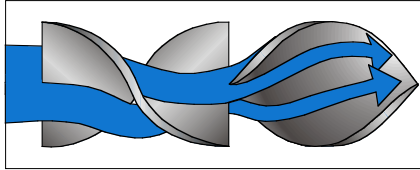


Description

Samhwa static mixers from JLS provide continuous in-line mixing of fluids, gases, or powders using no moving components. Alternating helical mixing elements provide thorough radial and axial blending in a short length by dividing the main flow into two equal streams as material passes each element. The number of divisions increases by 2^n , where "n" is the number of elements.



Each element is a rectangular plate twisted 180°. Right and left elements are joined alternately at 90° angles to each other.

Samhwa mixers are custom-designed for each application. The number of elements is determined by the specific application. Mixers can be jacketed or electrically heated, and supplied with fixed or removable mixer elements. Sizes range from 2 mm to more than 2 meters in diameter.

Advantages

- Provide excellent mixing or blending of two liquids, a liquid and a gas, two gases, or two powders
- Plug flow device (first in, first out)
- Short, uniform residence time
- Uniform temperature, no "hot spots"
- Smooth shape and edge sealing of elements allows no dead spaces for product to hangup or degrade
- Can be used for materials with low to high viscosities, up to 20,000 poise or more
- No maintenance (since no moving parts)
- Can process highly corrosive materials
- Can be used in high viscosity heat exchangers to increase heat transfer coefficients three to four times standard open tube designs

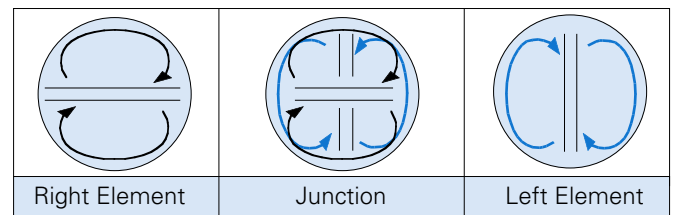
Applications

Processes:

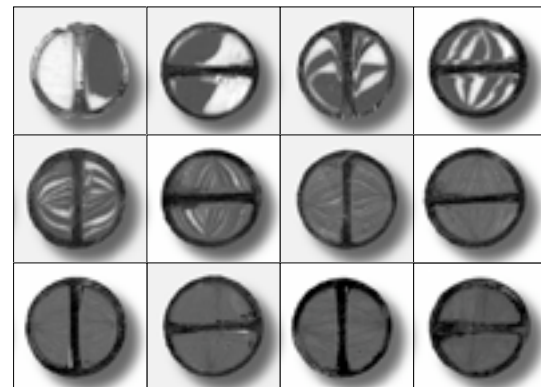
- Mixing
- Reacting
- Coloring
- Polymerization
- Heat exchange
- pH control
- Neutralization
- Diffusion
- Gas mixing
- Powder mixing
- Liquid mixing
- Laminar and turbulent mixing applications
- Obtaining product temperature uniformity
- Extrusion
- Compounding

Industries:

- Polymer processing
- Fiber production
- Plastics extrusion
- Foods including edible oil, mayonnaise, ice cream, chocolate, beverage, milk, yogurt, and cheese
- Pharmaceutical
- Injection molding
- Fine films



Flow is constantly rotated so that particles entering at the center of the stream are continuously forced to the outer wall and back again.



These photos show the flow at each element as it passes through a 12 element string.

Materials

Elements can be constructed of:

- Stainless steel
- Hastelloy
- Teflon
- Carbon steel
- PVC
- PP (Polypropylene)
- PE (Polyethylene)
- FRP (fiberglass reinforced plastics)
- Tantalum
- Kynar
- Inconell and many other materials

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Mixing Application Questionnaire

For a quotation on static mixers for your application, please copy this page, complete, and fax to JLS.

Company _____ Dept./Div. _____ Building _____

Address _____ City _____ State _____ Zip _____ Country _____

Contact _____ Title _____

Phone _____ Fax _____ E-mail _____ Submit quote by _____

Process Information

| Stream / Fluid | #1 | #2 | #3 | Total Mixture |
|-----------------------|----|----|----|---------------|
| Product name (stream) | | | | |
| Flow rate ___ /hr. | | | | |
| Pressure | | | | |
| Temperature | | | | |
| Density | | | | |
| Viscosity | | | | |
| Connection size | | | | |

Design Information

| | |
|--|--|
| Housing <input type="checkbox"/> Yes <input type="checkbox"/> No Size: | |
| Type element <input type="checkbox"/> Helical <input type="checkbox"/> High shear | |
| No. of elements | |
| Mixer length (mm) max. | |
| Connection type | |
| Material of construction | |
| Heating jacket <input type="checkbox"/> Oil <input type="checkbox"/> Steam <input type="checkbox"/> Electric <input type="checkbox"/> None | |
| Injection ring <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Use <input type="checkbox"/> Mixing <input type="checkbox"/> Uniform temperature | |

| | | |
|--|-------------|--|
| Material | Housing | |
| | Element | |
| | Flange | |
| Pressure Drop | Allowable | |
| | Operating | |
| Design Condition | Pressure | |
| | Temperature | |
| Testing required: <input type="checkbox"/> Yes <input type="checkbox"/> No Type: | | |
| ASME Code Stamp: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other stamp type: | | |