G01H

MEASUREMENT OF MECHANICAL VIBRATIONS OR ULTRASONIC, SONIC OR INFRASONIC WAVES

Definition statement

This place covers:

Apparatus or methods for the measurement, or measurement in combination with generation, of mechanical vibrations or the like, and particularly for the measurement of:

- mechanical vibrations or ultrasonic, sonic or infrasonic waves by using radiation-sensitive means, e.g. optical means;
- mechanical vibrations or ultrasonic, sonic or infrasonic waves by detecting changes in electric or magnetic properties;
- mechanical vibrations or ultrasonic, sonic or infrasonic waves by other means;
- vibrations in solids by using direct conduction to the detector;
- vibrations in fluids by using a detector in a fluid;
- propagation velocity of ultrasonic, sonic or infrasonic waves;
- reverberation time;
- resonant frequency;
- mechanical or acoustic impedance.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Determining imbalance by oscillating the body to be tested and converting vibrations due to imbalance into electric variables	G01M 1/22
Vibration testing of structures	G01M 7/02
Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; Visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object	G01N 29/00
Systems using the reflection or reradiation of acoustic waves, e.g. sonar systems	G01S 15/00
Sonar systems designed for mapping or imaging	G01S 15/89
Seismology; Seismic or acoustic prospecting or detecting	G01V 1/00
Manufacture of electromechanical resonators by processes which include measurement of frequency with consequential modification of the resonator	H03H 3/007

Informative references

Attention is drawn to the following places, which may be of interest for search:

Generating or transmitting mechanical vibrations in solids without measurement	B06B
Measuring distance, levels or bearings; Navigation; Gyroscopic instruments; Photogrammetry or videogrammetry	G01C
Measuring force or stress	G01L 1/00

Measuring pressure of a fluid or fluent solid material	G01L 7/00- G01L 19/00
Detecting knocks in internal-combustion engines	G01L 23/22
Testing dynamic balance of machines or structure, determining imbalance	G01M 1/14
Measuring acceleration, deceleration, shock	G01P 15/00
Acousto-optical devices	G02F 1/11, G02F 1/33
Obtaining records by techniques analogous to photography using ultrasonic, sonic or infrasonic waves	G03B 42/06
Musical instruments	G10B- G10H
Generating or transmitting mechanical vibrations in fluids without measurement	G10K
Arrangements for producing a reverberation or echo sound in fluids	G10K 15/08
Speech analysis or synthesis; Speech recognition	G10L
Information storage based on relative movement between record carrier and transducer	G11B
Piezoelectric, electro-strictive or magneto-strictive elements	H10N 30/00

G01H 1/00

Measuring {characteristics of} vibrations in solids by using direct conduction to the detector (G01H 9/00, G01H 11/00 take precedence)

Definition statement

This place covers:

Measuring characteristics of vibrations of rotating machines, using direct contact of the transducer, microphones, or optical detectors.

Measuring characteristics of vibrations of the rotor of turbo machines, using direct contact of the transducer, microphones, or optical detectors.

References

Limiting references

This place does not cover:

Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by using radiation-sensitive means, e.g. optical means	G01H 9/00
Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by detecting changes in electric or magnetic properties,	G01H 11/00
Transmitting measuring signals from a borehole to the surface by transmitting torsional acoustic waves through the drillstring or casing	E21B 47/16

Special rules of classification

Except for G01H 1/10 (torsional vibrations), groups G01H 1/04 - G01H 1/16 are not currently used for the classification of new documents. Since no distinction with regard to transverse, torsional or longitudinal vibrations has been made while classifying documents, the subject matter which is presumably covered by these groups is effectively classified in G01H 1/00.

G01H 3/00

Measuring {characteristics of} vibrations by using a detector in a fluid (G01H 7/00, G01H 9/00, G01H 11/00 take precedence)

Definition statement

This place covers:

- Measuring frequency.
- Measuring amplitude or power.
- Dosimeters.

References

Limiting references

This place does not cover:

Measuring reverberation time	G01H 7/00
Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by using radiation-sensitive means, e.g. optical means	G01H 9/00
Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by detecting changes in electric or magnetic properties,	G01H 11/00
Devices for measuring rapid changes, such as oscillations, in the pressure of steam, gas, or liquid	G01L 23/00

G01H 3/005

{Testing or calibrating of detectors covered by the subgroups of G01H 3/00 (calibrating geophysical instruments, e.g. seismic receivers G01V 13/00)}

Relationships with other classification places

G01V 13/00 covers the calibration of devices covered by the groups G01V 1/00, G01V 3/00, G01V 7/00, G01V 9/00 and G01V 11/00, i.e. prospecting or detecting using acoustic, seismic, electric, magnetic, gravitational, or optical means.

G01H 5/00

Measuring propagation velocity of ultrasonic, sonic or infrasonic waves {, e.g. of pressure waves}

References

Limiting references

This place does not cover:

Measuring temperature using measurement of the velocity of propagation of sound	G01K 11/24
Analysing fluids by measuring propagation velocity or propagation time of acoustic waves	G01N 29/024
Measuring speed of fluids, e.g. of an air-stream	G01P 5/00

G01H 7/00

Measuring reverberation time {; room acoustic measurements}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring absorption of vibrations in a material	G01N
Arrangements for producing a reverberation or echo sound in fluids	G10K 15/08

G01H 9/00

Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by using radiation-sensitive means, e.g. optical means

Definition statement

This place covers:

Measuring vibrations or sonic waves using electromagnetic waves, e.g. light.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring force or stress by measuring variations in optical properties of a material when it is stressed	G01L 1/24
Measuring pressure of a fluid by acoustic means	G01L 11/04
Analysing materials using optoacoustic interaction with the material	G01N 29/24
Measuring acceleration, measuring shock by photoelectric pick-up	G01P 15/093
Electro-optic transducers	H04R 23/00

G01H 11/00

Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves by detecting changes in electric or magnetic properties

Definition statement

This place covers:

Measuring by magnetic or electromagnetic means;

Measuring by electric means

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring acceleration, deceleration shock with conversion into electric or magnetic variables	G01P 15/08

Burglar alarms actuated by variation in capacitance or inductance or a circuit	G08B 13/26
Structural combination of musical instruments with microphones or other pick-up devices	G10H 3/16, G10H 3/18, G10H 3/20

G01H 13/00

Measuring resonant frequency

References

Limiting references

This place does not cover:

Analysing fluids by measuring frequency or resonance of acoustic waves	G01N 29/036
Analysing solids by measuring frequency or resonance of acoustic waves	G01N 29/12

G01H 15/00

Measuring mechanical or acoustic impedance

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Analysing fluids by measuring acoustic impedance	G01N 29/028

G01H 17/00

Measuring mechanical vibrations or ultrasonic, sonic or infrasonic waves, not provided for in the other groups of this subclass

Definition statement

This place covers:

Prediction of vibration patterns.

Chladni techniques.