

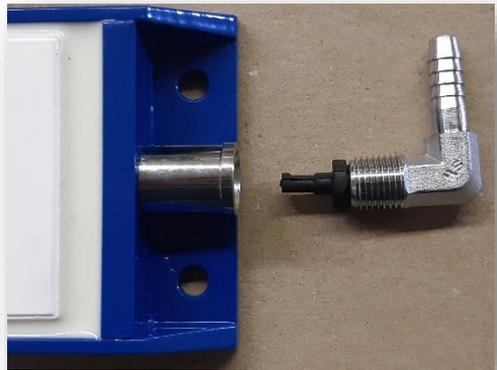
INWATER MICRO BUBBLE OXYGEN DIFFUSERS

SPECIFICATIONS

Part #	Case Size (inches)	Stone Size (Inches)	Weight (lbs)	Flowrate at operating pressure (LPM)		
				21 PSI	28 PSI	35 PSI
10491	26.4x3.1	24x2.5	4.4	2	4	8
10581	14.6x3.1	12.2x2.5	2.2	1	2	4

INSTALLATION

1. Install the check valve by inserting the rubber valve into the elbow connector. Screw the elbow connector into the diffuser inlet by hand. Do not over tighten.
2. To avoid bubble coalescence, place the diffuser horizontally and do not obstruct the surface with protective screens. The deeper the diffuser is placed in the water, the more effective it will be.
3. Secure diffuser to a flat surface using Velcro strips or screws. Do not over tighten.
4. Use 1/4" ID hose and brass or plastic fittings. Use teflon tape on threaded pipe joints.



The check valve is designed to prevent backflow of water through the inlet of the diffuser. The valve will open when the operating pressure is 8 psi or above.

Any number of diffusers can be connected to a common supply line. Supply pressure must not exceed 50 psi (3.5 bar). Use pre-set pressure regulator set to 50 psi and back pressure compensated flowmeter with needle valve to control flow. Alternatively, if an adjustable pressure regulator is used to control flow, then this must be used in conjunction with a 50 psi pressure relief valve.

OPERATION

Ensure the supply pressure at the diffuser cannot exceed 50 psi (3.5 bar). Pressurize the diffuser only when submerged. Turn the gas on and control flow via the needle valve on the flowmeter. If an adjustable pressure regulator is being used to control flow, ensure the regulator is in the Off position before turning on the gas supply.

Slowly increase pressure to the desired level, usually 20 to 30 psi, by turning the adjustment knob clockwise. There will be a small delay before the diffuser responds to flow adjustments, especially if the diffuser's air plenum has filled with water.

MAINTENANCE

The only maintenance required is periodic cleaning to maintain an even bubble pattern over the surface of the diffuser. Diffuser fouling or plugging manifests itself by a noticeable decrease in flow at the original flowmeter and pressure regulator settings. The frequency of cleaning depends on the diffuser's operating environment.

Methods of Cleaning:

- General cleaning: scrub with a hard bristle brush or hose down with a jet of water to remove slime and loose deposits.
- Cleaning a plugged diffuser: dry the diffuser and sand the surface with a coarse grit sandpaper (#40 or #60) until the top "skin" has been removed. In most cases this will rejuvenate the diffuser. If not, repeat procedure or acid clean.

Occasions arise when scrubbing is inadequate and acid cleaning will be required.

- Acid Cleaning: Dry out the diffuser and place on a level surface. Use window putty or similar to create a 1/4" high dam around the perimeter of the ceramic plate. Pour a 10% solution of muriatic acid (HCl) into the dam and allow the acid to soak into the diffuser. Continue to add acid until plate is covered to depth of 1/8". Allow to stand for 12 hours. Rinse with clean water and bubble for approximately 15 minutes until residual acid has been blown out and an even bubble pattern established before putting the diffuser back into service. It may be necessary to repeat the whole procedure if the diffuser has not been cleared on the first attempt.

CAUTION – Prior to use of muriatic acid, consult the material safety data sheet and ensure appropriate safety measures and personal protective equipment are used.

- Disinfection: Soak entire diffuser in disinfectant. This may stain the ceramic but will not affect performance.

DO NOT allow diffusers to become contaminated with oil. AVOID physical shock. When taken out of service, diffusers should be cleaned and stored dry.