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Aeration System Instructions

Yeast require plenty of oxygen during the very first stages of fermentation in order to form strong cell walls that can withstand both the osmotic pressure of the unfermented wort and also the alcohol that they will produce later. Oxygen-deprived yeast are more likely to produce off-flavors and have lower attenuation. Because oxygen is removed from the wort during the boil, it's necessary to add oxygen back to help ensure a healthy and complete fermentation.

Aerating the wort cuts down on the lag phase that takes place between pitching the yeast and the onset of vigorous fermentation. Yeast that has a readily available supply of oxygen are less likely to produce diacetyl and other compounds that cause off-flavors. Aeration is especially important when brewing high-gravity beers and lagers.

NOTE: Never handle the diffusion stone with bare hands. Skin oils can clog the fine pores. Wear cotton or latex gloves, or use a clean cloth when touching the stone.

When to Aerate

Aerate wort after it has been chilled and before yeast is pitched and fermentation has begun. Aerating wort while it is still hot can cause off-flavors in the finished beer, as can aerating fermenting beer.

Aeration vs. Oxidation

Aeration is beneficial because it supplies yeast cells with oxygen needed for reproduction and fermentation; a wort should only be aerated after it is chilled and prior to fermentation. *Oxidation* is a staling process that occurs when oxygen is introduced either while the wort is still hot or after fermentation has begun.

Using the Aeration System

- 1. Sanitize the diffusion stone and tubing.** Immerse both sections of tubing in a sanitizer solution. The stone can also be immersed in sanitizer solution; alternatively, the stone can be boiled or baked for 15 minutes to sterilize it.
- 2. Assemble the system.** Attach one section of tubing to the nipple on the aquarium pump; attach the other end of this section to one side of the in-line filter. Attach the second section of tubing to the opposite side of the filter. Attach the other end to the barb on the diffusion stone (see note above).
- 3. Aerate the chilled wort.** The temperature of the wort should be 80°F or cooler. Lower the diffusion stone into the fermenter; it should rest at or near the bottom. **Make sure the pump housing and cord are dry.** Plug in the pump and begin aerating the wort. Aeration can create lots of foam, so watch it closely. It may be periodically necessary to briefly unplug the pump to let it settle. For best results, aerate wort for 30 minutes prior to pitching yeast.

Cleaning and storage

Rinse tubing and stone with clean water after use. You may also wish to soak them in a solution of a cleanser such as PBW or B-Brite. Allow to dry thoroughly before storage. Keep the diffusion stone in a clean plastic bag.