



## Everything Else you Need for your Brewhouse & Cellaring Equipment

So, we trust our A-la-Carte style presentation of our Estimates is helpful in giving you many choices in how you want to set up your brewhouse and cellaring gear. Some things you may not want or need, some things you do. At Forgeworks we are about choices instead of packaging features together without the option of eliminating one thing or another. Some features you can easily add down the road. But, there is some gear you will need that you will notice is absent on our estimate.

### Chillers and Boilers

We typically get asked, "why I am not finding a Glycol Chiller on your estimate (or in the case of a Steam Fired system, a Boiler)?" Our reason is that the manufacturers of Chillers and Boilers are the absolute experts on walking through what your particular needs will be at opening and on into the future. They are the good people you would call if there are installation questions and operating/troubleshooting questions. We feel that it's not a good service to you to be in the middle of that, and to tack on a mark-up you don't need to incur. However, we will share with you our best picks for sourcing that Chiller or Boiler. These manufacturers all have a dedication to the brewing industry, are members of the Brewer's Association, and advertise in the New Brewer Magazine.

### **Glycol Chillers**

- G&D Chillers
- Advantage
- Pro Chiller Systems

FYI, there is a document on our website titled "Everything you wanted to know about Glycol". Look under "Articles" from the main menu, then click on "Industry Resources"

### **Boilers** (if your system is Steam fired)

- Columbia
- Hurst Boiler
- Rite Boilers
- Allied Engineering Co

**Polypropylene Glycol** (Try Industrial Chemicals, Inc.)

**Walk-In Coolers** (Pro-Tip here, build the largest cold room you can pull off, think serving tanks!)

- US Cooler
- American Walk-In Coolers
- Bush Refrigeration

FYI, as a money saving strategy, you can cool your Walk-In Cooler with a standard air conditioner and a Coolbot Controller.

### **Kettle Venting**

We will supply you with detailed information on parts and guidelines to install your Power Burner and Exhaust (in the case of In-Direct Fire Kettles), as well as venting your Kettle's Steam. When can get this to you early on so you can begin to request quotes from an HVAC Professional for your budgeting. It is a best practice to solicit referrals from other local breweries to a "Brewery Experience" HVAC company. Typically the more experienced they are about breweries, the less they are trying to figure stuff out on your tab.

### **Various Lab Stuff (Check out Hanna Instruments)**

- Quality Dial Thermometer for the Mash Tun
- Quality Hand Wand Thermometer for the Mash Tun (check out REOTEMP Brewing Instruments)
- Sugar Refractometer
- Hydrometer, Jars, Flask
- PH Meter

### **Kegs**

There seems to be a million supplier of kegs and all kinds of varieties. Ask your local breweries about what they did. Also, once you are up and brewing, figure out a way to track each keg, there is much information about how smart this is and how to do it available online...Google!

Keep in mind that if you go the Single Wall Serving Tanks in your cold room route, your inventory of kegs needed is greatly diminished, as well as your keg cleaning sessions and a need for a more automated style keg cleaner.

### **Keg Washer**

This is a good topic. Keg washers of all kinds are offered by many suppliers. Unless you are washing 12 or more kegs a week, you are in a position to look at alternatives to an automated keg washer. Automated Keg Washers can carry an \$8000 to \$12,000 price tag or more. If you are focusing on the Brewery Taproom or Brew Pub business model, and subscribe to the concept that Single Wall Bright/Serving tanks are the way to go (compared to a Jacketed Bright), and need far fewer kegs, then a more manual and perhaps primitive keg washer will work well for you without all the cost. We offer the Brewer's Multi Tool, which is a primitive Keg Cleaner that is also a Grant, a Remote CIP Reservoir, and a Hop Back. If you are washing only 5 kegs a week or as much as 12 Kegs in one sitting, then a primitive

style washer is all you need. Also, you are re-using them so fast that when cleaning them, you only need to do the water rinse then the Acid Cycle, instead of adding the Sanitary cycle. If you were storing empty and cleaned kegs for months, and potentially in the hot sun, then the sanitary cycle would be a must.

More on the Single Wall Bright Serving Tank vs a Jacketed Bright with a ton of Kegs. Unless you are packaging, having Single Wall Bright/Serving Tanks in your cold room is the way to go. Ideally, your Cold Room would be backed up to your taps. To give you an idea of the effectiveness of this strategy, check this out. There is less labor, you transfer from the Fermenter to your tanks in the cold room. When you are getting low on beer in a tank and need to turn that tank, you then keg off the balance. So you really don't need that many kegs. On a 7bbl Brewhouse, one serving tank equals 14 Kegs, and a serving tank may only take up 40 inches of space in the cold room. What is the labor comparison of washing 14 kegs, versus a CIP cycle on one tank? With 5 single wall serving tanks you can keep up to 10 beers on tap. Unless you are self distributing a lot of kegs to local restaurants/bars, you will find that you really don't have many kegs at all to clean on a weekly or bi-weekly basis. That \$8-10K could be invested in better places, like serving tanks or a larger cold room.

The Forgeworks Brewer's Multi-Tool is approximately \$4000, does four functions including manually washing kegs.

### **Electric Immersion Elements for Hot Liquor Tank (if applicable), or Electric Kettles**

There are vast choices out there for Electric Immersion Elements, with a range of prices. Since your Hot Liquor Tank or Electric Kettle may need as many as four of these elements, we elect to stay out of offering these, thus you are not paying mark up. This equipment wears out, requires special cleaning from time to time and you always need a spare. Similar to a lot of parts you will keep around the brewery, elements need to be replaced. We do however have a recommended supplier for Elements. Ask Glo-Quartz for a quote. They are made Arizona, USA. Contact: Glo-Quartz, Mike McGinnis, mmcginnis@gloquartz.com, 800-423-4078

Mixing Station for the Mash Tun

### **Grist Conveyance**

We do build a Barley Cracker, and it will fit up nice with many conveyance systems out there. We have some recommendations, some sample invoices for the most popular one, a Flex Auger from Farmer Boy Ag. If you have a distance to convey grist that is less than 35ft or so, with no corners/turns other than a climb above the mash tun, then a Flex Auger will work very well, and won't beat down your crush along the way. More than 40', or a requirement to have turns, etc., a "Disk and Chain" type conveyance system will be gentle on your grist, and deliver the crush you wanted to your Mash Tun. Those are also made by Farmer Boy Ag, but another credible supplier dedicated to the brewing industry is Cablevey.

-Flex Auger type; Farmer Boy Ag; Model 350, approximately \$1200

Contact: Dan Maulfair, danm@farmerboyag.com, 800-845-3374

-Chain & Disk type; Cablevey Conveyors, or Farmer Boy Ag

## **Yeast Brink**

You could easily make one of these out of a Keg with some modifications from your local stainless steel welder. Beyond that, there are many choices of these on the market. Like another brand of shoe coming into the fold, if we made a Yeast Brink, what kind of difference could we make out there? We think the industry is pretty much providing for the demand on these out there.

## **Fittings**

- RTD Probes for Fermenters, Brights
- Glycol Solenoid Valves for Fermenters, Brights
- Extra Pump Seals. Carbon seals are for the hot work, Teflon seals can be used for a dedicated pump for cellaring work.
- In-Line Site Glass, (excellent to place during vorlauf, and coming off the Kettle for Knockout)
- In-Line Streamline Strainer (Trub Filter), between Kettle and the Heat Exchanger
- CO2 Tank and Parts for injection post heat exchanger (on the way to the Fermenter)
- Keg Filler
- Carbonation Stones (Check out Zahm & Nagel)
- Sankey Valves

## **Miscellaneous**

- Scale for measuring Grain
- Brewers Paddle for working the grain bed in the Mash Tun (Check out Union Jack)
- Buckets for cleaning parts, Fermenter down tubes for CO2 off gas
- Water hoses and spray nozzles for wash down, etc.
- Strainer to place over Grant for use during Vorlauf and for Run Off
- Spent Grain Bins
- Trash Bins
- Clip Boards; Brew day log, and Fermentation Logs
- Stainless Steel Table
- Dolly/Hand Truck
- Industrial Shelving for Grain Storage
- Shelving for Chemicals, etc.
- Clock
- Timer
- Eye Wash Station
- First Aid Station
- CO2 Sensor/Alarm (CO2meter.com)
- Brewing Log Sheet
- Flow meter (buy a quality instrument only, investigate GPI or Turbines, Inc. Be careful to size correctly) This instrument is worth all the research you can do, and choosing a high quality one, the correct one, and laying down the money for it, otherwise you may be very disappointed. These units are the best on the market that have been recommended to us, however, the minimum flow range (5 GPM) is typically too high for small brew pub applications because of the smaller diameter (1" I.D.) hoses that are

used. In other words, smaller brewpubs would need to use a (1.5" I.D.) hose with flow ranges in the 10gpm range to make this unit function and total volumes properly.

I would ask your product representative what the minimum flow and maximum flow rates are for his particular meter. Make sure you buy one that designed to work with the ID of your Brewer's hose or stainless hardpiping.

GPI: <http://www.gpimeters.com/G2S10T09GMA-Prodview.html>

Turbine: <https://www.gwkent.com/econo-turbine-flow-meter.html>

Here are some others:

Anderson IZMAG Electromagnetic Flowmeter

<https://www.anderson-negele.com/us/p/flow-meter/izmag/>

[https://www.anderson-negele.com/wp-content/themes/andersonnegele/assets/izmag/pdf/IZMAG\\_05067\\_en\\_na.pdf](https://www.anderson-negele.com/wp-content/themes/andersonnegele/assets/izmag/pdf/IZMAG_05067_en_na.pdf)

### **GO-TO Suppliers for Lab & Miscellaneous Stuff**

- GW Kent
- Glacier Tanks
- Brewer's Hardware
- Foxx Equipment
- More Beer Pro
- Union Jack
- Zahm & Nagel
- REOTemp (excellent hand held temperature wand for Mash Tun)
- Brewery Gaskets
- Oktober Crawler Can Seamer
- Pullman Beer Engine for Cask Ale Dispensing
- Coolbot Controller
- Glo-Quartz (Electric Immersion Elements)
- Cynmar (lab stuff)
- Hanna Instruments (lab stuff)
- White Labs (lab stuff)
- 5-Star (Chemicals)
- BSG Craft Brewing (Chemicals)
- Birko (Chemicals)

- Shepard Brothers (Chemicals)
- Wesmar (Chemicals)
- Carolina (Chemicals)
- CO2meters.com

See our Industry Resources page on our website for other related equipment and services  
<https://www.forgeworksstainless.com/articles/2018/4/23/industry-resources>

We also have put together a Brewery Parts Dream Sheet, with what you could expect to pay from the various credible suppliers.