Installation/Product Knowledge Guide

Tools: Installing an Aero Mist system requires the following tools; cordless drill, tape measure, 9/16" wrench, 5/8" wrench, pliers, copper tubing cutter and PVC cutters.

Tubing: Our professional copper misting systems come in 12' kits and 6' extension kits. Everything needed to mist the first 12 linear feet is included in part # 52500 including mist line, nylon feed line, low pressure filter, clamps, nozzles and fittings. For each additional 6' of mist line needed, a 6' foot extension kit is required (part # 52501). Part numbers 52516 and 52517 or 6' lengths of blank nylon and copper tubing respectively are used for feed line and spanning areas around columns

Brass Fittings: All connections between both nylon and copper tubing are made with 3/8" brass compression fittings rated for both low-pressure and high-pressure misting systems. Each fitting requires a 5/8" and 9/16" open-ended wrench to tighten correctly. Tubing should be inserted into fitting until it bottoms out (approximately 1/2"). The 9/16" back-up wrench is used to hold the fitting in place and prevent it from spinning while the 5/8" wrench is used to tighten the nut. All fittings should be tightened securely to avoid leaking. ****Tightening the fitting w/o the tubing fully inserted will cause the ferrule inside the nut to crimp prematurely, causing leaks. Once ferrule is crimped incorrectly it is no longer useable and a new fitting is needed. Always make sure tubing bottoms out inside fitting before tightening. ****

Filters: All 12' foot kits (52500) come with a 5 micron filter designed for use with low pressure systems. This filter has a ¾" female thread that screws directly onto a standard hose bib. The fitting on the outlet side is a "push lock" fitting to connect the nylon tubing. Simply insert the nylon tubing into the fitting until it bottoms out and the fitting will lock it in place. All 1000 PSI pumps have a 5 micron filter attached to the pump with an inlet hose that simply screws onto any standard hose spigot. ****Do not use the low pressure filter (52505) if you are using a high pressure pump as it is not necessary and provides no added benefit.****

Nozzle selection: Depending on the height of the application and the relative humidity of the area, the recommended nozzle size varies. All nozzles are 10/24 thread and finger-tighten into fittings.

- All low pressure systems (utilizing standard hose pressure) are typically best-suited to use .014 nozzles (blue o-ring.)
- High pressure systems (utilizing a 1000 PSI pump) typically utilize the .012 nozzles (black o-ring). If you are in a humid area or your application height is less than 9' then .008 nozzles are recommended.
- Brass nozzle plugs (52504) can be used to plug an area where a nozzle is not wanted.

Low pressure: First start by threading the filter (52505) found in the 12' kit (52500) directly onto a ¾" hose bib (Verify that the black rubber O-Ring is seated correctly to prevent leaking). The outlet side of the filter is designed for the flexible nylon tubing to lock into place once it is inserted fully. The nylon tubing is flexible and can adjust to bends and contours so it may be easier to work with going up a wall or around corners in comparison to the rigid copper tubing, however both will work. After connecting the nylon tubing to the filter outlet, bend the tubing towards the wall or column in the direction of the start of the mist line. Using the clamp kit provided in the 12' kit or in the clamp kit (52509), begin clamping the tubing into place. It is recommended to use a clamp every 2 feet or as needed to keep the line straight and securely fastened. Continue this process until you reach the point where the mist line begins and make the transition from the nylon to the copper using a standard compression fitting.

Prepping Mist Line: In general, the more assembly and planning that can be done on the ground, the easier the installation will be. Therefore, it is recommended to assemble the tubing into sections to fit each run or side. It is important to ensure that nozzle directions remain consistent when connecting the 6' sections together. An easy way to do this is to use a pair of pliers and a 9/16" wrench. While holding the union in place with the wrench the grab the fitting for the nozzle with the pliers and adjusting the line so all nozzles are facing the same direction.

For lengths over 12' we recommend constructing mist line into 12' sections to make handling and installation easiest. For example if there was an opening of 16 feet between columns, you would connect two 6' sections together and have another 6' piece lying right beside it. To account for the spacing needed away from the column on each side, the total length of the mist line should total about 14' by cutting 2' off of each side.

It is recommended to leave one end of the tubing without a coupling and the other with a coupling already tightened onto it. This will allow you to make fewer connections in the air and is easiest when clamping the line to the patio. In addition, the final piece should have the end cap attached before mounting to patio fascia. It is also easiest to place clamps on the tubing every 2' while on the ground to avoid handling them while mounting the mist line to patio fascia.

To span the distance between columns and around corners use the 6' rigid copper tubing (52517) or 6' flexible nylon tubing (52516). This tubing is also ideal for the vertical run up the wall/patio to the start of the mist line.

Installation Tips: In general, mist line should be mounted to lower, outside edge of patio fascia with nozzles facing outwards at an angle of 30-45 degrees. The ideal situation is to create a curtain of mist around the open sides of the patio or area you want to have cooled creating a barrier of cooler air that any warm air must pass through. It is not recommended to hang mist line under covered structure because the lack of direct sunlight can cause mist to become too dense and water may begin to collect on ground or on items under structure. **Once the system is in place it is recommended that the system is flushed prior to inserting the nozzles.** To do so begin by turning on the water and inserting the nozzles from the side closest to the start of the run and continue adding one nozzle at a time until all of them are in.

High Pressure:

Sizing your Pump: Our 12' and 6' kits are complete, prefabricated copper tubes that have 24" nozzle spacing. To calculate the correct pump size, determine the total linear feet of misting area. To determine the amount of misting area needed, take the total linear feet of structure and subtract for areas off of columns and other structures to prevent mist from accumulating on them.

Mist line should start approximately 12-15” off of walls or columns and this combined area should be subtracted from the total amount of linear feet to determine amount of linear feet that will be misted. Divide the number of feet that will be misted by two to determine the number of nozzles needed. If you are utilizing a fog feature add the total number of nozzles heads from each fog riser to calculate the total number of nozzles your system has. Using the nozzle selection guide above determine the nozzle orifice size that is recommended for your application.

The guide below shows what size pump is needed to operate your system at 1000 PSI. Operating your pump above or below the nozzle minimums and maximums shown below can result in inability to generate adequate pressure or excessive back flow of water that can cause significant damage to the pump.

Recommended Minimum/Maximum Nozzle Ranges

	Nozzles	Nozzles	Nozzles
Nozzle Size	**0.014**	**0.012**	**0.008**
60100	**12 to 25**	**15 to 30**	**22 to 45**
50100	**12 to 25**	**15 to 30**	**22 to 45**
60140	**22 to 34**	**26 to 42**	**37 to 61**
50150	**24 to 38**	**29 to 47**	**41 to 68**
60200	**39 to 55**	**48 to 70**	**69 to 100**
50200	**40 to 55**	**49 to 70**	**70 to 100**

Locating Your Pump: Our 1000 PSI misting pumps require both a water and power source in the same location and come with a 4’ inlet house that connects to any standard 3/4” hose spigot and a 6’ foot power cord. Pumps are typically wired for 120V; however, 220V is available upon request. A dedicated 20 amp breaker is recommended to avoid tripping circuit breakers that can become over-loaded. Ideal locations for pumps are near pool equipment or on the side of home where water and power is accessible.

Installation of High Pressure System: Follow the steps shown above to install the mist line as described above. After determining pump location connect the nylon tubing to the outlet of the pump using the same method as other compression fittings. Run the nylon tubing underground or along structure to the start of mist line. Always use at least 25’ of nylon tubing to avoid pulsation (excess tubing can be coiled up at pump location or buried). Connect nylon tubing to mist line using standard compression fittings and connect the water and power to the pump. Follow the same procedure for flushing nozzles as listed in the Installation Tips section. You may need to turn the pump on and off as the pressure builds to avoid getting wet.