

# Ultrasonic Tube Resonators

## For Chemical Applications



### APPLICATION

- ★ Herbal Extraction
- ★ Electro plating
- ★ Maturing of spirits
- ★ Reducing particles size
- ★ Polymerization
- ★ Depolymerization
- ★ Agglomeration
- ★ Decreasing Reaction time
- ★ Catalyst
- ★ Dispersion
- ★ Emulsification
- ★ Crystalization
- ★ Sonoluminescence
- ★ Sonochemiluminescence
- ★ Electron Chemistry
- ★ Descaling
- ★ Treatment of molten metals

The tube resonators can be built in to or retrofitted to existing vessels. The tube resonator system components include :-

**Ultrasonic Generator :** A complete electronic unit which can be kept away from the Resonator.

**Tube Resonator :** A tubular resonator of SS 316 which generates ultrasonic energy.

If more energy is required an additional number of tube resonators can be installed in a system. The modular design offers flexibility in service and installation time. Total Power upto 50KW is achievable with multiple resonators.



# TUBE RESONATORS

Ultrasonic wave is a form of energy which when applied allows many chemical reactions to take place in its presence. The Ultrasound produces cavitation in the liquid which effectively acts like millions of micro stirrers and thus increasing the effective surface area. The cavitation produced also increased local pressure and local temperature by several hundred degrees in the vicinity of the bubble collapse. This not only reduces reaction time but also many reactions which normally require high temperature and pressure can be carried out in laboratory conditions.

Production facilities throughout the chemical, pharmaceutical and fertilizer industries are all affected by their capability to effectively process materials. The Ultrasonic energy increases their production capacities to a significant proportion without increasing too much of the capital and operating cost.

The Ultrasonic energy along with heat and pressure produces wonders and offers many new challenges for chemical engineers.

Conventional Ultrasonic energy was based on a bonded transducers and offered limited usage to chemical engineers. It was only suitable for small Lab trials. Roop Telsonic Ultrasonix Ltd. Have now introduced a novel type of Tube Resonator which allows not only application of ultrasound at laboratory and pilot plant level but also effectively at regular production plant



NOTE: Technical specifications are subject to change without prior notice, due to continuous upgradation.

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