CHEMICAL PLANT & ENGINEERING

ROTOSOLVER

Dispersing • Dissolving • Emulsifying • Homogenising

THE ULTIMATE HIGH SHEAR MIXER

FOR THE FOOD, PHARMACEUTICAL AND CHEMICAL PROCESSING INDUSTRIES.

APPLICATIONS

- LIQUID / LIQUID DISPERSIONS
- SOLID / LIQUID DISPERSIONS
- DISSOLVING / HYDRATING POWDERS
- OTHER DIFFICULT MIXING APPLICATIONS

WHEN PERFORMANCE IS CRITICAL

Conventional low-speed agitators provide very good results when mixing similar miscible liquids. High speed saw toothed dispersers are utilized effectively for particle size reduction, or for long residence time dispersions. Where very high shear rates are not detrimental to a process, fixed stator/rotor high shear mixers are commonly employed.

The ***Rotosolver*** provides the most innovative technology for producing superior liquid/liquid or solid/liquid dispersions, or for dissolving or hydrating powders and solids within liquids for 100% utilization. The ***Rotosolver*** optimizes the balance between shear rates, particle size reduction, and flow/circulation within your mixing kettle or tank.
To help illustrate how the ***Rotosolver*** is unique among other mixing devices, we offer the following comparisons:

DETAILS	ROTOSOLVER	CONVENTIONAL LOW SPEED AGITATORS	HIGH SPEED SAW-TOOTH DISC DISSOLVERS	FIXED STATOR CLOSE CLEARANCE HIGH SHEAR MIXER
MIXING ACTION	High intensity good top-to-bottom motion	Very good top-to-bottom motion	Good top-to-bottom motion	Low intensity (difficult to draw powder into mixer)
SHEAR RATE	High	Low	Moderate	Very High
PARTICLE SIZE REDUCTION	High	Very poor	Moderate to high	High to very high
VISCOSITY RANGE	50,000mPa*s	50,000 – 100,000 mPa*s	100,000mPa*s	25,000mPa*s
DISPERSE IMMISCIBLE FLUIDS	Yes	No	Yes	Yes
FULLY DISSOLVE OR HYDRATE POWDERS INTO LIQUIDS	Yes	No	Some	Yes (may over shear)
WEARING PARTS IN PRODUCT ZONE	No	No	No	Yes
CAPABLE OF CIP	Yes	Yes	Yes	No

ROTOSOLVER

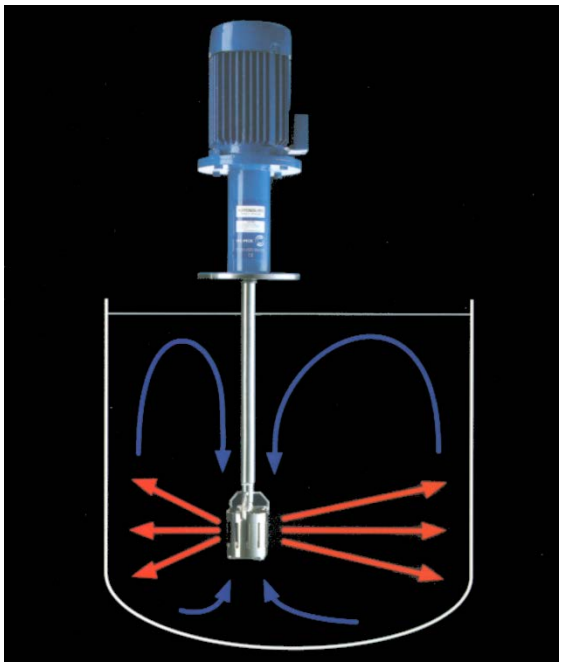
The **Rotosolver** combines the shearing capabilities of saw toothed rotor with a slotted stator and the additional advantage of high flow circulation from the dual rotor blades. This unique mixing head design provides a four-stage mixing action:

1- Flow is drawn into the mixing head from above and below where all materials are immediately mechanically sheared by the teeth on the rotors at the top and bottom of the cylinder.

2- The two high velocity counter current streams converge within the cylinder causing high turbulence and hydrodynamic shear without momentum loss from obstructions within the cylinder.

3- Pressure forces materials to the periphery of the cylinder where it is subjected to further mechanical shear as material passes through the sharpened slots.

4- The high velocity radial discharge combines with slower moving tank flow for additional hydrodynamic shear and circulation.



CHARACTERISTICS

- High intensity mixing action
- High shear rate
- High particle size reduction
- Viscosity range 50,000mPa*s
- Disperse immiscible liquids
- Fully dissolve or hydrate powders into liquid
- No wearing parts in product zone
- Capable of CIP
- Quick disconnect mixing head for inspection
- Single shaft obstruction free design
- Can be operated at low liquid levels

For higher viscosity fluids, or where further vortex control is beneficial, an upper high efficiency impeller can be added. This doubles the flow / pumping rate and could substantially reduce mixing time.

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