High Shear Mixer Homogenizer

FPS provides complete range of High Shear Homogenizers including Batch Homogenizer (Top Mounted and Bottom Mounted), Inline Homogenizer (Single Stage, Two Stage and Multi Stage).

Blending - Homogenizing - Emulsifying - Disintegrating

Particle Size Reduction - Solubilizing - De-agglomeration - Dissolving

Shear Force Principle:

FPS range of Homogenizer work on the principle of shear force produced in the precision designed work-heads i.e., the rotor-stator. Rotor is designed to produce a suction force for material which is pulled out centrifugally into the stator head, wherein the shearing of the material takes place. These Mixers impart a vigorous Radial and Axial flow patterns and Intense Shear which makes it an outstanding Pre-Mixer with excellent Dispersing performance, Uniform Fineness, Rapid Operation and High Efficiency.

Interchangeable Work-heads, High Tip Speed and narrow Radial Gap between the Rotor and Stator makes this Mixer ideal for the processes like Mixing, Homogenization, Suspensions, Emulsification, Dispersion and Disintegration of any Type of Solid/Powder into Liquid.

Working of High Shear Homogenizers:

Step 1. High Speed Rotation of Rotor blades exerts a Powerful Suction, drawing in liquids & solids directly into the Eye of the Rotor.

Step 2. Material is centrifugally forced to the tolerance between the Rotor & inner walls of the Stator where Milling action takes place.

Step 3. The Milling is then followed by vigorous Hydraulic Shearing as the material is forced through the perforations in the Stator.

Step 4. A continuous Mixing Pattern is maintained due to continuous Radial Expulsion and Suction into the eye forming a stable mixing pattern.
FPS range of High Shear Homogenizers:

1. Inline High Shear Homogenizer:
   FPS range of Inline High Shear Homogenizer consist of a specific arrangement of different number of sets of Stators and Rotors concentrically mounted horizontally inline to the fluid flow. Inline range provides versatility for the volume range varying from a few litres to thousands of litres.

   Types: Single Stage, Two Stage and Multi Stage.
   M.O.C: S.S. 304 / S.S. 316L / Other Material as per request.
   Sealing Mechanism: Single Mechanical Seal / Double Mechanical Seal / Gland Packing
   Mounting: Anti-Vibration Pads Suitable for all Volume range starting from Lab Scale to Commercial Volumes.
   Optional: Inverter/VFD for Variable Speed, Flameproof Motor, S.S. Motor Cover and Control Panel with Suitable Starter - VFD or S/D.

   • Single Stage Inline High Shear Homogenizer
   • Two Stage Inline High Shear Homogenizer
   • Multi Stage Inline High Shear Homogenizer

2. Batch High Shear Homogenizer
   FPS range of Batch High Shear Homogenizer consist of a specific arrangement of sets of Stators and Rotors concentrically mounted in a vertical orientation to the material flow.

   M.O.C: S.S. 304 / S.S. 316L / Other Material as per request.
   Mounting: Tank Mounted/Floor Mounted/Platform Mounted Suitable for all Volume range starting from Lab Scale to Commercial Volumes.
   Optional: Inverter/VFD for Variable Speed, Flameproof Motor, Control Panel with Suitable Starter - VFD or S/D.

   • Batch Top Mounted High Shear Homogenizer with Mixing Vessel
   • Batch High Shear Homogenizer with Manual Portable Lifting Stand
   • Batch High Shear Homogenizer with Automatic Hydraulic Lifting Stand
   • Batch Bottom Mounted High Shear Homogenizer with Mixing Vessel