

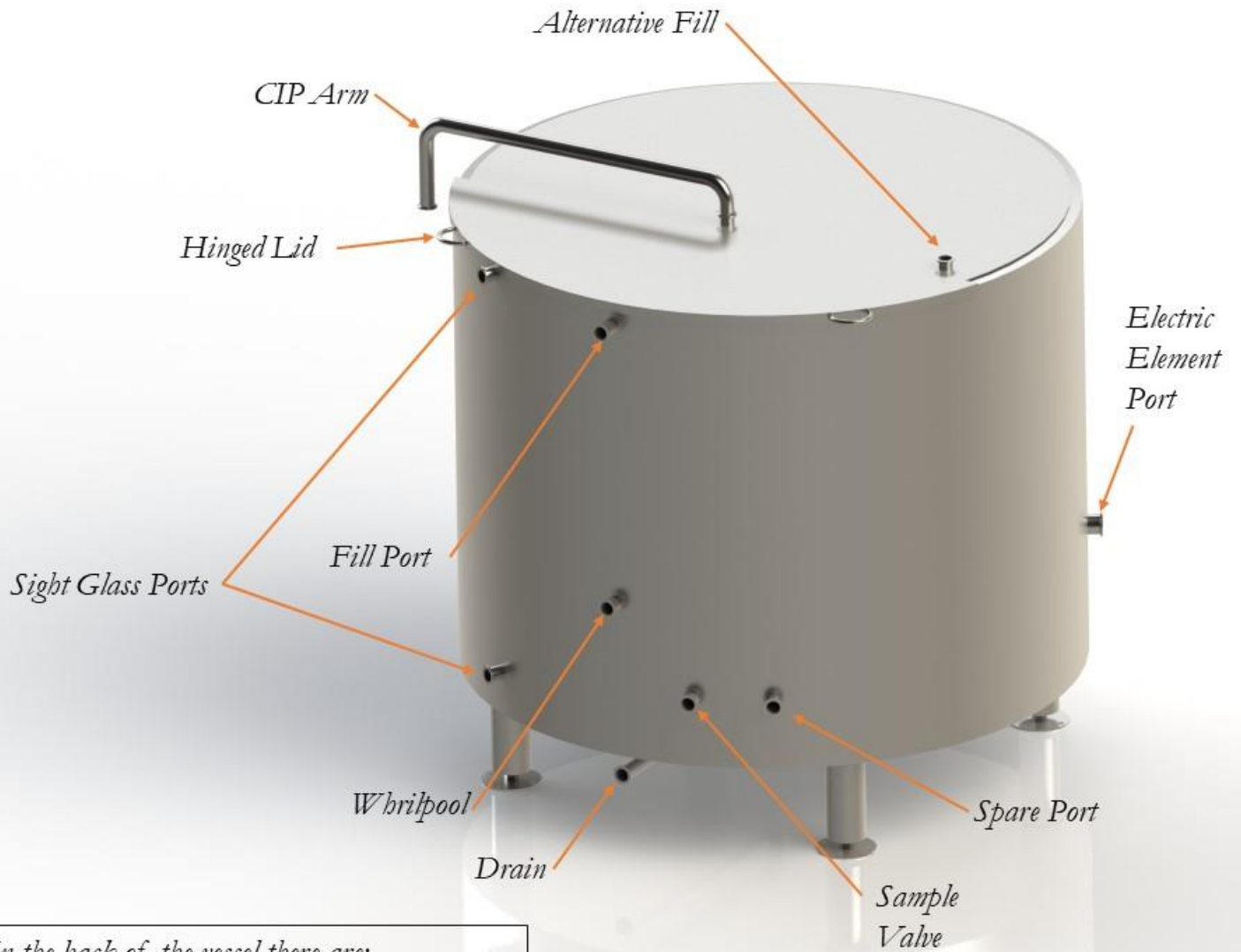
## Forgeworks Vessel Sizing and Features

We take customer feedback seriously and have driven the design of our brewery vessels to reflect that. Here are some true stories that have changed the way we build our tanks:

- We had a customer that received their drawings for the Hot Liquor Tank, and their response was that our design lacked key features. From that moment forward, we changed our HLT design from the top down to include every feature a brewer could dream of. A Whirlpool port to aid in mixing, a sample valve port for testing, and many fill port options, including one on the hinged lid. They come standard with two ports for Electric Immersion Elements, and a level sensor port.
- Years ago at a seminar at the Craft Brewer's Convention, we learned that the ideal Kettle should have 40% headspace, and we have been sizing them that way ever since.
- One day a customer, a master brewer who has been featured in many brewing safety podcasts, asked us if our Kettles came standard with a 2" port on the lid for the ability to install a Foam Sensor for boil-over protection. Our response was, "well it does now".
- On two occasions we had a customer tell us that our Brewer's Platform design was not going to work for their space, so we made one for them that reduced the space between the tanks. Another customer wanted the tanks to be a foot apart, with more access to the manways. Now we have three platform designs for you to choose from, or to inspire your own design. We have even built the platforms with removable steps, to free up floorspace when you are not brewing.

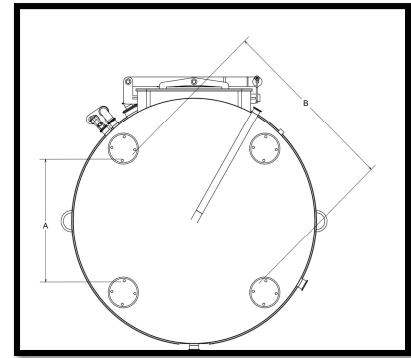
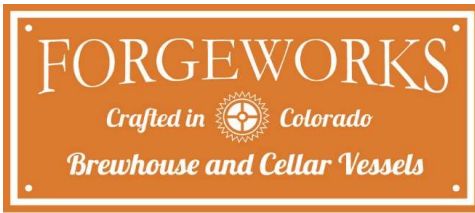
The theme here is that if you have a great idea, we are probably going to adopt it. Occasionally we come up with great ideas ourselves, like the two door rectangular manway on our Kettle. It even has a mechanism to prop one door open. We don't buy pre-built manways, and you probably know the ones I am talking about. Our Mash Lauter Tun manway is huge and rectangular. It's easy to remove the screens, and it comes with a removable spent grain chute, and manometer tubes. What are Manometer Tubes? These are two sight tubes that show you the pressure differential or suction within and across the grain bed. These tubes offer you a visual representation of how fast you are drawing wort through the grain bed, based on the difference in level between the two tubes. This visual gives you a warning if you are potentially pulling a vacuum under the screen, which can lead to a stuck mash or a bent screen...or both.

## Hot Liquor Tank Features



*In the back of the vessel there are:*

- *Additional electric element ports*
- *Electric element low-level cutoff switch port*
- *thermowell*



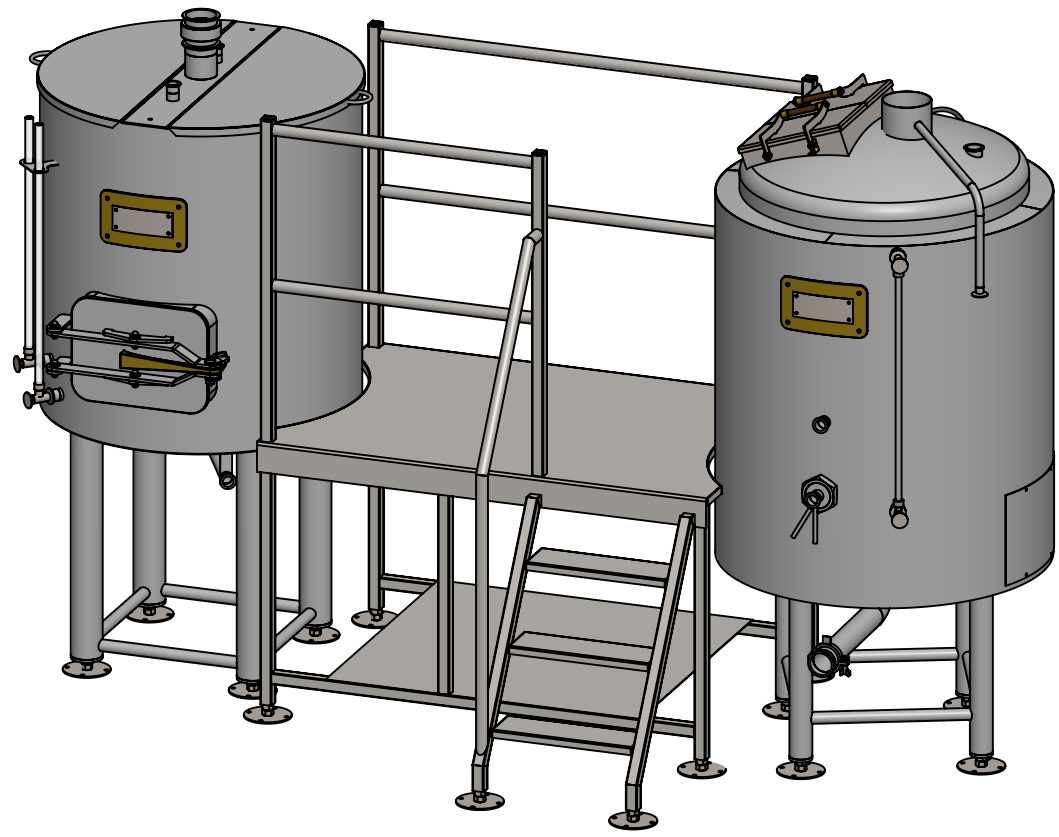
## Forgeworks Brewhouse Equipment Dimensions

Tank Type/Size	CAPACITY				DIMENSIONS		SEISMIC		
	Nominal Gallons	Total Capacity in Barrels	Total Capacity in Gallons	Head Space %	Width Inches	Height Inches	Distance A between Legs (Inches)	Distance B between Legs (Inches)	Foot Diameter (Inches)
<b>Mash/Lauter</b>									
3.5BBL	108	5.8	179.9	67%	45.0	72.0	18	27.3	6
5BBL	155	8.5	262.0	69%	52.0	84.0	21.5	32.3	6
7BBL	217	11.6	359.0	65%	58.0	84.0	26.5	39.3	6
10BBL	310	16.9	524.2	69%	68.0	84.0	33.5	44.3	6
<b>Kettle/Whirlpool</b>									
3.5BBL	108	5.4	166.7	54%	48.0	75.0	19.5	29	6
5BBL	155	8.5	262.9	70%	52.0	88.0	23.5	34	6
7BBL	217	10.7	332.8	53%	57.0	88.0	26	38	6
10BBL	310	14.3	444.4	43%	64.0	88.0	30.5	44.5	6
<b>Hot Liquor Tank</b>									
3.5BBL	108	5.4	166.7	54%	41.0	64.0	18.6	28	6
5BBL	155	8.9	274.9	77%	46.5	64.0	23	34	6
7BBL	217	12.6	389.6	80%	54.5	64.0	28.5	42	6
10BBL	310	16.9	524.2	69%	62.5	64.0	34	50.5	6
<b>COLD LIQUOR TANK</b>									
3.5BBL	108	5.4	166.7	54%	37.0	64.0	18.6	28	6
5BBL	155	8.9	274.9	77%	42.5	64.0	23	34	6
7BBL	217	12.6	389.6	80%	50.5	64.0	28.5	42	6
10BBL	310	16.9	524.2	69%	58.5	64.0	34	50.5	6
15BBL	465	20.6	638.2	37%	62.0	72.0	40	60	6
20BBL	620	33.4	1035.9	67%	68.0	72.0	44	66	6
<b>COMBI TANK (Mash/Lauter &amp; Hot Liquor)</b>									
7BBL HLT Bottom	217	9.4	290.0	34%	53.0	104.0	26.5	39.3	6
7BBL MLT Top	217	11.6	359.0	65%	-	-	-	-	-
10BBL HLT Bottom	310	13.6	423.0	36%	63.0	104.0	33.5	44.3	6
10BBL MLT Top	310	16.9	524.2	69%	-	-	-	-	-

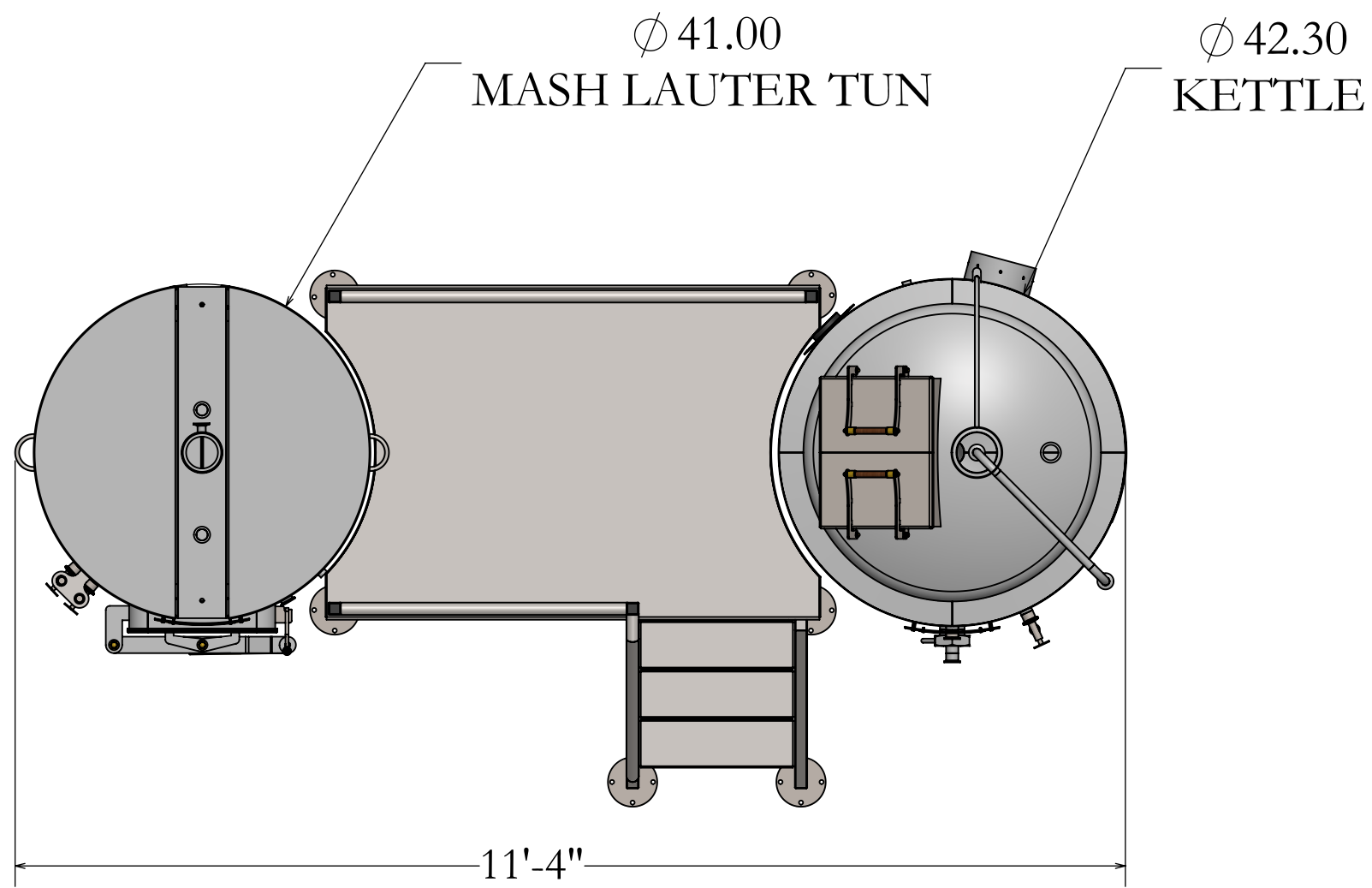


### 3.5 BBL BREWHOUSE STANDARD FOOTPRINT

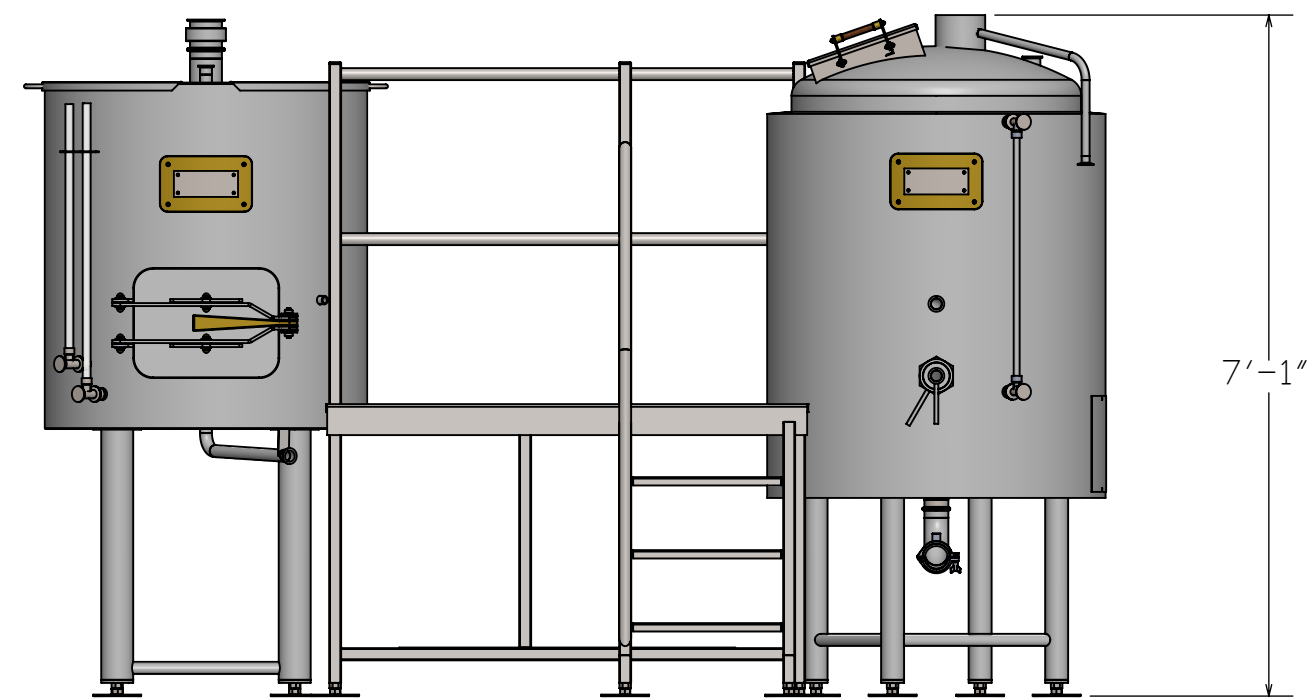
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FEATURES ARE CUSTOMIZABLE.



ISO



TOP



FRONT

APPROVAL SIGNATURE  CUSTOMER NAME / COMPANY	CURRENT REV/VER: A	SERIAL NUMBER	VOLUME	MASS 1391.13 lb
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				MATERIAL OR SEE BOM (I/A) 304 STAINLESS

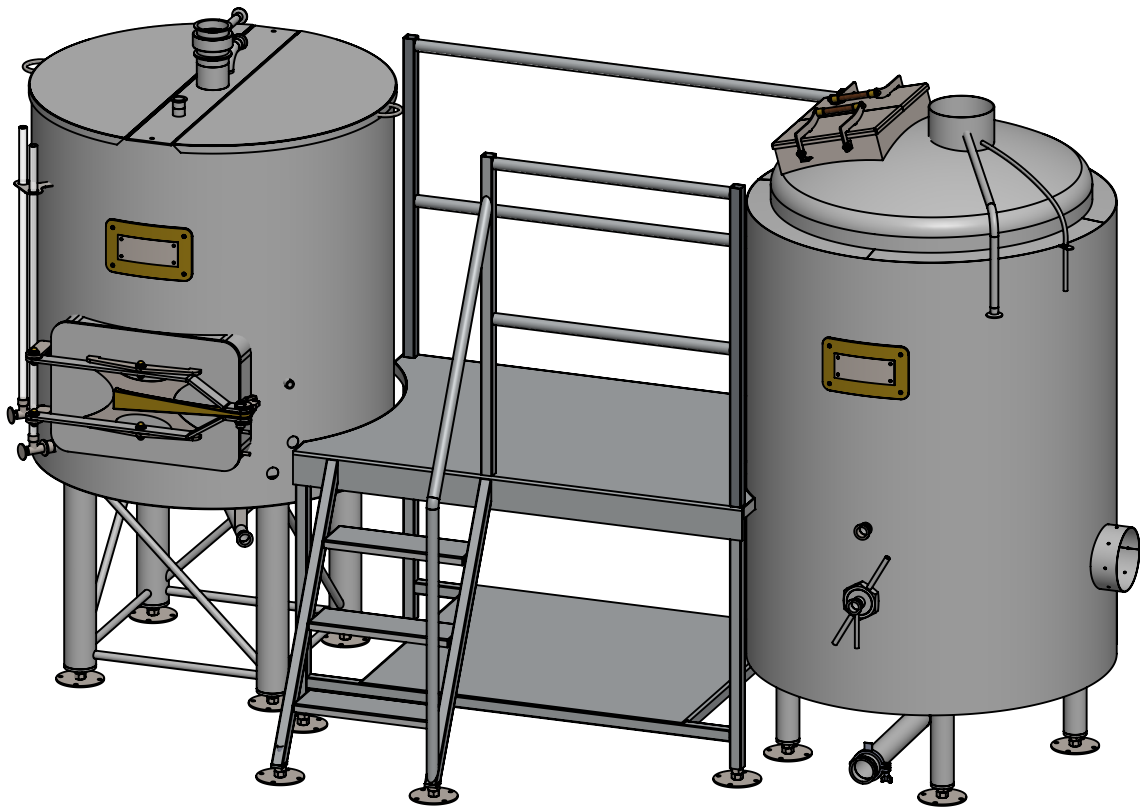
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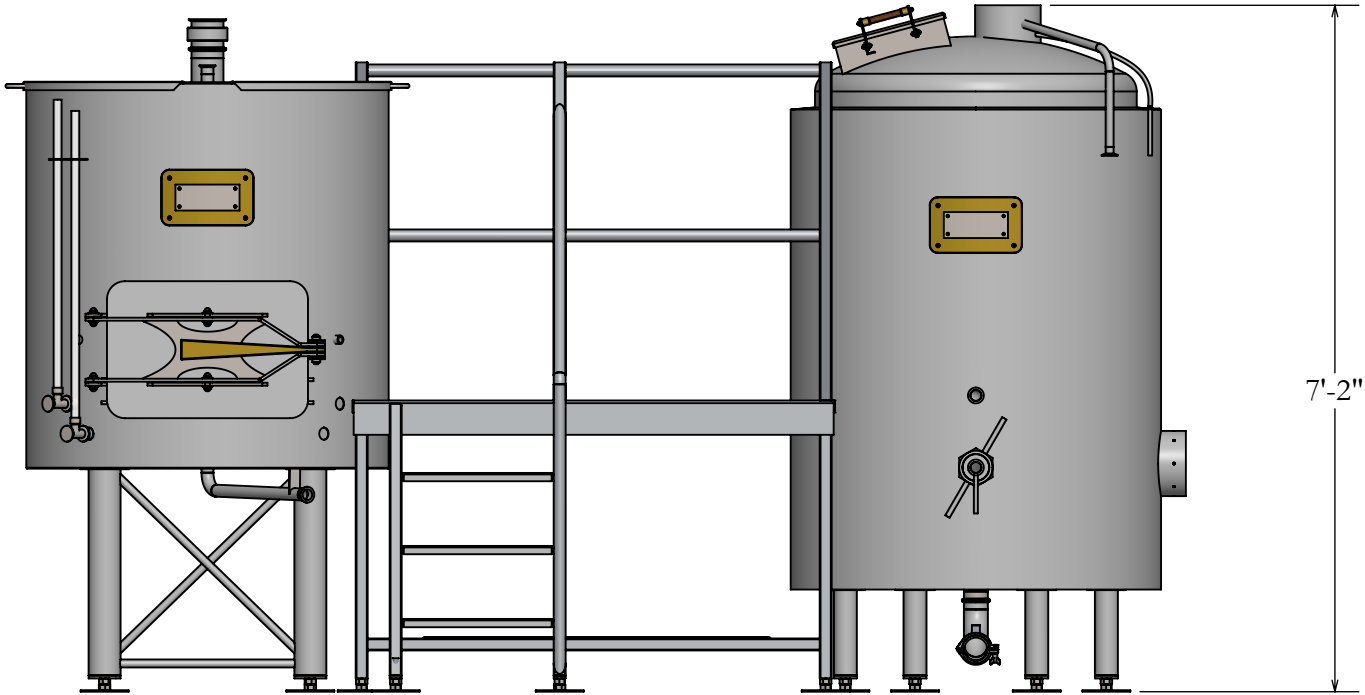
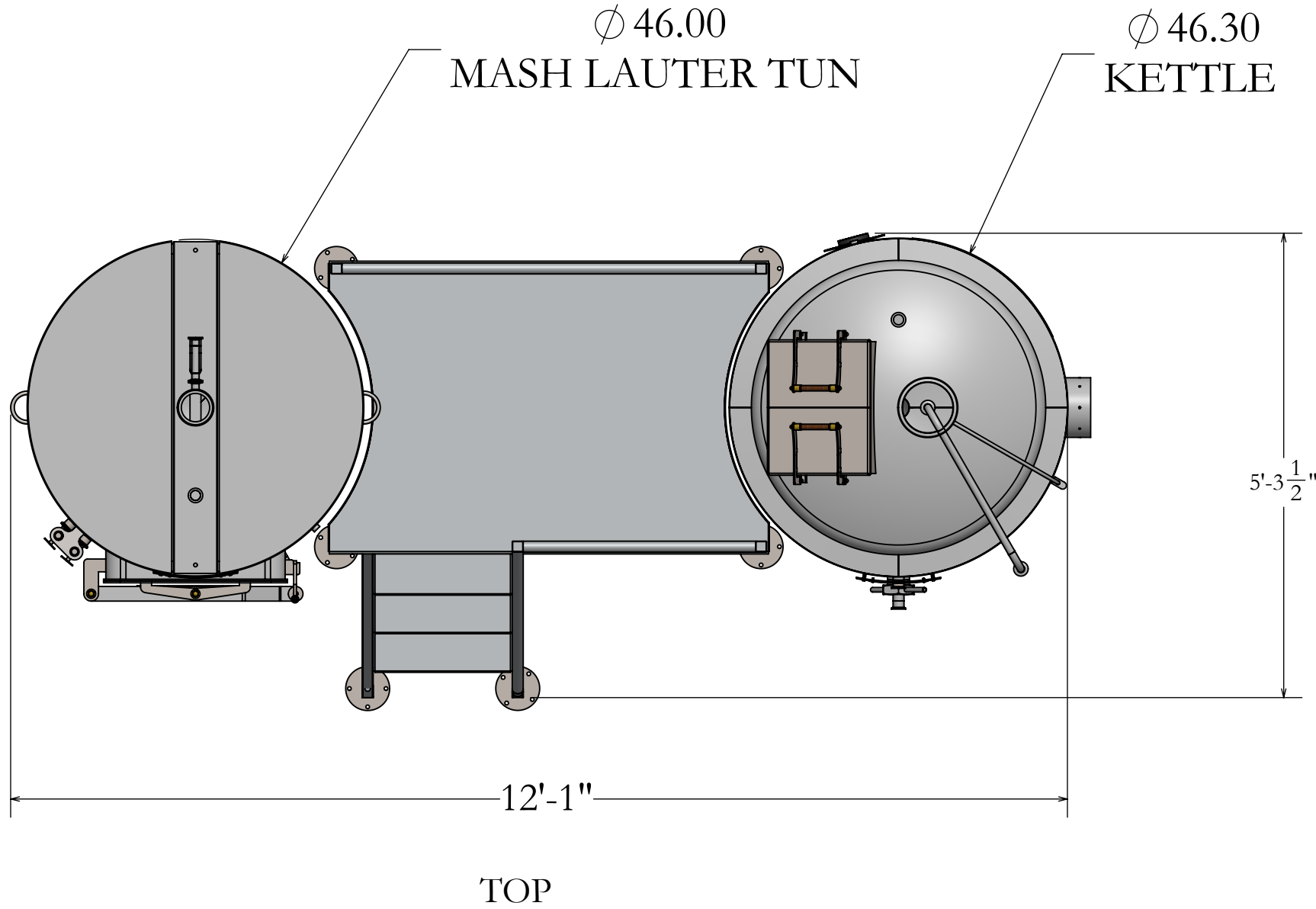


# 5 BBL BREWHOUSE STANDARD FOOTPRINT

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APPROVAL SIGNATURE

CUSTOMER NAME / COMPANY

CURRENT REV/VER: A			SERIAL NUMBER	VOLUME	MASS 1632.32 lb
REV/VER	DESCRIPTION	DATE	ASM / PART / WELDMNT DESCRIPTION: 5 BARREL BREWHOUSE AND HOT LIQUOR TANK, FLOOR LAYOUT		
			MATERIAL OR SEE BOM (I/A) 304 STAINLESS		

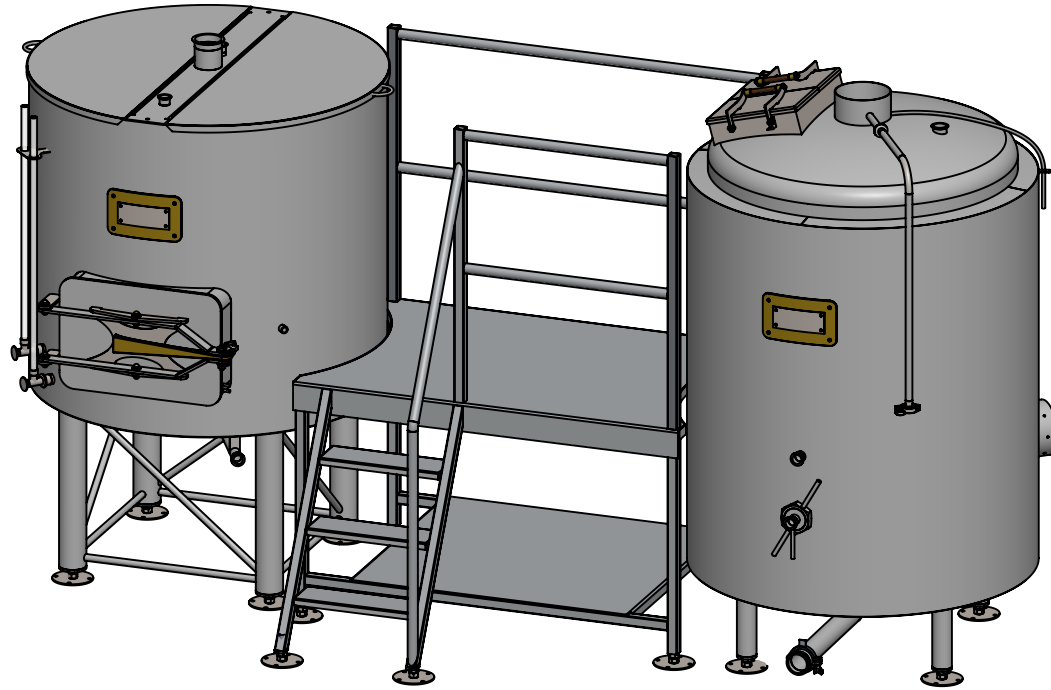
SHEET  
1 of 1

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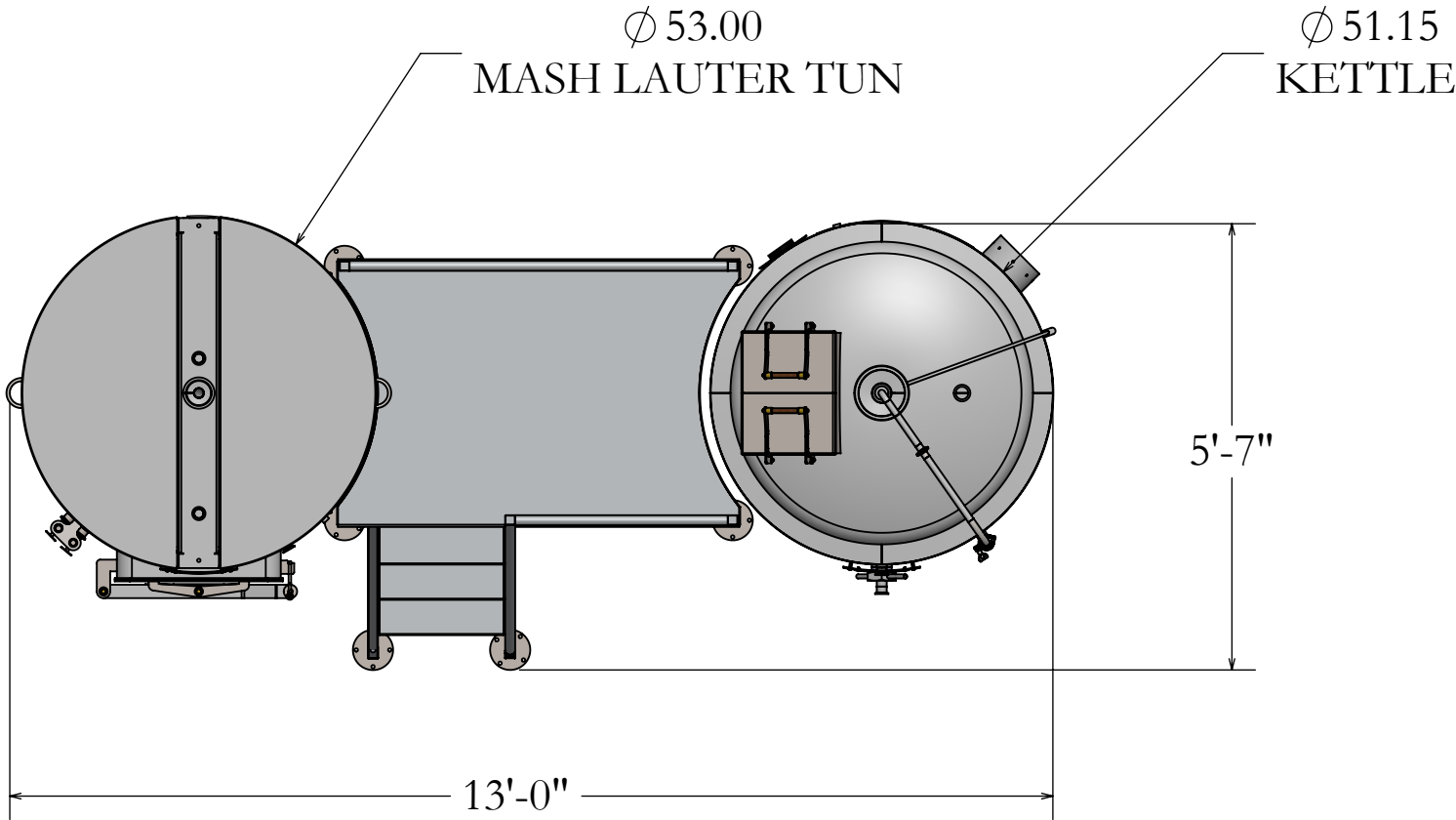


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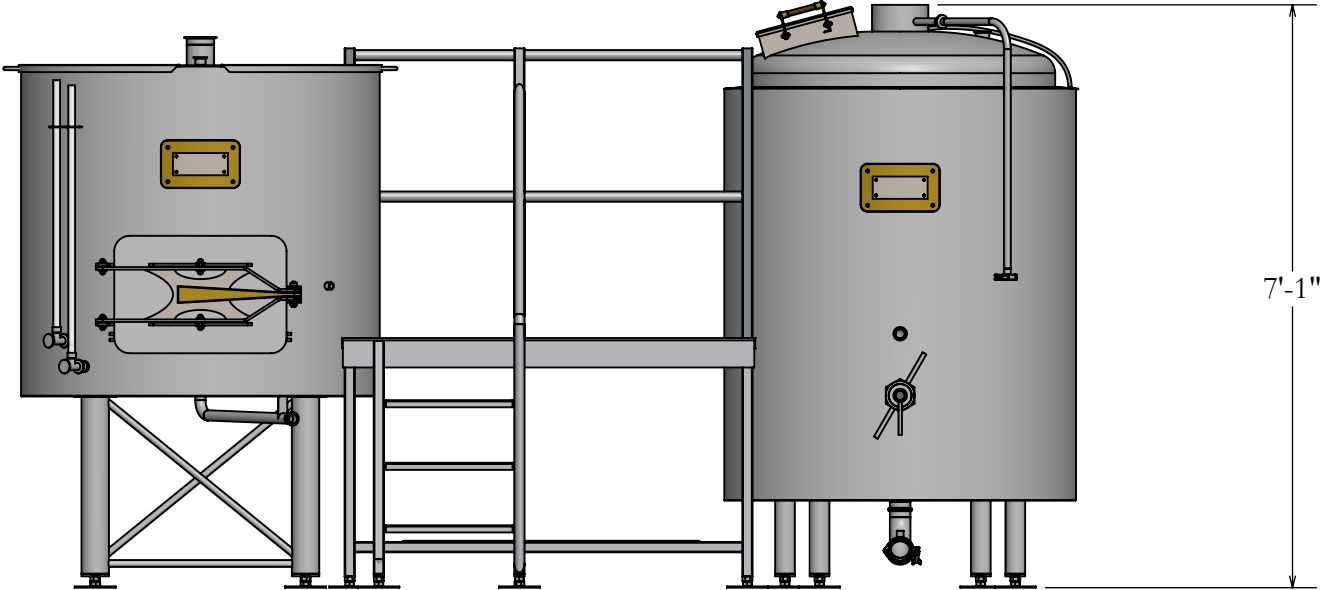
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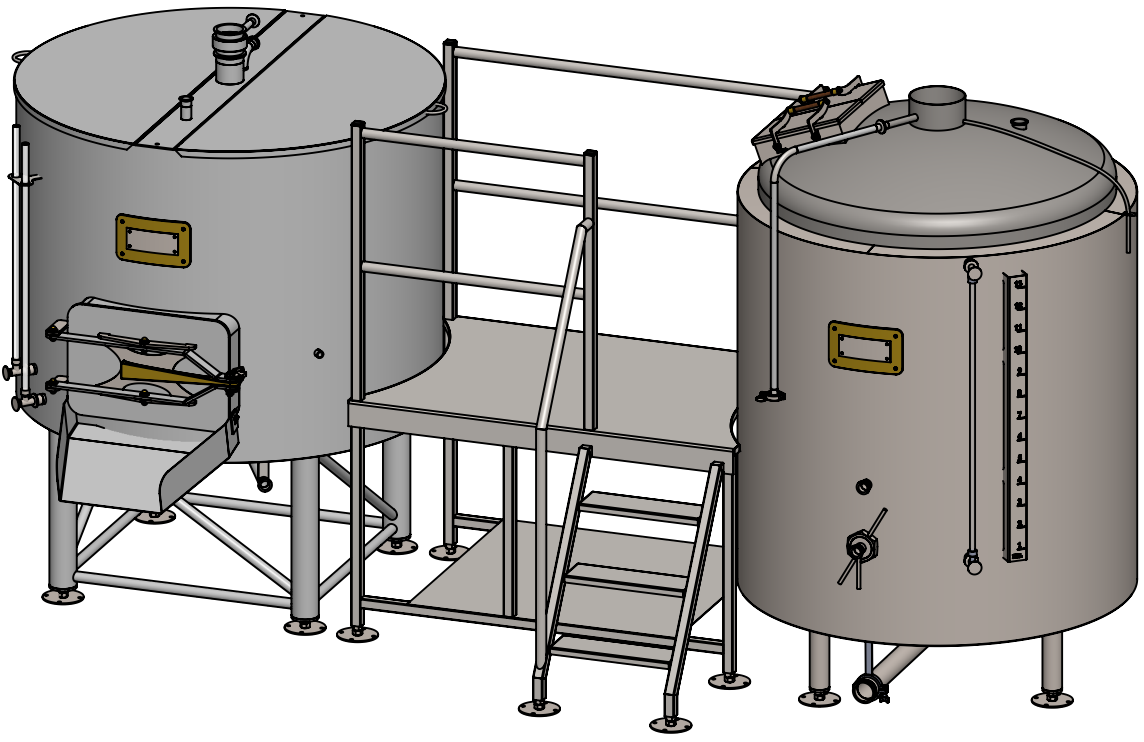
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APPROVAL SIGNATURE				MATERIAL OR SEE BOM (I/A)	
HOP MEADOWS				304 STAINLESS	
CUSTOMER NAME / COMPANY				1 of 1	

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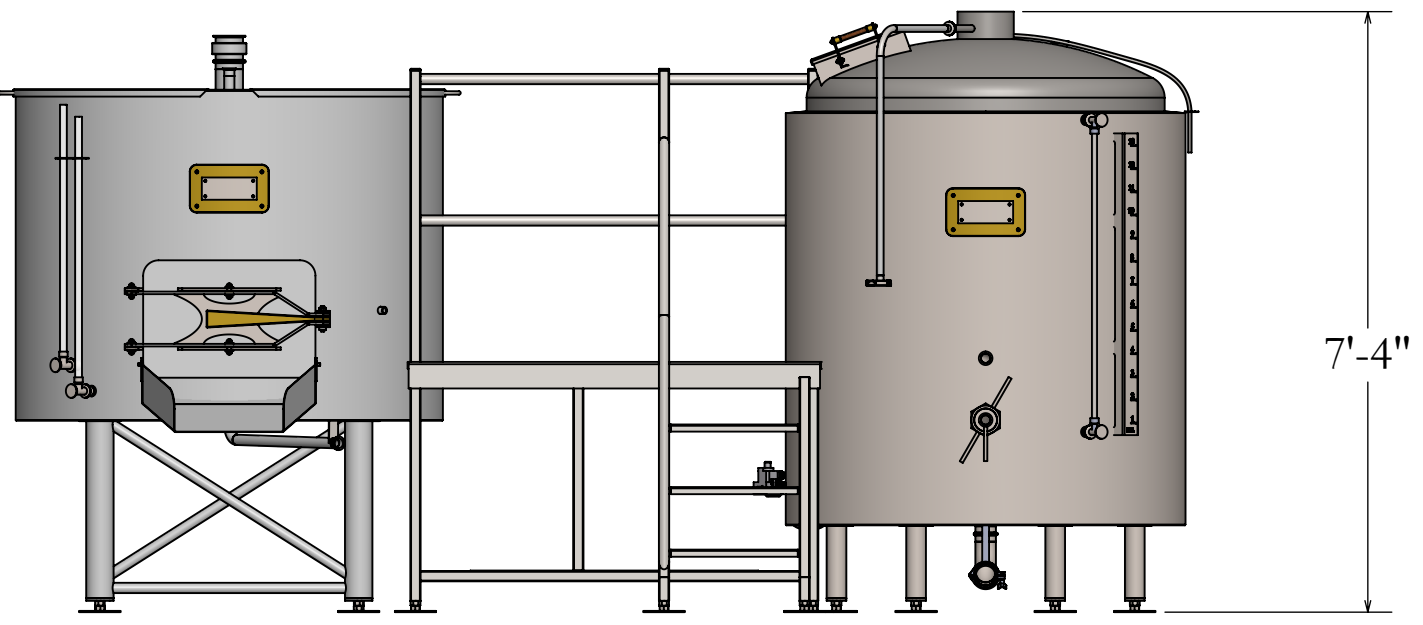
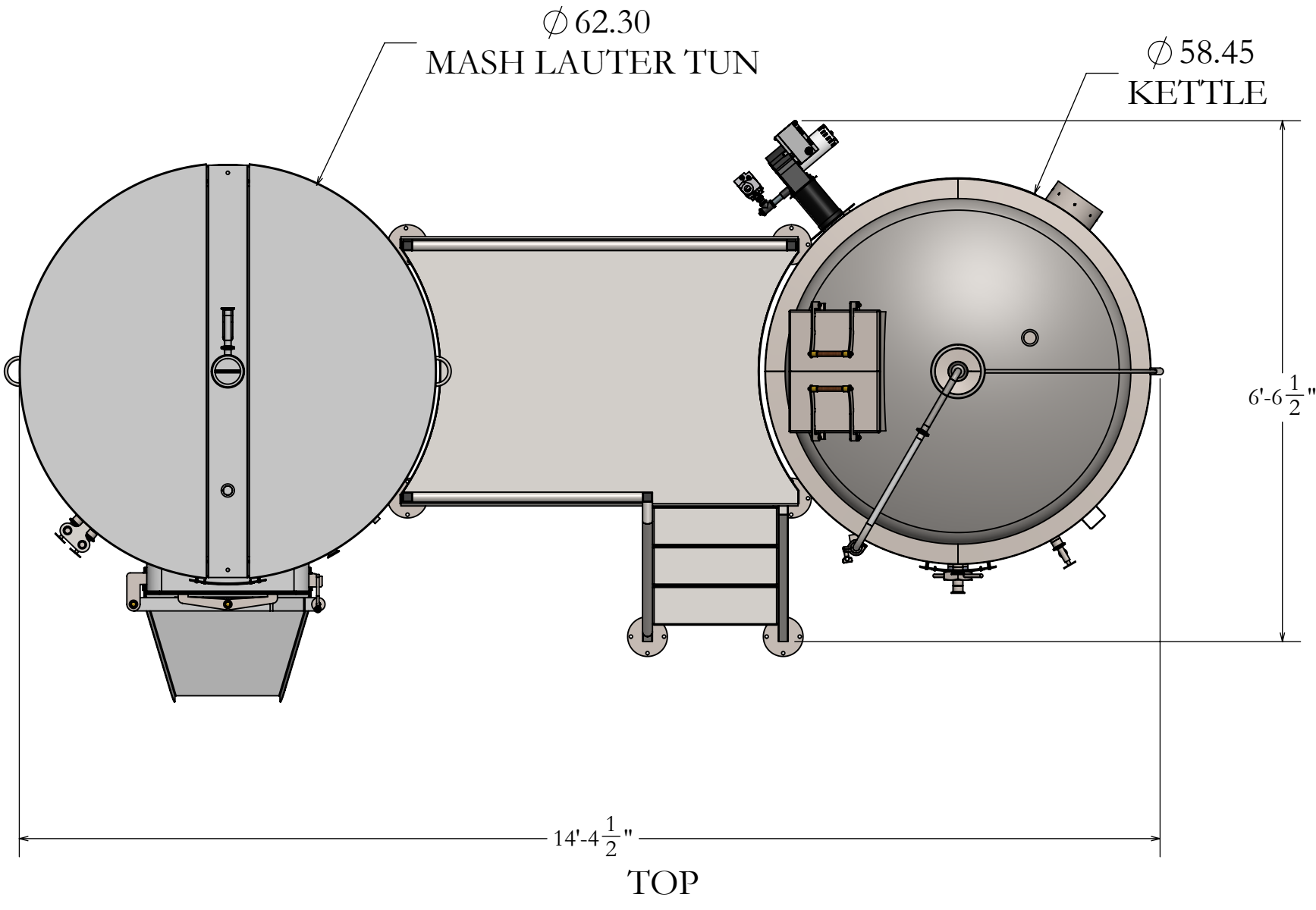


# 10 BBL BREWHOUSE STANDARD FOOTPRINT

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ISO



FRONT

	CURRENT REV/VER: A			SERIAL NUMBER	VOLUME	MASS
	REV/VER	DESCRIPTION	DATE	ASM / PART / WELDMENT DESCRIPTION:		
	APPROVAL SIGNATURE			10 BARREL BREWHOUSE AND HOT LIQUOR TANK, FLOOR LAYOUT		
CUSTOMER NAME / COMPANY			MATERIAL OR SEE BOM (I/A)			SHEET
			304 STAINLESS			1 of 1

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