CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS

(NOTES omitted)

INSTRUMENTS

G01 MEASURING; TESTING (NOTES omitted)

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

NOTES

- 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 measurement technique which is of major importance. Thus, the mere application of other techniques or 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 <u>G01B 3/00</u> <u>G01B 17/00</u> are classified in group <u>G01B 21/00</u> if no single other group can be selected as being predominantly applicable.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

1/00	Measuring instruments characterised by the	2003/1017	
	selection of material therefor	3/102	
3/00	Measuring instruments characterised by the use of	2003/1023	
5/00	mechanical techniques	2003/1025	
	-	2003/1028	
	<u>NOTE</u>	2003/103	
	When classifying in this group, mechanical	2003/1033	
	arrangements for measuring specific parameters		
	can be further classified in group G01B 5/00.	2003/1035	
3/002	• {Details}	2003/1038	
3/002	• {Scales; Graduations}	3/1041	••• cl
3/004	 {Scales, Graduations} {having both coarse and fine graduation} 	3/1043	• • •
3/008	 . {Arrangements for controlling the measuring 		
5/008	force}	3/1046	• • •
3/02	• Rulers with scales or marks for direct reading	3/1048	
	(measuring tapes <u>G01B 3/10</u>)	2003/1051	
3/04	• • rigid	2000,1001	
3/06	folding	2003/1053	
3/08	extensible	3/1056	т
3/10	• Measuring tapes	2003/1058	•• {]
3/1003	• characterised by structure or material;	3/1061	• • M
	characterised by layout or indicia		le
3/1004	• • • {Measuring tapes without casings}	2003/1064	
3/1005	Means for controlling winding or unwinding of	2003/1066	
	tapes	3/1069	
3/1007	Means for locking	3/1071	S
2003/101	• • • • {acting on the drum}		m
2003/1012	• • • {engaging the tape in a direction parallel to	2003/1074	
2002/1017	the tape itself}	2003/1076	
2003/1015	• • • {engaging the tape in a direction transversal	2003/1079	
	to the tape itself}		

2003/1017	• • • { acting on the whole coil }
3/102	Means for damping
2003/1023	• • {Winding mechanisms}
2003/1025	• • • {operated manually, e.g. crank-handles}
2003/1028	• • • {operated by electric motors}
2003/103	• • • {operated by springs}
2003/1033	• • • {Means for activating the locking, braking or
	releasing of the tape, e.g. buttons}
2003/1035	• • • {by pivotal operation}
2003/1038	• • • {by translatory motion operation}
3/1041	characterised by casings
3/1043	Details of internal structure thereof, e.g. means
	for coupling separately moulded casing halves
3/1046	Details of external structure thereof, e.g. shapes
	for ensuring firmer hold
3/1048	Integrated means for affixing or holding
2003/1051	• • • {specially adapted for two or more tapes within
	the same casing}
2003/1053	• • • {Tape exit slots, e.g. shape or exit direction}
3/1056	• Tape end arrangements, e.g. end-hooks
2003/1058	• • {Manufacturing or assembling methods}
3/1061	• • Means for displaying or assisting reading of
	length measurement
2003/1064	• • • {Windows, e.g. lenses, glasses or cross-hairs}
2003/1066	• • • {Index sliding on tape}
3/1069	Electronic or mechanical display arrangements
3/1071	• • Separate means for supporting or affixing
	measuring tapes
2003/1074	• • • {associated with the casings}
2003/1076	• • {associated with the end-hooks}
2003/1079	• • • {associated with the tapes}

3/1084	• Tapes combined with arrangements for functions other than measuring lengths	5/00	Measuring arrangements characterised by the use of mechanical techniques
2003/1087	• • • {for illuminating}		NOTE
3/1089	• • • for marking, drawing or cutting		
3/1092	for performing length measurements and at least one other measurement of a different nature, e.g. bubble-type level		When classifying in this group, specific mechanical measuring instruments can be further classified in group <u>G01B 3/00</u> .
3/1094	• • for recording information or for performing calculations	5/0002	• {Arrangements for supporting, fixing or guiding the measuring instrument or the object to be measured}
2003/1097	• • • {Tape measures with an adhesive surface}	5/0004	• {Supports (<u>G01B 5/025</u> takes precedence)}
3/11	Chains for measuring length	5/0007	• {Surface plates}
3/12	• Measuring wheels	5/0009	• • {Guiding surfaces; Arrangements compensating
3/14	• Templates for checking contours {(templates for		for non-linearity there-of}
2/16	mounting doors or windows E04F 21/0007)}	5/0011	• {Arrangements for eliminating or compensation of
3/16	• Compasses, i.e. with a pair of pivoted arms		measuring errors due to temperature or weight}
3/163	• • {without measuring scale}	5/0014	• • {due to temperature (on machine tools
3/166	• {provided with a measuring scale}		<u>B23Q 11/0003</u>)}
3/18	. Micrometers	5/0016	• • {due to weight (on machine tools $\underline{B23Q 11/001}$)}
3/20	Slide gauges	5/0018	• {for measuring key-ways}
3/205	• • {provided with a counter for digital indication of the measured dimension}	5/0021	 {for measuring the volumetric dimension of an object}
3/22	• Feeler-pin gauges, e.g. dial gauges (for measuring contours or curvatures <u>G01B 5/20</u>)	5/0023	• {Measuring of sport goods, e.g. bowling accessories, golfclubs, game balls}
3/24	• • with open yoke, i.e. calipers	5/0025	• {Measuring of vehicle parts (G01B 5/003 takes
3/26	• • Plug gauges		precedence)}
3/28	• • Depth gauges	5/0028	• {Brakes, brakeshoes, clutches}
3/30	• Bars, blocks, or strips in which the distance	5/003	• {Measuring of motor parts}
	between a pair of faces is fixed, although it may be	5/0032	• {Valves, actuating devices for valves}
	preadjustable, e.g. end measure, feeler strip	5/0035	• {Measuring of dimensions of trees}
3/303	• • {pre-adjustable, e.g. by means of	5/0037	• {Measuring of dimensions of welds}
	micrometerscrew}	5/004	• for measuring coordinates of points
3/306	• • • {with inclined slide plane}	5/008	• • using coordinate measuring machines
3/32	• • Holders therefor	5/012	Contact-making feeler heads therefor
3/34	• Ring or other apertured gauges, e.g. "go/no-go"	5/016	Constructional details of contacts
	gauge	5/02	• for measuring length, width or thickness
3/36	for external screw-threads		(<u>G01B 5/004</u> , <u>G01B 5/08</u> take precedence)
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	5/025	• {Measuring of circumference; Measuring length of ring-shaped articles (<u>G01B 5/0035</u> takes precedence)}
3/40	for external screw-threads	5/04	• specially adapted for measuring length or width
3/42	• of limit-gauge type, i.e. "go/no-go" (G01B 3/40 takes precedence)	5/043	of objects while moving ••• {for measuring length}
3/44	preadjustable for wear or tolerance	5/046	• • {for measuring width}
3/46	• Plug gauges for internal dimensions with engaging	5/040	 for measuring thickness
	surfaces which are at a fixed distance, although they	5/061	 {height gauges}
	may be preadjustable	5/063	 {provided with a slide which may be moved
3/48	for internal screw-threads	5/005	along a vertical support by means of a
3/50	• of limit-gauge type, i.e. "go/no-go" (G01B 3/48 takes precedence)	5/065	micrometer screw}
3/52	• • • preadjustable for wear or tolerance	5/065	•••• {provided with a slide which may be fixed along its vertical support in discrete
3/56	• Gauges for measuring angles or tapers, e.g. conical calipers	5/066	calibrated position}
3/563	• {Protractors (for use in geodesy <u>G01C 1/00;</u>	5/066	• • • {of coating}
5,505	protractor heads for drawing machines B43L 13/08)}	5/068	• • {of objects while moving (<u>G01B 5/066</u> takes precedence)}
3/566	{Squares}	5/08	 for measuring diameters {(<u>G01B 5/0035</u> takes precedence; measuring radius of curvature <u>G01B 5/213</u>)}
		5/10	• of objects while moving
		5/12	• internal diameters

5/14

5/143

precedence)

. . ngements characterised by the use chniques

. for measuring distance or clearance between spaced objects or spaced apertures (G01B 5/24 takes

. . {between holes on a workpiece}

2

5/146	• • {measuring play on bearings}
5/16	between a succession of regularly spaced objects
	or regularly spaced apertures
5/163	• • {of screw-threads}
5/166	• • {of gear teeth}
5/18	for measuring depth
5/20	. for measuring contours or curvatures
5/201	• • {for measuring roundness}
5/202	• • {of gears}
5/204	• {of screw-threads}
5/205	• {of turbine blades or propellers}
5/207	• using a plurality of fixed, simultaneously
	operating transducers (G01B 5/213 - G01B 5/22
	take precedence)
5/213	• for measuring radius of curvature
5/22	Spherometers
5/24	• for measuring angles or tapers; for testing the
	alignment of axes
5/241	• • {for measuring conicity}
5/242	• • {Sine bars; Sine plates}
5/243	• { for measuring chamfer (see <u>G01B 3/56</u>) }
5/245	• • for testing perpendicularity
5/25	• • for testing the alignment of axes
5/252	• • • for measuring eccentricity, i.e. lateral shift
	between two parallel axes
5/255	• for testing wheel alignment
5/26	• for measuring areas, e.g. planimeters
5/28	. for measuring roughness or irregularity of surfaces
5/285	• • {for controlling eveness}
5/30	• for measuring the deformation in a solid, e.g.
	mechanical strain gauge
7/00	mechanical strain gauge Measuring arrangements characterised by the use
	Measuring arrangements characterised by the use of electric or magnetic techniques
7/00 7/001	Measuring arrangements characterised by the use
	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)}
7/001	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges
7/001	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)}
7/001	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes
7/001 7/002	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)}
7/001 7/002	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate
7/001 7/002 7/003	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)}
7/001 7/002 7/003 7/004	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points
7/001 7/002 7/003 7/004 7/008	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines
7/001 7/002 7/003 7/004 7/008 7/012	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor
7/001 7/002 7/003 7/004 7/008 7/012 7/016	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts
7/001 7/002 7/003 7/004 7/008 7/012 7/016	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring length, width or thickness
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring listance between sensor and object (G01B 7/082 and G01B 7/102 take
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Constructional details of contacts for measuring lealer heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)}
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring length of cable, band or the
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinate measuring G01B 7/004)} for measuring coordinate of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04)}
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04)} specially adapted for measuring length or width
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023 7/026	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Contact-making feeler heads therefor for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04)} specially adapted for measuring length or width of objects while moving
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023 7/026 7/04	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04)} specially adapted for measuring length or width of objects while moving {for measuring length}
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023 7/026 7/026	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04) specially adapted for measuring length or width of objects while moving {for measuring length} {for measuring length}
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023 7/026 7/026 7/04 7/042 7/042 7/042	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04)} specially adapted for measuring length or width of objects while moving {for measuring length}
7/001 7/002 7/003 7/004 7/008 7/012 7/016 7/02 7/023 7/023 7/026 7/026	 Measuring arrangements characterised by the use of electric or magnetic techniques {Constructional details of gauge heads (G01B 7/012 takes precedence)} {Constructional details of contacts for gauges actuating one or more contacts (G01B 7/016 takes precedence)} {for measuring position, not involving coordinate determination (coordinate measuring G01B 7/004)} for measuring coordinates of points using coordinate measuring machines Contact-making feeler heads therefor Constructional details of contacts for measuring length, width or thickness (G01B 7/004, G01B 7/12 take precedence) {for measuring distance between sensor and object (G01B 7/082 and G01B 7/102 take precedence)} {for measuring length of cable, band or the like, which has been paid out, e.g. from a reel (measuring length of objects while moving G01B 7/04) specially adapted for measuring length or width of objects while moving {for measuring length} {for measuring length}

7/063	•	•	•	{using piezoelectric resonator	s
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7/066	{for measuring thickness of coating
	(apparatus or processes for the manufacture
	of piezoelectric or electrostrictive resonators
	for obtaining desired frequency <u>H03H 3/04</u>)}
7/08	• • • {using capacitive means}
7/082	• • • • {Height gauges}
7/085	• • • • {for measuring thickness of coating}
7/087	• • • • { for measuring of objects while moving
	(G01B 7/085 takes precedence)}
7/10	• • • {using magnetic means, e.g. by measuring
	change of reluctance}
7/102	• • • • {Height gauges}
7/105	• • • • { for measuring thickness of coating }
7/107	• • • • { for measuring objects while moving
	(<u>G01B 7/105</u> takes precedence)}
7/12	 for measuring diameters
7/125	• • {of objects while moving}
7/13	Internal diameters
7/14	. for measuring distance or clearance between spaced
	objects or spaced apertures (G01B 7/30 takes
	precedence)
7/142	• • {between holes on a workpiece}
7/144	• • {Measuring play on bearings}
7/146	• • {Measuring on gear teeth}
7/148	• • {Measuring on screw threads}
7/15	• • being regularly spaced
7/16	• for measuring the deformation in a solid, e.g. by
	resistance strain gauge
7/18	• • {using change in resistance}
7/20	• • { formed by printed-circuit technique }
7/22	• • {using change in capacitance}
7/24	• • using change in magnetic properties
7/26	• for measuring depth
7/28	• for measuring contours or curvatures
7/281	• • {for measuring contour or curvature along an
	axis, e.g. axial curvature of a pipeline or along a
	series of feeder rollers}
7/282	• • {for measuring roundness}
7/283	• • {of gears}
7/284	• {of screw-threads}
7/285	• {of propellers or turbine blades}
7/286	• {Spherometers}
7/287	• using a plurality of fixed, simultaneously
	operating transducers (G01B 7/293 takes
	precedence)
7/293	• for measuring radius of curvature
7/30	• for measuring angles or tapers; for testing the
	alignment of axes
7/305	• for testing perpendicularity
7/31	 for testing perpendicularity for testing the alignment of axes
7/312	• • for measuring eccentricity, i.e. lateral shift
	between two parallel axes
7/315	• • for testing wheel alignment
7/32	 for measuring areas
7/34	 for measuring roughness or irregularity of surfaces
7/345	 for measuring roughness of megularity of surfaces . {for measuring evenness}
11575	• (101 measuring eveniness)

9/00	Measuring instruments characterised by the use of optical techniques				
	NOTE				
	When classifying in this group, optical arrangements for measuring specific parameters can be further classified in group <u>G01B 11/00</u> .				
9/02	• Interferometers				
9/02001	 characterised by controlling or generating intrinsic radiation properties 				
9/02002	• • • using two or more frequencies				
9/02003	• • • • using beat frequencies				
9/02004	8 1 5				
9/02005	•••• {using discrete frequency stepping or switching}				
9/02007	interferometric measurement (using only beat <u>G01B 9/02003</u>)}				
9/02008					
9/02009	using different or varying spectral width}				
9/0201	• • • {using temporal phase variation}				
9/02011	, a garage fragmente a second se				
9/02012 9/02014					
9/02014					
9/02015	 {contacting two or more objects} 				
9/02017	 with multiple interactions between the target 				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	object and light beams, e.g. beam reflections occurring from different locations				
9/02018	• • • Multipass interferometers, e.g. double-pass				
9/02019	•••• {contacting different points on same face of object}				
9/02021	opposite faces}				
9/02022					
9/02023	on cavity or fibre}				
9/02024	• • {Measuring in transmission, i.e. light traverses the object}				
9/02025	surfaces}				
9/02027	• • {Two or more interferometric channels or interferometers}				
9/02028	• • • {Two or more reference or object arms in one interferometer}				
9/02029	• • {Combination with non-interferometric systems, i.e. for measuring the object}				
9/0203 9/02031	 {With imaging systems} {With non-optical systems, e.g. tactile} 				
9/02031	 {With non-optical systems, e.g. tactile} {generating a spatial carrier frequency, 				
9/02032	e.g. by creating lateral or angular offset between reference and object beam (shearing interferometers <u>G01B 9/02098</u>)}				
9/02034	wavefronts}				
9/02035	{Shaping the focal point, e.g. elongated focus}				
9/02036	• • • {by using chromatic effects, e.g. a wavelength dependent focal point}				
9/02037 9/02038	 {by generating a transverse line focus} {Shaping the wavefront, e.g. generating a 				

9/02039	• • • {by matching the wavefront with a particular
	object surface shape}
9/02041	• • {characterised by particular imaging or detection
	techniques}
9/02042	• • • {Confocal imaging}
9/02043	• • {Imaging of the Fourier or pupil or back focal plane, i.e. angle resolved imaging}
9/02044	• • • {Imaging in the frequency domain, e.g. by
0.00045	using a spectrometer}
9/02045	• • • {using the Doppler effect}
9/02047	• • {using digital holographic imaging, e.g. lensless phase imaging without hologram in the reference path}
9/02048	• • {Rough and fine measurement}
9/02048	 . {characterised by particular mechanical design
	details}
9/0205	• • • {of probe head}
9/02051	• • {Integrated design, e.g. on-chip or monolithic}
9/02052	• • {Protecting, e.g. shock absorbing,
	arrangements }
9/02054	• • • {Hand held}
9/02055	• • Reduction or prevention of errors; Testing;
	Calibration
9/02056	• • Passive reduction of errors
9/02057	•••• {by using common path configuration, i.e.
	reference and object path almost entirely overlapping}
9/02058	•••• {by particular optical compensation
	or alignment elements, e.g. dispersion
	compensation}
9/02059	• • • • {Reducing effect of parasitic reflections, e.g.
	cyclic errors}
9/02061	Reduction or prevention of effects of tilts or
	misalignment
9/02062	• • • {Active error reduction, i.e. varying with time}
9/02063	• • • {by particular alignment of focus position, e.g. dynamic focussing in optical coherence
	tomography}
9/02064	• • • {by particular adjustment of coherence gate,
	i.e. adjusting position of zero path difference in low coherence interferometry }
9/02065	•••• {using a second interferometer before or
	after measuring interferometer}
9/02067	• • • {by electronic control systems, i.e. using
	feedback acting on optics or light}
9/02068	• • • • • {Auto-alignment of optical elements}
9/02069	• • • • • {Synchronization of light source or
	manipulator and detector}
9/0207	• • • {Error reduction by correction of the
	measurement signal based on independently
	determined error sources, e.g. using a reference
0/00071	interferometer}
9/02071	• • • • {by measuring path difference independently
0/02072	from interferometer}
9/02072	• • • • {by calibration or testing of interferometer}
9/02074	$\cdot \cdot \cdot \cdot \{ \text{of the detector} \}$
9/02075	• • • {of particular errors}
9/02076	{Caused by motion}
9/02077	• • • • • {of the object}
9/02078	• • • • {Caused by ambiguity}
9/02079	• • • • {Quadrature detection, i.e. detecting relatively phase-shifted signals}
9/02081	••••• {simultaneous quadrature detection, e.g.
	by spatial phase shifting}

9/02082	{Caused by speckles}
9/02083	• • {characterised by particular signal processing and
2702003	
	presentation}
9/02084	• • {Processing in the Fourier or frequency domain
	when not imaged in the frequency domain}
0/02085	
9/02085	• • • {Combining two or more images of different
	regions}
9/02087	{Combining two or more images of the same
2702007	region}
9/02088	• • • {Matching signals with a database}
9/02089	• • • {Displaying the signal, e.g. for user
	interaction }
0/0200	,
9/0209	Low-coherence interferometers
9/02091	Tomographic interferometers, e.g. based on
	optical coherence
9/02092	• • {Self-mixing interferometers, i.e. feedback of
)/020)2	
	light from object into laser cavity}
9/02094	• • {Speckle interferometers, i.e. for detecting
	changes in speckle pattern}
9/02095	• • { detecting deformation from original shape}
9/02096	• • • {detecting a contour or curvature}
9/02097	Self-interferometers
9/02098	Shearing interferometers
9/021	• • using holographic techniques
9/023	for contour producing
	(<u>G01B 9/025</u> - <u>G01B 9/029</u> take precedence)
9/025	Double exposure technique
9/027	in real time
9/029	• • • by time averaging
9/04	• Measuring microscopes
9/06	Measuring telescopes
9/08	
9/08	 Optical projection comparators
9/08 9/10	
	 Optical projection comparators Goniometers for measuring angles between surfaces
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use
9/10	• Goniometers for measuring angles between surfaces
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques <u>NOTE</u> When classifying in this group, specific optical
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE
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9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques <u>NOTE</u> When classifying in this group, specific optical
9/10	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00.
9/10 11/00 11/002	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates}
9/10 11/00 11/002 11/005	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines}
9/10 11/00 11/002 11/005 11/007	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques <u>NOTE</u> When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} {coordinate measuring machines} {feeler heads therefor}
9/10 11/00 11/002 11/005	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines}
9/10 11/00 11/002 11/005 11/007	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques <u>NOTE</u> When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} {coordinate measuring machines} {feeler heads therefor}
9/10 11/00 11/002 11/005 11/007 11/02	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence)
9/10 11/00 11/002 11/005 11/007 11/02 11/022	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning}
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning}
9/10 11/00 11/002 11/005 11/007 11/02 11/022	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning}
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)}
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/060 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024,
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)}
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026 11/028 11/028	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026 11/028	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026 11/028 11/028	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving
9/10 11/00 11/002 11/005 11/007 11/02 11/022 11/024 11/026 11/028 11/028	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/04 11/043	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/04 11/043 11/043 11/046	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/04 11/043	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length} . {for measuring length}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/04 11/043 11/043 11/046	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/04 11/043 11/043 11/046	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length} . {for measuring length}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/043 11/043 11/043 11/043 11/043	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length} . for measuring length] . for measuring length]
9/10 11/00 11/002 11/005 11/007 11/022 11/022 11/024 11/026 11/028 11/03 11/043 11/043 11/043 11/043 11/046 11/06	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring width} . for measuring thickness {; e.g. of sheet material (thickness measurement by thermal means G01B 21/085)} . {Height gauges}
9/10 11/00 11/002 11/005 11/007 11/022 11/024 11/026 11/028 11/028 11/03 11/043 11/043 11/043 11/043 11/043	 Goniometers for measuring angles between surfaces Measuring arrangements characterised by the use of optical techniques NOTE When classifying in this group, specific optical measuring instruments can be further classified in group G01B 9/00. {for measuring two or more coordinates} . {coordinate measuring machines} . {feeler heads therefor} for measuring length, width or thickness (G01B 11/08 takes precedence) . {by means of tv-camera scanning} . {by means of diode-array scanning} . {by measuring distance between sensor and object (G01B 11/0608 takes precedence)} . {by measuring lateral position of a boundary of the object (G01B 11/022, G01B 11/024, G01B 11/04 take precedence)} . by measuring coordinates of points . specially adapted for measuring length or width of objects while moving . {for measuring length} . {for measuring length} . for measuring length] . for measuring length]

11/0625	• • • • {with measurement of absorption or
	reflection}
11/0633	{using one or more discrete wavelengths}
11/0641	• • • { with measurement of polarization }
11/065	{using one or more discrete wavelengths}
11/0658	• • • • { with measurement of emissivity or reradiation }
11/0666	• • • • {using an exciting beam and a detection
	beam including surface acoustic waves
	[SAW]}
11/0675	• • • • {using interferometry}
11/0683	• • • • {measurement during deposition or removal of the layer}
11/0691	• • {of objects while moving (<u>G01B 11/0616</u> takes precedence)}
11/08	• for measuring diameters
11/10	• • of objects while moving
11/105	• • {using photoelectric detection means}
11/12	• internal diameters
11/14	• for measuring distance or clearance between spaced
	objects or spaced apertures ($\underline{G01B \ 11/26}$ takes precedence; rangefinders $\underline{G01C \ 3/00}$)
11/16	• for measuring the deformation in a solid, e.g. optical
	strain gauge
11/161	• {by interferometric means}
11/162	• • {by speckle- or shearing interferometry}
11/164	• • {by holographic interferometry}
11/165	• {by means of a grating deformed by the object}
11/167	• {by projecting a pattern on the object}
11/168	• {by means of polarisation}
11/18	• {using photoelastic elements}
11/20	• {using brittle lacquer}
11/22	• for measuring depth
11/24	• for measuring contours or curvatures
11/2408	• • {for measuring roundness}
11/2416	 • {of gears (optical projection profile comparators
11/2425	<u>G01B 9/08</u>)}
	• {of screw-threads}
11/2433	• { for measuring outlines by shadow casting }
11/2441	• • {using interferometry}
11/245	 using a plurality of fixed, simultaneously operating transducers ({<u>G01B 11/2408</u> - <u>G01B 11/2425</u>, }<u>G01B 11/255</u>
	take precedence) $(0010 11/2400 - 0010 11/2425,) 0010 11/255$
11/25	• • by projecting a pattern, e.g. {one or more lines,}
	moiré fringes on the object (G01B $11/255$ takes
	precedence {; image analysis for depth or shape recovery <u>G06T 7/50</u> })
11/2504	• • {Calibration devices}
11/2509	• • {Color coding}
11/2513	• • • {with several lines being projected in more
	than one direction, e.g. grids, patterns}
11/2518	• • • {Projection by scanning of the object}
11/2522	• • • { the position of the object changing and
	being recorded}
11/2527	• • • • {with phase change by in-plane movement of the patern}
11/2531	{using several gratings, projected with variable angle of incidence on the object, and one
	detection device}
11/2536	• • • {using several gratings with variable grating
11,2000	pitch, projected on the object with the same
	angle of incidence}
	<u> </u>

11/254	••• {Projection of a pattern, viewing through a pattern, e.g. moiré}
11/2545	• • { with one projection direction and several detection directions, e.g. stereo }
11/255	 for measuring radius of curvature {(measuring diameter <u>G01B 11/08</u>)}
11/26	• for measuring angles or tapers; for testing the alignment of axes
11/27	 for testing the alignment of axes {(means for centering or aligning a light guide within a ferrule G02B 6/3834)}
11/272	• • • {using photoelectric detection means}
11/275	for testing wheel alignment
11/2755	• • • {using photoelectric detection means}
11/28	• for measuring areas
11/285	• • {using photoelectric detection means}
11/30	 for measuring roughness or irregularity of surfaces
11/303	• • {using photoelectric detection means}
11/306	• • {for measuring evenness}
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
13/04	• specially adapted for measuring length or width of objects while moving
13/06	• • for measuring thickness
13/065	• • • {Height gauges}
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
13/19	• • for testing the alignment of axes
13/195	for testing wheel alignment
13/20	• for measuring areas, e.g. pneumatic planimeters
13/22	. for measuring roughness or irregularity of surfaces
13/24	• for measuring the deformation in a solid
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 <u>G01B 9/00</u> , <u>G01B 11/00</u>)
15/02	
15/02	• for measuring thickness
15/025 15/04	 {by measuring absorption} for measuring contours or curvatures
15/04	 . {by measuring absorption}
15/045	
15/08	for measuring the deformation in a solidfor measuring roughness or irregularity of surfaces
17/00	Measuring arrangements characterised by the use
	of infrasonic, sonic or ultrasonic vibrations
17/02	for measuring thickness
17/025	• {for measuring thickness of coating}
17/04	• for measuring the deformation in a solid, e.g. by
17/06	vibrating string
17/06	. for measuring contours or curvatures
17/08	• for measuring roughness or irregularity of surfaces

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
	<u>NOTE</u>
	{Measuring arrangements or details thereof covered by two or more of groups <u>G01B 3/00</u> - <u>G01B 17/00</u> are classified in this group if no single other group can be selected as being predominantly applicable.}
21/02	• for measuring length, width, or thickness (G01B 21/10 takes precedence)
21/04	• • by measuring coordinates of points
21/042	{Calibration or calibration artifacts (<u>G01B 3/30</u> , <u>G01B 9/02072</u> take precedence)}
21/045	{Correction of measurements (G01B 9/02055 takes precedence)}
21/047	• • • {Accessories, e.g. for positioning, for tool- setting, for measuring probes}
21/06	• specially adapted for measuring length or width of objects while moving
21/065	• • { for stretchable materials }
21/08	• • for measuring thickness
21/085	• • • {using thermal means}
21/10	for measuring diameters
21/12	• • of objects while moving
21/14	• internal diameters {(of boreholes or wells <u>E21B 47/08</u>)}
21/16	• for measuring distance of clearance between spaced objects
21/18	• for measuring depth
21/20	 for measuring contours or curvatures, e.g. determining profile
21/22	• for measuring angles or tapers; for testing the alignment of axes
21/24	• • for testing alignment of axes
21/26	for testing wheel alignment
21/28	• for measuring areas
21/30	• for measuring roughness or irregularity of surfaces
21/32	• for measuring the deformation in a solid
2210/00	Aspects not specifically covered by any group under <u>G01B</u> , e.g. of wheel alignment, caliper-like sensors
2210/10	• Wheel alignment
2210/12	• • Method or fixture for calibrating the wheel aligner
2210/14	• One or more cameras or other optical devices capable of acquiring a two-dimensional image
2210/143	One or more cameras on each side of a vehicle in the main embodiment
2210/146	Two or more cameras imaging the same area
2210/16	• Active or passive device attached to the chassis of a vehicle
2210/18	• • Specially developed for using with motorbikes or other two-wheeled vehicles
2210/20	• • Vehicle in a state of translatory motion
2210/22	• • Wheels in a state of motion supported on rollers,
	rotating platform or other structure substantially capable of only one degree of rotational freedom
2210/24	• • Specially developed for using with trucks or other heavy-duty vehicles

2210/26	. Algorithms, instructions, databases, computerized
2210/20	methods and graphical user interfaces employed by a user in conjunction with the wheel aligner
2210/28	Beam projector and related sensors, camera, inclinometer or other active sensing or projecting device.
2210/283	
	. Beam projectors and related sensors
2210/286	• • • Projecting a light pattern on the wheel or vehicle body
2210/30	Reference markings, reflector, scale or other passive device
2210/303	• • fixed to the ground or to the measuring station
2210/306	• • • Mirror, prism or other reflector
2210/40	• Caliper-like sensors
2210/42	• with one or more detectors on a single side of the
	object to be measured and with a backing surface of support or reference on the other side
2210/44	• with detectors on both sides of the object to be measured
2210/46	• • with one or more detectors on a single side of the
2210/40	object to be measured and with a transmitter on the other side
2210/48	for measurement of a wafer
2210/50	• Using chromatic effects to achieve wavelength- dependent depth resolution
2210/52	Combining or merging partially overlapping images
	to an overall image
2210/54	• Revolving an optical measuring instrument around a
	body
2210/56	• Measuring geometric parameters of semiconductor
	structures, e.g. profile, critical dimensions or trench depth
2210/58	• Wireless transmission of information between a
	sensor or probe and a control or evaluation unit
2210/60	Unique sensor identification
2210/62	• Support for workpiece air film or bearing with
	positive or negative pressure
2210/64	. Interconnection or interfacing through or under
	capping or via rear of substrate in microsensors
2210/66	Rock or ground anchors having deformation
	measuring means
2290/00	Aspects of interferometers not specifically covered
	by any group under <u>G01B 9/02</u>
2290/10	• Astronomic interferometers
2290/15	• Cat eye, i.e. reflection always parallel to incoming
	beam
2290/20	. Dispersive element for generating dispersion
2290/25	• Fabry-Perot in interferometer, e.g. etalon, cavity
2290/30	• Grating as beam-splitter
2290/35	• Mechanical variable delay line
2290/40	• Non-mechanical variable delay line
2290/45	• Multiple detectors for detecting interferometer
2290/50	signalsPupil plane manipulation, e.g. filtering light of
2290/30	certain reflection angles
2290/55	• Quantum effects
2290/60	• Reference interferometer, i.e. additional
	interferometer not interacting with object
2290/65	
	• Spatial scanning object beam
2290/70	Spatial scanning object beamUsing polarization in the interferometer