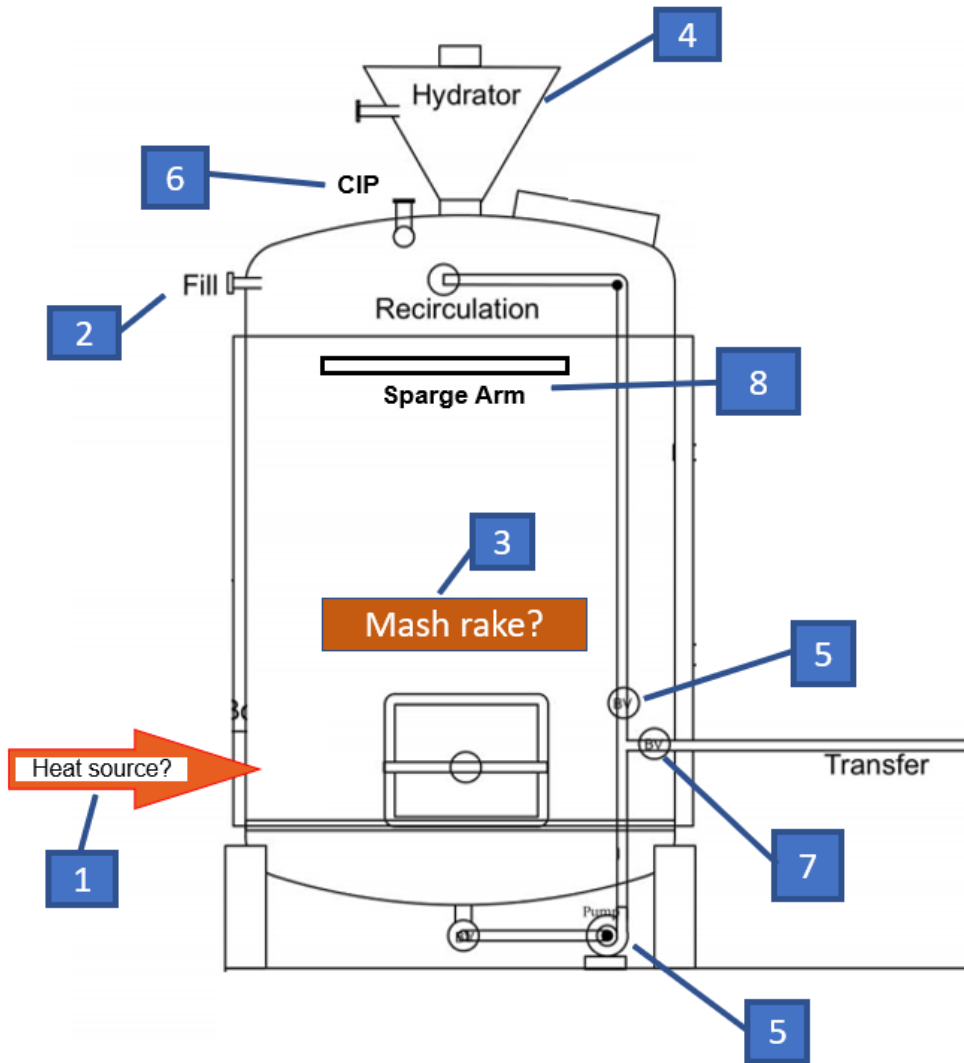


- Inlet hot water
- Heat source for tun
- Inlet grain
- Mash rake
- Outlet hot wort
- Recirculation
- CIP

LOTO point symbols

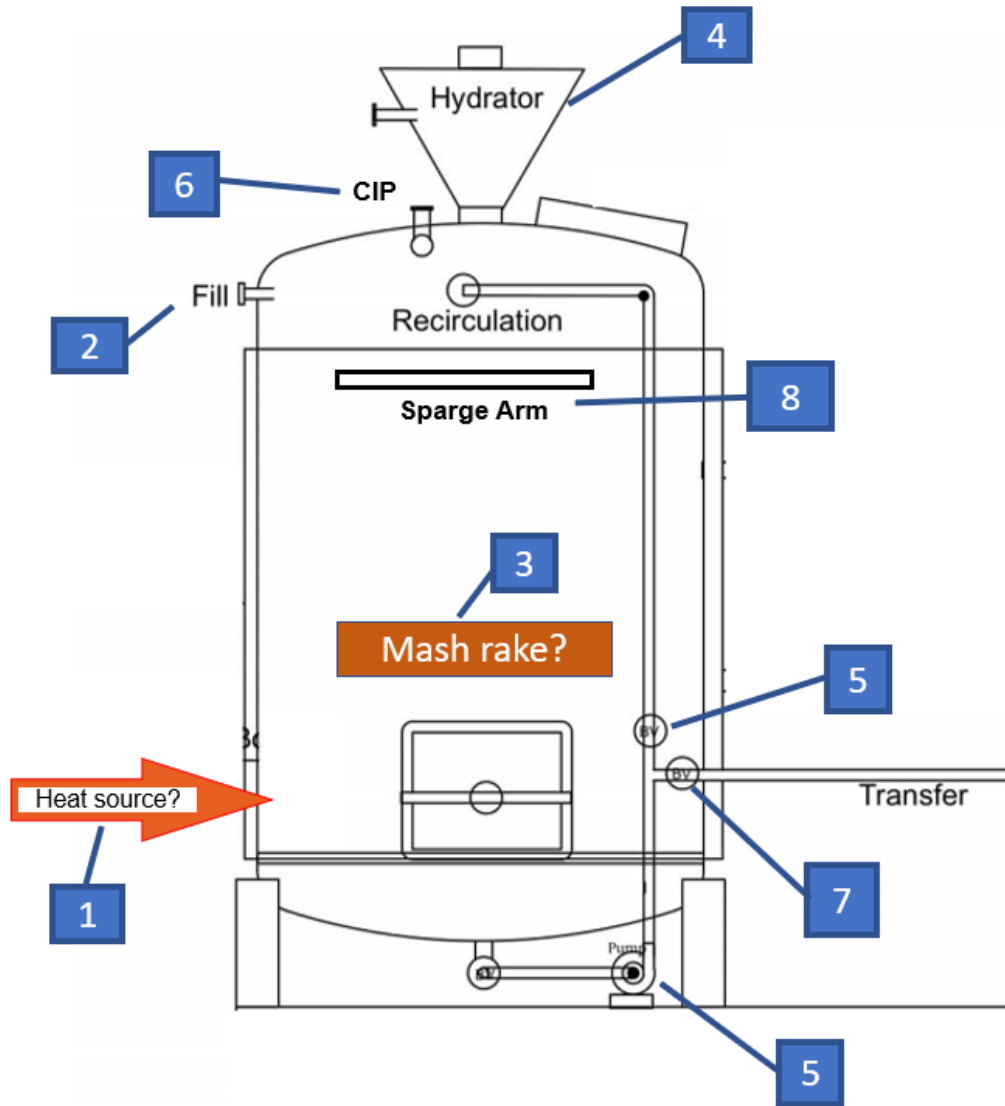


Step by step procedure



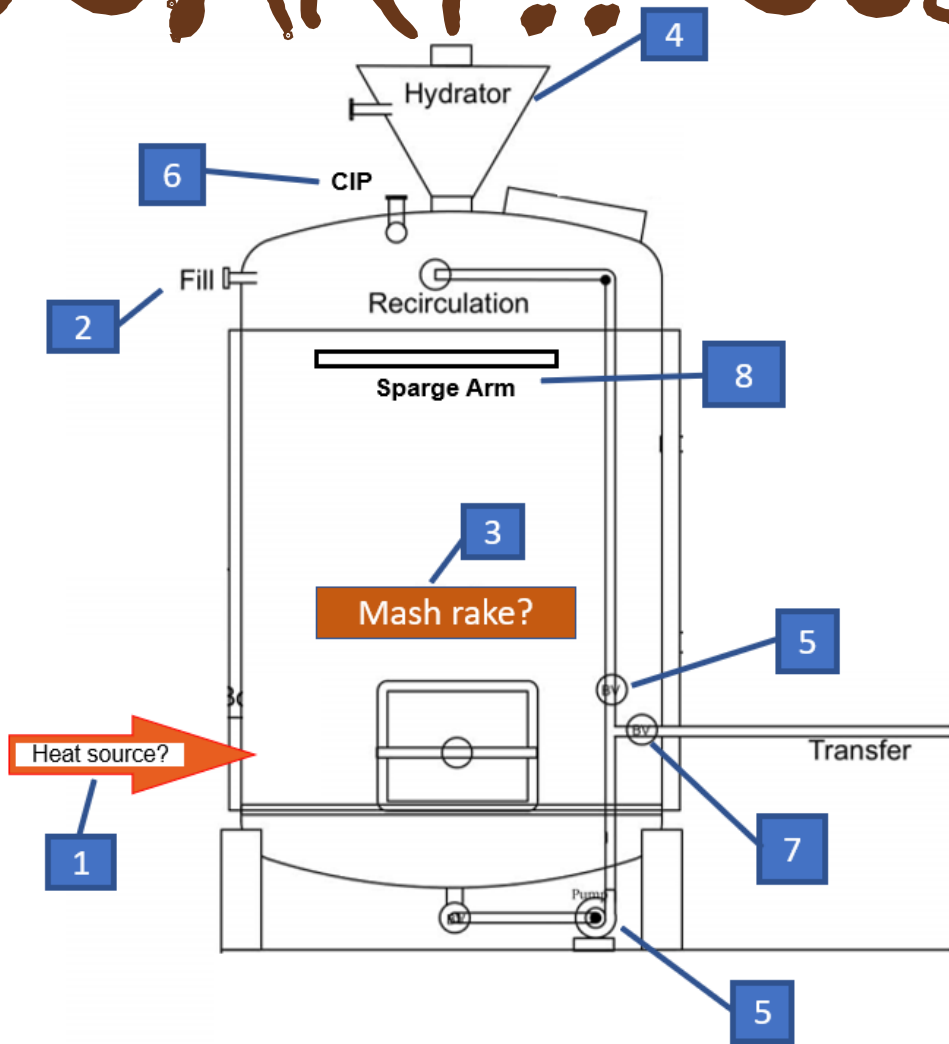
- Inlet hot water: more than one?
- Heat source for tun
- Inlet grain
- Mash rake
- Outlet hot wort
- Re-circulation
- Clean in Place: more than one?

Use the handout to create procedure



- 1) Shut off and lock tun heat source
- 2) Close and lock the inlet hot water
- 3) Shut off and lock mash rake
- 4) Shut off and lock grain feed system
- 5) Close and lock re-circulation loop
- 6) Shut off and lock CIP
- 7) Close and lock the outlet out of tun
- 8) Is sparge separate from inlet water?

SCARY!! Costs



- A lock on each loto point? 5 and 7
- What standard must LOTO device meet?
- Don't buy LOTO kits
- Lock is only for LOTO
- By shape, color or size
- Must locks be assigned?

Train your employees to your procedure

- What have to do to LOTO machine
- What your LOTO equipment looks like
- How to document your LOTO
- Where your LOTO documents are stored
- Train non-Authorized too

Check this!

Photograph the LOTO point
Put photo on paper
Add the procedure to paper
Laminate the paper
Paste it to the LOTO point



Wrap up



- We just identified many **different** variations of equipment
- Exposed many different variations of Lock out
- Each brewery needs to do specific training **on your own** stuff.
- **Never rely** on what people learned somewhere else

Thank you for your help:



- Jim Stricker,
- Nicole Reiman, Odd 13
- Dry Dock Brewing team
- Left Hand Brewing team
- Joe Schiraldi, Sleeping Giant
- Facebook: @brewery.safety.consulting
- And: I can do this because Mary lets me