ELMRIDGE “TLE” Series Liqui-Jet Gas & Chemical Infusers use water or other liquids as the motive fluid, and operate on the venturi principle to inject gases or other liquids into a pressurized liquid stream. Liqui-Jet Gas Infusers allow maximum gas or liquid injection with minimal differential pressure. Liquid is pumped through the Infuser nozzle, emerging at a relatively high velocity, creating a zone of lower pressure contained within the Suction Chamber of the Infuser. The secondary or Suction fluid (liquid, gas, or vapor), is drawn to this lower pressure zone, where the momentum of the motive liquid is transferred to the Suction fluid, causing the Suction fluid to be pumped. Operating characteristics (water motive/atmospheric air suction, and water motive/water suction), for standard models are shown below, and special units are also available to meet your specifications. Standard materials of construction are 316 Stainless Steel, PVC, CPVC, PVDF, and polypropylene. Other materials are available upon request. Threaded, flanged, sanitary, butt weld, or socket weld connections (except Cast Iron).
APPLICATION EXAMPLES

EXAMPLE 1:

It is required that a minimum of 4 scfh of air be entrained into a line discharging 31 usgpm of water to a Discharge Pressure of 45 psig. The water can be supplied to the infuser at up to 60 psig.

1. From Table TLE-1, the TLE5 infuser has a suction capacity of 19 scfh at 60 psig Motive Pressure and 45 psig Discharge Pressure. Motive Flowrate is 57.3 usgpm.

2. The required Capacity Factor with respect to Motive Flowrate is:

\[
\frac{31}{57.3} = 0.541
\]

3. From the Capacity Factor Table TLE-2, the Capacity Factor of the TLE4 Infuser is 0.55, therefore, the Suction Capacity of the TLE4 at the given operating conditions is:

\[
0.55 \times 19.0 = 10.45 \text{ scfh}
\]

The Motive Flowrate of the TLE4 at the given operating conditions is:

\[
0.55 \times 57.3 = 31.5 \text{ usgpm}
\]

The Suction Flowrate can be reduced, if necessary, by throttling the suction air supply.

EXAMPLE 2:

It is required that 1 usgpm of chemical (S.G. = 1.0), be entrained into a line discharging 84 usgpm of water to a Discharge Pressure of 10 psig. Suction Lift is 5 feet. The water can be supplied to the infuser at up to 40 psig.

1. From Table TLE-3, the TLE5 infuser has a suction capacity of 3.42 usgpm at 40 psig Motive Pressure, 5 feet Suction Lift, and 10 psig Discharge Pressure. Motive Flowrate is 50.4 usgpm.

2. The required Capacity Factor with respect to Motive Flowrate is:

\[
\frac{84}{50.4} = 1.7
\]

3. From the Capacity Factor Table TLE-2, the Capacity Factor of the TLE6 Infuser is 1.80, therefore, the Suction Capacity of the TLE6 at the given operating conditions is:

\[
1.80 \times 3.42 = 6.16 \text{ usgpm}
\]

The Motive Flowrate of the TLE6 at the given operating conditions is:

\[
1.80 \times 50.4 = 90.7 \text{ usgpm}
\]

Motive and Suction Flowrates can be reduced by throttling the liquid streams as required.

Dimensions and Specifications are subject to change without notice