

Title (en)

Method for phase controlled power- and frequency adjustment of an ultrasonic transducer and apparatus for application of the method.

Title (de)

Verfahren zur phasengesteuerten Leistungs- und Frequenzregelung eines Ultraschallwandlers sowie Vorrichtung zur Durchführung des Verfahrens.

Title (fr)

Procédé d'ajustement de la puissance et de la fréquence d'un transducteur ultrasonore par commande de phase et dispositif pour l'application du procédé.

Publication

EP 0254237 B1 19940921 (DE)

Application

EP 87110425 A 19870718

Priority

DE 3625149 A 19860725

Abstract (en)

[origin: US4849872A] A phase-regulated power and frequency control of an ultrasonic transducer which is supplied by a variable frequency oscillator of a phase control circuit with a plurality of voltage pulses amplified by a driver. First the variable frequency oscillator is canded to find a resonance frequency of the ultrasonic transducer and the scanner is locked to the resonance frequency of the ultrasonic transducer after locking into the phase control circuit. After initial oscillation of the ultrasonic transducer in the vicinity of a series resonance frequency thereof a capacitive phase angle between voltage and current is introduced and is maintained operationally so that by phase control of the phase control circuit the operating frequency of the oscillator is reduced relative to the series resonance frequency of the transducer. A phase angle change as a result of mechanical loading of the transducer leads to an increase of the operating frequency of the oscillator and thus to a shift toward the series resonance frequency of the transducer.

IPC 1-7

B06B 1/02

IPC 8 full level

B06B 1/02 (2006.01)

CPC (source: EP US)

B06B 1/0253 (2013.01 - EP US); **B06B 2201/55** (2013.01 - EP US); **Y10S 323/901** (2013.01 - EP US)

Cited by

AU589883B2; EP0340470A1; EP2705906A3

Designated contracting state (EPC)

BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0254237 A2 19880127; **EP 0254237 A3 19890705**; **EP 0254237 B1 19940921**; DE 3625149 A1 19880204; DE 3750560 D1 19941027; US 4849872 A 19890718

DOCDB simple family (application)

EP 87110425 A 19870718; DE 3625149 A 19860725; DE 3750560 T 19870718; US 14774388 A 19880125