



## Reasoning for no CIP Feature on Flat-Lid Mash Tun Design

Every brewhouse has different considerations and brewhouse cleaning methods vary widely. Honestly, most brewery equipment manufacturers avoid the question and just say "everybody does it different" which is true. But, here are recommendations and answers to the frequently asked question concerning our Flat Lid Mash Tun being CIP-able.

The following are questions and answers posed to our customer Brett Williams with Little Machine Beer in Denver, Colorado. Brett has the Forgeworks 10bbl Indirect Fire Brewhouse, and has been brewing on it since October of 2015. We went to Brett to ask about his thoughts on CIP for a Flat Lid Mash Tun.

**Forgeworks:**

***-Our Dual Hinged Flat Lid with the center support that you have on your mash tun doesn't feature the a dedicated port for CIP. Do you wish it had it?***

**Brett Williams:**

-Personally, no. Since I have no rake & plow and mix in by hand, I like having the extra space to paddle that the flat lid offers. The flat lid is a tiny bit harder to clean than a dome top, just because you have to get up in the crevices and scrub, but worth the savings and the extra paddling space to me. I wouldn't want to paddle through a manway. It also makes it easier to scrub the sides by hand, and I prefer not to CIP the tun for our size brewhouse which I'll explain below.

**Forgeworks:**

***Do you CIP your Mash Tun by rigging a spray ball through any other port?***

**Brett Williams:**

-No. I did once, which I'll explain below, and I don't recommend it.

-We clean our mash tun (and screens), every time we use it, with a cleaner designed for scrubbing (Five Star's CMC). We actually use our grant as a brink to hold the cleaner and scrub the inside/outside of the tun with a long-handled brush from the grant. We also completely remove the screens and scrub them separately every time. We let

CMC pool in the drain pipe to soak that while we do this, then rinse everything really well.

-We also fill and soak the mash tun quarterly (or as needed) with an alkaline cleaner to get it back to original condition. After this deep cleaning we re-passivate the stainless with acid.

**Forgeworks:**

***If you did route a spool and spray ball through another port to CIP, does caustic/acid drip down the outside of the mash tun?***

**Brett Williams:**

-Absolutely. I would not recommend this as it will cause streaking/staining of the outside of the tun, unless you give it constant attention and spray off the dripping chemical, which is also pretty dangerous.

-I did the initial passivation of our Forgeworks mash tun by removing the sparge assembly and replacing it with a 1' long extension pipe and the sprayball from our kettle. I didn't want to soak it because of how much acid it would have required. I knew what I was getting into and was prepared to spray the dripping acid off the sides of the tank, while it cycled, so it wouldn't stain. I only did this once and it wasn't worth the mess and the effort. Now I just pool the strong acid solution in the bottom of the tank, scrub it all over the sidewalls, drain, and let air-dry for passivation.

**Forgeworks:**

***Think the Mash Tun should be CIP-able?***

**Brett Williams:**

-This depends on the size of the tun and how often it's used. It would be very hard to scrub a 50 Bbl mash tun by hand, and it wouldn't be economical to fully fill and soak it with chemical. Also, lauter tuns at breweries that run more often, counterintuitively, actually need to be cleaned less.

-I personally prefer not to CIP the mash at our 10bbl scale because there are pretty big gaps between brews; we usually brew twice per week. This means if the tun doesn't get cleaned after each use, it has time to get funky. CIP'ing after each use would be an excessive use of time and chemicals so the scrubbing method is more economical, less time consuming and works great.

-Larger craft breweries typically CIP once per week because the tank is getting turned over so much it doesn't have time to get funky. For larger tuns that are getting turned over day in and day out, the tun just needs to be sprayed out/rinsed between brews. Then, once per week you would deep clean by soaking with chemical just above the screens to deep clean the screens. Then, rinse and remove the screens and scrub them additionally by hand if needed to get fully clean. Then, CIP the tank with alkaline cleaner with the screens removed to make sure all the husk material can drain and doesn't get caught up in them. Then, once you're sure everything's cleaned and rinsed

and there's no more husk material anywhere (including the spray-ball), re-assemble and run the acid CIP cycle with the screens in the tank.

-The trickiest situation is if your brewery is oversized. Then, your tank may be too big to scrub, but also isn't getting turned very often so should be cleaned each time. In this scenario you'd want to do some combination of the above methods. Or, just suck it up and CIP more often.

## **OTHER NOTES ON THIS TOPIC from Forgeworks:**

**CIP WITH OUR FLAT DUAL HINGED LID MASH TUN:** *A typical CIP on our Flat Dual Hinged Lid Mash Tun can still be achieved with some modifications. You can connect a 6-10" spool to the Sparge Port, and utilize a 180° Spray Ball. This will minimize caustic/acids from escaping under the flat lid and running down the outside of the vessel.*

**DOME LID ON MASH TUN:** *If you require the ability to CIP the mash tun, you can always choose the Dome Lid upgrade. Our dome lids come with a dedicated CIP connection. Choosing the Dome Lid upgrade gives you the ability to CIP, but does limit your access to the grain bed with a paddle, as you are working through the manway.*

**RAKE AND PLOW:** *We offer a Rake and Plow option on our 7, 10 and 15bbl Mash Tuns. This feature requires a Dome Lid upgrade. and is generally an economically viable option starting with 10bbl, but normally 15bbl and up. Out of every ten 10bbl brewhouses we build, only two are equipped with a Rake and Plow. Nearly every 15bbl brewhouse is built with a Rake and Plow.*