

Philchill Phittings

This package contains:

2 Philchill Phittings

4 plastic hose clamps

You supply the following:

25 ft. (min) of 3/8 in. OD) soft copper tubing

25 ft. (min) of 5/8 in, reinforced garden hose

Note: These items can be purchased at hardware Stores, home repair centers, and similar retailers.

You will also need these tools:

A sharp knife for cutting the hose

A wrench (5/8 Inch or an adjustable wrench)

A pair of pliers

Assembly Instructions:

1. Find a *large* work area. Gently unroll the copper tubing and carefully straighten it out. Be careful not to kink the tubing.
2. Cut both ends off the garden hose to make it about 12 inches shorter than the copper tubing, with both ends about equal in length. Save these ends; you'll need them later.
3. Lay the hose and the tube end to end in a straight line. Push the end of the copper tubing into the end of the hose. *Hint: this is much easier if you pour about 1/4 cup of water and a little liquid dishwashing detergent into the hose.*
4. Feed the tubing through the hose until about 6 inches of the tubing is exposed at each end of the hose.
5. Gently roll the hose/tube assembly around a bucket, a Cornelius keg, a cooler, or anything else that is about 9-12 inches in diameter, to make a cylindrical coil, Don't let it bend sharply; you don't want to kink the tubing. *Hint: this is easier if you sit on the floor with the bucket in your lap. Keep turning the bucket as you wrap the hose around it.*
6. Slip one of the supplied hose clamps over each end of the hose.
7. Remove the compression nut and sleeves from the Philchill Phittings.
8. Slide a Phitting on each end of the copper tubing and into the hose. Secure the Phitting by tightening the hose clamp with your pliers.
9. Slide the compression sleeves on the ends of the tubing, then slide the nuts on after them. Tighten the nuts with the wrench.
10. Find the hose ends you cut off earlier. Slide the end with the male connection onto the *upper* Phitting and secure it with a hose clamp.
11. Slide the hose end with the female connection onto the *lower* tube Phitting and secure it with a hose clamp.
12. You may want to file the inside ends of the copper tubing with a small rat-tail or chainsaw file to remove any burrs. If the ends look smooth, don't worry about it.
13. Secure the coils of the hose to each other for structural stability. You can use duct tape, wire, or even string for this purpose.

Before using your counterflow chiller for the first time, give it a thorough cleaning to remove any dirt trapped inside the tubing. Pour a mixture of hot water and dishwashing detergent through the tubing (using a small funnel) followed by a hot water rinse. Repeat until the rinse water is clear and clean.

Sanitizing your chiller:

It's very important to sanitize your counterflow chiller. Without sanitizing, each use will leave a small amount of wort trapped inside until the next time you brew imagine how attractive that is to bacteria, wild yeasts, and fungus.

Sanitizing your chiller is easy. After each use, simply run a few quarts of boiling water through it, straight into the drain, without any cooling water going through the hose. That flushes out trapped droplets of wort, sanitizing the entire length. Next time you use it, don't turn on the cooling water until *you* let a cup or two of boiling wort run through the chiller into a bucket or drain (*not a glass carboy.*'). Stop the flow and throw away this first bit of wort. Then turn on the cooling water and start collecting your cooled wort normally.

Using your counterflow low chiller:

Connect a water hose to the lower end of the chiller. This supplies the cooling water.

Connect a drain hose to the upper end of the chiller. This carries away the hot water exiting the chiller.

After your boil, the hot wort flows from the kettle into the copper tubing at the upper fitting and the chilled wort flows out the lower

one into your collecting bucket or carboy. Cold water flows into the lower fitting and the hot water flows out the upper one.

Set the chiller at a level below the kettle, with the water supply hose connected, and the drain hose over a drain.

***Kettle tap method:* If you have a tap or spigot in your kettle, connect it to the chiller with a short length of good hose and a couple of hose clamps. Then open the tap and let it flow. You must also have a strainer of some kind inside the kettle to keep spent hops and trub from entering the chiller and clogging it. *Hint:* A good strainer can be made by fixing a copper pot scrubber inside the kettle with a bit of wire.**

***Siphon method:* Wort can be siphoned from the kettle with a sturdy racking cane. Try a length of copper tubing a little longer than the depth of your kettle (not plastic, because the hot wort can melt it). Fasten a copper pot scrubber to the end of the racking tube as a strainer. Connect a length of good hose to the racking cane, using a hose clamp. Hold the racking cane and hose so that both open ends are pointing up and even with each other. Fill it with hot water from the tap. Crimp the end of the hose tightly about 2 inches from the end. This step may take some practice, so try it *first with just cold water in your kettle*. Connect the end of the hose to the inlet of the chiller tubing. Then put the racking cane into the kettle and release the crimp. The water should flow through the chiller with the hot wort following.**

Never start a siphon of hot wort with your *mouth*. If necessary, fill the chiller with water with a funnel, keeping the outlet closed.

After a cup or two of hot wort has passed through the chiller, turn on the cooling water and adjust the flow so that the wort exiting the chiller is below 80°F. You will need less water flow in winter, since the water entering your home will be colder.

Always use a heavy duty hose to move hot worts. Hoses reinforced with braiding are generally good, but don't use the thin wall vinyl hoses that are commonly used for racking or bottling.