SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B60 VEHICLES IN GENERAL

B60K ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES; ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS; AUXILIARY DRIVES; 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

ARRANGEMENTS OF PROPULSION UNITS
Electric; steam or gas; internal-combustion or jet-propulsion; plural diverse prime-movers.....1/00, 3/00, 5/00, 6/00
Motor incorporated in, or adjacent to, traction wheel.....7/00
Other kinds.....8/00
Arrangements of control devices.....26/00
Safety devices.....28/00
ARRANGEMENT OF TRANSMISSIONS OR OF THEIR CONTROL DEVICES.....17/00, 23/00
ARRANGEMENT OF CHANGE-SPEED GEARING CONTROL DEVICES.....20/00
ARRANGEMENT IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST, OR FUEL SUPPLY, OF PROPULSION UNITS.....11/00, 13/00, 15/00
ARRANGEMENTS IN CONNECTION WITH POWER SUPPLY FROM FORCE OF NATURE.....16/00
AUXILIARY DRIVES.....25/00
KINDS OF CONTROL
Fittings for automatically controlling vehicle speed.....31/00
INSTRUMENTATION, DASHBOARDS.....35/00, 37/00

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) **[5]**

1/02 • comprising more than one electric motor

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

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) **[5]**

3/02 • of piston type

3/04 • of turbine type

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) **[5]**

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

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

5/06 • • with the engine main axis substantially vertical

5/08 • comprising more than one engine

5/10 • providing for ready detachment of engine

5/12 • Arrangement of engine supports

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, 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]**
6/10 • • by means of a chargeable mechanical accumulator, e.g. flywheel **[5]**
6/12 • • by means of a chargeable fluidic accumulator **[5]**
6/20 • the prime-movers consisting of electric motors and internal combustion engines, e.g. HEVs **[2007.10]**

Note(s)

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)

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

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)
11/02 • with liquid cooling
11/04 • • Arrangement or mounting of radiators, radiator shutters, or radiator blinds
11/06 • with air cooling
11/08 • Air inlets for cooling; Shutters or blinds therefor

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)
13/02 • concerning intake
13/04 • concerning exhaust (exhaust silencers for internal-combustion engines per se F01N)
13/06 • using structural parts of the vehicle as ducts, e.g. frame parts

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) **[5]**
15/01 • Arrangement of fuel conduits (chassis frame forming fluid conduit means B62D 21/17) **[5]**
15/03 • Fuel tanks (chassis frame comprising fluid storage compartment B62D 21/16) **[5]**
15/035 • • characterised by venting means **[5]**
15/04 • • Tank inlets (B60K 15/077 takes precedence) **[5]**
15/05 • • • Inlet covers **[5]**
15/06 • • characterised by fuel reserve systems **[5]**
15/063 • • Arrangement of tanks **[5]**

15/067 • • • Mounting of tanks **[5]**
15/07 • • • • of gas tanks **[5]**
15/073 • • Tank construction specially adapted to the vehicle (B60K 15/077 takes precedence) **[5]**
15/077 • • with means modifying or controlling distribution or motion of fuel, e.g. to prevent noise, surge, splash or fuel starvation **[5]**
15/10 • concerning gas-producing plants (gas-producing plants per se C10J)

16/00 **Arrangements in connection with power supply from force of nature, e.g. sun, wind** (electric propulsion with power supply from force of nature, e.g. sun, wind, B60L 8/00; effecting propulsion by wind motors driving water-engaging propulsive elements B63H 13/00) **[5]**

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) **[2]**
17/02 • characterised by arrangement, location, or kind of clutch
17/04 • characterised by arrangement, location, or kind of gearing (electric equipment or propulsion of electrically-propelled vehicles B60L)
17/06 • • of change-speed gearing (B60K 17/10-B60K 17/16 take precedence) **[2]**
17/08 • • • of mechanical type
17/10 • • of fluid gearing (of fluid clutches B60K 17/02)
17/12 • • of electric gearing (of electrically-actuated clutches B60K 17/02)
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) **[4]**
17/16 • • of differential gearing
17/22 • characterised by arrangement, location, or type of main drive shafting, e.g. cardan shaft
17/24 • • Arrangement of mountings for shafting
17/26 • characterised by arrangement, location, or type of freewheel device
17/28 • characterised by arrangement, location, or type of power take-off
17/30 • the ultimate propulsive elements, e.g. ground wheels, being steerable **[4]**
17/32 • the ultimate propulsive elements, e.g. ground wheels, being rockable about a horizontal pivot
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)
17/342 • • having a longitudinal, endless element, e.g. belt or chain, for transmitting drive to wheels **[4]**
17/344 • • having a transfer gear **[4]**
17/346 • • • the transfer gear being a differential gear **[4]**
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]**
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]**
17/354 • • having separate mechanical assemblies for transmitting drive to the front or to the rear wheels or set of wheels **[4]**
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]**
17/36 • for driving tandem wheels

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]**
20/02 • of initiating means (control mechanisms in general G05G) **[2]**
20/04 • • floor-mounted **[2]**
20/06 • • mounted on steering column or the like **[2]**
20/08 • • dashboard-mounted **[2]**

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) **[2, 5]**
23/02 • for main transmission clutches
23/04 • for differential gearing
23/06 • for freewheel devices
23/08 • for changing number of driven wheels

25/00 **Auxiliary drives** (B60K 16/00 takes precedence; arrangement of tyre-inflating pumps mounted on vehicles B60C 23/10; driving engine auxiliaries F02B) **[5]**
25/02 • directly from an engine shaft
25/04 • from static or dynamic pressure or vacuum, developed by the engine
25/06 • from the transmission power take-off (transmissions having power take-off B60K 17/28)
25/08 • from a ground wheel, e.g. engaging the wheel tread or rim
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) **[5]**

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]**
26/02 • of initiating means or elements **[2]**
26/04 • of means connecting initiating means or elements to propulsion unit **[2]**

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) **[2, 2006.01]**
28/02 • responsive to conditions relating to the driver **[4]**
28/04 • • responsive to presence or absence of the driver, e.g. to weight or lack thereof **[4]**
28/06 • • responsive to incapacity of driver **[4]**
28/08 • responsive to conditions relating to the cargo, e.g. overload **[4]**

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

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

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

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) **[2, 2006.01]**

Note(s)

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]**

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]**

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

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

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]**

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

Note(s)

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]**

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

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

Arrangement or adaptations of instruments specially for vehicles; Dashboards

35/00 Arrangement or adaptations of instruments (arrangements on dashboard B60K 37/02)

37/00 Dashboards (as road-vehicle superstructure sub-unit B62D)

37/02 • Arrangement of instruments (arrangement of lighting devices for dashboards B60Q 3/04)

37/04 • Arrangement of fittings on dashboard (of instruments B60K 37/02)

37/06 • • of controls, e.g. control knobs