SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B60 VEHICLES IN GENERAL

Note(s) [4, 2009.01]

In this class, the following term is used with the meaning indicated:

- "vehicle" means all vehicles except those restricted to one of the following types of vehicles: rail vehicles, waterborne vessels, aircraft, space vehicles, hand carts, cycles, animal-drawn vehicles, and sledges, which are covered by the relevant subclasses of B61-B64.
  Thus the term "vehicle" includes:
  - vehicular characteristics which are common to more than one of the above-listed types;
  - certain characteristics restricted to automobiles, road or cross-country trailers.
  - The following exceptions to the above should be noted:
    a. subclass B60B or B60C embrace all vehicle wheels and tyres, except wheels for roller skates A63C 17/22, wheels for model railway vehicles A63H 19/22, and special adaptations of wheels or tyres for aircraft B64C 25/36;
    b. subclass B60C embraces the connection of valves to inflatable elastic bodies in general, and in this respect it is not limited to vehicles;
    c. subclass B60L embraces certain electric equipment of all electrically-propelled vehicles;
    d. subclass B60M embraces certain power supply equipment for, but external to, any kind of electrically-propelled vehicle;
    e. subclass B60R embraces safety belts or body harnesses used in all types of land vehicles;
    f. subclass B60S relates to all kinds of vehicles, except the servicing of rail locomotives B61K 11/00, ground equipment for aircraft B64F, or cleaning apparatus peculiar to waterborne vessels B63B 57/00, B63B 59/00;
    g. subclass B60T includes brake control systems of general applicability, and in this respect it is not limited to vehicles. It also includes rail-vehicle power-brake systems and some other features of rail-vehicle brake systems;
    h. subclass B60V embraces air-cushion vehicles per se and land vehicles, waterborne vessels or aircraft combined with features allowing them to alternatively operate as air-cushion vehicles or to be partially supported by an air cushion.

B60B VEHICLE WHEELS (making wheels or wheel parts by rolling B21H 1/00, by forging, hammering or pressing B21K 1/28)**; CASTORS; AXLES FOR WHEELS OR CASTORS; INCREASING WHEEL ADHESION**

Note(s)

Attention is drawn to the Note following the title of class B60.

Subclass index

Wheels

1/00 Spoked wheels; Spokes thereof (non-metallic B60B 5/00) **[1, 2, 2006.01]**

1/02 • Wheels with wire or other tension spokes **[1, 2006.01]**

1/04 • • Attaching spokes to rim or hub **[1, 2006.01]**

1/06 • Wheels with compression spokes (wheels of high resiliency B60B 9/00) **[1, 2006.01]**

1/08 • • formed by casting **[1, 2006.01]**
1/10 • • fabricated from sheet metal (B60B 1/12, B60B 3/08 take precedence) **[1, 2006.01]**
1/12 • • with tubular spokes (B60B 1/08 takes precedence) **[1, 2006.01]**
1/14 • • Attaching spokes to rim or hub **[1, 2006.01]**

3/00 Disc wheels, i.e. wheels with load-supporting disc body (non-metallic B60B 5/00; wheel cover discs B60B 7/00) **[1, 2006.01]**
3/02 • with a single disc body integral with rim **[1, 2006.01]**
3/04 • with a single disc body not integral with rim **[1, 2006.01]**
3/06 • formed by casting **[1, 2006.01]**
3/08 • with disc body formed by two or more axially-spaced discs **[1, 2006.01]**
3/10 • apertured to simulate spoked wheels **[1, 2006.01]**
3/12 • Means of reinforcing disc bodies **[1, 2006.01]**
3/14 • Attaching disc body to hub (resiliently B60B 9/00; attaching rim to wheel body B60B 23/00) **[1, 2006.01]**
3/16 • • by bolts or the like **[1, 2006.01]**
3/18 • • by circlips or the like **[1, 2006.01]**

5/00 Wheels, spokes, disc bodies, rims, hubs, wholly or predominantly made of non-metallic material (wheel cover discs B60B 7/00; wheels of high resiliency B60B 9/00) **[1, 2006.01]**
5/02 • made of synthetic material **[1, 2006.01]**
5/04 • made of wood **[1, 2006.01]**

7/00 Wheel cover discs, rings, or the like, for ornamenting, protecting, or obscuring, wholly or in part, the wheel body, rim, hub, or tyre sidewall [1, 2, 5, 2006.01]
7/01 • Rings specially adapted for covering only the wheel rim or the tyre sidewall, e.g. removable tyre sidewall trim rings **[5, 2006.01]**
7/02 • made essentially in one part (B60B 7/01 takes precedence) **[1, 5, 2006.01]**
7/04 • built-up of several main parts (B60B 7/01, B60B 7/20 take precedence) **[1, 5, 2006.01]**
7/06 • Fastening arrangements therefor (B60B 7/01, B60B 7/16 take precedence) **[1, 5, 2006.01]**
7/08 • • having gripping elements consisting of formations integral with the cover **[5, 2006.01]**
7/10 • • comprising a plurality of spaced spring clips individually mounted on the cover, e.g. riveted, welded or readily releasable **[5, 2006.01]**
7/12 • • comprising an annular spring or gripping element mounted on the cover (B60B 7/08 takes precedence) **[5, 2006.01]**
7/14 • • comprising screw-threaded means **[5, 2006.01]**
7/16 • Anti-theft devices **[5, 2006.01]**
7/18 • simulating spoked or wire wheel **[5, 2006.01]**
7/20 • having an element mounted for rotation independently of wheel rotation **[5, 2006.01]**

9/00 Wheels of high resiliency [1, 2006.01]
9/02 • using springs (wheels comprising resilient spokes B60B 9/26) **[1, 2006.01]**
9/04 • • in leaf form **[1, 2006.01]**
9/06 • • in helical form **[1, 2006.01]**
9/08 • • in flat coiled form **[1, 2006.01]**
9/10 • • of rubber or the like **[1, 2006.01]**
9/12 • • • in the form of sleeves or rings concentric with wheel axis **[1, 2006.01]**
9/14 • • • with means limiting relative lateral movements between hub and remainder of wheel **[1, 2006.01]**
9/16 • • • modified to ensure electric conductivity **[1, 2006.01]**
9/18 • using fluid (within spokes B60B 9/26) **[1, 2006.01]**
9/20 • • in rings concentric with wheel axis **[1, 2006.01]**
9/22 • • • inflatable **[1, 2006.01]**
9/24 • • with pistons and cylinders **[1, 2006.01]**
9/26 • comprising resilient spokes **[1, 2006.01]**
9/28 • • with telescopic action **[1, 2006.01]**

11/00 Units comprising multiple wheels arranged side by side; Wheels having more than one rim or capable of carrying more than one tyre [1, 2006.01]
11/02 • Units of separate wheels mounted for independent or coupled rotation **[1, 2006.01]**
11/04 • Wheels with a rim capable of carrying more than one tyre **[1, 2006.01]**
11/06 • Wheels with more than one rim mounted on a single wheel body **[1, 2006.01]**
11/08 • Arrangements of balancing mechanisms enabling a uniform distribution of load to the tyres **[1, 2006.01]**
11/10 • Emergency wheels (tyres collapsible into storage or non-use condition B60C 3/08; tyres characterised by means enabling restricted operation in damaged or deflated condition B60C 17/00) **[5, 2006.01]**

15/00 Wheels or wheel attachments designed for increasing traction (vehicle tyres B60C; non-skid devices temporarily attachable to resilient tyres or resiliently-tyred wheels B60C 27/00) **[1, 2006.01]**
15/02 • Wheels with spade lugs **[1, 2006.01]**
15/04 • • with resiliently-mounted spade lugs **[1, 2006.01]**
15/06 • • with pivotally-mounted spade lugs **[1, 2006.01]**
15/08 • • with spade lugs axially displaced relatively to the tread surface of the tyre **[1, 2006.01]**
15/10 • • with radially-adjustable spade lugs; Control mechanisms therefor **[1, 2006.01]**
15/12 • • • involving cams or eccentric hoops **[1, 2006.01]**
15/14 • • • involving an axially-displaceable cone **[1, 2006.01]**
15/16 • • • involving gearing, e.g. gear pinions acting upon threaded shafts on the spade lugs **[1, 2006.01]**
15/18 • Wheels with ground-engaging plate-like shoes **[1, 2006.01]**
15/20 • • with resiliently-mounted shoes, e.g. on a spider **[1, 2006.01]**
15/22 • • connected by links to the hub **[1, 2006.01]**
15/24 • Tread bands or rings for fairing lugs when travelling on the road **[1, 2006.01]**
15/26 • Auxiliary wheels or rings with traction-increasing surface attachable to the main wheel body **[1, 2006.01]**
15/28 • Wheel-ballasting weights; Their attachment **[1, 2006.01]**

17/00 Wheels characterised by rail-engaging elements (of model railways A63H 19/22) **[1, 2, 2006.01]**
17/02 • with elastic tyres **[1, 2006.01]**

19/00 Wheels not otherwise provided for or having characteristics specified in one of the subgroups of this group [1, 2006.01]
19/02 • convertible, e.g. from road wheel to rail wheel; Wheels specially designed for alternative use on road and rail **[1, 2006.01]**

19/04 • expansible **[1, 2006.01]**
19/06 • with compartments for fluid, packing, or loading material; Buoyant wheels **[1, 2006.01]**
19/08 • with lubricating passages, channels, or reservoirs **[1, 2006.01]**
19/10 • with cooling fins **[1, 2006.01]**
19/12 • Roller-type wheels (B60B 19/06 takes precedence) **[1, 2006.01]**
19/14 • Ball-type wheels (B60B 19/06 takes precedence) **[1, 2006.01]**

Rims; Hubs

21/00 **Rims** (non-metallic B60B 5/00; of high resiliency B60B 9/00; capable of carrying more than one tyre B60B 11/04; multiple rims on single wheel body B60B 11/06; of multi-part type B60B 25/00; metal tyres B60C) **[1, 2006.01]**
21/02 • characterised by transverse section **[1, 2006.01]**
21/04 • • with substantially-radial flanges (with rail-engaging flanges B60B 17/00) **[1, 2006.01]**
21/06 • characterised by means for attaching spokes **[1, 2006.01]**
21/08 • characterised by having braking surfaces **[1, 2006.01]**
21/10 • characterised by the form of tyre-seat or flange, e.g. corrugated (B60B 21/02 takes precedence) **[1, 2006.01]**
21/12 • Accessories, e.g. lining bands **[1, 2006.01]**

23/00 **Attaching rim to wheel body** (attaching spokes to rim B60B 1/04, B60B 1/14; attaching rims resiliently to wheel body B60B 9/00) **[1, 2006.01]**

Note(s)

Group B60B 23/12 takes precedence over groups B60B 23/02-B60B 23/06.

23/02 • by split or other expansible ring devices **[1, 2006.01]**
23/04 • by bayonet-joint, screw-thread, or like attachments **[1, 2006.01]**
23/06 • by screws, bolts, pins, or clips **[1, 2006.01]**
23/08 • • arranged radially **[1, 2006.01]**
23/10 • • arranged axially **[1, 2006.01]**
23/12 • by devices arranged to permit variation of axial position of rim relative to wheel body for track-width adjustment **[1, 2006.01]**

25/00 **Rims built-up of several main parts** (tools for assembling divided rims B60B 31/04) **[1, 2006.01]**
25/02 • Segmented rims, e.g. with segments arranged in sections; Connecting equipment, e.g. hinges; Insertable flange rings therefor **[1, 2006.01]**
25/04 • Rims with dismountable flange rings, seat rings, or lock rings **[1, 2006.01]**
25/06 • • Split flange rings, e.g. transversely split; Connecting equipment for overlapping the slot **[1, 2006.01]**
25/08 • • Continuous flange rings; Arrangement of recesses enabling the flange ring to be slipped over the rim body **[1, 2006.01]**
25/10 • • Seat rings for the tyre bead part, e.g. split **[1, 2006.01]**
25/12 • • • with integral flange part **[1, 2006.01]**
25/14 • • Locking means for flange rings or seat rings **[1, 2006.01]**
25/16 • • • Arrangement of bayonet catches **[1, 2006.01]**
25/18 • • • Arrangement of split rings **[1, 2006.01]**
25/20 • • • Arrangement of screw, bolts, or shouldered pins **[1, 2006.01]**
25/22 • Other accessories, e.g. for sealing the component parts enabling the use of tubeless tyres **[1, 2006.01]**

27/00 **Hubs** (non-metallic B60B 5/00; of high resiliency B60B 9/00) **[1, 2006.01]**
27/02 • adapted to be rotatably arranged on axle **[1, 2006.01]**
27/04 • • housing driving means, e.g. sprockets **[1, 2006.01]**
27/06 • adapted to be fixed on axle **[1, 2006.01]**

Apparatus or tools for mounting, holding or assembling wheels

29/00 **Apparatus or tools for mounting or dismounting wheels** (characterised by the means for holding the wheels B60B 30/00) **[1, 5, 2006.01]**

30/00 **Means for holding wheels or parts thereof** (spare wheel stowing, holding or mounting arrangements on vehicles B62D 43/00) **[5, 2006.01]**
30/02 • engaging the tyre, e.g. the tyre being mounted on the wheel rim **[5, 2006.01]**
30/04 • • the tyre not being mounted on a rim, i.e. holders or supports for tyres alone **[5, 2006.01]**
30/06 • engaging the wheel body, e.g. the rim **[5, 2006.01]**
30/08 • • the central part of the wheel body **[5, 2006.01]**
30/10 • characterised by being provided on a dolly **[5, 2006.01]**

31/00 **Apparatus or tools for assembling or disassembling wheels [1, 2006.01]**
31/02 • for tightening or straightening wire spokes in situ; for extracting spokes from wheels **[1, 2006.01]**
31/04 • for assembling divided rims **[1, 2006.01]**
31/06 • for removing or attaching cover discs, hub caps, or the like **[1, 2, 2006.01]**

33/00 **Castors in general** (castors for large containers B65D 90/18) **[1, 2006.01]**
33/02 • with disengageable swivel action **[1, 2006.01]**
33/04 • adjustable **[1, 2006.01]**
33/06 • • mounted retractably **[1, 2006.01]**
33/08 • Ball castors **[1, 2006.01]**

35/00 **Axle units; Parts thereof** (resilient suspension of a rigid axle or axle housing B60G 9/00; steerable vehicle stub-axles B62D) **[1, 2006.01]**
35/02 • Dead axles, i.e. not transmitting torque (axle housings for torque transmitting elements B60B 35/16) **[1, 2006.01]**
35/04 • • straight **[1, 2006.01]**
35/06 • • cranked **[1, 2006.01]**
35/08 • • of closed hollow section **[1, 2006.01]**
35/10 • • adjustable for varying track **[1, 2006.01]**
35/12 • Torque-transmitting axles **[1, 2006.01]**
35/14 • • composite or split, e.g. half-axles; Couplings between axle parts or sections (B60G 3/24 takes precedence) **[1, 2006.01]**
35/16 • • characterised by the axle housings for the torque transmitting elements, e.g. for shafts **[1, 2006.01]**
35/18 • • characterised by the arrangement of the bearings for the torque transmitting elements in the axle housings **[1, 2006.01]**

37/00 **Wheel-axle combinations, e.g. wheel sets** (units comprising multiple wheels arranged side by side B60B 11/00; rail-vehicle axle-boxes B61F) **[1, 2006.01]**

37/02 • the wheels being integral with solid axles **[1, 2006.01]**

37/04 • the wheels being rigidly attached to solid axles **[1, 2006.01]**

37/06 • the wheels being integral with, or rigidly attached to, hollow axles **[1, 2006.01]**

37/08 • • the hollow axles being rotatable around fixed axles **[1, 2006.01]**

37/10 • the wheels being individually rotatable around the axles **[1, 2006.01]**

37/12 • Axles with a fixed wheel and a loose wheel **[1, 2006.01]**

39/00 **Increasing wheel adhesion** (wheels or wheel attachments designed for increasing traction B60B 15/00; vehicle tyres B60C; non-skid devices temporarily attachable to resilient tyres or resiliently-tyred wheels B60C 27/00; road surface conditioning to prevent slipperiness E01C) **[1, 2006.01]**

39/02 • Vehicle fittings for scattering or dispensing material in front of its wheels **[1, 2006.01]**

39/04 • • the material being granular, e.g. sand (combined control of sanding apparatus and brakes of rail vehicles B61H) **[1, 2006.01]**

39/06 • • • the dispensing being effected by mechanical means **[1, 2006.01]**

39/08 • • • the dispensing being effected by fluid means **[1, 2006.01]**

39/10 • • • the dispensing being controlled electrically or electromagnetically **[1, 2006.01]**

39/12 • • the material being sheet-like or web-like **[1, 2006.01]**

B60C VEHICLE TYRES; TYRE INFLATION; TYRE CHANGING; CONNECTING VALVES TO INFLATABLE ELASTIC BODIES IN GENERAL; DEVICES OR ARRANGEMENTS RELATED TO TYRES [5]

Note(s)

1. In this subclass, the following term is used with the meaning indicated:
   - "tyre" means a separate ground-engaging, continuous element outside the periphery of the wheel rim and includes the tyre casing, cover, or jacket and any insert, e.g. inner tube. In group B60C 29/00, relating to connection of valves, the term "tyre" also includes inflatable elastic bodies other than tyres or inner tubes.
2. Attention is drawn to the Note following the title of class B60.

Subclass index

1/00 **Tyres characterised by the chemical composition or the physical arrangement or mixture of the composition [1, 4, 2006.01]**

Note(s) [4]

Tyres characterised by the compositions only, i.e. having no significant tyre structure, are classified only with the compositions, e.g. in C08K, C08L.

3/00 **Tyres characterised by transverse section [1, 4, 2006.01]**

3/02 • Closed, e.g. toroidal, tyres **[4, 2006.01]**

3/04 • characterised by the relative dimensions of the section, e.g. low profile (B60C 3/06 takes precedence) **[4, 2006.01]**

3/06 • asymmetric **[4, 2006.01]**

3/08 • collapsible into storage or non-use condition, e.g. space-saving spare tyres **[4, 2006.01]**

5/00 **Inflatable pneumatic tyres or inner tubes** (B60C 1/00, B60C 9/00-B60C 17/00 take precedence) **[1, 4, 2006.01]**

5/01 • without substantial cord reinforcement, e.g. cordless tyres, cast tyres **[4, 2006.01]**

5/02 • having separate inflatable inserts, e.g. with inner tubes; Means for lubricating, venting, preventing relative movement between tyre and inner tube (B60C 5/20 takes precedence) **[1, 4, 2006.01]**

5/04 • • Shape or construction of inflatable inserts (B60C 5/10 takes precedence) **[1, 4, 2006.01]**

5/08 • • • having reinforcing means **[1, 2006.01]**

5/10 • formed as a single discontinuous ring with contiguous ends which may be connected together **[1, 4, 2006.01]**

5/12 • without separate inflatable inserts, e.g. tubeless tyres with transverse section open to the rim (B60C 5/20 takes precedence) **[1, 4, 2006.01]**

5/14 • • with impervious liner or coating on the inner wall of the tyre **[1, 4, 2006.01]**

5/16 • • Sealing means between beads and rims, e.g. bands **[1, 2006.01]**

5/18 • Sectional casings, e.g. comprising replaceable arcuate parts **[1, 2006.01]**

5/20 • having multiple separate inflatable chambers **[4, 2006.01]**
5/22 • • the chambers being annular **[4, 2006.01]**
5/24 • • the walls of the chambers extending transversely of the tyre **[4, 2006.01]**

7/00 Non-inflatable or solid tyres (B60C 1/00 takes precedence) **[1, 2, 2006.01]**
7/02 • made from ropes or bristles **[1, 2006.01]**
7/04 • made of wood or leather **[1, 2006.01]**
7/06 • made of metal **[1, 2006.01]**
7/08 • built-up from a plurality of arcuate parts **[1, 2006.01]**
7/10 • characterised by means for increasing resiliency **[1, 2006.01]**
7/12 • • using enclosed chambers, e.g. gas-filled **[1, 4, 2006.01]**
7/14 • • using springs **[1, 2006.01]**
7/16 • • • of helical or flat coil form **[1, 2006.01]**
7/18 • • • • disposed radially relative to wheel axis **[1, 2006.01]**
7/20 • • • • disposed circumferentially relative to wheel axis **[1, 2006.01]**
7/22 • having inlays other than for increasing resiliency, e.g. for armouring **[1, 2006.01]**
7/24 • characterised by means for securing tyres on rim or wheel body **[1, 2006.01]**
7/26 • • using bolts **[1, 2006.01]**
7/28 • • using straps or the like, e.g. vulcanised into the tyre **[1, 2006.01]**

9/00 Reinforcements or ply arrangement of pneumatic tyres (inserts having reinforcing means B60C 5/08; bead structure, e.g. turnup or overlap construction, B60C 15/00) **[1, 4, 2006.01]**

Note(s) [4]

When classifying in this group, classification is also made in subclass B32B insofar as any layered product is concerned.

9/02 • Carcasses **[1, 2006.01]**
9/04 • • the reinforcing cords of each carcass ply arranged in a substantially parallel relationship **[1, 2006.01]**
9/06 • • • the cords extend diagonally from bead to bead and run in opposite directions in each successive carcass ply, i.e. bias angle ply (B60C 9/07, B60C 9/09 take precedence) **[1, 4, 2006.01]**
9/07 • • • the cords curve from bead to bead in plural planes, e.g. S-shaped cords **[4, 2006.01]**
9/08 • • • the cords extend transversely from bead to bead, i.e. radial ply (B60C 9/07 takes precedence) **[1, 4, 2006.01]**
9/09 • • • • combined with other carcass plies having cords extending diagonally from bead to bead, i.e. combined radial ply and bias angle ply **[4, 2006.01]**
9/10 • • the reinforcing cords within each carcass ply arranged in a crossing relationship **[1, 2006.01]**
9/11 • • • Woven, braided, or knitted plies **[4, 2006.01]**
9/12 • • built-up with rubberised layers of discrete fibres or filaments **[1, 2006.01]**
9/13 • • • with two or more differing cord materials **[4, 2006.01]**
9/14 • • built-up with sheets, webs, or films of homogeneous material, e.g. synthetics, sheet metal, rubber **[1, 2006.01]**
9/16 • • built-up with metallic reinforcing inlays **[1, 2006.01]**
9/17 • • asymmetric to the midcircumferential plane of the tyre **[4, 2006.01]**
9/18 • Structure or arrangement of belts or breakers, crown-reinforcing or cushioning layers **[1, 2006.01]**
9/20 • • built-up from rubberised plies each having all cords arranged substantially parallel **[1, 2006.01]**
9/22 • • • the plies being arranged with all cords disposed along the circumference of the tyre **[1, 2006.01]**
9/24 • • built-up of arcuate parts **[1, 2006.01]**
9/26 • • Folded plies **[4, 2006.01]**
9/28 • • characterised by the belt or breaker dimensions or curvature relative to carcass (B60C 9/30 takes precedence) **[4, 2006.01]**
9/30 • • asymmetric to the midcircumferential plane of the tyre **[4, 2006.01]**

11/00 Tyre tread bands; Tread patterns; Anti-skid inserts [1, 2006.01]
11/01 • Shape of the shoulders between tread and sidewall, e.g. rounded, stepped or cantilevered **[4, 2006.01]**
11/02 • Replaceable treads **[1, 2006.01]**
11/03 • Tread patterns **[4, 2006.01]**
11/04 • • in which the raised area of the pattern consists only of continuous circumferential ribs, e.g. zig-zag (B60C 11/12, B60C 11/13 take precedence) **[1, 4, 6, 2006.01]**
11/11 • • in which the raised area of the pattern consists only of isolated elements, e.g. blocks (B60C 11/12, B60C 11/13 take precedence) **[4, 2006.01]**
11/113 • • in which the raised area of the pattern consists only of projections extending continuously across the tread from one edge to the other **[6, 2006.01]**
11/117 • • formed only by isolated recesses, e.g. grooves, slots or holes (B60C 11/12, B60C 11/13 take precedence) **[6, 2006.01]**
11/12 • • characterised by the use of narrow slits or incisions, e.g. sipes **[1, 4, 2006.01]**
11/13 • • characterised by the groove cross-section, e.g. for buttressing or preventing stone-trapping **[6, 2006.01]**
11/14 • Anti-skid inserts, e.g. vulcanised into the tread band **[1, 2006.01]**
11/16 • • of plug form, e.g. made from metal, textile **[1, 2006.01]**
11/18 • • or strip form, e.g. metallic combs, rubber strips of different wear resistence (B60C 11/20 takes precedence) **[1, 2006.01]**
11/20 • • in coiled form **[1, 2006.01]**
11/22 • Tread rings between dual tyres **[4, 2006.01]**
11/24 • Wear-indicating arrangements **[4, 2006.01]**

13/00 Tyre sidewalls; Protecting, decorating, marking, or the like, thereof (B60C 17/08 takes precedence; tyre shoulders B60C 11/01; removable tyre sidewall trim rings B60B 7/01) **[1, 4, 5, 2006.01]**
13/02 • Arrangement of grooves or ribs **[4, 2006.01]**
13/04 • having annular inlays or covers, e.g. white sidewalls **[4, 2006.01]**

15/00 Tyre beads, e.g. ply turn-up or overlap [1, 2006.01]
15/02 • Seating or securing beads on rims (sealing means between beads and rims of tubeless tyres B60C 5/16; means for securing solid tyres on rims B60C 7/24) **[1, 4, 2006.01]**

15/024 • • Bead contour, e.g. lips, grooves, or ribs **[4, 2006.01]**
15/028 • • Spacers between beads (emergency load-supporting means B60C 17/00) **[4, 2006.01]**
15/032 • • • inflatable **[4, 2006.01]**
15/036 • • Tyres permanently fixed to the rim, e.g. by adhesive, by vulcanisation **[4, 2006.01]**
15/04 • Bead cores **[1, 4, 2006.01]**
15/05 • • multiple, i.e. with two or more cores in each bead **[4, 2006.01]**
15/06 • Flipper strips, fillers, or chafing strips **[1, 2006.01]**

17/00 Tyres characterised by means enabling restricted operation in damaged or deflated condition; Accessories therefor [1, 2006.01]
17/01 • utilising additional inflatable supports which become load-supporting in emergency **[4, 2006.01]**
17/02 • • inflated or expanded in emergency only **[1, 4, 2006.01]**
17/04 • utilising additional non-inflatable supports which become load-supporting in emergency **[1, 2006.01]**
17/06 • • resilient **[4, 2006.01]**
17/08 • Means facilitating folding of sidewalls, e.g. run-flat sidewalls **[4, 2006.01]**
17/10 • Internal lubrication **[4, 2006.01]**

19/00 Tyre parts or constructions not otherwise provided for [1, 2006.01]
19/04 • Tyre with openings closeable by means other than the rim; Closing means therefor **[1, 2006.01]**
19/08 • Electric-charge-dissipating arrangements **[1, 2006.01]**
19/12 • Puncture preventing arrangements **[1, 4, 2006.01]**

23/00 Devices for measuring, signalling, controlling, or distributing tyre pressure or temperature, specially adapted for mounting on vehicles; Arrangement of tyre inflating devices on vehicles, e.g. of pumps or of tanks; Tyre cooling arrangements [1, 3, 2006.01]
23/02 • Signalling devices actuated by tyre pressure **[1, 2006.01]**
23/04 • • mounted on the wheel or tyre **[1, 2006.01]**
23/06 • Signalling devices actuated by deformation of the tyre **[1, 2006.01]**
23/08 • • by touching the ground **[1, 2006.01]**
23/10 • Arrangement of tyre-inflating pumps mounted on vehicles **[1, 2006.01]**
23/12 • • operated by a running wheel **[1, 2006.01]**
23/14 • • operated by the prime mover of the vehicle **[1, 2006.01]**
23/16 • Arrangement of air tanks mounted on vehicles **[1, 2006.01]**
23/18 • Tyre cooling arrangements **[3, 4, 2006.01]**
23/19 • • for dissipating heat **[4, 2006.01]**
23/20 • Devices for measuring or signalling tyre temperature **[3, 2006.01]**

25/00 Apparatus or tools adapted for mounting, removing or inspecting tyres (testing of tyres G01M 17/02) **[1, 5, 2006.01]**
25/01 • for removing tyres from, or mounting tyres on, wheels **[5, 2006.01]**
25/02 • • Tyre levers or the like, e.g. hand-held **[1, 5, 2006.01]**
25/04 • • • pivotal about the wheel axis, or movable along the rim edge, e.g. rollable **[1, 5, 2006.01]**
25/05 • • Machines **[5, 2006.01]**
25/12 • • • for only seating the beads **[1, 5, 2006.01]**
25/122 • • • • acting on the tyre tread **[5, 2006.01]**
25/125 • • • for only breaking the beads **[5, 2006.01]**
25/128 • • • • acting axially on the whole circumference of the bead or side wall **[5, 2006.01]**
25/13 • • • • acting axially at localised regions of the bead or side wall **[5, 2006.01]**
25/132 • • • for removing and mounting tyres (for only seating the beads B60C 25/12; for only breaking the beads B60C 25/125) **[5, 2006.01]**
25/135 • • • • having a tyre support or a tool, movable along wheel axis **[5, 2006.01]**
25/138 • • • • • with rotary motion of tool or tyre support **[5, 2006.01]**
25/14 • Apparatus or tools for spreading tyre beads (B60C 25/12 takes precedence) **[1, 5, 2006.01]**
25/15 • • with means for inverting the tyre **[5, 2006.01]**
25/18 • Tools for mounting or demounting air valves **[1, 2006.01]**
25/20 • Tools for attaching metallic tyres, e.g. iron tyres upon wooden rims **[1, 2006.01]**

27/00 Non-skid devices temporarily attachable to resilient tyres or resiliently-tyred wheels [1, 2006.01]
27/02 • extending over restricted arcuate part of tread (B60C 27/20 takes precedence) **[1, 2006.01]**
27/04 • • the ground-engaging part being rigid **[1, 2006.01]**
27/06 • extending over the complete circumference of tread, e.g. made of chains (B60C 27/20 takes precedence) **[1, 2006.01]**
27/08 • • involving lugs or rings taking up wear **[1, 2006.01]**
27/10 • • having tensioning means **[1, 2006.01]**
27/12 • • • resilient **[1, 2006.01]**
27/14 • • automatically attachable **[1, 2006.01]**
27/16 • • formed of close material, e.g. leather **[1, 2006.01]**
27/18 • • • the material being fabric, e.g. woven wire **[1, 2006.01]**
27/20 • having ground-engaging plate-like elements **[1, 2006.01]**
27/22 • for tandem tyres **[1, 2006.01]**

29/00 Arrangements of tyre-inflating valves to tyres or rims; Accessories for tyre-inflating valves, not otherwise provided for (tools for mounting or demounting valves B60C 25/18) **[1, 4, 5, 2006.01]**
29/02 • Connection to rims **[4, 2006.01]**
29/04 • Connection to tyres **[4, 2006.01]**
29/06 • Accessories for tyre-inflating valves, e.g. housings, guards, covers for valve caps, locks, not otherwise provided for **[5, 2006.01]**

99/00 Subject matter not provided for in other groups of this subclass [2006.01]

B60D VEHICLE CONNECTIONS (components of brake systems B60T 17/04)

Note(s)

Attention is drawn to the Note following the title of class B60.

1/00 Traction couplings; Hitches; Draw-gear; Towing devices (devices specially adapted for connection between tractors and agricultural machines or implements A01B 59/00; fifth-wheel couplings B62D) **[1, 2, 2006.01]**

1/01 • Traction couplings or hitches characterised by their type **[5, 2006.01]**

1/02 • • Bolt or shackle-type couplings **[1, 5, 2006.01]**

1/04 • • Hook or hook-and-hasp couplings **[1, 5, 2006.01]**

1/06 • • Ball-and-socket hitches **[1, 5, 2006.01]**

1/07 • • Multi-hitch devices, i.e. comprising several hitches of the same or of a different type; Hitch-adaptors, i.e. for converting hitches from one type to another **[5, 2006.01]**

1/14 • Draw-gear or towing devices characterised by their type **[1, 4, 2006.01]**

1/145 • • consisting of an elongated single bar or tube **[5, 2006.01]**

1/155 • • • comprising telescopic or foldable parts **[5, 2006.01]**

1/167 • • consisting of articulated or rigidly assembled bars or tubes forming a V-, Y- or U-shaped draw gear (B60D 1/173 takes precedence) **[5, 2006.01]**

1/173 • • consisting of at least two bars which are not connected or articulated to each other **[5, 2006.01]**

1/18 • • Tow ropes, chains, or the like **[1, 2006.01]**

1/24 • characterised by arrangements for particular functions **[5, 2006.01]**

1/26 • • for remote control, e.g. for releasing **[5, 2006.01]**

1/28 • • for preventing unwanted disengagement, e.g. safety appliances **[5, 2006.01]**

1/30 • • for sway control **[5, 2006.01]**

1/32 • • • involving damping devices **[5, 2006.01]**

1/34 • • • involving springs **[5, 2006.01]**

1/36 • • for facilitating connection, e.g. hitch catchers **[5, 2006.01]**

1/38 • • • involving auxiliary cables for drawing the trailer to the tractor before coupling **[5, 2006.01]**

1/40 • • • involving a temporarily extensible or alignable member (B60D 1/38 takes precedence) **[5, 2006.01]**

1/42 • • for being adjustable **[5, 2006.01]**

1/44 • • • horizontally **[5, 2006.01]**

1/46 • • • vertically **[5, 2006.01]**

1/48 • characterised by the mounting **[5, 2006.01]**

1/50 • • resiliently mounted (B60D 1/30 takes precedence) **[5, 2006.01]**

1/52 • • removably mounted (B60D 1/56 takes precedence) **[5, 2006.01]**

1/54 • • collapsible or retractable when not in use, e.g. hide-away hitches (B60D 1/52 takes precedence) **[5, 2006.01]**

1/56 • • securing to the vehicle bumper **[5, 2006.01]**

1/58 • Auxiliary devices **[5, 2006.01]**

1/60 • • Covers, caps or guards **[5, 2006.01]**

1/62 • • involving supply lines, electric circuits, or the like **[5, 2006.01]**

1/64 • • • Couplings or joints therefor **[5, 2006.01]**

1/66 • • Props **[5, 2006.01]**

3/00 Fittings to facilitate pushing (B60D 1/00 takes precedence; vehicle bumpers B60R 19/02; steering arrangements for backing a normally-drawn trailer B62D 13/06) **[1, 2006.01]**

5/00 Gangways for coupled vehicles, e.g. of concertina type [1, 2006.01]

99/00 Subject matter not provided for in other groups of this subclass [2009.01]

B60F VEHICLES FOR USE BOTH ON RAIL AND ON ROAD; VEHICLES CAPABLE OF TRAVELLING IN OR ON DIFFERENT MEDIA, e.g. AMPHIBIOUS VEHICLES (air-cushion vehicles B60V)

1/00 Vehicles for use both on rail and on road; Conversions therefor [1, 2006.01]

1/02 • with rail and road wheels on the same axle **[1, 2006.01]**

1/04 • with rail and road wheels on different axles **[1, 2006.01]**

3/00 Amphibious vehicles, i.e. vehicles capable of travelling both on land and on water; Land vehicles capable of travelling under water (buoyant wheels B60B) **[1, 2006.01]**

5/00 Other vehicles capable of travelling in or on different media (vehicles having alternatively-usable runners and wheels B62B 13/18; flying-boats or seaplanes B64C 35/00) **[1, 2006.01]**

5/02 • convertible into aircraft **[1, 2006.01]**

B60G **VEHICLE SUSPENSION ARRANGEMENTS** (air-cushion vehicles B60V; connections between vehicle bodies and vehicle frames B62D 24/00) **[5]**

Note(s)

Attention is drawn to the Note following the title of class B60.

Subclass index

1/00 **Suspensions with rigid connection between axle and frame [1, 2006.01]**

1/02 • with continuous axle **[1, 2006.01]**

1/04 • with divided axle **[1, 2006.01]**

3/00 **Resilient suspensions for a single wheel** (pivoted suspension arms per se, attachment thereof to sprung part of the vehicle, buffer means for limiting movement of arms B60G 7/00; characterised by arrangement, location, or type of springs B60G 11/00) **[1, 2006.01]**

3/01 • the wheel being mounted for sliding movement, e.g. in or on a vertical guide (camber maintaining means B60G 3/26) **[5, 2006.01]**

3/02 • with a single pivoted arm **[1, 2006.01]**

3/04 • • the arm being essentially transverse to the longitudinal axis of the vehicle **[1, 2006.01]**

3/06 • • • the arm being rigid **[1, 2006.01]**

3/08 • • • • the arm forming the axle housing **[1, 2006.01]**

3/10 • • • the arm itself being resilient, e.g. leaf spring **[1, 2006.01]**

3/12 • • the arm being essentially parallel to the longitudinal axis of the vehicle **[1, 2006.01]**

3/14 • • • the arm being rigid **[1, 2006.01]**

3/16 • • • the arm itself being resilient, e.g. leaf spring **[1, 2006.01]**

3/18 • with two or more pivoted arms, e.g. parallelogram **[1, 2006.01]**

3/20 • • all arms being rigid **[1, 2006.01]**

3/22 • • • a rigid arm forming the axle housing **[1, 2006.01]**

3/24 • • • a rigid arm being formed by the live axle **[1, 2006.01]**

3/26 • • • Means for maintaining substantially-constant wheel camber during suspension movement **[1, 2006.01]**

3/28 • • at least one of the arms itself being resilient, e.g. leaf spring **[1, 2006.01]**

5/00 **Resilient suspensions for a set of tandem wheels or axles having interrelated movements [1, 2006.01]**

5/01 • the set being characterised by having more than two successive axles **[5, 2006.01]**

5/02 • mounted on a single pivoted arm **[1, 2006.01]**

5/03 • • the arm itself being resilient, e.g. a leafspring (B60G 5/053 takes precedence) **[5, 2006.01]**

5/04 • with two or more pivoted arms, the movements of which are resiliently interrelated **[1, 2006.01]**

5/047 • • at least one arm being resilient, e.g. a leafspring (B60G 5/053 takes precedence) **[5, 2006.01]**

5/053 • • a leafspring being used as equilibration unit between two axle-supporting units **[5, 2006.01]**

5/06 • • the arms turning on a common pivot **[1, 2006.01]**

7/00 **Pivoted suspension arms; Accessories thereof** (means for maintaining substantially-constant wheel camber during suspension movement B60G 3/26) **[1, 2006.01]**

7/02 • Attaching arms to sprung part of vehicle **[1, 2006.01]**

7/04 • Buffer means for limiting movement of arms **[1, 2006.01]**

9/00 **Resilient suspensions for a rigid axle or axle housing for two or more wheels [1, 2006.01]**

9/02 • the axle or housing being pivotally mounted on the vehicle **[1, 2006.01]**

9/04 • the axle or housing not being pivotally mounted on the vehicle **[1, 2006.01]**

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) **[1, 2006.01]**

Note(s)

In this group, the following terms or expressions are used with the meanings indicated:

- "torsion bar" includes torsion tube or the like;
- "rubber" includes synthetic substitutes of a similar nature.

11/02 • having leaf springs only **[1, 2006.01]**

11/04 • • arranged substantially parallel to the longitudinal axis of the vehicle **[1, 2006.01]**

11/06 • • arranged obliquely to the longitudinal axis of the vehicle **[1, 2006.01]**

11/08 • • arranged substantially transverse to the longitudinal axis of the vehicle **[1, 2006.01]**
11/10 • • characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle **[1, 2006.01]**
11/107 • • • Sliding or rolling mountings **[5, 2006.01]**
11/113 • • • Mountings on the axle (B60G 11/107 takes precedence) **[5, 2006.01]**
11/12 • • • Links, pins, or bushes **[1, 2006.01]**
11/14 • having helical, spiral, or coil springs only **[1, 2006.01]**
11/15 • • Coil springs resisting deflection by winding up **[5, 2006.01]**
11/16 • • characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle **[1, 2006.01]**
11/18 • having torsion-bar springs only **[1, 2006.01]**
11/20 • • characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle **[1, 2006.01]**
11/22 • having rubber springs only **[1, 2006.01]**
11/23 • • of the torsional-energy-absorption type **[5, 2006.01]**
11/24 • • characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle **[1, 2006.01]**
11/26 • having fluid springs only, e.g. hydropneumatic springs (B60G 15/12 takes precedence) **[1, 2006.01]**
11/27 • • wherein the fluid is a gas **[5, 2006.01]**
11/28 • • characterised by means specially adapted for attaching the spring to axle or sprung part of the vehicle **[1, 2006.01]**
11/30 • • having pressure fluid accumulator therefor, e.g. accumulator arranged in vehicle frame **[1, 2006.01]**
11/32 • having springs of different kinds **[1, 2006.01]**
11/34 • • including leaf springs **[1, 2006.01]**
11/36 • • • and also helical, spiral, or coil springs **[1, 2006.01]**
11/38 • • • and also rubber springs **[1, 2006.01]**
11/40 • • • • the rubber springs being attached to the axle **[1, 2006.01]**
11/42 • • • • the rubber springs being attached to sprung part of the vehicle **[1, 2006.01]**
11/44 • • • and also torsion-bar springs **[1, 2006.01]**
11/46 • • • and also fluid springs **[1, 2006.01]**
11/48 • • not including leaf springs **[1, 2006.01]**
11/50 • • • having helical, spiral, or coil springs, and also torsion-bar springs **[1, 2006.01]**
11/52 • • • having helical, spiral, or coil springs, and also rubber springs **[1, 2006.01]**
11/54 • • • • with rubber springs arranged within helical, spiral or coil springs **[1, 2006.01]**
11/56 • • • having helical, spiral or coil springs, and also fluid springs **[1, 2006.01]**
11/58 • • • • arranged coaxially **[1, 2006.01]**
11/60 • • • having both rubber springs and torsion-bar springs **[1, 2006.01]**
11/62 • • • having both rubber springs and fluid springs **[1, 2006.01]**
11/64 • • • having both torsion-bar springs and fluid springs **[1, 2006.01]**

13/00 Resilient suspensions characterised by arrangement, location, or type of vibration-dampers (adjusting damping effect B60G 17/06; vibration-dampers per se F16F) **[1, 2006.01]**

13/02 • having dampers dissipating energy, e.g. frictionally **[1, 2006.01]**
13/04 • • mechanically, e.g. having frictionally-engaging springs as damping elements **[1, 2006.01]**
13/06 • • of fluid type **[1, 2006.01]**
13/08 • • • hydraulic **[1, 2006.01]**
13/10 • • • pneumatic **[1, 2006.01]**
13/12 • • • quasi-fluid, i.e. having powdered medium **[1, 2006.01]**
13/14 • having dampers accumulating utilisable energy, e.g. compressing air **[1, 2006.01]**
13/16 • having dynamic absorbers as main damping means, i.e. spring-mass system vibrating out of phase **[1, 2006.01]**
13/18 • • combined with energy-absorbing means **[1, 2006.01]**

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) **[1, 5, 2006.01]**

15/02 • having mechanical spring **[1, 2006.01]**
15/04 • • and mechanical damper **[1, 2006.01]**
15/06 • • and fluid damper **[1, 2006.01]**
15/07 • • • the damper being connected to the stub axle and the spring being arranged around the damper **[5, 2006.01]**
15/08 • having fluid spring **[1, 2006.01]**
15/10 • • and mechanical damper **[1, 2006.01]**
15/12 • • and fluid damper **[1, 2006.01]**
15/14 • • • the damper being connected to the stub axle and the spring being arranged around the damper **[5, 2006.01]**

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 [1, 5, 2006.01]

17/005 • Suspension locking arrangements **[5, 2006.01]**
17/015 • the regulating means comprising electric or electronic elements (B60G 17/005 takes precedence) **[5, 2006.01]**
17/016 • • characterised by their responsiveness, when the vehicle is travelling, to specific motion, a specific condition, or driver input **[2006.01]**
17/0165 • • • to an external condition, e.g. rough road surface, side wind **[2006.01]**
17/017 • • characterised by their use when the vehicle is stationary, e.g. during loading, engine start-up or switch-off **[2006.01]**
17/018 • • characterised by the use of a specific signal treatment or control method **[2006.01]**
17/0185 • • • for failure detection **[2006.01]**
17/019 • • characterised by the type of sensor or the arrangement thereof **[2006.01]**
17/0195 • • characterised by the regulation being combined with other vehicle control systems **[2006.01]**
17/02 • Spring characteristics (B60G 17/005-B60G 17/015 take precedence) **[1, 5, 2006.01]**
17/027 • • Mechanical springs regulated by fluid means (B60G 17/033 takes precedence) **[5, 2006.01]**
17/033 • • characterised by regulating means acting on more than one spring **[5, 2006.01]**
17/04 • • Fluid-spring characteristics **[1, 2006.01]**

17/044 • • • Self-pumping fluid springs (pumps for liquids F04) **[5, 2006.01]**

17/048 • • • with the regulating means inside the fluid springs (B60G 17/044 takes precedence) **[5, 2006.01]**

17/052 • • • Pneumatic spring characteristics (B60G 17/048 takes precedence) **[5, 2006.01]**

17/056 • • • Regulating distributors or valves (B60G 17/044-B60G 17/048 take precedence) **[5, 2006.01]**

17/06 • Characteristics of dampers (B60G 17/015 takes precedence) **[1, 5, 2006.01]**

17/08 • • Characteristics of fluid dampers (adjusting fluid dampers in general F16F 9/44-F16F 9/53) **[1, 2006.01]**

21/00 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; steering deflectable wheels combined with means for inwardly inclining the vehicle body on bends B62D 9/02) **[1, 5, 2006.01]**

21/02 • permanently interconnected **[1, 2006.01]**

21/04 • • mechanically **[1, 2006.01]**

21/045 • • • between wheels on different axles on the same side of the vehicle, i.e. the left or the right side **[5, 2006.01]**

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 **[5, 2006.01]**

21/055 • • • • Stabiliser bars **[5, 2006.01]**

21/06 • • fluid **[1, 2006.01]**

21/067 • • • between wheels on different axles on the same side of the vehicle, i.e. the left or the right side **[5, 2006.01]**

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 **[5, 2006.01]**

21/08 • characterised by use of gyroscopes (gyroscopes for stabilising vehicle bodies without controlling suspension arrangements B62D 37/06) **[1, 4, 5, 2006.01]**

21/10 • not permanently interconnected, e.g. operative only on acceleration, only on deceleration, or only at off-straight position of steering **[1, 2006.01]**

23/00 Wheel suspensions with automatic means for sensing unevenness ahead of wheels or for moving wheels up or down in accordance therewith [1, 2006.01]

99/00 Subject matter not provided for in other groups of this subclass [2010.01]

B60H ARRANGEMENTS OF HEATING, COOLING, VENTILATING OR OTHER AIR-TREATING DEVICES SPECIALLY ADAPTED FOR PASSENGER OR GOODS SPACES OF VEHICLES

Note(s)

Attention is drawn to the Note following the title of class B60.

1/00 Heating, cooling or ventilating devices (heating, cooling or ventilating devices providing other air treatment, the other treatment being relevant, B60H 3/00; ventilating solely by opening windows, doors, roof parts, or the like B60J; heating or ventilating devices for vehicle seats B60N 2/56; vehicle window or windscreen cleaners using air, e.g. defrosters, B60S 1/54) **[1, 4, 2006.01]**

1/02 • the heat being derived from the propulsion plant **[1, 2006.01]**

1/03 • • and from a source other than the propulsion plant **[4, 2006.01]**

1/04 • • from cooling liquid of the plant **[1, 2006.01]**

1/06 • • • directly from main radiator **[1, 2006.01]**

1/08 • • • from other radiator than main radiator **[1, 2006.01]**

1/10 • • • • the other radiator being situated in a duct capable of being connected to atmosphere outside vehicle **[1, 2006.01]**

1/12 • • • • • using an air blower **[1, 2006.01]**

1/14 • • otherwise than from cooling liquid of the plant **[1, 2006.01]**

1/16 • • • the air being heated by direct contact with the plant, e.g. air-cooled motor **[1, 2006.01]**

1/18 • • • the air being heated from the plant exhaust gases **[1, 2006.01]**

1/20 • • • • using an intermediate heat-transferring medium **[1, 2006.01]**

1/22 • the heat being derived otherwise than from the propulsion plant **[1, 2006.01]**

1/24 • Devices purely for ventilating or where the heating or cooling is irrelevant (nozzles, air-diffusers B60H 1/34) **[1, 4, 2006.01]**

1/26 • • Ventilating openings in vehicle exterior; Ducts for conveying ventilating air **[1, 2006.01]**

1/28 • • • the openings being situated directly in front of vehicle front window **[1, 2006.01]**

1/30 • • • Air scoops **[1, 2006.01]**

1/32 • Cooling devices (vehicles adapted to transport refrigerated goods B60P 3/20) **[4, 2006.01]**

1/34 • Nozzles; Air-diffusers **[4, 2006.01]**

3/00 Other air-treating devices [1, 4, 2006.01]

3/02 • Moistening **[1, 2006.01]**

3/06 • Filtering **[1, 2006.01]**

B60J WINDOWS, WINDSCREENS, NON-FIXED ROOFS, DOORS, OR SIMILAR DEVICES FOR VEHICLES; REMOVABLE EXTERNAL PROTECTIVE COVERINGS SPECIALLY ADAPTED FOR VEHICLES (fastening, suspending, closing, or opening of such devices E05)

Note(s)

1. Windows, windscreens, non-fixed roofs, doors, or similar devices which are of general applicability, irrespective of whether described or claimed only for vehicles, are also classified in subclass E06B.
2. Attention is drawn to the Note following the title of class B60.

1/00 Windows; Windscreens; Accessories therefor (B60J 10/00 takes precedence; air curtains instead of windows B60J 9/04) **[1, 4, 5, 2006.01]**
1/02 • arranged at the vehicle front **[1, 2006.01]**
1/04 • • adjustable **[1, 2006.01]**
1/06 • • • comprising more than one pane **[1, 2006.01]**
1/08 • arranged at vehicle sides **[1, 2006.01]**
1/10 • • fixedly mounted **[1, 2006.01]**
1/12 • • adjustable **[1, 2006.01]**
1/14 • • • with pivotal or rotary movement **[1, 2006.01]**
1/16 • • • slidable **[1, 2006.01]**
1/17 • • • • vertically **[2, 2006.01]**
1/18 • arranged at the vehicle rear **[1, 2006.01]**
1/20 • Accessories, e.g. wind deflectors, blinds (antiglare provisions B60J 3/00; wind deflectors associated with roof openings B60J 7/22; removable external protective coverings for windows or windscreens B60J 11/08; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84) **[1, 2006.01]**

3/00 Antiglare equipment associated with windows or windscreens (optical viewing arrangements for vehicles B60R 1/00)**; Sun visors for vehicles** (sun visors having appliances for stowing or holding personal property B60R 7/05) **[1, 2, 5, 2006.01]**
3/02 • adjustable in position **[1, 2006.01]**
3/04 • adjustable in transparency **[1, 2006.01]**
3/06 • using polarising effect **[1, 2006.01]**

5/00 Doors (B60J 10/00 takes precedence; window aspects B60J 1/00) **[1, 5, 2006.01]**
5/02 • arranged at the vehicle front **[1, 2006.01]**
5/04 • arranged at the vehicle sides **[1, 2006.01]**
5/06 • • slidable; foldable **[1, 2006.01]**
5/08 • • • of roller-blind type **[1, 2006.01]**
5/10 • arranged at the vehicle rear (B60J 5/04 takes precedence) **[1, 2006.01]**
5/12 • • slidable; foldable **[1, 2006.01]**
5/14 • • • of roller-blind type **[1, 2006.01]**

7/00 Non-fixed roofs; Roofs with movable panels (B60J 10/00 takes precedence; window aspects B60J 1/00; fixed roofs B62D 25/06; mechanisms for operating wings E05F 11/00, E05F 15/00) **[1, 4, 5, 2006.01]**
7/02 • of sliding type **[1, 2006.01]**
7/04 • • with rigid plate-like element or elements **[1, 2006.01]**
7/043 • • • Sunroofs (B60J 7/047-B60J 7/053 take precedence) **[4, 2006.01]**
7/047 • • • movable to overlapping or nested relationship **[4, 2006.01]**
7/05 • • • pivoting upwardly to vent mode and moving downward before sliding to fully open mode **[4, 2006.01]**
7/053 • • • sliding with final closing motion having vertical component to attain closed and sealed condition **[4, 2006.01]**
7/057 • • • Driving or actuating arrangements (B60J 7/047-B60J 7/053 take precedence) **[4, 2006.01]**
7/06 • • with non-rigid element or elements **[1, 2006.01]**
7/08 • of non-sliding type, i.e. movable or removable roofs or panels, e.g. let-down tops or roofs capable of being easily detached or of assuming a collapsed or inoperative position **[1, 2006.01]**
7/10 • • readily detachable, e.g. tarpaulins with frames, or fastenings for tarpaulins (covering of loads on vehicles by tarpaulins B60P 7/04) **[1, 2006.01]**
7/11 • • • Removable panels, e.g. sunroofs **[4, 2006.01]**
7/12 • • foldable; Tensioning mechanisms therefor, e.g. struts (B60J 7/10 takes precedence) **[1, 2006.01]**
7/14 • • • with a plurality of plate-like elements **[1, 2006.01]**
7/16 • • non-foldable (B60J 7/10 takes precedence) **[1, 2006.01]**
7/185 • Locking arrangements (locks in general E05B) **[4, 2006.01]**
7/19 • • for rigid panels **[4, 2006.01]**
7/20 • Vehicle storage compartments for roof parts **[1, 2006.01]**
7/22 • Wind deflectors for open roofs **[1, 2006.01]**

9/00 Devices not provided for in one of main groups B60J 1/00-B60J 7/00 (B60J 10/00 takes precedence) **[1, 3, 5, 2006.01]**
9/02 • Entrance or exit closures other than windows, doors, or in roofs, e.g. emergency escape closures in vehicle bottom **[1, 2006.01]**
9/04 • Air curtains (in general F24F) **[1, 2006.01]**

10/00 Sealing arrangements [5, 2006.01, 2016.01]
10/15 • characterised by the material **[2016.01]**
10/16 • • consisting of two or more plastic materials having different physical or chemical properties (B60J 10/17 takes precedence) **[2016.01]**
10/17 • • provided with a low-friction material on the surface **[2016.01]**
10/18 • • provided with reinforcements or inserts **[2016.01]**
10/20 • characterised by the shape **[2016.01]**
10/21 • • having corner parts or bends **[2016.01]**
10/22 • • having varying cross-section in the longitudinal direction **[2016.01]**
10/23 • • assembled from two or more parts (B60J 10/21 takes precedence) **[2016.01]**
10/235 • • • the parts being joined along their longitudinal direction **[2016.01]**
10/24 • • having tubular parts **[2016.01]**
10/242 • • • with vent holes **[2016.01]**
10/244 • • • inflatable or deflatable **[2016.01]**

10/246 • • • having projections, e.g. ribs, within the tubular parts **[2016.01]**
10/248 • • • having two or more tubular cavities, e.g. formed by partition walls **[2016.01]**
10/25 • • characterised by water drainage means **[2016.01]**
10/26 • • characterised by the surface shape **[2016.01]**
10/265 • • • the surface being primarily decorative **[2016.01]**
10/27 • • having projections, grooves or channels in the longitudinal direction (for separately inserted fastening means, e.g. beads or strips, B60J 10/36) **[2016.01]**
10/273 • • • for enclosing or housing devices for purposes other than sealing, e.g. cables **[2016.01]**
10/277 • • • for facilitating specific deformation of sealing parts, e.g. for ensuring proper folding **[2016.01]**
10/30 • characterised by the fastening means **[2016.01]**
10/32 • • using integral U-shaped retainers **[2016.01]**
10/33 • • • characterised by the configuration of the retaining lips **[2016.01]**
10/34 • • using adhesives **[2016.01]**
10/35 • • • using adhesive tapes, e.g. double-sided tapes **[2016.01]**
10/36 • • using separately inserted fastening means, e.g. using clips, beads or strips **[2016.01]**
10/38 • • using magnetic means **[2016.01]**
10/40 • characterised by contact between two or more cooperating sealing arrangements **[2016.01]**
10/50 • characterised by means for prevention or reduction of noise, e.g. of rattling or vibration of windows **[2016.01]**
10/60 • characterised by defrosting arrangements **[2016.01]**
10/70 • specially adapted for windows or windscreens **[2016.01]**
10/72 • • with integral wind-deflecting means, e.g. for preventing soiling **[2016.01]**
10/74 • • for sliding window panes, e.g. sash guides **[2016.01]**
10/75 • • • for sealing the lower part of the panes **[2016.01]**
10/76 • • • for window sashes; for glass run channels **[2016.01]**
10/763 • • • • for preventing outward displacement of windows when at high speed **[2016.01]**
10/767 • • • • for reducing air resistance due to the panes not being flush with the sash guide or glass run channel **[2016.01]**
10/77 • • • for sashless windows, i.e. for frameless windows forming a seal directly with the vehicle body **[2016.01]**
10/773 • • • • for preventing outward displacement of windows when at high speed **[2016.01]**
10/777 • • • • the sealing arrangement being between the edges of adjacent panes **[2016.01]**
10/78 • • • adjacent to corner pieces, mirror supports or quarter windows **[2016.01]**
10/79 • • • for flush-glass windows, i.e. for windows flush with the vehicle body or the window frame **[2016.01]**
10/80 • specially adapted for opening panels, e.g. doors (for non-fixed roofs B60J 10/90) **[2016.01]**
10/82 • • for movable panels in roofs **[2016.01]**
10/84 • • arranged on the vehicle body **[2016.01]**
10/86 • • arranged on the opening panel **[2016.01]**
10/88 • • • mounted on, or integral with, the glass-run seals **[2016.01]**
10/90 • specially adapted for non-fixed roofs, e.g. foldable roofs or removable hard-tops **[2016.01]**

11/00 **Removable external protective coverings specially adapted for vehicles or parts of vehicles, e.g. parking covers** (covering of load on vehicles B60P 7/00; guard strips for body finishing, identifying or decorating B60R 13/04; tents for use as garages E04H 15/00) **[1, 2006.01]**

Note(s) [2006.01]

In groups B60J 11/02-B60J 11/06, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

11/02 • Covers wound on rollers **[2006.01]**
11/04 • for covering at least the roof of the vehicle, e.g. for covering the whole vehicle **[2006.01]**
11/06 • for covering only specific parts of the vehicle, e.g. for doors (covers or guards for traction couplings, hitches, draw-gear or towing devices B60D 1/60; guards for wheels, radiators or bumpers B60R 19/00) **[2006.01]**
11/08 • • for windows or windscreens (antiglare equipment B60J 3/00) **[2006.01]**
11/10 • • for wheels (hub caps or the like B60B 7/00; external spare wheel stowing, holding or mounting arrangements B62D 43/02) **[2006.01]**

B60K ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES; ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS IN VEHICLES; AUXILIARY DRIVES FOR VEHICLES; INSTRUMENTATION OR DASHBOARDS FOR VEHICLES; ARRANGEMENTS IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST OR FUEL SUPPLY OF PROPULSION UNITS IN VEHICLES [1, 2006.01]

Note(s)

1. In this subclass, the following terms or expressions are used with the meanings indicated:
   - "auxiliary drives" means drives of auxiliary or external machines or devices from the propulsion unit, transmission, or other parts of the vehicle, and includes the control of such drives;
   - "transmission" means all propulsion parts linking propulsion units, e.g. engines, to ultimate propulsive elements, e.g. wheels.
2. Attention is drawn to the Note following the title of class B60.

Subclass index

Arrangement or mounting of propulsion units in vehicles [2]

1/00 **Arrangement or mounting of electrical propulsion units** (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00; electric transmission arrangements B60K 17/12; electric equipment or propulsion of electrically-propelled vehicles per se B60L; current-collectors for power supply lines of electrically-propelled vehicles B60L 5/00) **[1, 5, 2006.01]**

1/02 • comprising more than one electric motor **[1, 2006.01]**

1/04 • of the electric storage means for propulsion (exchanging batteries for electric propulsion of vehicles B60L 53/80; for auxiliary purposes only B60R 16/04; supplying batteries to, or removing batteries from, vehicles B60S 5/06) **[1, 6, 2006.01, 2019.01]**

3/00 **Arrangement or mounting of steam or gaseous-pressure propulsion units** (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00; gaseous-pressure transmission arrangements B60K 17/10) **[1, 5, 2006.01]**

3/02 • of piston type **[1, 2006.01]**

3/04 • of turbine type **[1, 2006.01]**

5/00 **Arrangement or mounting of internal-combustion or jet-propulsion units** (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00) **[1, 5, 2006.01]**

5/02 • with the engine main axis, e.g. crankshaft axis, substantially in, or parallel to, the longitudinal centre line of the vehicle **[1, 2006.01]**

5/04 • with the engine main axis, e.g. crankshaft axis, transversely to the longitudinal centre line of the vehicle **[1, 2006.01]**

5/06 • • with the engine main axis substantially vertical **[1, 2006.01]**

5/08 • comprising more than one engine **[1, 2006.01]**

5/10 • providing for ready detachment of engine **[1, 2006.01]**

5/12 • Arrangement of engine supports **[1, 2006.01]**

6/00 **Arrangement or mounting of plural diverse prime-movers for mutual or common propulsion, e.g. hybrid propulsion systems comprising electric motors and internal combustion engines [5, 2006.01, 2007.10]**

Note(s) [2007.10]

In this group, the following expressions are used, with the meaning indicated:

- "prime-mover" means a propulsion unit or source of motive power providing a mechanical output, e.g. via a rotating shaft;
- "hybrid electric vehicle" [HEV] means a vehicle having an electric prime-mover and a combustion engine, in which the electrical prime-mover and the combustion engine either singly or in combination, drive the ultimate propulsive elements, e.g. wheels;
- "energy storing means" means apparatus for storing propulsive energy and providing stored energy to drive the prime-mover or the ultimate propulsive elements, e.g. wheels;
- "motor-generator" means an electric machine, such as a motor or a generator, or a mechanical combination thereof, which can provide positive mechanical output force or torque and which can function at other times as an electric generator.

6/08 • Prime-movers comprising combustion engines and mechanical or fluid energy storing means **[5, 2006.01]**

6/10 • • by means of a chargeable mechanical accumulator, e.g. flywheel **[5, 2006.01]**

6/12 • • by means of a chargeable fluidic accumulator **[5, 2006.01]**

6/20 • the prime-movers consisting of electric motors and internal combustion engines, e.g. HEVs **[2007.10]**

Note(s) [2007.10]

When classifying in one of groups B60K 6/22, B60K 6/42 or B60K 6/50, further technical information, which is considered to represent information of interest for search, should also be classified in the other subgroups of main group B60K 6/00 to enable searching using a combination of classification symbols.

6/22 • • characterised by apparatus, components or means specially adapted for HEVs **[2007.10]**

6/24 • • • characterised by the combustion engines **[2007.10]**

6/26 • • • characterised by the motors or the generators **[2007.10]**

6/28 • • • characterised by the electric energy storing means, e.g. batteries or capacitors **[2007.10]**

6/30 • • • characterised by chargeable mechanical accumulators, e.g. flywheels **[2007.10]**

6/32 • • • characterised by the fuel cells **[2007.10]**

6/34 • • • characterised by the absence of energy storing means **[2007.10]**
6/36 • • • characterised by the transmission gearings **[2007.10]**
6/365 • • • • with the gears having orbital motion **[2007.10]**
6/38 • • • characterised by the driveline clutches (shift clutches within the gearing or transmission B60K 6/36) **[2007.10]**
6/383 • • • • One-way clutches or freewheel devices **[2007.10]**
6/387 • • • • Actuated clutches, i.e. clutches engaged or disengaged by electric, hydraulic or mechanical actuating means **[2007.10]**
6/40 • • • characterised by the assembly or relative disposition of components **[2007.10]**
6/405 • • • • Housings **[2007.10]**
6/42 • • characterised by the architecture of the hybrid electric vehicle **[2007.10]**
6/44 • • • Series-parallel type **[2007.10]**
6/442 • • • • Series-parallel switching type **[2007.10]**
6/445 • • • • Differential gearing distribution type **[2007.10]**
6/448 • • • • Electrical distribution type **[2007.10]**
6/46 • • • Series type **[2007.10]**
6/48 • • • Parallel type **[2007.10]**
6/485 • • • • Motor-assist type **[2007.10]**
6/50 • • Architecture of the driveline characterised by arrangement or kind of transmission units **[2007.10]**
6/52 • • • Driving a plurality of drive axles, e.g. four-wheel drive **[2007.10]**
6/54 • • • Transmission for changing ratio **[2007.10]**
6/543 • • • • the transmission being a continuously variable transmission **[2007.10]**
6/547 • • • • the transmission being a stepped gearing **[2007.10]**

7/00 **Disposition of motor in, or adjacent to, traction wheel** (roller-skate driving mechanisms A63C 17/12) **[1, 2006.01]**

8/00 **Arrangement or mounting of propulsion units not provided for in one of main groups B60K 1/00-B60K 7/00 [5, 2006.01]**

Arrangements in connection with cooling, air intake, gas exhaust, fuel supply, or power supply of propulsion units in vehicles

11/00 **Arrangement in connection with cooling of propulsion units** (heating the interior space B60H; cooling internal combustion engines per se F01P) **[1, 2006.01]**
11/02 • with liquid cooling **[1, 2006.01]**
11/04 • • Arrangement or mounting of radiators, radiator shutters, or radiator blinds **[1, 2006.01]**
11/06 • with air cooling **[1, 2006.01]**
11/08 • Air inlets for cooling; Shutters or blinds therefor **[1, 2006.01]**

13/00 **Arrangement in connection with combustion air intake or gas exhaust of propulsion units** (extensions for melting snow or ice on roads or like surfaces E01H 5/00, E01H 6/00; forming part of the engine F01N; supplying combustion engines with combustible mixtures or constituents F02M) **[1, 2006.01]**
13/02 • concerning intake **[1, 2006.01]**
13/04 • concerning exhaust (exhaust silencers for internal-combustion engines per se F01N) **[1, 2006.01]**
13/06 • using structural parts of the vehicle as ducts, e.g. frame parts **[1, 2006.01]**

15/00 **Arrangement in connection with fuel supply of combustion engines; Mounting or construction of fuel tanks** (tanks in general B65D, F17C; supplying combustion engines with combustible mixtures or constituents F02M) **[1, 5, 2006.01]**
15/01 • Arrangement of fuel conduits (chassis frame forming fluid conduit means B62D 21/17) **[5, 2006.01]**
15/03 • Fuel tanks (chassis frame comprising fluid storage compartment B62D 21/16) **[5, 2006.01]**
15/035 • • characterised by venting means **[5, 2006.01]**
15/04 • • Tank inlets (B60K 15/077 takes precedence) **[1, 5, 2006.01]**
15/05 • • • Inlet covers **[5, 2006.01]**
15/06 • • characterised by fuel reserve systems **[1, 5, 2006.01]**
15/063 • • Arrangement of tanks **[5, 2006.01]**
15/067 • • • Mounting of tanks **[5, 2006.01]**
15/07 • • • • of gas tanks **[5, 2006.01]**
15/073 • • Tank construction specially adapted to the vehicle (B60K 15/077 takes precedence) **[5, 2006.01]**
15/077 • • with means modifying or controlling distribution or motion of fuel, e.g. to prevent noise, surge, splash or fuel starvation **[5, 2006.01]**
15/10 • concerning gas-producing plants (gas-producing plants per se C10J) **[1, 2006.01]**

16/00 **Arrangements in connection with power supply of propulsion units in vehicles from forces of nature, e.g. sun or wind** (electric propulsion with power supply from forces of nature, e.g. sun or wind, B60L 8/00; marine propulsion by wind motors driving water-engaging propulsive elements B63H 13/00; wind motors specially adapted for installation on vehicles F03D 9/32) **[5, 2006.01, 2020.01]**

Note(s) [2020.01]

When classifying in this group, details of sail or rigging arrangements which are suited for marine wind propulsion are also classified in the relevant groups of subclass B63H, e.g. in groups B63H 8/00, B63H 9/04.

Arrangement or mounting of transmissions or their control in vehicles

17/00 **Arrangement or mounting of transmissions in vehicles** (torque-transmitting axles B60B 35/12; combined transmission and steering gear for steering non-deflectable wheels B62D 11/00; clutches per se, e.g. construction thereof, F16D; gearing per se, e.g. construction thereof, F16H) **[1, 2, 2006.01]**
17/02 • characterised by arrangement, location, or kind of clutch **[1, 2006.01]**
17/04 • characterised by arrangement, location, or kind of gearing (electric equipment or propulsion of electrically-propelled vehicles B60L) **[1, 2006.01]**
17/06 • • of change-speed gearing (B60K 17/10-B60K 17/16 take precedence) **[1, 2, 2006.01]**
17/08 • • • of mechanical type **[1, 2006.01]**
17/10 • • of fluid gearing (of fluid clutches B60K 17/02) **[1, 2006.01]**

17/12 • • of electric gearing (of electrically-actuated clutches B60K 17/02) **[1, 2006.01]**

17/14 • • the motor of fluid or electric gearing being disposed in, or adjacent to, traction wheel (B60K 7/00, B60K 17/356 take precedence) **[1, 4, 2006.01]**

17/16 • • of differential gearing **[1, 2006.01]**

17/22 • characterised by arrangement, location, or type of main drive shafting, e.g. cardan shaft **[1, 2006.01]**

17/24 • • Arrangement of mountings for shafting **[1, 2006.01]**

17/26 • characterised by arrangement, location, or type of freewheel device **[1, 2006.01]**

17/28 • characterised by arrangement, location, or type of power take-off **[1, 2006.01]**

17/30 • the ultimate propulsive elements, e.g. ground wheels, being steerable **[1, 4, 2006.01]**

17/32 • the ultimate propulsive elements, e.g. ground wheels, being rockable about a horizontal pivot **[1, 2006.01]**

17/34 • for driving both front and rear wheels, e.g. four wheel drive vehicles (arrangement or mounting of control devices for changing number of driven wheels B60K 23/08) **[1, 2006.01]**

17/342 • • having a longitudinal, endless element, e.g. belt or chain, for transmitting drive to wheels **[4, 2006.01]**

17/344 • • having a transfer gear **[4, 2006.01]**

17/346 • • • the transfer gear being a differential gear **[4, 2006.01]**

17/348 • • having differential means for driving one set of wheels, e.g. the front, at one speed and the other set, e.g. the rear, at a different speeds (B60K 17/346 takes precedence) **[4, 2006.01]**

17/35 • • • including arrangements for suppressing or influencing the power transfer, e.g. viscous clutches (differential gearing with locking devices F16H 48/20) **[4, 6, 2006.01]**

17/354 • • having separate mechanical assemblies for transmitting drive to the front or to the rear wheels or set of wheels **[4, 2006.01]**

17/356 • • having fluid or electric motor, for driving one or more wheels (disposition of motor in, or adjacent to, traction wheel B60K 7/00) **[4, 2006.01]**

17/36 • for driving tandem wheels **[1, 2006.01]**

20/00 **Arrangement or mounting of change-speed gearing control devices in vehicles** (movable cabs having special adaptations of vehicle control devices B62D 33/073; such control devices per se F16H) **[2, 5, 2006.01]**

20/02 • of initiating means (control mechanisms in general G05G) **[2, 2006.01]**

20/04 • • floor-mounted **[2, 2006.01]**

20/06 • • mounted on steering column or the like **[2, 2006.01]**

20/08 • • dashboard-mounted **[2, 2006.01]**

23/00 **Arrangement or mounting of control devices for vehicle transmissions, or parts thereof, not otherwise provided for** (combined transmission and steering gear for steering non-deflectable wheels B62D 11/00; movable cabs having special adaptations of vehicle control devices B62D 33/073; such control devices per se F16D, F16H) **[1, 2, 5, 2006.01]**

23/02 • for main transmission clutches **[1, 2006.01]**

23/04 • for differential gearing **[1, 2006.01]**

23/06 • for freewheel devices **[1, 2006.01]**

23/08 • for changing number of driven wheels **[1, 2006.01]**

25/00 **Auxiliary drives** (B60K 16/00 takes precedence; arrangement of tyre-inflating pumps mounted on vehicles B60C 23/10; driving engine auxiliaries F02B) **[1, 5, 2006.01]**

25/02 • directly from an engine shaft **[1, 2006.01]**

25/04 • from static or dynamic pressure or vacuum, developed by the engine **[1, 2006.01]**

25/06 • from the transmission power take-off (transmissions having power take-off B60K 17/28) **[1, 2006.01]**

25/08 • from a ground wheel, e.g. engaging the wheel tread or rim **[1, 2006.01]**

25/10 • directly from oscillating movements due to vehicle running motion, e.g. suspension movement (resilient suspensions having dampers accumulating utilisable energy, e.g. compressing air, B60G 13/14) **[1, 5, 2006.01]**

26/00 **Arrangement or mounting of propulsion-unit control devices in vehicles** (movable cabs having special adaptations of vehicle control devices B62D 33/073) **[2, 5, 2006.01]**

26/02 • of initiating means or elements **[2, 2006.01]**

26/04 • of means connecting initiating means or elements to propulsion unit **[2, 2006.01]**

28/00 **Safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles, e.g. preventing fuel supply or ignition in the event of potentially dangerous conditions** (for electrically-propelled vehicles B60L 3/00; road vehicle drive control systems for purposes not related to the control of a particular sub-unit B60W 30/00; drive control systems specially adapted for autonomous road vehicles B60W 60/00) **[2, 2006.01]**

28/02 • responsive to conditions relating to the driver **[4, 2006.01]**

28/04 • • responsive to presence or absence of the driver, e.g. to weight or lack thereof **[4, 2006.01]**

28/06 • • responsive to incapacity of driver **[4, 2006.01]**

28/08 • responsive to conditions relating to the cargo, e.g. overload **[4, 2006.01]**

28/10 • responsive to conditions relating to the vehicle **[4, 2006.01]**

28/12 • • responsive to conditions relating to doors or doors locks, e.g. open door **[4, 2006.01]**

28/14 • • responsive to accident or emergency, e.g. deceleration, tilt of vehicle **[4, 2006.01]**

28/16 • • responsive to, or preventing, spinning or skidding of wheels (brake control systems for vehicle drive stability B60T 8/1755; arrangements responsive to a speed condition for adjusting wheel braking force B60T 8/32; control of vehicle driving stability otherwise than by controlling the propulsion unit only B60W 30/02; preventing wheel slippage by reducing power in rail vehicles B61C 15/12) **[4, 2006.01]**

31/00 **Vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator** (fittings acting on two or more sub-units B60W 30/14; propulsion-unit control in general, see the relevant classes or subclasses, e.g. F02D; speedometers G01P; systems or devices for controlling speed in general G05D 13/00) **[1, 2, 2006.01]**

Note(s) [4]

In this group:

- the means ordinarily includes a device, e.g. a servomechanism, for operating a velocity-affecting element of the vehicle, e.g. the throttle;
- a means for preventing a vehicle from exceeding a particular speed is often referred to as a "governor", whereas a means for maintaining the vehicle within a relatively narrow speed range is generally designated as "speed control". Since these two functions are frequently interrelated, no attempt has been made to identify such means as being particularly adapted to perform only one, or the other of the functions.

31/02 • including electrically actuated servomechanism **[4, 2006.01]**

31/04 • • and means for comparing one electrical quantity, e.g. voltage, pulse, waveform, flux, or the like, with another quantity of a like kind, which comparison means is involved in the development of an electrical signal which is fed into the controlling means **[4, 2006.01]**

31/06 • including fluid pressure actuated servomechanism **[4, 2006.01]**

31/08 • • and one or more electrical components for establishing or regulating input pressure **[4, 2006.01]**

31/10 • • and means for comparing one electrical quantity, e.g. voltage, pulse, waveform, flux, or the like, with another quantity of a like kind, which comparison means is involved in the development of a pressure which is fed into the controlling means **[4, 2006.01]**

31/12 • including a device responsive to centrifugal force **[4, 2006.01]**

Note(s) [4]

1. This subgroup covers also, for example, the pendulum of a curve compensator, i.e. a refinement to the regulating means for automatically adjusting the "set" speed of the means to changes in the course of the roadway along which the vehicle is travelling.
2. In this subgroup, rotating weights driven at a speed proportional to that of the vehicle's motor presently predominate.

31/14 • • having an electrical switch which is caused to function by the centrifugal force **[4, 2006.01]**

31/16 • having means to prevent or discourage unauthorised use or adjusting of the controlling means **[4, 2006.01]**

31/18 • including a device to audibly, visibly, or otherwise signal the existence of unusual or unintended speed **[4, 2006.01]**

Arrangement or adaptations of instruments specially for vehicles; Dashboards

35/00 Arrangement or adaptations of instruments (arrangements on dashboard B60K 37/02) **[1, 2006.01]**

37/00 Dashboards (as road-vehicle superstructure sub-unit B62D) **[1, 2006.01]**

37/02 • Arrangement of instruments (arrangement of lighting devices for dashboards B60Q 3/10) **[1, 2006.01]**

37/04 • Arrangement of fittings on dashboard (of instruments B60K 37/02) **[1, 2006.01]**

37/06 • • of controls, e.g. control knobs **[1, 2006.01]**

B60L PROPULSION OF ELECTRICALLY-PROPELLED VEHICLES (arrangements or mounting of electrical propulsion units or of plural diverse prime-movers for mutual or common propulsion in vehicles B60K 1/00, B60K 6/20; arrangements or mounting of electrical gearing in vehicles B60K 17/12, B60K 17/14; preventing wheel slip by reducing power in rail vehicles B61C 15/08; dynamo-electric machines H02K; control or regulation of electric motors H02P)**; SUPPLYING ELECTRIC POWER FOR AUXILIARY EQUIPMENT OF ELECTRICALLY-PROPELLED VEHICLES** (electric coupling devices combined with mechanical couplings of vehicles B60D 1/64; electric heating for vehicles B60H 1/00)**; ELECTRODYNAMIC BRAKE SYSTEMS FOR VEHICLES IN GENERAL** (control or regulation of electric motors H02P)**; MAGNETIC SUSPENSION OR LEVITATION FOR VEHICLES; MONITORING OPERATING VARIABLES OF ELECTRICALLY-PROPELLED VEHICLES; ELECTRIC SAFETY DEVICES FOR ELECTRICALLY-PROPELLED VEHICLES [4]**

Subclass index

1/00 Supplying electric power to auxiliary equipment of electrically-propelled vehicles (arrangement of signalling or lighting devices, the mounting or supporting thereof or circuits therefor, for vehicles in general B60Q) **[1, 6, 2006.01]**

1/02 • to electric heating circuits **[1, 2006.01]**

1/04 • • fed by the power supply line **[1, 2006.01]**
1/06 • • • using only one supply **[1, 2006.01]**
1/08 • • • • Methods or devices for control or regulation **[1, 2006.01]**
1/10 • • • with provision for using different supplies **[1, 2006.01]**
1/12 • • • • Methods or devices for control or regulation **[1, 2006.01]**
1/14 • to electric lighting circuits **[1, 2006.01]**
1/16 • • fed by the power supply line **[1, 2006.01]**

3/00 Electric devices on electrically-propelled vehicles for safety purposes; Monitoring operating variables, e.g. speed, deceleration or energy consumption (methods or circuit arrangements for monitoring or controlling batteries or fuel cells B60L 58/00) **[1, 2006.01, 2019.01]**
3/02 • Dead-man's devices **[1, 2006.01]**
3/04 • Cutting-off the power supply under fault conditions **[1, 2006.01]**
3/06 • Limiting the traction current under mechanical-overload conditions **[1, 2006.01]**
3/08 • Means for preventing excessive speed of the vehicle **[1, 2006.01]**
3/10 • Indicating wheel slip **[1, 2006.01]**
3/12 • Recording operating variables **[1, 2006.01]**

5/00 Current-collectors for power supply lines of electrically-propelled vehicles [1, 2006.01]
5/02 • with ice-removing device **[1, 2006.01]**
5/04 • using rollers or sliding shoes in contact with trolley wire (B60L 5/40 takes precedence) **[1, 2006.01]**
5/06 • • Structure of the rollers or their carrying means **[1, 2006.01]**
5/08 • • Structure of the sliding shoes or their carrying means **[1, 2006.01]**
5/10 • • Devices preventing the collector from jumping off **[1, 2006.01]**
5/12 • • Structural features of poles or their bases **[1, 2006.01]**
5/14 • • • Devices for automatic lowering of a jumped-off collector **[1, 2006.01]**
5/16 • • • Devices for lifting and resetting the collector (B60L 5/34 takes precedence) **[1, 2006.01]**
5/18 • using bow-type collectors in contact with trolley wire **[1, 2006.01]**
5/19 • • using arrangements for effecting collector movement transverse to the direction of vehicle motion **[3, 2006.01]**
5/20 • • Details of contact bow **[1, 2006.01]**
5/22 • • Supporting means for the contact bow **[1, 2006.01]**
5/24 • • • Pantographs **[1, 2006.01]**
5/26 • • • Half-pantographs, e.g. using counter-rocking beams **[1, 2006.01]**
5/28 • • • Devices for lifting and resetting the collector **[1, 2006.01]**
5/30 • • • • using springs **[1, 2006.01]**
5/32 • • • • using fluid pressure **[1, 2006.01]**
5/34 • with devices to enable one vehicle to pass another one using the same power supply line **[1, 2006.01]**
5/36 • with means for collecting current simultaneously from more than one conductor, e.g. from more than one phase **[1, 2006.01]**
5/38 • for collecting current from conductor rails (B60L 5/40 takes precedence) **[1, 2006.01]**
5/39 • • from third rail **[3, 2006.01]**
5/40 • for collecting current from lines in slotted conduits **[1, 2006.01]**
5/42 • for collecting current from individual contact pieces connected to the power supply line **[1, 2006.01]**

7/00 Electrodynamic brake systems for vehicles in general [1, 4, 2006.01]
7/02 • Dynamic electric resistor braking (B60L 7/22 takes precedence) **[1, 2006.01]**
7/04 • • for vehicles propelled by dc motors **[1, 2006.01]**
7/06 • • for vehicles propelled by ac motors **[1, 2006.01]**
7/08 • • Controlling the braking effect (B60L 7/04, B60L 7/06 take precedence) **[1, 2006.01]**
7/10 • Dynamic electric regenerative braking (B60L 7/22 takes precedence) **[1, 2006.01]**
7/12 • • for vehicles propelled by dc motors **[1, 2006.01]**
7/14 • • for vehicles propelled by ac motors **[1, 2006.01]**
7/16 • • for vehicles comprising converters between the power source and the motor **[1, 2006.01]**
7/18 • • Controlling the braking effect (B60L 7/12, B60L 7/14, B60L 7/16 take precedence) **[1, 2006.01]**
7/20 • Braking by supplying regenerated power to the prime mover of vehicles comprising engine-driven generators **[1, 2006.01]**
7/22 • Dynamic electric resistor braking, combined with dynamic electric regenerative braking **[1, 2006.01]**
7/24 • with additional mechanical or electromagnetic braking **[1, 2006.01]**
7/26 • • Controlling the braking effect **[1, 2006.01]**
7/28 • Eddy-current braking **[1, 2006.01]**

8/00 Electric propulsion with power supply from forces of nature, e.g. sun or wind [5, 2006.01]

9/00 Electric propulsion with power supply external to the vehicle (electric propulsion for monorail vehicles, suspension vehicles or rack railways B60L 13/00; in combination with batteries or fuel cells within the vehicle B60L 50/53) **[1, 5, 6, 2006.01, 2019.01]**
9/02 • using dc motors **[1, 2006.01]**
9/04 • • fed from dc supply lines **[1, 2006.01]**
9/06 • • • with conversion by metadyne **[1, 2006.01]**
9/08 • • fed from ac supply lines **[1, 2006.01]**
9/10 • • • with rotary converters **[1, 2006.01]**
9/12 • • • with static converters **[1, 2006.01]**
9/14 • • fed from different kinds of power supply lines **[1, 2006.01]**
9/16 • using ac induction motors **[1, 2006.01]**
9/18 • • fed from dc supply lines **[1, 2006.01]**
9/20 • • • single-phase motors **[1, 2006.01]**
9/22 • • • polyphase motors **[1, 2006.01]**
9/24 • • fed from ac supply lines **[1, 2006.01]**
9/26 • • • single-phase motors **[1, 2006.01]**
9/28 • • • polyphase motors **[1, 2006.01]**
9/30 • • fed from different kinds of power supply lines **[1, 2006.01]**
9/32 • using ac brush-displacement motors **[1, 2006.01]**

13/00 Electric propulsion for monorail vehicles, suspension vehicles or rack railways; Magnetic suspension or levitation for vehicles [1, 4, 6, 2006.01]
13/03 • Electric propulsion by linear motors **[6, 2006.01]**
13/04 • Magnetic suspension or levitation for vehicles **[4, 2006.01]**
13/06 • • Means to sense or control vehicle position or attitude with respect to railway **[4, 2006.01]**
13/08 • • • for the lateral position **[4, 2006.01]**

13/10 • Combination of electric propulsion and magnetic suspension or levitation **[4, 2006.01]**

15/00 Methods, circuits or devices for controlling the propulsion of electrically-propelled vehicles, e.g. their traction-motor speed, to achieve a desired performance; Adaptation of control equipment on electrically-propelled vehicles for remote actuation from a stationary place, from alternative parts of the vehicle or from alternative vehicles of the same vehicle train [1, 2006.01]

15/02 • characterised by the form of the current used in the control circuit **[1, 2006.01]**

15/04 • • using dc **[1, 2006.01]**

15/06 • • using substantially-sinusoidal ac **[1, 2006.01]**

15/08 • • using pulses **[1, 2006.01]**

15/10 • for automatic control superimposed on human control to limit the acceleration of the vehicle, e.g. to prevent excessive motor current (electric devices for safety purposes B60L 3/00) **[1, 2006.01]**

15/12 • • with circuits controlled by relays or contactors **[1, 2006.01]**

15/14 • • with main controller driven by a servomotor (B60L 15/18 takes precedence) **[1, 2006.01]**

15/16 • • with main controller driven through a ratchet mechanism (B60L 15/18 takes precedence) **[1, 2006.01]**

15/18 • • without contact-making and breaking, e.g. using a transductor **[1, 2006.01]**

15/20 • for control of the vehicle or its driving motor to achieve a desired performance, e.g. speed, torque, programmed variation of speed **[1, 2006.01]**

15/22 • • with sequential operation of interdependent switches, e.g. relays, contactors, programme drum **[1, 2006.01]**

15/24 • • with main controller driven by a servomotor (B60L 15/28 takes precedence) **[1, 2006.01]**

15/26 • • with main controller driven through a ratchet mechanism (B60L 15/28 takes precedence) **[1, 2006.01]**

15/28 • • without contact-making and breaking, e.g. using a transductor **[1, 2006.01]**

15/30 • • with means to change-over to human control **[1, 2006.01]**

15/32 • Control or regulation of multiple-unit electrically-propelled vehicles **[1, 2006.01]**

15/34 • • with human control of a setting device **[1, 2006.01]**

15/36 • • • with automatic control superimposed, e.g. to prevent excessive motor current **[1, 2006.01]**

15/38 • • with automatic control **[1, 2006.01]**

15/40 • Adaptation of control equipment on vehicle for remote actuation from a stationary place (devices along the route for controlling devices on rail vehicles B61L 3/00; central rail-traffic control systems B61L 27/00) **[1, 2006.01]**

15/42 • Adaptation of control equipment on vehicle for actuation from alternative parts of the vehicle or from alternative vehicles of the same vehicle train (B60L 15/32 takes precedence) **[1, 2006.01]**

50/00 Electric propulsion with power supplied within the vehicle (with power supply from forces of nature, e.g. sun or wind, B60L 8/00; for monorail vehicles, suspension vehicles or rack railways B60L 13/00) **[2019.01]**

50/10 • using propulsion power supplied by engine-driven generators, e.g. generators driven by combustion engines **[2019.01]**

50/11 • • using DC generators and DC motors **[2019.01]**

50/12 • • using AC generators and DC motors **[2019.01]**

50/13 • • using AC generators and AC motors **[2019.01]**

50/14 • • using DC generators and AC motors **[2019.01]**

50/15 • • with additional electric power supply (with capacitors charged by engine-driven generators B60L 50/40; with batteries charged by engine-driven generators B60L 50/61) **[2019.01]**

50/16 • • with provision for separate direct mechanical propulsion **[2019.01]**

50/20 • using propulsion power generated by humans or animals **[2019.01]**

50/30 • using propulsion power stored mechanically, e.g. in fly-wheels **[2019.01]**

50/40 • using propulsion power supplied by capacitors **[2019.01]**

50/50 • using propulsion power supplied by batteries or fuel cells **[2019.01]**

50/51 • • characterised by AC-motors **[2019.01]**

50/52 • • characterised by DC-motors **[2019.01]**

50/53 • • in combination with an external power supply, e.g. from overhead contact lines **[2019.01]**

50/60 • • using power supplied by batteries (in combination with fuel cells B60L 50/75) **[2019.01]**

50/61 • • • by batteries charged by engine-driven generators, e.g. series hybrid electric vehicles **[2019.01]**

50/62 • • • • charged by low-power generators primarily intended to support the batteries, e.g. range extenders **[2019.01]**

50/64 • • • Constructional details of batteries specially adapted for electric vehicles **[2019.01]**

Note(s) [2019.01]

This group covers adaptation of battery structures of electric vehicles, e.g. integration into control or safety systems, crash-resistant casings or vibration-damping means.

50/70 • • using power supplied by fuel cells (in combination with batteries B60L 50/75) **[2019.01]**

50/71 • • • Arrangement of fuel cells within vehicles specially adapted for electric vehicles **[2019.01]**

50/72 • • • Constructional details of fuel cells specially adapted for electric vehicles **[2019.01]**

Note(s) [2019.01]

This group covers adaptation of fuel cell structures of electric vehicles, e.g. integration into control or safety systems, crash-resistant casings or vibration-damping means.

50/75 • • using propulsion power supplied by both fuel cells and batteries **[2019.01]**

50/90 • using propulsion power supplied by specific means not covered by groups B60L 50/10-B60L 50/50, e.g. by direct conversion of thermal nuclear energy into electricity **[2019.01]**

53/00 Methods of charging batteries, specially adapted for electric vehicles; Charging stations or on-board charging equipment therefor; Exchange of energy storage elements in electric vehicles [2019.01]

53/10 • characterised by the energy transfer between the charging station and the vehicle **[2019.01]**

53/12 • • Inductive energy transfer **[2019.01]**

53/122 • • • Circuits or methods for driving the primary coil, i.e. supplying electric power to the coil **[2019.01]**
53/124 • • • Detection or removal of foreign bodies **[2019.01]**
53/126 • • • Methods for pairing a vehicle and a charging station, e.g. establishing a one-to-one relation between a wireless power transmitter and a wireless power receiver **[2019.01]**
53/14 • • Conductive energy transfer **[2019.01]**
53/16 • • • Connectors, e.g. plugs or sockets, specially adapted for charging electric vehicles **[2019.01]**
53/18 • • • Cables specially adapted for charging electric vehicles **[2019.01]**
53/20 • characterised by converters located in the vehicle **[2019.01]**
53/22 • • Constructional details or arrangements of charging converters specially adapted for charging electric vehicles **[2019.01]**
53/24 • • Using the vehicle's propulsion converter for charging **[2019.01]**
53/30 • Constructional details of charging stations **[2019.01]**
53/302 • • Cooling of charging equipment **[2019.01]**
53/31 • • Charging columns specially adapted for electric vehicles **[2019.01]**
53/34 • • Plug-like or socket-like devices specially adapted for contactless inductive charging of electric vehicles (positioning means for charging devices using inductive energy transfer B60L 53/38) **[2019.01]**
53/35 • • Means for automatic or assisted adjustment of the relative position of charging devices and vehicles **[2019.01]**
53/36 • • • by positioning the vehicle **[2019.01]**
53/37 • • • using optical position determination, e.g. using cameras **[2019.01]**
53/38 • • • specially adapted for charging by inductive energy transfer **[2019.01]**
53/39 • • • • with position-responsive activation of primary coils **[2019.01]**
53/50 • Charging stations characterised by energy-storage or power-generation means **[2019.01]**
53/51 • • Photovoltaic means **[2019.01]**
53/52 • • Wind-driven generators **[2019.01]**
53/53 • • Batteries **[2019.01]**
53/54 • • Fuel cells **[2019.01]**
53/55 • • Capacitors **[2019.01]**
53/56 • • Mechanical storage means, e.g. fly wheels **[2019.01]**
53/57 • • Charging stations without connection to power networks **[2019.01]**
53/60 • Monitoring or controlling charging stations **[2019.01]**
53/62 • • in response to charging parameters, e.g. current, voltage or electrical charge **[2019.01]**
53/63 • • in response to network capacity **[2019.01]**
53/64 • • Optimising energy costs, e.g. responding to electricity rates **[2019.01]**
53/65 • • involving identification of vehicles or their battery types **[2019.01]**
53/66 • • Data transfer between charging stations and vehicles **[2019.01]**
53/67 • • Controlling two or more charging stations **[2019.01]**
53/68 • • Off-site monitoring or control, e.g. remote control **[2019.01]**
53/80 • Exchanging energy storage elements, e.g. removable batteries **[2019.01]**

55/00 Arrangements for supplying energy stored within a vehicle to a power network, i.e. vehicle-to-grid [V2G] arrangements [2019.01]

58/00 Methods or circuit arrangements for monitoring or controlling batteries or fuel cells, specially adapted for electric vehicles [2019.01]

Note(s) [2019.01]

This group covers the monitoring of the operating state of batteries or fuel cells in combination with controlling the propulsion in response to the detected variables of the state.

58/10 • for monitoring or controlling batteries **[2019.01]**
58/12 • • responding to state of charge [SoC] **[2019.01]**
58/13 • • • Maintaining the SoC within a determined range **[2019.01]**
58/14 • • • Preventing excessive discharging **[2019.01]**
58/15 • • • Preventing overcharging **[2019.01]**
58/16 • • responding to battery ageing, e.g. to the number of charging cycles or the state of health [SoH] **[2019.01]**
58/18 • • of two or more battery modules **[2019.01]**
58/19 • • • Switching between serial connection and parallel connection of battery modules **[2019.01]**
58/20 • • • having different nominal voltages **[2019.01]**
58/21 • • • having the same nominal voltage **[2019.01]**
58/22 • • • Balancing the charge of battery modules **[2019.01]**
58/24 • • for controlling the temperature of batteries **[2019.01]**
58/25 • • • by controlling the electric load **[2019.01]**
58/26 • • • by cooling **[2019.01]**
58/27 • • • by heating **[2019.01]**
58/30 • for monitoring or controlling fuel cells **[2019.01]**
58/31 • • for starting of fuel cells **[2019.01]**
58/32 • • for controlling the temperature of fuel cells, e.g. by controlling the electric load **[2019.01]**
58/33 • • • by cooling **[2019.01]**
58/34 • • • by heating **[2019.01]**
58/40 • for controlling a combination of batteries and fuel cells **[2019.01]**

B60M POWER SUPPLY LINES, OR DEVICES ALONG RAILS, FOR ELECTRICALLY-PROPELLED VEHICLES (control of points or safety arrangements along railway lines B61L; construction of rails or points in general E01B)

Note(s)

This subclass covers:

- overhead, overground, or underground power-supply lines; their crossings and points, erection and supervision;
- devices along rails and rail joints, for current-conduction and for insulation;

contact by living beings **[1, 2006.01]**

- safety devices along the route against earth currents and inductive interference with nearby communication lines.

1/06 • • Arrangements along the power lines for reducing interference in nearby communication lines (in general H04B 15/02) **[1, 2006.01]**

1/08 • • Arrangements for energising and de-energising power line sections using mechanical actuation by the passing vehicle **[1, 2006.01]**

1/10 • • Arrangements for energising and de-energising power line sections using magnetic actuation by the passing vehicle **[1, 2006.01]**

1/12 • Trolley lines; Accessories therefor **[1, 2006.01]**

1/13 • • Trolley wires **[1, 2006.01]**

1/14 • • Crossings; Points **[1, 2006.01]**

1/16 • • Suspension insulators (in general H01B) **[1, 2006.01]**

1/18 • • Section insulators; Section switches **[1, 2006.01]**

1/20 • • Arrangements for supporting or suspending trolley wires, e.g. from buildings **[1, 2006.01]**

1/22 • • • Separate lines from which power lines are suspended, e.g. catenary lines, supporting-lines under tension **[1, 2006.01]**

1/225 • • • Arrangements for fixing trolley wires to supporting-lines which are under tension **[1, 2006.01]**

1/23 • • • Arrangements for suspending trolley wires from catenary line **[1, 2006.01]**

1/234 • • • incorporating yielding means or damping means (supporting wires B60M 1/22) **[1, 2006.01]**

1/24 • • • Clamps; Splicers; Anchor tips **[1, 2006.01]**

1/26 • • Compensation means for variation in length **[1, 2006.01]**

H02G 1/00) **[1, 2006.01]**

1/30 • Power rails **[1, 2006.01]**

1/32 • • Crossings; Points (B60M 1/34 takes precedence) **[1, 2006.01]**

1/34 • • in slotted conduits **[1, 2006.01]**

1/36 • Single contact pieces along the line for power supply **[1, 2006.01]**

3/00 Feeding power to the supply lines in contact with collector on vehicles; Arrangements for consuming regenerative power (controlling rail vehicles by varying voltage of power fed to vehicle B60L; power distribution in general H02J) **[1, 2006.01]**

3/02 • with means for maintaining voltage within a predetermined range (in general G05F) **[1, 2006.01]**

3/04 • Arrangements for cutting-in and -out of individual track sections (by passage of the vehicle B60M 1/10) **[1, 2006.01]**

3/06 • Arrangements for consuming regenerative power **[1, 2006.01]**

5/00 Arrangements along running rails or at joints thereof for current-conduction or insulation, e.g. safety devices for reducing earth currents (insulating rail joints E01B 11/54; conductive connections between rails in general H01R 4/00, e.g. H01R 4/64) **[1, 2006.01]**

5/02 • Means for reducing potential difference between rail and adjacent ground **[1, 2006.01]**

7/00 Power lines or rails specially adapted for electrically-propelled vehicles of special types, e.g. suspension tramway, ropeway, underground railway [1, 2006.01]

B60N SEATS SPECIALLY ADAPTED FOR VEHICLES; VEHICLE PASSENGER ACCOMMODATION NOT OTHERWISE PROVIDED FOR

Note(s)

Attention is drawn to the Note following the title of class B60.

2/00 Seats specially adapted for vehicles; Arrangement or mounting of seats in vehicles (railway seats B61D 33/00; cycle seats B62J 1/00; aircraft seats B64D 11/06, B64D 25/04, B64D 25/10) **[5, 2006.01]**

2/005 • Arrangement or mounting of seats in vehicles (B60N 2/02 takes precedence) **[7, 2006.01]**

2/01 • • Arrangement of seats relative to one another **[7, 2006.01]**

2/015 • • Attaching seats directly to vehicle chassis **[7, 2006.01]**

2/02 • the seat or part thereof being movable, e.g. adjustable (adjustable arm-rests B60N 2/75; adjustable head-rests B60N 2/806) **[5, 2006.01]**

2/04 • • the whole seat being movable **[5, 2006.01]**

2/06 • • • slidable (B60N 2/12 takes precedence) **[5, 2006.01]**

2/07 • • • • Slide construction **[7, 2006.01]**

2/075 • • • • • roller-less **[7, 2006.01]**

2/08 • • • • characterised by the locking device **[5, 2006.01]**

2/10 • • • tiltable (B60N 2/12 takes precedence) **[5, 2006.01]**

2/12 • • • slidable and tiltable **[5, 2006.01]**

2/14 • • • rotatable, e.g. to permit easy access (B60N 2/10 takes precedence) **[5, 2006.01]**

2/16 • • • height-adjustable **[5, 2006.01]**

2/18 • • • • the front or the rear portion of the seat being adjustable, e.g. independently of each other **[5, 2006.01]**

2/20 • • the back-rest being tiltable, e.g. to permit easy access (B60N 2/04, B60N 2/22 take precedence) **[5, 2006.01]**

2/22 • • the back-rest being adjustable **[5, 2006.01]**

2/225 • • • by cycloidal or planetary mechanisms **[7, 2006.01]**

2/23 • • • by linear screw mechanisms **[7, 2006.01]**

2/235 • • • by gear-pawl type mechanisms **[7, 2006.01]**

2/24 • for particular purposes or particular vehicles **[5, 2006.01]**

2/26 • • for children (B60N 2/30 takes precedence) **[5, 2006.01]**

2/28 • • • Seats readily mountable on, and dismountable from, existing seats of the vehicle **[5, 2006.01]**

2/30 • • Non-dismountable seats storable in a non-use position, e.g. foldable spare seats **[5, 2006.01]**

2/32 • • convertible for other use **[5, 2006.01]**

2/34 • • • into a bed **[5, 2006.01]**

2/36 • • • into a loading platform **[5, 2006.01]**

2/38 • • specially constructed for use on tractors or like off-road vehicles **[5, 2006.01]**

2/39 • • • Seats tiltable to compensate for roll inclination of vehicles **[7, 2006.01]**
2/40 • • • saddle type **[5, 2006.01]**
2/42 • • the seat constructed to protect the occupant from the effect of abnormal g-forces, e.g. crash or safety seats (for protecting children B60N 2/26; arm-rests B60N 2/75; head-rests B60N 2/888) **[5, 2006.01]**
2/427 • • • Seats or parts thereof displaced during a crash **[7, 2006.01]**
2/433 • • • Safety locks for back-rests, e.g. with locking bars activated by inertia **[7, 2006.01]**
2/50 • Seat suspension devices **[5, 2006.01]**
2/52 • • using fluid means **[5, 2006.01]**
2/54 • • using mechanical springs **[5, 2006.01]**
2/56 • Heating or ventilating devices **[7, 2006.01]**
2/58 • Seat coverings **[7, 2006.01]**
2/60 • • Removable protective coverings **[7, 2006.01]**
2/62 • Thigh-rests **[7, 2006.01]**
2/64 • Back-rests **[7, 2006.01]**
2/66 • • Lumbar supports **[7, 2006.01]**
2/68 • Seat frames **[7, 2006.01]**
2/70 • Upholstery springs **[7, 2006.01]**
2/72 • • Attachment or adjustment thereof **[7, 2006.01]**
2/75 • Arm-rests **[2018.01]**
2/80 • Head-rests **[2018.01]**
2/803 • • fixed **[2018.01]**
2/806 • • movable or adjustable **[2018.01]**
2/809 • • • vertically slidable **[2018.01]**
2/812 • • • • characterised by their locking devices **[2018.01]**
2/815 • • • • • Release mechanisms, e.g. buttons **[2018.01]**
2/818 • • • • • with stepwise positioning **[2018.01]**
2/821 • • • • • with continuous positioning **[2018.01]**
2/824 • • • • • • using springs **[2018.01]**
2/826 • • • • • • using rubber-type material **[2018.01]**
2/829 • • • • characterised by their adjusting mechanisms, e.g. electric motors **[2018.01]**
2/832 • • • • movable to an inoperative or stowed position **[2018.01]**
2/835 • • • • • specially adapted for rear seats **[2018.01]**
2/838 • • • tiltable **[2018.01]**
2/841 • • • • characterised by their locking devices **[2018.01]**
2/844 • • • • • Release mechanisms, e.g. buttons **[2018.01]**
2/847 • • • • • with stepwise positioning **[2018.01]**
2/85 • • • • • with continuous positioning **[2018.01]**
2/853 • • • • characterised by their adjusting mechanisms, e.g. electric motors **[2018.01]**
2/856 • • • • movable to an inoperative or stowed position **[2018.01]**
2/859 • • • • • specially adapted for rear seats **[2018.01]**
2/862 • • • • with means for maintaining a desired position when the seat-back is adjusted, e.g. parallelogram mechanisms **[2018.01]**
2/865 • • • providing a fore-and-aft movement with respect to the occupant's head **[2018.01]**
2/868 • • • providing a lateral movement parallel to the occupant's shoulder line **[2018.01]**
2/874 • • • movable to an inoperative or stowed position (B60N 2/832, B60N 2/856 take precedence) **[2018.01]**
2/876 • • • • specially adapted for rear seats (B60N 2/835, B60N 2/859 take precedence) **[2018.01]**
2/879 • • with additional features not related to head-rest positioning, e.g. heating or cooling devices or loudspeakers **[2018.01]**
2/882 • • detachable **[2018.01]**
2/885 • • provided with side-rests **[2018.01]**
2/888 • • with arrangements for protecting against abnormal g-forces, e.g. by displacement of the head-rest **[2018.01]**
2/891 • • with the head-rest being comma-shaped in side view **[2018.01]**
2/894 • • with rods solidly attached to the back-rest **[2018.01]**
2/897 • • with sleeves located in the back-rest for guiding the rods of the head-rest **[2018.01]**
2/90 • Details or parts not otherwise provided for **[2018.01]**

3/00 Arrangements or adaptations of other passenger fittings, not otherwise provided for (of radio sets, television sets, telephones, safety belts, or the like B60R) **[1, 2006.01]**
3/02 • of hand grips or straps **[1, 2006.01]**
3/04 • of floor mats **[1, 2006.01]**
3/06 • of footrests **[1, 2006.01]**
3/08 • of receptacles for refuse, e.g. ash-trays **[1, 2006.01]**
3/10 • of receptacles for food or beverages, e.g. refrigerated **[1, 2006.01]**
3/12 • of receptacles for cigarettes or the like **[1, 2006.01]**
3/14 • of electrically-heated lighters **[1, 2006.01]**
3/16 • of cooking or boiling devices **[1, 2006.01]**
3/18 • of drinking-water dispensing devices **[1, 2006.01]**

5/00 Arrangements or devices on vehicles for entrance or exit control of passengers, e.g. turnstiles [2, 2006.01]

99/00 Subject matter not provided for in other groups of this subclass [2006.01]

B60P VEHICLES ADAPTED FOR LOAD TRANSPORTATION OR TO TRANSPORT, TO CARRY, OR TO COMPRISE SPECIAL LOADS OR OBJECTS (vehicles with special provisions for transporting patients or disabled persons, or their personal conveyances A61G 3/00)

Note(s)

Attention is drawn to the Note following the title of class B60.

1/00 Vehicles predominantly for transporting loads and modified to facilitate loading, consolidating the load, or unloading (vehicles for carrying harvested crops with means for self-loading or self-unloading A01D 90/00; peculiar to refuse-collecting-vehicles B65F; loading or unloading vehicles by means not incorporated therein B65G) **[1, 2006.01]**

1/02 • with parallel up-and-down movement of load supporting or containing element (in combination with tipping B60P 1/34; devices for lifting or lowering bulky or heavy goods for loading or unloading purposes, movable on wheels or the like, e.g. fork-lift trucks, B66F 9/06) **[1, 2006.01]**

1/04 • with a tipping movement of load supporting or containing element (dredges or soil-shifting machines E02F 3/00) **[1, 2006.01]**

1/06 • • actuated by mechanical gearing only **[1, 2006.01]**

1/08 • • • with relative displacement of the wheel axles **[1, 2006.01]**

1/10 • • • with screw and nut **[1, 2006.01]**

1/12 • • • with toothed gears, wheels, or sectors; with links, cams and rollers, or the like **[1, 2006.01]**

1/14 • • • with cables, chains, or the like **[1, 2006.01]**

1/16 • • actuated by fluid-operated mechanisms **[1, 2006.01]**

1/18 • • • with relative displacement of the wheel axles **[1, 2006.01]**

1/20 • • • with toothed gears, wheels, or sectors; with links, cams and rollers, or the like **[1, 2006.01]**

1/22 • • • with cables, chains, or the like **[1, 2006.01]**

1/24 • • using the weight of the load **[1, 2006.01]**

1/26 • • Means for controlling movement of tailboards or sideboards **[1, 5, 2006.01]**

1/267 • • • Controlling degree of tailboard or sideboard movement in dependence upon degree of tipping movement, e.g. by linkage or cam **[5, 2006.01]**

1/273 • • • Providing interdependence between tipping movement and the latching or unlatching of a freely-swingable tailboard or sideboard **[5, 2006.01]**

1/28 • • Tipping-body constructions **[1, 2006.01]**

1/30 • • in combination with another movement of the element **[1, 2006.01]**

1/32 • • • the other movement being lateral displacement **[1, 2006.01]**

1/34 • • • the other movement being raising or lowering **[1, 2006.01]**

1/36 • using endless chains or belts thereon **[1, 2006.01]**

1/38 • • forming the main load supporting or containing element or part thereof **[1, 2006.01]**

1/40 • using screw conveyors thereon **[1, 2006.01]**

1/42 • • mounted on the load supporting or containing element **[1, 2006.01]**

1/43 • using a loading ramp mounted on the vehicle (loading ramps per se B65G 69/28) **[5, 2006.01]**

1/44 • having a loading platform thereon raising the load to the level of the load supporting or containing element **[1, 2006.01]**

1/46 • • carried in vertical guides **[1, 2006.01]**

1/48 • using pivoted arms raisable above the load supporting or containing element (load-engaging elements B66) **[1, 2006.01]**

1/50 • • loading from in front of the vehicle **[1, 2006.01]**

1/52 • using rollers in the load supporting or containing element **[1, 2006.01]**

1/54 • using cranes for self-loading or self-unloading (vehicles for transporting cranes B60P 3/28; mobile or travelling cranes B66C) **[1, 2006.01]**

1/56 • the load supporting or containing element having bottom discharging openings **[1, 2006.01]**

1/58 • using vibratory effect **[1, 2006.01]**

1/60 • using fluids, e.g. having direct contact between fluid and load **[1, 2, 2006.01]**

1/62 • • with porous walls **[1, 2006.01]**

1/64 • the load supporting or containing element being readily removable (caravans, camping, or the like vehicles characterised by living accommodation in the form of a removable body supported by the vehicle unit B60P 3/33, B60P 3/345) **[1, 5, 2006.01]**

3/00 Vehicles adapted to transport, to carry or to comprise special loads or objects (ambulances or other vehicles with special provisions for transporting patients or disabled persons, or their personal conveyances A61G 3/00; hearses A61G 21/00; fire-fighting land vehicles A62C 27/00; refuse-collecting vehicles B65F 3/00, B65F 7/00; snow-removing vehicles E01H; armoured or armed vehicles F41H 7/00; self-propelled mine-clearing vehicles F41H 11/16) **[1, 2006.01]**

3/022 • for transporting prefabricated buildings or modules thereof, e.g. prefabricated garages or the like (conveying or assembling building elements E04G 21/14) **[5, 2006.01]**

3/025 • the object being a shop, cafeteria or display (the object being a workshop B60P 3/14) **[3, 2006.01]**

3/03 • for transporting money or other valuables **[3, 2006.01]**

3/035 • for transporting reel units **[3, 2006.01]**

3/04 • for transporting animals **[1, 2006.01]**

3/05 • for transporting meat (for transporting refrigerated goods B60P 3/20) **[3, 2006.01]**

3/055 • for transporting bottles **[3, 2006.01]**

3/06 • for carrying vehicles (B60P 3/12 takes precedence; caravans, camping, or like vehicles with vehicle-carrying means B60P 3/363) **[1, 3, 5, 2006.01]**

3/07 • • for carrying road vehicles **[3, 2006.01]**

3/071 • • • Arrangement of overturned or on-edge vehicles **[5, 2006.01]**

3/073 • • • Vehicle retainers **[5, 2006.01]**

3/075 • • • • for wheels, hubs, or axle shafts **[5, 2006.01]**

3/077 • • • • • Wheel cradles, chocks, or wells **[5, 2006.01]**

3/079 • • • • Tie-downs (B60P 3/075 takes precedence) **[5, 2006.01]**

3/08 • • • Multilevel-deck construction carrying vehicles **[1, 3, 2006.01]**

3/10 • • for carrying boats **[1, 2006.01]**

3/11 • • for carrying aircraft **[3, 2006.01]**

3/12 • for salvaging damaged vehicles **[1, 2006.01]**

3/14 • the object being a workshop for servicing, for maintenance, or for carrying workmen during work (lifting devices for movable platforms or cabins for workmen B66F 11/04) **[1, 2006.01]**

3/16 • for carrying mixed concrete, e.g. having rotatable drums **[1, 2006.01]**

3/18 • the object being a searchlight **[1, 2006.01]**

3/20 • for transporting refrigerated goods (air treatment of goods space B60H) **[1, 2006.01]**

3/22 • Tank vehicles (tank aspects B65D 88/00, B65D 90/00, F17C) **[1, 2006.01]**

3/24 • • compartmented **[1, 2006.01]**

3/28 • for transporting cranes (vehicles using cranes for self-loading or self-unloading B60P 1/54; mobile or travelling cranes B66C) **[1, 2006.01]**

3/30 • Spraying-vehicles (sprinkling-wagons for fertilising liquid A01C 23/00; for destruction of noxious animals, vermin, or unwanted vegetation A01M; for spraying asphalt, bitumen, tar, or the like E01C; for cleaning streets E01H) **[1, 2006.01]**

3/32 • comprising living accommodation for people, e.g. caravans, camping, or like vehicles (tents or canopies, in general E04H 15/00) **[1, 2006.01]**

3/325 • • the living accommodation being neither expansible nor collapsible nor capable of rearrangement **[5, 2006.01]**

3/33 • • • characterised by living accommodation in the form of a removable body supported by the vehicle unit **[5, 2006.01]**

3/335 • • • supported by a trailer-type vehicle or being itself of the trailer-type (B60P 3/33 takes precedence) **[5, 2006.01]**

3/34 • • the living accommodation being expansible, collapsible or capable of rearrangement (B60P 3/39 takes precedence; tents supported at least partially by vehicles E04H 15/06) **[1, 5, 2006.01]**

3/345 • • • characterised by living accommodation in the form of a removable body supported by the vehicle unit **[5, 2006.01]**

3/35 • • • supported by a trailer-type vehicle or being itself of the trailer-type (B60P 3/345 takes precedence) **[5, 2006.01]**

3/355 • • • • collapsible to a condition not usable as living accommodation, e.g. to a trailer of compact design **[5, 2006.01]**

3/36 • • Auxiliary arrangements; Arrangements of living accommodation (toilet or washing arrangements B60R 15/00); Details **[1, 5, 2006.01]**

3/363 • • • with vehicle-carrying means **[5, 2006.01]**

3/367 • • • • with boat-carrying means **[5, 2006.01]**

3/37 • • • Exterior platforms, e.g. porch (awnings for buildings E04F 10/00; trailer awnings E04H 15/08; awnings for tents E04H 15/58) **[5, 2006.01]**

3/373 • • • Passageways between living accommodation and vehicle operating compartment **[5, 2006.01]**

3/377 • • • Means for securing living accommodation to vehicle unit **[5, 2006.01]**

3/38 • • • Sleeping arrangements **[1, 2006.01]**

3/39 • • • • expansible, collapsible or repositionable elements adapted to support a bed, e.g. wall portions **[5, 2006.01]**

3/40 • for carrying long loads, e.g. with separate wheeled load-supporting elements (B60P 3/022 takes precedence; signal devices to be attached to overhanging load B60Q 7/02) **[1, 5, 2006.01]**

3/41 • • for log transport **[6, 2006.01]**

3/42 • convertible from one use to a different one (vehicles capable of travelling in or on different media, rail-and-road vehicles B60F) **[1, 2006.01]**

5/00 Arrangements of weighing machines on vehicles (adapting weighing machines to use on transport vehicles G01G 19/08) **[1, 2006.01]**

7/00 Securing or covering of load on vehicles [1, 2006.01]

7/02 • Covering of load **[1, 2006.01]**

7/04 • • by tarpaulins or like flexible members **[1, 2006.01]**

7/06 • Securing of load (vehicle retainers B60P 3/073) **[1, 5, 2006.01]**

7/08 • • Securing to vehicle floor or sides (B60P 7/13, B60P 7/135 take precedence) **[1, 3, 5, 2006.01]**

7/10 • • • the load being plates, cases, or boxes **[1, 2006.01]**

7/12 • • • the load being tree-trunks, beams, drums, tubes, or the like **[1, 2006.01]**

7/13 • • Securing freight containers or forwarding containers on vehicles **[3, 2006.01]**

7/135 • • Securing or supporting by load bracing means **[5, 2006.01]**

7/14 • • • the load bracing means comprising a movable bulkhead **[1, 2006.01]**

7/15 • • • the load bracing means comprising a movable bar **[5, 2006.01]**

7/16 • • Protecting against shocks **[1, 2006.01]**

7/18 • • • Protecting freight containers or forwarding containers **[3, 2006.01]**

9/00 Other vehicles predominantly for carrying loads [1, 2006.01]

B60Q ARRANGEMENT OF SIGNALLING OR LIGHTING DEVICES, THE MOUNTING OR SUPPORTING THEREOF OR CIRCUITS THEREFOR, FOR VEHICLES IN GENERAL [4]

Note(s) [1, 7]

1. This subclass also covers the operation and control of lighting devices, for example:
   - arrangement or adaptation of lighting switches or signal-initiating means for vehicles;
   - control of lighting devices in relation to the vehicle as a whole, e.g. for levelling, swivelling or aiming.
2. This subclass does not cover optical, mechanical, thermal or electrical arrangement of elements within lighting devices, which are covered by groups F21S 41/00-F21S 45/00.
3. Attention is drawn to the Note following the title of class B60.

Subclass index

1/00 Arrangement of optical signalling or lighting devices, the mounting or supporting thereof or circuits therefor (for lighting vehicle interior B60Q 3/00) **[1, 4, 2006.01]**

1/02 • the devices being primarily intended to illuminate the way ahead or to illuminate other areas of way or environments **[1, 2006.01]**

1/04 • • the devices being headlights **[1, 2006.01]**

1/05 • • • retractable **[5, 2006.01]**

1/06 • • • adjustable, e.g. remotely-controlled from inside vehicle (B60Q 1/05 takes precedence) **[1, 5, 2006.01]**

1/064 • • • • by fluid means **[5, 2006.01]**

1/068 • • • • by mechanical means **[5, 2006.01]**

1/072 • • • • • comprising a flexible element, e.g. chain **[5, 2006.01]**

1/076 • • • • by electric means **[5, 2006.01]**

1/08 • • • • automatically **[1, 2006.01]**

1/10 • • • • • due to vehicle inclination, e.g. due to load distribution **[1, 2006.01]**

1/105 • • • • • • by fluid means **[5, 2006.01]**

1/11 • • • • • • by mechanical means **[5, 2006.01]**

1/115 • • • • • • by electric means **[5, 2006.01]**

1/12 • • • • • due to steering position **[1, 2006.01]**

1/124 • • • • • • by mechanical means **[5, 2006.01]**

1/128 • • • • • • • comprising a flexible element, e.g. chain **[5, 2006.01]**

1/132 • • • • • • • comprising meshing gear elements **[5, 2006.01]**

1/136 • • • • • • • comprising rigid link elements **[5, 2006.01]**

1/14 • • • having dimming means **[1, 2006.01]**

1/16 • • • illuminating the way asymmetrically **[1, 2006.01]**

1/18 • • • being additional front lights **[1, 2006.01]**

1/20 • • • • Fog lights **[1, 2006.01]**

1/22 • • for reverse drive **[1, 2006.01]**

1/24 • • for lighting other areas than only the way ahead **[1, 2006.01]**

1/26 • the devices being primarily intended to indicate the vehicle, or parts thereof, or to give signals, to other traffic **[1, 2006.01]**

1/28 • • for indicating front of vehicle **[1, 2006.01]**

1/30 • • for indicating rear of vehicle, e.g. by means of reflecting surfaces **[1, 2006.01]**

1/32 • • for indicating vehicle sides **[1, 2006.01]**

1/34 • • for indicating change of drive direction (B60Q 1/22 takes precedence) **[1, 2006.01]**

1/36 • • • using movable members, e.g. arms with built-in flashing lamps **[1, 2006.01]**

1/38 • • • using immovably-mounted light sources, e.g. fixed flashing lamps **[1, 2006.01]**

1/40 • • • having automatic return to inoperative position **[1, 2006.01]**

1/42 • • • • due to steering-wheel position **[1, 2006.01]**

1/44 • • for indicating braking action **[1, 2006.01]**

1/46 • • for giving flashing caution signals during drive, other than signalling change of direction, e.g. flashing the headlights **[1, 2006.01]**

1/48 • • for parking purposes **[1, 2006.01]**

1/50 • • for indicating other intentions or conditions, e.g. request for waiting or overtaking **[1, 2006.01]**

1/52 • • • for indicating emergencies **[1, 2006.01]**

1/54 • • • for indicating speed **[1, 2006.01]**

1/56 • • for illuminating registrations or the like **[1, 2006.01]**

3/00 Arrangement of lighting devices for vehicle interiors; Lighting devices specially adapted for vehicle interiors [1, 4, 2006.01, 2017.01]

3/10 • for dashboards **[2017.01]**

3/12 • • lighting onto the surface to be illuminated **[2017.01]**

3/14 • • lighting through the surface to be illuminated **[2017.01]**

3/16 • • Circuits; Control arrangements **[2017.01]**

3/18 • • • for varying the light intensity **[2017.01]**

3/20 • for lighting specific fittings of passenger or driving compartments; mounted on specific fittings of passenger or driving compartments (lighting for dashboards B60Q 3/10) **[2017.01]**

3/208 • • Sun roofs; Windows **[2017.01]**

3/217 • • Doors, e.g. door sills; Steps **[2017.01]**

3/225 • • Small compartments, e.g. glove compartments **[2017.01]**

3/233 • • Seats; Arm rests; Head rests **[2017.01]**

3/242 • • Safety belts; Body harnesses **[2017.01]**

3/252 • • Sun visors **[2017.01]**

3/258 • • Rear-view mirrors **[2017.01]**

3/267 • • Door handles; Hand grips **[2017.01]**

3/275 • • Smoking-related fittings, e.g. cigarette lighters or ashtrays **[2017.01]**

3/283 • • Steering wheels; Gear levers **[2017.01]**

3/292 • • Ignition locks **[2017.01]**

3/30 • for compartments other than passenger or driving compartments, e.g. luggage or engine compartments **[2017.01]**

3/35 • • Portable lighting devices **[2017.01]**

3/40 • specially adapted for specific vehicle types **[2017.01]**

3/41 • • for mass transit vehicles, e.g. buses **[2017.01]**

3/43 • • • General lighting **[2017.01]**

3/44 • • • Spotlighting, e.g. reading lamps **[2017.01]**

3/46 • • • Emergency lighting, e.g. for escape routes **[2017.01]**

3/47 • • • Circuits; Control arrangements **[2017.01]**

3/49 • • for vehicles with non-fixed roofs, e.g. convertibles **[2017.01]**

3/50 • Mounting arrangements (for compartments other than passenger or driving compartments B60Q 3/30; specially adapted for specific vehicle types B60Q 3/40) **[2017.01]**

3/51 • • for mounting lighting devices onto vehicle interior, e.g. onto ceiling or floor **[2017.01]**

3/53 • • • Modular mounting systems, e.g. using tracks, rails or multiple plugs **[2017.01]**

3/54 • • Lighting devices embedded in interior trim, e.g. in roof liners **[2017.01]**

3/56 • • Lighting devices mounted on elongate supports, e.g. on flexible arms **[2017.01]**

3/57 • • Retractable or concealable lighting devices **[2017.01]**

3/59 • • Lighting devices mounted in the vehicle interior and adapted for portability **[2017.01]**

3/60 • characterised by optical aspects **[2017.01]**

3/62 • • using light guides **[2017.01]**

3/64 • • • for a single lighting device **[2017.01]**

3/66 • • • for distributing light among several lighting devices **[2017.01]**

3/68 • • using ultra-violet light **[2017.01]**

3/70 • characterised by the purpose **[2017.01]**

3/72 • • for preventing the driver from being dazzled **[2017.01]**

3/74 • • for overall compartment lighting; for overall compartment lighting in combination with specific lighting, e.g. room lamps with reading lamps (general lighting mounted on specific fittings B60Q 3/20; general lighting for mass transit vehicles B60Q 3/43) **[2017.01]**

3/76 • • for spotlighting, e.g. reading lamps (spotlighting on or for specific fittings B60Q 3/20; spotlighting in mass transit vehicles B60Q 3/44) **[2017.01]**

3/78 • • for generating luminous strips, e.g. for marking trim component edges **[2017.01]**

3/80 • Circuits; Control arrangements (for dashboards B60Q 3/16; for mass transit vehicles B60Q 3/47) **[2017.01]**

3/82 • • Switches specially adapted for vehicle interior lighting, e.g. switching by tilting the lens **[2017.01]**

3/85 • • for manual control of the light, e.g. of colour, orientation or intensity **[2017.01]**

3/88 • • Means for plugging to the electrical power supply of the vehicle, e.g. by using cigarette lighter sockets **[2017.01]**

5/00 Arrangement or adaptation of acoustic signal devices [1, 2006.01]

7/00 Arrangement or adaptation of portable emergency signal devices on vehicles [1, 2006.01]

7/02 • to be attached to overhanging loads or extending parts of vehicle **[1, 2006.01]**

9/00 Arrangement or adaptation of signal devices not provided for in one of main groups B60Q 1/00-B60Q 7/00 [1, 2006.01]

11/00 Arrangement of monitoring devices for devices provided for in groups B60Q 1/00-B60Q 9/00 [2, 2006.01]

B60R VEHICLES, VEHICLE FITTINGS, OR VEHICLE PARTS, NOT OTHERWISE PROVIDED FOR (fire prevention, containment or extinguishing specially adapted for vehicles A62C 3/07)

Note(s)

Attention is drawn to the Note following the title of class B60.

Subclass index

1/00 Optical viewing arrangements (antiglare equipment, e.g. polarising, for windscreens or windows B60J 3/00) **[1, 2, 2006.01]**

1/02 • Rear-view mirror arrangements (periscope arrangements B60R 1/10) **[1, 2006.01]**

1/04 • • mounted inside vehicle (B60R 1/08 takes precedence) **[1, 7, 2006.01]**

1/06 • • mounted on vehicle exterior (B60R 1/08 takes precedence) **[1, 7, 2006.01]**

1/062 • • • with remote control for adjusting position **[7, 2006.01]**

1/064 • • • • by manually powered actuator **[7, 2006.01]**

1/066 • • • • • for adjusting the mirror relative to its housing **[7, 2006.01]**

1/068 • • • • • • using cables **[7, 2006.01]**

1/07 • • • • by electrically powered actuator **[7, 2006.01]**

1/072 • • • • • for adjusting the mirror relative to its housing **[7, 2006.01]**

1/074 • • • • • for retracting the mirror arrangements to a non-use position alongside the vehicle **[7, 2006.01]**

1/076 • • • yieldable to excessive external force and provided with an indexed use position (B60R 1/062 takes precedence) **[7, 2006.01]**

1/078 • • • easily removable; mounted for bodily outward movement, e.g. when towing **[7, 2006.01]**

1/08 • • involving special optical features, e.g. avoiding blind spots **[1, 2006.01]**

1/10 • Front-view mirror arrangements; Periscope arrangements **[1, 2006.01]**

1/12 • Mirror assemblies combined with other articles, e.g. clocks **[1, 2006.01]**

3/00 Arrangements of steps, e.g. running-boards (constructed as superstructure sub-units of road vehicles B62D 25/22) **[1, 2006.01]**

3/02 • Retractable steps **[1, 2006.01]**

3/04 • with provisions for shoe-scraping **[1, 2006.01]**

5/00 **Compartments within vehicle body primarily intended or sufficiently spacious for trunks, suit-cases, or the like** (primarily intended for stowing loads in load-transporting vehicles B60P; arrangements for stowing spare wheels B62D 43/06) **[1, 2006.01]**

5/02 • arranged at front of vehicle **[1, 2006.01]**

5/04 • arranged at rear of vehicle **[1, 2006.01]**

7/00 **Stowing or holding appliances inside of vehicle primarily intended for personal property smaller than suit-cases, e.g. travelling articles, or maps** (for radio sets, television sets, telephones, or the like, mounting of cameras operative during drive, tools, or spare parts B60R 11/02-B60R 11/06; for receptacles for refuse, food, beverages, cigarettes B60N 3/00) **[1, 2006.01]**

7/02 • in a separate luggage compartment **[1, 2006.01]**

7/04 • in driver or passenger space **[1, 2006.01]**

7/05 • • mounted on sun visor **[5, 2006.01]**

7/06 • • mounted on or below dashboards **[1, 2006.01]**

7/08 • Disposition of racks, clips, or the like **[1, 2006.01]**

7/10 • • for supporting hats, clothes or clothes hangers **[5, 2006.01]**

7/12 • • for supporting umbrellas **[5, 2006.01]**

7/14 • • for supporting weapons **[5, 2006.01]**

9/00 **Supplementary fittings on vehicle exterior for carrying loads, e.g. luggage, sports gear or the like [1, 5, 2006.01]**

9/02 • at the sides, e.g. on running-board **[1, 2006.01]**

9/04 • Carriers associated with vehicle roof (B60R 9/08 takes precedence) **[1, 5, 2006.01]**

9/042 • • Carriers characterised by means to facilitate loading or unloading of the load, e.g. rollers, tracks, or the like **[5, 2006.01]**

9/045 • • Carriers being adjustable or transformable, e.g. expansible, collapsible **[5, 2006.01]**

9/048 • • Carriers characterised by article-gripping, -retaining, or -locking means **[5, 2006.01]**

9/05 • • Carriers characterised by wind deflecting means **[5, 2006.01]**

9/052 • • Carriers comprising elongate members extending only transversely of vehicle (B60R 9/08 takes precedence) **[5, 2006.01]**

9/055 • • Enclosure-type carriers, e.g. containers, boxes (B60R 9/048 takes precedence) **[5, 2006.01]**

9/058 • • characterised by releasable attaching means between carrier and roof **[5, 2006.01]**

9/06 • at vehicle front or rear **[1, 2006.01]**

9/08 • specially adapted for sports gear **[1, 2006.01]**

9/10 • • for cycles **[1, 2006.01]**

9/12 • • for skis **[1, 2006.01]**

11/00 **Arrangements for holding or mounting articles, not otherwise provided for [1, 2006.01]**

11/02 • for radio sets, television sets, telephones, or the like; Arrangement of controls thereof **[1, 2006.01]**

11/04 • Mounting of cameras operative during drive; Arrangement of controls thereof relative to the vehicle **[1, 2006.01]**

11/06 • for tools or spare parts (for spare wheels B62D 43/00) **[1, 2006.01]**

13/00 **Elements for body-finishing, identifying, or decorating; Arrangements or adaptations for advertising purposes [1, 2006.01]**

13/01 • Liners for load platforms or load compartments **[5, 2006.01]**

13/02 • Trim mouldings; Ledges; Wall liners; Roof liners (B60R 13/01 takes precedence) **[1, 5, 2006.01]**

13/04 • Ornamental or guard strips; Ornamental inscriptive devices **[1, 2006.01]**

13/06 • Sealing strips **[1, 2006.01]**

13/07 • Water drainage or guide means not integral with roof structure (B60R 13/06 takes precedence; water deflectors for bonnets or lids B62D 25/13) **[4, 2006.01]**

13/08 • Insulating elements, e.g. for sound insulation **[1, 4, 2006.01]**

13/10 • Registration, licensing, or like devices **[1, 2006.01]**

15/00 **Arrangements or adaptations of sanitation devices [1, 2006.01]**

15/02 • Washing facilities **[1, 2006.01]**

15/04 • Toilet facilities **[1, 2006.01]**

16/00 **Electric or fluid circuits specially adapted for vehicles and not otherwise provided for; Arrangement of elements of electric or fluid circuits specially adapted for vehicles and not otherwise provided for [3, 2006.01]**

16/02 • electric **[3, 2006.01]**

16/023 • • for transmission of signals between vehicle parts or subsystems **[2006.01]**

16/027 • • • between relatively movable parts of the vehicle, e.g. between steering wheel and column **[2006.01]**

16/03 • • for supply of electrical power to vehicle subsystems **[2006.01]**

16/033 • • • characterised by the use of electrical cells or batteries **[2006.01]**

16/037 • • for occupant comfort **[2006.01]**

16/04 • • Arrangement of batteries **[3, 6, 2006.01]**

16/06 • • for carrying-off electrostatic charges **[3, 2006.01]**

16/08 • fluid **[3, 2006.01]**

17/00 **Arrangements or adaptations of lubricating systems or devices [1, 2006.01]**

17/02 • Systems, e.g. central lubrication systems **[1, 2006.01]**

19/00 **Wheel guards; Radiator guards; Obstruction removers; Fittings damping bouncing force in collisions** (mudguards B62D 25/16) **[1, 2006.01]**

19/02 • Bumpers, i.e. impact receiving or absorbing members for protecting vehicles or fending off blows from other vehicles or objects (integral with waterborne vessels or specially adapted therefor B63B 59/02) **[1, 4, 2006.01]**

19/03 • • characterised by material, e.g. composite (B60R 19/18 takes precedence) **[4, 2006.01]**

19/04 • • formed from more than one section (B60R 19/18 takes precedence) **[1, 4, 2006.01]**

19/12 • • • vertically spaced **[4, 2006.01]**

19/14 • • • having folding parts **[4, 2006.01]**

19/16 • • • having deflecting members, e.g. rollers, balls **[4, 2006.01]**

19/18 • • Means within the bumper to absorb impact **[4, 2006.01]**

19/20 • • • containing gas or liquid, e.g. inflatable **[4, 2006.01]**

19/22 • • • containing cellular material, e.g. solid foam **[4, 2006.01]**

19/24 • • Arrangements for mounting bumpers on vehicles **[4, 2006.01]**

19/26 • • • comprising yieldable mounting means **[4, 2006.01]**

19/28 • • • • Metallic springs **[4, 2006.01]**
19/30 • • • • Elastomeric material **[4, 2006.01]**
19/32 • • • • Fluid shock absorbers **[4, 2006.01]**
19/34 • • • • destroyed upon impact, e.g. one-shot type **[4, 2006.01]**
19/36 • • • • Combinations of yieldable mounting means of different types **[4, 2006.01]**
19/38 • • • adjustably or movably mounted, e.g. horizontally displaceable for securing a space between parked vehicles **[4, 2006.01]**
19/40 • • • • in the direction of an obstacle before a collision **[4, 2006.01]**
19/42 • • extending primarily along the sides of, or completely encircling, a vehicle **[4, 2006.01]**
19/44 • • Bumper guards **[4, 2006.01]**
19/46 • • • spring- or pivotally-mounted **[4, 2006.01]**
19/48 • • combined with, or convertible into, other devices or objects, e.g. bumpers combined with road brushes, bumpers convertible into beds **[4, 2006.01]**
19/50 • • • with lights or registration plates **[4, 2006.01]**
19/52 • Radiator or grille guards **[4, 2006.01]**
19/54 • Obstruction removers or deflectors (B60R 19/16, B60R 21/34 take precedence) **[4, 2006.01]**
19/56 • Arrangements on high-riding vehicles, e.g. lorries, for preventing vehicles or objects from running thereunder **[4, 2006.01]**

21/00 Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks (safety belts or body harnesses in vehicles B60R 22/00; seats constructed to protect the occupant from the effect of abnormal g-forces, e.g. crash or safety seats, B60N 2/42; energy-absorbing arrangements for hand wheels for steering vehicles B62D 1/11; energy-absorbing arrangements for vehicle steering columns B62D 1/19) **[1, 4, 5, 2006.01]**

21/01 • Electrical circuits for triggering safety arrangements in case of vehicle accidents or impending vehicle accidents **[7, 2006.01]**
21/013 • • including means for detecting collisions, impending collisions or roll-over **[2006.01]**
21/0132 • • • responsive to vehicle motion parameters **[2006.01]**
21/0134 • • • responsive to imminent contact with an obstacle **[2006.01]**
21/0136 • • • responsive to actual contact with an obstacle **[2006.01]**
21/015 • • including means for detecting the presence or position of passengers, passenger seats or child seats, e.g. for disabling triggering **[2006.01]**
21/017 • • including arrangements for providing electric power to the safety arrangements **[2006.01]**
21/02 • Occupant safety arrangements or fittings **[1, 4, 2006.01]**
21/04 • • Padded linings for the vehicle interior **[1, 4, 2006.01]**
21/045 • • • associated with the instrument panel or dashboard **[4, 2006.01]**
21/05 • • • associated with the steering wheel, hand lever or column **[4, 5, 2006.01]**
21/055 • • Padded fittings, e.g. head rests, sun visors **[4, 2006.01]**
21/06 • • Safety nets, transparent sheets, curtains, or the like, e.g. between occupants and glass (B60R 21/11, B60R 21/12, B60R 21/16 take precedence) **[1, 4, 2006.01]**
21/08 • • • movable from an inoperative to an operative position, e.g. in a collision **[1, 4, 7, 2006.01]**
21/09 • • Control elements or operating handles movable from an operative to an out-of-the way position, e.g. switch knobs, window cranks **[4, 2006.01]**
21/11 • • Overhead guards, e.g. against loads falling down **[4, 2006.01]**
21/12 • • which protect the occupants against personal attack from the inside or the outside of the vehicle **[1, 4, 2006.01]**
21/13 • • Roll-over protection **[4, 7, 2006.01]**
21/16 • • Inflatable occupant restraints or confinements designed to inflate upon impact or impending impact, e.g. air bags **[4, 2006.01]**
21/18 • • • the inflatable member formed as a belt or harness or combined with a belt or harness arrangement **[4, 2006.01]**
21/20 • • • Arrangements for storing inflatable members in their non-use or deflated condition; Arrangement or mounting of air bag modules or components **[4, 2006.01, 2011.01]**
21/201 • • • • Packaging straps or envelopes for inflatable members **[2011.01]**
21/203 • • • • in steering wheels or steering columns **[2006.01]**
21/205 • • • • in dashboards **[2006.01, 2011.01]**
21/206 • • • • • in the lower part of dashboards, e.g. for protecting the knees **[2011.01]**
21/207 • • • • in vehicle seats **[2006.01]**
21/21 • • • • in vehicle side panels, e.g. doors (pillar mounted arrangements B60R 21/213) **[2006.01, 2011.01]**
21/213 • • • • in vehicle roof frames or pillars **[2006.01, 2011.01]**
21/214 • • • • in roof panels **[2011.01]**
21/215 • • • • characterised by the covers for the inflatable member **[2006.01, 2011.01]**
21/2155 • • • • • with complex motion of the cover; Retraction under the lining during opening **[2011.01]**
21/216 • • • • • comprising tether means for limitation of cover motion during deployment **[2011.01]**
21/2165 • • • • • characterised by a tear line for defining a deployment opening **[2011.01]**
21/217 • • • • Inflation fluid source retainers, e.g. reaction canisters; Connection of bags, covers, diffusers or inflation fluid sources therewith or together **[2006.01, 2011.01]**
21/23 • • • Inflatable members (B60R 21/18 takes precedence) **[2006.01]**
21/231 • • • • characterised by their shape, construction or spatial configuration **[2006.01, 2011.01]**
21/232 • • • • • Curtain-type airbags deploying mainly in a vertical direction from their top edge **[2011.01]**
21/233 • • • • • comprising a plurality of individual compartments; comprising two or more bag-like members, one within the other (B60R 21/232 takes precedence) **[2006.01]**
21/2334 • • • • • Expansion control features **[2011.01]**
21/2338 • • • • • • Tethers **[2011.01]**

21/2342 • • • • • • Tear seams **[2011.01]**
21/2346 • • • • • • Soft diffusers **[2011.01]**
21/235 • • • • characterised by their material **[2006.01]**
21/237 • • • • characterised by the way they are folded **[2006.01]**
21/239 • • • • characterised by their venting means **[2006.01]**
21/26 • • • characterised by the inflation fluid source or means to control inflation fluid flow **[4, 2006.01, 2011.01]**
21/261 • • • • with means other than bag structure to diffuse or guide inflation fluid **[2011.01]**
21/262 • • • • • Elongated tubular diffusers, e.g. curtain-type **[2011.01]**
21/263 • • • • using a variable source, e.g. plural stage or controlled output (hybrid inflator B60R 21/272) **[2011.01]**
21/264 • • • • using instantaneous generation of gas, e.g. pyrotechnic (B60R 21/268 takes precedence) **[2006.01]**
21/268 • • • • using instantaneous release of stored pressurised gas **[2006.01, 2011.01]**
21/272 • • • • • with means for increasing the pressure of the gas just before or during liberation, e.g. hybrid inflators **[2006.01]**
21/274 • • • • • characterised by means to rupture or open the fluid source **[2011.01]**
21/276 • • • • with means to vent the inflation fluid source, e.g. in case of overpressure **[2006.01]**
21/30 • • • • with means to draw ambient air into the flow line and mix such air with the inflation fluid **[4, 2006.01]**
21/33 • • • Arrangements for non-electric triggering of inflation **[2006.01]**
21/34 • Protecting non-occupants of a vehicle, e.g. pedestrians **[4, 2006.01, 2011.01]**
21/36 • • using airbags **[2011.01]**
21/38 • • using means for lifting bonnets **[2011.01]**

22/00 Safety belts or body harnesses in vehicles [4, 2006.01]
22/02 • Semi-passive restraint systems, e.g. systems applied or removed automatically but not both **[4, 2006.01]**
22/03 • • Means for presenting the belt or part thereof to the wearer **[6, 2006.01]**
22/04 • Passive restraint systems, i.e. systems both applied and removed automatically, e.g. by movement of the vehicle door **[4, 2006.01]**
22/06 • • having the belt or harness connected to a member slidable in a vehicle-mounted track **[4, 2006.01]**
22/08 • • having the belt retractor mounted on or in a vehicle closure, e.g. the door **[4, 2006.01]**
22/10 • specially adapted for children or animals **[4, 2006.01]**

Note(s) [6]

Groups B60R 22/02-B60R 22/08 and B60R 22/12-B60R 22/48 take precedence over group B60R 22/10.

22/12 • Construction of belts or harnesses (B60R 21/18 takes precedence) **[4, 2006.01]**
22/14 • • incorporating enlarged restraint areas, e.g. vests, nets **[4, 2006.01]**
22/16 • • using belts which become permanently deformed, i.e. one time use **[4, 2006.01]**
22/18 • Anchoring devices **[4, 2006.01]**
22/185 • • with stopping means for acting directly upon the belt in an emergency, e.g. by clamping or friction **[7, 2006.01]**
22/19 • • with means for reducing belt tension during use under normal conditions **[7, 2006.01]**
22/195 • • with means to tension the belt in an emergency **[7, 2006.01]**
22/20 • • adjustable in position, e.g. in height **[4, 2006.01]**
22/22 • • secured to the vehicle floor **[4, 2006.01]**
22/24 • • secured to the side, door, or roof of the vehicle **[4, 2006.01]**
22/26 • • secured to the seat **[4, 2006.01]**
22/28 • incorporating energy-absorbing devices **[4, 2006.01]**
22/30 • Coupling devices other than buckles, including length-adjusting fittings **[4, 2006.01]**
22/32 • Devices for releasing in an emergency, e.g. after an accident **[4, 2006.01]**
22/34 • Belt retractors, e.g. reels (anchoring devices with means to tension the belt in an emergency B60R 22/195) **[4, 7, 2006.01]**
22/343 • • with electrically actuated locking means **[6, 2006.01]**
22/347 • • with means for permanently locking the retractor during the wearing of the belt (B60R 22/343, B60R 22/415 take precedence) **[6, 2006.01]**
22/35 • • • the locking means being automatically actuated **[6, 2006.01]**
22/353 • • • • in response to belt movement when a wearer applies the belt **[6, 2006.01]**
22/357 • • • • in response to fastening of the belt buckle **[6, 2006.01]**
22/36 • • self-locking in an emergency (B60R 22/343 takes precedence) **[4, 2006.01]**
22/38 • • • responsive only to belt movement **[4, 2006.01]**
22/40 • • • responsive only to vehicle movement **[4, 2006.01]**
22/405 • • • responsive to belt movement and vehicle movement **[6, 2006.01]**
22/41 • • • with additional means for preventing locking under predetermined conditions **[6, 2006.01]**
22/415 • • • with additional means allowing a permanent locking of the retractor during the wearing of the belt **[6, 2006.01]**
22/42 • • • having means for acting directly upon the belt, e.g. by clamping or friction **[4, 2006.01]**
22/44 • • with means for reducing belt tension during use under normal conditions **[4, 2006.01]**
22/46 • • with means to tension the belt in an emergency **[4, 7, 2006.01]**
22/48 • Control systems, alarms, or interlock systems, for the correct application of the belt or harness **[4, 2006.01]**

25/00 Fittings or systems for preventing or indicating unauthorised use or theft of vehicles (locks for vehicles E05B 77/00-E05B 85/00) **[1, 5, 2006.01, 2013.01]**
25/01 • operating on vehicle systems or fittings, e.g. on doors, seats or windscreens **[2013.01]**
25/02 • • operating on the steering mechanism **[1, 2006.01, 2013.01]**
25/021 • • • restraining movement of the steering column or steering wheel hub, e.g. restraining means controlled by ignition switch **[2013.01]**
25/0215 • • • • using electric means, e.g. electric motors or solenoids **[2013.01]**
25/022 • • • operating on the steering wheel, e.g. bars locked to the steering wheel rim (B60R 25/021 takes precedence) **[2013.01]**
25/023 • • • Countermeasures against the physical destruction of the steering lock **[2013.01]**

25/04 • • operating on the propulsion system, e.g. engine or drive motor **[1, 2006.01, 2013.01]**
25/042 • • • operating on the fuel supply **[2013.01]**
25/043 • • • by blocking the exhaust **[2013.01]**
25/044 • • • by limiting or blocking the air supply **[2013.01]**
25/045 • • • by limiting or cutting the electrical supply to the propulsion unit **[2013.01]**
25/06 • • • operating on the vehicle transmission **[1, 2006.01]**
25/08 • • operating on brakes or brake systems **[1, 2006.01]**
25/09 • • by restraining wheel rotation, e.g. wheel clamps **[2013.01]**
25/10 • actuating a signalling device **[1, 2006.01, 2013.01]**
25/102 • • a signal being sent to a remote location, e.g. a radio signal being transmitted to a police station, a security company or the owner **[2013.01]**
25/104 • • characterised by the type of theft warning signal, e.g. visual or audible signals with special characteristics **[2013.01]**
25/20 • Means to switch the anti-theft system on or off **[2013.01]**
25/21 • • using hidden switches **[2013.01]**
25/22 • • using mechanical identifiers **[2013.01]**
25/23 • • using manual input of alphanumerical codes **[2013.01]**
25/24 • • using electronic identifiers containing a code not memorised by the user **[2013.01]**
25/25 • • using biometry **[2013.01]**
25/30 • Detection related to theft or to other events relevant to anti-theft systems **[2013.01]**
25/31 • • of human presence inside or outside the vehicle **[2013.01]**
25/32 • • of vehicle dynamic parameters, e.g. speed or acceleration **[2013.01]**
25/33 • • of global position, e.g. by providing GPS coordinates **[2013.01]**
25/34 • • of conditions of vehicle components, e.g. of windows, door locks or gear selectors **[2013.01]**
25/40 • Features of the power supply for the anti-theft system, e.g. anti-theft batteries, back-up power supply or means to save battery power **[2013.01]**

99/00 Subject matter not provided for in other groups of this subclass [2009.01]

B60S SERVICING, CLEANING, REPAIRING, SUPPORTING, LIFTING, OR MANOEUVRING OF VEHICLES, NOT OTHERWISE PROVIDED FOR

Note(s)

Attention is drawn to the Note following the title of class B60.

Subclass index

1/00 Cleaning of vehicles (by apparatus not integral with vehicle B60S 3/00; cleaning in general B08B; de-icing of aircraft B64D; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84) **[1, 2006.01]**
1/02 • Cleaning windscreens, windows, or optical devices **[1, 2006.01]**
1/04 • • Wipers or the like, e.g. scrapers **[1, 2006.01]**
1/06 • • • characterised by the drive (producing other than swinging movement B60S 1/44) **[1, 2006.01]**
1/08 • • • • electrically driven **[1, 2006.01]**
1/10 • • • • pneumatically driven **[1, 2006.01]**
1/12 • • • • hydraulically driven **[1, 2006.01]**
1/14 • • • • personally driven **[1, 2006.01]**
1/16 • • • • Means for transmitting drive **[1, 2006.01]**
1/18 • • • • • mechanically **[1, 2006.01]**
1/20 • • • • • • by cable drives; by flexible shafts **[1, 2006.01]**
1/22 • • • • • • by rotary cams **[1, 2006.01]**
1/24 • • • • • • by rotary cranks **[1, 2006.01]**
1/26 • • • • • • by toothed gearing **[1, 2006.01]**
1/28 • • • characterised by a plurality of wipers (B60S 1/06 takes precedence) **[1, 2006.01]**
1/30 • • • • arranged both outside and inside **[1, 2006.01]**
1/32 • • • characterised by constructional features of wiper blades or arms **[1, 2006.01]**
1/34 • • • • Wiper arms; Mountings therefor **[1, 2006.01]**
1/36 • • • • • Variable-length arms **[1, 2006.01]**
1/38 • • • • Wiper blades **[1, 2006.01]**
1/40 • • • • Connections between blades and arms **[1, 2006.01]**
1/42 • • • • • resilient **[1, 2006.01]**
1/44 • • • the wiper blades having other than swinging movement, e.g. rotary **[1, 2006.01]**
1/46 • • using liquid; Windscreen washers **[1, 2006.01]**
1/48 • • • Liquid supply therefor **[1, 2006.01]**
1/50 • • • • Arrangement of reservoir **[1, 2006.01]**
1/52 • • • • Arrangement of nozzles (nozzles per se B05B) **[1, 2006.01]**
1/54 • • using gas, e.g. hot air **[1, 2006.01]**
1/56 • • specially adapted for cleaning other parts or devices than front windows or windscreens **[1, 2006.01]**
1/58 • • • for rear windows **[1, 2006.01]**
1/60 • • • for signalling devices, e.g. reflectors **[1, 2006.01]**
1/62 • Other vehicle fittings for cleaning **[1, 2006.01]**

1/64 • • for cleaning vehicle interiors, e.g. built-in vacuum cleaners **[1, 2006.01]**
1/66 • • for cleaning vehicle exterior **[1, 2006.01]**
1/68 • • • for freeing wheels or tyres from foreign matter, e.g. wheel scrapers **[1, 2006.01]**

3/00 Vehicle cleaning apparatus not integral with vehicles (cleaning in general B08B; cleaning peculiar to waterborne vessels B63B 57/00, B63B 59/00; ground equipment for cleaning aircraft B64F 5/00) **[1, 2006.01]**
3/04 • for exteriors of land vehicles **[1, 2006.01]**
3/06 • • with rotary bodies contacting the vehicles **[1, 2006.01]**

5/00 Servicing, maintaining, repairing, or refitting of vehicles (vehicles adapted to carry a workshop for servicing or maintenance B60P 3/14; servicing rail locomotives B61K) **[1, 2006.01]**
5/02 • Supplying fuel to vehicles; General disposition of plant in filling stations (apparatus for transferring measured quantities of petrol, oil, or the like from storage space to vehicles B67D) **[1, 2006.01]**
5/04 • Supplying air for tyre inflation (arrangement of tyre inflating devices on vehicles B60C 23/00; tyre pressure gauges G01L 17/00) **[3, 2006.01]**
5/06 • Supplying batteries to, or removing batteries from, vehicles (exchanging batteries for electric propulsion of vehicles B60L 53/80) **[6, 2006.01, 2019.01]**

9/00 Ground-engaging vehicle fittings for supporting, lifting, or manoeuvring the vehicle, wholly or in part, e.g. built-in jacks (lifting devices in general B66F; supports in general F16M) **[1, 2006.01]**
9/02 • for only lifting or supporting **[1, 2006.01]**
9/04 • • mechanically **[1, 2006.01]**
9/06 • • • of screw-and-nut type **[1, 2006.01]**
9/08 • • • • the screw axis being substantially vertical **[1, 2006.01]**
9/10 • • by fluid pressure **[1, 2006.01]**
9/12 • • • of telescopic type **[1, 2006.01]**
9/14 • for both lifting and manoeuvring **[1, 2006.01]**
9/16 • • for operating only on one end of vehicle (B60S 9/205 takes precedence) **[1, 4, 2006.01]**
9/18 • • • mechanically **[1, 2006.01]**
9/20 • • • with fluid-pressure lift **[1, 2006.01]**
9/205 • • Power driven manoeuvring fittings, e.g. reciprocably driven steppers or rotatably driven cams (vehicles with ground-engaging propulsion means, e.g. walking members, B62D 57/02) **[4, 2006.01]**
9/21 • • • comprising a rotatably driven auxiliary wheel or endless track, e.g. driven by a ground wheel (track vehicles with additional or alternative ground wheels B62D 55/02, B62D 55/04; auxiliary drives from a ground wheel B60K 25/08) **[4, 2006.01]**
9/215 • • • • driven by an auxiliary motor **[4, 2006.01]**
9/22 • Means for attaching lifting, supporting, or manoeuvring devices to vehicles (for separate devices B60S 11/00) **[1, 2006.01]**

11/00 Vehicle modifications for receiving separate lifting, supporting, or manoeuvring devices [1, 2006.01]

13/00 Vehicle-manoeuvring devices separate from the vehicle (vehicle-lifting or pushing devices B66F) **[1, 2006.01]**
13/02 • Turntables; Traversers (incorporated in vehicle-storing garages E04H) **[1, 2006.01]**

B60T VEHICLE BRAKE CONTROL SYSTEMS OR PARTS THEREOF; BRAKE CONTROL SYSTEMS OR PARTS THEREOF, IN GENERAL (control of electrodynamic brake systems B60L 7/00; conjoint control of brakes and other drive units of vehicles B60W)**; ARRANGEMENT OF BRAKING ELEMENTS ON VEHICLES IN GENERAL; PORTABLE DEVICES FOR PREVENTING UNWANTED MOVEMENT OF VEHICLES; VEHICLE MODIFICATIONS TO FACILITATE COOLING OF BRAKES [1, 2006.01]**

Note(s)

In this subclass, the following expression is used with the meaning indicated:
- "brake control systems" includes brake control systems for vehicles or of general applicability.

Subclass index

1/00 Arrangements of braking elements, i.e. of those parts where braking effect occurs [1, 2006.01]
1/02 • acting by retarding wheels **[1, 2006.01]**
1/04 • • acting directly on tread **[1, 2006.01]**
1/06 • • acting otherwise than on tread, e.g. employing rim, drum, disc, or transmission **[1, 2006.01]**

1/08 • • using fluid or powdered medium **[1, 2006.01]**
1/087 • • • in hydrodynamic, i.e. non-positive displacement, retarders **[3, 2006.01]**
1/093 • • • in hydrostatic, i.e. positive displacement, retarders **[3, 2006.01]**
1/10 • • by utilising wheel movement for accumulating energy, e.g. driving air compressors (using propulsion unit as braking means, see the relevant class) **[1, 2006.01]**
1/12 • acting otherwise than by retarding wheels, e.g. jet-action **[1, 2006.01]**
1/14 • • directly on road (portable devices, e.g. chocks, B60T 3/00) **[1, 2006.01]**
1/16 • • by increasing air resistance, e.g. flaps **[1, 2006.01]**

3/00 Portable devices for preventing unwanted movement of vehicles, e.g. chocks [1, 2006.01]

5/00 Vehicle modifications to facilitate cooling of brakes [1, 2006.01]

Brake control systems or parts thereof

7/00 Brake-action initiating means [1, 2006.01]
7/02 • for personal initiation **[1, 2006.01]**
7/04 • • foot-actuated **[1, 2006.01]**
7/06 • • • Disposition of pedal **[1, 2006.01]**
7/08 • • hand-actuated **[1, 2006.01]**
7/10 • • • Disposition of hand control **[1, 2006.01]**
7/12 • for automatic initiation; for initiation not subject to will of driver or passenger **[1, 2006.01]**
7/14 • • operated upon collapse of driver **[1, 2006.01]**
7/16 • • operated by remote control, i.e. initiating means not mounted on vehicle **[1, 2006.01]**
7/18 • • • operated by wayside apparatus **[1, 2006.01]**
7/20 • • specially adapted for trailers, e.g. in case of uncoupling of trailer (inertia-actuated overrun brakes B60T 13/08) **[1, 2006.01]**
7/22 • • initiated by contact of vehicle, e.g. bumper, with an external object, e.g. another vehicle **[4, 2006.01]**

8/00 Arrangements for adjusting wheel-braking force to meet varying vehicular or ground-surface conditions, e.g. limiting or varying distribution of braking force (by changing number of effective brake cylinders in power brake systems B60T 17/10) **[1, 2006.01]**
8/17 • Using electrical or electronic regulation means to control braking **[2006.01]**

Note(s) [2006.01]

When classifying in group B60T 8/17, classification is also made in appropriate places in groups B60T 8/18, B60T 8/24, B60T 8/26 or B60T 8/32 if other aspects than electronic control are of interest.

8/171 • • Detecting parameters used in the regulation; Measuring values used in the regulation **[2006.01]**
8/172 • • Determining control parameters used in the regulation, e.g. by calculations involving measured or detected parameters **[2006.01]**
8/173 • • Eliminating or reducing the effect of unwanted signals, e.g. due to vibrations or electrical noise **[2006.01]**
8/174 • • characterised by using special control logic, e.g. fuzzy logic **[2006.01]**
8/175 • • Brake regulation specially adapted to prevent excessive wheel spin during vehicle acceleration, e.g. for traction control **[2006.01]**
8/1755 • • Brake regulation specially adapted to control the stability of the vehicle, e.g. taking into account yaw rate or transverse acceleration in a curve (road vehicle drive control systems for control of driving stability otherwise than by controlling a particular sub-unit B60W 30/02) **[2006.01]**
8/176 • • Brake regulation specially adapted to prevent excessive wheel slip during vehicle deceleration, e.g. ABS (B60T 8/1755 takes precedence) **[2006.01]**
8/1761 • • • responsive to wheel or brake dynamics, e.g. wheel slip, wheel acceleration or rate of change of brake fluid pressure **[2006.01]**
8/1763 • • • responsive to the coefficient of friction between the wheels and the ground surface (B60T 8/1764 takes precedence) **[2006.01]**
8/1764 • • • Regulation during travel on surface with different coefficients of friction, e.g. between left and right sides, mu-split **[2006.01]**
8/1766 • • • Proportioning of brake forces according to vehicle axle loads, e.g. front to rear of vehicle **[2006.01]**
8/1769 • • • specially adapted for vehicles having more than one driven axle, e.g. four-wheel drive vehicles **[2006.01]**
8/18 • responsive to vehicle weight or load, e.g. load distribution (B60T 8/30 takes precedence; responsive to weight and speed condition B60T 8/58) **[1, 4, 2006.01]**
8/20 • • with stepwise control action **[1, 2006.01]**
8/22 • • with continuous control action **[1, 2006.01]**
8/24 • responsive to vehicle inclination or change of direction, e.g. negotiating bends **[1, 2006.01]**
8/26 • characterised by producing differential braking between front and rear wheels **[1, 2006.01]**
8/28 • • responsive to deceleration **[4, 2006.01]**
8/30 • • responsive to load **[4, 2006.01]**
8/32 • responsive to a speed condition, e.g. acceleration or deceleration (B60T 8/28 takes precedence) **[4, 2006.01]**
8/34 • • having a fluid pressure regulator responsive to a speed condition **[4, 2006.01]**
8/36 • • • including a pilot valve responding to an electromagnetic force **[4, 2006.01]**
8/38 • • • including valve means of the relay or driver controlled type **[4, 2006.01]**
8/40 • • • comprising an additional fluid circuit including fluid pressurising means for modifying the pressure of the braking fluid, e.g. including wheel driven pumps for detecting a speed condition, or pumps which are controlled by means independent of the braking system **[4, 2006.01]**
8/42 • • • having expanding chambers for controlling pressure **[4, 2006.01]**
8/44 • • • co-operating with a power-assist booster means associated with a master cylinder for controlling the release and reapplication of brake pressure through an interaction with the power assist device **[4, 2006.01]**
8/46 • • • the pressure being reduced by exhausting fluid **[4, 2006.01]**
8/48 • • • connecting the brake actuator to an alternative or additional source of fluid pressure **[4, 2006.01]**

8/50 • • • having means for controlling the rate at which pressure is reapplied to the brake **[4, 2006.01]**

8/52 • • Torque sensing, i.e. wherein the braking action is controlled by forces producing or tending to produce a twisting or rotating motion on a braked rotating member **[4, 2006.01]**

8/54 • • by mechanical means **[4, 2006.01]**

8/56 • • having means for changing the coefficient of friction **[4, 2006.01]**

8/58 • • responsive to speed and another condition or to plural speed conditions **[4, 2006.01]**

Note(s) [4]

In this group, a single condition which is itself responsive to, or representative of, another single condition is not regarded as plural conditions.

8/60 • • • using electrical circuitry for controlling the braking action, the circuitry deriving a control function relating to the dynamic of the braked vehicle or wheel **[4, 2006.01]**

8/62 • • • • wherein the individual vehicle wheels are provided (i) with self-contained braking systems operating the individual wheels in accordance with its dynamic state or (ii) with a central processing unit which receives input from individual wheels or wheel groups and produces a plurality of control signals for separately operating individual wheels or groups of wheels **[4, 2006.01]**

8/64 • • • • wherein the controlled braking action is characterised by the manner in which the braking fluid pressure is reduced or reapplied **[4, 2006.01]**

8/66 • • • • wherein the braking action is responsive to the difference between a computed or other theoretical vehicle speed and an actual speed of a wheel thereof **[4, 2006.01]**

8/68 • • • • • wherein the braking action is controlled by a difference between the rate of change of vehicle velocity and the rate of change of wheel velocity **[4, 2006.01]**

8/70 • • • • • sensing both acceleration and deceleration of either the vehicle or the wheel **[4, 2006.01]**

8/72 • • responsive to a difference between a speed condition, e.g. deceleration, and a fixed reference (B60T 8/66 takes precedence) **[4, 2006.01]**

8/74 • • • sensing a rate of change of velocity **[4, 2006.01]**

8/76 • • • two or more sensing means from different wheels indicative of the same type of speed condition **[4, 2006.01]**

8/78 • • • using electrical circuitry for controlling the braking action, the circuitry deriving a control function relating to the dynamics of the braked vehicle or wheel **[4, 2006.01]**

8/80 • • • • Means sensing a rate of change of velocity **[4, 2006.01]**

8/82 • • • • two or more sensing means from different wheels indicative of the same type of speed condition **[4, 2006.01]**

8/84 • • • • wherein two wheels or wheel groups are controlled in dependence on the behaviour of a reference wheel or wheel group, with means for changing the reference wheel, e.g. "select high, select low" operation **[4, 2006.01]**

8/86 • • wherein the brakes are automatically applied in accordance with a speed condition and having means for overriding the automatic braking device when a skid condition occurs **[4, 2006.01]**

8/88 • • with failure responsive means, i.e. means for detecting and indicating faulty operation of the speed responsive control means **[4, 2006.01]**

8/90 • • • using a simulated speed signal to test speed responsive control means **[4, 2006.01]**

8/92 • • • automatically taking corrective action **[4, 2006.01]**

8/94 • • • • on a fluid pressure regulator **[4, 2006.01]**

8/96 • • • • on speed responsive control means **[4, 2006.01]**

10/00 Control or regulation for continuous braking making use of fluid or powdered medium, e.g. for use when descending a long slope [4, 2006.01]

10/02 • with hydrodynamic brake **[4, 2006.01]**

10/04 • with hydrostatic brake **[4, 2006.01]**

11/00 Transmitting braking action from initiating means to ultimate brake actuator without power assistance or drive or where such assistance or drive is irrelevant [1, 5, 2006.01]

11/04 • transmitting mechanically **[1, 5, 2006.01]**

11/06 • • Equalising arrangements **[1, 5, 2006.01]**

11/08 • • providing variable leverage **[1, 5, 2006.01]**

11/10 • transmitting by fluid means, e.g. hydraulic **[1, 5, 2006.01]**

11/12 • • the transmitted force being varied therein (B60T 11/16-B60T 11/28 take precedence) **[1, 5, 2006.01]**

11/14 • • the transmitted force being substantially unchanged **[1, 5, 2006.01]**

11/16 • • Master control, e.g. master cylinders **[1, 5, 2006.01]**

11/18 • • • Connection thereof to initiating means **[1, 5, 2006.01]**

11/20 • • • Tandem, side-by-side, or other multiple master-cylinder units **[1, 5, 2006.01]**

11/21 • • • • with two pedals operating on respective circuits, pressures therein being equalised when both pedals are operated together, e.g. for steering **[5, 2006.01]**

11/22 • • • characterised by being integral with reservoir **[1, 5, 2006.01]**

11/224 • • • with pressure-varying means, e.g. with two stage operation provided by use of different piston diameters including continuous variation from one diameter to another **[5, 2006.01]**

11/228 • • • Pressure-maintaining arrangements, e.g. for replenishing the master cylinder chamber with fluid from a reservoir (B60T 11/232 takes precedence) **[5, 2006.01]**

11/232 • • • Recuperation valves **[5, 2006.01]**

11/236 • • • Piston sealing arrangements **[5, 2006.01]**

11/24 • • Single initiating means operating on more than one circuit, e.g. dual circuits (multiple master-cylinder units B60T 11/20) **[1, 5, 2006.01]**

11/26 • • Reservoirs (integral with master controls B60T 11/22) **[1, 5, 2006.01]**

11/28 • • Valves specially adapted therefor (recuperation valves B60T 11/232) **[1, 5, 2006.01]**

11/30 • • • Bleed valves for hydraulic brake systems **[1, 5, 2006.01]**

11/32 • • • Automatic cut-off valves for defective pipes **[1, 5, 2006.01]**

11/34 • • • Pressure-reducing or limiting valves **[1, 5, 2006.01]**

13/00 Transmitting braking action from initiating means to ultimate brake actuator with power assistance or drive; Brake systems incorporating such transmitting means, e.g. air-pressure brake systems [1, 2006.01]

13/02 • with mechanical assistance or drive **[1, 2006.01]**

13/04 • • by spring or weight (fluid-released B60T 13/10) **[1, 2006.01]**

13/06 • • by inertia, e.g. flywheel **[1, 2006.01]**

13/08 • • • Overrun brakes **[1, 2006.01]**

13/10 • with fluid assistance, drive, or release **[1, 2006.01]**

13/12 • • the fluid being liquid **[1, 2006.01]**

13/122 • • • Systems using both master cylinder and distributor valve; Structural associations of master cylinder with distributor valve **[6, 2006.01]**

13/125 • • • Systems using brake pressure distributor valve without master cylinder **[6, 2006.01]**

13/128 • • • Systems using booster hydraulically combined with master cylinder **[6, 2006.01]**

13/13 • • • • with additional direct hydraulic output from booster to brake circuit **[6, 2006.01]**

13/132 • • • Systems using booster having mechanical output, e.g. to master cylinder **[6, 2006.01]**

13/135 • • • Boosters characterised by control valve in booster piston **[6, 2006.01]**

13/138 • • • Pressure supply arrangements **[6, 2006.01]**

13/14 • • • • using accumulators or reservoirs **[1, 6, 2006.01]**

13/16 • • • • using pumps directly, i.e. without interposition of accumulators or reservoirs **[1, 6, 2006.01]**

13/18 • • • • • with control of pump output delivery **[1, 6, 2006.01]**

13/20 • • • • • with control of pump driving means **[1, 6, 2006.01]**

13/22 • • • Brakes applied by springs or weights and released hydraulically **[1, 2006.01]**

13/24 • • the fluid being gaseous **[1, 2006.01]**

13/26 • • • Compressed-air systems **[1, 2006.01]**

13/36 • • • • direct, i.e. brakes applied directly by compressed air **[1, 2006.01]**

13/38 • • • • Brakes applied by springs or weights and released by compressed air **[1, 2006.01]**

13/40 • • • • indirect, i.e. compressed-air booster units **[1, 2006.01]**

13/44 • • • • • with two-chamber booster units **[1, 2006.01]**

13/45 • • • • • with multiple booster units, e.g. tandem booster units **[5, 2006.01]**

13/46 • • • Vacuum systems **[1, 2006.01]**

13/48 • • • • direct, i.e. brakes applied directly by vacuum **[1, 2006.01]**

13/50 • • • • Brakes applied by springs or weights and released by vacuum **[1, 2006.01]**

13/52 • • • • indirect, i.e. vacuum booster units **[1, 2006.01]**

13/56 • • • • • with two-chamber booster units **[1, 2006.01]**

13/563 • • • • • with multiple booster units, e.g. tandem booster units **[5, 2006.01]**

13/565 • • • • • characterised by being associated with master cylinders, e.g. integrally formed **[5, 2006.01]**

13/567 • • • • • characterised by constructional features of the casing or by its strengthening or mounting arrangements **[5, 2006.01]**

13/569 • • • • • characterised by piston details, e.g. construction, mounting of diaphragm **[5, 2006.01]**

13/57 • • • • • characterised by constructional features of control valves **[5, 2006.01]**

13/573 • • • • • characterised by reaction devices **[5, 2006.01]**

13/575 • • • • • • using resilient discs or pads **[5, 2006.01]**

13/577 • • • • • • using levers **[5, 2006.01]**

13/58 • • Combined or convertible systems **[1, 2006.01]**

13/60 • • • both fluid pressure and vacuum **[1, 2006.01]**

13/62 • • • both straight and automatic **[1, 2006.01]**

13/64 • • • both single and multiple, e.g. single and tandem **[1, 2006.01]**

13/66 • • Electrical control in fluid-pressure brake systems **[1, 2006.01]**

13/68 • • • by electrically-controlled valves **[1, 2006.01]**

13/70 • • • by fluid-controlled switches **[1, 2006.01]**

13/72 • • • in vacuum systems **[1, 2006.01]**

13/74 • with electrical assistance or drive **[1, 2006.01]**

15/00 Construction, arrangement, or operation of valves incorporated in power brake systems and not covered by groups B60T 11/00 or B60T 13/00 (valve structures responsive to a speed condition B60T 8/34) **[1, 4, 2006.01]**

15/02 • Application and release valves **[1, 2006.01]**

15/04 • • Driver's valves **[1, 2006.01]**

15/06 • • • Single driver's valves for pressure brakes without automatic control **[1, 2006.01]**

15/08 • • • Driver's valves for pressure brakes having automatic control **[1, 2006.01]**

15/10 • • • for vacuum brakes **[1, 2006.01]**

15/12 • • • combined with relay valves or the like **[1, 2006.01]**

15/14 • • • influencing electric control means **[1, 2006.01]**

15/16 • • • Arrangements enabling systems to be controlled from two or more positions **[1, 2006.01]**

15/18 • • Triple or other relay valves which allow step-wise application or release and which are actuated by brake-pipe pressure variation to connect brake cylinders or equivalent to compressed-air or vacuum source or atmosphere **[1, 2006.01]**

15/20 • • • controlled by two fluid pressures **[1, 2006.01]**

15/22 • • • • with one or more auxiliary valves, for braking, releasing, filling reservoirs **[1, 2006.01]**

15/24 • • • controlled by three fluid pressures **[1, 2006.01]**

15/26 • • • • without a quick braking action **[1, 2006.01]**

15/28 • • • • • and having auxiliary valves **[1, 2006.01]**

15/30 • • • • with a quick braking action **[1, 2006.01]**

15/32 • • • • • and having auxiliary valves **[1, 2006.01]**

15/34 • • • controlled alternatively by two or three fluid pressures **[1, 2006.01]**

15/36 • • Other control devices or valves characterised by definite functions **[1, 2006.01]**

15/38 • • • for quick take-up and heavy braking, e.g. with auxiliary reservoir for taking-up slack **[1, 2006.01]**

15/40 • • • • with separate take-up and applying cylinders **[1, 2006.01]**

15/42 • • • with a quick braking action, i.e. with accelerating valves actuated by brake-pipe pressure variation **[1, 2006.01]**
15/44 • • • • and operating independently of the main control device **[1, 2006.01]**
15/46 • • • for retarding braking action to prevent rear vehicles of a vehicle train from overtaking the forward ones **[1, 2006.01]**
15/48 • • • for filling reservoirs **[1, 2006.01]**
15/50 • • • • with means for limiting or relieving pressure in reservoirs **[1, 2006.01]**
15/52 • • • for quick release of brakes, e.g. for influencing counter-pressure in triple valve or recirculating air from reservoir or brake cylinder to brake pipe **[1, 2006.01]**
15/54 • • • for controlling exhaust from triple valve or from brake cylinder **[1, 2006.01]**
15/56 • • • for filling reservoirs by means of a secondary supply pipe **[1, 2006.01]**
15/58 • • • for supplying control impulses through a secondary air pipe **[1, 2006.01]**
15/60 • • • for releasing or applying brakes when vehicles of a vehicle train are uncoupled **[1, 2006.01]**

17/00 Component parts, details, or accessories of brake systems not covered by groups B60T 8/00, B60T 13/00 or B60T 15/00, or presenting other characteristic features [1, 4, 2006.01]
17/02 • Arrangements of pumps or compressors, or control devices therefor **[1, 2006.01]**
17/04 • Arrangement of piping, valves in the piping, e.g. cut-off valves, couplings or air hoses **[1, 4, 2006.01]**
17/06 • Applications or arrangements of reservoirs **[1, 2006.01]**
17/08 • Brake cylinders other than ultimate actuators **[1, 2006.01]**
17/10 • • Two or more cylinders acting on the same brake with means for rendering them effective selectively or successively, the number of effective cylinders being variable **[1, 2006.01]**
17/12 • • • according to vehicle weight **[1, 2006.01]**
17/14 • • • according to vehicle speed **[1, 2006.01]**
17/16 • • Locking of brake cylinders **[1, 2006.01]**
17/18 • Safety devices; Monitoring **[1, 2006.01]**
17/20 • • Safety devices operable by passengers other than the driver **[1, 2006.01]**
17/22 • • Devices for monitoring or checking brake systems; Signal devices **[1, 2006.01]**

B60V AIR-CUSHION VEHICLES

Note(s)

In this subclass, the following expression is used with the meaning indicated:
- "air-cushion vehicles" includes all vehicles which are wholly or partly supported on land or water by air or other gaseous cushions.

1/00 Air-cushion vehicles (land vehicles, waterborne vessels, or aircraft adapted or modified to travel on air cushions B60V 3/00) **[1, 2006.01]**
1/02 • wherein the cushion is generated and contained by at least one peripheral fluid curtain **[1, 2006.01]**
1/04 • wherein the cushion is contained at least in part by walls **[1, 2006.01]**
1/06 • wherein the cushion is formed within plenum chamber **[1, 2006.01]**
1/08 • wherein the cushion is created during forward movement of the vehicle by ram effect **[1, 2006.01]**
1/10 • in which the curtain-forming nozzle or the vehicle base is shaped to create a vortex curtain **[1, 2006.01]**
1/11 • Stability or attitude control **[2, 2006.01]**
1/12 • • by dividing the cushion **[1, 2, 2006.01]**
1/14 • Propulsion; Control thereof (B60V 1/11 takes precedence) **[1, 2, 2006.01]**
1/15 • • using part of the cushion-forming fluid **[2, 2006.01]**
1/16 • Flexible skirts **[1, 2006.01]**
1/18 • Body structure **[1, 2006.01]**
1/20 • Spray deflectors **[1, 2006.01]**
1/22 • provided with hydrofoils **[1, 2006.01]**

3/00 Land vehicles, waterborne vessels, or aircraft, adapted or modified to travel on air cushions [1, 2006.01]
3/02 • Land vehicles, e.g. road vehicles **[1, 2006.01]**
3/04 • • co-operating with rails or other guiding means, e.g. with air cushion between rail and vehicle **[1, 2006.01]**
3/06 • Waterborne vessels **[1, 2006.01]**
3/08 • Aircraft, e.g. air-cushion alighting-gear therefor **[1, 2006.01]**

B60W CONJOINT CONTROL OF VEHICLE SUB-UNITS OF DIFFERENT TYPE OR DIFFERENT FUNCTION; CONTROL SYSTEMS SPECIALLY ADAPTED FOR HYBRID VEHICLES; ROAD VEHICLE DRIVE CONTROL SYSTEMS FOR PURPOSES NOT RELATED TO THE CONTROL OF A PARTICULAR SUB-UNIT [2006.01]

Note(s) [2006.01]

1. Main groups B60W 10/00 and B60W 30/00-B60W 60/00 do not cover the control of a single sub-unit; such control is classified in the relevant place for the sub-unit, e.g. F02D, F16H. Where a single sub-unit is controlled by means of signals or commands from other sub-units, the control of this single sub-unit is classified in the relevant place for this sub-unit. For example, the control of variable-ratio gearing by means of signals from the engine or the accelerator is classified in the subclass for gearing, F16H.
2. Conjoint control of driveline units, e.g. engines, and variable-ratio gearing occurring only transiently during ratio shift and being also characterised by the control of the gearing is also classified in the subclass for gearing, F16H.

3. When classifying in group B60W 10/00, classification must also be made in groups B60W 20/00-B60W 60/00 in order to identify the purpose or use of the control.
4. In this subclass, the following expressions are used with the meanings indicated:
   - "conjoint control" means that a programmed or condition-responsive automatic controller on board the vehicle, embodying control logic for vehicle sub-units of different type or different function, sends control signals to actuators of two or more vehicle sub-units, so that the sub-units act together to solve a particular problem or in response to a particular driving condition;
   - "drive control system" means an electronic system on board a road vehicle for automatically controlling the movement of that vehicle in order to take certain actions;
   - “road vehicle” means a motorised vehicle for transportation on roads, e.g. a car, truck or bus;
   - “autonomous road vehicle” means a road vehicle capable of controlling all dynamic driving tasks without human intervention during different driving scenarios by using on-board computer hardware and software to execute decision making processes in real-time;
   - "sub-unit" means one of the following vehicle systems: propulsion system, clutch system, change-speed gearing system, system for distributing drive torque between front and rear axles, axle differential system, brake system, steering system, suspension system, energy storage means, fuel cells or auxiliary equipment.

10/00 Conjoint control of vehicle sub-units of different type or different function (for propulsion of purely electrically-propelled vehicles with power supplied within the vehicle B60L 50/00-B60L 58/00) **[2006.01]**

Note(s) [2006.01]

When classifying in this group, each controlled sub-unit must be separately identified by a classification in a relevant place in this group.

10/02 • including control of driveline clutches **[2006.01]**
10/04 • including control of propulsion units **[2006.01]**
10/06 • • including control of combustion engines **[2006.01]**
10/08 • • including control of electric propulsion units, e.g. motors or generators **[2006.01]**
10/10 • including control of change-speed gearings **[2006.01, 2012.01]**
10/101 • • Infinitely variable gearings **[2012.01]**
10/103 • • • of fluid type **[2012.01]**
10/105 • • • of electric type **[2012.01]**
10/107 • • • with endless flexible members **[2012.01]**
10/108 • • • Friction gearings **[2012.01]**
10/109 • • • • of toroid type **[2012.01]**
10/11 • • Stepped gearings **[2012.01]**
10/111 • • • with separate change-speed gear trains arranged in series **[2012.01]**
10/113 • • • with two input flow paths, e.g. double clutch transmission selection of one of the torque flow paths by the corresponding input clutch **[2012.01]**
10/115 • • • with planetary gears **[2012.01]**
10/119 • including control of all-wheel-driveline-means, e.g. transfer gears or clutches for dividing torque between front and rear axles (B60W 10/14 takes precedence) **[2012.01]**
10/12 • including control of differentials **[2006.01, 2012.01]**
10/14 • • Central differentials for dividing torque between front and rear axles **[2012.01]**
10/16 • • Axle differentials, e.g. for dividing torque between the left and right wheels **[2012.01]**
10/18 • including control of braking systems **[2006.01, 2012.01]**
10/184 • • with wheel brakes **[2012.01]**
10/188 • • • hydraulic brakes **[2012.01]**
10/192 • • • electric brakes **[2012.01]**
10/196 • • acting within the driveline, e.g. retarders **[2012.01]**
10/198 • • with exhaust brakes **[2012.01]**
10/20 • including control of steering systems **[2006.01]**
10/22 • including control of suspension systems **[2006.01]**
10/24 • including control of energy storage means **[2006.01]**
10/26 • • for electrical energy, e.g. batteries or capacitors **[2006.01]**
10/28 • including control of fuel cells **[2006.01]**
10/30 • including control of auxiliary equipment, e.g. air-conditioning compressors or oil pumps **[2006.01]**

20/00 Control systems specially adapted for hybrid vehicles [2006.01, 2016.01]

20/10 • Controlling the power contribution of each of the prime movers to meet required power demand **[2016.01]**
20/11 • • using model predictive control [MPC] strategies, i.e. control methods based on models predicting performance **[2016.01]**
20/12 • • using control strategies taking into account route information **[2016.01]**
20/13 • • in order to stay within battery power input or output limits; in order to prevent overcharging or battery depletion **[2016.01]**
20/14 • • • in conjunction with braking regeneration **[2016.01]**
20/15 • • Control strategies specially adapted for achieving a particular effect **[2016.01]**
20/16 • • • for reducing engine exhaust emissions **[2016.01]**
20/17 • • • for noise reduction **[2016.01]**
20/18 • • • for avoiding ageing of fuel **[2016.01]**
20/19 • • • for achieving enhanced acceleration **[2016.01]**
20/20 • Control strategies involving selection of hybrid configuration, e.g. selection between series or parallel configuration **[2016.01]**
20/30 • Control strategies involving selection of transmission gear ratio **[2016.01]**
20/40 • Controlling the engagement or disengagement of prime movers, e.g. for transition between prime movers **[2016.01]**
20/50 • Control strategies for responding to system failures, e.g. for fault diagnosis, failsafe operation or limp mode **[2016.01]**

30/00 Purposes of road vehicle drive control systems not related to the control of a particular sub-unit, e.g. of systems using conjoint control of vehicle sub-units [2006.01]

30/02 • Control of vehicle driving stability **[2006.01, 2012.01]**
30/04 • • related to roll-over prevention **[2006.01]**
30/045 • • Improving turning performance **[2012.01]**
30/06 • Automatic manoeuvring for parking **[2006.01]**
30/08 • Predicting or avoiding probable or impending collision **[2006.01, 2012.01]**
30/085 • • Taking automatic action to adjust vehicle attitude in preparation for collision, e.g. braking for nose dropping **[2012.01]**

30/09 • • Taking automatic action to avoid collision, e.g. braking and steering **[2012.01]**
30/095 • • Predicting travel path or likelihood of collision **[2012.01]**
30/10 • Path keeping **[2006.01]**
30/12 • • Lane keeping **[2006.01, 2020.01]**
30/14 • Cruise control **[2006.01]**
30/16 • • Control of distance between vehicles, e.g. keeping a distance to preceding vehicle **[2006.01, 2012.01, 2020.01]**
30/165 • • • automatically following the path of a preceding lead vehicle, e.g. "electronic tow-bar" **[2012.01, 2020.01]**
30/17 • • • with provision for special action when the preceding vehicle comes to a halt, e.g. stop and go **[2012.01, 2020.01]**
30/18 • Propelling the vehicle **[2006.01, 2012.01]**
30/182 • • Selecting between different operative modes, e.g. comfort and performance modes **[2012.01, 2020.01]**
30/184 • • Preventing damage resulting from overload or excessive wear of the driveline **[2012.01]**
30/186 • • • excessive wear or burn out of friction elements, e.g. clutches **[2012.01]**
30/188 • • Controlling power parameters of the driveline, e.g. determining the required power **[2012.01]**
30/19 • • Improvement of gear change, e.g. by synchronisation or smoothing gear shift **[2012.01]**
30/192 • • Mitigating problems related to power-up or power-down of the driveline, e.g. start-up of a cold engine **[2012.01]**
30/194 • • • related to low temperature conditions, e.g. high viscosity of hydraulic fluid **[2012.01]**
30/20 • • Reducing vibrations in the driveline **[2006.01]**

40/00 Estimation or calculation of driving parameters for road vehicle drive control systems not related to the control of a particular sub-unit [2006.01]

40/02 • related to ambient conditions **[2006.01]**
40/04 • • Traffic conditions **[2006.01]**
40/06 • • Road conditions **[2006.01, 2012.01]**
40/064 • • • Degree of grip **[2012.01]**
40/068 • • • Road friction coefficient **[2012.01]**
40/072 • • • Curvature of the road **[2012.01]**
40/076 • • • Slope angle of the road **[2012.01]**
40/08 • related to drivers or passengers **[2006.01, 2012.01]**
40/09 • • Driving style or behaviour **[2012.01]**
40/10 • related to vehicle motion **[2006.01, 2012.01]**
40/101 • • Side slip angle of tyre **[2012.01]**
40/103 • • Side slip angle of vehicle body **[2012.01]**
40/105 • • Speed **[2012.01]**
40/107 • • Longitudinal acceleration **[2012.01]**
40/109 • • Lateral acceleration **[2012.01]**
40/11 • • Pitch movement **[2012.01]**
40/112 • • Roll movement **[2012.01]**
40/114 • • Yaw movement **[2012.01]**
40/12 • related to parameters of the vehicle itself **[2006.01, 2012.01]**
40/13 • • Load or weight **[2012.01]**

50/00 Details of control systems for road vehicle drive control not related to the control of a particular sub-unit [2006.01]

50/02 • Ensuring safety in case of control system failures, e.g. by diagnosing, circumventing or fixing failures **[2006.01, 2012.01]**
50/023 • • Avoiding failures by using redundant parts **[2012.01]**
50/029 • • Adapting to failures or work around with other constraints, e.g. circumvention by avoiding use of failed parts **[2012.01]**
50/032 • • Fixing failures by repairing failed parts, e.g. loosening a sticking valve **[2012.01]**
50/035 • • Bringing the control units into a predefined state, e.g. giving priority to particular actuators **[2012.01]**
50/038 • • Limiting the input power, torque or speed **[2012.01]**
50/04 • Monitoring the functioning of the control system **[2006.01]**
50/06 • Improving the dynamic response of the control system, e.g. improving the speed of regulation or avoiding hunting or overshoot **[2006.01]**
50/08 • Interaction between the driver and the control system **[2006.01, 2012.01, 2020.01]**
50/10 • • Interpretation of driver requests or demands **[2012.01]**
50/12 • • Limiting control by the driver depending on vehicle state, e.g. interlocking means for the control input for preventing unsafe operation **[2012.01]**
50/14 • • Means for informing the driver, warning the driver or prompting a driver intervention **[2012.01, 2020.01]**
50/16 • • • Tactile feedback to the driver, e.g. vibration or force feedback to the driver on the steering wheel or the accelerator pedal **[2012.01, 2020.01]**

60/00 Drive control systems specially adapted for autonomous road vehicles [2020.01]