

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

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 17/06](#))}
- 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](#); **B62D 1/24D** 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 [N: (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 . [N: 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)}

B60H 2001/00

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

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- 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, desaeration 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 [N: ([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