

# 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](#)

**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

- 1/00007 . {Combined heating, ventilating, or cooling devices ([control systems or mechanisms B60H 1/00642](#))}
- 1/00014 . . {for load cargos on load transporting vehicles}
- 1/00021 . . {Air flow details of the heating, ventilating and cooling [HVAC] devices}
- 1/00028 . . . {Constructional lay-out of the devices in the vehicle}
- 1/00035 . . . {for sending an air stream of uniform temperature into the passenger compartment}
- 1/00042 . . . . {the air passing only one heat exchanger}
- 1/0005 . . . . {the air being firstly cooled and subsequently heated or *vice versa*}
- 1/00057 . . . . {the air being heated and cooled simultaneously, e.g. using parallel heat exchangers}
- 1/00064 . . . {for sending air streams of different temperatures into the passenger compartment}
- 1/00071 . . . . {the air passing only one heat exchanger}
- 2001/00078 . . . {Assembling, manufacturing or layout details}
- 2001/00085 . . . . {of air intake}
- 2001/00092 . . . . {of air deflecting or air directing means inside the device}
- 2001/00099 . . . . {comprising additional ventilating means}
- 2001/00107 . . . . {characterised by the relative position of the heat exchangers, e.g. arrangements leading to a curved airflow}
- 2001/00114 . . . {Heating or cooling details}
- 2001/00121 . . . . {More than one heat exchanger in parallel}
- 2001/00128 . . . . {Electric heaters}
- 2001/00135 . . . . {Deviding walls for separate air flows}
- 2001/00142 . . . . {first heating and then cooling}
- 2001/0015 . . . {Temperature regulation}
- 2001/00157 . . . . {without by-pass}
- 2001/00164 . . . . {with more than one by-pass}
- 2001/00171 . . . . {Valves on heaters for modulated liquid flow}
- 2001/00178 . . . . {comprising an air passage from the HVAC box to the exterior of the cabin}
- 2001/00185 . . . . {Distribution of conditioned air}
- 2001/00192 . . . . {to left and right part of passenger compartment}
- 2001/002 . . . . {to front and rear part of passenger compartment}
- 1/00207 . . {characterised by the position of the HVAC devices with respect to the passenger compartment ([B60H 1/00021 takes precedence](#))}
- 2001/00214 . . . {Devices in front of the passenger compartment}
- 2001/00221 . . . {Devices in the floor or side wall area of the passenger compartment}
- 2001/00228 . . . {Devices in the interior of the passenger compartment}
- 2001/00235 . . . {Devices in the roof area of the passenger compartment}
- 2001/00242 . . . {Devices in the rear area of the passenger compartment}
- 1/0025 . . {the devices being independent of the vehicle}
- 1/00257 . . {Non-transportable devices, disposed outside the vehicle, e.g. on a parking}
- 1/00264 . . {Transportable devices}
- 1/00271 . {Heating, cooling or ventilating devices specially adapted for particular vehicle parts or components and being connected to the vehicle HVAC unit}
- 1/00278 . . {for the battery ([arrangement of batteries B60R 16/04](#))}
- 1/00285 . . {for vehicle seats ([vehicle seats with heating or ventilation means independent from the HVAC system of the vehicle B60N 2/56](#))}
- 1/00292 . . {for steering wheels ([steering wheels with heating or ventilation means independent from the HVAC system of the vehicle B62D 1/065](#))}
- 2001/003 . . {Component temperature regulation using an air flow}
- 2001/00307 . . {Component temperature regulation using a liquid flow}
- 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](#))}
- 1/00321 . {Heat exchangers for air-conditioning devices ([B60H 1/3227 takes precedence](#))}
- 1/00328 . . {of the liquid-air type}
- 1/00335 . . {of the gas-air type ([B60H 1/18 takes precedence](#))}
- 1/00342 . . {of the liquid-liquid type}
- 2001/0035 . . {movable in and out of the air stream}
- 1/00357 . {Air-conditioning arrangements specially adapted for particular vehicles}
- 1/00364 . . {for caravans or trailers}

- 1/00371 . . {for vehicles carrying large numbers of passengers, e.g. buses}
- 1/00378 . . {for tractor or load vehicle cabins}
- 1/00385 . . {for vehicles having an electrical drive, e.g. hybrid or fuel cell}
- 1/00392 . . . {for electric vehicles having only electric drive means}
- 1/004 . . . {for vehicles having a combustion engine and electric drive means, e.g. hybrid electric vehicles}
- 1/00407 . . {for open or convertible vehicles}
- 1/00414 . . {for military, emergency, safety or security vehicles}
- 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](#))}
- 1/00428 . . {electric}
- 1/00435 . . {fluid or pneumatic}
- 1/00442 . . . {using a vacuum}
- 1/0045 . . {mechanical power take-offs from the vehicle propulsion unit}
- 1/00457 . {Ventilation unit, e.g. combined with a radiator ([control systems for ventilators B60H 1/00828](#))}
- 1/00464 . . {The ventilator being of the axial type}
- 1/00471 . . {The ventilator being of the radial type, i.e. with radial expulsion of the air}
- 1/00478 . {Air-conditioning devices using the Peltier effect ([for air-conditioning in general F24F 5/0042](#); for refrigeration [F25B 21/02](#); electric devices exhibiting the Peltier effect [H01L 35/00](#))}
- 1/00485 . {Valves for air-conditioning devices, e.g. thermostatic valves ([valves per se F16K](#); [thermostatic valves per se G05D 23/02](#))}
- 1/00492 . {characterised by comprising regenerative heating or cooling means, e.g. heat accumulators}
- 1/005 . . {Regenerative cooling means, e.g. cold accumulators}
- 1/00507 . {Details, e.g. mounting arrangements, desaeration devices ([B60H 1/32 takes precedence](#))}
- 1/00514 . . {Details of air conditioning housings}
- 1/00521 . . . {Mounting or fastening of components in housings, e.g. heat exchangers, fans, electronic regulators}
- 1/00528 . . . {Connections between housing parts}
- 1/00535 . . . {Mounting or fastening of the housing to the vehicle}
- 1/00542 . . . {Modular assemblies}
- 1/0055 . . . {the housing or parts thereof being integrated in other devices, e.g. dashboard}
- 1/00557 . . {Details of ducts or cables}
- 1/00564 . . . {of air ducts}
- 1/00571 . . . {of liquid ducts, e.g. for coolant liquids or refrigerants}
- 1/00578 . . . {of bowden wires}
- 1/00585 . . {Means for monitoring, testing or servicing the air-conditioning}
- 1/00592 . . {Add-on devices, e.g. heat/cooling boxes, compartment dividers, upgrade sets}
- 2001/006 . . {Noise reduction}
- 2001/00607 . . {Recycling}
- 2001/00614 . . {Cooling of electronic units in air stream}
- 2001/00621 . . {Fastening lids on air-conditioning housings}
- 2001/00628 . . {Adaption for left or right hand drive}
- 2001/00635 . . {Air-tight sealing devices}
- 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](#))}
- 1/0065 . . {Control members, e.g. levers or knobs ([B60H 1/00985 takes precedence](#))}
- 1/00657 . . . {Remote control devices}
- 1/00664 . . {Construction or arrangement of damper doors ([control systems or circuits for damper doors B60H 1/00835](#))}
- 1/00671 . . . {Damper doors moved by rotation; Grilles}
- 1/00678 . . . . {the axis of rotation being in the door plane, e.g. butterfly doors}
- 1/00685 . . . . {the door being a rotating disc or cylinder or part thereof ([B60H 1/00678 takes precedence](#))}
- 1/00692 . . . {Damper doors moved by translation, e.g. curtain doors}
- 2001/007 . . . {Manufacturing or assembling}
- 2001/00707 . . . {Details of pivots of damper doors}
- 2001/00714 . . . {Details of seals of damper doors}
- 2001/00721 . . . {Air deflecting or air directing means}
- 2001/00728 . . . {Film doors}
- 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}
- 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}
- 1/0075 . . . {the input being solar radiation}
- 1/00757 . . . {by the input of sound, e.g. by using a voice synthesizer}
- 1/00764 . . . {the input being a vehicle driving condition, e.g. speed ([B60H 1/00828, B60H 1/00864 take precedence](#))}
- 1/00771 . . . . {the input being a vehicle position or surrounding, e.g. GPS-based position or tunnel}
- 1/00778 . . . . {the input being a stationary vehicle position, e.g. parking or stopping}
- 1/00785 . . . {by the detection of humidity or frost}
- 1/00792 . . . {Arrangement of detectors ([B60H 1/00742, B60H 1/0075, B60H 1/00785 take precedence](#))}
- 1/008 . . . {the input being air quality}
- 1/00807 . . . {the input being a specific way of measuring or calculating an air or coolant temperature}
- 1/00814 . . {Control systems or circuits characterised by their output, for controlling particular components of the heating, cooling or ventilating installation}
- 1/00821 . . . {the components being ventilating, air admitting or air distributing devices}
- 1/00828 . . . . {Ventilators, e.g. speed control ([B60H 1/00864 takes precedence](#))}
- 1/00835 . . . . {Damper doors, e.g. position control ([construction or arrangement of damper doors B60H 1/00664; B60H 1/00864 takes precedence](#))}

1/00842	. . . . .	{the system comprising a plurality of damper doors; Air distribution between several outlets}	1/025	. .	{from both the cooling liquid and the exhaust gases of the propulsion plant}
1/00849	. . . . .	{for selectively commanding the induction of outside or inside air ( <a href="#">B60H 1/00842</a> takes precedence)}	1/03	. .	and from a source other than the propulsion plant
1/00857	. . . . .	{characterised by the means connecting the initiating means, e.g. control lever, to the damper door}	1/032	. . .	{from the cooling liquid of the propulsion plant and from a burner}
1/00864	. . . . .	{Ventilators and damper doors}	1/034	. . .	{from the cooling liquid of the propulsion plant and from an electric heating device}
1/00871	. . . . .	{Air directing means, e.g. blades in an air outlet (construction of nozzles or air diffusers <a href="#">B60H 1/34</a> )}	1/036	. . .	{from the plant exhaust gases and from a burner}
1/00878	. . .	{the components being temperature regulating devices ( <a href="#">B60H 1/00899</a> takes precedence; constructions of valves <a href="#">B60H 1/00485</a> )}	1/038	. . .	{from the cooling liquid of the propulsion plant and from a viscous fluid heater}
1/00885	. . . . .	{Controlling the flow of heating or cooling liquid, e.g. valves or pumps ( <a href="#">B60H 1/00899</a> takes precedence; constructions of valves <a href="#">B60H 1/00485</a> )}	1/04	. .	from cooling liquid of the plant {( <a href="#">B60H 1/025</a> , <a href="#">B60H 1/03</a> take precedence)}
1/00892	. . . . .	{Devices specially adapted for avoiding uncomfortable feeling, e.g. sudden temperature changes ( <a href="#">B60H 1/00885</a> takes precedence)}	1/06	. . .	directly from main radiator
1/00899	. . . . .	{Controlling the flow of liquid in a heat pump system (controlling the properties of the refrigerant liquid, e.g. pressure or temperature, <a href="#">B60H 1/3204</a> )}	1/08	. . .	from other radiator than main radiator
1/00907	. . . . .	{where the flow direction of the refrigerant changes and an evaporator becomes condenser}	1/10	. . . . .	the other radiator being situated in a duct capable of being connected to atmosphere outside vehicle
1/00914	. . . . .	{where the flow direction of the refrigerant does not change and there is a bypass of the condenser}	1/12	. . . . .	using an air blower
1/00921	. . . . .	{where the flow direction of the refrigerant does not change and there is an extra subcondenser, e.g. in an air duct}	1/14	. .	otherwise than from cooling liquid of the plant {, e.g. heat from the grease oil, the brakes, the transmission unit ( <a href="#">B60H 1/03</a> takes precedence)}
2001/00928	. . . . .	{comprising a secondary circuit}	1/143	. . .	{the heat being derived from cooling an electric component, e.g. electric motors, electric circuits, fuel cells or batteries}
2001/00935	. . . . .	{comprising four way valves for controlling the fluid direction}	2001/146	. . .	{from a viscous fluid heater}
2001/00942	. . . . .	{comprising a plurality of heat exchangers, e.g. for multi zone heating or cooling}	1/16	. . .	the air being heated by direct contact with the plant, e.g. air-cooled motor
2001/00949	. . . . .	{comprising additional heating/cooling sources, e.g. second evaporator}	1/18	. . .	the air being heated from the plant exhaust gases {( <a href="#">B60H 1/025</a> takes precedence; exhaust or silencing apparatus associated with devices profiting by exhaust energy <a href="#">F01N 5/00</a> )}
2001/00957	. . . . .	{comprising locations with heat exchange within the refrigerant circuit itself, e.g. cross-, counter-, or parallel heat exchange}	1/20	. . . . .	using an intermediate heat-transferring medium
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}	1/22	. .	the heat being derived otherwise than from the propulsion plant {( <a href="#">B60H 1/0025</a> , <a href="#">B60H 1/00492</a> and <a href="#">B60H 1/03</a> take precedence)}
1/00971	. .	{Control systems or circuits characterised by including features for locking or memorising of control modes}	1/2203	. .	{the heat being derived from burners (burners in general <a href="#">F23C</a> , <a href="#">F23D</a> , <a href="#">F24H 9/18</a> )}
1/00978	. .	{Control systems or circuits characterised by failure of detection or safety means; Diagnostic methods}	1/2206	. . .	{controlling the operation of burners (control of burners in general <a href="#">F23N 5/00</a> )}
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 <a href="#">B60H 1/00757</a> ; <a href="#">B60H 1/00978</a> takes precedence)}	1/2209	. . .	{arrangements of burners for heating an intermediate liquid ( <a href="#">B60H 1/032</a> takes precedence)}
2001/00992	. .	{Calculations modifying a user set value}	1/2212	. . .	{arrangements of burners for heating air}
1/02	. .	the heat being derived from the propulsion plant {( <a href="#">B60H 1/00492</a> takes precedence)}	1/2215	. .	{the heat being derived from electric heaters (in general <a href="#">H05B</a> ; for electric traction vehicles <a href="#">B60L 1/02</a> )}
			1/2218	. . .	{controlling the operation of electric heaters}
			1/2221	. . .	{arrangements of electric heaters for heating an intermediate liquid ( <a href="#">B60H 1/034</a> takes precedence)}
			1/2225	. . .	{arrangements of electric heaters for heating air}
			2001/2228	. .	{controlling the operation of heaters}
			2001/2231	. . .	{for proper or safe operation of the heater}
			2001/2234	. . .	{when vehicle is parked, preheating}
			2001/2237	. . .	{supplementary heating, e.g. during stop and go of a vehicle}
			2001/224	. . .	{automatic operation, e.g. control circuits or methods}
			2001/2243	. . .	{manual operation, e.g. remote control or timer}

2001/2246	. . . {obtaining information from a variable, e.g. by means of a sensor}	1/3202	. . . {using evaporation, i.e. not including a compressor, e.g. involving fuel or water evaporation ( <a href="#">B60H 1/3235</a> takes precedence; in general <a href="#">F25B 19/00</a> , <a href="#">F25D 7/00</a> )}
2001/225	. . . {related to an operational state of another HVAC device}	1/3204	. . . {using compression ( <a href="#">B60H 1/3233</a> takes precedence; in general <a href="#">F25B</a> , <a href="#">F25D</a> )}
2001/2253	. . . {related to an operational state of the vehicle or a vehicle component}	1/3205	. . . . {Control means therefor}
2001/2256	. . . . {related to the operation of the heater itself, e.g. flame detection or overheating}	1/3207	. . . . {for minimizing the humidity of the air}
2001/2259	. . . {output of a control signal}	1/3208	. . . . {Vehicle drive related control of the compressor drive means, e.g. for fuel saving purposes}
2001/2262	. . . . {related to the period of on/off time of the heater}	1/321	. . . . {for preventing the freezing of a heat exchanger}
2001/2265	. . . . {related to the quantity of heat produced by the heater}	1/3211	. . . . {for increasing the efficiency of a vehicle refrigeration cycle}
2001/2268	. . . {Constructional features}	1/3213	. . . . {for increasing the efficiency in a vehicle heat pump}
2001/2271	. . . . {Heat exchangers, burners, ignition devices}	1/3214	. . . . {for improving the lubrication of a refrigerant compressor in a vehicle}
2001/2275	. . . . {Thermoelectric converters for generating electrical energy}	1/3216	. . . . {for improving a change in operation duty of a compressor in a vehicle}
2001/2278	. . . . {Connectors, water supply, housing, mounting brackets}	1/3217	. . . . {for high pressure, inflammable or poisonous refrigerants causing danger in case of accidents}
2001/2281	. . . . {Air supply, exhaust systems}	1/3219	. . . . {for improving the response time of a vehicle refrigeration cycle}
2001/2284	. . . . {Fuel supply}	1/322	. . . . {for improving the stop or idling operation of the engine}
2001/2287	. . . . {Integration into a vehicle HVAC system or vehicle dashboard ( <a href="#">B60H 2001/00128</a> takes precedence)}	1/3222	. . . . {characterised by the compressor driving arrangements, e.g. clutches, transmissions or multiple drives ( <a href="#">B60H 1/3208</a> , <a href="#">B60H 1/3226</a> take precedence)}
2001/229	. . . . {Integration into an air outlet}	1/3223	. . . . {characterised by the arrangement or type of the compressor ( <a href="#">B60H 1/3222</a> takes precedence)}
2001/2293	. . . . {Integration into other parts of a vehicle}	1/3225	. . . . {characterised by safety arrangements, e.g. compressor anti-seizure means or by signalling devices}
2001/2296	. . . . {integration into fluid/air heat exchangers}	1/3226	. . . . {Self-contained devices, i.e. including own drive motor}
1/24	. Devices purely for ventilating or where the heating or cooling is irrelevant (nozzles, air-diffusers <a href="#">B60H 1/34</a> )	1/3227	. . . . {characterised by the arrangement or the type of heat exchanger, e.g. condenser, evaporator ( <a href="#">condensed liquid drainage means B60H 1/3233</a> )}
1/241	. . . {characterised by the location of ventilation devices in the vehicle}	1/3229	. . . . {characterised by constructional features, e.g. housings, mountings, conversion systems ( <a href="#">B60H 1/3227</a> , <a href="#">B60H 1/3233</a> take precedence)}
1/242	. . . . {located in the front area}	1/323	. . . . {characterised by comprising auxiliary or multiple systems, e.g. plurality of evaporators, or by involving auxiliary cooling devices}
1/243	. . . . {located in the lateral area (e.g. doors, pillars)}	1/3232	. . . . {particularly adapted for load transporting vehicles ( <a href="#">B60H 1/3226</a> takes precedence)}
1/244	. . . . {located in the rear area}	1/3233	. . . {characterised by condensed liquid drainage means}
1/245	. . . . {located in the roof}	1/3235	. . . {using sublimation, e.g. dry ice cooling or melting ice}
1/246	. . . . {located in the interior of the vehicle or in or below the floor}	2001/3236	. . . {information from a variable is obtained}
1/247	. . . {Disposition of several air-diffusers in a vehicle for ventilation-air circulation in a vehicle cabin}	2001/3238	. . . . {related to the operation of the compressor}
1/248	. . . {Air-extractors, air-evacuation from the vehicle interior}	2001/3239	. . . . {related to flow}
1/249	. . . . {using one-way valves}	2001/3241	. . . . . {of air}
1/26	. . . Ventilating openings in vehicle exterior; Ducts for conveying ventilating air	2001/3242	. . . . . {of a refrigerant}
1/262	. . . . {Openings in or on the vehicle roof}	2001/3244	. . . . {related to humidity}
1/265	. . . . {Openings in window or door past or pillars (door pasts <a href="#">per se B62D 25/14</a> ; <a href="#">B60H 1/248</a> takes precedence)}	2001/3245	. . . . . {of air}
1/267	. . . . {Openings in or near to vehicle windows (pivoting side windows <a href="#">B60J 1/14</a> ; wind deflectors associated with windows for ventilating <a href="#">B60J 1/20</a> )}	2001/3247	. . . . . {of a refrigerant}
1/28	. . . . the openings being situated directly in front of vehicle front window		
1/30	. . . . Air scoops		
1/32	. . . Cooling devices ({ <a href="#">B60H 1/00478</a> , <a href="#">B60H 1/005</a> take precedence;} vehicles adapted to transport refrigerated goods <a href="#">B60P 3/20</a> )		
1/3201	. . . {using absorption or adsorption (in general <a href="#">F25B 15/00</a> , <a href="#">F25B 17/00</a> )}		



- 2001/3248 . . . {related to pressure}
  - 2001/325 . . . . {of the refrigerant at a compressing unit}
  - 2001/3251 . . . . {of the refrigerant at a condensing unit}
  - 2001/3252 . . . . {of the refrigerant at an evaporating unit}
  - 2001/3254 . . . . {of the refrigerant at an expansion unit}
  - 2001/3255 . . . {related to temperature}
  - 2001/3257 . . . . {of the refrigerant at a compressing unit}
  - 2001/3258 . . . . {of the air at a condensing unit}
  - 2001/326 . . . . {of the refrigerant at a condensing unit}
  - 2001/3261 . . . . {of the air at an evaporating unit}
  - 2001/3263 . . . . {of the refrigerant at an evaporating unit}
  - 2001/3264 . . . . {of the refrigerant at an expansion unit}
  - 2001/3266 . . . {related to the operation of the vehicle}
  - 2001/3267 . . . {related to the operation of an expansion valve}
  - 2001/3269 . . {output of a control signal}
  - 2001/327 . . . {related to a compressing unit}
  - 2001/3272 . . . . {to control the revolving speed of a compressor}
  - 2001/3273 . . . . {related to the operation of the vehicle, e.g. the compressor driving torque}
  - 2001/3275 . . . . {to control the volume of a compressor}
  - 2001/3276 . . . {related to a condensing unit}
  - 2001/3277 . . . . {to control the air flow}
  - 2001/3279 . . . . {to control the refrigerant flow}
  - 2001/328 . . . {related to an evaporating unit}
  - 2001/3282 . . . . {to control the air flow}
  - 2001/3283 . . . . {to control the refrigerant flow}
  - 2001/3285 . . . {related to an expansion unit}
  - 2001/3286 . . {Constructional features}
  - 2001/3288 . . . {Additional heat source}
  - 2001/3289 . . . {Additional cooling source}
  - 2001/3291 . . . {Locations with heat exchange within the refrigerant circuit itself}
  - 2001/3292 . . . {Compressor drive is electric only}
  - 2001/3294 . . . {Compressor drive is hybrid}
  - 2001/3295 . . . {Compressing means other than compressor}
  - 2001/3297 . . . {Expansion means other than expansion valve}
  - 2001/3298 . . . {Ejector-type refrigerant circuits}
    - 1/34 . Nozzles; {Air-diffusers} ([dispositions of air diffusers in a vehicle B60H 1/247](#))
    - 1/3407 . . {providing an air stream in a fixed direction, e.g. using a grid or porous panel}
    - 1/3414 . . {with means for adjusting the air stream direction ([B60H 1/345 takes precedence](#))}
    - 1/3421 . . . {using only pivoting shutters}
    - 1/3428 . . . {using a set of pivoting shutters and a pivoting frame}
    - 1/3435 . . . {using only a pivoting frame}
    - 1/3442 . . . . {the frame being spherical}
    - 1/345 . . {with means for adjusting divergence, convergence or oscillation of air stream}
    - 1/3457 . . {Outlets providing a vortex, i.e. a spirally wound air flow}
  - 2001/3464 . . {Details of hinges}
  - 2001/3471 . . {Details of actuators}
  - 2001/3478 . . . {acting on additional damper doors}
  - 2001/3485 . . {Air temperature regulation}
  - 2001/3492 . . {Manufacturing; Assembling}
- 3/00 Other air-treating devices**
- 3/0007 . {Adding substances other than water to the air, e.g. perfume, oxygen}
  - 3/0014 . . {characterised by the location of the substance adding device}
  - 3/0021 . . . {in the air-conditioning housing}
  - 3/0028 . . . {on or near an air outlet}
  - 3/0035 . . {characterised by the control methods for adding the substance}
  - 2003/0042 . . {with ventilating means for adding the substances}
  - 2003/005 . . {with heating means for adding the substances}
  - 2003/0057 . . {Servicing means therefor, e.g. for renewal of substances}
  - 2003/0064 . . {adding more than one substance}
  - 3/0071 . {Electrically conditioning the air, e.g. by ionizing}
  - 3/0078 . . {comprising electric purifying means}
  - 3/0085 . {Smell or pollution preventing arrangements ([B60H 3/0007](#), [B60H 3/0071](#), [B60H 3/02](#), [B60H 3/06 take precedence](#))}
  - 3/0092 . . {in the interior of the HVAC unit, e.g. by spraying substances inside the unit}
  - 3/02 . Moistening; {Devices influencing humidity levels, i.e. humidity control ([B60H 1/3202](#), [B60H 1/3207 take precedence](#))}
  - 3/022 . . {for only humidifying the air}
  - 3/024 . . {for only dehumidifying the air}
  - 2003/026 . . {the devices being located in the passenger compartment}
  - 2003/028 . . {the devices comprising regeneration means}
  - 3/06 . Filtering {([B60H 3/0078 takes precedence](#))}
  - 3/0608 . . {Filter arrangements in the air stream}
  - 3/0616 . . . {with provisions for replacing the filter element}
  - 3/0625 . . . {with provisions for by-passing the filter element}
  - 3/0633 . . . {with provisions for regenerating or cleaning the filter element}
  - 3/0641 . . . {near ventilating openings in the vehicle exterior}
  - 2003/065 . . . {Details for holding filter elements in position}
  - 3/0658 . . {Filter elements specially adapted for their arrangement in vehicles ([B60H 3/0608 takes precedence](#))}
  - 2003/0666 . . . {the filter element having non-rectangular shape}
  - 2003/0675 . . {Photocatalytic filters}
  - 2003/0683 . . {the quality of the filter or the air being checked}
  - 2003/0691 . . {Adsorption filters, e.g. activated carbon}