Cleaning Tank Hydrophone with Digital Pressure Meter  
*HCT-0320, MCT-1200*

Despite the wide adoption of ultrasonic cleaning, the acoustic characteristics are not well understood. The portable HCT hydrophone with MCT pressure meter bridges this gap, offering a reliable solution to characterize and monitor the acoustic properties of ultrasonic cleaners. Its unique single point sensing design allows measurements with high spatial resolution to offer true 3-dimensional mapping of the cleaning tank. The rugged construction allows routine mapping of the acoustic pressure and ultimately determination of the cleaning efficiency of the tank.

**Applications**

- Acquire acoustic maps to optimize cleaning efficiency of ultrasonic baths
- Routinely spot check acoustic field of cleaning tank for process control monitoring
- Continuously monitor the acoustic output by integrating with a central PC
- Compare tank-to-tank performance to maintain matching in production environments
- Tune process recipes by characterizing the ultrasonic cleaner fully loaded with substrates
- Identify cleaning tank issues such as debonded or malfunctioning transducers
- Self-calibrate with an absolute reference meter to match test results

**Acoustic Pressure Plot of a 40 kHz Industrial Cleaning Tank**
Technical Specifications

**HCT-0320 Hydrophone**
- **Useful Frequency Range:** 20 to 1200 kHz
- **Maximum Operating Temperature:** 70 ºC
- **Chemical Compatibility:** pH Range 4 to 12 (Teflon)
- **Probe Dimensions:**
  - Shaft Length: 270 mm
  - Shaft Diameter: 3 mm
  - Handle Length: 80 mm
  - Handle Diameter: 12 mm
- **Cable:** LEMO connector with embedded hydrophone calibration file, 1.5 meter length
- **Hydrophone Slide (Optional):** 40, 80, 120, 160, 200 cm

**MCT-1200 Pressure Meter**
- **Measured Parameters:**
  - Fundamental Frequency, $F_0$ (kHz)
  - Total Pressure, $P_{tot}$ (kPa or unitless) *
- **Data Management:**
  - Touch panel display
  - Time averaging interval: 1-60 sec
  - Data logging to local memory
  - Self-calibration to match with reference meter
  - Remote access via Ethernet
  - Real-time data transfer for continuous monitoring
- **Power:** rechargeable battery, charger (5 VDC, 3A)
- **Labels:** CE Mark, FCC
- **Dimensions:** 76 mm (W) x 169 mm (H) x 30 mm (D)

Specifications are subject to change without notice.

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**Simple Measurement Set-up**

- LEMO Connector with Stored Calibration
- HCT Hydrophone
- 1.5 meter cable
- Hydrophone Slide Assembly (optional)
- MCT-1200 Digital Pressure Meter
- Ultrasonic Cleaning Tank (customer supplied)