KOMAX HPC Mixer for limited pipeline space, rapid, energy-efficient in-line static mixing

When pipeline space is limited for installing a traditional static mixer, Komax HPC Static Mixer solves space and mixing problems. The HPC mixer can be installed within a spacing as short as one pipe diameter of the mainline.

Komax HPC Mixer offers advantages over traditional mixers:

- Requires a spacing as short as one pipe diameter of the pipe
- Allows up to three injection ports
- Uses counter rotating vortex generating element technology
- ideal for a low to moderate viscous mixing
- Blends the additive effectively without sacrificing pressure drop.
- Strong tangential momentum offers more efficient mixing by eliminating dead zone within the pipe.
- Available in standard materials of construction: Carbon Steel, Stainless Steel, PVC, FRP, and can also be made out of Titanium or specialty alloys as required
- Low capital cost, no moving parts, maintenance free, low head loss and long service life
- In most turbulent flow applications, a coefficient of variation of 0.05 is achieved three pipe diameters downstream from the mixer outlet.

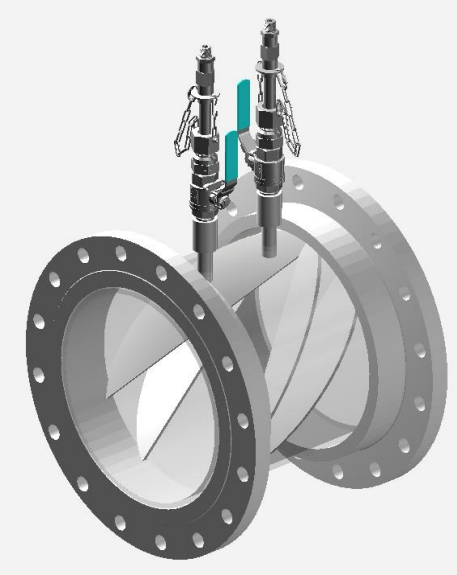

Fig 1. HPC mixer detail.

KOMAX HPC MIXER technology employs a unique counter rotating vortex generating element group that helps achieve a desirable mixing quality by creating counter-rotating vortex pairs. Extensive studies were conducted to identify the optimal design parameters for the element, aiming to achieve a short mixing length while minimizing pressure loss under various flow conditions.

The mixer is designed to ensure a consistent mixing quality, regardless of the additive injection point. Consequently, the need for an injection quill is eliminated, alleviating any concerns about additive release hole blockages.

Additive chemicals are introduced at the upper section of the pipe, just before they reach the mixing element. A high shear flow induced by the upstream element breaks down and disperses the additives in the upper-middle section of the mixer. As the fluid continues downstream, counter-rotating vortex pairs interact with each other, guiding the low-energy additive fluid towards the core flow region where extensive mixing takes place, facilitated by the swirling flow. This momentum carries on downstream within the pipe, ensuring thorough and homogeneous blending of the additives with the main fluid.

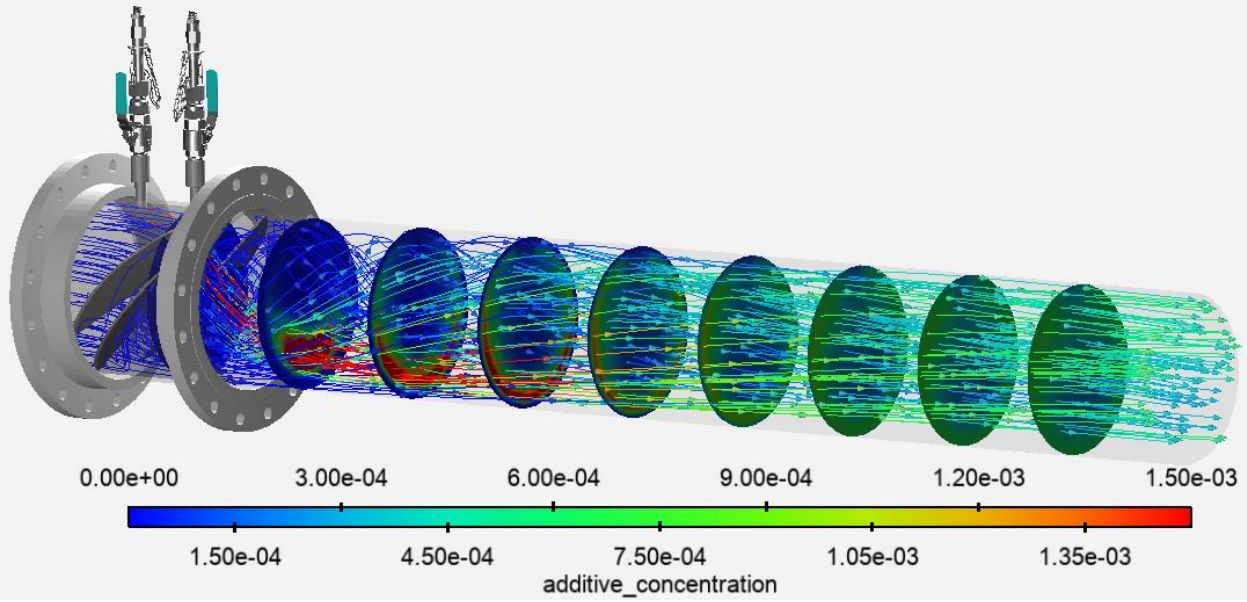

Fig 2. CFD analysis, streamlines and contour plots colored in an additive concentration.

Typical HPC Mixer Applications

- Waste Water Flocculation
- Water/ Waste Water pH control
- Water/ Waste Water Dechlorination
- Water Chloramination
- Mixing any other additives into water

OTHER KOMAX PRODUCTS AND SERVICES: KOMAX will design a complete Static Mixer system for your application. Our engineers are experienced in the design and fabrication of additive input ports, spargers and diffusers that can enhance the mixing action. Call or email us for any custom mixing design to achieve your process requirements.

KOMAX SYSTEMS·INC
MIXING BY DESIGN

15301 Graham St. Huntington Beach, CA 92649

Phone: 714.933.7400 • Fax: 310.830.9826 • Toll Free: 800.826.0760

Email: Info@komax.com **Web Site: www.komax.com**