

CPC**COOPERATIVE PATENT CLASSIFICATION****B60H****ARRANGEMENTS OR ADAPTATIONS OF HEATING, COOLING, VENTILATING, OR OTHER AIR-TREATING DEVICES SPECIALLY FOR PASSENGER OR GOODS SPACES OF VEHICLES****NOTE**

Attention is drawn to the Note following the title of class [B60](#)

Guidance heading:**B60H 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](#))

NOTE

In this group and its subgroups, as well as in patent documents, the following abbreviation is used: - HVAC Heating, Ventilating and Air Conditioning

- [B60H 1/00007](#) . { Combined heating, ventilating, or cooling devices ([control systems or mechanisms B60H 1/00642](#)) }
- [B60H 1/00014](#) .. {for load cargos on load transporting vehicles }
- [B60H 1/00021](#) .. { Air flow details of the heating, ventilating and cooling [HVAC] devices}
- [B60H 1/00028](#) ... { Constructional lay-out of the devices in the vehicle }
- [B60H 1/00035](#) ... {for sending an air stream of uniform temperature into the passenger compartment }
- [B60H 1/00042](#) {the air passing only one heat exchanger }
- [B60H 1/0005](#) {the air being firstly cooled and subsequently heated or vice-versa }
- [B60H 1/00057](#) {the air being heated and cooled simultaneously, e.g. using parallel heat exchangers }
- [B60H 1/00064](#) ... {for sending air streams of different temperatures into the passenger compartment }
- [B60H 1/00071](#) {the air passing only one heat exchanger }
- [B60H 1/00207](#) .. { characterised by the position of the HVAC devices with respect to the passenger compartment ([B60H 1/00021](#) takes precedence) }
- [B60H 1/0025](#) . {the devices being independent of the vehicle }
- [B60H 1/00257](#) .. {Non-transportable devices, disposed outside the vehicle, e.g. on a parking }
- [B60H 1/00264](#) .. {Transportable devices }
- [B60H 1/00271](#) . { Heating, cooling or ventilating devices specially adapted for particular vehicle parts or components and being connected to the vehicle HVAC unit }

- B60H 1/00278 . . {for the battery (arrangement of batteries [B60R 16/04](#)) }
- B60H 1/00285 . . { for vehicle seats (vehicle seats with heating or ventilation means independent from the HVAC system of the vehicle [B60N 2/56](#)) }
- B60H 1/00292 . . { for steering wheels (steering wheels with heating or ventilation means independent from the HVAC system of the vehicle [B62D 1/065](#)) }

- B60H 1/00314 . {Arrangements permitting a rapid heating of the heating liquid ([B60H 1/00492](#), [B60H 1/03](#) take precedence; aiding engine start by heating of engine coolants [F02N 19/10](#)) }

- B60H 1/00321 . {Heat exchangers for air-conditioning devices ([B60H 1/3227](#) takes precedence) }
- B60H 1/00328 . . {of the liquid-air type }
- B60H 1/00335 . . {of the gas-air type ([B60H 1/18](#) takes precedence) }
- B60H 1/00342 . . { of the liquid-liquid type }

- B60H 1/00357 . {Air-conditioning arrangements specially adapted for particular vehicles }
- B60H 1/00364 . . {for caravans or trailers }
- B60H 1/00371 . . {for vehicles carrying large numbers of passengers e.g. buses }
- B60H 1/00378 . . {for tractor or load vehicle cabins }
- B60H 1/00385 . . {for vehicles having an electrical drive, e.g. hybrid or fuel cell }
- B60H 1/00392 . . . { for electric vehicles having only electric drive means }
- B60H 1/004 . . . { for vehicles having a combustion engine and electric drive means, e.g. hybrid electric vehicles }
- B60H 1/00407 . . { for open or convertible vehicles }
- B60H 1/00414 . . { for military, emergency, safety or security vehicles }

- B60H 1/00421 . {Driving arrangements for parts of a vehicle air-conditioning ([B60H 1/3222](#) takes precedence; auxiliary drives per se for vehicles [B60K 25/00](#)) }
- B60H 1/00428 . . {electric }
- B60H 1/00435 . . {fluid or pneumatic }
- B60H 1/00442 . . . {using a vacuum }
- B60H 1/0045 . . {mechanical power take-offs from the vehicle propulsion unit }

- B60H 1/00457 . {Ventilation unit, e.g. combined with a radiator (control systems for ventilators [B60H 1/00828](#)) }
- B60H 1/00464 . . {The ventilator being of the axial type }
- B60H 1/00471 . . {The ventilator being of the radial type, i.e. with radial expulsion of the air }

- B60H 1/00478 . { Air-conditioning devices using the Peltier effect (for air-conditioning in general [F24F 5/00D](#); for refrigeration [F25B 21/02](#); electric devices exhibiting the Peltier effect [H01L 35/00](#)) }

- B60H 1/00485 . {Valves for air-conditioning devices, e.g. thermostatic valves (valves per se [F16K](#) ; thermostatic valves per se [G05D 23/02](#)) }

- B60H 1/00492 . {characterised by comprising regenerative heating or cooling means, e.g. heat accumulators }
- B60H 1/005 . . {Regenerative cooling means, e.g. cold accumulators }

- B60H 1/00507 . {Details, e.g. mounting arrangements, desaeration devices ([B60H 1/32](#) takes precedence) }
- B60H 1/00514 .. {Details of air conditioning housings }
- B60H 1/00521 ... {Mounting or fastening of components in housings, e.g. heat exchangers, fans, electronic regulators }
- B60H 1/00528 ... {Connections between housing parts }
- B60H 1/00535 ... {Mounting or fastening of the housing to the vehicle }
- B60H 1/00542 ... {Modular assemblies }
- B60H 1/0055 ... {the housing or parts thereof being integrated in other devices, e.g. dashboard }
- B60H 1/00557 .. {Details of ducts or cables }
- B60H 1/00564 ... {of air ducts }
- B60H 1/00571 ... {of liquid ducts, e.g. for coolant liquids or refrigerants }
- B60H 1/00578 ... {of bowden wires }
- B60H 1/00585 .. {Means for monitoring, testing or servicing the air-conditioning }
- B60H 1/00592 .. {Add-on devices, e.g. heat/cooling boxes, compartment dividers, upgrade sets }

- B60H 1/00642 . {Control systems or circuits, control members or indication devices for heating, cooling or ventilating devices ([B60H 1/3201](#) - [B60H 1/3208](#), [B60H 1/3225](#) take precedence; dashboards [B60K 37/00](#); systems for controlling or regulating non-electric variables in general [G05D](#)) }
- B60H 1/0065 .. {Control members, e.g. levers or knobs ([B60H 1/00985](#) takes precedence) }
- B60H 1/00657 ... { Remote control devices }
- B60H 1/00664 .. {Construction or arrangement of damper doors (control systems or circuits for damper doors [B60H 1/00835](#)) }
- B60H 1/00671 ... {Damper doors moved by rotation ; Grilles }
- B60H 1/00678 {the axis of rotation being in the door plane, e.g. butterfly doors }
- B60H 1/00685 {the door being a rotating disc or cylinder or part thereof ([B60H 1/00678](#) takes precedence) }
- B60H 1/00692 ... {Damper doors moved by translation, e.g. curtain doors }
- B60H 1/00735 .. {Control systems or circuits characterised by their input, i.e. by the detection, measurement or calculation of particular conditions, e.g. signal treatment, dynamic models }
- B60H 1/00742 ... {by detection of the vehicle occupants` presence; by detection of conditions relating to the body of occupants, e.g. using radiant heat detectors }
- B60H 1/0075 ... {the input being solar radiation }
- B60H 1/00757 ... {by the input of sound, e.g. by using a voice synthesizer }
- B60H 1/00764 ... {the input being a vehicle driving condition, e.g. speed ([B60H 1/00828](#), [B60H 1/00864](#) take precedence) }
- B60H 1/00771 { the input being a vehicle position or surrounding, e.g. GPS-based position or tunnel }
- B60H 1/00778 { the input being a stationary vehicle position, e.g. parking or stopping }
- B60H 1/00785 ... {by the detection of humidity or frost }
- B60H 1/00792 ... {Arrangement of detectors ([B60H 1/00742](#), [B60H 1/0075](#), [B60H 1/00785](#) take precedence) }
- B60H 1/008 ... { the input being air quality }
- B60H 1/00807 ... { the input being a specific way of measuring or calculating an air or coolant }

- temperature }
- B60H 1/00814 .. {Control systems or circuits characterised by their output, for controlling particular components of the heating, cooling or ventilating installation }
- B60H 1/00821 ... {the components being ventilating, air admitting or air distributing devices }
- B60H 1/00828 {Ventilators, e.g. speed control ([1/00Y6A4 takes precedence](#)) }
- B60H 1/00835 {Damper doors, e.g. position control (construction or arrangement of damper doors [B60H 1/00664](#); [B60H 1/00864 takes precedence](#)) }
- B60H 1/00842 {the system comprising a plurality of damper doors; Air distribution between several outlets }
- B60H 1/00849 {for selectively commanding the induction of outside or inside air ([1/00Y6A3A takes precedence](#)) }
- B60H 1/00857 {characterised by the means connecting the initiating means, e.g. control lever, to the damper door }
- B60H 1/00864 {Ventilators and damper doors }
- B60H 1/00871 {Air directing means, e.g. blades in an air outlet (construction of nozzles or air diffusers [B60H 1/34](#)) }
- B60H 1/00878 ... {the components being temperature regulating devices ([B60H 1/00899 takes precedence](#); constructions of valves [B60H 1/00485](#)) }
- B60H 1/00885 {Controlling the flow of heating or cooling liquid, e.g. valves or pumps ([B60H 1/00899 takes precedence](#); constructions of valves [B60H 1/00485](#)) }
- B60H 1/00892 {Devices specially adapted for avoiding uncomfortable feeling, e.g. sudden temperature changes ([B60H 1/00885 takes precedence](#)) }
- B60H 1/00899 {Controlling the flow of liquid in a heat pump system (controlling the properties of the refrigerant liquid, e.g. pressure or temperature, [B60H 1/3204](#)) }
- B60H 1/00907 {where the flow direction of the refrigerant changes and an evaporator becomes condenser }
- B60H 1/00914 {where the flow direction of the refrigerant does not change and there is a bypass of the condenser }
- B60H 1/00921 {where the flow direction of the refrigerant does not change and there is an extra subcondenser, e.g. in an air duct }
- B60H 1/00964 .. {Control systems or circuits characterised by including features for automatic and non-automatic control, e.g. for changing from automatic to manual control }
- B60H 1/00971 .. {Control systems or circuits characterised by including features for locking or memorising of control modes }
- B60H 1/00978 .. {Control systems or circuits characterised by failure of detection or safety means; Diagnostic methods }
- B60H 1/00985 .. {Control systems or circuits characterised by display or indicating devices, e.g. voice simulators (characterised by the input of sound using a voice synthesizer [B60H 1/00757](#); [B60H 1/00978 takes precedence](#)) }
- B60H 1/02 . the heat being derived from the propulsion plant { ([B60H 1/00492 takes precedence](#)) }
- B60H 1/025 .. {from both the cooling liquid and the exhaust gases of the propulsion plant }
- B60H 1/03 .. and from a source other than the propulsion plant
- B60H 1/032 ... {from the cooling liquid of the propulsion plant and from a burner }
- B60H 1/034 ... {from the cooling liquid of the propulsion plant and from an electric heating device }
- B60H 1/036 ... {from the plant exhaust gases and from a burner }
- B60H 1/038 ... {from the cooling liquid of the propulsion plant and from a viscous fluid heater }

- B60H 1/04 .. from cooling liquid of the plant { [\(B60H 1/025, B60H 1/03 take precedence\)](#) }
- B60H 1/06 ... directly from main radiator
- B60H 1/08 ... from other radiator than main radiator
- B60H 1/10 the other radiator being situated in a duct capable of being connected to atmosphere outside vehicle
- B60H 1/12 using an air blower
- B60H 1/14 .. otherwise than from cooling liquid of the plant {e.g. heat from the grease oil, the brakes, the transmission unit [\(B60H 1/03 takes precedence\)](#) }
- B60H 1/143 ... { the heat being derived from cooling an electric component, e.g. electric motors, electric circuits, fuel cells or batteries }
- B60H 1/16 ... the air being heated by direct contact with the plant, e.g. air-cooled motor
- B60H 1/18 ... the air being heated from the plant exhaust gases { [\(B60H 1/025 takes precedence; exhaust or silencing apparatus associated with devices profiting by exhaust energy F01N 5/00\)](#) }
- B60H 1/20 using an intermediate heat-transferring medium
- B60H 1/22 . the heat being derived otherwise than from the propulsion plant { [\(B60H 1/0025, B60H 1/00492 and B60H 1/03 take precedence\)](#) }
- B60H 1/2203 .. { the heat being derived from burners (burners in general [F23C](#) , [F23D](#) , [F24H 9/18](#)) }
- B60H 1/2206 ... { controlling the operation of burners (control of burners in general [F23N 5/00](#)) }
- B60H 1/2209 ... { arrangements of burners for heating an intermediate liquid [\(B60H 1/032 takes precedence\)](#) }
- B60H 1/2212 ... { arrangements of burners for heating air }
- B60H 1/2215 .. { the heat being derived from electric heaters (in general [H05B](#) ; for electric traction vehicles [B60L 1/02](#)) }
- B60H 1/2218 ... { controlling the operation of electric heaters }
- B60H 1/2221 ... { arrangements of electric heaters for heating an intermediate liquid [\(B60H 1/034 takes precedence\)](#) }
- B60H 1/2225 ... { arrangements of electric heaters for heating air }
- B60H 1/24 . Devices purely for ventilating or where the heating or cooling is irrelevant ([nozzles, air-diffusers B60H 1/34](#))
- B60H 1/241 .. { characterised by the location of ventilation devices in the vehicle }
- B60H 1/242 ... { located in the front area }
- B60H 1/243 ... { located in the lateral area (e.g. doors, pillars) }
- B60H 1/244 ... { located in the rear area }
- B60H 1/245 ... { located in the roof }
- B60H 1/246 ... { located in the interior of the vehicle or in or below the floor }
- B60H 1/247 .. { Disposition of several air-diffusers in a vehicle for ventilation-air circulation in a vehicle cabin }
- B60H 1/248 .. {Air-extractors, air-evacuation from the vehicle interior }
- B60H 1/249 ... {using one-way valves }
- B60H 1/26 .. Ventilating openings in vehicle exterior; Ducts for conveying ventilating air
- B60H 1/262 ... {Openings in or on the vehicle roof }
- B60H 1/265 ... {Openings in window or door past or pillars (door pasts per se [B62D 25/14; B60H 1/248 takes precedence](#)) }

- B60H 1/267 . . . {Openings in or near to vehicle windows (pivoting side windows [B60J 1/14](#); wind deflectors associated with windows for ventilating [B60J 1/20](#)) }
- B60H 1/28 . . . the openings being situated directly in front of vehicle front window
- B60H 1/30 . . . Air scoops

- B60H 1/32 . Cooling devices ({[B60H 1/00478](#), [B60H 1/005](#) take precedence; } vehicles adapted to transport refrigerated goods [B60P 3/20](#))
- B60H 1/3201 .. {using absorption or adsorption (in general [F25B 15/00](#), [F25B 17/00](#)) }
- B60H 1/3202 .. {using evaporation, i.e. not including a compressor, e.g. involving fuel or water evaporation ([B60H 1/3235](#) takes precedence; in general [F25B 19/00](#), [F25D 7/00](#)) }
- B60H 1/3204 .. {using compression ([B60H 1/3233](#) takes precedence; in general [F25B](#) , [F25D](#)) }
- B60H 1/3205 . . . {Control means therefor }
- B60H 1/3207 { for minimizing the humidity of the air }
- B60H 1/3208 {Vehicle drive related control of the compressor drive means, e.g. for fuel saving purposes }
- B60H 1/321 { for preventing the freezing of a heat exchanger }
- B60H 1/3211 { for increasing the efficiency of a vehicle refrigeration cycle }
- B60H 1/3213 { for increasing the efficiency in a vehicle heat pump }
- B60H 1/3214 { for improving the lubrication of a refrigerant compressor in a vehicle }
- B60H 1/3216 { for improving a change in operation duty of a compressor in a vehicle }
- B60H 1/3217 { for high pressure, inflammable or poisonous refrigerants causing danger in case of accidents }
- B60H 1/3219 { for improving the response time of a vehicle refrigeration cycle }
- B60H 1/322 { for improving the stop or idling operation of the engine }
- B60H 1/3222 . . . {characterised by the compressor driving arrangements, e.g. clutches, transmissions or multiple drives ([B60H 1/3208](#), [B60H 1/3226](#) take precedence) }
- B60H 1/3223 . . . {characterised by the arrangement or type of the compressor ([B60H 1/3222](#) takes precedence) }
- B60H 1/3225 . . . {characterised by safety arrangements, e.g. compressor anti-seizure means or by signalling devices }
- B60H 1/3226 . . . {Self-contained devices, i.e. including own drive motor }
- B60H 1/3227 . . . {characterised by the arrangement or the type of heat exchanger, e.g. condenser, evaporator (condensed liquid drainage means [B60H 1/3233](#)) }
- B60H 1/3229 . . . {characterised by constructional features, e.g. housings, mountings, conversion systems ([B60H 1/3227](#), [B60H 1/3233](#) take precedence) }
- B60H 1/323 . . . {characterised by comprising auxiliary or multiple systems, e.g. plurality of evaporators, or by involving auxiliary cooling devices }
- B60H 1/3232 . . . {particularly adapted for load transporting vehicles ([B60H 1/3226](#) takes precedence) }
- B60H 1/3233 .. {characterised by condensed liquid drainage means }
- B60H 1/3235 .. {using sublimation, e.g. dry ice cooling or melting ice }

- B60H 1/34 . Nozzles ; { Air-diffusers } (dispositions of air diffusers in a vehicle [B60H 1/247](#))
- B60H 1/3407 .. {providing an air stream in a fixed direction, e.g. using a grid or porous panel }
- B60H 1/3414 .. {with means for adjusting the air stream direction ([B60H 1/345](#) takes precedence) }
- B60H 1/3421 . . . {using only pivoting shutters }

- B60H 1/3428 . . . {using a set of pivoting shutters and a pivoting frame }
- B60H 1/3435 . . . {using only a pivoting frame }
- B60H 1/3442 {the frame being spherical }
- B60H 1/345 . . {with means for adjusting divergence, convergence or oscillation of air stream }
- B60H 1/3457 . . { Outlets providing a vortex, i.e. a spirally wound air flow }

B60H 3/00**Other air-treating devices**

- B60H 3/0007 . {Adding substances other than water to the air, e.g. perfume, oxygen }
- B60H 3/0014 . . { characterised by the location of the substance adding device }
- B60H 3/0021 . . . { in the air-conditioning housing }
- B60H 3/0028 . . . { on or near an air outlet }
- B60H 3/0035 . . { characterised by the control methods for adding the substance }

- B60H 3/0071 . {Electrically conditioning the air, e.g. by ionizing }
- B60H 3/0078 . . {comprising electric purifying means }

- B60H 3/0085 . {Smell or pollution preventing arrangements } ([B60H 3/0007](#), [B60H 3/0071](#),
[B60H 3/02](#), [B60H 3/06](#) take precedence)
- B60H 3/0092 . . { in the interior of the HVAC unit, e.g. by spraying substances inside the unit }

- B60H 3/02 . Moistening; { Devices influencing humidity levels, i.e. humidity control ([B60H 1/3202](#),
[B60H 1/3207](#) take precedence) }
- B60H 3/022 . . { for only humidifying the air }
- B60H 3/024 . . { for only dehumidifying the air }

- B60H 3/06 . Filtering { ([B60H 3/0078](#) takes precedence) }
- B60H 3/0608 . . {Filter arrangements in the air stream }
- B60H 3/0616 . . . {with provisions for replacing the filter element }
- B60H 3/0625 . . . {with provisions for by-passing the filter element }
- B60H 3/0633 . . . {with provisions for regenerating or cleaning the filter element }
- B60H 3/0641 . . . {near ventilating openings in the vehicle exterior }
- B60H 3/0658 . . { Filter elements specially adapted for their arrangement in vehicles ([B60H 3/0608](#)
takes precedence) }

Guidance heading:**B60H 2001/00**

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abbreviation is used: - HVAC Heating, Ventilating and Air Conditioning

- B60H 2001/00007 . { Combined heating, ventilating, or cooling devices (control systems or mechanisms [B60H 1/00642](#)) }
- B60H 2001/00021 .. { Air flow details of the heating, ventilating and cooling [HVAC] devices]
- B60H 2001/00078 ... Assembling, manufacturing or layout details
- B60H 2001/00085 of air intake
- B60H 2001/00092 of air deflecting or air directing means inside the device
- B60H 2001/00099 comprising additional ventilating means
- B60H 2001/00107 characterised by the relative position of the heat exchangers, e.g. arrangements leading to a curved airflow
- B60H 2001/00114 ... Heating or cooling details
- B60H 2001/00121 More than one heat exchanger in parallel
- B60H 2001/00128 Electric heaters
- B60H 2001/00135 Dividing walls for separate air flows
- B60H 2001/00142 first heating and then cooling
- B60H 2001/0015 ... Temperature regulation
- B60H 2001/00157 without by-pass
- B60H 2001/00164 with more than one by-pass
- B60H 2001/00171 Valves on heaters for modulated liquid flow
- B60H 2001/00178 comprising an air passage from the HVAC box to the exterior of the cabin
- B60H 2001/00185 ... Distribution of conditioned air
- B60H 2001/00192 to left and right part of passenger compartment
- B60H 2001/002 to front and rear part of passenger compartment
- B60H 2001/00207 .. { characterised by the position of the HVAC devices with respect to the passenger compartment ([B60H 1/00021](#) takes precedence) }
- B60H 2001/00214 ... Devices in front of the passenger compartment
- B60H 2001/00221 ... Devices in the floor or side wall area of the passenger compartment
- B60H 2001/00228 ... Devices in the interior of the passenger compartment
- B60H 2001/00235 ... Devices in the roof area of the passenger compartment
- B60H 2001/00242 ... Devices in the rear area of the passenger compartment
- B60H 2001/00271 . { Heating, cooling or ventilating devices specially adapted for particular vehicle parts or components and being connected to the vehicle HVAC unit }
- B60H 2001/003 .. Component temperature regulation using an air flow
- B60H 2001/00307 .. Component temperature regulation using a liquid flow
- B60H 2001/00321 . {Heat exchangers for air-conditioning devices ([B60H 1/3227](#) takes precedence) }
- B60H 2001/0035 .. movable in and out of the air stream
- B60H 2001/00507 . {Details, e.g. mounting arrangements, deaeration devices ([B60H 1/32](#) takes precedence) }

- B60H 2001/006 .. Noise reduction
- B60H 2001/00607 .. Recycling
- B60H 2001/00614 .. Cooling of electronic units in air stream
- B60H 2001/00621 .. Fastening lids on air-conditioning housings
- B60H 2001/00628 .. Adaption for left or right hand drive
- B60H 2001/00635 .. Air-tight sealing devices

- B60H 2001/00642 . {Control systems or circuits, control members or indication devices for heating, cooling or ventilating devices ([B60H 1/3201](#) - [B60H 1/3208](#), [B60H 1/3225](#) take precedence; dashboards [B60K 37/00](#); systems for controlling or regulating non-electric variables in general [G05D](#)) }

- B60H 2001/00664 .. {Construction or arrangement of damper doors (control systems or circuits for damper doors [B60H 1/00835](#)) }

- B60H 2001/007 ... Manufacturing or assembling
- B60H 2001/00707 ... Details of pivots of damper doors
- B60H 2001/00714 ... Details of seals of damper doors
- B60H 2001/00721 ... Air deflecting or air directing means
- B60H 2001/00728 ... Film doors

- B60H 2001/00814 .. {Control systems or circuits characterised by their output, for controlling particular components of the heating, cooling or ventilating installation }

- B60H 2001/00878 ... {the components being temperature regulating devices ([B60H 1/00899](#) takes precedence; constructions of valves [B60H 1/00485](#)) }

- B60H 2001/00928 comprising a secondary circuit
- B60H 2001/00935 comprising four way valves for controlling the fluid direction
- B60H 2001/00942 comprising a plurality of heat exchangers, e.g. for multi zone heating or cooling

- B60H 2001/00949 comprising additional heating/cooling sources, e.g. second evaporator
- B60H 2001/00957 comprising locations with heat exchange within the refrigerant circuit itself, e.g. cross-, counter-, or parallel heat exchange

- B60H 2001/00992 .. Calculations modifying a user set value

- B60H 2001/02 . the heat being derived from the propulsion plant { ([B60H 1/00492](#) takes precedence) }
- B60H 2001/14 .. otherwise than from cooling liquid of the plant {e.g. heat from the grease oil, the brakes, the transmission unit ([B60H 1/03](#) takes precedence) }

- B60H 2001/146 ... from a viscous fluid heater

- B60H 2001/22 . the heat being derived otherwise than from the propulsion plant { ([B60H 1/0025](#), [B60H 1/00492](#) and [B60H 1/03](#) take precedence) }

- B60H 2001/2228 .. controlling the operation of heaters
- B60H 2001/2231 ... for proper or safe operation of the heater
- B60H 2001/2234 ... when vehicle is parked, preheating
- B60H 2001/2237 ... supplementary heating, e.g. during stop and go of a vehicle
- B60H 2001/224 ... automatic operation, e.g. control circuits or methods
- B60H 2001/2243 ... manual operation, e.g. remote control or timer
- B60H 2001/2246 .. obtaining information from a variable, e.g. by means of a sensor
- B60H 2001/225 ... related to an operational state of another HVAC device

B60H 2001/2253	...	related to an operational state of the vehicle or a vehicle component
B60H 2001/2256	...	related to the operation of the heater itself, e.g. flame detection or overheating
B60H 2001/2259	..	output of a control signal
B60H 2001/2262	...	related to the period of on/off time of the heater
B60H 2001/2265	...	related to the quantity of heat produced by the heater
B60H 2001/2268	..	Constructional features
B60H 2001/2271	...	Heat exchangers, burners, ignition devices
B60H 2001/2275	...	Thermoelectric converters for generating electrical energy
B60H 2001/2278	...	Connectors, water supply, housing, mounting brackets
B60H 2001/2281	...	Air supply, exhaust systems
B60H 2001/2284	...	Fuel supply
B60H 2001/2287	...	Integration into a vehicle HVAC system or vehicle dashboard (B60H 2001/00128 takes precedence)
B60H 2001/229	...	Integration into an air outlet
B60H 2001/2293	...	Integration into other parts of a vehicle
B60H 2001/2296	...	integration into fluid/air heat exchangers
B60H 2001/32	.	Cooling devices ({ B60H 1/00478 , B60H 1/005 take precedence; } vehicles adapted to transport refrigerated goods B60P 3/20)
B60H 2001/3236	..	information from a variable is obtained
B60H 2001/3238	...	related to the operation of the compressor
B60H 2001/3239	...	related to flow
B60H 2001/3241	....	of air
B60H 2001/3242	....	of a refrigerant
B60H 2001/3244	...	related to humidity
B60H 2001/3245	....	of air
B60H 2001/3247	....	of a refrigerant
B60H 2001/3248	...	related to pressure
B60H 2001/325	....	of the refrigerant at a compressing unit
B60H 2001/3251	....	of the refrigerant at a condensing unit
B60H 2001/3252	....	of the refrigerant at an evaporating unit
B60H 2001/3254	....	of the refrigerant at an expansion unit
B60H 2001/3255	...	related to temperature
B60H 2001/3257	....	of the refrigerant at a compressing unit
B60H 2001/3258	....	of the air at a condensing unit
B60H 2001/326	....	of the refrigerant at a condensing unit
B60H 2001/3261	....	of the air at an evaporating unit
B60H 2001/3263	....	of the refrigerant at an evaporating unit
B60H 2001/3264	....	of the refrigerant at an expansion unit
B60H 2001/3266	...	related to the operation of the vehicle
B60H 2001/3267	...	related to the operation of an expansion valve
B60H 2001/3269	..	output of a control signal
B60H 2001/327	...	related to a compressing unit

B60H 2001/3272	....	to control the revolving speed of a compressor
B60H 2001/3273	....	related to the operation of the vehicle , e.g. the compressor driving torque
B60H 2001/3275	....	to control the volume of a compressor
B60H 2001/3276	...	related to a condensing unit
B60H 2001/3277	....	to control the air flow
B60H 2001/3279	....	to control the refrigerant flow
B60H 2001/328	...	related to an evaporating unit
B60H 2001/3282	....	to control the air flow
B60H 2001/3283	....	to control the refrigerant flow
B60H 2001/3285	...	related to an expansion unit
B60H 2001/3286	..	Constructional features
B60H 2001/3288	...	Additional heat source
B60H 2001/3289	...	Additional cooling source
B60H 2001/3291	...	Locations with heat exchange within the refrigerant circuit itself
B60H 2001/3292	...	Compressor drive is electric only
B60H 2001/3294	...	Compressor drive is hybrid
B60H 2001/3295	...	Compressing means other than compressor
B60H 2001/3297	...	Expansion means other than expansion valve
B60H 2001/3298	...	Ejector-type refrigerant circuits

B60H 2001/34	.	Nozzles ; { Air-diffusers } (dispositions of air diffusers in a vehicle B60H 1/247)
B60H 2001/3464	..	Details of hinges
B60H 2001/3471	..	Details of actuators
B60H 2001/3478	...	acting on additional damper doors
B60H 2001/3485	..	Air temperature regulation
B60H 2001/3492	..	Manufacturing; Assembling

B60H 2003/00 Other air-treating devices

B60H 2003/0007	.	{ Adding substances other than water to the air, e.g. perfume, oxygen }
B60H 2003/0042	..	with ventilating means for adding the substances
B60H 2003/005	..	with heating means for adding the substances
B60H 2003/0057	..	Servicing means therefor, e.g. for renewal of substances
B60H 2003/0064	..	adding more than one substance
B60H 2003/02	.	Moistening; { Devices influencing humidity levels, i.e. humidity control (B60H 1/3202, B60H 1/3207 take precedence) }
B60H 2003/026	..	the devices being located in the passenger compartment
B60H 2003/028	..	the devices comprising regeneration means
B60H 2003/06	.	Filtering { (B60H 3/0078 takes precedence) }
B60H 2003/0608	..	{ Filter arrangements in the air stream }
B60H 2003/065	...	Details for holding filter elements in position
B60H 2003/0658	..	{ Filter elements specially adapted for their arrangement in vehicles (B60H 3/0608

takes precedence) }

- B60H 2003/0666 . . . the filter element having non-rectangular shape
- B60H 2003/0675 . . Photocatalytic filters
- B60H 2003/0683 . . the quality of the filter or the air being checked
- B60H 2003/0691 . . Adsorption filters, e.g. activated carbon