Static Mixer

Working Principle

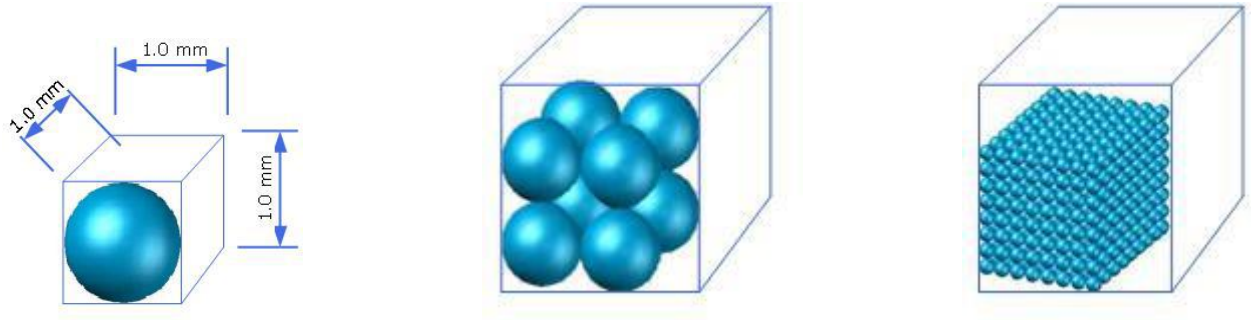
Ozone gas produced by the Ozone generator has to be dissolved in the water medium. The quantity of Ozone which is actually dissolved in water is only useful. The most optimum technique of Ozone gas dissolution in water decides the Ozone gas to water transfer efficiency. One of the techniques of dissolving Ozone in water is by using fine bubble using static mixer.

After venturi, static mixer is installed where its internal blade vigorously breaks the ozone gas bubbles in smaller bubbles which increase the total surface area of the cumulative bubbles. This increases the ozone gas to liquid mass transfer surface area. Which in turn increase the efficiency of the ozone mixing.

Finer the size of bubble more is the surface area which comes in contact with the water medium for gas to liquid transfer. In fig No.01 it can be seen that finer the bubble more will be the number of bubbles in the same volume & more overall surface area.

When using a venturi injector it is necessary to use back flow preventer to ensure water does not flow from the venturi injector back to the Ozone Generator.

Ozone Bubble Size Calculation:



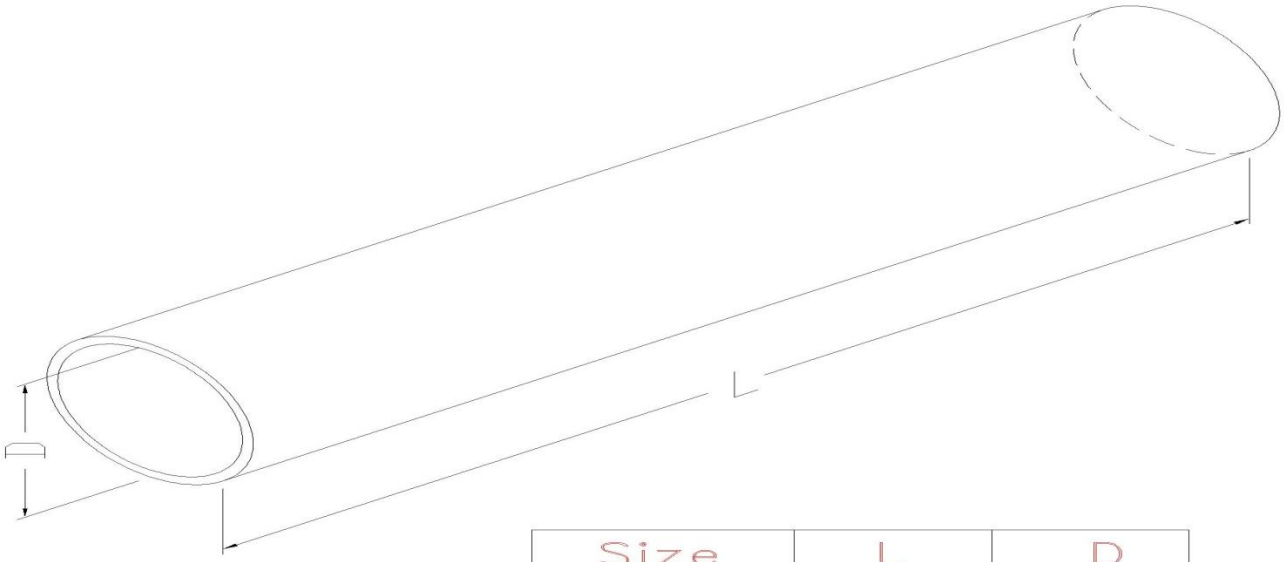
Cube	**: 1.0 mm3**
Bubble Dia	: 1.0 mm
Nos. of bubbles:	1.0 no.
Surface Area	: 3.14 mm2
Total S. Area	: 3.14 mm2

Cube	**: 1.0 mm3**
Bubble Dia	: 0.5 mm
Nos. of bubbles:	8.0 no.
Surface Area	: 0.786 mm2
Total S. Area	**: 6.29 mm2**

Cube	**: 1.0 mm3**
Bubble Dia	: 0.1 mm
Nos. of bubbles:	1,000.0 no.
Surface Area	: 0.0314 mm2
Total S. Area	**: 31.43 mm2**

Figure 1

Dimension:-



Size	L	D
1”	200	33.0
1 1/2”	250	50.0
2”	300	60.3