

## G01M

**TESTING STATIC OR DYNAMIC BALANCE OF MACHINES OR STRUCTURES;  
TESTING STRUCTURES OR APPARATUS NOT OTHERWISE PROVIDED FOR  
{(devices for testing the performance of portable percussive tools with fluid-  
pressure drive [B25D 9/005](#))}**

### Definition statement

*This place covers:*

The scope of the subclass [G01M](#) is so broad that a detailed description of the subject matter appropriate for this place is correctly possible only at the main group level.

The user is referred to the CPC definitions for the individual main groups of [G01M](#) which follow hereinafter. The following list is intended to assist the user:

Testing characterised by the objects investigated:

Machines or machine parts – see definitions for [G01M 1/00](#), [G01M 9/00](#), [G01M 10/00](#), [G01M 13/00](#), [G01M 15/00](#), [G01M 17/00](#)

Structures – see definitions for [G01M 1/00](#), [G01M 3/00](#), [G01M 5/00](#), [G01M 7/00](#)

Apparatus not provided elsewhere – see definitions for [G01M 11/00](#), [G01M 99/00](#)

Testing characterised by the properties investigated:

Balance – see definition for [G01M 1/00](#)

Fluid tightness – see definition for [G01M 3/00](#)

Elasticity, deflection – see definition for [G01M 5/00](#)

Vibration resistance – see definition for [G01M 7/00](#)

Aerodynamic properties – see definition for [G01M 9/00](#)

Hydrodynamic properties – see definition for [G01M 10/00](#)

Optical properties – see definition for [G01M 11/00](#)

### Relationships with other classification places

[G01N](#) covers investigating, i.e. testing or determining, the properties of materials, as opposed to testing or determining the properties of structures or apparatus, machine parts, which is covered by [G01M](#).

### References

#### Limiting references

*This place does not cover:*

Devices for testing the performance of portable percussive tools with fluid-pressure drive	<a href="#">B25D 9/005</a>
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## Glossary of terms

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

Calibrating means	ascertaining the quality of a measuring or testing device, or checking, adjusting graduations of measuring or testing device.
Monitoring means	maintain a continuous or periodical watch (human or instrumental) on, to enable action to be taken or initiated, or a signal to be given, if undesired conditions occur.
Investigating means	testing or determining.
Testing means	determination of the presence, quality, or genuineness of object to be tested.

## G01M 1/00

Testing static or dynamic balance of machines or structures (balancing rotary bowls of centrifuges [B04B 9/14](#); apparatus characterised by the means for holding wheels or parts thereof [B60B 30/00](#); determining the stability factors of ships [B63B](#); stabilising of aircraft [B64C 17/00](#); control systems for balancing automatically in operation [G05](#); balancing rotors of dynamo-electric machines [H02K 15/16](#))

### Definition statement

*This place covers:*

Methods and apparatus for:

Determining the moment of inertia of machines.

Static balancing of machines.

Determining position of center of gravity of machines.

Devices for determining unbalance of machines.

Devices for correcting unbalance of machines.

### Relationships with other classification places

[G01H](#) covers the combination of generation and measurement of mechanical and other vibrations while subclass [G01M 1/00](#) covers determining unbalance by oscillating or rotating the body to be tested.

[H04R](#) covers vibration transducers while [G01M 1/00](#) covers determining unbalance by evaluating measured vibrations.

## 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:*

Balancing rotary bowls of centrifuges	<a href="#">B04B 9/14</a>
Means for holding wheels or parts thereof	<a href="#">B60B 30/00</a>
Determining vessel properties with respect to stability or balance	<a href="#">B63B 9/08</a>

Equipment to decrease pitch, roll, or like unwanted vessel movements	<a href="#">B63B 39/00</a>
Apparatus for indicating vessel attitude	<a href="#">B63B 39/00</a>
Aircraft stabilization not otherwise provided for	<a href="#">B64C 17/00</a>
Centring the rotor within the stator; Balancing the rotor	<a href="#">H02K 15/16</a>

### Informative references

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

Tools for wheel weight mounting or removing	<a href="#">B25B 27/0078</a>
Balancing rotors of turbines	<a href="#">F01D 5/027</a>
Counterweights; Attaching or mounting same	<a href="#">F16F 15/28</a>
Correcting- or balancing-weights or equivalents means for balancing rotating bodies, e.g. vehicle wheels, for vibration suppression	<a href="#">F16F 15/32</a>
Control of mechanical oscillations	<a href="#">G05D 19/00</a>

### Special rules of classification

The sub-group **G01M/38** is not used anymore: classify in the correspondent classes in [G01M 1/14](#) and [G01M 1/30](#).

## G01M 1/04

**Adaptation of bearing support assemblies for receiving the body to be tested**  
**{{(tyre chucks in general [G01M 17/021](#))}}**

### 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:

Test of wheels	<a href="#">G01M 17/013</a>
Uniformity test of tyre	<a href="#">G01M 17/02</a>
Tyre chucks for testing purposes	<a href="#">G01M 17/021</a>
Uniformity test of tyre and surface correction	<a href="#">G01M 17/024</a>

## G01M 1/12

**Static balancing; Determining position of centre of gravity (by determining unbalance [G01M 1/14](#))**

### References

#### Limiting references

This place does not cover:

Determining unbalance by dynamic methods	<a href="#">G01M 1/14</a>
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**Informative references**

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

Levelling, stabilizing of vehicles transporting loads	<a href="#">B60P 1/045</a>
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**G01M 1/22**

and converting vibrations due to unbalance into electric variables (measuring vibrations in general [G01H](#); microphones or like acoustic electromechanical transducers [H04R](#))

**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 vibration in general	<a href="#">G01H</a>
Vibration transducers per se	<a href="#">H04R</a>

**G01M 1/30**

Compensating unbalance ([G01M1/38](#) takes precedence; counterweights [F16F 15/28](#))

**References****Informative references**

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

Counterweights; Attaching or mounting same	<a href="#">F16F 15/28</a>
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**G01M 1/32**

by adding material to the body to be tested, e.g. by correcting-weights (correcting-weights per se [F16F 15/32](#))

**References****Informative references**

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

Correcting means for balancing rotating bodies for vibration suppression	<a href="#">F16F 15/32</a>
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**G01M 1/34**

by removing material from the body to be tested, e.g. from the tread of tyres

**Definition statement**

This place covers:

Devices for compensating unbalance by removing by grinding or drilling.

## References

### Informative references

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

Uniformity test of tyre and surface correction	<a href="#">G01M 17/024</a>
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## G01M 1/36

### by adjusting position of masses built-in the body to be tested

#### Definition statement

*This place covers:*

Devices for:

Hydraulic positioning of balancing weights.

Electric, magnetic positioning, like solenoids, motors.

Mechanical positioning.

Balancing with free moving parts, like balls,

Balancing by using eccentric discs.

## G01M 3/00

**Investigating fluid-tightness of structures (investigating permeability of porous material, investigating the presence of flaws in general [G01N](#) {membrane leak detection in blood dialysis [A61M 1/1692](#); detecting infusion flow leakage [A61M 5/16831](#)})**

#### Definition statement

*This place covers:*

Investigating fluid-tightness of structures:

Like cables, tubes, pipes, welds, pipe joints, seals, valves, containers, radiators.

By using thermal means, pigs or moles, fluid or vacuum, tracer materials, infrasonic, sonic, or ultrasonic vibrations, pressure or flow or level detector, light or by using other electric means, e.g. by observing electric discharges.

With leakage calibration devices and standard leak

## References

### Limiting references

*This place does not cover:*

Detection of leak in washing machines	<a href="#">A47L 15/4212</a>
Membrane leak detection in blood dialysis	<a href="#">A61M 1/1692</a>
Detecting medical infusion flow leakage	<a href="#">A61M 5/16831</a>
Leak detection in membrane	<a href="#">B01D 65/102</a>
Leakage-indicating devices for large containers	<a href="#">B65D 90/50</a>

Locating fluid leaks in boreholes or wells	<a href="#">E21B 47/10</a>
Leak detection in pumps	<a href="#">F04B 43/009</a>
Means for stopping flow from pipes	<a href="#">F16L 55/10</a>
Preventing, monitoring or locating loss in the pipe-line and networks	<a href="#">F17D 5/02</a>
Leak detection in steam boilers	<a href="#">F22B 37/421</a>
Leakage detection in pressure sensors	<a href="#">G01L 19/0672</a>
Investigating material strength by pressure test	<a href="#">G01N 3/12</a>
Investigating the permeability, pore volume, or surface area of porous materials	<a href="#">G01N 15/08</a>
Investigating the presence of flaws or irregularities of material by mechanical methods	<a href="#">G01N 19/08</a>
Investigating the presence of flaws, defects or contamination by the use of optical means	<a href="#">G01N 21/88</a>
Investigating the presence of flaws by the use of microwaves	<a href="#">G01N 22/02</a>
Investigating the presence of flaws by wave or particle radiation, e.g. X-rays	<a href="#">G01N 23/18</a>
Investigating the presence of flaws by the use of thermal means	<a href="#">G01N 25/72</a>
Investigating the presence of flaws by the use of electric, electro-chemical or magnetic means	<a href="#">G01N 27/00</a>
Investigating the presence of flaws in solids by the use of ultrasonic, sonic or infrasonic waves	<a href="#">G01N 29/04</a>
Mass spectrometers per se	<a href="#">H01J 49/26</a>
Leak testing of cell or batteries	<a href="#">H01M 10/4228</a>

### **Informative references**

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

Detecting or repairing leaks in apparatus using semi-permeable membranes	<a href="#">B01D 65/10</a>
Testing for leaks in apparatus for blow-molding	<a href="#">B29C 49/80</a>
Monitoring, testing or servicing air conditioning in vehicles	<a href="#">B60H 1/00585</a>
Leakage detectors for rocket-engine plants	<a href="#">F02K 9/54</a>
Leakage detection for insulated conductors or cables characterized by their form	<a href="#">H01B 7/32</a>

### **G01M 3/005**

{using pigs or moles ([G01M 3/246](#), [G01M 3/2823](#) take precedence)}

### **References**

#### **Limiting references**

*This place does not cover:*

Leak detection using sonic vibration in pipe using pigs moles	<a href="#">G01M 3/246</a>
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Leak detection using pressure, flow or level detector in pipe using pigs moles	<a href="#">G01M 3/2823</a>
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### **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:*

Pig moles per se	<a href="#">F16L 55/26</a>
General pipeline inspection	<a href="#">F17D 5/00</a>

## **G01M 3/007**

{Leak detector calibration, standard leaks ([G01M 3/207](#) takes precedence)}

### **Definition statement**

*This place covers:*

Dummy leakage generators for sensitivity check.

Standard volume tanks for leakage test.

Changing means of fine volume for calibration.

Fine leakage bulb.

Standard leak bodies controlling probe gas flow.

### **References**

#### **Limiting references**

*This place does not cover:*

Calibration of leak detection using tracermaterials	<a href="#">G01M 3/207</a>
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## **G01M 3/022**

{Test plugs for closing off the end of a pipe (means for stopping flow from pipes [F16L 55/10](#))}

### **References**

#### **Limiting references**

*This place does not cover:*

Means for stopping flow from pipes	<a href="#">F16L 55/10</a>
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**G01M 3/025****{Details with respect to the testing of engines or engine parts}****References*****Limiting references****This place does not cover:*

Failures in purge control systems	<a href="#">F02M 25/0809</a>
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**G01M 3/202****{mass spectrometer detection systems (mass spectrometers [H01J 49/26](#))}****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:*

Mass spectrometer per se	<a href="#">H01J 49/26</a>
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**G01M 3/205****{accessories and associated equipment, pump constructions (pumps [F04](#))}****References*****Informative references****Attention is drawn to the following places, which may be of interest for search:*

Multistage pump, specially adapted to production of high vacuum, like molecular pumps	<a href="#">F04D 19/04</a>
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**G01M 3/24****using infrasonic, sonic, or ultrasonic vibrations****Definition statement***This place covers:*

Systems for:

Locating leak in underground pipes.

Signal processing in the time and frequency domain.

Signal processing using correlation techniques.

Passive detection (no active source is used).



## References

### Informative references

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

Leak detection using pig-moles	<a href="#">G01M 3/005</a>
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## G01M 3/2892

{for underground fuel dispensing systems ([G01M 3/30](#) takes precedence)}

## References

### Informative references

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

Leakage-indicating devices for large containers	<a href="#">B65D 90/50</a>
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## G01M 3/3209

{Details, e.g. container closure devices}

## Definition statement

*This place covers:*

Also container closure devices.

## G01M 3/3236

{by monitoring the interior space of the containers}

## Definition statement

*This place covers:*

Tightness of tanks, bottles, cans and methods or apparatus:

Using introduction of overpressure into interior space;

Using vacuum pump and controlling vacuum pressure and also by measuring on/off of vacuum pump or by measuring pressure change while pump cycles have predetermined on/off cycles.

## References

### Limiting references

*This place does not cover:*

Leak testing of cell or batteries	<a href="#">H01M 10/4228</a>
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## G01M 3/3281

**{removably mounted in a test cell}**

### Definition statement

*This place covers:*

Test cells, testing pockets, test chambers, seal chambers, testing bells.

## G01M 5/00

**Investigating the elasticity of structures, e.g. deflection of bridges, air-craft wings ([G01M 9/00](#) takes precedence; strain gauges [G01B](#))**

### Definition statement

*This place covers:*

Investigating the elasticity of structures, e.g. deflection of bridges, aircraft wings or blades, elongated object, like pipe, masts, tower or railways, e.g. testing elastic properties of bodies or chassis, e.g. torsion-testing:

by determining damage, crack or wear.

by determining deflection or stress.

by using vibration or acceleration excitation or detection.

by using an external apparatus, like a test bench.

by measuring a variation of impedance (resistance, inductance or capacitance).

by using electromagnetic excitation or detection.

### Further details of subgroups

[G01M 5/0066](#); This sub-group has some overlap with [G01M 7/00](#) (vibration testing of structure): it is possible to classify in both main groups ([G01M 7/00](#) and [G01M 5/00](#)): a classification in [G01M 5/00](#) are suited for documents making the emphasis on the testing of the structure, and documents making emphasis on the vibration testing are to be classified in [G01M 7/00](#).

This subgroup also covers documents where there is a vibration or acceleration detection without specific vibration detection (for instance a bridge with acceleration detector whereas the signature of vehicle passage are measured and analysed: in this specific case also classify in [G01M 5/0008](#)).

[G01M 5/0075](#); This sub-group has some overlap with [G01M 11/08](#) (testing of mechanical properties with optical methods). It is possible to classify in both main group ([G01M 11/00](#) and [G01M 5/00](#)): a classification in [G01M 5/00](#) are suited for documents making the emphasis on the testing of the structure, and documents making emphasis on the optical testing are suited to be classified in [G01M 11/00](#).

This sub group does not cover the investigating of the properties of solids material by the use of optical means ([G01N 21/00](#)).

### Relationships with other classification places

[G01B](#) covers apparatus, which can be used for investigating the elasticity of structures but not specially adapted for this purposes, e.g. strain gauges.

[G01H](#) covers apparatus or methods for the measurement, or measurement in combination with generation, of mechanical vibrations or the like, and particularly for the measurement of:

Mechanical vibrations or ultrasonic, sonic or infrasonic waves by using radiation-sensitive means, e.g. Optical means.

Mechanical vibrations or ultrasonic, sonic or infrasonic waves by detecting changes in electric or magnetic properties.

Mechanical vibrations or ultrasonic, sonic or infrasonic waves by other means;

Vibrations in solids by using direct conduction to the detector.

Vibrations in fluids by using a detector in a fluid.

Propagation velocity of ultrasonic, sonic or infrasonic waves.

Reverberation time.

Resonant frequency.

Mechanical or acoustic impedance.

## References

### Limiting references

*This place does not cover:*

Aerodynamic testing	<a href="#">G01M 9/00</a>
Testing of machine parts	<a href="#">G01M 13/00</a>
Testing a vehicles	<a href="#">G01M 17/00</a>
Mechanical testing of complete machine	<a href="#">G01M 99/005</a>
Testing a structure by applying load	<a href="#">G01M 99/007</a>
Earthquake detection	<a href="#">G01V 1/00</a>
Testing of nuclear power plants	<a href="#">G21C 17/00</a>

### References out of a residual place

*Examples of places in relation to which this place is residual:*

Investigating the properties of solids material by application of mechanical stress	<a href="#">G01N 3/00</a>
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### Informative references

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

Testing of foundations or foundations structures	<a href="#">E02D 33/00</a>
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## G01M 7/00

**Vibration-testing of structures; Shock-testing of structures (G01M 9/00 takes precedence{; generating vibrations B06, G10, H04R; vibration measurement G01H; material testing G01N 3/00})**

### Definition statement

*This place covers:*

Vibration testing or shock testing of structures.

### Relationships with other classification places

[G01B](#) 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.

### References

#### Limiting references

*This place does not cover:*

Aerodynamic testing; Arrangements in or on wind tunnels	<a href="#">G01M 9/00</a>
Testing of gearings and transmission mechanisms using acoustic or vibration analysis	<a href="#">G01M 13/028</a>
Testing of bearings using acoustic or vibration analysis	<a href="#">G01M 13/045</a>
Testing of internal combustion engine using acoustic or vibration analysis	<a href="#">G01M 15/12</a>
Testing the effect of speed or acceleration	<a href="#">G01M 99/004</a>
Investigating the properties of solids material by application of a single impulsive force	<a href="#">G01N 3/30</a>
Investigating the properties of solids material by application of a repeated or pulsating force	<a href="#">G01N 3/32</a>
Investigating the properties of material by the use of ultra sonic, sonic or infra sonic waves	<a href="#">G01N 29/00</a>
Investigating the presence of flaws in solids by the use of ultrasonic, sonic or infrasonic waves	<a href="#">G01N 29/04</a>
Earthquake detection	<a href="#">G01V 1/00</a>
Testing of nuclear power plants	<a href="#">G21C 17/00</a>

**Informative references**

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

Generating and transmitting of mechanical vibrations.	<a href="#">B06B</a>
Testing of foundations or foundations structures	<a href="#">E02D 33/00</a>
Measurement of mechanical vibrations in general.	<a href="#">G01H</a>
Musical instruments and acoustics.	<a href="#">G10</a>
Loudspeakers, microphones and similar devices.	<a href="#">H04R</a>

**Special rules of classification**

This group has some overlap with [G01M 5/0066](#) (testing of structure using vibration or acceleration detection or excitation): it is possible to classify in both main group ([G01M 7/00](#) and [G01M 5/00](#)): a classification in [G01M 5/00](#) are suited for documents making the emphasis on the testing of the structure, and documents making emphasis on the vibration testing are suited to be classified in [G01M 7/00](#).

**G01M 7/02****Vibration-testing {by means of a shake table}****Definition statement**

*This place covers:*

Also environmental testing.

**G01M 7/022****{Vibration control arrangements, e.g. for generating random vibrations}****Definition statement**

*This place covers:*

Also overload protection.

**G01M 7/025****{Measuring arrangements}****Definition statement**

*This place covers:*

Also measurement data analysis of vibration testing.

**G01M 7/027****{Specimen mounting arrangements, e.g. table head adapters}****References****Informative references**

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

Producing shaped articles by using vibration	<a href="#">B28B 1/08</a>
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Producing shaped articles by using vibration tables	<a href="#">B28B 1/0873</a>
Details of apparatus for testing material with sonic waves	<a href="#">G01N 29/22</a>

## G01M 7/08

### Shock-testing

#### References

##### Limiting references

*This place does not cover:*

Shock testing of vehicles	<a href="#">G01M 17/0078</a>
Shock-testing of solid materials	<a href="#">G01N 29/045</a>

##### Informative references

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

Measuring force due to impact	<a href="#">G01L 5/0052</a>
Anatomic models	<a href="#">G09B 23/00</a>

## G01M 9/00

**Aerodynamic testing; Arrangements in or on wind tunnels (building aspects Section E; investigating properties of materials in general [G01N](#))**

#### Definition statement

*This place covers:*

Aerodynamic testing and arrangements therefore.

Also covered is parachute canopy testing, testing using infrared camera, chimney testing, space conditions, simulation, testing of autopilots, heat conversion, balancing of propellers.

#### References

##### Informative references

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

Investigating the elasticity of structures, e.g. deflection of bridges, aircraft wings	<a href="#">G01M 5/00</a>
Vibration testing of structures; Shock-testing of structures	<a href="#">G01M 7/00</a>
Investigating properties of materials in general	<a href="#">G01N</a>
Measuring speed of fluids, e.g. of air stream; Measuring speed of bodies relative to fluids, e.g. of ship, of aircraft	<a href="#">G01P 5/00</a>

## G01M 9/02

### Wind tunnels

#### Definition statement

*This place covers:*

Complete arrangements as well as simulations.

## G01M 9/04

### Details

#### Definition statement

*This place covers:*

Partial details of wind tunnels, measurements arrangements, investigation properties, like acoustic or wind distribution, wall arrangements, wind or smoke or hot gas production, production of environmental conditions, supersonic flow generators, high speed plasma generators, holding or support devices of the object under test, vibration absorbers, isolation, high pressure wave generator.

## G01M 9/06

### Measuring arrangements specially adapted for aerodynamic testing

#### Definition statement

*This place covers:*

Theoretical arrangements for aerodynamic measuring, constructions in combination with visualisation methods of flow profiles, simulation, space conditions, turbulators on airfoils for transient simulation, balances incorporated in test object.

#### References

##### Informative references

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

Measuring volume flow, flow rate	<a href="#">G01F</a>
Measuring multiple component of the force	<a href="#">G01L 5/16</a>

## G01M 9/08

### Aerodynamic models

#### Definition statement

*This place covers:*

Theoretical models and model construction for aerodynamic measurements or observing or form creation.

## G01M 10/00

**Hydrodynamic testing; Arrangements in or on ship-testing tanks or water tunnels (building aspects Section E; investigating properties of materials in general G01N; {methods for designing, building, maintaining, converting, refitting, repairing or determining properties of vessels, not otherwise provided for and using towing tanks or model basins for designing B63B 9/02; for determining vessel properties with respect to stability or balance B63B 9/08; apparatus for indicating vessel attitude, e.g. inclination or duration of roll B63B 39/00})**

### Definition statement

*This place covers:*

Hydrodynamic testing and arrangements therefore, e.g. means for studying the flow of fluid about the object to be tested.

### References

#### Limiting references

*This place does not cover:*

Method for design, building or repairing or determining properties using towing tanks or model basins	<a href="#">B63B 9/02</a>
Determining vessel properties with respect stability or balance	<a href="#">B63B 9/08</a>
Apparatus for indicating vessel attitude	<a href="#">B63B 39/00</a>
Investigating properties of materials in general	<a href="#">G01N</a>
Building aspects	E

## G01M 11/00

**Testing of optical apparatus; Testing structures by optical methods not otherwise provided for**

### Definition statement

*This place covers:*

Testing of optical apparatus, e.g. testing of fiber, testing of mirror, testing of optical properties of lenses (measuring refractive power, geometrical properties or aberrations, material or chromatic transmission properties, the optical modulation transfer function of optical apparatus and etc.) or mechanical properties. Testing of headlights. Testing structures by optical methods not otherwise provided for.

This group also covers theoretical articles, calibration arrangements not otherwise provided, parts of testing systems, like power meters, testing resistance to radiation, end face monitoring, photo acoustic methods.

### Relationships with other classification places

This group is residual place for classifying testing of optical devices or apparatus not provided for in any other subclass of the CPC. Testing of particular optical devices or apparatus is often covered by the respective subclass provided for that optical devices or apparatus.



Testing of optical devices or apparatus is classified in [G01M 11/00](#) only if there is no appropriate place for that subject matter elsewhere.

## References

### Limiting references

*This place does not cover:*

Informative Calibrating optical contour or curvature measuring devices	<a href="#">G01B 11/2504</a>
Photometry	<a href="#">G01J 1/00</a>
Testing electrical properties of light emitting diodes, laser diodes or photodiodes	<a href="#">G01R 31/2635</a>
Testing electrical properties of lamps	<a href="#">G01R 31/44</a>
Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating	<a href="#">G02F 1/00</a>
Repairing of testing liquid crystal displays	<a href="#">G02F 1/1309</a>
Testing correct operation of photographic apparatus	<a href="#">G03B 43/00</a>
Testing and control of apparatus for microlithography	<a href="#">G03F 7/70483</a> – <a href="#">G03F 7/70541</a> , <a href="#">G03F 7/70558</a> , <a href="#">G03F 7/70591</a> – <a href="#">G03F 7/70683</a>
Inspection of images for flow detection	<a href="#">G06T 7/0002</a>
Electronic inspection or testing of displays, like LED or LCD	<a href="#">G09G 3/006</a>
Testing electrical properties of solar cells	<a href="#">H02S 50/10</a>
Diagnosis, testing or measuring for television systems or their details	<a href="#">H04N 17/00</a>
Diagnosis, testing or measuring for television cameras	<a href="#">H04N 17/002</a>
Monitoring or testing of lasers	<a href="#">H04S 3/008</a>

### References out of a residual place

*Examples of places in relation to which this place is residual:*

Devices for testing or checking weapon sighting devices	<a href="#">F41G 1/54</a>
Devices for testing or checking aiming and laying means	<a href="#">F41G 3/32</a>

### Informative references

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

Interferometers	<a href="#">G01B 9/02</a>
Measuring arrangements characterised by the use of optical means	<a href="#">G01B 11/00</a>
Investigating or analysing materials by the use of optical means	<a href="#">G01N 21/00</a>
Optical elements, systems or apparatus	<a href="#">G02B</a>

## Synonyms and Keywords

*In patent documents, the following abbreviations are often used:*

FBG	Fibre Bragg Grating
LCD	Liquid Crystal display
LED	Light Emitting Diode
OFDR	Optical Frequency Domain Reflectometry
OTDR	Optical Time Domain Reflectometry
PDL	Polarisation Dispersion Loss
PMD	Polarisation Mode Dispersion

## G01M 11/005

**{Testing of reflective surfaces, e.g. mirrors}**

### References

#### *Limiting references*

*This place does not cover:*

Optical means to measure roughness of a surface	<a href="#">G01B 11/30</a>
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## G01M 11/0221

**{by determining the optical axis or position of lenses}**

### References

#### *Informative references*

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

Testing the alignment of axes using optical means	<a href="#">G01B 11/27</a>
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## G01M 11/0242

**{by measuring geometrical properties or aberrations}**

### References

#### *Limiting references*

*This place does not cover:*

Measuring contours or curvatures by optical means	<a href="#">G01B 11/24</a>
Measuring geometric parameters required to locate ophtalmic lenses in spectacles frames	<a href="#">G02C 13/005</a>

**G01M 11/0278**

{Detecting defects of the object to be tested, e.g. scratches or dust (investigating the presence of flaws or contamination on materials by optical means [G01N 21/88](#))}

**Definition statement**

*This place covers:*

This group also covers the detection of marks on lenses

**References****Limiting references**

*This place does not cover:*

Investigating the presence of flaws or contamination on materials by optical means	<a href="#">G01N 21/88</a>
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**Informative references**

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

Inspecting transparent materials	<a href="#">G01N 21/958</a>
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**G01M 11/06**

**Testing of alignment of vehicle head-light devices**

**Definition statement**

*This place covers:*

Systems mainly projecting the light beam on a surface.

**References****Limiting references**

*This place does not cover:*

Arrangements for automatically correcting headlights in vehicle	<a href="#">G01B 11/30</a>
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**G01M 11/08**

**Testing of mechanical properties {([G01M 11/005](#) takes precedence)}**

**Special rules of classification**

This sub-group has some overlap with [G01M 5/00](#) (testing of mechanical properties of structures). It is possible to classify in both main group ([G01M 11/00](#) and [G01M 5/00](#)): a classification in [G01M 5/00](#) is suited for documents having the emphasis on the testing of the structure, and documents having the emphasis on the optical testing should be classified in [G01M 11/00](#).

**G01M 11/088**

{of optical fibres; Mechanical features associated with the optical testing of optical fibres (material testing in general [G01N](#))}

**Definition statement**

*This place covers:*

Also thermal testing, in flight testing, testing pay-out of a canister.

**References****Limiting references**

*This place does not cover:*

Mechanical testing of thin elongated materials, like filament, web, tape or non optical fibers	<a href="#">G01N 2203/028</a>
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**G01M 11/30**

{Testing of optical devices, constituted by fibre optics or optical waveguides (measuring a given physical parameter of optical fibres, see the relevant subclasses, e.g. [G01B](#), [G01N](#); equipment for monitoring, testing or fault measuring in optical transmission systems [H04B 10/07](#))}

**References****Limiting references**

*This place does not cover:*

Measuring a length, thickness, angle with an optical fiber	<a href="#">G01B 9/00</a> - <a href="#">G01B9/0011</a>
Measuring a non specific physical parameter with an optical fiber	<a href="#">G01D 5/353</a>
Measuring force with an optical fiber	<a href="#">G01L 1/242</a>

In general this group cover the testing of optical by measuring one or more given physical parameter, however if it concerns the use of fiber for determining one or more physical parameter see the corresponding fields (for instance [G01L](#) for force measurement, [G01K](#) for temperature measurement ...)

**Informative references**

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

Monitoring or testing optical amplifier	<a href="#">H04B 10/0731</a>
Monitoring or testing optical transmission line in use	<a href="#">H04B 10/075</a>
Monitoring or testing optical transmission line	<a href="#">H04B10/08</a>
Optical multiplexing system	<a href="#">H04J 14/00</a>

**Special rules of classification**

There is an overlap between [G01M 11/30](#) and [H04B10/08](#) (testing of optical transmission line) and double classification is possible. document for [G01M 11/30](#) should have an emphasis on the default detection method.

**G01M 11/31**

**{with a light emitter and a light receiver being disposed at the same side of a fibre or waveguide end-face, e.g. reflectometers}**

**Definition statement**

*This place covers:*

Testing of light fibers with light source and detector on the same end, measuring connectors, optical switches, splitter in optical transmission lines, measuring end shape of fiber backscatter of cw for power measurements.

For localisation of faults, local monitoring of fibers see subgroups of [G01M 11/31](#).

**G01M 11/3109**

**{Reflectometers detecting the back-scattered light in the time-domain, e.g. OTDR}**

**Definition statement**

*This place covers:*

Localisation of attenuation or faults by use of single pulses and direct detection of delay-time and intensity, like OTDR, averaging, box-car, references fibers, dummy fibers, photon counting.

**G01M 11/3118**

**{using coded light-pulse sequences}**

**Definition statement**

*This place covers:*

Devices using pseudo-random signals, correlation techniques, Golay-code.

**G01M 11/3172**

**{Reflectometers detecting the back-scattered light in the frequency-domain, e.g. OFDR, FMCW, heterodyne detection}**

**Definition statement**

*This place covers:*

Local oscillators, frequency shifting interferometers.

**G01M 11/3181**

**{Reflectometers dealing with polarisation}**

**Definition statement**

*This place covers:*

Measurements or compensation of polarisation backscatter.

## References

### Limiting references

*This place does not cover:*

Polarization Mode Dispersion measurement in transmission	<a href="#">G01M 11/336</a>
Polarization Dependent Loss measurement in transmission	<a href="#">G01M 11/337</a>

## G01M 11/319

**{Reflectometers using stimulated back-scatter, e.g. Raman or fibre amplifiers}**

### Definition statement

*This place covers:*

Measurements on doped fibers, measurements using stimulated Raman or Brillouin scattering, or using laserloops or ringlasers for generating stimulated backscatter.

## G01M 11/35

**{in which light is transversely coupled into or out of the fibre or waveguide, e.g. using integrating spheres ([G01M 11/31](#) takes precedence)}**

### Definition statement

*This place covers:*

Also light injection by microbending.

## G01M 11/37

**{in which light is projected perpendicularly to the axis of the fibre or waveguide for monitoring a section thereof}**

### Definition statement

*This place covers:*

Also refractive index profile measurements of fibers, fiber core diameter or shape or excentricity measurements, and also transversal camera monitoring.

## G01M 13/00

**Testing of machine parts (investigating the cutting power of tools, [G01N](#), e.g. [G01N 3/58](#))**

### Definition statement

*This place covers:*

Testing of machine parts, such as: sealing rings, gearings, power-transmitting couplings or clutches, power-transmitting endless, e.g. belts, chains, bearings.

### Relationships with other classification places

[G01L](#) covers instruments which can be used for testing of machine parts (gearing, transmission mechanisms), of steering or rolling behavior of vehicles, e.g. measuring efficiency, steering angles, steering forces, but not specially adapted for this purposes.

[G01N](#) covers investigating, i.e. testing or determining, the properties of materials, as opposed to testing machine parts, which is covered by [G01M 13/00](#).

## References

### Limiting references

*This place does not cover:*

Apparatus for testing, tuning or synchronising carburettors, e.g. carburettor flow stands	<a href="#">F02M 19/01</a>
Testing fuel-injection apparatus	<a href="#">F02M 65/00</a>
Testing of ignition installations peculiar to internal-combustion engines	<a href="#">F02P 17/00</a>
Testing of valves	<a href="#">F16K 37/0075</a>
Testing brakes	<a href="#">G01L 5/28</a>
Pressure-testing of materials	<a href="#">G01N 3/12</a>
Investigating machinability by cutting tools; Investigating the cutting ability of tools	<a href="#">G01N 3/58</a>

## G01M 13/02

**Testing of gearing or of transmission mechanisms (measuring efficiency [G01L](#))**

### Definition statement

*This place covers:*

Also testing of power transmitting rotating elements, like gearings, driveshaft, differentials, vehicle power transmissions, coupling, belt drives, temperature or pressure or other adaptation means, gear shifting, control tests of automatic transmission, life usage, shaft adjustments, rotation angle measurements, tests of synchronizers.

## References

### Informative references

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

Transmission coupling, clutches in general	<a href="#">F16D</a>
Transmission means using belt, cables, ropes in general	<a href="#">F16G</a>
Contour measurements on gear teeth with mechanical means	<a href="#">G01B 5/202</a>
Distance measurements on gear teeth	<a href="#">G01B 7/146</a>
Contour measurements on gear teeth with electrical or magnetic means	<a href="#">G01B 7/283</a>

## G01M 13/025

**{Test-benches using a rotational drive and loading means; Load/drive simulation}**

### Definition statement

*This place covers:*

Also devices with electrical or hydraulic drive means, simulation of combustion engines, brake and inertial forces, measuring power transmitting characteristics, of vehicle transmission, driveshaft.

**G01M 13/026****{of the mechanical closed-loop type}****Definition statement***This place covers:*

Also devices with power circulation type, ring connected multiple gearbox driveshaft.

**G01M 13/027****{Test-benches using force applying means, e.g. loading of drive shafts along several directions}****Definition statement***This place covers:*

Also devices with application or measurement of different component measuring steering forces on drive, steering trains, radial or vertical forces on vehicle axels, driveshaft.

**G01M 13/04****Testing of bearings****Definition statement***This place covers:*

Also devices for monitoring bearing with temperature sensor.

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

Vibration testing of structures in general	<a href="#">G01M 7/00</a>
Bearing with rolling contact in general	<a href="#">F16C 19/00</a>
Force sensor associated with a bearing	<a href="#">G01L 5/0009</a>

**G01M 15/00****Testing of engines****Definition statement***This place covers:*

Testing of engines, e.g. by monitoring different engine parameters: pressure, temperature, velocity, vibration, and power, detecting misfire, exhaust gases, combustion flame.

**Further details of subgroups**[G01M 15/04](#)

No document should be classified in this sub-group but in:

[G01M 15/042](#) if the devices monitors with fuel consumption, ignition, compression, load, multiple diagnostic stations, test station in series;



[G01M 15/044](#) if the devices monitors power, for instance with dynamometers;

[G01M 15/046](#) if the devices monitors revolutions, by speed or speed variations, deriving torque, cylinder pressure therefrom, and for cylinder detection by flywheel tooth measurements see also [G01M 15/06](#);

[G01M 15/048](#) if the devices monitors temperature (Temperature per se, see [G01K](#));

[G01M 15/06](#) if the devices monitors positions of pistons or crank angle;

[G01M 15/08](#) if the devices monitors pressure (Pressure measurement per se, see [G01L](#));

[G01M 15/08](#) if the devices monitors pressure in fluid ducts (Pressure measurement per se, see [G01L](#));

[G01M 15/10](#) if the device monitors exhaust gas (Analysis of gas per se, see [G01N](#); details of exhaust gas measuring device see [G01M 15/02](#); controlling catalytic converters, see [F01N 3/18](#); electrical control of supply of combustion mixture, see [F02D 41/14](#));

[G01M 15/11](#) by detecting misfire (control arrangements in order to prevent misfire see [F02D](#) and [F02P](#));

[G01M 15/12](#) by monitoring vibration (vibration testing of structure see [G01M 7/00](#)).

And if several parameter are monitored at the same time:

[G01M 15/05](#) (see also [G07C 5/0808](#), diagnosing performance data of vehicles).

## References

### Limiting references

*This place does not cover:*

Testing positive displacement machines for liquids, pumps, pumping installation	<a href="#">F04B 51/00</a>
Knock detection in internal combustion engines	<a href="#">G01L 23/221</a>

### Informative references

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

Lubrication of combustion engines	<a href="#">F01M</a>
Monitoring or diagnostic devices for exhaust-gas treatment apparatus	<a href="#">F01N 11/00</a>
Indicating or supervising devices of internal-combustion engines	<a href="#">F02B 77/08</a>
Running-in of internal-combustion engines	<a href="#">F02B 79/00</a>
Controlling combustion engines	<a href="#">F02D</a>
Rocket-engine plants characterised by specially adapted arrangements for testing or measuring	<a href="#">F02K 9/96</a>
Apparatus for testing, tuning or synchronising carburettors, e.g. carburettor flow stands	<a href="#">F02M 19/01</a>
Testing fuel-injection apparatus	<a href="#">F02M 65/00</a>
Testing of ignition installations peculiar to internal-combustion engines	<a href="#">F02P 17/00</a>
Testing of valves	<a href="#">F16K 37/0075</a>
Testing of ignition installations of combustion apparatus	<a href="#">F23Q 23/00</a>

Devices for determining the value of power, e.g. by measuring and simultaneously multiplying the values of torque and revolutions per unit of time, by multiplying the values of tractive or propulsive force and velocity	<a href="#">G01L 3/24</a>
Measuring wheel side-thrust	<a href="#">G01L 5/20</a>
Measuring the force applied to control members, e.g. control members of vehicles, triggers	<a href="#">G01L 5/22</a>
Determining the characteristic of torque in relation to revolutions per unit of time	<a href="#">G01L 5/26</a>
Testing brakes	<a href="#">G01L 5/28</a>
Devices for detecting or indicating knocks in internal-combustion engines	<a href="#">G01L 23/22</a>
Devices for measuring pressure in inlet or exhaust ducts of internal-combustion engines	<a href="#">G01L 23/24</a>
Means for indicating positions of pistons or cranks of internal-combustion engines by measuring pressure	<a href="#">G01L 23/30</a>
Testing or calibrating of apparatus for measuring force, torque, work, mechanical power, or mechanical efficiency	<a href="#">G01L 25/00</a>
Testing or calibrating of apparatus for measuring fluid pressure	<a href="#">G01L 27/00</a>
Pressure-testing	<a href="#">G01N 3/12</a>

## G01M 17/00

Testing of vehicles ([G01M 15/00](#) takes precedence; testing fluid tightness [G01M 3/00](#); testing elastic properties of bodies or chassis, e.g. torsion testing [G01M 5/00](#); testing alignment of vehicle head-lighting devices [G01M 11/06](#); {testing brakes [G01L 5/28](#)})

### Definition statement

*This place covers:*

Testing of vehicles and also different parts of vehicles, e.g. wheels, tyres, endless-tracks, suspension, or of damping as a part of wheeled or endless-traced vehicles or suspension, axles, wheels suspension, or of axles as a part of railway vehicles.

### References

#### Limiting references

*This place does not cover:*

Testing fluid tightness	<a href="#">G01M 3/00</a>
Testing elastic properties of bodies or chassis, e.g. torsion testing	<a href="#">G01M 5/00</a>
Testing alignment of vehicle head-lighting devices	<a href="#">G01M 11/06</a>
Testing of engine	<a href="#">G01M 15/00</a>
Testing brakes	<a href="#">G01L 5/28</a>
Testing of electric installation on transport means	<a href="#">G01R 31/006</a>

**Informative references**

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

Devices for measuring, signalling, controlling, or distributing tyre pressure or temperature, specially adapted for mounting on vehicles	<a href="#">B60C 23/00</a>
Measuring wheel side-thrust	<a href="#">G01L 5/20</a>
Measuring the force applied to control members, e.g. control members of vehicles, triggers	<a href="#">G01L 5/22</a>
Devices or apparatus for measuring tyre pressure or the pressure in other inflated bodies	<a href="#">G01L 17/00</a>

**G01M 17/0072**

{the wheels of the vehicle co-operating with rotatable rolls ([G01M 17/022](#), [G01M 17/045](#), [G01M 17/065](#) take precedence)}

**Definition statement**

*This place covers:*

Devices with dynamometers, associated flywheel assemblies, constructions (for search see also [G01L 3/16](#), rotary absorption dynamometers), roller assemblies (without specific roller construction), measuring or calculation arrangements, endless belts, flat belts, dynamometer control arrangements, like system using feedback.

**References****Limiting references**

*This place does not cover:*

The tyre co-operates with rotatable rolls	<a href="#">G01M 17/022</a>
The vehicle wheels co-operating with rotatable rollers	<a href="#">G01M 17/045</a>
The vehicle wheels co-operating with rotatable rolls	<a href="#">G01M 17/065</a>

**Informative references**

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

Rotary-absorption dynamometers, e.g. of brake type	<a href="#">G01L 3/16</a>
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**G01M 17/0074**

{Details, e.g. roller construction, vehicle restraining devices}

**Definition statement**

*This place covers:*

Automatic shifters of gears, brake, gas pedal, devices for applying a variable load on the vehicle, safety arrangements, vehicle lifting devices, vibrators (for search see also [G01M 7/04](#)) and special applications, like testing of remote controlled toy car.

**References****Informative references**

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

Monodirectional test stands	<a href="#">G01M 7/04</a>
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**G01M 17/0078**

{Shock-testing of vehicles (shock-testing of structures in general [G01M 7/08](#), [G01N 3/30](#))}

**References****Informative references**

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

Shock testing of structure	<a href="#">G01M 7/08</a>
Measuring force due to impact	<a href="#">G01L 5/0052</a>
Anatomic models	<a href="#">G09B 23/00</a>

**G01M 17/013****of wheels****References****Limiting references**

This place does not cover:

Railway wheel testing	<a href="#">G01M 17/10</a>
Testing of wheel alignment by optical means	<a href="#">G01B 11/275</a>

**G01M 17/02****of tyres****References****Limiting references**

This place does not cover:

Tire thread bands and tread patterns	<a href="#">B60C 11/00</a>
Tire thread bands and tread patterns wear indicating arrangements	<a href="#">B60C 11/24</a>
Measuring profile depth	<a href="#">G01B 21/18</a>

**G01M 17/021****{Tyre supporting devices, e.g. chucks (for balancing [G01M 1/04](#))}****Special rules of classification**

Wheel testing is not to be classified in this group but mainly testing tires with adjustable chucks, two rims, etc.

**G01M 17/022****{the tyre co-operates with rotatable rolls}****Definition statement**

*This place covers:*

Measuring uniformity, concentricity, tread problems, radial forces, elastic deformation, rolling resistance, cornering resistance, yaw attitude, drag force, side-wall deformation, tire air pressure, impact resistance, conicity, with a flat belt, single roller, multiple rollers, hydraulic motor, endless belt, dynamic load, grooved drum, suspension simulation, vibration exciters, setting means for slip, camber angle, rubber removing brush, water jets.

**G01M 17/024****{combined with tyre surface correcting or marking means (compensating unbalance [G01M 1/30](#); marking location of unbalance [G01M 1/26](#))}****Definition statement**

*This place covers:*

Compensation by grinding the shoulders, by grinding the tire tread, by compensating radial, lateral or tangential forces.

**References****Informative references**

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

Compensating balance by removing material	<a href="#">G01M 1/34</a>
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**G01M 17/06****of steering behaviour; of rolling behaviour (measuring steering angles [G01B](#); measuring steering forces [G01L](#))****Definition statement**

*This place covers:*

Vehicle diagnostic devices, side slip, axle vibrations, toe-angle, wheel alignment, tire tread, caster trail, cornering.

**References****Informative references**

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

Measuring steering forces	<a href="#">G01L 5/221</a>
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**G01M 17/08****of railway vehicles****References****Limiting references**

This place does not cover:

Testing of railways brake system	<a href="#">B60T 17/228</a>
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**G01M 99/00****Subject matter not provided for in other groups of this subclass****References****Limiting references**

This place does not cover:

Testing static or dynamic balance of machines or structures	<a href="#">G01M 1/00</a>
Investigating fluid tightness of structures	<a href="#">G01M 3/00</a>
Investigating the elasticity of structures, e.g. deflection of bridges, aircraft wings	<a href="#">G01M 5/00</a>
Vibration testing of structures; Shock-testing of structures	<a href="#">G01M 7/00</a>
Aerodynamic testing; Arrangements in or on wind tunnels	<a href="#">G01M 9/00</a>
Hydrodynamic testing; Arrangements in or on ship-testing tanks or water tunnels	<a href="#">G01M 10/00</a>
Testing of optical apparatus	<a href="#">G01M 11/00</a>
Testing of machine parts	<a href="#">G01M 13/00</a>
Testing of engines	<a href="#">G01M 15/00</a>
Testing of vehicles	<a href="#">G01M 17/00</a>

**Informative references**

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

Testing instrument for artificial joints	<a href="#">A61F 2/468</a>
Testing of non-implantable prostheses	<a href="#">A61F 2/76</a>
Testing the effectiveness of sterilization	<a href="#">A61L 2/28</a>
Measuring golf clubs, bats or rackets	, <a href="#">A63B 51/005</a> , <a href="#">A63B 60/42</a> , <a href="#">A63B 60/46</a>
Filter condition indicators	<a href="#">B01D 46/0086</a>

Testing of membranes or membrane apparatus	<a href="#">B01D 65/10</a>
Controlling or analyzing typewriter or other selective printing mechanism	<a href="#">B41J 29/393</a>
Testing or monitoring air-conditioning of vehicles	<a href="#">B60H 1/00585</a>
Testing of parachutes	<a href="#">B64D 21/00</a>
Testing foundations or foundations structures	<a href="#">E02D 33/00</a>
Testing characteristics of the spark in internal combustion engine ignition	<a href="#">F02P 17/12</a>
Calibrating optical contour or curvature measuring devices	<a href="#">G01B 11/2504</a>
Calibration of coordinate measuring apparatus	<a href="#">G01B 21/042</a>
Testing, calibrating, or compensating of compasses	<a href="#">G01C 17/38</a>
Detection of malfunction of sensor per se	<a href="#">G01D 3/08</a>
Calibrating of sensor per se	<a href="#">G01D 18/00</a>
Testing or calibrating apparatus for measuring volume, volume flow or liquid level or for metering by volume	<a href="#">G01F 25/00</a>
Testing or calibrating of weighing apparatus	<a href="#">G01G 23/01</a>
Testing or calibrating of thermometers	<a href="#">G01K 15/00</a>
Testing or calibrating calorimeters	<a href="#">G01K 19/00</a>
Testing or calibrating force, work or torque apparatus testing and calibrating fluid pressure sensorArrangements for testing electric properties;	<a href="#">G01L 25/00</a>
Arrangements for locating electric faults;	<a href="#">G01L 27/00</a>
Arrangements for electrical testing characterized by what is being tested not provided for elsewhere	<a href="#">G01R 31/00</a>
Testing of electrical properties of sparking plugs	<b>G01R31/38</b>
Testing or calibrating meteorological apparatus	<a href="#">G01W 1/18</a>
Testing correct operation of photographic apparatus or parts thereof	<a href="#">G03B 43/00</a>
Quality surveillance of production	<a href="#">G05B 19/41875</a>
Testing or monitoring of control systems	<a href="#">G05B 23/00</a>
Registering or indicating the condition or the working of machines or other apparatus	<a href="#">G07C 3/00</a>
Checking or monitoring of signalling or alarm systems	<a href="#">G08B 29/00</a>
Monitoring; Testing of fusion reactors	<a href="#">G21C 17/00</a>
Testing or measuring during manufacture or treatment of semiconductor devices	<b>H01L21/66</b>
Calibration or testing of analogue/digital or digital/analogue converters	<a href="#">H03M 1/10</a>
Monitoring; Testing of line transmission systems	<a href="#">H04B 3/46</a>
Monitoring or testing of relay systems	<a href="#">H04B 17/40</a>
Diagnosis, testing or measuring for television systems or their details	<a href="#">H04N 17/00</a>
Monitoring arrangements; Testing arrangements of acoustic electromechanical transducers	<a href="#">H04R 29/00</a>

**Special rules of classification**

This group is residual place for classifying testing of structures or of apparatus, not provided for elsewhere.

Testing of particular devices or apparatus is often covered by the respective subclass provided for that devices or apparatus. Testing of particular devices or apparatus is classified in **G01M19/00** only if there is no appropriate place for that subject matter elsewhere.