

# VINTUITIVE™ Winemaking Tools LLC Ace Venturi User Manual

For more information about the Ace, as well as detailed performance specifications and updated user manuals, visit our website [www.vintuitivewmt.com/ace](http://www.vintuitivewmt.com/ace).

## Background; Venturi Basics:

Venturis work by fluid dynamic properties (the Bernoulli effect). As a liquid is pumped through the venturi, it is forced through a small diameter opening (towards the center of the venturi, at the air inlet) that increases the speed of the liquid. Due to conservation of energy, that increased speed comes at the expense of decreased pressure, creating a low-pressure zone that suctions air or other fluid from outside the venturi. Venturis are completely passive devices - you just need to move liquid through it, and the laws of physics do the rest. See figure 1.

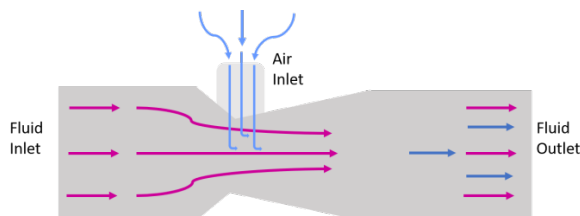


Figure 1: The basics of how venturis work.

## Ace Venturi Features and Benefits:

- **CLEANABILITY:** The Ace venturi is designed so that all internal pieces can be removed for thorough cleaning and sanitization as needed. Both versions of the Ace are made exclusively of materials that can tolerate hot water cleaning.
- **MAXIMUM AIR DRAW:** Careful design of the internal geometry ensures maximum air draw through the Ace, while requiring as little head pressure as possible to operate. This quality enables the Ace to be used with a wide variety of pump technologies and plumbing setups. Both versions of the Ace utilize the same geometry, and should have identical performance.
- **POWERFUL VACUUM:** The Ace can create a vacuum powerful enough to suck liquid additives into the working fluid.
- **EASY TO CUSTOMIZE:** The air inlet port can be outfitted with a number of third-party accessories depending on your needs. Some users find it necessary to precisely regulate the amount of air entering their ferment, in which case a valve can help. Others like to have filters in place, to prevent any unwanted particulate or fruit flies from entering the air intake port.
- **CHECK VALVE INCLUDED:** Included with your purchase is a custom flapper gasket that can be used as a simple check valve to prevent backflow out of the air inlet (see below for details). The flapper valve has the additional benefit of stopping any momentary and minor splashing/leaking that sometimes occurs as liquid first begins to flow through the device as the pump jolts to life.

## How to Use (same for all sizes and insert types):

- 1) Be sure that both inserts have their o-ring in place.
- 2) Push inserts into the T firmly until their shoulder is flush with the T/C ferrule (see Figure 2). They will only fit in the correct orientation, so don't worry about getting them in reverse.



Figure 2: Be sure to install the inserts completely.

- 3) Install Ace into your plumbing system as high as possible – if any liquid is trapped above it within your plumbing system, that liquid could passively drain out of the Ace while not in use. Clamp in place with arrows on T pointing in the desired flow direction (See figures 3 and 4).

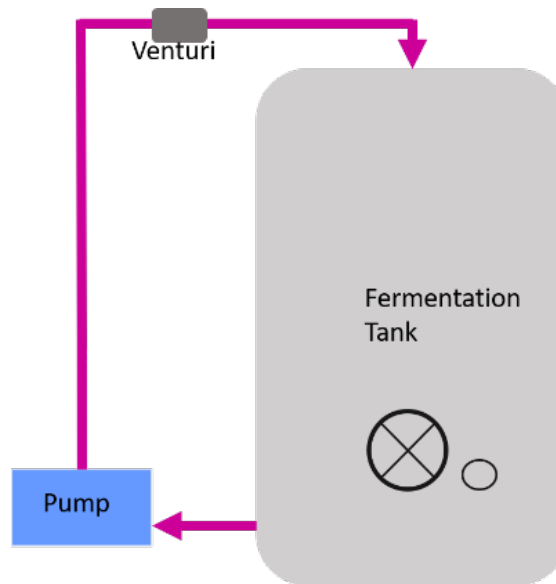


Figure 3: The Ace venturi should always be installed at the highest point possible within the plumbing system.



Figure 4: Install the Ace such that fluid flows in the direction of the arrows on the device.

- 4) OPTIONAL: Install backflow prevention device on air inlet, such as the included flapper gasket, butterfly valve, ball valve, check valve, or standpipe.

- a. If using the flapper gasket, be sure that it can properly seal against the mating fitting placed above it. Most people using the 2" Ace use a 1" T/C, for example, while people using the 1-1/2" Ace commonly use a 1-1/2" x 1/2" NPT adapter. Sizing the air inlet tubing correctly is mandatory for proper flapper valve functionality, as the valve works by sealing against the mating tube (blocking it) whenever pressure within the Ace is larger than ambient. See figure 5 for a schematic of how the flapper valve works.

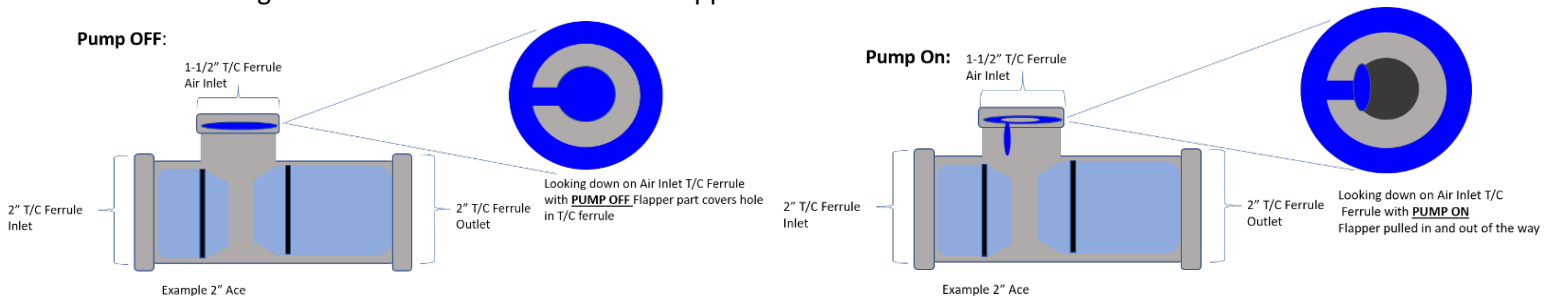


Figure 5: Flapper valve functionality with pump on and off.