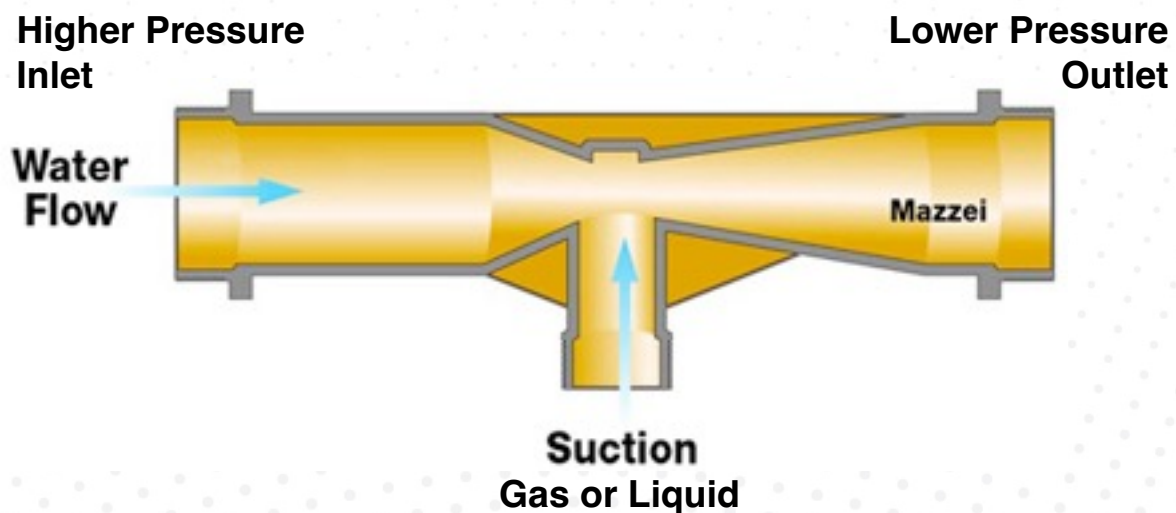




Venturi injectors are a highly efficient means of mixing liquids or gasses into a stream of water.

They work on the principle of differential pressure.

Water enters the venturi at a higher pressure than it exits. The difference in the entry and exit pressures creates a vacuum at the suction port on the side of the venturi. The bigger the difference, the greater the vacuum and therefore the efficiency of the mixing.



When installed correctly Venturis can achieve the following mixing efficiencies:

Gas Suction	1 Part Air to 1 Part Water (100%)
Liquid Suction	8 Parts Liquid to 100 Parts Water (8%)

Efficiencies do vary from model to model. (Please refer to the Venturi selection tables)

Back Pressure.

Increasing the back pressure on the outlet side of a Venturi decreases the Suction as this reduces the difference in pressure between the Inlet and the Outlet.

For example:

If the back pressure on a Venturi is close to Zero (ie. the water flowing out of the Venturi goes straight into the top of a tank) then the Venturi will give maximum suction.

Alternatively if the water exiting the Venturi still has to travel say 10 metres uphill then there will be 1 Bar back pressure. This will reduce the available suction. The Venturi tables allow us to calculate how much suction a venturi will generate under varying conditions.

Understanding the Venturi Performance Tables

Each model Venturi has a corresponding performance table. These are available from the Wassertec website. www.wassertec.co.za/Wassertec/Venturi.html

Mazzei Injector Company, LLC- Injector Performance Table							
Injector Model				784		7/23/04	
Operating Pressure kg/cm2		Air Suction		Operating Pressure kg/cm2		Air Suction	
Injector Inlet	Injector Outlet	Motive Flow l/min	Air Suction l/min	Injector Inlet	Injector Outlet	Motive Flow l/min	Air Suction l/min
0.35	0.00	16.3	5.5	4.22	0.00	56.6	28.0
	0.07		4.7		0.35		27.1
	0.14		2.3		0.70		23.3
	0.21		1.0		1.05		20.8
	0.28		0.5		1.41		16.5
0.70	0.00	23.1	9.2	0.00	2.11	0.00	7.3
	0.14		7.4		2.46		4.9
	0.35		2.7		2.81		3.8
	0.49		0.9		3.16		2.3
	0.56		0.4		0.00		28.3

The excerpt above is from a Model 784 venturi and is for Air Suction. If you are dosing a liquid then use the table marked "Liquid Suction".

The Table is divided into Sections:

Injector Inlet - This is the pressure of water entering the venturi

Injector Outlet - This is the back pressure on the outlet of the venturi

Motive Flow - This is the volume of water the venturi can process at the corresponding inlet pressure. The higher the pressure the higher the motive flow.

Air Suction - This is the maximum air suction corresponding to the amount of back pressure. Notice how as the back pressure (Outlet) increases the suction decreases.

Example. (Highlighted in Pink)

With 4.22 Bar (kg/cm²) inlet pressure and 1.05 Bar outlet pressure (ie. 10 metre head of water) the Model 784 venturi will allow 56.6 litres of water through and create a suction of 20.8 litres per minute of air/gas/ozone.

If the back pressure was Zero then the suction would be 28.0 litres per minute.