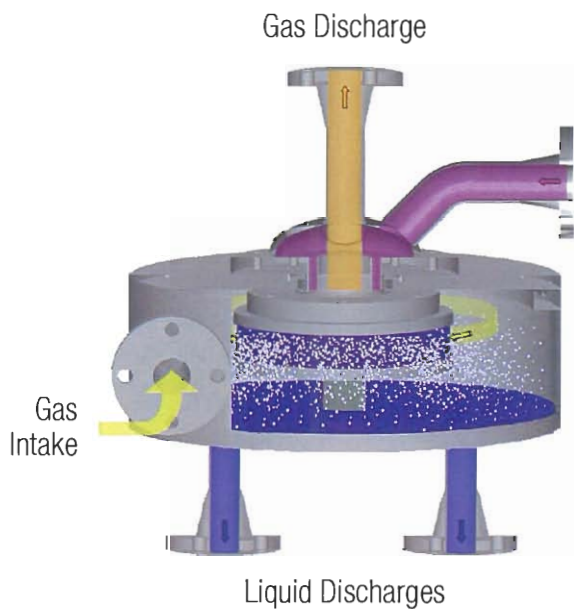


## How GasTran™ Technology Works

GasTran Units use specially engineered materials to shear an incoming fluid stream into ultra fine droplets. This process dramatically increases the surface area of the fluid to facilitate proven chemical processes. GasTran Technology provides significantly more efficient mass transfer than current alternatives because it is continuously shearing and coalescing the liquid exposing surface area to the gas medium.

## GasTran Basic Operation

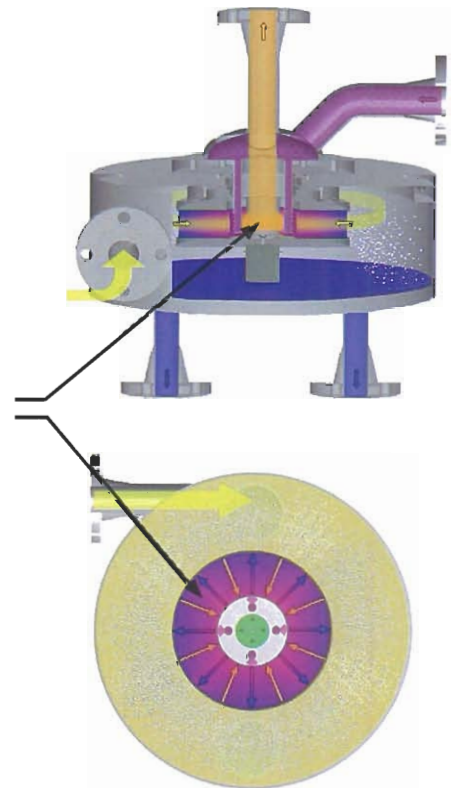


Liquid Intake

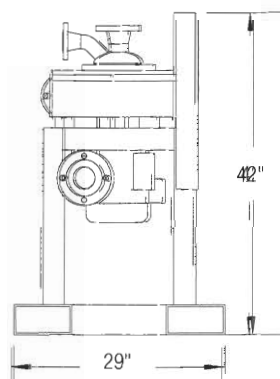
Gas Intake

Liquid Discharges

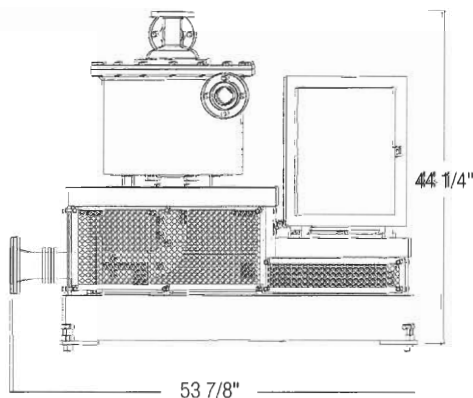
The mass transfer occurs in the center rotor, which is spun at very high velocities by an attached motor. The liquid is forced through the rotor by centrifugal force while the gas is driven by pressure drop to the inside of the rotor causing countercurrent flow. The liquid drains out the bottom of the unit and the gas discharges at the top.



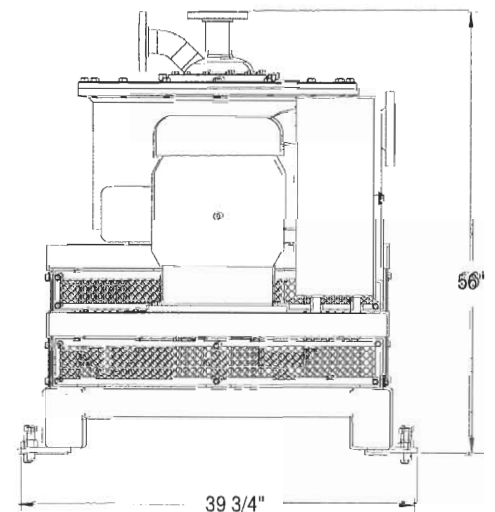
## GasTran HP Series Models



Model HP-A



Model HP-B



Model HP-C

## GasTran™ Features

- Reduces gas concentration in liquids to less than 2 parts per billion (ppb)
- Injects gases into liquids above theoretical saturation levels
- Highly scalable operation with turn-down ratios as low as 95%
- Reaches steady state equilibrium concentrations in seconds
- Maintains performance even with viscous fluids & solids
- Low operating pressure requirements
- Stainless steel construction
- Alternative materials & food-grade designs available



Model HP-B

## Benefits & Applications

The GasTran Unit's compact, low-maintenance, and energy-efficient process intensification design makes it ideal for applications where high performance is required but space and cost-efficiency is at a premium. Its ability to handle **viscous fluids** and solids with little to no fouling results in less downtime and **maintenance**. Fast start-up and shut-down of operation means less wasted product at the beginning and end of production runs. The compact size and lower required operating pressures also translate into safer operation. A modular design enables systems capable of handling flow rates up to 1,200gpm.

### Industry applications include:

- Removal of O<sub>2</sub> and CO<sub>2</sub> to deaerate process water (Boilers, Beverage, Waterflood, etc)
- Ozonation & oxygenation of industrial wastewater streams
- Separation & recovery in process streams (Solvents, VOCs, Alcohols, etc)
- Simultaneous saturation & facilitation of chemical reactions

