

# WESTFALL

Model 2900

## Variable Flow Static Mixer

*Optimizes Mixing and Minimizes Headloss*

● PATENT PENDING



Pivoting Mixer Plate ●

Variable .7 Beta Mixer for low flow mixing

Finally: a static mixer that significantly reduces headloss at maximum flow, while maintaining thorough, consistent mixing through a **20 to 1** turndown ratio.



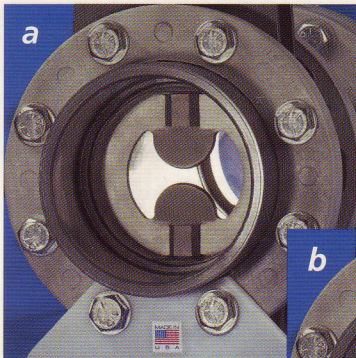
Fixed .9 Beta Mixer for high flow mixing

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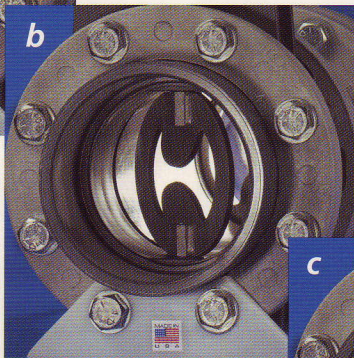
## Advantages of the Model 2900 Variable Flow Static Mixer

This innovative design (patent pending) features two in-line wafer type mixers: one stationary and one mounted on a pivot that adjusts incrementally to changing flow conditions. Imagine a motor operated butterfly valve with the mixer orifice shape in the middle. This downstream mixer is designed to literally "go with the flow" in response to a differential pressure controller – wide open when operating at maximum flow velocity, to reduce headloss; and closing as flow decreases to enhance mixing turbulence and retain more constant differential pressure across the mixers.

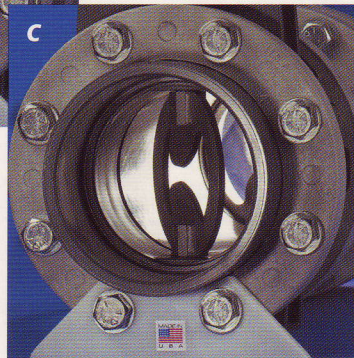
Our wafer type mixer is a radical departure from conventional vane type static mixers. Its computer designed, geometric shape creates vortex shedding and shear-induced turbulence, which effectively mixes the injected fluid(s) with the main process stream.



*a*  
Closed mixer boosts turbulence for mixing at low flow – 0-2 fps

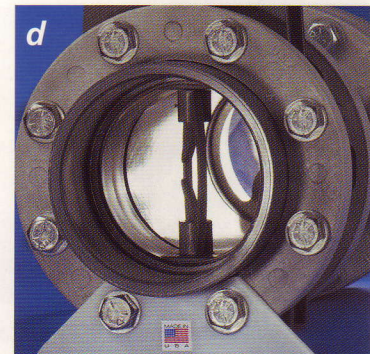


*b*  
Mixer is partly open to mix at 2-4 fps, avoiding headloss



*c*  
Mixer is opened wider to mix at 5-6 fps while reducing headloss

*a, b, c, d* .7 Beta variable mixer plate opens and closes to accommodate changes in rate of flow, providing optimum mixing and minimal headloss

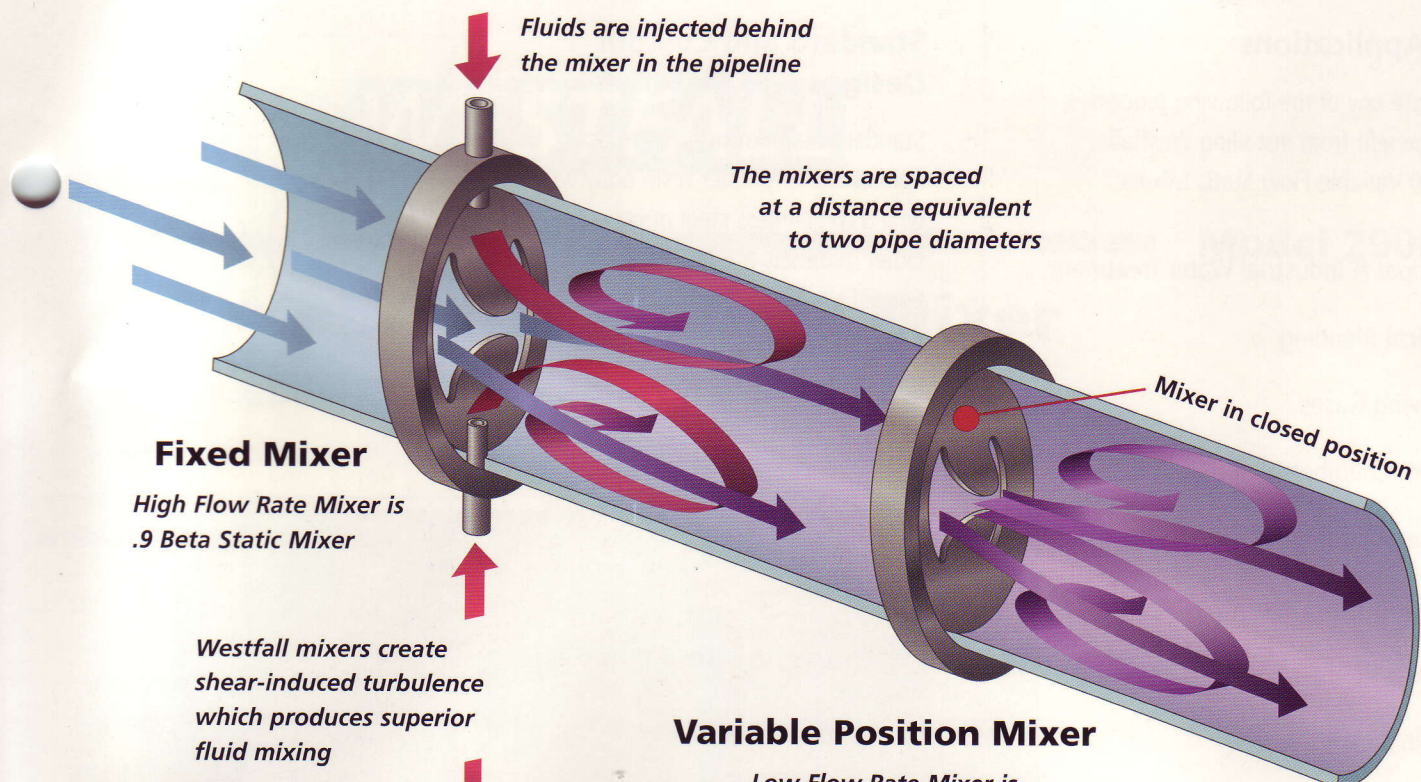


*d*  
Mixer is wide open to significantly reduce headloss for high rates of flow – 7-10 fps

- ◆ Accommodates Wide Range of Flow Rates (Up to 20 to 1 Turndown Ratio) Without Excessive Headloss at Maximum Flow
- ◆ Significantly Reduces Headloss at High Rates of Flow
- ◆ Dramatically Improves Mixing at Low Rates of Flow
- ◆ Excellent Mixing As Low As .5 FPS
- ◆ Alden Lab Tests Verify Excellent Mixing from .5 to 10 FPS
- ◆ Available in Line Sizes 3/8" to 120" Diameter
- ◆ Short Laying Length
- ◆ Integral Injection Fittings
- ◆ Predictable Mixing
- ◆ Easy Installation
- ◆ Long Service Life
- ◆ Low Maintenance Requirements
- ◆ Materials of Construction: PVC, FRP, 316 Stainless Steel, Titanium, etc.

### Westfall 2900 Variable Flow Static Mixer

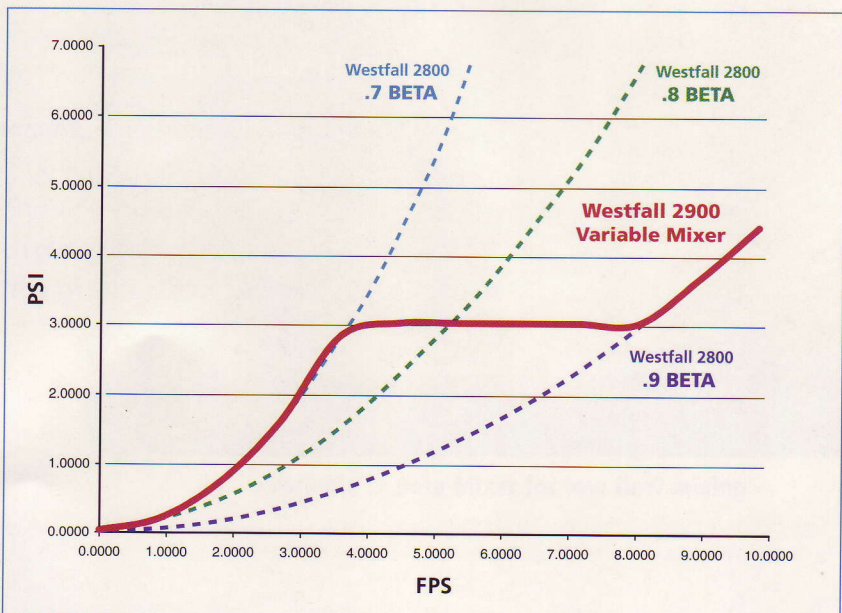
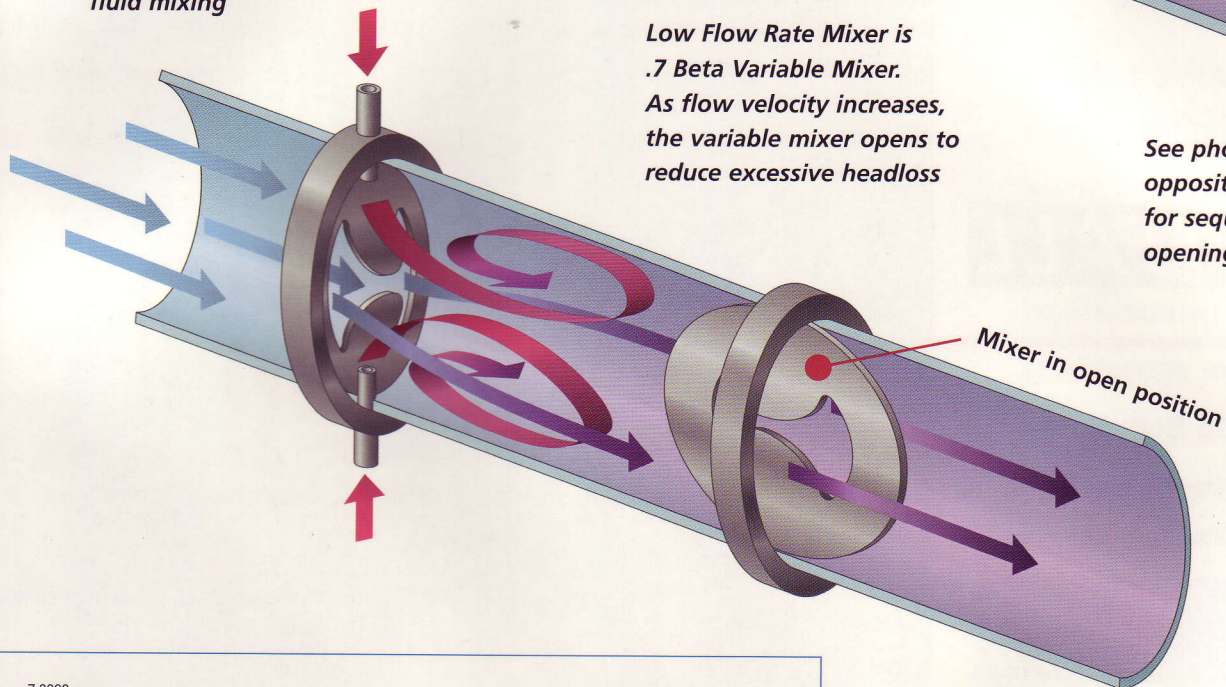
Optimizes Mixing and Minimizes Headloss



**Variable Position Mixer**

Low Flow Rate Mixer is .7 Beta Variable Mixer. As flow velocity increases, the variable mixer opens to reduce excessive headloss

See photos on opposite page for sequential opening of mixer



**WESTFALL**

**Model 2900  
Variable Flow  
Static Mixer**

## Typical Applications

If you operate any of the following processes, you could benefit from installing Westfall Model 2900 Variable Flow Static Mixers:

- ◆ Municipal & Industrial Water Treatment
- ◆ Chemical Blending
- ◆ Dissolving Gases
- ◆ Contact Chambers
- ◆ Polymer Blending
- ◆ Flocculant Blending
- ◆ pH Control
- ◆ Potable Water
- ◆ Waste Water
- ◆ Chlorination/De-Chlorination

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## Experience and Reputation

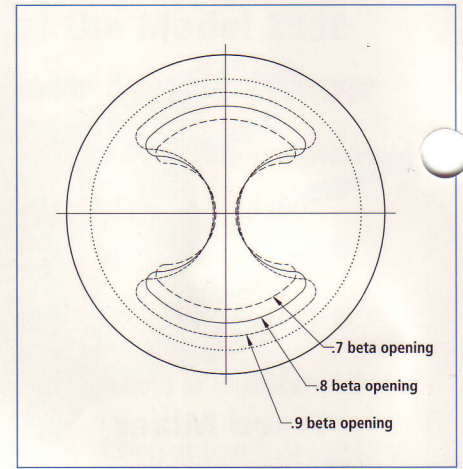
Westfall Manufacturing Company has extensive experience in the water, waste water and industrial markets and has been the primary supplier of water treatment components for numerous original equipment manufacturers. The company has a proud history of successful applications, having manufactured more than 10,000 Venturi meters since 1965 and more than 2,500 vacuum D.E. filters over the past fifty years. We are a preferred manufacturer of Static Mixers, Vacuum Diatomaceous Earth Filter Systems, Dry Chemical Feeders and Venturi Flow Meters.

**Westfall Innovates – Others Imitate**

## Standard and Custom Designs and Materials

Standard materials are Fiberglass Reinforced Vinyl Ester resin body with type 316 stainless steel mixer plate. Other materials are available on request. Special size rings, mixer plates and injection fittings can be fabricated to meet specific requirements.

Mixer plates are offered in 0.7 – 0.9 Beta ratios. The mixers are available with manual and automatic controls.



Westfall 2800 Standard Mixer Sizes

### Mixer Plate Beta Openings

Alden laboratory CoV = .008 for .7 beta ratio with excellent mixing at 1-3 FPS  
Alden laboratory CoV = .009 for .8 beta ratio with excellent mixing at 3-8 FPS  
Alden laboratory CoV = .050 for .9 beta ratio with excellent mixing at 8-11 FPS  
CoV = standard deviation of the test data divided by the average of the test data

### Visit [www.westfallmfg.com](http://www.westfallmfg.com)

for further information and laboratory data including the white paper:

### [An Evaluation of the Hydrodynamics Mechanisms Which Drive the Performance of the Westfall Static Mixer](#)

by Dr. Thomas J. Gieseke, NUWCDIVNPT  
(Naval Undersea Warfare Center Division Newport)

The study focused on measurement of pressure patterns through the Westfall Mixer and the measurement of the flow-field in its wake.

### Westfall Manufacturing Company

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