

Nano Bubble Nozzle Installation Guide

PIG-NB-001 | Installation | Intended for: Installer

Purpose and scope

This guide provides the general installation sequence for Puroxi Nano Bubble Nozzles. It does not replace the current model-specific product manual, the pump manufacturer instructions, applicable electrical rules or the final site design. Confirm the nozzle model, pipe outside diameter, connection standard, pressure rating, material and gas source before installation.

Before installation

- Confirm the required nozzle flow, pump duty point and complete-system total dynamic head from the pump curve. A pump can be single-phase or three-phase; the electrical phase is not the selection criterion. The pump must deliver the required flow at the required pressure after all static and friction losses are included.
- Confirm compatible piping, unions, isolation valves, pressure gauge and flow measurement. Smooth-end UPVC and CPVC nozzles normally use locally sourced slip fittings or flange adapters.
- Verify water chemistry, temperature and chemical compatibility with UPVC, CPVC plus PTFE, PTFE, SS304 or SS316.
- Install every electrical item through a qualified electrician with appropriate grounding, overcurrent and residual-current protection.
- For open-water systems, keep the ambient-air intake and electrical connections above the highest expected water level.

Hydraulic arrangement

- Water enters one end of the nozzle and treated water exits the opposite end. Do not reverse the intended flow direction when the model is marked.
- Provide straight, supported piping where practical. Avoid unnecessary elbows, restrictions and rapid changes in diameter.
- Install a pressure gauge where it represents nozzle inlet pressure. Install a flowmeter where practical.
- Provide isolation and a removable union or flange arrangement so the nozzle can be inspected without dismantling the whole system.
- For a submersible-pump system, place the pump in a protective cage and keep the intake clear of sediment, vegetation and debris. The pump discharge connects to the nozzle loop; it does not connect to the ultrasonic float.

Gas or ambient-air connection

- Connect every supplied gas port. Smaller models normally have two ports; MNB120 and larger models may have multiple ports.
- For filtered ambient air, join the branch tubes into the approved common line and place the low-resistance buoy or shore filter above water. Do not use a compressor for the standard passive-air arrangement.
- Keep passive-air tubing as straight and short as practical. Avoid small restrictive check valves unless Puroxi has confirmed their suitability.
- Use gas-compatible tubing, fittings and backflow protection for oxygen, ozone, carbon dioxide or nitrogen. Follow the gas-source supplier safety requirements.
- Hydrogen peroxide is a liquid. Meter it separately into the water line upstream through a compatible dosing system. Never connect hydrogen peroxide to a nozzle gas port.

Commissioning sequence

- Open the water path and confirm that the pump is flooded or properly primed.
- Establish the approved gas or filtered-air path before starting the pump.
- Start the pump and verify stable flow, inlet pressure and gas draw. Typical nozzle operation requires at least about 30 psi, with 40-50 psi commonly preferred, but the current model manual and approved design govern.
- Inspect every fitting for water or gas leakage. Confirm that all gas ports are receiving supply.
- Record initial pressure, flow, power, gas condition and visual discharge pattern.

Normal shutdown

- Stop the pump first, then shut off the controlled gas source.
- Relieve pressure and isolate the system before service.
- Where required by the application, flush or purge the nozzle and piping after shutdown.

Technical caution: Final pump and piping selection must be based on the complete system and the current nozzle manual. Do not operate against a closed valve or exceed the rated pressure of the nozzle, piping or fittings.