



OPERATION OF THE MICRO BUBBLE GENERATOR

APPLICATION NOTE PIV-028 (A4)

Introduction

The Model BG-1000 (or BG-1000E) was designed to be simple to use as seed particle generator for wind tunnel applications. The operation for the generator can be summarized in eight simple steps. Follow the steps and the generator can be ready for your measurement in five minutes.

1. Remove the BG-1000 generator from the crate.
2. Fill the tank with water/soap solution.
3. Plug in the power cord.
4. Prime the pump.
5. Purge the nozzles.
6. Attach compressed air line.
7. Attach flexible feed hose.
8. Generator is ready to use.

All the controls for the generator are located on the front panel for easy access:

- Pump Power
- Air Ball Valve
- Air Regulator
- Air Needle Valve

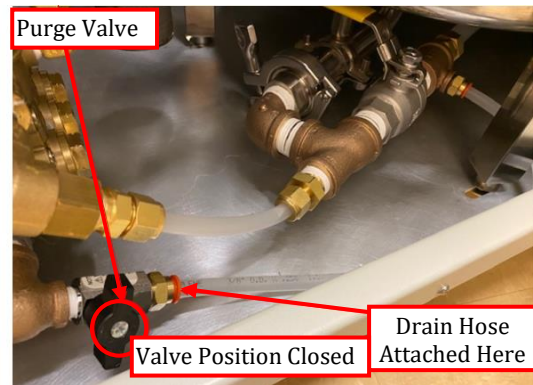


Filling the Tank with the Distilled Water/Soap Solution

The recommended water/soap mixture is with 10% soap by volume. For example, when using 19 liter of distilled water, add 1.9 liter of soap detergent. As for the type of detergent, dish detergent without any dye or scent, and not High Efficiency (HE) type is suggested. Such volume ratio provides the highest amount of micro bubbles generated.

Prime the Pump

Open the cabinet door on the side and verify the valve is closed as indicated in the picture below. Turn the black knob to allow water to flow through the pump and leave the pump running for about 10 seconds. The pump is now primed.



Purge the Air from the Nozzles

Open the top of the tank to expose the nozzle cluster inside the tank. Open the valve of the side of the cluster and turn on the pump for about 10 seconds, to allow water/soap solution to spray out of the top nozzle hole. Turn off the pump and then shut off the valve on the side.

Open the Valve



Compressed Air Line and Flexible Hose Connections

Connect the compressed air line on the back unit as indicated in the picture. Connect also the flexible hose on the top of the tank. There is a hose clamp to allow the hose to be tightly secured.



Generator Ready to Generate the Micro Bubbles

Turn on the Pump Switch and open the Air Ball Valve, Use the Air Regulator and Air Valve to control the flow rate of the bubble output. The mean size of the micro bubbles is about 15 microns.

Draining the BG-1000 Tank

When the measurement is completed, it is always recommended to drain the water/soap solution if the generator is not to be used for a long period of time (say a couple of weeks). To drain the solution out, attach a hose to the drain connection on the back of the BG-1000 and open the Yellow drain valve inside.



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