

the best of **Brew** YOUR OWN

CONVERTING BREW POT TO KETTLE



Please note all file contents are Copyright © Battenkill Communications, Inc. All Rights Reserved. This file is for the buyer's personal use only. It's unlawful to share or distribute this file to others in any way including e-mailing it, posting it online, or sharing printed copies with others.

Converting Brew Pot To Kettle

Story and photos by **Forrest Whitesides**

One of the great things about building your own homebrewing equipment is that you can convert a piece of equipment that you already have into something you find more useful — for example, if you have an extra brewpot, but you could actually use a kettle, you can follow a few simple steps and have the equipment you need, which is great if you don't want to spend money on something brand new.

Modifying an existing aluminum or stainless kettle by adding a valve, thermometer and hop/trub straining screen is not so difficult, and it's cheaper than buying a new kettle with the upgrades included. Plus it will make your brewing life easier. Just imagine feeding your counterflow chiller by simply opening a valve. No more siphoning boiling wort!

easier to use and makes perfectly round, clean holes that are mostly free of burrs.

For this project, we'll be using weldless kettle fittings. This means we're going to need to drill some holes in the kettle. Drilling metal can be tricky, but it doesn't have to be difficult as long as you have a few essential tools and follow directions carefully. In fact, once you tackle this project, you can use your confidence in metal drilling skills to modify other equipment. For example, if you don't have a brewpot to convert, but perhaps have access to a (legally-obtained) used Sanke keg, you can convert the keg into a kettle as well.

The drilling can be difficult, but the fittings are very easy to install. For this project you'll need a Zymico Weldless Kettle Conversion Kit. There are several models available and all of



“Modifying an existing aluminum or stainless kettle by adding a valve, thermometer and hop/trub straining screen is not so difficult, and it's cheaper than buying a new kettle with the upgrades included. Plus it will make your brewing life easier.”

I recommend using a step drill bit for this project, although a hole saw (for the 7/8-inch hole) and 1/2-inch twist bit will suffice. The step drill will be

them will work well for this project. You will also need a Blichmann Weldless Brewmometer and a Zymico Bazooka Screen.

Parts and Tools

Weldless fittings

- Zymico Weldless Kettle Conversion Kit - there are several models available and all will work for this project
- Blichmann Weldless Brewmometer
- Zymico Bazooka Screen

Drilling needs

- A corded drill or a 14.4-V cordless drill
- 7/8-inch step drill bit and a 1/16-inch twist bit
- cutting oil or other lubricant like 3-in-1 Oil for drilling stainless, or liquid dish soap for drilling aluminum
- Metal file
- Adjustable wrench
- Teflon pipe tape
- Permanent marker or grease pencil

1: MEASURE TWICE, DRILL ONCE

To have the valve and thermometer face 90 degrees from the handles, use a tape measure to find the distance between the kettle's two handles, divide by 2 to find the halfway point, and mark it with a Sharpie or grease pencil. Draw a line from the mark down to the bottom of the kettle. Make one mark on the line about 1.5 in. (3.8 cm) up from the bottom of the kettle and another about 7 in. (18 cm) or higher from the bottom (see photo). The top mark is for the thermometer, which, according to the manufacturer, should be at least 6 in. (15 cm) from the kettle bottom to protect it from the heat of propane burners.

2: DRILLING ALUMINUM

For aluminum, the easier of the two materials to work with (by far), common dish detergent is an excellent drill lubricant. Apply a small amount to the areas on the kettles marked for drilling. Also rub some detergent on the drill bits for good measure. It's a good idea to pre-drill a small pilot hole to get things started. The smallest hole size on the $\frac{7}{8}$ -inch step drill is $\frac{3}{16}$ inch, so begin here for the pilot hole. Drill a pilot hole on both marks.

Next, use the step drill to widen the pilot holes to their proper sizes. The bottom hole for the valve should be $\frac{7}{8}$ inch. The top hole for the thermometer should be a $\frac{1}{2}$ inch, which is the fifth step on the step drill. Keep drilling until you feel the bit drop down five times. It's a good idea to check the diameter of the hole every couple of steps to make sure the hole doesn't get too big — there are no do-overs once you've drilled too far.

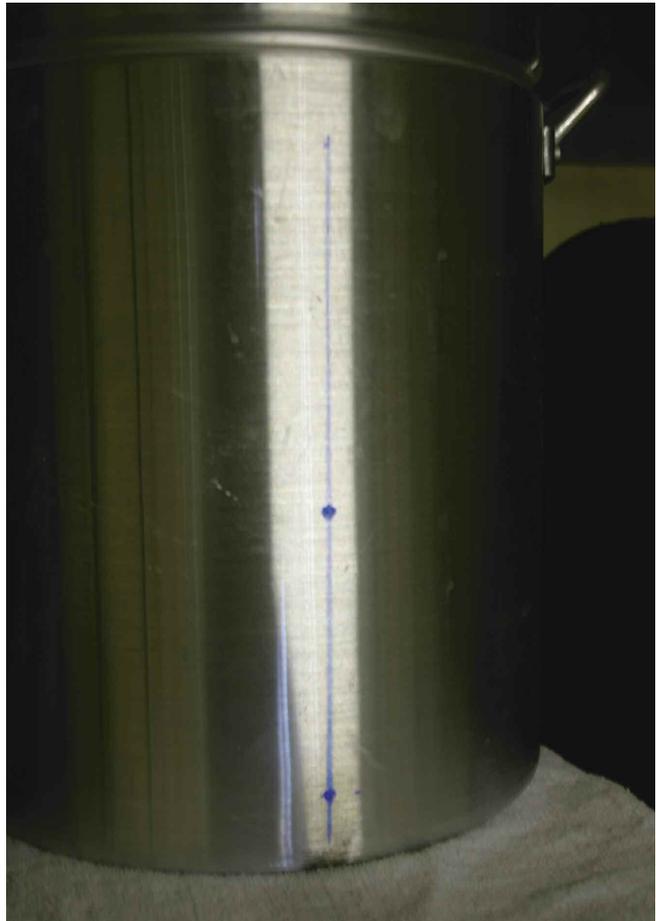
3: DRILLING STAINLESS STEEL

The general toughness of stainless steel makes it a superior material for a brew kettle. This also makes it difficult to drill. As with aluminum, lubricant is needed to facilitate the drilling process. In this case, use either a commercial cutting oil or something like 3-in-1 oil. It is critical not to get the metal too hot. If it gets too hot, the steel hardens and becomes virtually impossible to drill. Use the oil liberally, and reapply as necessary during the drilling process. When you see the oil evaporate in a small puff of white smoke it's time to apply more.

Keep the drill on medium or low speed and use lots of pressure. This, along with the lubricant, will help keep the steel at low temperature while drilling. Because stainless steel is so hard, start out with a really small pilot hole ($\frac{1}{16}$ -inch or $\frac{1}{8}$ -inch) and work it up to $\frac{3}{16}$ -inch. Be aware that small-diameter bits will easily break under the pressure needed to drill through stainless steel. Go slow.

Once the pilot holes are $\frac{3}{16}$ -inch, lube up the step drill and start drilling. Again, use a medium speed and lots of pressure. Follow the same procedure as above for widening the pilot holes.

From here on out, the project steps are the same for either aluminum or stainless steel.





4: SMOOTH OPERATOR

Once both holes are the appropriate sizes, use a metal file to smooth the edges and remove any sharp burrs. A Dremel Tool with the appropriate metal grinding bit also works well. The holes should be smooth inside and out to prevent burrs from damaging the rubber gaskets used in the weldless fittings. Wash the kettle inside and out to remove any lubricant. Next you can move on to installing the ball valve.



5: INSTALLING THE BALL VALVE

Remove the brass nut and rubber gasket from the weldless bulkhead fitting. (Note: the bulkhead comes with two rubber gaskets, but only one is used in installation — the other is a spare). From the inside, put the bulkhead's threaded pipe nipple through the bottom hole. The metal washer should be on the inside. On the outside push the rubber gasket over the pipe nipple and then hand-tighten the brass nut until both it and the gasket are flush with the exterior kettle wall. Be sure that the milled-out side of the nut faces the gasket. Use an adjustable wrench to hold the nut steady and hand-tighten from the inside. Over-tightening can damage the gasket. Apply some Teflon pipe tape to the exposed threads on the outside and screw in the ball valve.



6: INSTALLING THE THERMOMETER

First, calibrate the thermometer following the manufacturer's instructions. The Blichmann Brewmometer dial reads from 60–220 °F (16–104 °C) with several important brewing temperatures marked, making it ideal for use for both boiling wort and mashing and sparging grain.

After calibrating, loosen and remove the thermometer nut. From the outside, put the thermometer stem through the hole. Make sure that the rubber o-ring is seated flush against the kettle wall, followed by the metal washer. Hand-tighten the nut on the inside of the kettle. Use an adjustable wrench on both sides of the thermometer simultaneously to tighten the fitting. Do not turn the dial to tighten. Over-tightening can damage the rubber o-ring. Finally, the Bazooka Screen screws simply into the bulkhead fitting. If the screen is too long, the end can be crimped. 

DON'T MISS AN ISSUE OF

Brew

THE HOW-TO HOMEBREW BEER MAGAZINE

YOUR OWN



Each issue is packed with homebrewing techniques, recipes, DIY projects, tips, and more!

For more information on *Brew Your Own* digital subscriptions check out:

byo.com/digitaledition