

Giving Edge to Efficiency

Fenix™ High Shear Mixer

High shear mixer is used for transferring one component into a main continuous liquid phase in which it the component to be transferred is (normally) immiscible. This equipment is commonly used in the chemicals, pharmaceuticals and plastics industries including adhesives, cosmetics and food sectors for suspension, dispersion, homogenization and emulsification.

High shear mixer uses a high speed impeller (also called rotor) to create high velocity and shear in the continuous liquid phase. The velocity at the centre of the impeller is much lower. This differential speed generates shear in the mass of the fluid.

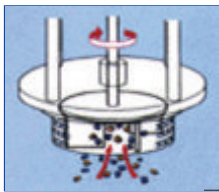
A stationary component (or stator) is used in combination with the rotor. to create a close clearance gap between the rotor and itself and forms an extremely high shear zone for the material as it exits the rotor. The combination of the rotor and the stator is referred to as the mixing head

FXShearMix range of mixers from the house of Fenix is based on this concept of mixing head for intense shear of ingredients. This mixer has a separate chamber at the bottom through which the mixing ingredients are drawn in. The high speed rotating head pushes the ingredients through specially designed perforated head at a very high velocity. This helps the fluid to break into small particles which flows through the peripheral cavity to the top. The fluid is kept in suspension in the chamber by rotating blades and flows out through the top nozzles.

Key design parameters are (a) rotor diameter, (b) rotor rpm, (c) rotor configuration, (d) gap between rotor and stator and (e) residence time in the mixer. .

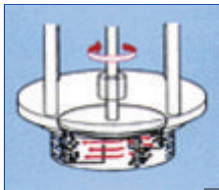


Fenix™ high shear mixer works on the principle of drawing the materials through the specially designed mixing head and shearing this through another specially designed rotating assembly.



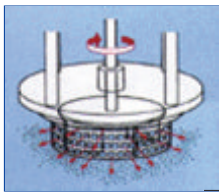
Stage 1

The high-speed rotation of the impeller draws material through the suction of the mixing vessel.



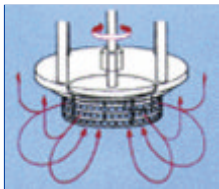
Stage 2

Centrifugal force drives material towards the periphery of the impeller where it is subjected to a milling action in the clearance between the ends of the impeller blades and the stator head.



Stage 3

This is followed by intense shearing of the material which is forced, at high velocity, out through the perforations in the stator head.



Stage 4

The material expelled from the head flows up at high speed towards the sides of the mixing vessel. The impellers at the top of the mixing head keep the material in suspension.

Technical Data – FX M03

MOC Body - Shaft - Shear Head	Operating Temperature
SS 316	100 deg C max
MOC Motor Stand - Supports	Operating Pressure
Carbon Steel	5 bar g max
Motor Details	Shipping Dimensions
5 HP 1500 RPM TEFC IP 55	1800 mm X 700 mm
Flow Range	Gross Weight
5 m ³ /hr max	90 kg

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