

G01B

MEASURING LENGTH, THICKNESS OR SIMILAR LINEAR DIMENSIONS; MEASURING ANGLES; MEASURING AREAS; MEASURING IRREGULARITIES OF SURFACES OR CONTOURS

Definition statement

This place covers:

Instruments and methods for measuring:

- linear dimensions of objects such as length, thickness, width, height, depth, diameter, coordinates of points of objects, distance or clearance between spaced objects or spaced apertures;
- angles or tapers;
- alignment of axes;
- areas;
- contours, curvatures or profiles;
- roughness or irregularities of surfaces;
- deformation in a solid.

Methods of measuring geometrical parameters of objects (e.g. shape or surface configuration, measurement of volume, coordinates, height, length, width, thickness, contours, surface roughness or evenness, diameters, roundness, eccentricity, angles, alignment, deformation, displacement), devices for carrying out these methods and related calibration aspects.

Classification within [G01B](#) into the main groups is to a large extent based on the underlying measurement principle:

Optical	G01B 11/00
Using fluid	G01B 13/00
Use of radiation	G01B 15/00
Use of subsonic, sonic, ultrasonic vibrations	G01B 17/00
If no particular measurement principle prevails or if more than one of the above-mentioned underlying measurement principles equally apply	G01B 21/00
Mechanical	G01B 3/00 , G01B 5/00
Electric or magnetic	G01B 7/00

An exception is [G01B 1/00](#), where documents should be classified which have aspects related to the material selected for the geometrical parameter measuring instrument.

Another exception is [G01B 9/00](#), which is a hardware group mainly containing interferometers. Only when a distance or displacement measurement is concerned (or a related measurement, such as an orientation measurement based on distance measurements to various locations on the object), then an interferometer should be classified in [G01B 9/00](#).

Small, hand-held mechanical devices (such as those available in hardware stores) are classified in [G01B 3/00](#), whereas large mechanical set-ups (industrial machines, such as coordinate measuring machines) are classified in [G01B 5/00](#).

To further support the user in consulting the main groups of this subclass, the following table summarises the properties of the electromagnetic spectrum together with the potentially relevant main groups.

Electromagnetic spectrum				Main groups
Radiation	Wavelength (m)	Frequency (Hz)	Energy (eV)	
Gamma rays	< 0.01 nm	> 30 EHz	> 124 keV	G01B 15/00
X-rays	0.01 nm – 10 nm	30 EHz – 30 PHz	124 keV – 124 eV	G01B 15/00
Extreme Ultraviolet [EUV]	10 nm – 100 nm	30 PHz – 3 PHz	124 eV – 12.4 eV	G01B 9/00 , G01B 11/00 , G01B 15/00
Ultraviolet	100 nm – 390 nm	3 PHz – 770 THz	12.4 eV – 3.2 eV	G01B 9/00 , G01B 11/00
Visible light	390 nm – 750 nm	770 THz – 400 THz	3.2 eV – 1.7 eV	G01B 9/00 , G01B 11/00
Infrared	750 nm – 100 µm	400 THz – 3 THz	1.7 eV – 12.4 meV	G01B 9/00 , G01B 11/00
Sub-millimetre wave (i.e. terahertz wave or waveband within Infrared)	100 µm - 1 mm	3 THz - 300 GHz	12.4 meV – 1.24 meV	G01B 9/00 , G01B 11/00 , G01B 15/00
Microwave	1 mm – 1 m	300 GHz – 300 MHz	1.24 meV – 1.24 µeV	G01B 15/00
Radio	1 m – 100 km	300 MHz – 3 kHz	1.24 µeV – 12.4 peV	G01B 7/00 , G01B 15/00

Relationships with other classification places

Only documents with the emphasis on details of the actual geometrical measurement method, measurement apparatus and/or calibration aspects are to be classified in [G01B](#). Documents covering devices or methods which themselves do not belong in [G01B](#), but which use or incorporate geometrical measuring devices or steps should normally not be classified in [G01B](#), but rather in the respective field of their application. A drill, for example, in combination with a device for measuring the distance from the drill to the object being drilled should not be classified as a distance measuring device, as long as the actual way of distance measuring is not presented as the invention. Similarly, a document about a machine for sorting articles according to their diameter should not be classified with diameter determination as long as details of the diameter determination are not the invention.

If investigating or analysing an object is concerned (e.g. determination of material properties or defect analysis for quality control purposes), then [G01N](#) has to be considered for classification.

If testing an object or apparatus is concerned, then [G01M](#) has to be considered for classification.

The general subject matters of measuring linear dimensions, distances, or angles is covered by several subclasses besides [G01B](#):

[G01C](#): measuring distances, levels, or bearings; surveying; navigation; gyroscopic instruments; photogrammetry or videogrammetry.

[G01S](#): radio direction finding; radio navigation; determining distance or velocity by use of radio waves; locating or presence detecting by use of the reflection or reradiation of radio waves; analogous arrangements using other waves.

Relationships with other classification places

When propagation effects of waves are relevant for such measurements [G01S](#) is in general the appropriate subclass.

For measuring ground distance between points in geodesy, surveying, and navigation [G01C](#) is the appropriate subclass when no radio waves are used or when propagation effects of waves other than radio waves are not relevant.

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:

Measuring human body, see the relevant places, where such exist, e.g.	A41H 1/00 , A43D 1/02 , A61B 5/103
Measuring appliances combined with walking-sticks	A45B 3/08
Measuring methods or devices specially adapted for metal-rolling mills	B21B 38/00
Measuring, gauging or adjusting equipment for machines for working metal or other material	B23B 25/06
Measuring or gauging equipment specially adapted for grinding or polishing operations	B24B 33/06 , B24B 49/00
Combinations of measuring devices with writing-implements	B43K 29/08
Devices for metering predetermined lengths of running material	B65H 61/00
Measuring devices for spinning or twisting machines	D01H 13/32
Measuring devices for determining the length of threads in sewing machines	D05B 45/00
Devices for checking, measuring, recording existing surfacing of roads or like structures, e.g. profilographs	E01C 23/01
Measuring diameter of boreholes or wells	E21B 47/08
Geodetical, nautical or aeronautical measuring, surveying, rangefinding	G01C
Photogrammetry or videogrammetry	G01C 11/00
Investigating or analysing particle size, investigating or analysing surface area of porous material	G01N 15/00
Radio direction-finding, determining distance or velocity by use of propagation effects, e.g. Doppler effect, propagation time, of radio waves, analogous arrangements using other waves	G01S
Measuring length or roll diameter of film in cameras or projectors	G03B 1/60
Methods or arrangements for converting the position of a manually-operated writing or tracing member into an electrical signal	G06K 11/00
Measuring elapsed travel of recording medium in recording or playback equipment, sensing diameter of record in autochange gramophones	G11B
Means structurally associated with electric rotary current collectors for indicating brush wear	H01R 39/58
Indicating consumption of electrodes in arc lamps	H05B 31/34

Informative references

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

Human body, dentistry	A61B , A61C
Ball games	A63B
Sorting according to dimensions	B07
Gears	B23F
Machine tools	B23Q
Robotics	B25J
Writing, drawing	B43K , B43L
Vehicles	B60 , B61
Micromechanical devices (MEMS)	B81B , B81C
Nanotechnology	B82B , B82Y
Yarns	D01H
Marking textile materials; Marking in combination with metering or inspection	D06H 1/00
Paper webs, currency	D21F , G07D 7/00
Building	E04D , E04F , E04G
Measuring in boreholes or wells	E21B 47/00
Turbines	F01D
Bearings	F16C
Pigs, moles	F16L 55/00
Range finders, inclinometers, photogrammetry, surveying, gyroscopes	G01C 3/00 , G01C 9/00 , G01C 11/00 , G01C 13/00 , G01C 15/00 , G01C 19/00
Transducers not specially adapted for a specific variable	G01D 5/00
Measuring volume flow or level of fluids or fluent solid material	G01F
Methods or apparatus for determining the capacity of containers or cavities, or the volume of solid bodies	G01F 17/00
Spectroscopy	G01J
Measuring force, stress, torque, pressure	G01L
Measuring force or stress, in general	G01L 1/00
Testing static or dynamic balance of machines or structures; Testing structures or apparatus not otherwise provided for	G01M
Investigating/analysing	G01N
Optical coherence tomography (OCT)	G01N 21/00 , A61B 3/00 , A61B 5/00
Speed, acceleration	G01P
Investigating or analysing surface structures in atomic ranges using scanning-probe techniques	G01Q
Measuring electric or magnetic variables	G01R
Trackers	G01S

Radio direction-finding, determining distance or velocity and locating or detecting by use of radio waves	G01S
Geophysical measuring	G01V
Optical elements	G02B
Scales (e.g. Vernier)	G02B 27/00 , G06G 1/00 , G01D 5/00 , G01D 13/00
Spectacle frames	G02C 13/00
Cameras	G03B , H04N
Lithography (including interferometric stage position measurement)	G03F 7/00
Holography	G03H
Combination of measuring devices with means for controlling or regulating	G05
Numerical control	G05B 19/00
Joysticks	G05G 9/00
Computer input devices (such as mice, touch pads)	G06F 3/00
Hand-manipulated analogue computing devices	G06G 1/00
Commerce	G06Q
Image analysis	G06T 7/00
Electron/ion microscopes	H01J 37/00
Interferometer aspects not relating to distance or displacement measurements (e.g. signal modulation)	H04B 10/00 , H04L 27/00 , G02F 1/00
Semiconductor devices	H10

Special rules of classification

In this subclass, the groups are distinguished by the technique of measurement which is of major importance. Thus the mere application of other techniques or means for giving a final indication does not affect the classification.

Machines operated on similar principles to the hand-held devices specified in this subclass are classified with these devices.

One or more [G01B 3/00](#) breakdown Indexing Codes should be given when information is concerned which is more detailed than the corresponding [G01B 3/00](#) or when assigning a [G01B 3/00](#) is not appropriate (i.e. in cases where the geometrical measurement information is only of additional nature).

At least one [G01B 2210/00](#) Indexing Code is compulsory for wheel alignment ([G01B 2210/10](#)), calliper-like sensors ([G01B 2210/40](#)) as well as in the following cases:

Using chromatic effects to achieve wavelength-dependent depth resolution	G01B 2210/50
Combining partially overlapping images to an overall image	G01B 2210/52
Measuring geometric parameters of semiconductor structures, such as for example profile, critical dimensions (CD) or trench depth	G01B 2210/56
Wireless transmission of information between a sensor or probe and a control or evaluation unit	G01B 2210/58
Unique sensor ID to enable sensors to be recognised and appropriate amplification or error compensation or calibration curves etc. to be used (e.g. by resistor value across connector terminals)	G01B 2210/60

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Propagation effects	are relevant if the outcome of a measurement depends on the actual value of a physical quantity characterising the propagation of the wave, i.e. its wavelength, frequency, velocity, or phase. The mere presence or direction of a wave are not considered a propagation effect or to contribute to a propagation effect. To put it in another way, propagation effects are irrelevant, if the radiation may be looked upon as a beam of radiation whose wave nature can be ignored. Examples of measurements where propagation effects are relevant include, e.g. measurements of propagation time, phase difference, phase delay, measurements using the Doppler effect or interference.
Measuring areas	quantifying, by measurement, the size of areas (not: the act of measuring in certain spatial regions or the spatial regions where measurements are taken)
Irregularities of surfaces	smaller-scale surface textures
Contour	envelope-like description of (part of) the shape of an object

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

CMM	Coordinate Measuring Machine
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In patent documents, the following words/expressions are often used as synonyms:

- "warp", "warpage", "waviness" and "evenness"

G01B 1/00

Measuring instruments characterised by the selection of material therefor

Definition statement

This place covers:

Sensors which are characterised only or in part by the material from which they are made.

G01B 3/00

Measuring instruments characterised by the use of mechanical techniques

Definition statement

This place covers:

Small, hand-held mechanical devices, such as those available in retail stores.

Machines operating on similar principles to the hand-held devices specified in this group are also classified here with these devices. For example, arrangements for controlling a measuring force are classified in [G01B 3/008](#), even if they are not hand-held.

References

Informative references

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

Measuring arrangements characterised by the use of mechanical means, usually (aspects of) large mechanical set-ups (industrial machines, such as coordinate measuring machines)	G01B 5/00
Marking or setting out work	B25H 7/00
Straightedges, triangles	B43L 7/00
Winding/unwinding	B65H
Devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material	B65H 75/34
Templates for mounting doors or windows	E04F 21/0007
Protractors for use in geodesy	G01C 1/00

Special rules of classification

One or more [G01B 3/00](#) Indexing Codes should only be given when information is concerned which is more detailed than the corresponding [G01B 3/00](#) or when assigning a [G01B 3/00](#) is not appropriate (i.e. in cases where the geometrical measurement information is only of additional nature).

G01B 5/00

Measuring arrangements characterised by the use of mechanical techniques

Definition statement

This place covers:

Large mechanical set-ups, such as industrial machines or coordinate measuring machines, and aspects of the large mechanical set-ups.

References

Informative references

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

Instruments as specified in the subgroups and characterised by the use of mechanical measuring means, usually small, hand-held mechanical devices, such as those available in hardware stores.	G01B 3/00
Machine tools, probe magazines	B23Q
Robotics, manipulators	B25J
Supports in general	F16M 11/00

Special rules of classification

At least one [G01B 2210/00](#) Indexing Code has to be given when [G01B 5/255](#) is given.

[G01B 5/0011](#), [G01B 5/0018](#), [G01B 5/0023](#), [G01B 5/0025](#), [G01B 5/003](#), [G01B 5/0035](#) and [G01B 5/0037](#) also contain methods and devices other than mechanical methods and devices.

[G01B 5/0035](#) also contains measurements of plants. Measuring of logs is not included.

[G01B 5/016](#) covers constructional details of contacts, which are meant to refer to the actual switch contacts within the probe head (not: the probe tip for contacting an object to be measured).

[G01B 5/255](#) also contains vehicle frame and ride height measurement.

When classifying in this group at least one [G01B 2210/00](#) Indexing Code has to be given.

G01B 5/26

for measuring areas, e.g. planimeters

References

Informative references

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

Integrators in general	G06G
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G01B 7/00

Measuring arrangements characterised by the use of electric or magnetic techniques

Definition statement

This place covers:

Electric, magnetic and electro-magnetic (e.g. using eddy-currents) measuring principles. Frequencies up to approximately 100 MHz.

References

Informative references

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

Measuring thickness during the manufacture of coatings	C23C 14/54
Angle or position sensing	G01D
Measuring electric or magnetic variables	G01R
Radio direction-finding, determining distance or velocity and locating or detecting by use of radio waves	G01S
Electric or magnetic detecting or prospecting	G01V 3/00
Manufacture of piezoelectric or electrostrictive resonators for obtaining desired frequency	H03H

Special rules of classification

At least one [G01B 2210/00](#) Indexing Code has to be given when [G01B 7/315](#) is given.

[G01B 7/001](#) and [G01B 7/002](#) concern measuring heads which are not for coordinate measuring machines, whereas [G01B 7/012](#) is for heads for coordinate measuring machines.

[G01B 7/003](#) and [G01B 7/30](#) should not be assigned to linear and rotary encoders or transducers, respectively. Encoders and transducers are in [G01D](#).

[G01B 7/016](#) covers constructional details of contacts, which are meant to refer to the actual switch contacts within the probe head (not: the probe tip for contacting an object to be measured).

If "height" is specifically mentioned as parameter being measured, then [G01B 7/082](#) and [G01B 7/102](#) take precedence over [G01B 7/023](#).

[G01B 7/315](#) also contains vehicle frame and ride height measurement.

When classifying in this group at least one [G01B 2210/00](#) Indexing Code has to be given.

With roughness or irregularity ([G01B 7/34](#)) smaller-scale surface textures are meant, whereas with evenness ([G01B 7/345](#)) a larger-scale surface structure is meant.

G01B 7/32

for measuring areas

References

Informative references

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

Integrators in general	G06G
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G01B 9/00

Measuring instruments characterised by the use of optical techniques

Definition statement

This place covers:

Interferometers, measuring microscopes, optical projection comparators and goniometers for measuring angles between surfaces.

References

Informative references

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

Arrangements for measuring particular parameters other than displacement	G01B 11/00
Interferometers for medical use	A61B
Diffraction gratings in sensors for measuring physical entities	G01D 5/38
Interferometers for spectral analysis	G01J 9/00
Interferometers for optical coherence tomography	G01N 21/4795
Microscopes in general	G02B 21/00
Telescopes in general	G02B 23/00
Interferometers for lithography	G03F 7/00 , G03F 9/00
Holography in general	G03H

Special rules of classification

When classifying in [G01B 9/10](#), also [G01B 11/26](#) has to be considered for classification.

G01B 9/02

Interferometers

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:

Apparatus for testing the eyes; Instruments for examining the eyes	A61B 3/00
Fabry-Perot interferometers	G01J 3/26
Interferometric spectrometry	G01J 3/45
Using interferometric methods to measure optical phase difference, determine degree of coherence or measure optical wavelength	G01J 9/02
Investigating or analysing materials using interferometric methods involving refractivity or phase-affecting properties	G01N 21/45
Interference filters	G02B 5/28
Devices for the control of the intensity, phase, polarisation or colour, by interference	G02F 1/21
Depth or shape recovery in image analysis from laser ranging, e.g. using interferometry	G06T 7/521

Informative references

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

Transducers not specially adapted for a specific variable, using optical means with attenuation or whole or partial obturation of beams of light detected by photocells, by influencing the transmission properties of an optical fibre	G01D 5/353
Systems measuring distance only of a target using transmission of continuous electromagnetic waves other than radio waves, whether unmodulated, amplitude-, phase- or frequency-modulated, with phase comparison between the received signal and the contemporaneously transmitted signal	G01S 17/36

G01B 11/00

Measuring arrangements characterised by the use of optical techniques

Definition statement

This place covers:

Optical measuring principles operating between far infrared (inclusive) and ultraviolet (inclusive), e.g. for volume measurement.

References

Informative references

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

Instruments of the types covered by group G01B 9/00 per se	G01B 9/00
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Investigating, analysing materials by the use of optical means	G01N 21/00
Image analysis for depth or shape recovery	G06T 7/50

Special rules of classification

At least one [G01B 2210/00](#) Indexing Code has to be given when [G01B 11/275](#) or [G01B 11/2755](#) is given.

"Pose" measurements (i.e. position plus orientation) go into [G01B 11/002](#).

[G01B 11/0625](#) - [G01B 11/0683](#) should be given when the pertinent measurement principle applies, even when the object being measured is not a coating ([G01B 11/0616](#)), but, for example, a pipe wall.

[G01B 11/26](#) should not be assigned to encoders or transducers, which are in [G01D](#).

[G01B 11/275](#) and [G01B 11/2755](#) also contain vehicle frame and ride height measurement. When classifying in this group at least one [G01B 2210/00](#) Indexing Code has to be given.

The expressions "using interferometry" [G01B 11/0675](#), "by interferometric means" in [G01B 11/161](#) and "using interferometry" in [G01B 11/2441](#) are meant to refer to using an interferometric measurement arrangement, i.e. with a measurement and reference path that combine into one path to a detector (not: measuring interfering reflections from different reflectors within an object being measured). To be used if no emphasis on particular interferometer details.

[G01B 11/0658](#) contains measurement of emissivity or reradiation, which is meant to cover fluorescence and Raman scattering.

[G01B 11/0666](#) is meant to cover measuring thickness by exciting an object with a laser beam that generates an ultrasonic beam into the object. Reflections of the ultrasonic beam are then analysed, often using an interferometer.

[G01B 11/165](#) contains deformation measurement by means of a grating deformed by the object. This is meant to refer to a grating being arranged on the object and its optical properties being measured as a function of deformation of the object (not: fiber Bragg gratings in general).

[G01B 11/18](#) contains Bragg gratings in general being used for measuring deformation.

The expression "contours or curvatures" in [G01B 11/24](#) is meant to refer to an envelope-like description of the shape or part of the shape of an object.

G01B 11/28

for measuring areas

References

Informative references

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

Integrators in general	G06G
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G01B 13/00

Measuring arrangements characterised by the use of fluids

Definition statement

This place covers:

Measuring principles using fluids.

References

Informative references

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

Volume measurement	G01F 17/00
Lithography	G03F 7/00 , G03F 9/00
Pressure regulation	G05D 16/00

Special rules of classification

At least one [G01B 2210/00](#) Indexing Code has to be given when [G01B 13/195](#) is given.

The expression "contours or curvatures" in [G01B 13/16](#) is meant to refer to an envelope-like description of the shape or part of the shape of an object.

When classifying in [G01B 13/195](#) at least one [G01B 2210/00](#) Indexing Code has to be given

With roughness or irregularity ([G01B 13/22](#)) smaller-scale surface textures are meant.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Fluid	liquid or gas
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G01B 13/20

for measuring areas, e.g. pneumatic planimeters

References

Informative references

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

Integrators in general	G06G
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G01B 15/00

Measuring arrangements characterised by the use of electromagnetic waves or particle radiation, e.g. by the use of microwaves, X-rays, gamma rays or electrons (characterised by the use of optical techniques [G01B 9/00](#), [G01B 11/00](#))

Definition statement

This place covers:

Measuring principles using wave or particle radiation, such as e⁻ (beta), e⁺ (positron), gamma, X-ray, neutron, radar, microwaves, millimeter waves. Anything from about 100 MHz to far infrared as well as with a frequency higher than ultraviolet.

References

Limiting references

This place does not cover:

Measuring arrangements by optical means	G01B 9/00 , G01B 11/00
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Informative references

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

Measuring arrangements by acoustic vibrations	G01B 17/00
Investigating, analysing	G01N 23/00
Scanning electron microscopes	G01Q 30/00
Radar	G01S
Electron microscopes	H01J 37/00

Special rules of classification

In case of measuring a distance or clearance between spaced objects or apertures, [G01B 15/00](#) as well as [G01B 7/14](#) should be assigned.

The expression "contours or curvatures" in [G01B 15/04](#) is meant to refer to an envelope-like description of the shape or part of the shape of an object.

G01B 17/00

Measuring arrangements characterised by the use of infrasonic, sonic or ultrasonic vibrations

Definition statement

This place covers:

Measuring principles using acoustic energy, e.g. for short range distance measurement.

References

Informative references

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

Measuring object thickness (e.g. pipe wall) by exciting an object with a laser beam that generates an ultrasonic beam into the object. Reflections of the ultrasonic beam are then analysed, often using an interferometer	G01B 11/0666
Investigating, analysing materials by the use of subsonic, sonic or ultrasonic vibrations	G01N 29/00
Sonar or long range distance measurements	G01S 15/00

Special rules of classification

The expression "contours or curvatures" in [G01B 17/06](#) is meant to refer to an envelope-like description of the shape or part of the shape of an object.

G01B 21/00

Measuring arrangements or details thereof, where the measuring technique is not covered by the other groups of this subclass, unspecified or not relevant

Definition statement

This place covers:

Measurements based on unspecified measurement principles or on principles covered by two or more of groups [G01B 3/00](#) - [G01B 17/00](#).

References

Informative references

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

Machine tools	B23Q
Unwinding or rewinding apparatus incorporating length measuring devices	B65H 16/02 , B65H 2511/11
Internal diameters of boreholes or wells	E21B 47/08
Numerical control	G05B 19/00
Digital computing, data processing	G06F 17/00
Three-dimensional modelling	G06T 17/00

Special rules of classification

At least one [G01B 2210/00](#) Indexing Code has to be given when [G01B 21/26](#) is given.

[G01B 21/04](#) covers processing of measurement data, e.g. outlier processing.

[G01B 21/042](#) covers calibration and calibration artifacts, which are meant as artifacts and methods used or applied before actual measurement of the workpiece.

[G01B 21/045](#) covers correction of measurements, which is meant as artifacts and methods used or applied during or after actual measurement of the workpiece.

When classifying in [G01B 21/26](#) at least one [G01B 2210/00](#) Indexing Code has to be given.

G01B 21/28

for measuring areas

References

Informative references

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

Integrators in general	G06G
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