

ULTRASONIC FLOW-THROUGH REACTORS

Applications:

- High intensity ultrasonic action
- Deconglomerates coalesced materials
- Dispersion of nano-scaled particles
- Emulsifying of substances
- Disintegrating of sludge
- Production of suspensions
- Suited to a wide variety of applications

Features

- Typical flow rate 13 Gal/min
- High power density up to 2000 W/Gal
- Constant power $\pm 2\%$ deviation
- Multiple units can be mounted in a series or parallel configuration
- Leading edge technology
- Manufactured entirely in the USA



WITHOUT COVER,
WITH SAMPLING PIPES
AND FLANGE



WITHOUT COVER



WITH COVER

Pictured as:
Ultrasonic Power: 2000W; Frequency: 40 kHz
2 inch pipe, 70 inches long

Ultrasonic cavitation is a result of high frequency sound waves introduced by means of a series of "transducers" mounted to the exterior of the tube. The intense sound travels throughout the tube and creates waves of compression and expansion in the liquid. In the compression wave, the molecules are tightly compressed together. Conversely in the expansion wave, the molecules are rapidly pulled apart. The expansion is so dramatic that the molecules are ripped apart creating microscopic bubbles. The bubbles are not seen by the naked eye since they are so small and exist for only a split second of time. The bubbles contain a partial vacuum while they exist. As the pressure around the bubbles becomes greater, the fluid around the bubble rushes in collapsing the bubble very rapidly. This violent collapse, combined with the liquid jets velocity, provides a very intense action in a minute area. This ultrasonic action exists throughout the reactor