

**ECLA****EUROPEAN CLASSIFICATION****B06B**

**METHODS OR APPARATUS FOR GENERATING OR TRANSMITTING MECHANICAL VIBRATIONS OF INFRASONIC, SONIC, OR ULTRASONIC FREQUENCY, [N: e.g.] FOR PERFORMING MECHANICAL WORK IN GENERAL** (for particular applications, see the relevant subclasses, e.g. [B07B1/40](#), [B23Q17/12](#), [B24B31/06](#); measurement of mechanical vibrations [G01H](#); in direction finding, locating, distance or velocity measuring [G01S](#); [N: generating seismic energy [G01V1/02](#)]; control of mechanical vibrations in general [G05D](#); sound-producing devices, e.g. bells, sirens, whistles [G10K](#), [N: e.g. methods or devices for transmitting, conducting, or directing sound in general [G10K11/00](#)]; generation of electrical oscillations [H03B](#); electromechanical resonators in general [H03H](#); electromechanical transducers [N: for communication techniques, e.g. microphones, speakers] [H04R](#))

**B06B1/00**

**Methods or apparatus for generating mechanical vibrations of infrasonic, sonic, or ultrasonic frequency**

- [B06B1/02](#) . making use of electrical energy ([B06B1/18](#), [B06B1/20](#) take precedence)
- [B06B1/02D](#) . . [N: Driving circuits (specially adapted for particular applications, see the relevant subclass, e.g. [G01](#); circuits for steering transducer arrays [G10K11/34](#); basic circuits [H03](#))]
- [B06B1/02D2](#) . . . [N: for generating pulses, e.g. bursts of oscillations, envelopes] [N9505]
- [B06B1/02D3](#) . . . [N: for generating signals continuous in time] [N9505]
- [B06B1/02D3B](#) . . . . [N: and stepped in amplitude, e.g. square wave, 2-level signal] [N9505]
- [B06B1/02D3C](#) . . . . [N: of a single frequency, e.g. a sine-wave] [N9505]
- [B06B1/02D3C2](#) . . . . . [N: with a feedback signal] [N9505]
- [B06B1/02D3C2B](#) . . . . . [N: taken directly from the generator circuit] [N9505]
- [B06B1/02D3C2C](#) . . . . . [N: taken from a transducer or electrode connected to the driving transducer] [N9505]
- [B06B1/02D3D](#) . . . . [N: for generating multiple frequencies] [N9505]
- [B06B1/02D3D2](#) . . . . . [N: with simultaneous generation, e.g. with modulation, harmonics] [N9505]
- [B06B1/02D3D3](#) . . . . . [N: with consecutive, i.e. sequential generation, e.g. with frequency sweep] [N9505]
- [B06B1/02E](#) . . [N: Electrostatic transducers, e.g. electret-type]
- [B06B1/04](#) . . operating with electromagnetism (dynamo-electric motors with vibrating magnet, armature or coil system [H02K33/00](#))
- [B06B1/04B](#) . . . [N: using vibrating magnet, armature or coil system]
- [B06B1/06](#) . . operating with piezo-electric effect or with electrostriction (piezo-electric or electrostrictive devices per se [H01L41/00](#))
- [B06B1/06B](#) . . . [N: using a piezo-electric bender, e.g. bimorph]
- [B06B1/06C](#) . . . [N: using multiple elements ([B06B1/06C3E](#) and [B06B1/06F](#) take precedence)] [C0310]
- [B06B1/06C2](#) . . . . [N: in a pile]
- [B06B1/06C2B](#) . . . . . [N: for generating several frequencies]

B06B1/06C2C	. . . . .	[N: of piezo- and non-piezo-electric elements, e.g. `Tonpilz`]
B06B1/06C3	. . . . .	[N: on one surface]
B06B1/06C3A	. . . . .	[N: Annular array]
B06B1/06C3B	. . . . .	[N: Square array]
B06B1/06C3C	. . . . .	[N: Cylindrical array]
B06B1/06C3D	. . . . .	[N: Spherical array]
B06B1/06C3E	. . . . .	[N: with multiple active layers] [N0310]
B06B1/06E	. . . . .	[N: using a single piezo-electric element ( <a href="#">B06B1/06F</a> takes precedence)]
B06B1/06E2	. . . . .	[N: of rectangular shape]
B06B1/06E3	. . . . .	[N: of circular shape]
B06B1/06E4	. . . . .	[N: of cylindrical shape]
B06B1/06E5	. . . . .	[N: of U-shape]
B06B1/06E6	. . . . .	[N: with an electrode on the sensitive surface]
B06B1/06E6B	. . . . .	[N: used as a diaphragm]
B06B1/06E6C	. . . . .	[N: which is used as, or combined with, an impedance matching layer]
B06B1/06E6D	. . . . .	[N: and a low impedance backing, e.g. air]
B06B1/06E6E	. . . . .	[N: and a high impedance backing]
B06B1/06E6F	. . . . .	[N: and a damping structure]
B06B1/06E6F2	. . . . .	[N: on the back only of piezo-electric elements]
B06B1/06F	. . . . .	[N: with foil-type piezo-electric elements, e.g. PVDF]
B06B1/06F2	. . . . .	[N: with a continuous electrode on one side and a plurality of electrodes on the other side]
B06B1/06F3	. . . . .	[N: with a plurality of electrodes on both sides]
B06B1/08	. . . . .	operating with magnetostriction ( <a href="#">magnetostrictive devices per se H01L41/00</a> )
B06B1/08B	. . . . .	[N: using multiple elements, e.g. arrays]
B06B1/10	. . . . .	making use of mechanical energy ( <a href="#">B06B1/18</a> , <a href="#">B06B1/20</a> take precedence)
B06B1/12	. . . . .	operating with systems involving reciprocating masses
B06B1/14	. . . . .	the masses being elastically coupled
B06B1/16	. . . . .	operating with systems involving rotary unbalanced masses [N: ( <a href="#">electrical motors using rotary unbalanced masses in general H02K7/06B</a> )] [C9502]
B06B1/16B	. . . . .	[N: Adjustable systems, i.e. where amplitude or direction of frequency of vibration can be varied]
B06B1/16B2	. . . . .	[N: Making use of masses with adjustable amount of eccentricity]
B06B1/16B2B	. . . . .	[N: the amount of eccentricity being only adjustable when the system is stationary ( <a href="#">B06B1/16B2E</a> takes precedence)]
B06B1/16B2D	. . . . .	[N: the amount of eccentricity being automatically variable as a function of the running condition, e.g. speed, direction ( <a href="#">B06B1/16B2E</a> takes precedence)]
B06B1/16B2E	. . . . .	[N: with fluid masses or the like]
B06B1/16B4	. . . . .	[N: Where the phase-angle of masses mounted on counter-rotating shafts can be varied, e.g. variation of the vibration phase]
B06B1/16C	. . . . .	[N: Orbital vibrators having masses being driven by planetary gearings, rotating cranks or the like]
B06B1/16C1	. . . . .	[N: Rotary pendulum vibrators]

- B06B1/18
  - wherein the vibrator is actuated by pressure fluid ([B06B1/20](#) takes precedence)
- B06B1/18B
  - · [N: operating with reciprocating masses]
- B06B1/18C
  - · [N: operating with rotary unbalanced masses]
- B06B1/20
  - making use of a vibrating fluid [N: (whistles or sirens per se [G10K](#))]
- B06B3/00**
  - Methods or apparatus specially adapted for transmitting mechanical vibrations of infrasonic, sonic, or ultrasonic frequency [M1112]**
- B06B3/02
  - involving a change of amplitude
- B06B3/04
  - involving focusing or reflecting