

## SECTION G — PHYSICS

## G01 MEASURING; TESTING

## G01B MEASURING LENGTH, THICKNESS OR SIMILAR LINEAR DIMENSIONS; MEASURING ANGLES; MEASURING AREAS; MEASURING IRREGULARITIES OF SURFACES OR CONTOURS

Note(s)

1. This subclass covers measuring of position or displacement in terms of linear or angular dimensions.
2. In this subclass, the groups are distinguished by the means of measurement which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification.
3. Attention is drawn to the Notes following the title of class G01.
4. Machines operated on similar principles to the hand-held devices specified in this subclass are classified with these devices.
5. Measuring arrangements or details thereof covered by two or more of groups G01B 3/00-G01B 17/00 are classified in group G01B 21/00 if no single other group can be selected as being predominantly applicable.

Subclass index

MEASURING DEVICES CHARACTERISED BY THE MATERIAL.....	1/00
PREDOMINANT METHODS USED IN MEASURING DEVICES	
Mechanical.....	3/00, 5/00
Electric or magnetic.....	7/00
By fluids.....	13/00
By light waves; by other electro-magnetic waves or radiation.....	9/00, 11/00, 15/00
By sonic waves.....	17/00
OTHER MEASURING ARRANGEMENTS.....	21/00

<b>1/00</b>	<b>Measuring instruments characterised by the selection of material therefor</b>	3/32	• • Holders therefor
		3/34	• Ring or other apertured gauges, e.g. "go/no-go" gauge
<b>3/00</b>	<b>Instruments as specified in the subgroups and characterised by the use of mechanical measuring means</b> (arrangements for measuring particular parameters G01B 5/00; devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34) [2]	3/36	• • for external screw threads
		3/38	• Gauges with an open yoke and opposed faces, i.e. calipers, in which the internal distance between the faces is fixed, although it may be preadjustable
3/02	• Rulers or tapes with scales or marks for direct reading	3/40	• • for external screw threads
		3/42	• • of limit-gauge type, i.e. "go/no-go" (G01B 3/40 takes precedence)
3/04	• • rigid	3/44	• • • preadjustable for wear or tolerance
3/06	• • • folding	3/46	• Plug gauges for internal dimensions with engaging surfaces which are at a fixed distance, although they may be preadjustable
3/08	• • • extensible		
3/10	• • flexible	3/48	• • for internal screw threads
3/11	• Chains for measuring length	3/50	• • of limit-gauge type, i.e. "go/no-go" (G01B 3/48 takes precedence)
3/12	• Measuring wheels		
3/14	• Templates for checking contours	3/52	• • • preadjustable for wear or tolerance
3/16	• Compasses, i.e. with a pair of pivoted arms	3/56	• Gauges for measuring angles or tapers, e.g. conical calipers
3/18	• Micrometers		
3/20	• Slide gauges	<b>5/00</b>	<b>Measuring arrangements characterised by the use of mechanical means</b> (instruments of the types covered by group G01B 3/00 <i>per se</i> G01B 3/00) [2]
3/22	• Feeler-pin gauges, e.g. dial gauges (for measuring contours or curvatures G01B 5/20)	5/004	• for measuring coordinates of points [6]
3/24	• • with open yoke, i.e. calipers	5/008	• • using coordinate measuring machines [6]
3/26	• • Plug gauges	5/012	• • • Contact-making feeler heads therefor [6]
3/28	• • Depth gauges	5/016	• • • • Constructional details of contacts [6]
3/30	• Bars, blocks, or strips in which the distance between a pair of faces is fixed, although it may be preadjustable, e.g. end measure, feeler strip	5/02	• for measuring length, width, or thickness (G01B 5/004, G01B 5/08 take precedence) [6]

## G01B

- 5/04 • • specially adapted for measuring length or width of objects while moving
- 5/06 • • for measuring thickness
- 5/08 • for measuring diameters
- 5/10 • • of objects while moving
- 5/12 • • internal diameters
- 5/14 • for measuring distance or clearance between spaced objects or spaced apertures (G01B 5/24 takes precedence)
- 5/16 • • between a succession of regularly spaced objects or regularly spaced apertures
- 5/18 • for measuring depth
- 5/20 • for measuring contours or curvatures
- 5/207 • • using a plurality of fixed, simultaneously operating transducers (G01B 5/213-G01B 5/22 take precedence) [6]
- 5/213 • • for measuring radius of curvature [6]
- 5/22 • • Spherometers
- 5/24 • for measuring angles or tapers; for testing the alignment of axes
- 5/245 • • for testing perpendicularity [6]
- 5/25 • • for testing the alignment of axes
- 5/252 • • • for measuring eccentricity, i.e. lateral shift between two parallel axes [6]
- 5/255 • • for testing wheel alignment
- 5/26 • for measuring areas, e.g. planimeter (integrators in general G06G)
- 5/28 • for measuring roughness or irregularity of surfaces
- 5/30 • for measuring the deformation in a solid, e.g. mechanical strain gauge

### 7/00 Measuring arrangements characterised by the use of electric or magnetic means

- 7/004 • for measuring coordinates of points [6]
- 7/008 • • using coordinate measuring machines [6]
- 7/012 • • • Contact-making feeler heads therefor [6]
- 7/016 • • • • Constructional details of contacts [6]
- 7/02 • for measuring length, width, or thickness (G01B 7/004, G01B 7/12 takes precedence) [6]
- 7/04 • • specially adapted for measuring length or width of objects while moving
- 7/06 • • for measuring thickness
- 7/12 • for measuring diameters
- 7/13 • • Internal diameters [6]
- 7/14 • for measuring distance or clearance between spaced objects or spaced apertures (G01B 7/30 takes precedence)
- 7/15 • • being regularly spaced [6]
- 7/16 • for measuring the deformation in a solid, e.g. by resistance strain gauge
- 7/24 • • using change in magnetic properties
- 7/26 • for measuring depth
- 7/28 • for measuring contours or curvatures
- 7/287 • • using a plurality of fixed, simultaneously operating transducers (G01B 7/293 takes precedence) [6]
- 7/293 • • for measuring radius of curvature [6]
- 7/30 • for measuring angles or tapers; for testing the alignment of axes
- 7/305 • • for testing perpendicularity [6]
- 7/31 • • for testing the alignment of axes
- 7/312 • • • for measuring eccentricity, i.e. lateral shift between two parallel axes [6]
- 7/315 • • for testing wheel alignment
- 7/32 • for measuring areas (integrators in general G06G)

- 7/34 • for measuring roughness or irregularity of surfaces

### 9/00 Instruments as specified in the subgroups and characterised by the use of optical measuring means (arrangements for measuring particular parameters G01B 11/00) [2]

- 9/02 • Interferometers
- 9/021 • • using holographic techniques [2]
- 9/023 • • • for contour producing (G01B 9/025-G01B 9/029 take precedence) [2]
- 9/025 • • • Double-exposure technique [2]
- 9/027 • • • in real time [2]
- 9/029 • • • by time averaging [2]
- 9/04 • Measuring microscopes
- 9/06 • Measuring telescopes
- 9/08 • Optical projection comparators
- 9/10 • Goniometers for measuring angles between surfaces

### 11/00 Measuring arrangements characterised by the use of optical means (instruments of the types covered by group G01B 9/00 *per se* G01B 9/00) [2]

- 11/02 • for measuring length, width, or thickness (G01B 11/08 takes precedence)
- 11/03 • • by measuring coordinates of points [3]
- 11/04 • • specially adapted for measuring length or width of objects while moving
- 11/06 • • for measuring thickness
- 11/08 • for measuring diameters
- 11/10 • • of objects while moving
- 11/12 • • internal diameters
- 11/14 • for measuring distance or clearance between spaced objects or spaced apertures (G01B 11/26 takes precedence; rangefinders G01C 3/00)
- 11/16 • for measuring the deformation in a solid, e.g. optical strain gauge
- 11/22 • for measuring depth
- 11/24 • for measuring contours or curvatures
- 11/245 • • using a plurality of fixed, simultaneously operating transducers (G01B 11/255 takes precedence) [7]
- 11/25 • • by projecting a pattern, e.g. moiré fringes, on the object (G01B 11/255 takes precedence) [7]
- 11/255 • • for measuring radius of curvature [7]
- 11/26 • for measuring angles or tapers; for testing the alignment of axes
- 11/27 • • for testing the alignment of axes
- 11/275 • • for testing wheel alignment
- 11/28 • for measuring areas (integrators in general G06G)
- 11/30 • for measuring roughness or irregularity of surfaces

### 13/00 Measuring arrangements characterised by the use of fluids

- 13/02 • for measuring length, width, or thickness (G01B 13/08 takes precedence)
- 13/03 • • by measuring coordinates of points [3]
- 13/04 • • specially adapted for measuring length or width of objects while moving
- 13/06 • • for measuring thickness
- 13/08 • for measuring diameters
- 13/10 • • internal diameters
- 13/12 • for measuring distance or clearance between spaced objects or spaced apertures (G01B 13/18 takes precedence)
- 13/14 • for measuring depth
- 13/16 • for measuring contours or curvatures

13/18	• for measuring angles or tapers; for testing the alignment of axes	21/00	<b>Measuring arrangements or details thereof in so far as they are not adapted to particular types of measuring means of the other groups of this subclass [3]</b>
13/19	• • for testing the alignment of axes	21/02	• for measuring length, width, or thickness (G01B 21/10 takes precedence) [3]
13/195	• • for testing wheel alignment	21/04	• • by measuring coordinates of points [3]
13/20	• for measuring areas, e.g. pneumatic planimeter (integrators in general G06G)	21/06	• • specially adapted for measuring length or width of objects while moving [3]
13/22	• for measuring roughness or irregularity of surfaces	21/08	• • for measuring thickness [3]
13/24	• for measuring the deformation in a solid [3]	21/10	• for measuring diameters [3]
<b>15/00</b>	<b>Measuring arrangements characterised by the use of wave or particle radiation (G01B 9/00, G01B 11/00 take precedence) [4]</b>	21/12	• • of objects while moving [3]
15/02	• for measuring thickness	21/14	• • internal diameters [3]
15/04	• for measuring contours or curvatures	21/16	• for measuring distance or clearance between spaced objects [3]
15/06	• for measuring the deformation in a solid	21/18	• for measuring depth [3]
15/08	• for measuring roughness or irregularity of surfaces [6]	21/20	• for measuring contours or curvatures, e.g. determining profile [3]
<b>17/00</b>	<b>Measuring arrangements characterised by the use of infrasonic, sonic, or ultrasonic vibrations [4]</b>	21/22	• for measuring angles or tapers; for testing the alignment of axes [3]
17/02	• for measuring thickness	21/24	• • for testing the alignment of axes [3]
17/04	• for measuring the deformation in a solid, e.g. by vibrating string	21/26	• • for testing wheel alignment [3]
17/06	• for measuring contours or curvatures [6]	21/28	• for measuring areas (integrators in general G06G) [3]
17/08	• for measuring roughness or irregularity of surfaces [6]	21/30	• for measuring roughness or irregularity of surfaces [3]
		21/32	• for measuring the deformation in a solid [3]