

## **INSTALLING THE LOBESTAR® MIXING EDUCTOR:**

The Lobestar® Mixing Eductor design is based on the Bernoulli Principle of "When velocity is high, pressure is low". Generally, a centrifugal pump is used to deliver the pressure energy to Eductor.

The pressurized fluid is converted to velocity as it passes through the converging Lobestar® Nozzle. The resulting high velocity stream generates a low-pressure region around the issuing jet stream drawing in and entraining powders, granular materials or secondary liquid(s) into the mixing chamber of the Lobestar® Mixing Eductor. A momentum of energy exchange in the mixing chamber produces a uniformly mixed stream. The geometry of the conical diffuser that is located downstream from the Eductor mixing chamber is shaped to reduce the velocity gradually and convert the velocity energy to pressure at the discharge with as little loss of pressure as possible.

The Lobestar® Mixing Eductor has no moving parts. The four major components are:  
(1) Nozzle (2) Suction inlet (3) Mixing Chamber (4) Diffuser.

The orientation of the Lobestar® Mixing Eductor is an important consideration for good performance. The direction of fluid flow is from the Lobestar® Nozzle inlet end to the diffuser discharge end. The discharge line (hose or pipe) routed from a pump is connected to the Nozzle end of the Eductor. The discharge end of the Eductor is the Diffuser end. This is on the downstream side. The pipe or hose discharge can be connected to a tank or reservoir. This can complete a closed circuit for batch or continual service.

Since the Lobestar® Mixing Eductor's performance is based on streamline flow, the following are installation considerations:

- 1) Check to see that the discharge of the pump is connected to the Nozzle end of the Eductor.
- 2) A valve must be installed on the suction of the Eductor. Before starting the pump, the suction valve should be in a closed position. A minimum of 25 PSI should be obtained before opening the suction valve.
- 3) The piping or hose on the downstream side of the Eductor should always be as large as or larger than the diameter of the Eductor. Example: A 2" Model Lobestar® Mixing Eductor should be connected to 2" or 3" pipe or hose.
- 4) Avoid placing downstream obstructions in the line. Interruptions in the streamline flow will cause the fluid in the pipe to separate from the wall. When wall separation develops, "eddies" form in the flow stream and back-flow can occur.

- 5) When installing elbows in the downstream line, the first elbow should be at least 6 pipe diameters from the discharge end of the Eductor.
- 6) The pipe routed to a containment area or tank should discharge above the liquid surface to prevent back-pressure. If foaming should occur, discharge the line just below the liquid surface level.