

CPC COOPERATIVE PATENT CLASSIFICATION

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

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:
 - "conjoint control of drive units" includes such control for vehicles or of general applicability;
 - "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;
 - "drive unit" means propulsion unit conjoint with transmission, a "drive unit" can additionally include the ultimate driven unit;
 - "sub-unit" means, e.g. propulsion unit, clutch, gearing or brake system;
 - "hybrid vehicle" means vehicles with plural diverse prime-movers for mutual or common propulsion
2. Attention is drawn to the Note following the title of class [B60](#)

Arrangement or mounting of propulsion units in vehicles (of control devices for such units [B60K 26/00](#); elastic mountings [per se F16F](#); propulsion units or their control [per se](#), [see the relevant classes](#))

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)
2001/001	. {one motor mounted on a propulsion axle for rotating right and left wheels of this axle}
2001/003	. {with means for cooling the electrical propulsion units}
2001/005	. . {the electric storage means}
2001/006	. . {the electric motors}
2001/008	. {with means for heating the electrical propulsion units}
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)
2001/0405	. . {characterised by their position}
2001/0411	. . . {Arrangement in the front part of the vehicle}
2001/0416	. . . {Arrangement in the rear part of the vehicle}
2001/0422	. . . {Arrangement under the front seats}
2001/0427	. . . {Arrangement between the seats}
2001/0433	. . . {Arrangement under the rear seats}
2001/0438	. . . {Arrangement under the floor}
2001/0444	. . . {Arrangement on a trailer}
2001/045	. . . {Arrangement in a wheel, e.g. a spare wheel}
2001/0455	. . {Removal or replacement of the energy storages}
2001/0461	. . . {from the side}
2001/0466	. . . {from above}
2001/0472	. . . {from below}

2001/0477	. . . {from the back}
2001/0483	. . . {from the front}
2001/0488	. . . {with arrangements for pivoting}
2001/0494	. . . {with arrangements for sliding}
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)
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)
2005/003	. {the internal combustion or jet propulsion unit is arranged between the front and the rear axle}
2005/006	. {the internal combustion or jet propulsion unit is arranged behind the rear axle}
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 ({ Supports comprising both a plastic spring and a fluid damper F16F 13/06 })
5/1208	. . {Resilient supports (B60K 5/1241 - B60K 5/1291 take precedence)}
5/1216	. . . {characterised by the location of the supports relative to the motor or to each other (B60K 5/1225 takes precedence)}

- 5/1225 . . . {comprising resilient rings surrounding a part of the unit}
- 5/1233 . . . {comprising protective elements, e.g. for protecting against heat, dust}
- 5/1241 . . {Link-type support ([B60K 5/125](#), [B60K 5/1275](#) take precedence)}
- 5/125 . . {Telescopic supports, e.g. telescopic dampers ([B60K 5/1275](#) takes precedence)}
- 5/1258 . . {Wire-type supports ([B60K 5/1275](#) takes precedence)}
- 5/1266 . . {Supports comprising friction damping devices ([B60K 5/125](#), [B60K 5/1283](#) take precedence)}
- 5/1275 . . {Plastically deformable supports}
- 5/1283 . . {Adjustable supports, e.g. the mounting or the characteristics being adjustable}
- 5/1291 . . {Supports comprising stoppers}
- 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 {; Control systems therefor, i.e. systems controlling two or more prime movers, or controlling one of these prime movers and any of the transmission, drive or drive units (arrangement or mounting in vehicles of electrical gearing, in which an electrical machine serves only as reduction gearing and not as the prime mover and in which no electrical storing means are used [B60K 17/12](#); control and regulation of purely electrical prime movers [B60L](#); prime-movers comprising electrical and internal combustion motors in a common engine block or housing [per se F02B 65/00](#); electric motors or motor-generators used for starting the combustion engine [F02N 11/04](#); electric motors for synchronising gearing [F16H 3/12](#))}{Informative references: mechanical gearings with secondary electric drive [F16H 3/72](#); arrangements for handling mechanical energy structurally associated with the dynamo-electric machine [H02K 7/00](#); machines comprising structurally interrelated motor and generator parts [H02K 51/00](#); dynamo-electric machines not otherwise provided for in [H02K](#) see [H02K 99/00](#)}**
- NOTE**
- In this subgroup, the following expressions are used, with the meanings indicated :
- "energy storing means" means apparatus for storing propulsive energy and providing stored energy to drive the prime mover or the ultimate propulsive elements
 - "hybrid electric vehicle" (HEV) means a vehicle with an electrical 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
 - "motor-generator" means an electric motor, or an electric generator, or an electrical machine which can be used for both functions, as a motor or a generator
 - "prime mover" means a propulsion unit or source of motive power providing a mechanical output, e.g. via a rotating shaft
- 6/08 . Prime-movers comprising combustion engines and mechanical or fluid energy storing means
- 6/10 . . by means of a chargeable mechanical accumulator, e.g. flywheel
- 6/105 . . . {the accumulator being a flywheel}
- 6/12 . . by means of a chargeable fluidic accumulator
- 2006/123 . . . {for driving pneumatic motors}
- 2006/126 . . . {the hydraulic accumulator starts the engine}
- 6/20 . the prime-movers consisting of electric motors and internal combustion engines, e.g. HEVs
- NOTE**
- 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
- 6/24 . . . characterised by the combustion engines
- 6/26 . . . characterised by the motors or the generators
- 2006/262 {the motor or generator are used as clutch, e.g. between engine and driveshaft}
- 2006/264 {with outer rotor and inner stator}
- 2006/266 {with two coaxial motors or generators}
- 2006/268 {Electric drive motor starts the engine, i.e. used as starter motor}
- 6/28 . . . characterised by the electric energy storing means, e.g. batteries or capacitors
- 6/30 . . . characterised by chargeable mechanical accumulators, e.g. flywheels
- 6/32 . . . characterised by the fuel cells
- 6/34 . . . characterised by the absence of energy storing means
- 6/36 . . . characterised by the transmission gearings
- 6/365 with the gears having orbital motion
- 6/38 . . . characterised by the driveline clutches ([shift clutches within the gearing or transmission \[B60K 6/36\]\(#\), \(\[B60K 6/54\]\(#\)\)](#))
- 2006/381 {characterized by driveline brakes ([shift brakes in transmission \[B60K 6/54\]\(#\)](#))}
- 6/383 One-way clutches or freewheel devices
- 6/387 Actuated clutches, i.e. clutches engaged or disengaged by electric, hydraulic or mechanical actuating means
- 6/40 . . . characterised by the assembly or relative disposition of components
- 6/405 Housings
- 6/42 . . characterised by the architecture of the hybrid electric vehicle
- 6/44 . . . Series-parallel type
- 6/442 Series-parallel switching type
- 6/445 Differential gearing distribution type
- 6/448 Electrical distribution type
- 6/46 . . . Series type
- 6/48 . . . Parallel type
- 2006/4808 {Electric machine connected or connectable to gearbox output shaft}
- 2006/4816 {Electric machine connected or connectable to gearbox internal shaft}
- 2006/4825 {Electric machine connected or connectable to gearbox input shaft}

2006/4833	. . . . {Step up or reduction gearing driving generator, e.g. to operate generator in most efficient speed range}	13/04	. concerning exhaust ({collecting exhaust gases with central suction systems not forming part of vehicles, e.g. in workshops or tunnels B08B 15/002 , otherwise along carriageways E01C 1/005 ;) extensions for melting snow on roads E01H 5/00 , E01H 6/00 ; exhaust or silencing apparatus for internal combustion engines <i>per se</i> F01N ; {pipes, joints or supports therefor F16L })
2006/4841	. . . . {the gear provides shifting between multiple ratios}		
6/485	. . . . Motor-assist type		
6/50	. . Architecture of the driveline characterised by arrangement or kind of transmission units		
6/52	. . . Driving a plurality of drive axles, e.g. four-wheel drive	13/06	. using structural parts of the vehicle as ducts, e.g. frame parts
6/54	. . . Transmission for changing ratio		
2006/541	. . . . {without reverse ratio using instead electric reversing}	15/00	Arrangement in connection with fuel supply of combustion engines {or other fuel consuming energy converters, e.g. fuel cells}; Mounting or construction of fuel tanks (tanks in general B65D, F17C; supplying combustion engines with combustible mixtures or constituents F02M)
2006/542	. . . . {with overdrive ratio}	15/01	. Arrangement of fuel conduits (chassis frame forming fluid conduit means B62D 21/17)
6/543	. . . . the transmission being a continuously variable transmission	15/013	. . {of gas conduits}
6/547	. . . . the transmission being a stepped gearing	2015/016	. . {Fuel conduits having more than one internal passage, e.g. for different types of fuel}
7/00	Disposition of motor in, or adjacent to, traction wheel (roller-skate driving mechanisms A63C 17/12)	15/03	. Fuel tanks (chassis frame comprising fluid storage compartment B62D 21/16 ; {Details of the fuel feeding system related to the fuel tank F02M 37/0076 })
7/0007	. {the motor being electric}	15/03006	. . {Gas tanks (B60K 15/07 takes precedence)}
7/0015	. {the motor being hydraulic}	2015/03013	. . . {Control systems for LPG tanks}
7/0023	. {the motor being pneumatic}	2015/03019	. . . {Filling of gas tanks}
2007/003	. {with two or more motors driving a single wheel}	2015/03026	. . . {comprising a valve}
2007/0038	. {the motor moving together with the wheel axle}	2015/03032	. . {Manufacturing of fuel tanks}
2007/0046	. {the motor moving together with the vehicle body, i.e. moving independently from the wheel axle}	2015/03039	. . . {made of a combination of non metallic and metallic materials}
2007/0053	. {the motor moving relative to the vehicle body and to the wheel axle}	2015/03046	. . . {made from more than one layer}
2007/0061	. {the motor axle being parallel to the wheel axle}	2015/03052	. . . {Fuel tanks made of two balloons, one inside the other}
2007/0069	. {the motor axle being perpendicular to the wheel axle}	2015/03059	. . . {Fuel tanks with double shells or more}
2007/0076	. . {the motor axle being horizontal}	2015/03065	. . . . {with material filled between the walls}
2007/0084	. . {the motor axle being vertical}	2015/03072	. . {Arrangements for reducing evaporation}
2007/0092	. {the motor axle being coaxial to the wheel axle}	2015/03078	. . . {Membranes, layers or the like covering the surface of the fuel}
8/00	Arrangement or mounting of propulsion units not provided for in one of the preceding main groups	2015/03085	. . . . {using inflatable bags or bladders in the tanks}
<u>Arrangements in connection with cooling, air intake, gas exhaust, fuel supply, or power supply of propulsion units in vehicles</u>			
11/00	Arrangement in connection with cooling of propulsion units (heating the interior space B60H; cooling internal combustion engines <i>per se</i> F01P)	2015/03092	. . {with latent heat storages to reduce the evaporation of fuel}
11/02	. with liquid cooling	2015/03098	. . {with a device for mixing liquids in the fuel tank, e.g. for mixing oil and fuel}
11/04	. . Arrangement or mounting of radiators, radiator shutters, or radiator blinds ({ B60K 11/085 takes precedence})	2015/03105	. . {with supplementary interior tanks inside the fuel tank}
11/06	. with air cooling	2015/03111	. . {Swirl pots}
11/08	. Air inlets for cooling; Shutters or blinds therefor ({radiator or grille guards B60R 19/52 })	2015/03118	. . {Multiple tanks, i.e. two or more separate tanks (supplementary tanks inside the fuel tank B60K 2015/03105)}
11/085	. . {with adjustable shutters or blinds}	2015/03125	. . . {Suction lines for dual tanks}
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)	2015/03131	. . . {Systems for filling dual tanks}
13/02	. concerning intake	2015/03138	. . . {Pumping means between the compartments}
		2015/03144	. . . {Fluid connections between the tanks}
		2015/03151	. . . {Mechanical connection between the tanks}
		2015/03157	. . . {for supply different types of fuel to the motor}
		2015/03164	. . {Modular concepts for fuel tanks}
		2015/03171	. . {Expansion tanks}
		15/03177	. . {made of non-metallic material, e.g. plastics, or of a combination of non-metallic and metallic material (B60K 15/03006 takes precedence)}

- 2015/03184 . . {Exchangeable tanks, i.e. the empty tank is replaced by refilled tank}
- 2015/0319 . . {with electronic systems, e.g. for controlling fuelling or venting (for LPG tanks [B60K 2015/03013](#))}
- 2015/03197 . . . {Systems for exchanging data}
- 2015/03203 {during refueling}
- 2015/0321 . . {characterised by special sensors, the mounting thereof}
- 2015/03217 . . . {Fuel level sensors}
- 2015/03223 {comprising at least two level fuel sensors}
- 2015/0323 . . . {Sensors for detecting presence or absence of the filling nozzle}
- 2015/03236 . . {characterised by special filters, the mounting thereof}
- 2015/03243 . . {characterised by special pumps, the mounting thereof}
- 2015/0325 . . . {Jet pumps}
- 2015/03256 . . {characterised by special valves, the mounting thereof}
- 2015/03263 . . . {Ball valves}
- 2015/03269 . . . {Flap valves}
- 2015/03276 . . . {Valves with membranes}
- 2015/03282 . . . {Umbrella type valves}
- 2015/03289 . . . {Float valves; Floats therefor}
- 2015/03296 . . . {Pressure regulating valves}
- 2015/03302 . . . {Electromagnetic valves}
- 2015/03309 . . {Tanks specially adapted for particular fuels}
- 2015/03315 . . . {for hydrogen}
- 2015/03322 . . . {for methanol}
- 2015/03328 . . {Arrangements or special measures related to fuel tanks or fuel handling}
- 2015/03335 . . . {for fast filling of fuel tanks, e.g. specific filler pipes for pressurised fuelling}
- 2015/03342 . . . {to allow automatic or robotised filling of the tank}
- 2015/03348 . . . {for supplying additives to fuel}
- 2015/03355 . . . {for supplying different types of fuel}
- 2015/03361 . . . {for checking the quality or quantity of fuel during filling of fuel tank}
- 2015/03368 . . . {for preventing overfilling of tanks}
- 2015/03375 . . . {to improve security}
- 2015/03381 . . . {for preventing explosions}
- 2015/03388 . . . {in case of a roll over of the vehicle}
- 2015/03394 . . . {for preventing expulsion of fuel during filling of the tank}
- 2015/03401 . . . {for preventing electrostatic charges}
- 2015/03407 . . . {to protect tanks against projectiles}
- 2015/03414 . . . {associated with the fuel tank for cooling heated fuel}
- 2015/03421 . . . {to protect the fuel tank against heat}
- 2015/03427 . . . {for heating fuel, e.g. to avoiding freezing}
- 2015/03434 . . . {for preventing theft of fuel (locks for filler caps [B60K 15/0409](#); locking of the inlet cover [B60K 2015/0561](#))}
- 2015/0344 {comprising baffles}
- 2015/03447 {for improving the sealing}
- 2015/03453 {for fixing or mounting parts of the fuel tank together}
- 2015/0346 {by welding}
- 2015/03467 {by clip or snap fit fittings}
- 2015/03473 {for draining or emptying a fuel tank}
- 2015/0348 {for returning the fuel from the motor}
- 2015/03486 . . . {characterised by the materials the tank or parts thereof are essentially made from}
- 2015/03493 {made of plastics}
- 15/035 . . . characterised by venting means
- 15/03504 {adapted to avoid loss of fuel or fuel vapour, e.g. with vapour recovery systems}
- 2015/03509 {with a droplet separator in the vent line}
- 2015/03514 {with vapor recovery means}
- 15/03519 {Valve arrangements in the vent line}
- 2015/03523 {Arrangements of the venting tube}
- 2015/03528 {Mounting of venting tubes}
- 2015/03533 {the venting tube being movable with the fuel level}
- 2015/03538 {the venting tube being connected with the filler tube}
- 2015/03542 {Mounting of the venting means ([mounting of venting tubes B60K 2015/03528](#))}
- 2015/03547 {the venting means are integrated in the fuel cap or inlet cover}
- 2015/03552 {the venting means are integrated into the fuel filler pipe}
- 2015/03557 {comprising elements of the venting device integrated in the fuel tank, e.g. vapor recovery means}
- 2015/03561 {Venting means working at specific times}
- 2015/03566 {comprising means for stopping the venting of fuel vapor, e.g. during refueling or engine stop}
- 2015/03571 {Venting during driving}
- 2015/03576 {Venting during filling the reservoir}
- 2015/0358 {the venting is actuated by specific signals or positions of particular parts}
- 2015/03585 {by gas pressure}
- 2015/0359 {by filler cap or inlet cover position}
- 2015/03595 {by filler nozzle}
- 15/04 . . . Tank inlets ([B60K 15/077 takes precedence](#))
- 15/0403 {Anti-siphoning devices}
- 15/0406 {Filler caps for fuel tanks}
- 15/0409 {Provided with a lock}
- 2015/0412 {the key can only be withdrawn when the cap is placed on the filler neck}
- 2015/0416 {electrically actuated}
- 2015/0419 {Self-sealing closure caps, e.g. that don't have to be removed manually}
- 2015/0422 {actuated by the inlet cover}
- 2015/0425 {actuated by a motor}
- 2015/0429 {actuated by the nozzle}
- 2015/0432 {having a specific connection between the cap and the vehicle or tank opening}
- 2015/0435 {using a sliding connection}
- 2015/0438 {using screw or bayonet}
- 2015/0441 {with torque control}
- 2015/0445 {using hinges}
- 2015/0448 {comprising spherical valve type closures}
- 2015/0451 {Sealing means in the closure cap}
- 2015/0454 {combined closing of the fuel inlet and bodywork inlet by one element which is visible from outside}
- 2015/0458 {Details of the tank inlet}
- 2015/0461 {comprising a filler pipe shutter, e.g. trap, door or flap for fuel inlet}

- 2015/0464 {comprising a flexible or extendable filler pipes, e.g. corrugated, foldable or with bellows}
- 2015/0467 {Fuel tanks with more than one filler pipe}
- 2015/047 {Manufacturing of the fuel inlet or connecting elements to fuel inlet, e.g. pipes or venting tubes}
- 2015/0474 {Arrangement of fuel filler pipes in relation to vehicle body}
- 2015/0477 {Details of the filler neck tank side}
- 2015/048 {Arrangements for sealing the fuel inlet during filling}
- 2015/0483 {Means to inhibit the introduction of too small or too big filler nozzles}
- 2015/0487 {Means to shield vehicle bodywork from fuel, e.g. during filling}
- 2015/049 {Means for determining the position of the filler nozzle in the filler pipe}
- 2015/0493 {Means for checking absence or presence of closure cap}
- 2015/0496 {the fuel inlet being arranged on the top of the fuel tank}
- 15/05 Inlet covers
- 2015/0507 {Arrangements for adjusting the inlet cover}
- 2015/0515 {Arrangements for closing or opening of inlet cover (locking means [B60K 2015/0561](#))}
- 2015/0523 {with sliding connection to the vehicle body}
- 2015/053 {with hinged connection to the vehicle body}
- 2015/0538 {with open or close mechanism automatically actuated}
- 2015/0546 {Arrangements for checking the position of the inlet cover}
- 2015/0553 {Details concerning the inlet box or bowl in the vehicle car body panel}
- 2015/0561 {Locking means for the inlet cover}
- 2015/0569 {with actuator fixed to the inlet cover}
- 2015/0576 {with actuator fixed to the vehicle body}
- 2015/0584 {the locking bolt is linearly moved to lock or unlock}
- 2015/0592 {with storage means for the cap}
- 15/06 characterised by fuel reserve systems
- 15/061 {with level control}
- 2015/062 {Arrangement for filling the fuel reserve systems}
- 15/063 Arrangement of tanks
- 2015/0631 {the fuel tank forming at least part of the vehicle floor}
- 2015/0632 {the fuel tank is arranged below the front seat}
- 2015/0633 {the fuel tank is arranged below the rear seat}
- 2015/0634 {the fuel tank is arranged below the vehicle floor}
- 2015/0635 {the fuel tank is arranged between the seats}
- 2015/0636 {the fuel tank being part of the chassis or frame}
- 2015/0637 {the fuel tank is arranged in the front of the vehicle}
- 2015/0638 {the fuel tank is arranged in the rear of the vehicle}
- 2015/0639 {the fuel tank is arranged near or in the roof}
- 15/067 Mounting of tanks

- 2015/0675 {allowing deflection movements of the tank in case of a crash}
- 15/07 of gas tanks
- 15/073 Tank construction specially adapted to the vehicle ([B60K 15/077](#) takes precedence)
- 15/077 with means modifying or controlling distribution or motion of fuel, e.g. to prevent noise, surge, splash or fuel starvation
- 2015/0772 {Floats in the fuel tank (float valves [B60K 2015/03289](#))}
- 2015/0775 {for reducing movement or slash noise of fuel}
- 2015/0777 {in-tank reservoirs or baffles integrally manufactured with the fuel Tank}
- 15/10 concerning gas-producing plants

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

WARNING

Group [B60K 16/00](#) is impacted by reclassification into group [F03D 9/32](#).

Groups [B60K 16/00](#) and [F03D 9/32](#) should be considered in order to perform a complete search.

- 2016/003 . . . {solar power driven}
- 2016/006 . . . {wind power driven}

Arrangement or mounting of transmissions or their control in vehicles (torque-transmitting axles [B60B](#); combined transmission and steering gear for steering non-deflectable wheels [B62D](#))

- 17/00 Arrangement or mounting of transmissions in vehicles** (clutches [per se](#), e.g. construction thereof, [F16D](#); gearing [per se](#), e.g. construction thereof, [F16H](#))
- 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](#))
- 17/043 . . . {Transmission unit disposed in or near the vehicle wheel, or between the differential gear unit and the wheel}
- 17/046 . . . {with planetary gearing having orbital motion}
- 17/06 . . . of change-speed gearing ([B60K 17/10](#) - [B60K 17/16](#) take precedence)
- 17/08 . . . of mechanical type
- 17/10 . . . of fluid gearing (of fluid clutches [B60K 17/02](#))
- 17/105 . . . {Units comprising at least a part of the gearing and a torque-transmitting axle, e.g. transaxles ([B60K 17/14](#) takes precedence)}
- 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](#) takes precedence)
- 17/145 . . . {the electric gearing being disposed in or adjacent to traction wheel}
- 17/16 . . . of differential gearing
- 17/165 . . . {provided between independent half axles ([B60K 17/18](#), [B60K 17/20](#) take precedence)}

17/18	. . . {in which the differential movement is obtained by resilient means}	20/08	. . Dashboard means
17/20	. . . {in which the differential movement is limited}		<u>WARNINGS</u>
17/22	. characterised by arrangement, location, or type of main drive shafting, e.g. cardan shaft		1. The groups F16H 59/00 - F16H 63/00 were introduced on 1 May, 1988. These groups include the subject matter of B60K 20/14 , which from this date is no longer used for the classification of new documents
17/24	. . Arrangements of mountings for shafting		2. Documents from the backlog of group B60K 20/14 are in the process of being systematically transferred to groups F16H 59/00 - F16H 63/00
17/26	. characterised by arrangement, location, of 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		
17/303	. . {with a gearwheel on the steering knuckle or kingpin axis}	20/14	. . {fluid}
17/306	. . {with a universal joint in the axis of the steering knuckle}	23/00	Arrangement or mounting of control devices for vehicle transmissions, or parts thereof, not otherwise provided for (movable cabs having special adaptations of vehicle control devices B62D 33/06; such control devices per se F16D, F16H)
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)	2023/005	. {Adjusting multiple pedals, e.g. for their initial position}
17/342	. . having a longitudinal, endless element, e.g. belt or chain, for transmitting drive to wheels	23/02	. for main transmission clutches
17/344	. . having a transfer gear	2023/025	. . {Adjusting of clutch pedal positions (clutch adjustment for removing slack F16D 13/75)}
17/346	. . . the transfer gear being a differential gear	23/04	. for differential gearing
17/3462	. . . . {with means for changing distribution of torque between front and rear wheels}	2023/043	. . {Control means for varying left-right torque distribution, e.g. torque vectoring}
17/3465	. . . . . {self-actuated means, e.g. differential locked automatically by difference of speed}	2023/046	. . {Axle differential locking means}
17/3467	. . . . {combined with a change speed gearing, e.g. range gear}	23/06	. for freewheel devices
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 speed (B60K 17/346 takes precedence)	23/08	. for changing number of driven wheels, {for switching from driving one axle to driving two or more axles (B60K 17/3515 takes precedence)}
17/35	. . . including arrangements for suppressing or influencing the power transfer, e.g. viscous clutches (differential gearing with locking devices F16H 48/20)	23/0808	. . {for varying torque distribution between driven axles, e.g. by transfer clutch}
17/3505	. . . . {with self-actuated means, e.g. by difference of speed}	2023/0816	. . . {for varying front-rear torque distribution with a central differential}
17/351	. . . . . {comprising a viscous clutch}	2023/0825	. . . . {for adding torque to the front wheels}
17/3515	. . . . {with a clutch adjacent to traction wheel, e.g. automatic wheel hub}	2023/0833	. . . . {for adding torque to the rear wheels}
17/352	. . . . {manually operated}	2023/0841	. . . {for locking a central differential, e.g. by using a lock-up clutch}
17/354	. . having separate mechanical assemblies for transmitting drive to the front or to the rear wheels or set of wheels	2023/085	. . {automatically actuated}
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)	2023/0858	. . . {with electric means, e.g. electro-hydraulic means}
17/358	. . {all driven wheels being steerable}	2023/0866	. . . {with hydraulic means only}
17/36	. for driving tandem wheels	2023/0875	. . . {with mechanical means only}
20/00	Arrangement or mounting of change-speed gearing control devices in vehicles (movable cabs having special adaptations of vehicle control devices B62D 33/06; such control devices per se F16H)	2023/0883	. . {manually actuated}
20/02	. of initiating means (control mechanisms in general G05G)	2023/0891	. . . {with actuator levers, e.g. shift levers or linkage for changing two-wheel to four-wheel drive}
20/04	. . floor mounted	25/00	Auxiliary drives (B60K 16/00 takes precedence; arrangements of tyre-inflating pumps mounted on vehicles B60C 23/10; driving tyre-inflating pumps B60C; driving engine auxiliaries F02B)
20/06	. . mounted on steering column or the like	2025/005	. {driven by electric motors forming part of the propulsion unit}
		25/02	. directly from an engine shaft
		2025/022	. . {by a mechanical transmission}
		2025/024	. . . {with variable ratio}
		2025/026	. . {by a hydraulic transmission}
		2025/028	. . {by a pneumatic transmission}
		25/04	. from static or dynamic pressure or vacuum, developed by the engine

25/06	<ul style="list-style-type: none"> from the transmission power take-off (transmissions having power-take-off B60K 17/28) 	28/16	<ul style="list-style-type: none"> responsive to, or preventing, 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 15/00)
2025/065	<ul style="list-style-type: none"> {the transmission being fluidic, e.g. hydraulic} 	28/165	<ul style="list-style-type: none"> {acting on elements of the vehicle drive train other than the propulsion unit and brakes, e.g. transmission, clutch, differential (acting on brakes B60T 8/17)}
25/08	<ul style="list-style-type: none"> from a ground wheel, e.g. engaging the wheel tread or rim 		
25/10	<ul style="list-style-type: none"> 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) 		
2025/103	<ul style="list-style-type: none"> {by electric means} 		
2025/106	<ul style="list-style-type: none"> {by fluid means} 		
26/00	Arrangements or mounting of propulsion unit control devices in vehicles	31/00	Vehicle fittings, acting on a single sub-unit only, for automatically controlling, 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; {in traffic anti-collision system for road vehicles G08G 1/16})
26/02	<ul style="list-style-type: none"> of initiating means or elements 		
26/021	<ul style="list-style-type: none"> {with means for providing feel, e.g. by changing pedal force characteristics} 		
2026/022	<ul style="list-style-type: none"> {with tactile feedback from a controller, e.g. vibrations} 		
2026/023	<ul style="list-style-type: none"> {with electrical means to generate counter force or torque} 		
2026/024	<ul style="list-style-type: none"> {Adjustable consoles, e.g. for changing position of mounting casings} 		
2026/025	<ul style="list-style-type: none"> {Input devices for controlling electric drive motors} 		
2026/026	<ul style="list-style-type: none"> {Adjusting of accelerator pedal positions} 		
2026/027	<ul style="list-style-type: none"> {Acceleration input members mounted on a seat} 		
2026/028	<ul style="list-style-type: none"> {Acceleration input members mounted on steering wheel or column} 		
2026/029	<ul style="list-style-type: none"> {Joystick type control devices for acceleration} 		
26/04	<ul style="list-style-type: none"> of means connecting initiating means or elements to propulsion unit 		
2026/043	<ul style="list-style-type: none"> {with mechanical gearings} 		
2026/046	<ul style="list-style-type: none"> {with electrical transmission means} 		
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-units B60W 30/00)		
2028/003	<ul style="list-style-type: none"> {inhibiting the starter motor, e.g. by controlling ignition or park lock circuits} 	31/0008	<ul style="list-style-type: none"> {including means for detecting potential obstacles in vehicle path}
2028/006	<ul style="list-style-type: none"> {disconnecting the electric power supply, e.g. the vehicle battery} 	2031/0016	<ul style="list-style-type: none"> {Identification of obstacles; Selection of a target vehicle}
28/02	<ul style="list-style-type: none"> responsive to conditions relating to the driver (see provisionally also B60K 28/00) 	2031/0025	<ul style="list-style-type: none"> {Detecting position of target vehicle, e.g. vehicle driving ahead from host vehicle}
28/04	<ul style="list-style-type: none"> responsive to presence or absence of the driver, e.g. to weight or lack thereof 	2031/0033	<ul style="list-style-type: none"> {Detecting longitudinal speed or acceleration of target vehicle}
28/06	<ul style="list-style-type: none"> responsive to incapacity of driver 	2031/0041	<ul style="list-style-type: none"> {Detecting lateral speed of target vehicle}
28/063	<ul style="list-style-type: none"> {preventing starting of vehicles} 	2031/005	<ul style="list-style-type: none"> {Selecting more than one target vehicle, e.g. using several preceding vehicles as target}
28/066	<ul style="list-style-type: none"> {actuating a signalling device (B60K 28/063 takes precedence)} 	31/0058	<ul style="list-style-type: none"> {responsive to externally generated signalling}
28/08	<ul style="list-style-type: none"> responsive to conditions relating to the cargo, e.g. overload (see provisionally also B60K 28/00) 	31/0066	<ul style="list-style-type: none"> {responsive to vehicle path curvature}
28/10	<ul style="list-style-type: none"> responsive to conditions relating to the vehicle (see provisionally also B60K 28/00) 	31/0075	<ul style="list-style-type: none"> {responsive to vehicle steering angle}
28/12	<ul style="list-style-type: none"> responsive to conditions relating to doors or doors locks, e.g. open door (see provisionally also B60K 28/00) 	31/0083	<ul style="list-style-type: none"> {responsive to centrifugal force acting on vehicle due to the path it is following}
28/14	<ul style="list-style-type: none"> responsive to accident or emergency, e.g. deceleration, tilt of vehicle 	2031/0091	<ul style="list-style-type: none"> {Speed limiters or speed cutters}
		31/02	<ul style="list-style-type: none"> including electrically actuated servomechanism {including an electric control system or a servomechanism in which the vehicle velocity affecting element is actuated electrically}

NOTE

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.

- 31/04 . . 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
- 31/042 . . . {where at least one electrical quantity is set by the vehicle operator}
- 31/045 {in a memory, e.g. a capacitor}
- 31/047 {the memory being digital}
- 31/06 . including fluid pressure actuated servomechanism {in which the vehicle velocity affecting element is actuated by fluid pressure}
- 31/08 . . and one or more electrical components for establishing or regulating input pressure
- 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
- 31/102 . . . {where at least one electrical quantity is set by the vehicle operator}
- 31/105 {in a memory, e.g. a capacitor}
- 31/107 {the memory being digital}
- 31/12 . including a device responsive to centrifugal forces {(centrifugal force acting on the vehicle due to the path it is following [B60K 31/0083](#), motor speed limiting by governors [G05D 13/10](#))}
- 31/14 . . having an electrical switch which is caused to function by the centrifugal force
- 31/16 . having means to prevent or discourage unauthorised use or adjusting of the controlling means {(vehicle theft prevention in general [B60R 25/00](#))}
- 31/18 . including a device to audibly, visibly, or otherwise signal the existence of unusual or unintended speed {to the driver of the vehicle (devices primarily intended for indicating speed to other traffic [B60Q 1/54](#))}
- 31/185 . . {connected to the speedometer display, e.g. by sensors or switches responsive to the position of the indicator needle (arrangement of pointers in automobile speedometers for indicating predetermined speeds by the detection of the position of the indicator needle [G01P 1/11](#))}

Arrangement of adaptations of instruments specially for vehicles; Dashboards

- 35/00** Arrangement of 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 3/10](#))
- 37/04 . Arrangement of fittings on dashboard (of instruments [B60K 37/02](#))
- 37/06 . . of control, e.g. control knobs

41/00 {Conjoint control of drive units; Conjoint control of at least two sub-units thereof (arrangement of plural diverse prime-movers for mutual or common propulsion [B60K 6/00](#))}

NOTES

1. The control of a single sub-unit is classified in the relevant class for the sub-unit. 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 class for this sub-unit. For instance, the control of variable-ratio gearing by means of signals from the engine or { from another sub-unit influenced by} the accelerator is classified in subclass [F16H](#)
2. Conjoint control of drive units, e.g. propulsion units, and variable-ratio gearing occurring only transiently during ratio shift and being also characterised by the control of the gearing is classified in subclass [F16H](#)

WARNING

This group and its subgroups are no longer used for the classification of new documents as from January 1st, 2006. The backlog of these groups is being continuously reclassified to the relevant groups of [B60W](#).

- 41/002 . {Changing foot controls into hand controls, e.g. for invalid people}
- 41/004 . {using electrical means}
- 41/006 . . {with analogue circuits, relays and switches}
- 41/008 . {using hydraulic or pneumatic means}
- 41/02 . {of propulsion unit and clutch}
- 41/022 . . {using electrical means}
- 41/025 . . . {with analogue circuits, relays and switches}
- 41/027 . . {using hydraulic or pneumatic means}
- 41/04 . {of propulsion unit and gearing}
- 41/042 . . {using electrical means}
- 41/045 . . . {with analogue circuits, relays and switches}
- 41/047 . . {using hydraulic or pneumatic means}
- 41/06 . . {the gearing being stepped}
- 41/062 . . . {using electrical means}
- 41/065 {with analogue circuits, relays and switches}
- 41/067 . . . {using hydraulic or pneumatic means}
- 41/08 . . . {with interruption of the drive}
- 41/082 {using electrical means}
- 41/085 {with analogue circuits, relays and switches}
- 41/087 {using hydraulic or pneumatic means}
- 41/10 . . . {without interruption of the drive}
- 41/102 {using electrical means}
- 41/105 {with analogue circuits, relays and switches}
- 41/107 {using hydraulic or pneumatic means}
- 41/12 . . {the gearing being infinitely variable}
- 41/14 . . . {of mechanical type}
- 41/142 {using electrical means}
- 41/145 {with analogue circuits, relays and switches}
- 41/147 {using hydraulic or pneumatic means}
- 41/16 . . . {of fluid type}
- 41/162 {using electrical means}

41/165	. . . . {with analogue circuits, relays and switches}	2350/10	. Input/output devices or features thereof
41/167	. . . . {using hydraulic or pneumatic means}	2350/1004	. . Graphical user interfaces or menu aspects
41/18	. . . {of electric type, e.g. electromagnetic}	2350/1008	. . Input devices or features thereof
41/20	. {of propulsion unit and brake system}	2350/1012	. . . Controls by an approaching finger
41/202	. . {using electrical means}	2350/1016	. . . with reconfigurable control functions
41/205	. . . {with analogue circuits, relays and switches}	2350/102	. . . Rotary controllers
41/207	. . {using hydraulic or pneumatic means}	2350/1024	. . . Touch sensitive control means or buttons
41/22	. {of clutch and gearing (control of torque converter lock-up clutches F16H 61/14)}	2350/1028	. . . . Touch screens
41/222	. . {using electrical means}	2350/1032	. . . . . Emulation of control buttons
41/225	. . . {with analogue circuits, relays and switches}	2350/1036	. . . . Touch switches
41/227	. . {using hydraulic or pneumatic means}	2350/104	. . . Input by combination of touch screen and control button
41/24	. {of clutch and brake system}	2350/1044	. . . Input by voice
41/242	. . {using electrical means}	2350/1048	. . . Joysticks
41/245	. . . {with analogue circuits, relays and switches}	2350/1052	. . . Input by gesture
41/247	. . {using hydraulic or pneumatic means}	2350/1056	. . Output devices of features thereof
41/26	. {of gearing and brake system}	2350/106	. . . Video screens
41/262	. . {using electrical means}	2350/1064	. . . Combined instruments with analogue meters and additional displays
41/265	. . . {with analogue circuits, relays and switches}	2350/1068	. . . the same information is available on different displays
41/267	. . {using hydraulic or pneumatic means}	2350/1072	. . . Virtual instruments
41/28	. {of three or more sub-units}	2350/1076	. . Type of information
41/282	. . {using electrical means}	2350/108	. . . Explanation of functions
41/284	. . . {the sub-units being engine, clutch and gearing}	2350/1084	. . . Distance to obstacles or vehicles
41/286	. . . {with analogue circuits, relays and switches}	2350/1088	. . . Reversing assist
41/288	. . {using hydraulic or pneumatic means}	2350/1092	. . . Economic driving
		2350/1096	. . . Information displayed according to relevancy
		2350/20	. Optical features of instruments
2310/00	Arrangements, adaptations or methods for cruise controls	2350/2004	. . Displays on a manual operation element
2310/20	. Operator actuated switches or levers for cruise control or speed limiting systems	2350/2008	. . using color changes
2310/22	. Displays for target speed	2350/2013	. . using a camera
2310/24	. Speed setting methods	2350/2017	. . Three-dimensional displays
2310/242	. . setting initial target speed, e.g. initial algorithms	2350/2021	. . using a filter
2310/244	. . changing target speed or setting a new target speed, e.g. changing algorithms	2350/2026	. . Holographic features
2310/246	. . releasing speed control, e.g. inhibiting speed control if a brake pedal is depressed	2350/203	. . Illumination features
2310/248	. . resuming speed control, e.g. returning to old target speed	2350/2034	. . . Electroluminescent elements
2310/26	. Distance setting methods, e.g. determining target distance to target vehicle	2350/2039	. . . Backlit symbols
2310/262	. . setting initial distance to preceding vehicle, e.g. initial algorithms	2350/2043	. . . Translucent dashboard skins
2310/264	. . changing distance, e.g. reducing the distance for overtaking	2350/2047	. . using a laser
2310/266	. . releasing distance control, e.g. inhibiting control if target vehicle lost or changing lane	2350/2052	. . using projection means
2310/268	. . resuming distance control, e.g. changing target vehicle	2350/2056	. . Optical elements for superposition of display information
2310/28	. Following time setting methods, e.g. elapsed delay between preceding and host vehicle	2350/206	. . Optical elements in front of, or behind a dial
2310/30	. Mode switching, e.g. changing from one cruise control mode to another	2350/2065	. . using real or virtual images of components
		2350/2069	. . Adjustment of brightness
		2350/2073	. . Fogging prevention
		2350/2078	. . Glare prevention
		2350/2082	. . Anti-reflection means
		2350/2086	. . Instrument cover plate features
		2350/2091	. . . for instruments which should not be visible
		2350/2095	. . Semi-transparent optical elements
		2350/30	. Hardware adaptations for dashboards
		2350/302	. . Circuit board features
		2350/305	. . Wiring harness
		2350/307	. . Electrical connections
		2350/35	. Control system arrangements
		2350/352	. . Control of displays
		2350/355	. . Remote controls
		2350/357	. . Wireless data transfers
2350/00	Arrangements or adaptations of instruments; Dashboards	2350/40	. Structural details of dashboards
		2350/401	. . Dashboard parts used as air ducts

Arrangement or mounting of propulsion units in vehicles (of control devices for such units B60K 26/00; elastic mountings per se F16F; propulsion units or their control per se, see the relevant classes)

