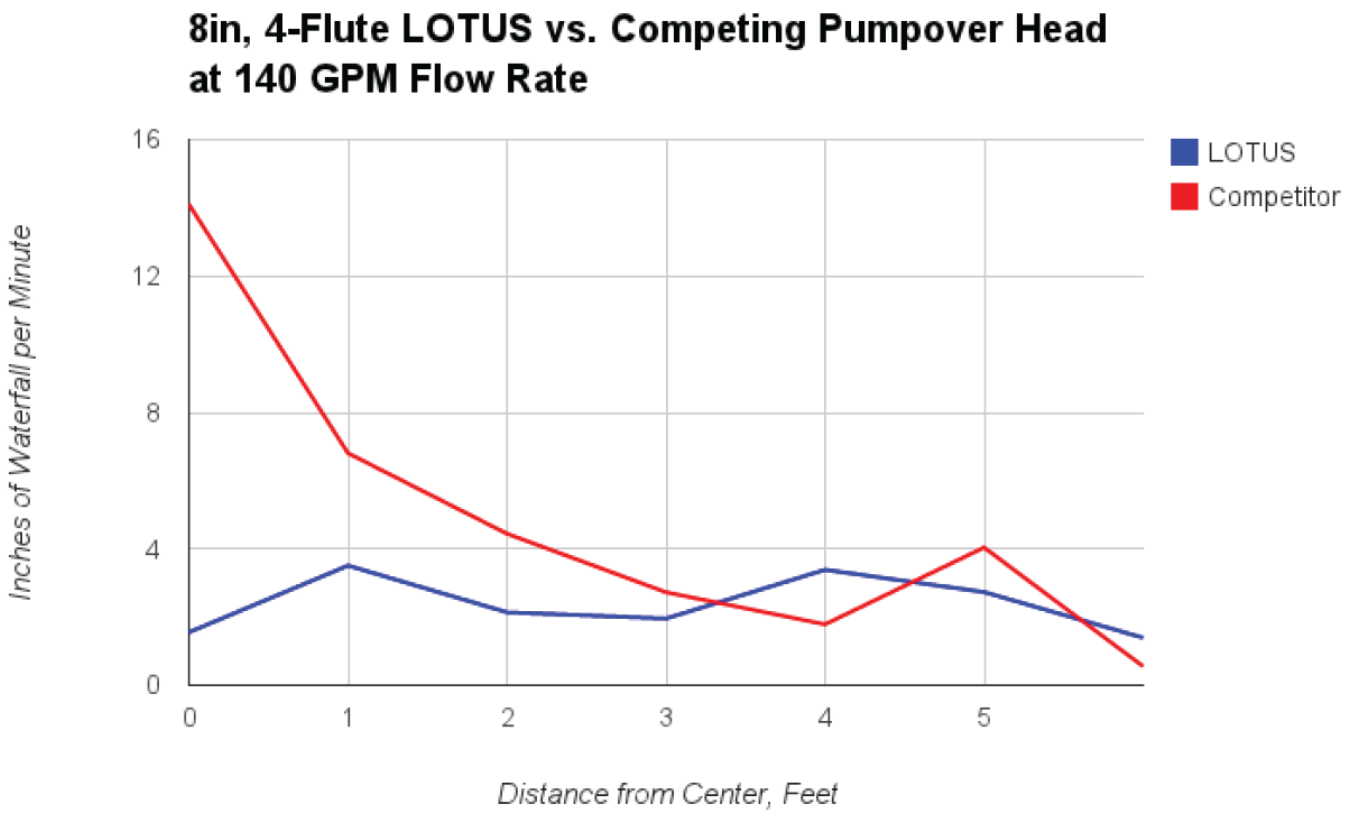
ViNTUiTiVE™
Winemaking Tools LLC

Using and Maintaining your LOTUS Pumpover Head

The LOTUS pumpover head was designed from the ground up to be an effective, simple to use, and durable device. This brief introduction to the product is intended to highlight several of the features that make our product unique. We will also discuss how to best maintain your LOTUS, and what to do in the rare event of a problem with the device.

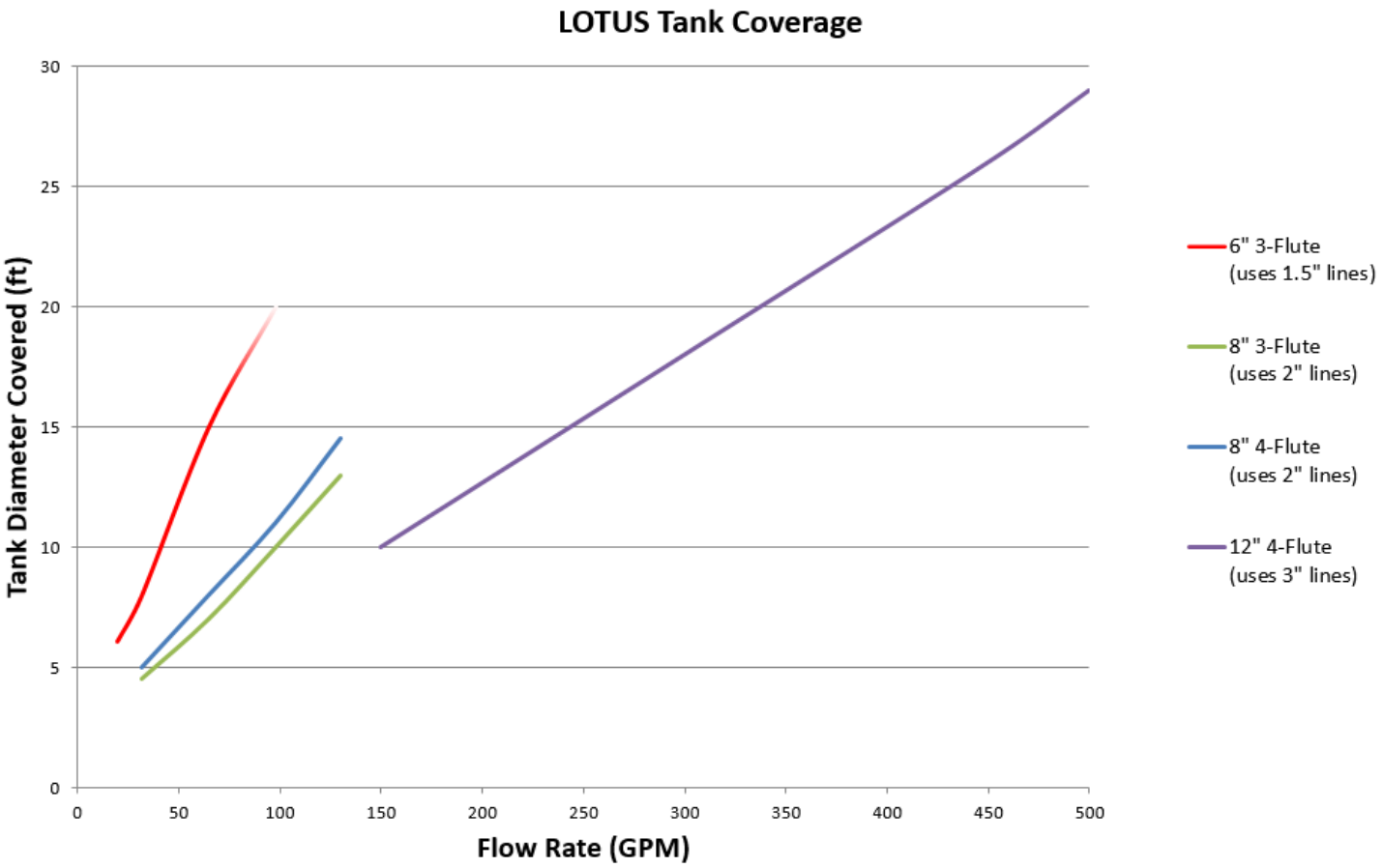
Benefits of LOTUS

The LOTUS is a revolutionary winemaking tool that was developed using state of the art CAD and rapid prototyping technologies. The result is a product like no other in its category: unlike competitors, the LOTUS uniformly distributes juice – even if unfiltered or mixed with whole berries – over the cap in tanks of any size without excessive bruising or misting. The following graph was produced after collecting test data (liquid distribution) from a LOTUS as well as an industry-standard pumpover head. The results confirm that the LOTUS evenly distributes juice across the entire tank, without the central "hot spots" common amongst competitive products.



Benefits of LOTUS, cont.

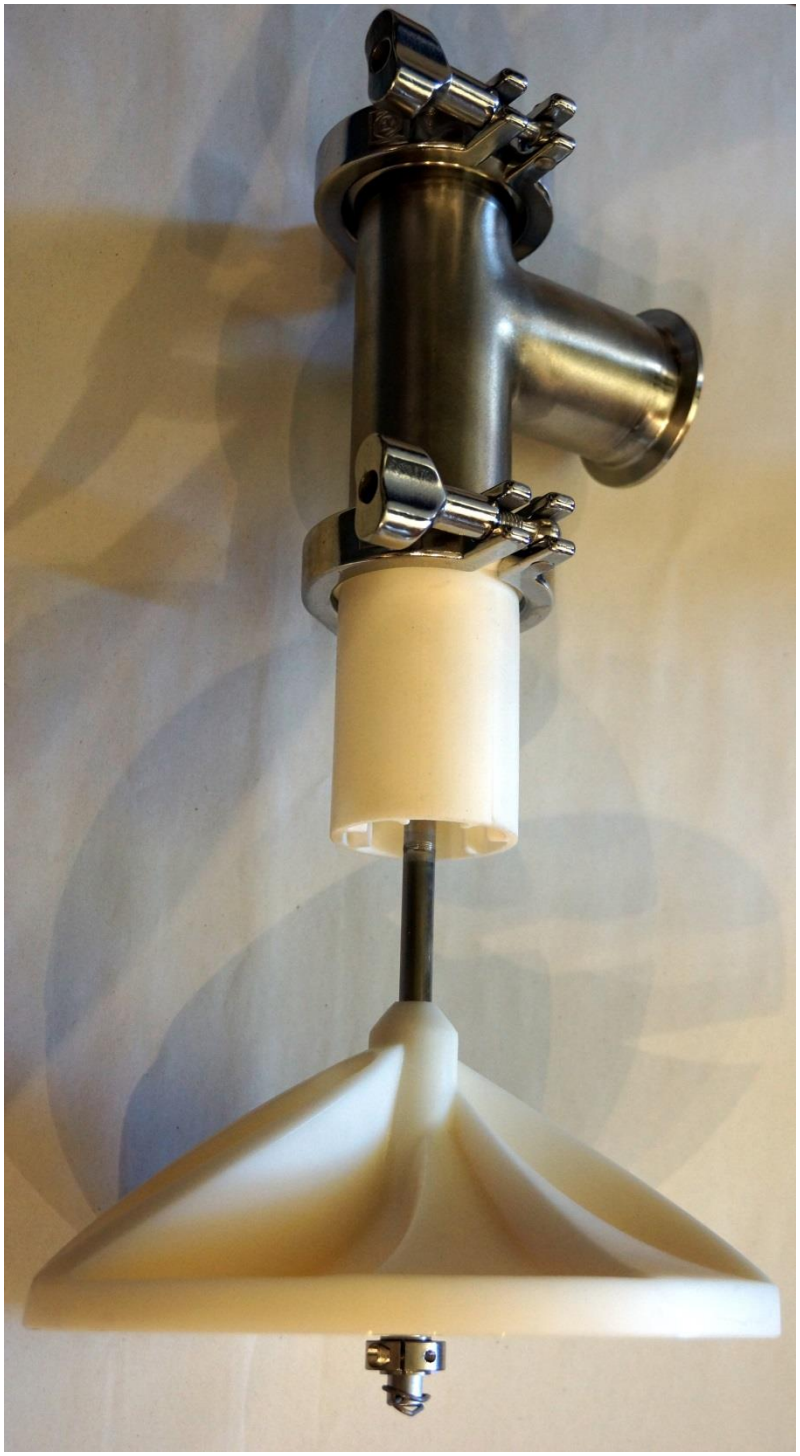
The LOTUS comes in several standard sizes to ensure a proper fit with tanks of any diameter. When selecting a LOTUS, please refer to the following chart and ensure that your tank diameter and intended flow rates match up – if they don't, you may either overspray or underspray.



NOTE: by adjusting the height of the LOTUS flower (see the "LOTUS Use and Adjustment" section), the radius of coverage can be fine tuned to better your particular tank size and flow parameters.

LOTUS Setup

The LOTUS pumpover device comes pre-assembled and should need no work prior to use. For ease of cleaning and adjustment, however, LOTUS is designed to be simple to tear down and put back together.



LOTUS Setup, cont.

In order to disassemble your LOTUS for cleaning or part replacement, start by removing the cotter pin on the end of the shaft. The cotter pin serves as a failsafe to ensure that the shaft collar does not fall off of the shaft and into the tank during LOTUS flower height adjustment.

To remove the pin, grab the bent end and twist down and over the shaft to release it. Then pull it towards you to remove. To install, align the pin so that the bent end faces downward (toward bottom of shaft) and push the straight portion of the pin through the hole in the shaft.

LOTUS Setup, cont.

Once the cotter pin is out, loosen the shaft collar using an allen key. The sizes are as follows, depending on the model size of LOTUS that you own.

6”: $^{3}/_{32}$ inch allen key
8”: $^{7}/_{64}$ inch allen key
12”: $^{9}/_{64}$ inch allen key

NOTE: when reinstalling the shaft collar, don’t worry about orientation. Both sides of it have been machined to interface properly with the food-grade bearing in the LOTUS flower.

LOTUS Setup, cont.

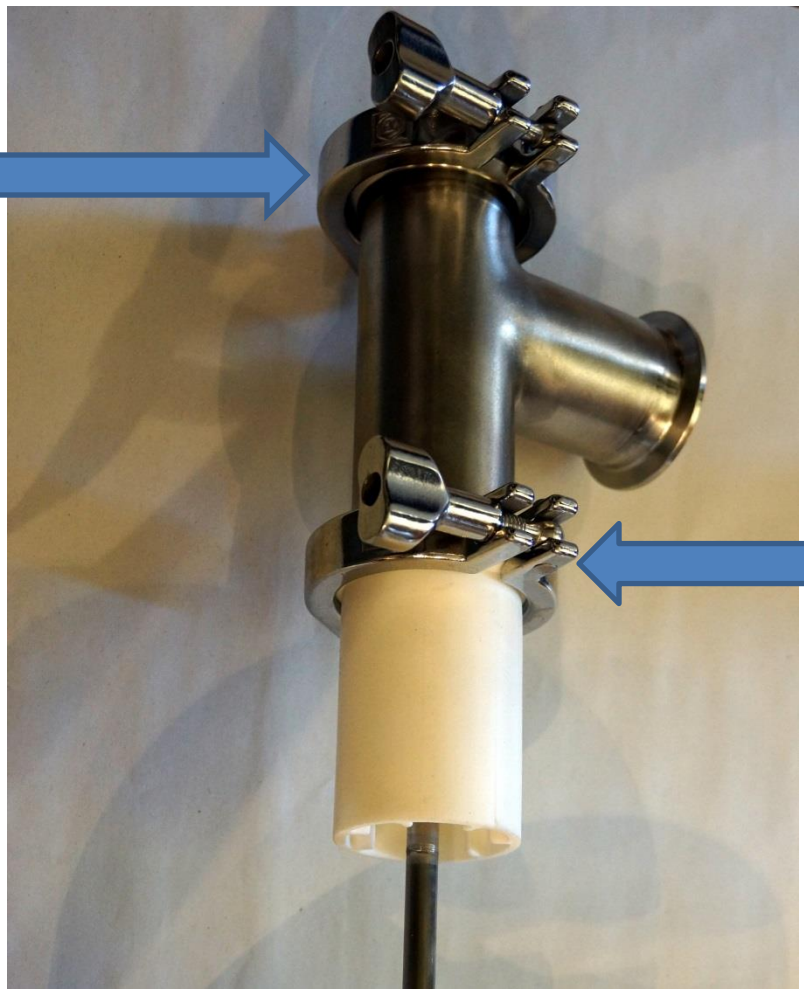
Proceed with LOTUS disassembly by gently sliding the flower off of the shaft. Make sure to wipe the shaft clean before doing so to prevent scratches on the precision ground surfaces of the rod and bearing.

Wipe clean prior to sliding LOTUS!

LOTUS Setup, cont.

Final LOTUS disassembly follows by loosening and removing the triclover clamp used to attach the flow conditioner to the unit. The triclover clamp attaching the shaft and cap can also be removed to access the T joint and shaft.

Remove clamp to separate shaft and T joint assemblies



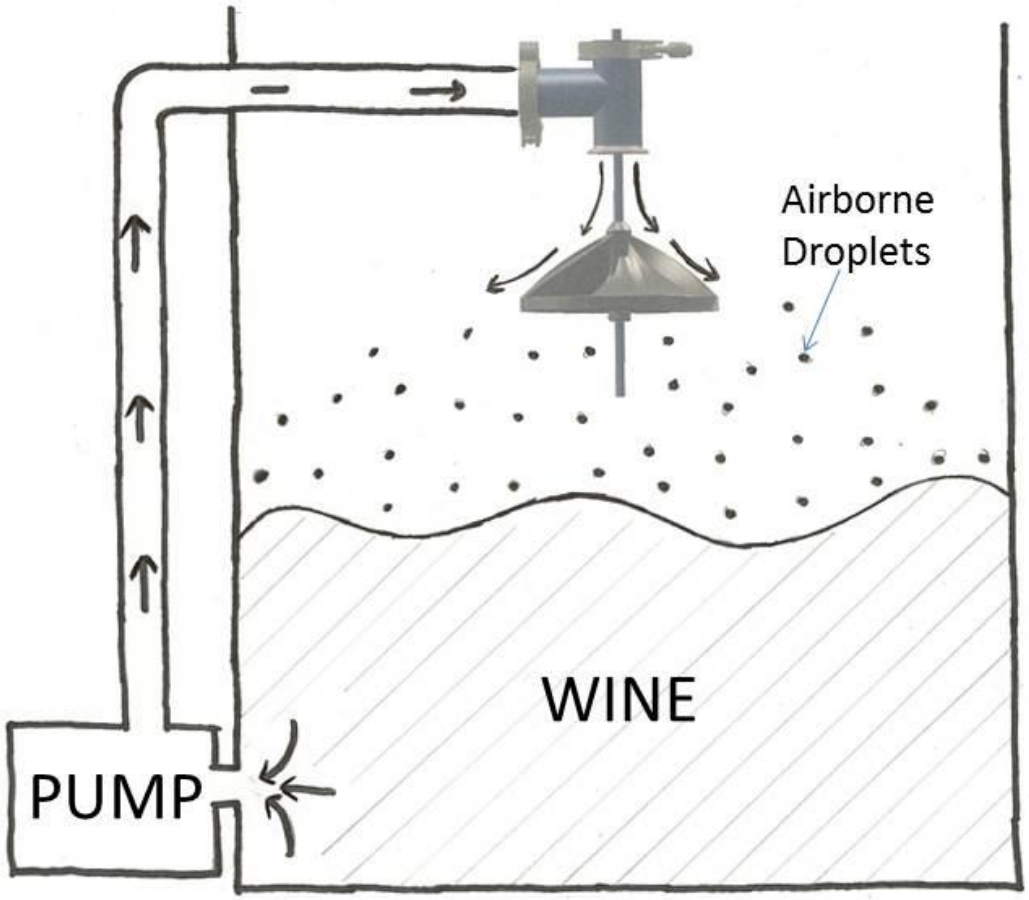
Remove clamp to separate flow conditioner

NOTE: remember to include triclover gaskets when reassembling these parts. Also, **do not over tighten** the triclover clamps attaching the rod and cap assembly or flow conditioner to the T joint. Doing so can force the rod into a non-vertical position, or result in pinching and deformation of the flow conditioner.

LOTUS Use and Adjustment

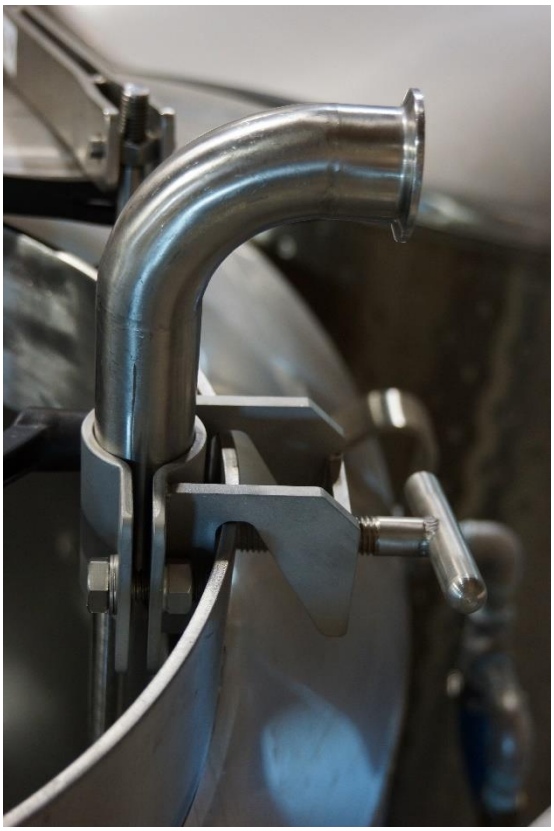
Our goal in designing the LOTUS was to make it easy to use. This section of the manual serves primarily to showcase how several LOTUS pumpover units were installed when tank access was limited or non-ideal. For simpler cases, the drawing below (taken from our patent application) serves as a basic guide to how LOTUS is intended to work.

Please note that the LOTUS pumpover head requires only 2 feet of clearance (from bottom of flower) above the wine cap to function as intended.



LOTUS Use and Adjustment, cont.

The following pictures showcase how existing customers have successfully mounted the LOTUS in truncated tanks using a custom bracket. Please keep in mind that this represents only one of many successful mounting possibilities!



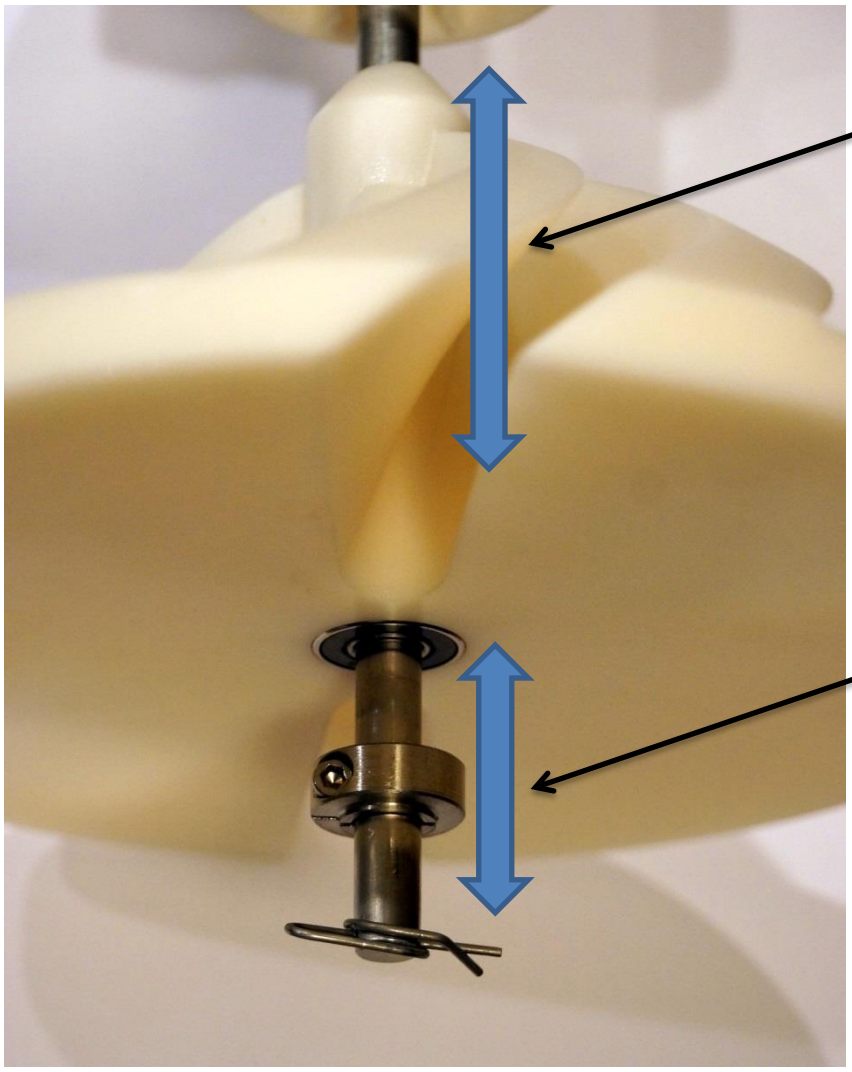
LOTUS Use and Adjustment, cont.

The following pictures showcase how existing customers have successfully mounted the LOTUS in tanks with centered top manways using a custom bracket. Please keep in mind that this represents only one of many successful mounting possibilities!

LOTUS Use and Adjustment, cont.

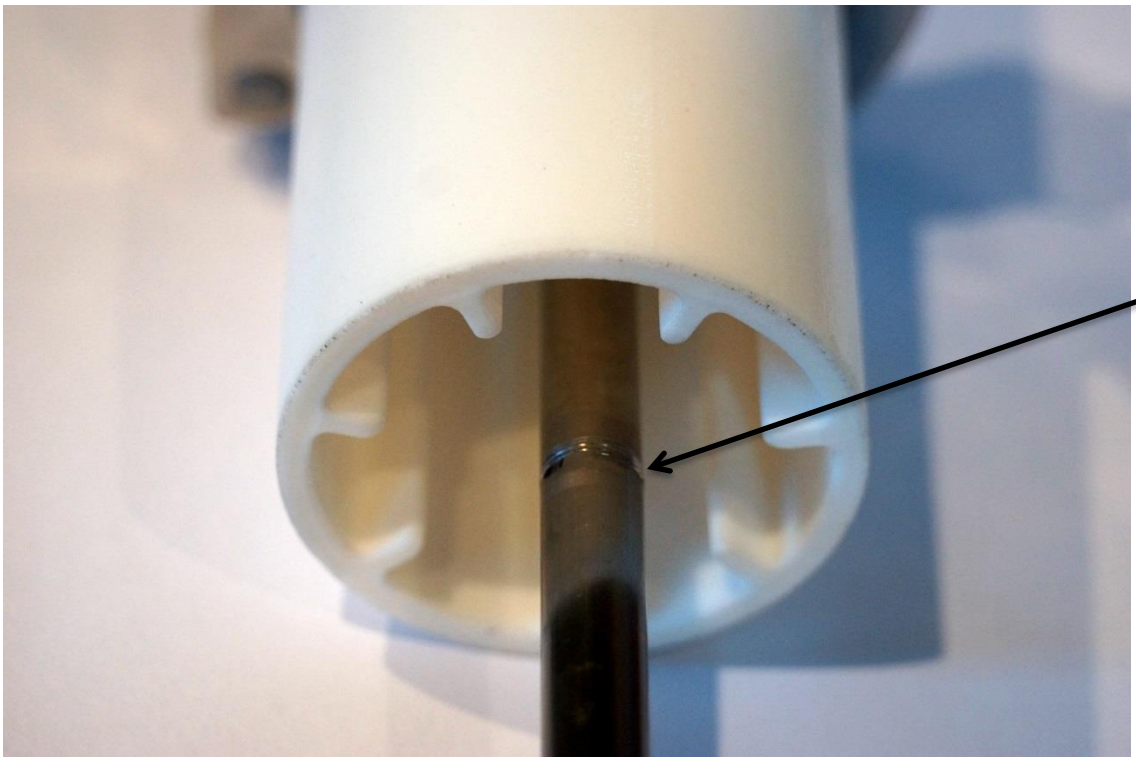
In addition to offering several sizes and styles of LOTUS to fit specific tank geometries and pumpover rates, every LOTUS model is continuously adjustable within a finite range to accommodate slight changes in tank diameter or intended pumpover rates.

By sliding the LOTUS flower up or down on the shaft and using the shaft collar to keep it in place, you can fine tune the distribution pattern of wine over the wine cap. Moving the LOTUS flower up near the top of its range results in an approximately 1+ foot increase in throw diameter, and will also act to reduce droplet size (increase aeration) for a given flow rate.



LOTUS Use and Adjustment, cont.

Note, as shown in the picture below, that an upper travel limit has been made on the shaft of each LOTUS unit to prevent the flower from crashing into and damaging the flow conditioner during use and storage. Do not try to force the flower up beyond this point; doing so will result in damage to the upper bushing.



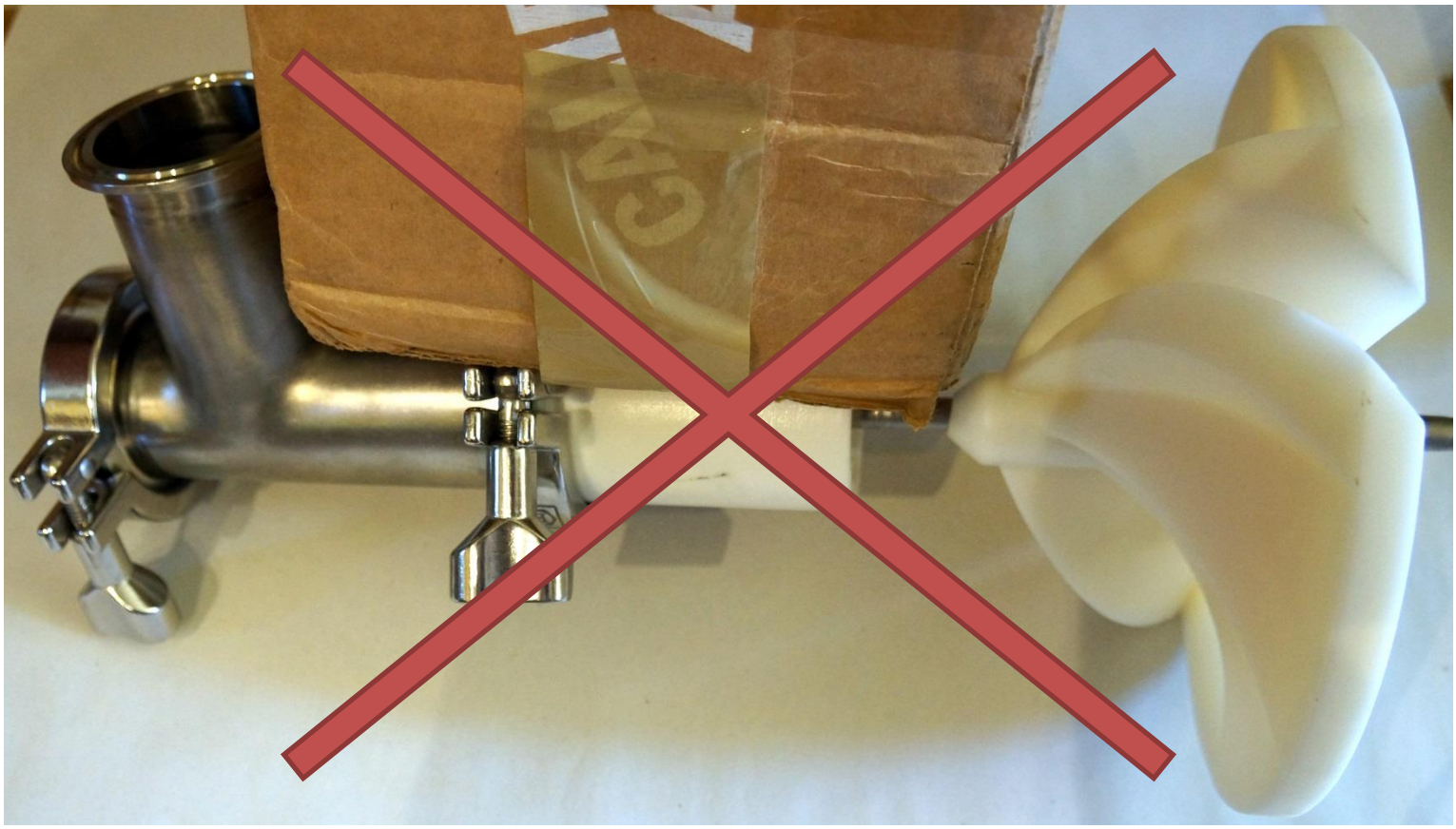
Storing Your LOTUS

The LOTUS was designed to be durable and should need little attention over years of continued use. Storing your LOTUS properly, however, is one of the most important things that you can do to ensure that it stays in good condition.

All metallic components are made of 304 stainless steel, and will not rust or require any treatment. The bushing (top) is made of a sintered bronze material that is approved for use in food equipment. The ball bearing (bottom) is made of stainless steel components and is filled with a solid polymer lubricant (also food safe), and will never need additional lubrication. It is double-sealed with rubber gaskets to keep the assembly as sanitary and smooth-running as possible. Finally, all plastic components are made of an FDA-grade thermoset urethane resin, which is chemically stable and abrasion resistant.

To store the LOTUS while it's not in use, first ensure that the unit is clean and dry. Then place the unit in a location that is out of direct sunlight, as extreme heat and UV radiation may eventually degrade plastic components. Most importantly, make sure to store the LOTUS in a position that does not load the plastic components, as doing so can eventually lead to (temporary) deformities upon retrieval. Please see the troubleshooting section if you're experiencing that problem – there is a solution!

Storing Your LOTUS, cont.



Do **NOT** store the LOTUS like this – instead keep it in a position in which the plastic components are not weighted.

Troubleshooting

There are very few issues that have come up during our extensive testing of LOTUS. We'll discuss the more common ones below.

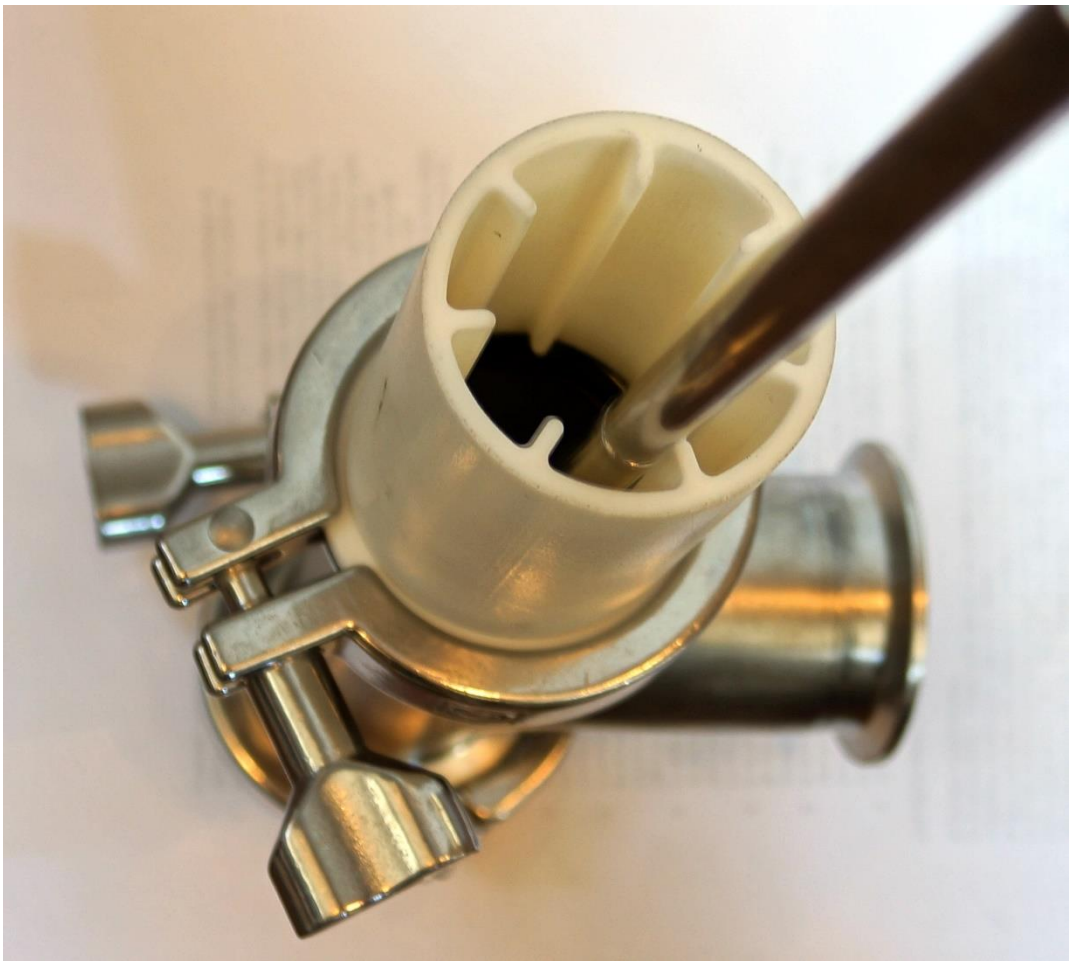
Plastic parts are bent or deformed out of proper shape

Flow conditioners are most susceptible to this problem, which is most often a result of improper storage (see "Storing your LOTUS" section for details on proper storage).

The good news is that this problem is fully reversible, as the plastic used throughout LOTUS is a thermoset resin and will forever remember its original form. To get it back into that form, simply remove the affected plastic piece from the LOTUS assembly and leave it upright in a warm environment for 1-2 hours. We recommend leaving it near a sunny window, but a oven **preheated** to 150F will also work well. With gentle heat and time, the plastic will bounce back into shape and will be good to go.

Troubleshooting, cont.

The shaft is not centered with respect to the T joint



This is typically the result of an improperly tightened shaft and cap assembly. Too loose is clearly a problem, but too tight is as well, and often results in a slightly cocked shaft relative to the T. To fix this, simply loosen the cap, set the shaft assembly in place and ensure that it is centered, and retighten to finger-tight level.

If the unit has been dropped, it is possible (but improbable) that the shaft was slightly bent. To resolve this, tighten the cap down snugly and then, while holding the T joint securely, apply firm pressure to the rod in the direction that it needs to be move to become centered. Repeat as necessary.

Troubleshooting, cont.

The LOTUS is not spinning smoothly, or is wobbling and/or not moving concentrically with respect to the shaft.

This is typically the result of a dislodged ball bearing (see below). This can happen if the shaft became scuffed before adjustments were made, and the bearing got caught up on the shaft instead of remaining part of the LOTUS flower. To resolve this, first make sure that the shaft is clean and free of any surface scratches or imperfections. A scotch brite pad can be used to gently polish the shaft if necessary.

To get the ball bearing back in place, tighten the shaft collar and then firmly push the LOTUS flower down the shaft, onto the bearing. Continue pushing until the bearing is back in place – it should be a snug press fit.

If the bearing is in place but you are still experiencing problems with rotation, remove the flower from the shaft and look up the bore hole from the bottom of the LOTUS flower. The small bronze bushing should be near the top of the flower; if it has become dislodged or worked its way down, please contact your dealer for a replacement unit.

LOTUS Parts List

In the event that you are in need of replacement parts, please contact your LOTUS dealer. All parts are made to be easily replaceable if damaged.

LOTUS Flower (1x per LOTUS unit)

Flow Conditioner (1x per LOTUS unit)

Ball Bearing (1x per LOTUS unit)

Bushing (1x per LOTUS unit)

LOTUS Parts List, cont.

Shaft and Cap Assembly,
(1x per LOTUS unit)

Triclover Clamp,
(2x per LOTUS unit)

Triclover Gasket,
(2x per LOTUS unit)

Shaft Collar,
(1x per LOTUS unit)

Cotter Pin,
(1x per LOTUS unit)