

# **FIVE EASY HOMEBREW PROJECTS**

**Looking for a Saturday-morning project?**

**From a wort pump to a carboy cart, here are five brewing gadgets you can make yourself.**

*By Tom Cannell*



## **AQUARIUM PUMP**

### **The fishy way to aerate your wort**

Tired of shaking your carboy? Yes, you do have to oxygenate your wort to create healthy yeast that will prosper during the growth phase. And if you brew big beers (with a specific gravity of 1.060 and above), oxygenation is crucial to a proper attenuation.

One of the easiest ways to oxygenate is to borrow technology from the fishtank. In less than an hour, an ordinary aquarium pump (\$10) will push enough air through your wort to insure sufficiently dissolved oxygen. (That doesn't include time spent waiting for foam to subside.) An aquarium air stone (\$2 for several) provides bubbles; other plastic and stainless-steel air stones are available at most brew shops.

As always, there are tricks. My pump outlet is small, so I bought six feet of tiny tubing from an aquarium shop. Aquarium air stones (and all other stones I've seen) share the same inlet size. To prevent the lightweight air stone and tubing from floating on the wort surface, buy a 1/8-inch plastic tube long enough to reach the bottom of your fermenter. Include a sterile filter in the air line to filter out wild yeast and bacteria. I paid \$2.50 for mine at the Yeast Culture Kit Company ([http://members.aol.com/\\_ht\\_a/pgbabcock/yckco/yckcotbl.html](http://members.aol.com/_ht_a/pgbabcock/yckco/yckcotbl.html)). The assembled combination goes: pump, tubing, the in-line filter, more tube, the "wand" and just enough tube to connect to your air stone (see photo).

## **BOTTLE RACK**

### **Out of the sink and onto a wall**



After you've cleaned and sanitized your bottles, where do you put them? Housemates don't appreciate sinks full of upturned bottles, boxes of bombers and dishwashers crammed with sanitized bail-tops. A good solution to this problem is a bottle rack. If you're handy, you should be able to build a rack and keep all your glassware clean and stored for only \$10 to \$20.

Our example came from a university salvage yard (see photo). Familiar to all science students, this wooden glassware dryer provides the conceptual framework for your own. All you need is a sheet of plywood or MDF (medium density fiberboard). OSB (oriented strand board), press board or flake board will be too weak.

Drill staggered holes in the board at approximately 30 degrees to perpendicular. Size the dowels from 3/8-inch to 1/2-inch to accommodate different sizes of bottles. Then seal all of the surfaces with two thick coats of enamel paint. If you have glass labware like Erlenmeyer flasks, you might want to make a few special rows to accommodate them on your rack.



## **WORT CHILLER**

### **A simple copper coil for cooling**

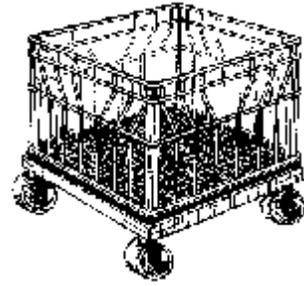
You've most likely experienced the fears of infection along with the extreme boredom of waiting for wort to cool to pitching temperature. There is a relatively simple solution: Make a wort chiller.

Behold the cheapest, quickest reusable immersion chiller I have ever made. It's 20 feet of 1/4-inch copper tubing, six feet of plastic tubing, some clamps and an adapter to fit your garden hose.

I chose 1/4-inch tubing because it's easy to bend and has lots of surface area to quickly cool the wort. To form the coil, I wound it around my plastic fermenter. This technique made a coil that fit easily inside my enamel boiling kettle.

If you or a friend have access to a flare tool (most auto mechanics will have one), put a small flare at each end of the tube. The flare will increase the diameter of the copper tubing, which will help prevent the plastic tube from pushing off the water-in end. (Pressure pushes the plastic tubing off the copper tube; plus, the plastic "grows" and becomes very elastic from heat.)

All you need to do now is install the tubing (warming it first in hot water can help simplify the process) and clamp it with worm/gear clamps. Be sure that you buy the correct size clamps. And remember to sanitize the pipe exterior with strong soap or other cleaner, since it will be a little bit oily from the manufacturing process.



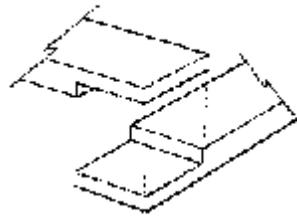
## **CARBOY CART**

### **Hot fermenter on a roll**

This was inspired by the janitor's mop bucket and was suggested by my homebrew group as an alternative to carrying heavy, hot, fragile fermenters. It takes four pieces of scrap wood, four inexpensive (less than \$10) casters, and a \$2.50 "milk crate." I suggest two fixed and two swiveling casters.

First decide if your fermenter will fit into a typical milk crate or one of the similar containers sold everywhere. Don't "find" a dairy milk crate behind the grocery store. Do get one with a flat bottom; self-draining is preferred.

To build the support, use half-lap joints (see illustration) to make a square base for the cart. Secure the milk crate with drywall screws, heavy duty staples, or nuts and bolts. Install casters and you're off and rolling.





### **COPPER RACKING CANE**

#### **Bend a tube to transfer brew**

You can make an indestructible racking cane from 36-50 inches of copper tubing for about \$2. You'll want malleable tubing with a 1/4-inch inside diameter; this size should accept the plastic foot from your old racking cane.

Cut the tube to a length of at least 6 inches longer than your deepest vessel. It's better to err on the longer side. After cutting, use a file to remove sharp edges. Slide a bending coil over one end (see photo) and start bending. You should be able to buy a bending coil at your local hardware store; it's very easy to use.

Instead of reusing the foot, you might fit a stainless mash filter, or put a U-turn at the bottom to attach a sanitized copper or stainless sponge to filter out hops and trub.