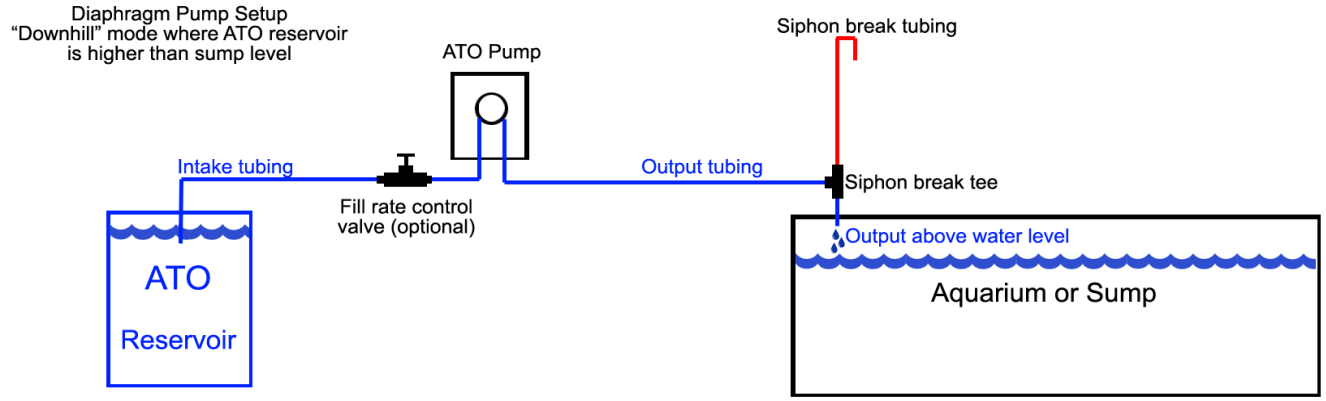
Setup Instructions for Auto Top-off Diaphragm Pump

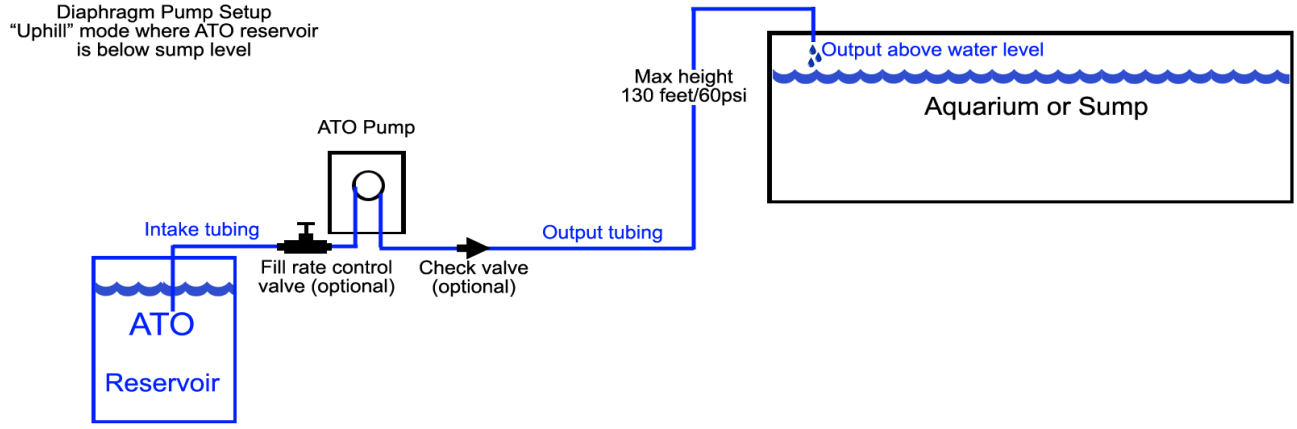
The AVAST ATO Diaphragm pump is straightforward to install. In most cases, you mount the pump box in a convenient location, then cut two pieces of the supplied tubing for the intake and output of the pump. Route the intake tubing into your ATO reservoir, and the output to your aquarium or sump. Note that this pump, like conventional powerheads, allows water to flow through when powered off. In most cases, this is not a problem, but you should consider two scenarios which could allow siphoning and lead to a potential overflow or water spill.

First, make sure the output end of the tubing is above the water level in your sump or aquarium's rear overflow chamber. This will prevent aquarium water from siphoning back into the ATO reservoir when the pump powers off. If you are using our magnetic ATO holder, the fitting for the ATO pump tubing will keep the end of the tubing securely above the water line. We also include a check valve with the pump to help prevent any back-siphoning when the pump turns off.

Second, if your ATO reservoir is higher than the level of your sump (aka “Downhill” mode), install a siphon break line on the output side of the pump. This will prevent water from continuing to flow from the reservoir down through the pump and into your aquarium when the pump turns off. This setup is common when a 5 gallon bucket is used as an ATO reservoir, and sits next to a small or shallow sump. A siphon break is created simply by adding a tee fitting (included) in the tubing on the output side of the pump, with an extra length of tubing connected to the open leg of the tee. The open end of this section of tubing is raised up to be the highest point in the ATO installation (mounting hardware included). When the pump is on, water will flow through the lower portion of the output tubing to the aquarium. When the power shuts off, the siphon break tubing will allow air into the line, causing the siphon action to stop. The following figure details the “Downhill” siphon break diagram:

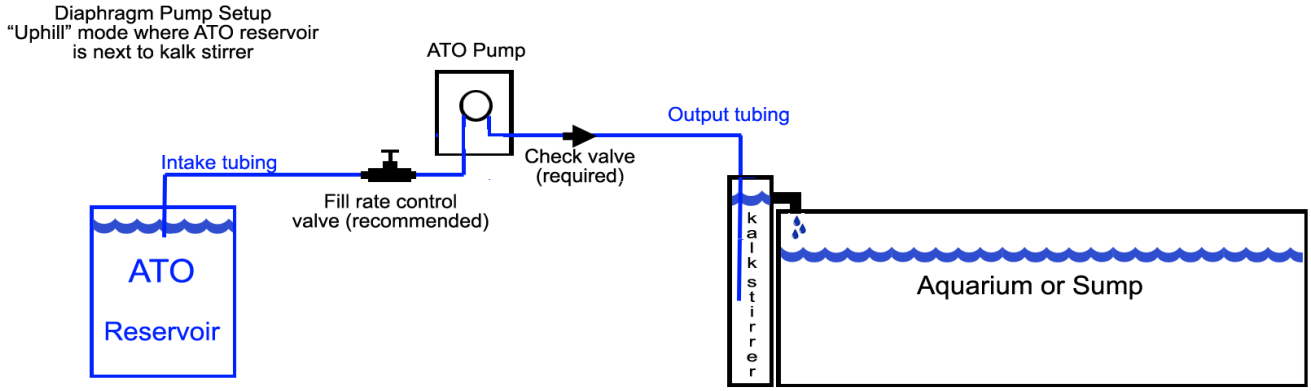


If your ATO reservoir is located below your sump or aquarium water level, then the siphon break is not needed. The output tubing should still be installed above the max water level, even though a check valve is provided to help prevent back siphoning. Follow the “Uphill” diagram:



Note that it is safe to run the pump dry (i.e., if your ATO bucket is empty for a few days), but try to avoid extended run-dry time (weeks) as it may lead to increased wear on the pump seals.

The diaphragm pump kit also includes a small valve that can be placed on the input tubing to control the fill rate of the pump. This is useful when connecting the output to a kalk stirrer, and you wish to drip water through the stirrer into your sump. Please note when using the pump with our kalk stirrer, the included check valve should always be used. This prevents kalk solution from flowing back into the pump and ATO reservoir, since the water level in the stirrer is typically higher than the ATO reservoir. Long term exposure of kalk solution in the diaphragm pump may shorten the pump life. Follow the Kalk Stirrer diagram in this case:



Final Note: No matter which type of automatic top-off system you use, please be sure to thoroughly test all components before you allow it to operate unattended!