

# CPC COOPERATIVE PATENT CLASSIFICATION

## B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

### TRANSPORTING

#### B60 VEHICLES IN GENERAL

(NOTE omitted)

#### B60G VEHICLE SUSPENSION ARRANGEMENTS (air-cushion vehicles [B60V](#); {cycle suspensions [B62K 25/00](#)})

##### NOTES

- Attention is drawn to the Note following the title of class [B60](#).
- {Indexing codes [B60G 2200/00](#) - [B60G 2800/00](#) are dedicated to particular aspects of suspension arrangements:
  - [B60G 2200/00](#) refers to the type of suspension arrangement;
  - [B60G 2202/00](#) refers to the suspension elements used (springs, dampers and actuators);
  - [B60G 2204/00](#) refers to mounting features of suspension elements;
  - [B60G 2206/00](#) refers to constructional and manufacturing details of suspension elements;
  - [B60G 2300/00](#) refers to the type of vehicle;
  - [B60G 2400/00](#) - [B60G 2800/00](#) refer to the electronic control of suspension arrangements, whereby:
    - [B60G 2400/00](#) refers to input parameters of the control;
    - [B60G 2401/00](#) refers to types of sensors used;
    - [B60G 2500/00](#) refers to the controlled action or device;
    - [B60G 2600/00](#) refers to particular details of the control system;
    - [B60G 2800/00](#) refers to the result to be achieved by the control action.}

##### WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:  
[B60G 23/00](#) covered by [B60G 17/0165](#)
- 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.

<b>1/00</b>	<b>Suspensions with rigid connection between axle and frame</b>	3/16	. . . the arm itself being resilient, e.g. leaf spring { <a href="#">B60G 7/003</a> takes precedence}
1/02	. with continuous axle	3/18	. with two or more pivoted arms, e.g. parallelogram
1/04	. with divided axle	3/185	. {the arms being essentially parallel to the longitudinal axis of the vehicle}
<b>3/00</b>	<b>Resilient suspensions for a single wheel (pivoted suspensions arms <i>per se</i>, attachment thereof to sprung part of the vehicle, buffer means for limiting movement of arms <a href="#">B60G 7/00</a>; {rigid axle suspensions <a href="#">B60G 9/00</a>;} characterised by arrangement, location or type of springs <a href="#">B60G 11/00</a>)</b>	3/20	. . all arms being rigid
		3/202	. . . {having one longitudinal arm and two parallel transversal arms, e.g. dual-link type strut suspension}
3/01	. the wheel being mounted for sliding movement, e.g. in or on a vertical guide (camber maintaining means <a href="#">B60G 3/26</a> )	3/205	. . . . {with the pivotal point of the longitudinal arm being on the vertical plane defined by the wheel rotation axis and the wheel ground contact point}
3/02	. with a single pivoted arm	3/207	. . . {the arms being essentially parallel to the longitudinal axis of the vehicle}
3/04	. . the arm being essentially transverse to the longitudinal axis of the vehicle	3/22	. . . a rigid arm forming the axle housing
3/06	. . . the arm being rigid	3/225	. . . . {the arm being of the trailing wishbone type}
3/08	. . . . the arm forming the axle housing	3/24	. . . a rigid arm being formed by the live axle { <a href="#">B60G 3/22</a> , <a href="#">B60G 3/26</a> take precedence; driving arrangements <a href="#">B60K 17/22</a> , <a href="#">B60K 17/30</a> , <a href="#">B60K 17/32</a> }
3/10	. . . the arm itself being resilient, e.g. leaf spring { <a href="#">B60G 7/003</a> takes precedence}		
3/12	. . the arm being essentially parallel to the longitudinal axis of the vehicle		
3/14	. . . the arm being rigid		
3/145	. . . . {the arm forming the axle housing}		

- 3/26 . . . Means for maintaining substantially-constant wheel camber during suspension movement {; Means for controlling the variation of the wheel position during suspension movement ([B60G 3/202](#), [B60G 3/22](#), [B60G 7/003](#), [B60G 7/006](#) take precedence; means for adjusting camber, castor, or toe-in [B62D 17/00](#))}
- 3/265 . . . . {with a strut cylinder contributing to the suspension geometry by being linked to the wheel support via an articulation}
- 3/28 . . at least one of the arms itself being resilient, e.g. leaf spring {([B60G 7/003](#) takes precedence)}
- 3/285 . . . {the arm being essentially parallel to the longitudinal axis of the vehicle}
- 5/00 Resilient suspensions for a set of tandem wheels or axles having interrelated movements**
- 5/005 . {the wheels being fixed on a non-pivotal structure, e.g. a sliding mount}
- 5/01 . the set being characterised by having more than two successive axles
- 5/02 . mounted on a single pivoted arm {, e.g. the arm being rigid}
- 5/025 . . {the arm being transverse to the longitudinal axis of the vehicle}
- 5/03 . . the arm itself being resilient, e.g. a leafspring ([B60G 5/053](#) takes precedence)
- 5/04 . with two or more pivoted arms, the movements of which are resiliently interrelated {, e.g. the arms being rigid}
- 5/043 . . {the arms being transverse to the longitudinal axis of the vehicle}
- 5/047 . . at least one arm being resilient, e.g. a leafspring ([B60G 5/053](#) takes precedence)
- 5/053 . . a leafspring being used as equilibration unit between two axle-supporting units
- 5/06 . . the arms turning on a common pivot {, e.g. being rigid}
- 5/065 . . . {at least one arm being resilient}
- 7/00 Pivoted suspension arms; Accessories thereof** (means for maintaining substantially constant wheel camber during suspension movement [B60G 3/26](#); {articulations for wheels [B60G 5/00](#); leaf spring attaching means [B60G 11/10](#), [B60G 11/12](#); trailing arm twist beam axle attaching means [B60G 21/052](#); articulations in general [F16C](#)})
- 7/001 . {Suspension arms, e.g. constructional features ([B60G 7/006](#) takes precedence)}
- 7/003 . . {of adjustable length}
- 7/005 . {Ball joints ([B60G 7/006](#) takes precedence; for steering linkage [B62D 7/16](#); ball joints *per se* [F16C 11/06](#))}
- 7/006 . {Attaching arms to sprung or unsprung part of vehicle, characterised by comprising attachment means controlled by an external actuator, e.g. a fluid or electrical motor ([B62D 7/146](#) takes precedence)}
- 7/008 . {Attaching arms to unsprung part of vehicle ([B60G 7/005](#), [B60G 7/006](#) take precedence)}
- 7/02 . Attaching arms to sprung part of vehicle {([B60G 7/006](#) takes precedence)}
- 7/04 . Buffer means for limiting movement of arms {(stops limiting fluid passage in fluid dampers [F16F 9/49](#); stroke-limiting stops for fluid dampers [F16F 9/58](#))}
- 9/00 Resilient suspensions of a rigid axle or axle housing for two or more wheels** {(the axle being a part of a set of tandem axles [B60G 5/00](#)-[B60G 5/065](#); with leaf springs [B60G 11/02](#)-[B60G 11/08](#))}
- 9/003 . {the axle being rigidly connected to a trailing guiding device}
- 9/006 . {the axle being connected to two trailing arms with only one of them being rigidly connected to the axle}
- 9/02 . the axle or housing being pivotally mounted on the vehicle {, e.g. the pivotal axis being parallel to the longitudinal axis of the vehicle ([B60G 9/003](#) takes precedence)}
- 9/022 . . {the axle having an imaginary pivotal point}
- 9/025 . . . {using linkages for the suspension of the axle allowing its lateral swinging displacement}
- 9/027 . . {the axle having either a triangular, a "T" or "U" shape and being directly articulated with the chassis only by its middle apex, e.g. De Dion suspension}
- 9/04 . the axle or housing not being pivotally mounted on the vehicle {([B60G 9/003](#) takes precedence)}
- 11/00 Resilient suspensions characterised by arrangement, location or kind of springs** (single wheel suspension by pivoted arm resilient in itself [B60G 3/00](#); adjusting spring characteristic [B60G 17/00](#); springs *per se* [F16F](#))
- NOTE**
- The term "torsion bar" includes torsion tube or the like. The term "rubber" includes synthetic substitutes of a similar nature.
- 11/003 . {Lubrication devices for springs and dampers (vehicle lubrication devices in general [B60R 17/00](#); for leaf springs in general [F16F 1/24](#))}
- 11/006 . {Centrally located spring units, e.g. all wheels being connected to a common spring unit ([B60G 5/00](#), [B60G 17/033](#) take precedence)}
- 11/02 . having leaf springs only {([B60G 11/006](#) takes precedence)}
- 11/025 . . {repairing devices for leaf springs}
- 11/04 . . arranged substantially parallel to the longitudinal axis of the vehicle
- 11/06 . . arranged obliquely to the longitudinal axis of the vehicle
- 11/08 . . arranged substantially transverse to the longitudinal axis of the vehicle
- 11/10 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle
- 11/107 . . . Sliding or rolling mountings
- 11/113 . . . Mountings on the axle ([B60G 11/107](#) takes precedence)
- 11/12 . . . Links, pins, or bushes
- 11/125 . . . . {Multiple-eye arrangements}
- 11/14 . having helical, spiral or coil springs only {([B60G 11/006](#) takes precedence)}
- 11/15 . . Coil springs resisting deflection by winding up

- 11/16 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle
- 11/18 . having torsion-bar springs only {(B60G 11/006 takes precedence; having rubber springs of the torsional-energy-absorption type B60G 11/23)}
- NOTE**  
[B60G 11/184](#) takes precedence over [B60G 11/181](#) - [B60G 11/183](#)
- 11/181 . . {arranged in a plane parallel to the longitudinal axis of the vehicle}
- 11/182 . . {arranged in a plane oblique to the longitudinal axis of the vehicle}
- 11/183 . . {arranged in a plane transverse to the longitudinal axis of the vehicle}
- 11/184 . . {the torsion-bar consisting of a bundle of torsion elements}
- 11/185 . . . {the elements being rods}
- 11/186 . . . . {of hexagonal cross-section}
- 11/187 . . . {the elements being leaf-springs loaded by twisting}
- 11/188 . . . {the elements being cables}
- 11/189 . . {the torsion spring consisting of a tube with a slit}
- 11/20 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle
- 11/22 . having rubber springs only {(B60G 11/006 takes precedence)}
- 11/225 . . {Neidhart type rubber springs}
- 11/23 . . of the torsional-energy-absorption type
- 11/24 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle
- 11/26 . having fluid springs only, e.g. hydropneumatic springs {(B60G 11/006, B60G 15/12 take precedence)}
- 11/265 . . {hydraulic springs}
- 11/27 . . wherein the fluid is a gas
- 11/28 . . characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle
- 11/30 . . having pressure fluid accumulator therefor, e.g. accumulator arranged in vehicle frame {(dampers accumulating utilisable energy B60G 13/14)}
- 11/32 . having springs of different kinds {(B60G 11/006 takes precedence)}
- 11/34 . . including leaf springs
- 11/36 . . . and also helical, spiral or coil springs
- 11/38 . . . and also rubber springs
- 11/40 . . . . the rubber springs being attached to the axle
- 11/42 . . . . the rubber springs being attached to sprung part of the vehicle
- 11/44 . . . and also torsion-bar springs
- 11/46 . . . and also fluid springs
- 11/465 . . . . {with a flexible wall}
- 11/48 . . not including leaf springs
- 11/50 . . . having helical, spiral or coil springs, and also torsion-bar springs
- 11/52 . . . having helical, spiral or coil springs, and also rubber springs
- 11/54 . . . . with rubber springs arranged within helical, spiral or coil springs
- 11/56 . . . having helical, spiral or coil springs, and also fluid springs
- 11/58 . . . . arranged coaxially
- 11/60 . . . having both rubber springs and torsion-bar springs
- 11/62 . . . having both rubber springs and fluid springs
- 11/64 . . . having both torsion-bar springs and fluid springs
- 13/00 Resilient suspensions characterised by arrangement, location or type of vibration dampers (adjusting damping effect B60G 17/06; vibration dampers per se F16F)**
- 13/001 . {Arrangements for attachment of dampers (mounting arrangements of combined spring and damper units B60G 15/00; mountings of fluid dampers in general F16F 9/54)}
- 13/003 . . {characterised by the mounting on the vehicle body or chassis of the damper unit}
- 13/005 . . {characterised by the mounting on the axle or suspension arm of the damper unit}
- 13/006 . . . {on the stub axle}
- 13/008 . . . {involving use of an auxiliary cylinder (B60G 13/006 takes precedence)}
- 13/02 . having dampers dissipating energy, e.g. frictionally
- 13/04 . . mechanically, e.g. having frictionally-engaging springs as damping elements
- 13/06 . . of fluid type
- 13/08 . . . hydraulic
- 13/10 . . . pneumatic
- 13/12 . . . quasi-fluid, i.e. having powdered medium
- 13/14 . having dampers accumulating utilisable energy, e.g. compressing air {(fluid springs with an accumulator B60G 11/30)}
- 13/16 . having dynamic absorbers as main damping means, i.e. spring-mass system vibrating out of phase
- 13/18 . . combined with energy-absorbing means
- 15/00 Resilient suspensions characterised by arrangement, location or type of combined spring and vibration damper, e.g. telescopic type (combined spring and vibration-dampers per se F16F)**
- 15/02 . having mechanical spring
- 15/04 . . and mechanical damper {or dynamic damper}
- 15/06 . . and fluid damper
- 15/061 . . . {with a coil spring being mounted inside the damper}
- 15/062 . . . {the spring being arranged around the damper (B60G 15/061, B60G 15/067, B60G 15/07 take precedence)}
- 15/063 . . . . {characterised by the mounting of the spring on the damper (B60G 15/065, B60G 15/066 take precedence)}
- 15/065 . . . . {characterised by the use of a combination of springs}
- 15/066 . . . . {the spring being different from a coil spring (B60G 15/065 takes precedence)}
- 15/067 . . . {characterised by the mounting on the vehicle body or chassis of the spring and damper unit}
- 15/068 . . . . {specially adapted for MacPherson strut-type suspension}

- 15/07 . . . the damper being connected to the stub axle and the spring being arranged around the damper {[\(B60G 15/068 takes precedence\)](#)}
- 15/08 . having fluid spring
- 15/10 . . and mechanical damper {or dynamic damper}
- 15/12 . . and fluid damper
- 15/14 . . . the damper being connected to the stub axle and the spring being arranged around the damper
- 17/00 Resilient suspensions having means for adjusting the spring or vibration-damper characteristics, for regulating the distance between a supporting surface and a sprung part of vehicle or for locking suspension during use to meet varying vehicular or surface conditions, e.g. due to speed or load** {[\(levelling or stabilising systems for tippers B60P 1/045\)](#)}
- 17/002 . {by temperature regulation of the suspension unit, e.g. heat operated systems}
- 17/005 . Suspension locking arrangements {[\(for retractable wheels B62D 61/12\)](#)}
- 17/015 . the regulating means comprising electric or electronic elements {[\(B60G 17/002\)](#), [B60G 17/005 take precedence](#)}
- 17/0152 . . {characterised by the action on a particular type of suspension unit [\(B60G 17/01941 takes precedence\)](#)}
- 17/0155 . . . {pneumatic unit}
- 17/0157 . . . {non-fluid unit, e.g. electric motor}
- 17/016 . . characterised by their responsiveness, when the vehicle is travelling, to specific motion, a specific condition, or driver input {[\(B60G 17/017 takes precedence\)](#)}
- 17/0161 . . . {mainly during straight-line motion [\(B60G 17/0164 takes precedence\)](#)}
- 17/0162 . . . {mainly during a motion involving steering operation, e.g. cornering, overtaking [\(B60G 17/0164 takes precedence\)](#)}
- 17/0163 . . . . {the control involving steering geometry, e.g. four-wheel steering}
- 17/0164 . . . {mainly during accelerating or braking}
- 17/0165 . . . to an external condition, e.g. rough road surface, side wind
- 17/017 . . characterised by their use when the vehicle is stationary, e.g. during loading, engine start-up or switch-off
- 17/018 . . characterised by the use of a specific signal treatment or control method
- 17/0182 . . . {involving parameter estimation, e.g. observer, Kalman filter}
- 17/0185 . . . for failure detection
- 17/019 . . characterised by the type of sensor or the arrangement thereof {[\(B60G 17/01941 takes precedence\)](#)}
- 17/01908 . . . {Acceleration or inclination sensors [\(characterised by the use of gyroscopes B60G 21/08\)](#)}
- 17/01916 . . . . {Mercury-switch type devices}
- 17/01925 . . . . {Pendulum-type devices}
- 17/01933 . . . {Velocity, e.g. relative velocity-displacement sensors}
- 17/01941 . . . {characterised by the use of piezoelectric elements, e.g. sensors or actuators}
- 17/0195 . . characterised by the regulation being combined with other vehicle control systems {[\(conjoint control of vehicle sub-units including control of suspension systems B60W 10/22\)](#)}
- 17/02 . Spring characteristics {, e.g. mechanical springs and mechanical adjusting means}[\(B60G 17/005, B60G 17/015 take precedence\)](#)}
- 17/021 . . {the mechanical spring being a coil spring [\(B60G 17/0272 takes precedence\)](#)}
- 17/023 . . {the mechanical spring being a leaf spring [\(B60G 17/0275 takes precedence\)](#)}
- 17/025 . . {the mechanical spring being a torsion spring [\(B60G 17/0277, B60G 21/0553 take precedence\)](#)}
- 17/027 . . Mechanical springs regulated by fluid means [\(B60G 17/033 takes precedence\)](#)}
- 17/0272 . . . {the mechanical spring being a coil spring}
- 17/0275 . . . {the mechanical spring being a leaf spring}
- 17/0277 . . . {the mechanical spring being a torsion spring [\(B60G 21/0553 takes precedence\)](#)}
- 17/033 . . characterised by regulating means acting on more than one spring
- 17/04 . . fluid spring characteristics
- 17/0408 . . . {details, e.g. antifreeze for suspension fluid, pumps, retarding means [per se](#)}
- 17/0416 . . . {regulated by varying the resiliency of hydropneumatic suspensions [\(B60G 17/048 takes precedence\)](#)}
- 17/0424 . . . . {by varying the air pressure of the accumulator}
- 17/0432 . . . . {by varying the number of accumulators connected to the hydraulic cylinder [\(B60G 17/0424 takes precedence\)](#)}
- 17/044 . . . Self-pumping fluid springs (pumps for liquids [F04](#))
- 17/048 . . . with the regulating means inside the fluid springs [\(B60G 17/044 takes precedence\)](#)}
- 17/0485 . . . . {the springs being pneumatic springs with a flexible wall, e.g. with levelling valves}
- 17/052 . . . Pneumatic spring characteristics [\(B60G 17/048 takes precedence ; valves \[per se F16K\]\(#\)\)](#)}
- 17/0521 . . . . {the spring having a flexible wall}
- 17/0523 . . . . {Regulating distributors or valves for pneumatic springs}
- 17/0525 . . . . . {Height adjusting or levelling valves}
- 17/0526 . . . . . {Distributor units, e.g. for retractable wheels [\(vehicles with retractable wheels \[per se B62D 61/12\]\(#\)\)](#)}
- 17/0528 . . . . . {Pressure regulating or air filling valves}
- 17/056 . . . Regulating distributors or valves {for hydropneumatic systems}[\(B60G 17/044 - B60G 17/048, {B60G 17/0416} take precedence; {Fluid interconnection systems to control vehicle inclination B60G 21/06, B60G 21/10}; valves \[per se F16K\]\(#\)\)](#)}
- 17/0565 . . . . {Height adjusting valves}
- 17/06 . Characteristics of dampers {, e.g. mechanical dampers}[\(B60G 17/015 takes precedence\)](#)}
- 17/08 . . Characteristics of fluid dampers [\(adjusting fluid dampers in general F16F 9/44 - F16F 9/53\)](#)}

<b>21/00</b>	<b>Interconnection systems for two or more resiliently-suspended wheels, e.g. for stabilising a vehicle body with respect to acceleration, deceleration or centrifugal forces (B60G 17/033 takes precedence {; levelling or stabilising systems for tippers B60P 1/045}; steering deflectable wheels combined with means for inwardly inclining the vehicle body on bends B62D 9/02)</b>	2200/14	. . . with lateral arms
		2200/141	. . . with one trailing arm and one lateral arm only
		2200/142	. . . with a single lateral arm, e.g. MacPherson type
		2200/1422	. . . . the lateral arm being resilient
		2200/1424	. . . . the lateral arm having an L-shape
		2200/143	. . . with lateral arms crossing each other, i.e. X formation as seen along the longitudinal axis
21/002	. {longitudinally}	2200/144	. . . with two lateral arms forming a parallelogram
21/005	. {transversally}	2200/1442	. . . . including longitudinal rods
21/007	. {means for adjusting the wheel inclination}	2200/154	. . . the lateral arm having an L-shape
21/02	. permanently interconnected	2200/156	. . . wishbone-type arm formed by two links defining a virtual apex
21/023	. . {longitudinally}	2200/17	. . with a strut contributing to the suspension geometry by being articulated onto the wheel support
21/026	. . {transversally}	2200/18	. . Multilink suspensions, e.g. elastokinematic arrangements
21/04	. . mechanically	2200/182	. . . with one longitudinal arm or rod and lateral rods
21/045	. . . between wheels on different axles on the same side of the vehicle, i.e. the left or the right side	2200/184	. . . Assymetric arrangements
21/05	. . . between wheels on the same axle but on different sides of the vehicle, i.e. the left and right wheel suspensions being interconnected	2200/20	. Semi-rigid axle suspensions
21/051	. . . . {Trailing arm twist beam axles}	2200/21	. . Trailing arms connected by a torsional beam, i.e. twist-beam axles
21/052	. . . . {Mounting means therefor}	2200/22	. . Trailing arms connected by a straight torsion bar
21/053	. . . . . {adjustable}	2200/23	. . Trailing arms connected by a U-shaped torsion bar
21/055	. . . . Stabiliser bars	2200/24	. . Interconnected split axles
21/0551	. . . . . {Mounting means therefor}	2200/30	. Rigid axle suspensions
21/0553	. . . . . {adjustable}	2200/31	. . with two trailing arms rigidly connected to the axle
21/0555	. . . . . {including an actuator inducing vehicle roll}	2200/312	. . with one of the two trailing arms being rigidly connected to the axle
21/0556	. . . . . {including a releasable coupling (B60G 21/0555 takes precedence)}	2200/314	. . with longitudinally arranged arms articulated on the axle
21/0558	. . . . . {including means varying the stiffness of the stabiliser (B60G 21/0556 takes precedence)}	2200/315	. . . at least one of the arms having an A or V shape
21/06	. . fluid	2200/318	. . two or more axles being mounted on a longitudinal rocking or walking beam
21/067	. . . between wheels on different axles on the same side of the vehicle, i.e. the left or the right side	2200/32	. . pivoted
21/073	. . . between wheels on the same axle but on different sides of the vehicle, i.e. the left and right wheel suspensions being interconnected	2200/322	. . . with a single pivot point and a straight axle
21/08	. characterised by use of gyroscopes (gyroscopes for stabilising vehicle bodies without controlling suspension arrangements B62D 37/06)	2200/324	. . . with a single pivot point and a triangular "T" or "U"-shaped axle, e.g. DeDion arrangement
21/10	. not permanently interconnected, e.g. operative only on acceleration, only on deceleration or only at off-straight position of steering	2200/326	. . . with two laterally spaced pivots, e.g. trailing frame
21/103	. . {longitudinally}	2200/34	. . Stabilising mechanisms, e.g. for lateral stability
21/106	. . {transversally}	2200/341	. . . Panhard rod
<b>99/00</b>	<b>Subject matter not provided for in other groups of this subclass</b>	2200/3415	. . . . Scott-Russel linkage
99/002	. {Suspension details of the suspension of the vehicle body on the vehicle chassis}	2200/342	. . . Watt linkage
99/004	. {Other suspension arrangements with rubber springs}	2200/343	. . . with an axle suspended by two pivoted rods in "V"-arrangement, the rods being coupled at its apex
99/006	. {Other suspension arrangements with metallic springs}	2200/344	. . . with an axle suspended by two pivoted rods in an inverted "V"-arrangement, the rods being coupled at its apex
99/008	. {Other suspension arrangements with fluid springs}	2200/345	. . . with an axle suspended by two pivoted rods in "X"-arrangement
<b>2200/00</b>	<b>Indexing codes relating to suspension types</b>	2200/346	. . . with an axle suspended by two laterally displaced rods having an imaginary point of intersection above the wheel axis
2200/10	. Independent suspensions	2200/347	. . . with an axle suspended by two laterally displaced rods having an imaginary point of intersection below the wheel axis
2200/13	. . with longitudinal arms only	2200/40	. Indexing codes relating to the wheels in the suspensions
2200/132	. . . with a single trailing arm		
2200/1322	. . . . with a wishbone or triangular arm		
2200/1324	. . . . with a resilient trailing arm		

- 2200/42 . . Driven wheels or dead axles
- 2200/422 . . Driving wheels or live axles
- 2200/44 . . steerable
- 2200/445 . . Self-steered wheels
- 2200/446 . . Non-steerable wheels
- 2200/46 . . camber angle
- 2200/462 . . Toe-in/out
- 2200/4622 . . . Alignment adjustment
- 2200/464 . . Caster angle
- 2200/466 . . Damping acceleration or deceleration torque on wheel axle
  
- 2202/00 Indexing codes relating to the type of spring, damper or actuator**
- 2202/10 . Type of spring
- 2202/11 . . Leaf spring
- 2202/112 . . . longitudinally arranged
- 2202/114 . . . transversally arranged
- 2202/116 . . . having a "C" form loaded only at its ends transversally to its central axis
- 2202/117 . . . having a "C" form loaded parallel to its central axis
- 2202/12 . . Wound spring
- 2202/122 . . . subjected to tension
- 2202/13 . . Torsion spring
- 2202/132 . . . comprising a longitudinal torsion bar and/or tube
- 2202/134 . . . comprising a transversal torsion bar and/or tube
- 2202/135 . . . Stabiliser bar and/or tube
- 2202/1351 . . . . comprising at least two stabiliser bars parallel to each other
- 2202/136 . . . Twist-beam type arrangement
- 2202/1362 . . . . including a second torsional element, e.g. second beam, stabiliser bar or tube
- 2202/14 . . Plastic spring, e.g. rubber
- 2202/141 . . . subjected to tension
- 2202/142 . . . subjected to shear, e.g. Neidhart type
- 2202/1422 . . . . Axial
- 2202/1424 . . . . Torsional
- 2202/143 . . . subjected to compression
- 2202/144 . . . of rotary type
- 2202/15 . . Fluid spring
- 2202/152 . . . Pneumatic spring
- 2202/1522 . . . . of rotary type
- 2202/1524 . . . . with two air springs per wheel, arranged before and after the wheel axis
- 2202/154 . . . with an accumulator
- 2202/16 . . Magnetic spring
- 2202/20 . Type of damper
- 2202/21 . . with two dampers per wheel, arranged before and after the wheel axis
- 2202/22 . . Rotary Damper
- 2202/23 . . Friction Damper
- 2202/24 . . Fluid damper
- 2202/242 . . . Pneumatic damper
- 2202/25 . . Dynamic damper
- 2202/30 . Spring/Damper and/or actuator Units
- 2202/31 . . with the spring arranged around the damper, e.g. MacPherson strut
- 2202/312 . . . The spring being a wound spring
- 2202/314 . . . The spring being a pneumatic spring
- 2202/32 . . The spring being in series with the damper and/or actuator
- 2202/322 . . . the damper being controllable
- 2202/40 . Type of actuator
- 2202/41 . . Fluid actuator
- 2202/412 . . . Pneumatic actuator
- 2202/413 . . . Hydraulic actuator
- 2202/414 . . . using electrohydraulic valves
- 2202/415 . . . using other types of valves, e.g. mechanically operated valves
- 2202/416 . . . using a pump, e.g. in the line connecting the lower chamber to the upper chamber of the actuator
- 2202/42 . . Electric actuator
- 2202/422 . . . Linear motor
- 2202/424 . . . electrostrictive materials, e.g. piezoelectric actuator
- 2202/43 . . Mechanical actuator
- 2202/432 . . . Spring motor
- 2202/44 . . Axial actuator, e.g. telescopic
- 2202/441 . . . where axial movement is translated to rotation of the connected end part
- 2202/442 . . Rotary actuator
- 2202/45 . . Other types, e.g. external jets for stability with particular characteristics
- 2202/49 . . Other type, e.g. external jets for stability
  
- 2204/00 Indexing codes related to suspensions per se or to auxiliary parts**
- 2204/10 . Mounting of suspension elements
- 2204/11 . . Mounting of sensors thereon
- 2204/111 . . . on pneumatic springs
- 2204/112 . . . on dampers, e.g. fluid dampers
- 2204/113 . . . Tyre related sensors
- 2204/114 . . . Steering column mounted sensors
- 2204/115 . . . Wheel hub bearing sensors
- 2204/116 . . . Sensors coupled to the suspension arm
- 2204/1162 . . . . directly mounted on the suspension arm
- 2204/12 . . Mounting of springs or dampers
- 2204/121 . . . Mounting of leaf springs
- 2204/122 . . . Mounting of torsion springs
- 2204/1222 . . . . Middle mounts of stabiliser on vehicle body or chassis
- 2204/1224 . . . . End mounts of stabiliser on wheel suspension
- 2204/1226 . . . . on the trailing arms of a twist beam type arrangement
- 2204/124 . . . Mounting of coil springs
- 2204/1242 . . . . on a damper, e.g. MacPherson strut
- 2204/12422 . . . . . anchoring the end coils on the spring support plate
- 2204/1244 . . . . on a suspension arm
- 2204/1246 . . . . on twist beam axles
- 2204/125 . . . Mounting of rubber type springs
- 2204/126 . . . Mounting of pneumatic springs
- 2204/1262 . . . . on a damper
- 2204/127 . . . with the mounting of springs or dampers moving so that the direction of the related force vector can be changed, thus contributing to a variation of the loading of the wheel
- 2204/128 . . . Damper mount on vehicle body or chassis
- 2204/129 . . . Damper mount on wheel suspension or knuckle
- 2204/13 . . . with the spring, i.e. coil spring, or damper horizontally mounted
- 2204/1302 . . . . inside the vehicle frame

- 2204/14 . . Mounting of suspension arms
- 2204/143 . . . on the vehicle body or chassis
- 2204/1431 . . . . of an L-shaped arm
- 2204/1432 . . . . by vertical bolts or studs
- 2204/1434 . . . . in twist-beam axles arrangement
- 2204/147 . . . on the vehicle engine body
- 2204/148 . . . on the unsprung part of the vehicle, e.g. wheel knuckle or rigid axle
- 2204/1482 . . . . on rigid axle by elastic mount
- 2204/1484 . . . . on an intermediate upright strut upon which the stub axle is pivoted
- 2204/149 . . . Mounting of rigid axle on wheel knuckle
- 2204/15 . . Mounting of subframes
- 2204/16 . . Mounting of vehicle body on chassis
- 2204/162 . . . Cabins, e.g. for trucks, tractors
- 2204/17 . . Mounting of bogies, e.g. for trailers
- 2204/18 . . Mounting of vehicle engines
- 2204/182 . . . Electric motor on wheel support
- 2204/19 . . Mounting of transmission differential
- 2204/20 . . Mounting of accessories, e.g. pump, compressor
- 2204/201 . . . of fluid lines
- 2204/202 . . . of cables
- 2204/2022 . . . . using a suspension element (e.g. link, damper or spring) as part of the electrical circuitry
- 2204/22 . . Linking of trailers to trucks, e.g. truck-trailer connections
- 2204/30 . . In-wheel mountings
- 2204/40 . Auxiliary suspension parts; Adjustment of suspensions
- 2204/41 . . Elastic mounts, e.g. bushings
- 2204/4102 . . . having a pin or stud extending perpendicularly to the axis of the elastic mount
- 2204/4103 . . . having an eccentrically located inner sleeve
- 2204/4104 . . . Bushings having modified rigidity in particular directions
- 2204/41042 . . . . by using internal cam surfaces
- 2204/41043 . . . . formed by a U-shaped external bracket
- 2204/41044 . . . . in a shell for being loaded mainly in axial direction, e.g. piston rod mounts, longitudinal push-pull rod mounts
- 2204/41046 . . . . having the axis of an inner sleeve or pin inclined to the axis of the bush
- 2204/4106 . . . Elastokinematic mounts
- 2204/41062 . . . . hydromounts; interconnected mounts
- 2204/4108 . . . Resilient element being enclosed and or pre-stressed in a solid container
- 2204/414 . . Cardan joints
- 2204/416 . . Ball or spherical joints
- 2204/418 . . Bearings, e.g. ball or roller bearings
- 2204/419 . . Gears
- 2204/4191 . . . Planetary or epicyclic gears
- 2204/4192 . . . rack and pinion
- 2204/4193 . . . worm gears
- 2204/42 . . Joints with cam surfaces
- 2204/421 . . Pivoted lever mechanisms for mounting suspension elements, e.g. Watt linkage
- 2204/422 . . Links for mounting suspension elements
- 2204/4222 . . . for movement on predefined locus of, e.g. the wheel center
- 2204/423 . . Rails, tubes, or the like, for guiding the movement of suspension elements
- 2204/4232 . . . Sliding mounts
- 2204/424 . . Mechanisms for force adjustment, e.g. constant force mechanisms
- 2204/43 . . Fittings, brackets or knuckles
- 2204/4302 . . . for fixing suspension arm on the vehicle body or chassis
- 2204/4304 . . . Bracket for lower cylinder mount of McPherson strut
- 2204/4305 . . . Bracket for mounting of hydraulic lines on a damper cylinder
- 2204/4306 . . . Bracket or knuckle for rigid axles, e.g. for clamping
- 2204/43065 . . . . U-shaped bolts crossing each other
- 2204/4307 . . . Bracket or knuckle for torsional springs
- 2204/4308 . . . Protecting guards, e.g. for rigid axle damage protection
- 2204/44 . . Centering or positioning means
- 2204/4402 . . . Spacers or shims
- 2204/4404 . . . Retainers for holding a fixing element, e.g. bushing, nut, bolt etc., until it is tightly fixed in position
- 2204/45 . . Stops limiting travel
- 2204/4502 . . . using resilient buffer
- 2204/45021 . . . . for limiting upper mount movement of a McPherson strut
- 2204/4504 . . . using cable or band to prevent extension
- 2204/46 . . Means for locking the suspension
- 2204/4602 . . . Locking of a McPherson type strut upper mount on the vehicle body
- 2204/4604 . . . mechanically, e.g. using a hook as anticreep mechanism
- 2204/4605 . . . hydraulically, e.g. interrupting communication between the chambers of a hydraulic cylinder
- 2204/47 . . Means for retracting the suspension
- 2204/4702 . . . pneumatically
- 2204/61 . . Adjustable during maintenance
- 2204/62 . . Adjustable continuously, e.g. during driving
- 2204/80 . . Interactive suspensions; arrangement affecting more than one suspension unit
- 2204/81 . . front and rear unit
- 2204/8102 . . . diagonally arranged
- 2204/82 . . left and right unit on same axle
- 2204/83 . . Type of interconnection
- 2204/8302 . . . Mechanical
- 2204/83022 . . . . using cables, wires, belts or chains
- 2204/8304 . . . using a fluid
- 2204/8306 . . . Permanent; Continuous
- 2206/00 Indexing codes related to the manufacturing of suspensions: constructional features, the materials used, procedures or tools**
- 2206/01 . . Constructional features of suspension elements, e.g. arms, dampers, springs
- 2206/011 . . Modular constructions
- 2206/0112 . . . Bogies for heavy vehicles
- 2206/0114 . . . Independent suspensions on subframes
- 2206/0116 . . . Integrated distribution control units with valves, accumulators, PCB's or the like
- 2206/012 . . Hollow or tubular elements
- 2206/0122 . . . having a U profile with plate closing the profile in the total or partial length of the element
- 2206/013 . . with embedded inserts for material reinforcement
- 2206/014 . . with reinforcing nerves or branches
- 2206/016 . . allowing controlled deformation during collision

2206/017	. . forming an eye for the bushing	2206/71	. . . Light weight materials
2206/10	. . Constructional features of arms	2206/7101	. . . . Fiber-reinforced plastics [FRP]
2206/11	. . . the arm being a radius or track or torque or steering rod or stabiliser end link	2206/7102	. . . . Aluminium alloys
2206/111	. . . . of adjustable length	2206/7103	. . . . Magnesium alloys
2206/1112	. . . . . Manually, for alignment purposes	2206/7104	. . . . Thermoplastics
2206/1114	. . . . . Self-adjustable during driving	2206/71042	. . . . . Polyester elastomer
2206/1116	. . . . . Actively adjustable during driving	2206/71043	. . . . . Polyamid elastomer
2206/12	. . . with two attachment points on the sprung part of the vehicle	2206/71044	. . . . . Soft nylon
2206/121	. . . the arm having an H or X-shape	2206/7105	. . . . Porous materials, ceramics, e.g. as filling material
2206/122	. . . the arm having L-shape	2206/72	. . . Steel
2206/123	. . . the arm having T-shape	2206/722	. . . . Plates
2206/124	. . . the arm having triangular or Y-shape, e.g. wishbone	2206/724	. . . . Wires, bars or the like
2206/13	. . . with more than two attachment points on the sprung part of the vehicle	2206/73	. . . Rubber; Elastomers
2206/14	. . . the arm forming a U-shaped recess for fitting a bush	2206/80	. . Manufacturing procedures
2206/141	. . . . The recess being integrally or seamlessly formed	2206/81	. . . Shaping
2206/15	. . . the arm being resilient	2206/8101	. . . . by casting
2206/16	. . . the arm having a U profile and/or made of a plate	2206/81012	. . . . . by injection moulding
2206/161	. . . . with middle section narrower than end section	2206/8102	. . . . . by stamping
2206/162	. . . . with a plate closing the profile in the total or partial length of the arm	2206/81022	. . . . . by forging
2206/20	. . Constructional features of semi-rigid axles, e.g. twist beam type axles	2206/8103	. . . . . by folding or bending
2206/201	. . . with detachable cross beam and/or torsion stabiliser bar/tube	2206/81035	. . . . . involving heating to relieve internal stresses
2206/202	. . . with a radially deformed tube as a cross member	2206/8104	. . . . . by drawing
2206/203	. . . with outwardly bent trailing arms to increase the width of the support or wheelbase	2206/8105	. . . . . by extrusion
2206/30	. . Constructional features of rigid axles	2206/8106	. . . . . by thermal treatment, e.g. curing hardening, vulcanisation
2206/31	. . . Straight axle	2206/81062	. . . . . to relieve internal stresses, e.g. during folding or bending
2206/312	. . . Cranked axle	2206/8107	. . . . . by hydroforming
2206/32	. . . Hollow cross section	2206/8108	. . . . . by twisting
2206/40	. . Constructional features of dampers and/or springs	2206/8109	. . . . . by rolling
2206/41	. . . Dampers	2206/811	. . . . . by cutting
2206/42	. . . Springs	2206/8111	. . . . . by machining
2206/422	. . . . Accumulators for hydropneumatic springs	2206/8112	. . . . . by thermal spraying of molten material
2206/4222	. . . . . with a flexible separating wall; Membrane construction	2206/82	. . . Joining
2206/424	. . . . Plunger or top retainer construction for bellows or rolling lobe type air springs	2206/8201	. . . . . by welding
2206/426	. . . . Coil springs having a particular shape, e.g. curved axis, pig-tail end coils	2206/82012	. . . . . Pressure welding
2206/427	. . . . Stabiliser bars or tubes	2206/82013	. . . . . Friction or heat welding
2206/428	. . . . Leaf springs	2206/82014	. . . . . Magnetic pulse welding
2206/50	. . Constructional features of wheel supports or knuckles, e.g. steering knuckles, spindle attachments	2206/8205	. . . . . by conical or compressed rubber clamping inserts as joining means
2206/60	. . Subframe construction	2206/8206	. . . . . by riveting
2206/601	. . . Hanger bracket	2206/8207	. . . . . by screwing
2206/602	. . . Single transverse beam	2206/8208	. . . . . by hemming or seaming, e.g. by folding of the rim
2206/604	. . . with two parallel beams connected by cross members	2206/8209	. . . . . by deformation
2206/605	. . . Flexible constructions	2206/82092	. . . . . by press-fitting
2206/606	. . . Complex constructions	2206/821	. . . . . by gluing
2206/70	. . Materials used in suspensions	2206/83	. . . Punching
		2206/84	. . . Hardening
		2206/8401	. . . . Annealing
		2206/8402	. . . . Quenching
		2206/8403	. . . . Shot-peening
		2206/85	. . . Filament winding
		2206/90	. . Maintenance
		2206/91	. . . Assembly procedures
		2206/911	. . . . using a modification kit
		2206/92	. . . Tools or equipment used for assembling
		2206/921	. . . . Coil spring compressor
		2206/93	. . . Tools used for adjustments
		2206/931	. . . . McPherson strut positioning tool

2206/94	. . . Tools used for supporting parts	2400/05146	. . . . Wheel caster
2206/99	. . . Suspension element selection procedure depending on loading or performance requirements, e.g. selection of damper, spring or bush	2400/0516	. . . Angular position of a suspension element
		2400/05162	. . . . the element being a suspension arm
		2400/052	. . Angular rate
		2400/0521	. . . Roll rate
		2400/0522	. . . Pitch rate
		2400/0523	. . . Yaw rate
		2400/053	. . Angular acceleration
		2400/0531	. . . Roll acceleration
		2400/0532	. . . Pitch acceleration
		2400/0533	. . . Yaw acceleration
		2400/10	. Acceleration; Deceleration
		2400/102	. . vertical
		2400/104	. . lateral or transversal with regard to vehicle
		2400/1042	. . . using at least two sensors
		2400/106	. . longitudinal with regard to vehicle, e.g. braking
		2400/1062	. . . using at least two sensors
		2400/20	. Speed
		2400/202	. . Piston speed; Relative velocity between vehicle body and wheel
		2400/204	. . Vehicle speed
		2400/2042	. . . Lateral speed
		2400/206	. . Body oscillation speed; Body vibration frequency
		2400/208	. . of wheel rotation
		2400/25	. Stroke; Height; Displacement
		2400/252	. . vertical
		2400/256	. . horizontal
		2400/257	. . . transversal with regard to vehicle
		2400/258	. . . longitudinal with regard to vehicle
		2400/30	. Propulsion unit conditions
		2400/302	. . Selected gear ratio; Transmission function
		2400/304	. . . neutral position
		2400/306	. . . overdrive
		2400/31	. . Clutch condition
		2400/32	. . Torque on propulsion shaft
		2400/33	. . Throttle position
		2400/34	. . Accelerator pedal position
		2400/35	. . Position of fuel or air injector
		2400/36	. . Functioning of turbocharger
		2400/37	. . Brake pad or disc friction
		2400/38	. . Speed of engine rotation
		2400/382	. . . Ignition switch
		2400/39	. . Brake pedal position
		2400/40	. Steering conditions
		2400/41	. . Steering angle
		2400/412	. . . of steering wheel or column
		2400/4122	. . . . Neutral position detection
		2400/42	. . Steering torque
		2400/44	. . Steering speed
		2400/46	. . Steering frequency
		2400/47	. . Rear wheel steering
		2400/50	. Pressure
		2400/51	. . in suspension unit
		2400/512	. . . in spring
		2400/5122	. . . . Fluid spring
		2400/51222	. . . . . Pneumatic
		2400/518	. . . in damper
		2400/5182	. . . . Fluid damper
		2400/52	. . in tyre
		2400/60	. Load
		2400/61	. . Load distribution
<b>2300/00</b>	<b>Indexing codes relating to the type of vehicle</b>		
2300/02	. Trucks; Load vehicles		
2300/022	. . Fork lift trucks, Clark		
2300/024	. . Light trucks		
2300/026	. . Heavy duty trucks		
2300/0262	. . . Multi-axle trucks		
2300/03	. Silo or fluid transporting vehicles		
2300/04	. Trailers		
2300/042	. . Semi-trailers		
2300/044	. . Truck-trailer connections		
2300/06	. Cranes		
2300/07	. Off-road vehicles		
2300/08	. Agricultural vehicles		
2300/082	. . Tractors		
2300/083	. . Boom carrying vehicles, e.g. for crop spraying		
2300/084	. . Ridable lawn mowers		
2300/09	. Construction vehicles, e.g. graders, excavators		
2300/10	. Railway vehicles		
2300/102	. . having track following mechanism for lateral stability		
2300/12	. Cycles; Motorcycles		
2300/122	. . Trikes		
2300/124	. . Quads		
2300/13	. Small sized city motor vehicles		
2300/14	. Buses		
2300/16	. Aeroplanes		
2300/18	. Helicopters		
2300/20	. Toys		
2300/22	. Perambulators		
2300/24	. Wheelchairs		
2300/26	. Carts		
2300/27	. Racing vehicles, e.g. F1		
2300/28	. Amphibious vehicles		
2300/30	. Load ramps		
2300/32	. Track vehicles		
2300/322	. . Snowmobiles		
2300/34	. Ambulances		
2300/36	. Independent Multi-axle long vehicles		
2300/37	. Vehicles having steerable wheels mounted on a vertically moving column		
2300/38	. Low or lowerable bed vehicles		
2300/40	. Variable track or wheelbase vehicles		
2300/402	. . Extra load carrying wheels, e.g. tag axles		
2300/45	. Rolling frame vehicles		
2300/50	. Electric vehicles; Hybrid vehicles		
2300/60	. Vehicles using regenerative power		
<b>2400/00</b>	<b>Indexing codes relating to detected, measured or calculated conditions or factors</b>		
2400/05	. Attitude		
2400/051	. . Angle		
2400/0511	. . . Roll angle		
2400/0512	. . . Pitch angle		
2400/0513	. . . Yaw angle		
2400/0514	. . . Wheel angle detection		
2400/05142	. . . . Wheel camber		
2400/05144	. . . . Wheel toe		

- 2400/62 . . Seat occupation; Passenger presence
- 2400/63 . . Location of the center of gravity
- 2400/64 . . Wheel forces, e.g. on hub, spindle or bearing
- 2400/70 . Temperature of vehicle part or in the vehicle
- 2400/71 . . of suspension unit
- 2400/712 . . . of spring
- 2400/7122 . . . . Fluid spring
- 2400/716 . . . of damper
- 2400/7162 . . . . Fluid damper
- 2400/72 . . in vehicle interior
- 2400/73 . . of other part than suspension unit
- 2400/732 . . . of propulsion unit
- 2400/80 . Exterior conditions
- 2400/82 . . Ground surface
- 2400/821 . . . Uneven, rough road sensing affecting vehicle body vibration
- 2400/822 . . . Road friction coefficient determination affecting wheel traction
- 2400/8222 . . . . Hydroplaning
- 2400/823 . . . Obstacle sensing
- 2400/824 . . . Travel path sensing; Track monitoring
- 2400/84 . . Atmospheric conditions
- 2400/841 . . . Wind
- 2400/842 . . . Temperature
- 2400/8422 . . . . of air
- 2400/8424 . . . . of ground or road
- 2400/843 . . . Humidity; Rainfall
- 2400/845 . . . Darkness
- 2400/847 . . . Sunshine; Light
- 2400/90 . Other conditions or factors
- 2400/91 . . Frequency
- 2400/92 . . Travelling or driving time
- 2400/922 . . Travelling distance
- 2400/94 . . Deformation of a vehicle part
- 2400/942 . . . of vehicle body
- 2400/95 . . Position of vehicle body elements
- 2400/952 . . . of door or bonnet
- 2400/954 . . . Wheelbase
- 2400/96 . . Presence, absence or inactivity of driver
- 2400/97 . . Relation between towing and towed vehicle, e.g. tractor-trailer combination
- 2400/972 . . . Angle of articulation
- 2400/98 . . Stabiliser movement
- 2401/00 Indexing codes relating to the type of sensors based on the principle of their operation**
- 2401/10 . Piezoelectric elements
- 2401/11 . Electrostrictive transducers
- 2401/12 . Strain gauge
- 2401/122 . . Wheatstone bridge circuit
- 2401/14 . Photo or light sensitive means, e.g. Infrared
- 2401/142 . . Visual Display Camera, e.g. LCD
- 2401/144 . . Fiber optic sensor
- 2401/15 . Doppler effect
- 2401/16 . GPS track data
- 2401/17 . Magnetic/Electromagnetic
- 2401/172 . . Hall effect
- 2401/174 . . Radar
- 2401/176 . . Radio or audio sensitive means, e.g. Ultrasonic
- 2401/19 . Speech recognising means
- 2401/20 . Switches, e.g. mercury or ball type switches
- 2401/21 . Laser
- 2401/22 . Radioactivity sensitive materials
- 2401/23 . Memory materials
- 2401/24 . Heat sensitive materials; temperature gauge
- 2401/25 . Capacitance type, e.g. as level indicator
- 2401/26 . Resistance type, e.g. as level indicator
- 2401/27 . Gravitational, e.g. pendulum or axial movement type
- 2401/28 . Gyroscopes
- 2401/90 . Single sensor for two or more measurements
- 2401/902 . . the sensor being an xy axis sensor
- 2401/904 . . the sensor being an xyz axis sensor
- 2500/00 Indexing codes relating to the regulated action or device**
- 2500/02 . Supply or exhaust flow rates; Pump operation
- 2500/022 . . Minimisation of pressure cavitation effects upon demand
- 2500/04 . using inertia type valves
- 2500/10 . Damping action or damper
- 2500/102 . . stepwise
- 2500/104 . . continuous
- 2500/106 . . duty rate
- 2500/11 . . Damping valves
- 2500/112 . . . Fluid actuation
- 2500/114 . . . pressure regulating valves
- 2500/116 . . . for damping pressure oscillations of the fluid in hydraulic lines
- 2500/20 . Spring action or springs
- 2500/201 . . Air spring system type
- 2500/2012 . . . Open systems
- 2500/2014 . . . Closed systems
- 2500/202 . . Height or leveling valve for air-springs
- 2500/2021 . . . Arrangement of valves
- 2500/2022 . . . with valve seat actuation for selectively adjusting neutral height
- 2500/203 . . Distributor valve units comprising several elements, e.g. valves, pump or accumulators
- 2500/204 . . Pressure regulating valves for air-springs
- 2500/2041 . . . for variable volume air springs, e.g. using accumulators as expansion chambers
- 2500/2042 . . . Air filling valves
- 2500/2043 . . . Wheatstone bridge type valve arrangements
- 2500/2044 . . . Air exhausting valves
- 2500/2046 . . . Pressure equalising valves between two units
- 2500/205 . . Air-compressor operation
- 2500/206 . . Variable pressure accumulators for hydropneumatic suspensions
- 2500/2062 . . . by varying the air-pressure of the accumulator
- 2500/2064 . . . by varying the number of accumulators connected in parallel to the hydraulic cylinder
- 2500/22 . . Spring constant
- 2500/30 . Height or ground clearance
- 2500/302 . . using distributor valves
- 2500/32 . . of only one vehicle part or side
- 2500/322 . . . only front part
- 2500/324 . . . only rear part
- 2500/326 . . . only left or right side
- 2500/40 . Steering
- 2500/42 . . Sensibility
- 2600/00 Indexing codes relating to particular elements, systems or processes used on suspension systems or suspension control systems**

2600/02	. Retarders, delaying means, dead zones, threshold values, cut-off frequency, timer interruption	2600/602	. . high pass
2600/04	. Means for informing, instructing or displaying	2600/604	. . low pass
2600/042	. . Monitoring means	2600/66	. Humidifying or drying means
2600/0422	. . . involving data transmission, e.g. via satellite or GPS; for data monitoring, telemetry or platooning purposes	2600/68	. Filtering means, e.g. fluid filters
2600/044	. . Alarm means	2600/70	. Computer memory; Data storage, e.g. maps for adaptive control
2600/07	. Inhibiting means	2600/702	. . Parallel processing
2600/08	. Failure or malfunction detecting means	2600/704	. . Electronic tags containing data, e.g. identification number of a component; Gain values for the control of the unit, etc.
2600/082	. . Sensor drift	2600/71	. Distributed control; Master - slave controllers; Remote control units
2600/084	. . Supervisory systems	2600/72	. Cooling or warming means
2600/086	. . Redundant systems	2600/73	. Electrical control
2600/09	. Feedback signal	2600/74	. Analog systems
2600/11	. Feedforward signal	2600/76	. Digital systems
2600/12	. Sampling or average detecting; Addition or subtraction	2600/77	. A/D, D/A signal converters
2600/122	. . Summation signal	2600/82	. duty rate function
2600/124	. . Error signal	2600/85	. Speed of regulation
2600/14	. Differentiating means, i.e. differential control	2600/90	. other signal treatment means
2600/16	. Integrating means, i.e. integral control	<b>2800/00</b>	<b>Indexing codes relating to the type of movement or to the condition of the vehicle and to the end result to be achieved by the control action</b>
2600/17	. Proportional control, i.e. gain control	2800/01	. Attitude or posture control
2600/172	. . Weighting coefficients or factors	2800/012	. . Rolling condition
2600/18	. Automatic control means	2800/0122	. . . Roll rigidity ratio; Warping
2600/181	. . Signal modulation; pulse-width, frequency-phase	2800/0124	. . . Roll-over conditions
2600/182	. . Active control means	2800/014	. . Pitch; Nose dive
2600/184	. . Semi-Active control means	2800/016	. . Yawing condition
2600/186	. . Analogue Controller Details and Signal Treatment	2800/019	. . Inclination due to load distribution or road gradient
2600/187	. . Digital Controller Details and Signal Treatment	2800/0192	. . . longitudinal with regard to vehicle
2600/1871	. . . Optimal control; Kalman Filters	2800/0194	. . . transversal with regard to vehicle
2600/1872	. . . Observer; Luapunov function	2800/16	. Running
2600/1873	. . . Model Following	2800/162	. . Reducing road induced vibrations
2600/1874	. . . Modal analysis	2800/164	. . Heaving; Squatting
2600/1875	. . . Other parameter or state estimation methods not involving the mathematical modelling of the vehicle	2800/166	. . Platooning
2600/1876	. . . Artificial intelligence	2800/18	. Starting, accelerating
2600/1877	. . . Adaptive Control	2800/182	. . Traction
2600/1878	. . . Neural Networks	2800/20	. Stationary vehicle
2600/1879	. . . Fuzzy Logic Control	2800/202	. . kneeling, e.g. for letting passengers on/off
2600/188	. . Spectral analysis; Transformations	2800/203	. . lowering the floor for loading/unloading
2600/1881	. . . Integral	2800/204	. . adjusting floor height to the loading ramp level
2600/1882	. . . Fourier	2800/2042	. . . using an anticreep mechanism to lock the height
2600/1883	. . . z-transform	2800/205	. . jacking-up for changing tyre or vehicle inspection
2600/1884	. . . Laplace	2800/21	. Traction, slip, skid or slide control
2600/1885	. . . Euler equations	2800/212	. . Transversal; Side-slip during cornering
2600/189	. . Statistical analysis	2800/213	. . by applying forward/backward torque on each wheel individually
2600/20	. Manual control or setting means	2800/214	. . by varying the load distribution
2600/202	. . using a remote, e.g. cordless, transmitter or receiver unit	2800/215	. . by applying a braking action on each wheel individually
2600/204	. . Joystick actuated suspension	2800/22	. Braking, stopping
2600/206	. . Control-by-wire	2800/222	. . during collision
2600/21	. Self-controlled or adjusted	2800/224	. . automatically, based on dangerous living style
2600/22	. Magnetic elements	2800/226	. . automatically, based on stopping at a preset or target point position
2600/24	. . permanent magnets	2800/24	. Steering, cornering
2600/26	. . Electromagnets; Solenoids	2800/242	. . Obstacle avoidance manoeuvre
2600/28	. Temporary fluctuations	2800/244	. . Oversteer
2600/41	. SISO system, i.e. single input - single output system	2800/246	. . Understeer
2600/43	. MIMO system, i.e. multi input - multi output system		
2600/44	. Vibration noise suppression		
2600/60	. Signal noise suppression; Electronic filtering means		

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- 2800/248 . . Neutral steering behaviour
- 2800/70 . Estimating or calculating vehicle parameters or state variables
- 2800/702 . . Improving accuracy of a sensor signal
- 2800/7022 . . . Calibration of a sensor, e.g. automatically
- 2800/704 . . predicting unorthodox driving conditions for safe or optimal driving
- 2800/80 . Detection or control after a system or component failure
- 2800/802 . . Diagnostics
- 2800/85 . System Prioritisation
- 2800/87 . System configuration based on vehicle type or model
- 2800/90 . System Controller type
- 2800/91 . . Suspension Control
- 2800/912 . . . Attitude Control; levelling control
- 2800/9122 . . . . ARS - Anti-Roll System Control
- 2800/9123 . . . . Active Body Control [ABC]
- 2800/9124 . . . . Roll-over protection systems, e.g. for warning or control
- 2800/914 . . . Height Control System
- 2800/915 . . . Suspension load distribution
- 2800/916 . . . Body Vibration Control
- 2800/92 . . ABS - Brake Control
- 2800/922 . . . EBV - Electronic brake force distribution
- 2800/925 . . Airbag deployment systems
- 2800/93 . . Skid or slide control [ASR]
- 2800/94 . . Electronic Stability Program (ESP, i.e. ABS +ASC+EMS)
- 2800/95 . . Automatic Traction or Slip Control [ATC]
- 2800/952 . . . Electronic driving torque distribution
- 2800/954 . . . Four-wheel drive
- 2800/96 . . ASC - Assisted or power Steering control
- 2800/962 . . . Four-wheel steering
- 2800/963 . . . Steer-by-wire
- 2800/964 . . . Auto-navigation
- 2800/965 . . . Automatic or driver-independent manoeuvre, e.g. for obstacle avoidance or roll-over prevention
- 2800/97 . . Engine Management System [EMS]
- 2800/972 . . Electronic Differential Lock [EDS]
- 2800/98 . . Intelligent Transportation System or Bus [IDB]
- 2800/982 . . Active Cruise Control, e.g. DISTRONIC type
- 2800/984 . . Tyre Pressure Monitoring Systems