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CONVERTING KEG TO KETTLE



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Converting Keg to Kettle

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If you've been thinking of making the step up to 10-gallon (38-L) batches, you probably experienced sticker shock after shopping for high-volume brew kettles. A 15-gallon (57-L) stainless steel kettle with a ball valve will cost you upwards of \$200, but you can make your own for about half that. You'll need a 15.5-gallon (half-barrel/59-L) Sankey-style keg, a weldless kettle fitting kit and some basic power tools. The end product is commonly referred to as a "keggle," since it is a keg-to-kettle conversion.

But first, a few words about used kegs. If you want a used keg (which I recommend, strictly on a cost-savings basis), the best place to start looking is at brew pubs or craft breweries in your local area, which may have kegs that are a little too dinged up to continue a useful life as pressurized beer containers. These will work fine. You can also order reconditioned or new kegs from vendors like Sabco.

What is NOT cool to do is take a keg from behind a restaurant or keep a keg from a party after paying the deposit. The restaurant or local liquor



ty goggles instead of just glasses. Hearing protection is also recommended. Cutting and grinding metal is very loud and can cause hearing damage. Cheap earplugs will protect your hearing and make the project a lot more comfortable to complete.

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store is not the owner of the keg — the brewery who filled the keg is the owner. And the deposit does not generally cover the cost of replacing a keg. If you take a keg in either of those ways you're costing the brewery a lot of money and subsequently helping to drive up the cost of high-quality beer. It's also stealing. Get your kegs the right way.

Safety precautions

Protective eyewear is absolutely required. And given that there are flying, red-hot metal particles involved in this project, I highly recommend safe-

Parts and Tools

- 15.5-gallon (half barrel/59-L) Sankey-style keg
- Weldless kettle fitting kit including a bulkhead and ball valve
- Plasma cutter, or an angle or die grinder, or a rotary tool, with metal cutting/grinding wheels
- Power drill with twist and step bits, or a hole saw
- Lubricant (3-in-1 oil)
- Coarse sand paper
- Permanent marker
- Protective goggles
- Ear protection



1: VENT THE KEG

Unless you bought your keg reconditioned, you must bleed off the interior pressure. Even empty kegs aren't really empty, in most cases. There will be a small amount of stale beer and a decent amount of pressure still inside. **YOU MUST RELIEVE THE PRESSURE ON THE KEG BEFORE ANY CUTTING OR DRILLING.** Failing to follow this guideline could result in serious injury.

My preferred method for safely depressurizing a keg is to lightly tap a small nail between the valve and the rubber bung (see photo). It is advisable to cover the top of the keg with an old towel to prevent a geyser of funky, stale beer from reigning down on you or shooting up in your face. You can also wedge the blade of a flat-head screwdriver between the valve and bung to bleed off the pressure. You can also hook a tap to the keg and just open it . . . that is if you have a tap.

2: MARKING AND CUTTING THE TOP

Use a permanent type marker (a Sharpie, for example) to mark the guideline for the cut. One easy way to do this is to tie one end of a string around the marker and the other end around the center valve on the keg. This low-tech method yields a very nice circle that is pretty close to perfect. If you've got a really steady hand, you can also just lean the marker against the inside edge of the outer rim and run it around the circumference of the keg. A common diameter for the opening on a keggie is about 12 inches (30.5 cm). This is totally a personal preference.

For doing the actual cutting, you have a few options. The most elegant choice is a plasma cutter. If you know someone who owns one of these, this is the best way to cut a super smooth opening with minimal fuss. If this isn't an option (which is the case for most of us), you can also use an angle or die grinder or various types of rotary tools. The smaller the diameter of the cutting/grinding wheel, the smoother a cut you can make. The tradeoff is that smaller wheels also take longer to do the cutting. In my tests the Dremel (with a 1.5-inch wheel) took about three to four times as long to cut the same distance as the RotoZip (with a 3.5-inch wheel), but the resulting edge was smoother and required less grinding and filing to make it safe for human contact. Either tool did an adequate job, however.

Expect to use two or three of the RotoZip wheels and six or more of the Dremel wheels to complete the cut. Buy double what you think you'll need, just in case.

3: REMOVING THE TOP

Once you've got the top out (see photo), you should smooth out the rough edges around the opening. Take extra care during this step, as the steel will be very sharp. I used an angle grinder as a first step to wear down the edge. I followed this up with a finer grinding stone attachment on my Dremel and some manual sanding with very coarse sand paper on a sanding block. My resulting edge in these photos, while not the prettiest in the world, is smooth to the touch and safe for general brewing use.



4: ADDING THE BALL VALVE

Now we're going to add a weldless bulkhead and ball valve to round out the keggie. If you plan to go with a welded connection, you can skip this section and consult with the welder. Most homebrewing gear uses 1/2-inch threaded fittings, so make sure you standardize on that when welding.

Several homebrew suppliers offer weldless kits that include the bulkhead and the ball valve. I opted to use Norther Brewer's bulkhead-only kit (catalog #7551) and a Blichmann 3-piece stainless steel ball valve (available from many suppliers). I chose this combination because all of the parts that touch the wort/beer are stainless steel, and the Blichmann valve can be broken down for cleaning. You can use any bulkhead setup or ball valve you like.

For a 1/2-inch bulkhead, you'll generally need a 7/8-inch hole. However, you should always follow the manufacturer's instructions, so if their guidelines give a size other than 7/8 of an inch, go with what is stated in the instructions.

Mark the spot for drilling a couple inches up from the bottom seam of the keg. The inside bottom of a keg is sloped, so the closer to the bottom you drill, the more of an angle your valve will sit at when attached. Each type and shape of keg varies as to the degree of slope, so make sure you don't drill the hole too low. In my experience, it's better to go a little too high than too low, because you can make up for a high valve with a dip tube.

5: DRILLING THE KEG

Drilling stainless steel can be frustrating sometimes, to say the least. The approach I take is to use a center punch to mark the initial hole, then use a 1/8-inch twist bit to make a pilot hole, and then widen the hole up to the proper diameter with a step bit (Figure 4). You can get inexpensive step bits from Harbor Freight and most big-box auto parts stores such as AutoZone.

The keys to drilling stainless steel are: use lubricant (3-in-1 oil works fine), drill at slow to medium speed, and use a lot of pressure. Lubricant is very important when drilling stainless steel, as it is critical not to get the metal too hot. If it gets too hot, the steel will harden and become virtually impossible to work with. Use the oil liberally, and reapply as necessary during the drilling process. You'll know it's time to apply more when you see the oil evaporate in a small puff of white smoke. At that point, stop drilling and apply more oil.

6: INSTALL THE BULKHEAD

Follow the manufacturer's instructions for installing the bulkhead fitting and then attach the ball valve. At this point, you could either add a hose barb fitting to the ball valve or connect more complex plumbing, depending on your brewery setup. Once you've done all the cutting, grinding, drilling, and filing, the inside of the keg is going to be nasty. Rinse it thoroughly with water to remove all of the drilling lubricant and metal filings. Follow up with an overnight soak in warm water and Powdered Brewery Wash (PBW). Rinse thoroughly, and you're ready to brew. 



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