



Mist Cooling Installation Manual Fixed Lines & Misting Fans



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01

Tips and Useful Information for Installation

Pump Power and Water Connection Requirements

- **Power Connection:**
 - ▶ **Pump Ventilation:** The pump module should be installed in a well-ventilated area, under cover, to prevent overheating and protect internal components. Avoid areas with excessive dust or dirt, as this can interfere with the pump's operation over time.
 - ▶ **Circuit Protection:** Ensure that the electrical circuit supplying the pump module includes a circuit breaker or a fuse rated according to the pump's electrical load to avoid overloads and potential damage.
- **Water Connection:**
 - ▶ The water supply to the pump must maintain a pressure of 20 PSI (135 KPA) to 50 PSI (345 KPA) for optimal performance. If the water pressure drops below 20 PSI, the pump may fail to operate correctly, resulting in erratic performance or shutdown.
 - ▶ Take into account any appliances that share the same water source, such as dishwashers or sprinklers, which can reduce water pressure.

Tools Required for Installation

- **Tube Cutters:**
 - ▶ For both Quick Fit and Push Lock systems, you must use proper tube cutters to achieve clean, straight cuts. Never use a hacksaw, as this can introduce metal or plastic filings into the system, leading to nozzle blockages.
- **Allen Keys (3mm):**
 - ▶ Necessary for loosening and tightening grub screws on Quick Fit fittings. Ensure the grub screws are fully loosened before inserting the tube, and tighten securely once the fitting is aligned.
- **Adjustable Wrenches:**
 - ▶ Required for connecting water fittings to the pump and adjusting valves. Having multiple wrenches on hand allows for secure tightening of both push lock and threaded fittings.
- **Screwdrivers and Drill:**
 - ▶ For mounting misting lines, tube saddles, and fan brackets. Use the appropriate screws for different surfaces (Teck screws for metal, and expansion bolts for masonry).

01

Tips and Useful Information for Installation

- **Other Helpful Tools:**

- ▶ Measuring tape for planning mist line runs and positioning fans. Ladder to safely reach elevated installation points.
- ▶ Protective gloves to handle tubing and fittings without risk of cuts or injuries.
- ▶ Spirit level to ensure mist lines are installed evenly

Common Installation Don'ts

- **Don't Use a Hacksaw for Tube Cutting:**

- ▶ Always use nylon tube cutters or stainless steel tube cutters when cutting misting lines. A hacksaw can leave behind metal or plastic shavings, which can clog the nozzles and cause malfunctions in the system.

- **Don't Install Misting Lines Below 2.7 Meters:**

- ▶ For optimal cooling and to prevent wetting of people or surfaces, misting lines should be installed at least 2.7 meters (approximately 9 feet) above the ground. Installing lower than this can cause surfaces and people to get wet instead of benefiting from the mist evaporation process.

- **Don't Position Fans Against Wind:**

- ▶ When installing misting fans, avoid pointing them directly into prevailing winds. The wind can blow the mist back, reducing efficiency and causing water accumulation on nearby structures. Instead, place fans with the wind at their back, allowing the mist to be carried further for better cooling.

- **Don't Run Tubing Over Roofs or in Roof Cavities:**

- ▶ Running misting lines across rooftops or through roof cavities can lead to maintenance difficulties and damage due to extreme heat, debris, or sharp objects. Tubes should be installed along more accessible paths to ensure easy inspection and repairs.

- **Don't Install Fans Too Close to Seating:**

- ▶ Misting fans should be placed at least 3 meters from any seating area or structure. If placed too close, the mist may not have enough time to disperse and atomise, leading to wet surfaces or discomfort for people in the area.

02

Receiving and Unpacking Your Misting System

Safe Unpacking Process

- **Inspect the Shipment:**
 - ▶ Before unpacking, carefully inspect the boxes for any signs of damage that may have occurred during shipping. If you notice significant damage to the packaging, take photos and report it to OZmist for potential replacements. Compare the items you've received against the packing slip to ensure all components, including the pump, tubing, fittings, fans, and nozzles, are accounted for.
- **Unpacking the High-Pressure Pump:**
 - ▶ The pump module is one of the heaviest and most important components of the system, so handle it with care.
 - ▶ Ensure that the pump is lifted from the base to avoid putting strain on any fittings, wires, or tubes. Having a second person assist with unpacking can help prevent accidental drops or damage.
 - ▶ Place the pump on a flat, stable surface close to where it will be installed. Keep the pump covered and protected from dust or debris if installation will not begin immediately.
- **Unpacking the Tubing and Fittings:**
 - ▶ Carefully unpack the tubing (stainless steel or high-pressure nylon) and fittings to avoid any kinks or bends in the lines, as this can impair performance.
 - ▶ Lay out all tubing on a clean, flat surface to inspect for any cuts or abrasions.
 - ▶ Organize the fittings (Quick Fit or Push Lock) by type and size for easy access during installation.
- **Preparing for Assembly:**
 - ▶ Keep the area clean and free from clutter during unpacking. Set aside the tools required for the installation (tube cutters, Allen keys, wrenches, etc.). Ensure you have a clear workspace where you can assemble parts of the system before installation begins.

03

Component Identification

Push Lock & Quick Fit Components

OZmist offers two primary connection systems for misting lines: Push Lock and Quick Fit. Each system has unique features, and understanding their differences will help ensure a smooth installation.

- **Push Lock System:**

- ▶ The Push Lock system uses high-pressure nylon tubing that can be easily cut to length and connected without the need for special tools beyond a tube cutter.
- ▶ Simply push the nylon tubing into the Push Lock fitting until it is fully inserted past the internal O-ring. This creates a secure, leak-free connection capable of withstanding high pressure.
- ▶ Push Lock fittings are ideal for flexible installations where slight adjustments may be needed or when tubing needs to be routed around tight corners using Push Lock elbows.
- ▶ The Push Lock system is extremely user-friendly, requiring no additional tools for tightening or securing the fittings.

- **Quick Fit System:**

- ▶ The Quick Fit system uses pre-cut stainless steel tubing with specially designed Quick Fit fittings. These fittings are secured using grub screws tightened with a 3mm Allen key.
- ▶ When assembling, ensure the tube is inserted into the fitting and that the grub screw is fully tightened into the groove on the tube. This prevents the fitting from sliding or coming loose under pressure.
- ▶ The Quick Fit system is more rigid than the Push Lock system, making it ideal for permanent installations in commercial or industrial environments where the system won't need frequent adjustments.

Both systems provide excellent durability and performance at high pressures, so the choice depends on the specific requirements of your installation. Ensure you use the correct tube cutters and tools to avoid damaging the tubing or fittings.

03

Component Identification

KTW2460 & Industrial Fans

OZmist offers a variety of fan options for use in misting systems. Two of the most popular models are the KTW2460 and larger Industrial Fans. Each is designed to deliver efficient misting in different environments.

- **KTW2460 Fans:**

- ▶ These fans come pre-assembled with the misting ring already attached. The fan is mounted using a simple wall bracket, which allows for easy installation and orientation adjustments.
- ▶ The KTW2460 fan has a powerful motor that is capable of distributing mist over a distance of up to 10 meters when operating on the highest setting. Ideal for smaller, more confined areas such as patios, outdoor dining areas, or small industrial spaces.
- ▶ When installing, ensure the fan is mounted at least 2.7 meters above ground and positioned so that mist does not directly hit seating or sensitive equipment.

- **OZmist Industrial Fans:**

- ▶ Our wall mounted industrial fans are designed for cooling or dust suppression in expansive areas such as factories, warehouses, and indoor facilities and undercover space. These fans can throw mist over distances of up to 9+ meters in still conditions, depending on the setting and wind conditions.
- ▶ Fans should be securely mounted using heavy-duty fan brackets, which are fixed to solid structural supports like walls or poles. Avoid mounting fans directly on weak structures, as vibrations may cause noise or instability.
- ▶ Industrial fans have multiple speed settings and are equipped with oscillation capabilities to maximise airflow and misting over a wide area.



03

Component Identification

Stainless Steel & Semi-Rigid Nylon Tubing

OZmist systems utilize both stainless steel and high-pressure nylon tubing depending on the installation needs. Understanding the differences between these tubing materials will help ensure proper setup and maintenance.

- **Stainless Steel Tubing:**

- ▶ This tubing is used in the Quick Fit system and is pre-cut and polished to ensure a sleek, professional look. It is ideal for installations where aesthetics are important, such as outdoor dining areas or residential properties.
- ▶ Stainless steel tubing is durable and resistant to corrosion, making it a great choice for long-term use in outdoor environments.
- ▶ Always use the appropriate stainless steel tube cutters to avoid introducing metal shavings into the system, which could cause blockages.

- **Semi-Rigid High-Pressure Nylon Tubing:**

- ▶ This tubing is typically used in the Push Lock system due to its flexibility and ease of installation. The semi-rigid nylon tubing is capable of withstanding the high-pressure requirements of the system, with a rating of over 17,000 KPA.
- ▶ Nylon tubing is highly flexible, allowing it to be routed around obstacles or corners without the need for joints or elbows, minimizing potential leak points.
- ▶ Make sure to secure the tubing with tube saddles every meter to prevent sagging or vibration, which could affect the system's performance.

Both tubing types are designed to handle the high pressures (1,000 PSI) required for effective misting. Proper handling and cutting of these materials are essential to maintaining system integrity.



03

Component Identification

High-Pressure Pump Specification

The high-pressure pump is the heart of your misting system, providing the necessary pressure to atomize the water and produce the fine mist that cools or suppresses dust.

- **Pressure Rating:**
 - ▶ OZmist pumps are designed to operate at 1,000 PSI (70 Bar), which is essential for generating ultra-fine mist droplets that evaporate quickly without causing wetness.
 - ▶ The pump is equipped with an unloader valve that allows you to adjust the pressure as needed. If the pressure is too low, the mist may not form properly, and if it's too high, it could lead to excess water output or damage to the system.
- **Water Supply and Filtration:**
 - ▶ The pump must have a clean water supply with an inlet pressure between 20 PSI and 50 PSI to function correctly. It is recommended to install a water filter before the pump to prevent dirt or debris from entering the system and blocking nozzles.
 - ▶ Commercial CPM pump modules include a single 10-micron filter, while our industrial OZ series of pumps are equipped with dual cartridge filters (10-micron and 5- micron) for enhanced filtration.
- **Electrical Requirements:**
 - ▶ Ensure the pump is connected to a 220V or 240V power supply, depending on your region. The pump's electrical circuit should have appropriate protection, such as a circuit breaker, to prevent overloads or damage during operation.
 - ▶ The pump module should be installed in a well-ventilated area to prevent overheating, given that it will be running for extended periods.



04

Installing Your Misting System

Locating the Pump Module

Properly positioning the pump module is essential for ensuring optimal performance and easy maintenance of your OZmist system. Follow these guidelines when deciding where to place the pump:

- **Choose a Well-Ventilated, Dry Area:**
 - ▶ The pump module should be located in an area that offers adequate ventilation. This is particularly important because the pump motor generates heat during operation, and without proper airflow, the system could overheat, reducing its efficiency and lifespan.
 - ▶ Install the pump in a dry, protected space such as a shed, under a roof, or in a covered outdoor area. The pump should never be exposed to direct rain or extreme weather conditions.
- **Access for Maintenance:**
 - ▶ Ensure the pump is placed in a location that allows easy access for regular maintenance tasks, such as replacing filters, changing the oil, or inspecting the system.
 - ▶ Avoid placing the pump in confined spaces like roof cavities or behind walls where access is restricted, as this can complicate routine maintenance and repairs. You will need to periodically check the pump's oil levels and clean its filters, so easy access is crucial.
- **Water Supply and Drainage:**
 - ▶ The pump requires a stable water supply, connected within 1.5m of a mains water line delivering constant inlet pressure between 20 PSI (135 KPA) and 50 PSI (345 KPA). Make sure the water supply line is reliable, and consider adding a water filter to prevent debris from entering the system and clogging the nozzles.
 - ▶ If your pump module has a high-pressure solenoid valve, ensure it is placed near proper drainage, as it will release head pressure from the pump when it is shut down. This is important to prevent water pooling near the pump module.
- **Flat, Level Surface:**
 - ▶ The pump module should be installed on a flat, sealed surface that is sturdy enough to handle its weight and prevent any vibration. Bolting the pump module down is recommended if the installation area experiences foot traffic or if vibrations could become an issue.
 - ▶ Keep the area clear of vegetation or other debris to prevent clogging of the system and ensure unobstructed airflow around the pump.

04

Installing Your Misting System

Planning the Installation

Proper planning before starting the installation will save you time and ensure that the system is installed efficiently. Here are the key factors to consider when planning:

- **Identify the Mist Line or Fan Locations:**
 - ▶ Determine whether your system will include misting lines, fans, or both. Depending on the layout of the area, decide on the best location for these components to maximize cooling or dust suppression efficiency.
 - ▶ For misting lines, they can be mounted on walls, fascia boards, or suspended from stainless steel support cables. Ensure that the locations chosen provide even coverage without obstructing walkways or entrances. For misting fans, ensure they are mounted on solid structures like walls, poles, or steel beams, allowing the mist to travel over the desired area without creating wet spots.
- **Plan the Path for High-Pressure Tubing:**
 - ▶ Identify the shortest, most efficient route for the high-pressure tubing that connects the pump to the misting lines or fans. This helps reduce friction loss, which can decrease the system's performance.
 - ▶ Avoid running the tubing over roofs or through inaccessible areas. If possible, route the tubing along walls or ceilings where it can be secured using tube saddles every meter to prevent sagging or vibration.
 - ▶ Ensure there is enough clearance around the tubing to prevent it from coming into contact with sharp edges or high-temperature surfaces, as this could cause damage or wear over time.
- **Support for Misting Lines:**
 - ▶ If using stainless steel mist lines, plan to install tube saddles or stainless steel cables to support the lines. Ensure that the supports are strong enough to hold the tubing and withstand any tension applied during installation.
 - ▶ Secure mist lines at regular intervals (e.g., every meter) to prevent sagging, which could affect the distribution of mist or the aesthetics of the installation.

04

Installing Your Misting System

- **Consider Environmental Factors:**

- ▶ If installing outdoors, consider the prevailing wind direction. Plan to position the mist lines or fans so that the mist is carried by the wind rather than blown away or back onto structures.
- ▶ If installing in a high-traffic area, make sure that mist lines are positioned high enough (at least 2.7 meters) to avoid wetting people or surfaces.

Fan and Mist Line Positioning

Proper positioning of misting fans and mist lines is crucial for ensuring effective cooling, dust suppression, and mist distribution. Consider the following guidelines for optimal placement:

Misting Fans

- **Height and Distance Requirements:**

- ▶ Fans should be installed at least 2.7 meters (9 feet) from the ground to ensure the mist has enough time to evaporate before reaching the floor. This prevents water accumulation on surfaces or on people below.
- ▶ Maintain a horizontal distance of at least 4 meters (13 feet) between the misting fans and seating areas, structures, or equipment. If fans are placed too close, the mist may not evaporate fully, leading to wetting.

- **Orientation and Wind Direction:**

- ▶ Avoid positioning fans to blow mist directly into the prevailing wind. When mist is blown against the wind, it can be carried away or fail to reach the target area. Instead, position fans so that the wind helps carry the mist further into the desired cooling area.
- ▶ If installing multiple fans, stagger their positions to ensure even coverage across the area. This prevents overlapping mist patterns and reduces the chance of over-wetting specific spots.

- **Solid Mounting for Fans:**

- ▶ Fans should be mounted on solid structural supports, such as walls, steel beams, or poles. Avoid installing fans on weaker structures like horizontal C-section purlins, as they may twist or vibrate, causing noise or instability.
- ▶ Use the correct mounting hardware for the surface, such as spring washers and bolts for steel surfaces, or Dyna bolts for concrete or brick walls.

04

Installing Your Misting System

Misting Lines

- **Placement and Height:**
 - ▶ Misting lines should be installed at least 2.7 meters above ground. This height allows the mist to evaporate fully in the air, providing effective cooling without wetting the surfaces or people below.
 - ▶ When positioning misting lines, ensure they are installed along the edges of structures like fascia boards, walls, or roof eaves. This provides even mist coverage while keeping the lines out of the way of foot traffic.
 - ▶ Avoid installing mist lines in wind-exposed areas where the mist can be blown away from the desired cooling area. If possible, install misting lines under roof overhangs or protected areas to shield the mist from wind.
- **Nozzle Direction:**
 - ▶ When installing nozzles, angle them slightly upward rather than pointing them directly down. This allows the mist to disperse and evaporate before it reaches ground level. If nozzles are pointed downward, the mist may not have enough time to evaporate, resulting in wetting of surfaces and people.
- **Spacing and Support:**
 - ▶ Use tube saddles to secure misting lines every 1 meter for distribution lines and 750mm intervals for misting lines. This prevents sagging, which can cause uneven mist distribution or affect the aesthetics of the installation. Make sure that all tubing and nozzles are securely attached, and double-check for any leaks or loose fittings before proceeding to the system commissioning.



Pump Module Dimensions

450mm long
280mm deep
340mm high
(including filters, switches etc.)



05

Planning the Installation

IMPORTANT: Planning the installation will save you time in the long run.

1. Determine if you are installing misting fans or mist lines. in most cases, there will be a design for the system showing the location of mist fans/ lines and supply lines.
2. Misting lines can be fixed to fascia boards, walls, under ceilings and on stainless steel support cables above the area to be cooled.
3. Fans are installed on walls, poles or other building structures.
4. Determine the location of misting lines and support cables (if required)
5. if using an s/s cable, make sure the two fixed points are strong enough to hold the weight of the tube and cable as well as the tension that is applied.
6. Find a suitable location for the pump module keeping in mind the need for water, power and control systems.
7. Choose a path for the high-pressure nylon tube to run between the pump and misting lines or fan locations. Try to keep the runs as direct as possible while aesthetically pleasing. do not run nylon tubes across roof's and preferably not in roof cavities.
8. Have suitable screws available to fix the tube saddles and stainless steel cable.
9. When assembling mist and supply lines ensure debris can't enter the tubes as it could cause a nozzle blockage when the system is started.

Misting nozzle lines

There are two misting lines materials available for installation. our most popular alfresco cooling systems are the quick fit range which comprises of pre-cut and machined lengths of stainless steel tube and quick-fit fittings. alternatively, push lock fittings can also be used with high-pressure nylon. Both systems are extremely easy to use with similar installation times.

Misting line / fan location considerations

You should have a plan or idea of where mist lines are to be run. Mist lines should not be installed lower than 2.7m off the floor. the mist is extremely fine so factor this in when installing in open spaces where wind may affect it. An example would be mist lines installed on the edge of gutters and exposed to the wind which can take the mist up and over the roof.

If installing mist fans you should keep at least a 4-meter horizontal separation between the fan face and seating or structures. any closer and the mist may create wetting of surfaces, structures and people.

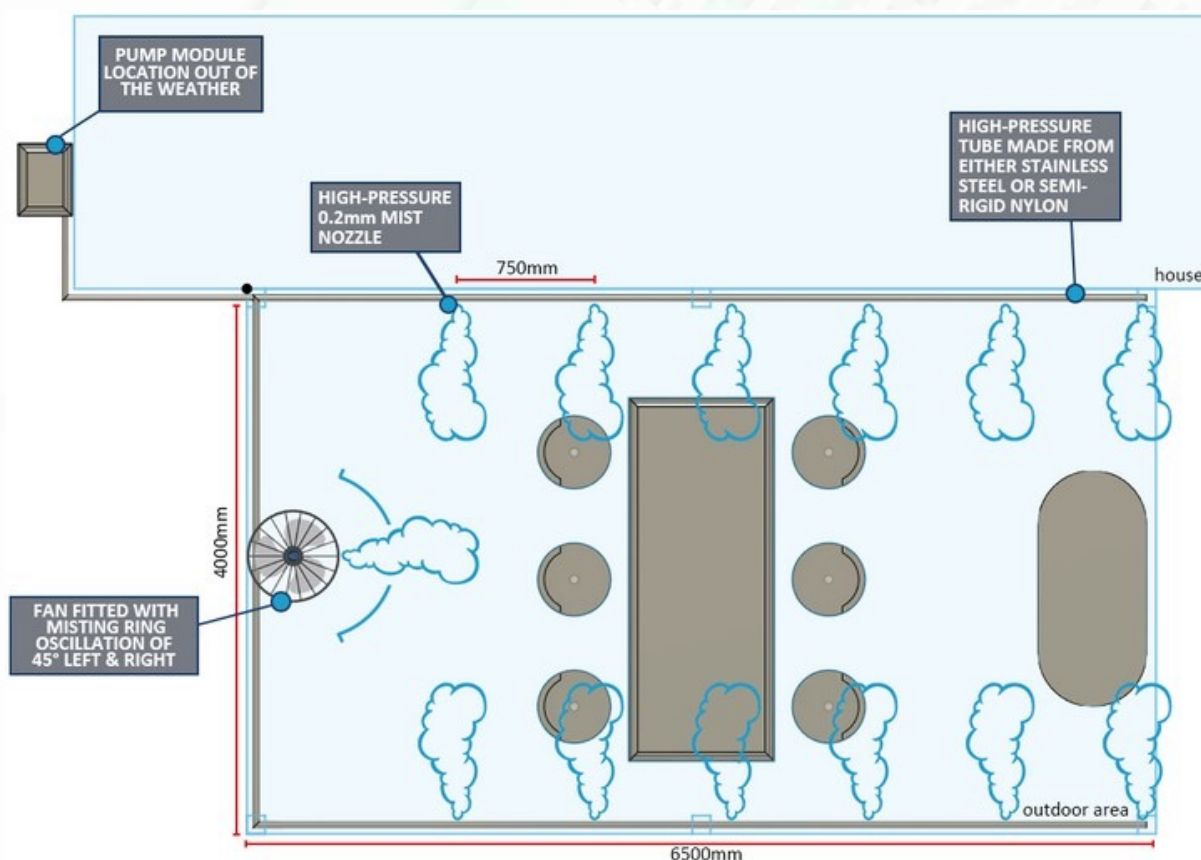
Don't position fans to blow into a prevailing wind. most of the time the wind will come from the same direction. have the wind coming from behind the fan will allow the mist to travel further and work more efficiently.

Keep the supply line run as short as possible between the pump module and furthest mist line. with a high flow system, friction loss will need to be considered when supplying/installing the nylon supply lines.

Consider access to the mist lines should there be a blocked nozzle, leaking or broken pipe. it is a good rule to never install your pump in a roof cavity or run your tubing through areas that have limited to no access.

Consider running supply lines at a lower level that can be easily accessed if ever required.

***Example Mist System Only**



06

Fascia & Spouting Installation

Special Considerations

When fixing to fascias and gutters special consideration should be given to the following;

1. Mist will throw out from the nozzle about 3 meters.
2. Nozzles should be installed pointing up slightly. pointing nozzles directly down will not give the mist time to evaporate sufficiently and could cause person or surface wetting.
3. Wind will affect mist when installed outside. this can be a problem when the mist is blown back against surfaces or up and over roofs. if possible try to install under roof's to allow the mist some protection from the wind.
4. If installing on a wall under a veranda make sure you have at least 300mm clearance between the mist nozzles and roof.
5. Mist should nearly be evaporated above head height. do not install mist lines any lower than 2.7m off the floor.
6. Make sure the mist lines are out of reach in public areas.

Select the position of the mist line considering the above points.

When fixing to fascias and gutters nylon insert tube saddles should be used. the saddles should be fixed at 1m spacings for supply lines and 750mm intervals, or against a nozzle union, in mist lines. use teck screws to fix to metal or wood. masonry should be drilled, plugged and screwed as required. It is easier to make up 3 meter sections of mist lines on the ground. align all of the nozzles before tightening the grub screws. fit saddles to the section and fix in place.

- Continue this process until all mist lines are in place.
- The last fitting in the mist line will be a single nozzle blank end.
- Leave the nozzle out of this fit-ting until the lines have been flushed out. once the mist lines have been installed you can run the distribution line back to the pump module.
- Choose the shortest, neatest path between the mist line and pump, avoiding sharp bends and objects. use tube saddles every 1 meter and never allow the mist or supply line to sag or vibrate.
- Never cut nylon or stainless steel tube using a hacksaw as the filings will end up in the tube and work their way into the nozzles causing blockages. be sure to keep the inside of the tubing clean from excess dirt. if dirt enters the tubing it will need to be flushed out.

07

Distribution Line Layout with High-Pressure Nylon Tubing

IMPORTANT: Never cut nylon tube using a hacksaw.

Distribution lines between the pump module and stainless steel misting lines (atomization lines) are normally semi-rigid high-pressure nylon tube which is supplied in 25-meter or 100-meter rolls. nylon tube is specially manufactured for ozmist to withstand pressures of over 17,000kpa. normal plumbing pipe such as auspex is rated at just 1,378 kpa.

- When running the nylon tube distribution line it is important to choose the shortest, neatest path between misting lines and the pump module to limit pressure loss due to pipe friction.
- It is important not to allow the tube to come into contact with sharp edges where a chafing of the tubing can occur., resulting in damaged lines that may leak.
- The distribution line is normally saddled to the building frame using the supplied nylon insert tube saddles. making sure to have your lines set in place before tightening saddle.
- It is important to use sufficient tube saddles so that the tube will not vibrate or sag.
- Do not attach the tubing to steam pipes or close proximity as the heat transmitted will damage the nylon tubing.
- When changing the direction of the tube, do not bend the tube too sharply. this could cause the tube to kink and break. if it is not possible to leave a radius bend in the tube use a push lock elbow.
- When cutting the tube it is important to use tube cutters. never cut nylon tube using a hacksaw as the filings will end up in the tube and work their way into the nozzles causing blockages.
- Be sure to keep the inside of the tubing clean from excess dirt. if dirt enters the tubing it will need to be flushed out prior to all of the nozzles are installed.

08

Fan Misting - Fan Assembly

IMPORTANT: The pump module should be installed as explained above.

Choosing fan location

There are several factors that will dictate where the best position for the fans will be fitted.

- Most importantly the fan should not be located where un-evaporated mist will make contact with any surface or people. you should keep a horizontal distance of at least 4 meters.
- Fans should be mounted at least 2.7 meters from the bottom of the fan to the floor.
- Ozmist industrial fans will throw mist around 10 meters from the misting ring when the fan is running on fan speed 3. the distance of throw will shorten when the fan is run at a lower speed.

Mounting fan brackets

Fan brackets should be fixed in solid structural locations, failure to do so can result in audible fan vibrations, these are more common if the fan is set to oscillate left and right.

When fixing the wall bracket to steel it is advisable to drill and bolt using spring washers rather than using tech screws.

When fixing fan brackets to concrete or brick walls appropriately sized dyna bolts should be used. when fixing to timber make sure that the timber and screws are sturdy enough to take the weight of the fan and ring.

Fan mounting brackets should not be fitted directly to horizontal c-section wall purlins as they will twist.

Assembly of industrial fans

- Remove fans from boxes and assemble as per instructions included in the cartons.
- A hydraulic connection hose screws to the thread on the stainless steel ring. make sure to fit a white nylon washer from the zip lock back in before tightening. A stainless steel ball valve and brass thread join to the other end of the connection hose. again, use a white washer between the thread and nut. the supply line connects to a push lock 1/4" male x tube union at this point.

KTW2460 Fans

The KTW2460 fans come pre-assembled with the misting ring fitted. a single- piece wall bracket is fixed to the wall and the fan fits to it. When you have the orientation set, tighten the allen key grub screw to lock in place.

Once the mist lines have been installed you can run the distribution line back to the pump module.

Choose the shortest, neatest path between the mist line and pump, avoiding sharp bends and objects. Use tube saddles every 1 meter and never allow the mist or supply line to sag or vibrate.

Never cut nylon or stainless steel tube using a hacksaw as the filings will end up in the tube and work their way into the nozzles causing blockages. Be sure to keep the inside of the tubing clean from excess dirt. if dirt enters the tubing it will need to be flushed out.

Resources:

Website [LINK](#)

YouTube [LINK](#)



09

Pump Module Location

IMPORTANT: The pump module must be installed undercover in a position that offers adequate ventilation.

The pump module must be installed under cover in a position that offers adequate ventilation. Pump modules should not be installed in excessively dusty or dirty areas. the internal electrical components inside the cabinet will be affected by dust buildup.

Water supply

The pump module needs an adequate water supply to run efficiently. with the pump module running all nozzles connected, there must be a minimum of 20psi (or 135kpa) inlet water pressure and a maximum of 50psi (or 345kpa).

Insufficient water pressure will cause the internal low-pressure switch to stop the pump erratically until the water flow is restored. If this 'chattering' continues it will trip the power supply to the pump and can cause damage to the electrical contactor. Too much water pressure can cause damage to the filter housing, which can cause leaks or other issues.

Take into account other appliances using water. The most common is sprinkler systems, dishwashers and washing machines. pressure can also be affected during peak usage hours usually mid-afternoons.

Mounting surface

The module should be installed onto a flat, level and sealed surface. vegetation should be kept clear of the module.

Access

The pump module should be situated in an accessible location where the pump can be easily inspected and periodical work can be taken out eg replacing cartridge filters and changing oil.

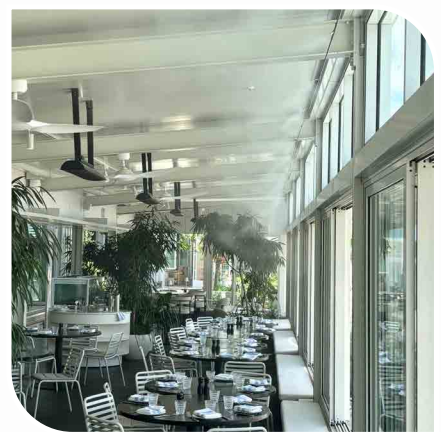
Drainage

The commercial pump module has a high-pressure solenoid valve that relieves pump head pressure upon shut down. This will release any head pressure through a drainage hose away from the pump module, make sure that this hose is located in a suitable position.

Water quality

Ultra fine mist nozzles employed in the ozmist system dependent of clean water for their continued, trouble-free operation.

- Commercial pump modules are fitted with a single 10µm cartridge filter located internally.
- Industrial pump modules are fitted with dual external cartridge filters comprising of 1 x 10µm filter and 1 x 5µm filter.
- Filter life will ultimately depend on the quality of the water supplied.



10

Quick-Fit Tube Systems

There is a comprehensive range of quick fit fittings available.

- Choose the required fitting and undo the 3mm allen key grub screw making sure it is fully undone. if it's not undone completely it may stop the tube from inserting fully.
- Twist the fitting onto the end of the stainless steel tube. occasionally lubrication of the end of the tube may be necessary.
- Never hit the fitting onto the tube as you will tear the internal o ring and the fitting will leak.
- Once the tube is fully inserted, twist the fitting/nozzle to line up with other fittings in the line. tighten the grub screw fully.
- When the tube is inserted to the correct depth the grub screw will lock into the groove on the tube. The grub screw is there to simply keep the fitting from sliding off the tube, over-tightening the grub screw will damage the tube and can cause leaks.
- Pre assembling sections of tubes and fittings on the ground can make installation quicker.
- Nylon insert wrap around tube saddles are supplied to secure the tube to the building structure. if installing the mist line to purlins, fascias, etc. Wrap the saddle around the tube and screw to the structure making sure the tube does not come into contact with the building.
- Hand screw nozzles into the nozzle unions.

Quick Fit Static Line Components for Stainless



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Push-lock Tube Systems

Push lock fittings are extremely easy to use.

Only use nylon tube cutters to cut the tube. **Never use a hacksaw.**

- Cut the nylon tube to length. push the fitting over the end of the tube and push until the tube is fully inserted. Keep in mind that there is an internal o ring that is 5mm short of the end of the fitting and this is sometimes mistaken for the end of the fitting. you must push the tube past the o ring or the fitting will blow off under pressure.
- Never hit the fitting onto the tube as you will tear the internal o ring and the fitting will leak.
- Once the tube is fully inserted, hold the end collar and twist the fitting around the tube. finally, pull back on the fitting. this helps to lock the jaws onto the tube.
- Pre assembling sections of tubes and fittings on the ground can make installation quicker.
- Nylon insert wrap around tube saddles are supplied to secure the tube to the building structure. if installing the mist line to purlins, fascias, etc. wrap the saddle around the tube and screw to the structure making sure the tube does not come into contact with the building.
- Hand screw nozzles into the nozzle unions.

Push Lock Static Line Components for Nylon

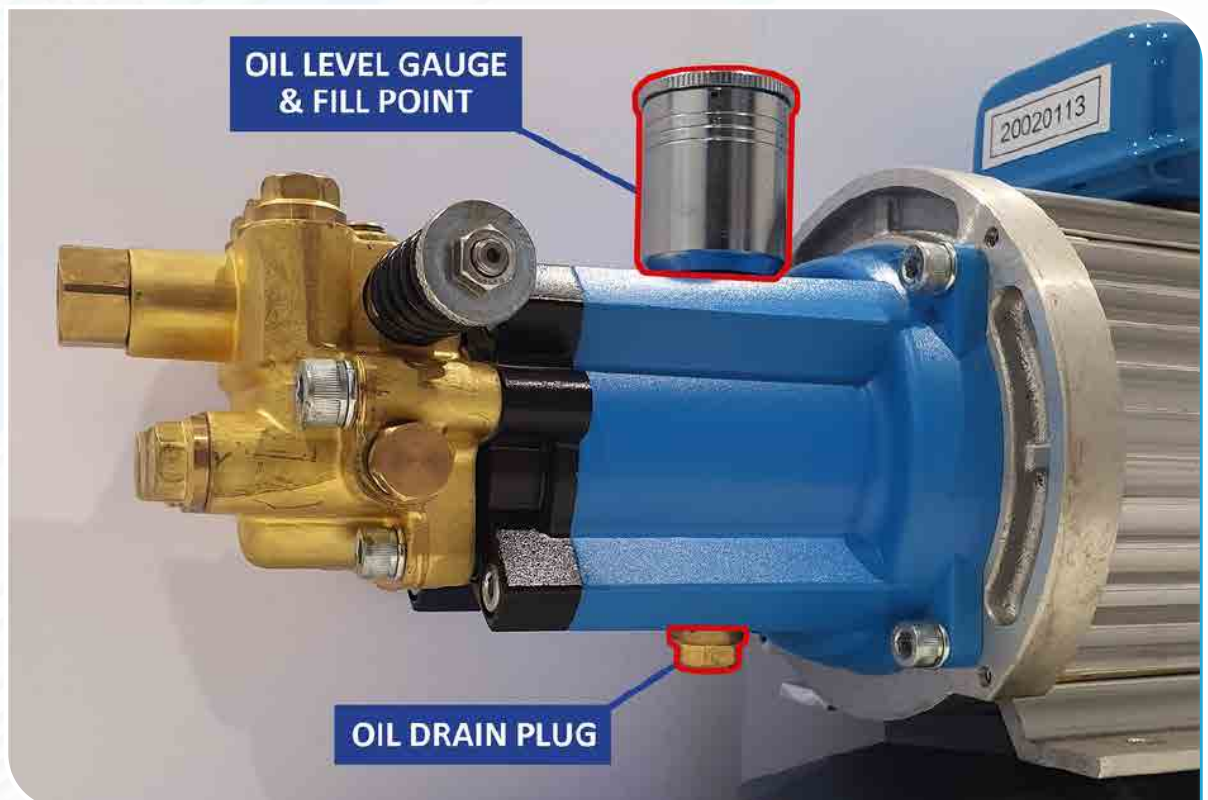


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Before Starting - Oil

Oil level check - oil changes

- Make sure there is oil halfway up the silver canister, before starting the pump.
- Before starting make sure you have at least 300ml of fully synthetic 10w- 40 oil.
- Lift the pump, the drain port is on the underside of the blue section of the pump. fit a container under the pump head and remove the plug.
- Don't forget to remove the fill cap from the top of the pump.
- When the old oil has all drained, replace the drain plug.
- Very slowly, pour the new oil into the oil cylinder stopping frequently to let the oil run through the crankcase. fill until the oil reaches halfway up the cylinder. refit the cap and screw on tightly



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Flushing and Commissioning the System

Flushing the system

The pump should be connected to both the inlet water supply and the distribution lines. distribution lines should be connected to the misting lines.

- In large systems flush one line at a time, starting at the furthestmost line from the pump module. Once each line has flushed, stop the pump, close the ball valve to that line then fit the nozzle into the end fitting before moving on to the next misting line.
- Continue this process, working towards the pump module. by doing this the water will be forced through the complete system, eventually running water through all of the lines and flushing the system completely.
- Make sure to check the lines thoroughly for leaks as you move along.
- When all of the lines have been flushed and nozzles fitted the ball valves can be opened. switch the pump on and mist will be produced by the nozzles and the pressure in the lines increases. the pump module can now be left turned on.

Commissioning the system

- With all of the ball valves open and the pump on the operating pressure needs to be set at 1,000psi.
- If the pressure is above or below 1,000psi the unloader valve will need to be adjusted.
- Turn the pump off. undo the side latches and open the lid. the unloader valve is the black spring located on the brass pump head at the right end of the module.
- If the pressure is below 1,000psi turn the knurled nut/spring in a clockwise direction x 1/4 turn.
- If the pressure is above 1,000psi turn the knurled nut/spring in an anti-clockwise direction x 1/4 turn.
- Restart the pump and check the pressure at the gauge.

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Fan Misting - Flushing and Commissioning

Commissioning the fans

The pump should be connected to a power and water supply as well as supply and mist lines.

Turn all ball valves except one-off. remove the top mist nozzle in this fan mist ring. turn on the pump and wait for the water to run through the nozzle hole. in areas where water damage could occur it is advisable to use a bucket to catch the water when the pump is turned on.

Run water through this ring for at least 2 minutes. turn the pump off, refit the nozzle and open the valve again.

Move to the second ring, remove the top nozzle and turn the pump on. continue this process through all of the fans.

Make sure the fans are turned to help dissipate the mist while testing and commissioning.

Commissioning the pump module

Now that the mist lines or mist fans are running look at the high-pressure gauge on the pump module. this gauge should read 1000 psi or 70 bar.

- If the pressure is outside of 1000psi you will need to remove the cover from the pump module. This will expose the pump unit. refer to the pump module introduction pages for the pump that you have.
- If the pressure is above or below this level then the black unloader valve spring on the front of the brass pump head will need to be adjusted.
 - If the pressure is too low the handle needs to be turned in a clockwise direction.
 - If the pressure is too high then the handle needs to be turned in an anti-clockwise direction.

Make all adjustments in small increments with the pump module switched off. Turn the pump back on after adjustment and check pressures again. check all tubing joints are free from leaks.

For optimum performance of the system, it is important that the mist from the nozzle has the correct spray pattern. The mist should be 50mm wide 50mm from the face of the misting nozzle.

Leave the pump running for at least 30 minutes after the installation to ensure that it is running correctly. Turn the pump on and off a few times to make sure fittings are not going to pull apart under start-up pressure.

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System Maintenance

IMPORTANT: Oil change after first 50 hours then 250 hour intervals.

Filter cartridges

Filter cartridge life will depend on the quality of the water running through them.

Regardless of the condition of the cartridge, they should be changed at least at the start of every summer. dirty filters will restrict water flow to the pump. checking the pressure on the low-pressure gauge periodically will help determine the filters condition.

Blocked filter cartridges are a major cause of pump shut down. should your pump module shut down for no apparent reason the first thing to look at is the low pres-sure water gauge on the end of the pump module. if the reading is below 20psi you should replace the cartridges.

To replace the cartridge place the supplied plastic spanner over the filter housing and undo. you will need a 5 micron and 10 micron 250mm sediment cartridge for our industrial pumps and a single 10 micron cartridge for our commercial pumps.

On our industrial pump modules the filters need to be in a specific order for the filtration to work effectively. the 10 micron filter will always be closest to the water inlet.

Oil changes

- Before starting make sure you have at least 300ml of fully synthetic 10w-40 oil.

See the above section for details on the oil change process.

Nozzle blockages

Occasionally misting nozzles will block. nozzles can be easily removed and in most cases cleaned or replaced. To clean submerge nozzles in clr clear, wash and replace.

- Be careful not to lose any of the three parts that are contained in each misting nozzle body.

The correct spray pattern of our nozzles is a spherical shape that is 50mm across at 50mm below the nozzle face. An incorrect pattern can mean that dripping will occur and the nozzle should be cleaned or replaced.

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Off Season

IMPORTANT: It is good practice to drain all residual water from your system before winter.

System preparation

As we enter the cooler months of the year your ozmist misting system will likely not see a lot of use, there are a few precautions that we can take beforehand to eliminate any risk of damage to the misting lines and pumps that can be caused by freezing conditions.

Draining

Our misting systems should be drained of all residual water after the last use heading into cooler months or if you plan on not using the system for a long period of time. This is a very simple task to perform. follow the steps below to drain any water from your system.

Tools required:

- 2 x shifters

1. Find the high-pressure water outlet on your pump, (see the image below for reference)



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Off Season

Once you have located the high-pressure outlet you can remove the push lock to 1/4" mi fitting that is referenced in Fig 2.

Once the fitting is removed the majority of water that is in the line will drain, to speed up this process you can remove the nozzle at the very end of your system, this will release any vacuum that may be holding water in the mist line.

Make sure to replace the nozzle and re-install the push lock fitting into the pump before packing away. Failure to re-install the fittings can cause blockages and or damage to the system when next used.

Once the line is drained you can remove the filter housing with the supplied filter housing wrench and empty all water from within, these must be re-installed to prevent blockages.



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Troubleshooting

Pump will not start	<ul style="list-style-type: none"> • The switch is not turned on. the switch will glow red when the pump has power • Check the power supply at the circuit board • Check that there is sufficient water • Supply to the pump • Power supply circuit could be overloaded
Water supply has dropped outside the rangerequired by the low-pressure switch	<ul style="list-style-type: none"> • Water supply to the pump may be inadequate. check supply line inlet water pressure. • Check the condition of water filters. filter cartridges may be blocked and need replacing. • A fluctuating water supply will cause the pump to 'chatter' as the low-pressure inlet valve stops and starts. this can cause the overload to trip.
Water filter cartridge is leaking water	<ul style="list-style-type: none"> • O-ring between the housing and the base is not sealed. remove the housing and assess for cracks and check the o-ring for damage. Reset o-ring and re-install carefully.
Pump cannot reach operating pressure	<ul style="list-style-type: none"> • Adjust the un-loader valve spring on the side of the pump head, as per previous instructions. • Check the incoming water pressure on the low-pressure gauge. • Internal seals are damaged and need to be replaced and pump needs servicing. • Internal check valve is stuck open and needs to be cleaned or replaced. • Too many nozzles in the system. • Check that there are not leaks in the pipework between the pump and end of the system.
Pump will not pressurize to 1000psi or 70bar	<ul style="list-style-type: none"> • Check that no nozzles have been removed from the misting lines or fans.

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Warranty

Ozmist

Limited warranty against defects policy

This document sets the limited warranty against defects for certain products manufactured by OZmist Pty Ltd ACN 096 811 488 (referred to in these terms and conditions as 'OZmist', 'we', 'us', or 'our'). A person or organisation who has purchased an ozmist product will be referred to in this document as 'you' or 'your'.

OZmist warrants that the products that it sells directly to you are free from defects in workmanship. our products are put through tests and inspections before they are sold to you. if within the warranty period defined below, you believe a product you have purchased from us does not comply with this warranty, then you must follow the process set out in this warranty document.

1. Australian consumer law disclaimer

Our goods and services come with guarantees that cannot be excluded under the Australian consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This warranty is in addition to your rights under the Australian consumer law.

2. What the warranty covers

- This warranty applies:
 - To any OZmist products, including parts of a product, except as excluded in clause 3 (product); and
 - For 1 year from the date you purchased the product from us (warranty period).

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Warranty

3. Exclusions

This warranty does not cover any labour taken to remove, repair, replace or reinstall, including but not limited to nozzles, pumps, internal seals, water filters, nylon tubes and similar components of a product. This warranty also does not cover any defect which is a result of your or another party's fault, including but not limited to:

- Failure to properly install the product in accordance with our instruction manuals;
- Failure to use the products in accordance with our instruction manuals;
- Exposure to conditions due to the manner in which the product is installed, used or stored;
- Power supply issues that affect the installation or use of the product;
- Failure to store the product in a secure facility;
- Modification or misuse of the product;
- Regular wear and tear;

4. How to make a claim under this warranty

1. Making a claim

If within the warranty period, you believe that a product you purchased is faulty, you must immediately stop using the product and please contact us by using the email address provided in the header of this warranty document with full details of the fault (including images).

2. Further inspection

If we determine that your product may be defective, we will either;

- ◇ Request that you send your product (or a part of a product, such as the motor) back to us, at your cost, for further inspection using our own testing methods, including any requested accessories, documentation or registration shipped with the product. or;
- ◇ If your product is located within a reasonable distance of our business address provided in the header of this warranty document (product location), we may, at our absolute discretion, visit the product location for further inspection or to pick up the product for repairs, within a reasonable time notified by us to you. If we choose to do this, we will communicate to you the date/s and time/s we will travel to the product location and you must ensure that you or a representative is available at those dates and times.

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Warranty

3. After inspection

If we determine, in our absolute discretion;

- ◇ That the relevant product is faulty and covered by this warranty, we will provide you with a repair, replacement or refund of the product at our cost. or;
- ◇ That the relevant product is not faulty or is faulty due to your fault or any exclusions set out in clause 3, we will refuse your warranty claim.

4. No other warranties

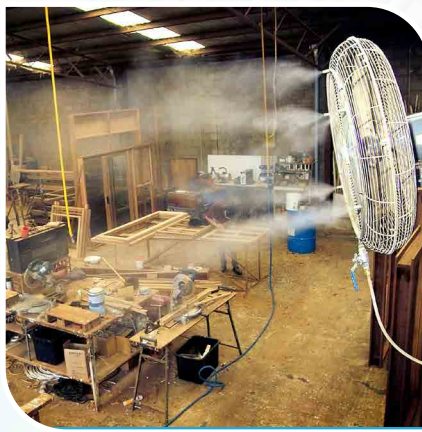
To the maximum extent permitted by applicable law, all express or implied representations and warranties not expressly stated in this warranty document, or in any written terms and conditions issued by us, are excluded.

5. Liability

To the maximum extent permitted by law, we exclude any liability that may arise as a result of you pursuing a warranty claim in accordance with this warranty document.

6. Jurisdiction

This warranty document is governed by the laws of Victoria, Australia



Contact Details:
enquiries@Ozmist.com.au
1300 306 478
