# Hank Speaks… So Listen **by Hank Bienert (1/2013)**

Since many did not get their Christmas wish, here is a belated Christmas (or early Boxing Day) present for you made by **someone who really cares about you;** that is, a present you give yourself.

**TUNS OF FUN**
Those who choose to go all grain need to know that AG will NOT be a major improvement in your beer but only a moderate one at the saving of a few dollars versus extract with a mini-mash but will mean the expenditure of a lot more time. AG allows the homebrewer to widen their choices since the varieties of malt extracts available are adequate but not as varied as what can be had starting with grains.

In my journey in brewing, moving to AG was nice (from old car to new one with A/C and automatic) but going from bottling to kegging was TREMENDOUS (from bicycle to car).

5 gallons of cooler capacity is enough for 12.5 lbs. of grain and the water to mash it at a ratio of 1 qt/lb, so most folks choose a 10 gallon cooler-40-48 qt. Bigger than that for most brewing will mean a lot of empty space which will lose heat. A hole in the top for a thermometer if you wish constant monitoring - fact is the temp tends to remain stable and another one perhaps to pour in hot water.

There are a number of configurations of coolers. "Back in the day" one got a rectangular cooler, built a manifold along the bottom with some Cu tubes, cut lotsa grooves in them and connected it to the drainage port. Studies show and this has been my personal observation that the more vertical the vessel better the drainage so I discarded my rectangular one for a cylindrical one I obtained one as a post Katrina find and bought a SS perforated circular disc for the bottom which drains fine.

If I was building one today I wouldn't get the disc which is now replaceable with the SS mesh tubing mentioned in an earlier article-the toilet supply line.

I also have a 48 qtr. cube style that is a fine outer chamber for ale fermentation. The height means a 6 gal. carboy or plastic pail fermenter will be shrouded above the liquid line and therefore temp controlled and the square cross section provides open spaces around the fermenter which nicely accept pint bottles of frozen water. The insulation is EXCELLENT and with an old blanket thrown over it you will have to replace only 4 bottles every third day if you have it in a 70 degree house.

TIP- you can use it for a mash tun via the SS screen tube, rinse it out and after disconnecting the SS screen part, put the fermenter in it. One cube = one less thing to buy and to store.

Sam's club has the 60 qt. on sale for 28 bux but you really need the 48 qt unless you commonly do 10+ gallons and I imagine you can get that size for a bit less at WalMart, Academy Sports, Rouse's(?), Target, HD/Lowe's, or K mart.

**Making a drain port**.
There have been notes in books and on the Internet from the late 1990s and even within the past few months describing a set of washers, nipples, etc. to make an assembly - see this parts list from a recent homebrewing post:

- (4) 1/2 copper 90 degree slip on elbows
- (5) 1/2 copper slip on tees
- (2) 1/2 copper 45 degree slip on elbows
- (1) copper 1/2 female-threaded to 1/2 slip on adapter
- (5) 3/4x2 fender washers (Home Depot only has CUT washers in this size)
- (1) 3/4x2 stainless steel washer
- (2) neoprene 2 washers (fender washers?)
- (1) 2 1/2 brass pipe nipple
- (1) 1/2 brass ball valve with threaded female ends
- (1) 1/2 hose barb adapter with threaded male end
- Teflon tape

Cost about $30 + cooler ..there are plenty of videos showing details but please DO NOT buy anything until you read a bit more.

I learned a long time ago that a quick decision is often a poor one because such a decision can be impulsive and lazy. Now I've made the choice and don't have to continue "the hard work of thinking" approach. I never take the first solution until I have come with a least a couple possibilities. So, in 2005 (Thanks, post Katrina trash heap) when I got a 10 gallon cylinder keg that I wanted to use in place of my old rectangular cooler, I looked around and saw the numerous complex bulkhead assemblies, differing only in the minutia of gaskets and valves but found the posting below which is still relatively unknown

Here's how I did it: **Gott Cooler Mash Tun Conversion**
I've read many web-pages on the subject of converting a 10-gallon Gott cooler (now Rubbermaid) into a mash-tun. I came up with my own approach, which I think is much easier and cheaper too. To begin with, get a 12″ Phil's Phalse Bottom. It fits a 10 gallon Gott perfectly. The tricky part is always the "bulkhead" fitting, where the wort line passes through the wall of the cooler. Phil suggests using a drilled rubber stopper with a 3/8″ OD copper tube. I think that will leak, especially if you accidentally bash it with the paddle while stirring your mash. Start with your basic 10-gallon Rubbermaid or Gott cooler (mine is a Rubbermaid, purchased rather expensively at a restaurant supply.) I ran the wort line out the spigot hole at the bottom, like everyone else. You have to remove the spigot. The spigot is held on with a large plastic nut on the inside, and a rubber gasket.

Here's where my method departs from others I've seen. Gott has conveniently already solved the bulkhead problem with this spigot. Perhaps we can find a way to leverage their work. Since we were originally just going to throw this part away, we may as well take it apart first (in the interest of science). If you push the spigot button, you can use a sharp knife to cut off the plastic valve that will protrude from the inside of the spigot: The valve core will then fall out the other side.

To make this into a bulkhead fitting, we need to run a piece of tubing through the spigot body in a water-tight way. For good flow-rate and resistance to clogging, I used the ubiquitous 3/8″OD copper tubing from Home Depot. The spigot body has a hole straight through it that the core used to be in. The hole is too small for the 3/8″ tubing, but the spigot body has enough material that we can enlarge the hole just enough to get a tight fit. I just used a 3/8″ bit in the drill press: Then you can push the copper tubing through the hole to complete the bulkhead fitting:

(**HANK's NOTE- Drill the hole so there is a tight fit and FORCE the Cu tubing through with any food safe lubricant-saliva, honey ,jelly, olive oil)** At this point, I replaced the spigot on the cooler, with the original rubber gasket and plastic nut. Filled with 10 gallons of water, it was water-tight. Nevertheless, to be extra sure, I applied some food-grade sealant around the joint on the inside. And that is basically it. No futzing about with poorly-fitting rubber stoppers, no search for some elusive combination of Home Depot pipe-fittings (I wish I could get all that time and effort back now.)

Install the Phil's Phalse Bottom (**HANK's NOTE-USE a SS MESH INSTEAD**) inside of the mash tun. A short piece of 3/8″ID plastic tubing will form an adequate seal with the copper tubing on the inside. Don't bother with hose-clamps or anything, this connection doesn't have to be water-tight. But it should be firm enough to withstand a bump from the stirring paddle without coming off. On the outside, you can install a valve on the copper tubing to control the flow-rate during sparging and run-off. I used a compression-fit quarter-turn ball-valve. The large port of a ball-value is desirable to avoid getting clogged by bits of grain husk that may get through the false-bottom before the filter bed is set. If a bit of grain gets in there, just open the valve all the way for a second to push it through.

(**HANK's NOTE-If this seems confusing here is the original link http://www.thegatesofdawn.ca/wordpress/homebrewing/mashtun/** ..and how much time and money will you save this way? - plenty!! I used, to control flow, a small faucet with a compression fitting as is found on a frig icemaker line...will it leak?

IF it does you will at worst scenario lose a few drops of wort which you can catch and add to boil pot. Mine has YET to leak since built in 2005 - about 40 uses but if it does I will report back. And this is what you will need to go all grain!

Your appreciation should be expressed by giving copious quantities of your first all grain beer to Hank/Monk via the Hopline … for those uncomfortable with readin' n' writin' big words, please continue to mumble during meetings from the back row which is where I like to sit/sip/mumble - and where the afore mentioned free beer should be delivered