

# Pearth™ Digester Gas Mixing

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An economical reliable way to assure adequate mixing is with the PFT Pearth™ gas mixing system. In very small diameter digesters (25 feet/ 8 meters or less) one points of gas energy input is generally sufficient to mix tank contents. In larger diameter tanks, the Pearth system employs lances to sequentially inject gas into a series of micromixing zones.

The gas discharge is sequenced from lance to lance thereby moving the micromixing zone throughout the tank. Since energy dissipates as one moves away from the energy source, a greater number of small, sequencing mixing zones results in a lower energy cost and improved mixing performance over a single, large zone. The absence of intense energy from a given zone during the sequencing cycle has no effect on the digester operation due to the relative slow reaction and settling rates experienced in anaerobic digestion.

The sequential discharge feature of the Pearth™ system develops a variable mixing pattern in the digester, whereas nearly every other gas, mechanical or recirculation mixing pattern.

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With a fixed mixing pattern, velocity vectors associated with the flow developed by the mixing system have a fixed direction and intensity. As a result, dead spots may be formed by opposing vectors, wall effects, or by the effects of piping and other obstructions in the digester. To reduce these dead spots with a fixed pattern mixing system requires putting more energy into the digester.

With sequential discharge, both the direction and the intensity of velocity vectors at any point in the digester are frequently and automatically changed, with only one point at a time receiving gas flow. This feature virtually eliminates the formation of a floating scum layer in the digester and greatly reduces bottom solids deposition.

## Benefits of the Pearth™ Gas Mixing System

- Reduced energy costs
- Thorough digester mixing
- Superior floating solids controls
- Ability to control settling zone for digested solids
- Access to all equipment without dewatering the digester

The information provided in this literature contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of the contract.

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