

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 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 (B60H 1/00864 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 (B60H 1/00842 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) }

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](#))

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In this group and its subgroups, as well as in patent documents, the following 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, 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](#) } ([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