

Ultrasonic transducers for acceleration of biological and chemical reactions.

These transducers provide power ultrasonic output at frequencies 100 kHz or 300 kHz. Such ultrasonic output increases activity of particles and molecules in treated area. It is well-known: the lower work frequency the larger displacements of the particles and molecules. Plus one more feature: these work frequencies are high enough to protect treated liquid or biological tissue from appearance of the cavitation.



Fig. 4. Power ultrasonic transducer with work frequency 100 kHz. Diameter of the taper is 6 mm, diameter of the housing is 25.4 mm. Diameter of the taper can be done larger – up to 12 mm.



Fig.5. Power ultrasonic transducer with work frequency 300 kHz. Diameter of the taper is 16 mm, diameter of the housing is 25.4 mm.

Each transducer has closed and water-protected Aluminum housing with installed coaxial cable (RG-174/U, length ~ 1.2 m) and connector BNC at the end of this cable. Connection of the BNC with the cable is shown on Fig. 2 in section “HIFU transducers in closed metal housing”.

Each transducer contains inner electric matching circuit to get electric impedance 40 – 60 Ohm at its work frequency.

Each transducer demonstrates efficiency 50 – 60% in respect to feeding electric power.

Each transducer has certificate of test.

Such transducers should be operated in contact with water – at least in partial contact with the water. Maximal electric feeding power in CW mode is 10 – 15 W. Temperature of the transducer should not exceed 45 – 50 C⁰.