**CPC**

**PERFORMING OPERATIONS; TRANSPORTING**

**TRANSPORTING**

**VEHICLES IN GENERAL**

**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

**WARNING**

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Heating, cooling or ventilating \([\text{HVAC}]\) 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 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\}

1/00078 . . . \{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\}
WARNING

Group B60H 1/00271 is impacted by reclassification into group B60H 1/00295. Groups B60H 1/00271 and B60H 1/00295 should be considered in order to perform a complete search.

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)]

1/00295 . . . [for trim components, e.g. panels, dashboards, liners]

WARNING

Group B60H 1/00295 is incomplete pending reclassification of documents from group B60H 1/00271. Groups B60H 1/00295 and B60H 1/00271 should be considered in order to perform a complete search.

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 takes 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 . . . [moveable 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 . . . [comprising regenerative heating or cooling means, e.g. heat accumulators]

WARNING

Group B60H 1/00492 is impacted by reclassification into group B60H 1/00499. Groups B60H 1/00492 and B60H 1/00499 should be considered in order to perform a complete search.

1/00499 . . . [Heat or cold storage without phase change including solid bodies, e.g. batteries]

WARNING

Group B60H 1/00499 is incomplete pending reclassification of documents from groups B60H 1/00492 and B60H 1/005. Groups B60H 1/00492, B60H 1/005 and B60H 1/00499 should be considered in order to perform a complete search.

1/005 . . . [Regenerative cooling means, e.g. cold accumulators]

WARNING

Group B60H 1/0005 is impacted by reclassification into group B60H 1/00499. Groups B60H 1/0005 and B60H 1/00499 should be considered in order to perform a complete search.

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]
WARNING

Group B60H 2001/00733 is incomplete pending reclassification of documents from groups B60H 1/00642, B60H 1/00735 and B60H 1/00964.

All groups listed in this Warning should be considered in order to perform a complete search.

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]
1/00857 . . . {characterised by the means connecting the initiating means, e.g. control lever, to the damper door}

1/00864 . . . {Ventilators and damper doors}

1/00871 . . . {Air directing means, e.g. blades in an air outlet (construction of nozzles or air diffusers B60H 1/34)}

1/00878 . . . {the components being temperature regulating devices}

**WARNING**

Group B60H 1/00878 is impacted by reclassification into group B60H 2001/00961.

Groups B60H 1/00878 and B60H 2001/00961 should be considered in order to perform a complete search.

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)}

1/00892 . . . {Devices specially adapted for avoiding uncomfortable feeling, e.g. sudden temperature changes (B60H 1/00885 takes precedence)}

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)}

1/00907 . . . {where the flow direction of the refrigerant changes and an evaporator becomes condenser}

1/00914 . . . {where the flow direction of the refrigerant does not change and there is a bypass of the condenser}

1/00921 . . . {where the flow direction of the refrigerant does not change and there is an extra subcondenser, e.g. in an air duct}

2001/00928 . . . {comprising a secondary circuit}

**WARNING**

Group B60H 2001/00928 is impacted by reclassification into group B60H 2001/00961.

All groups listed in this Warning should be considered in order to perform a complete search.

2001/00942 . . . {comprising a plurality of heat exchangers, e.g. for multi zone heating or cooling}

**WARNING**

Group B60H 2001/00942 is impacted by reclassification into group B60H 2001/00961.

All groups listed in this Warning should be considered in order to perform a complete search.

2001/00949 . . . {comprising additional heating/cooling sources, e.g. second evaporator}

**WARNING**

Group B60H 2001/00949 is impacted by reclassification into group B60H 2001/00961.

All groups listed in this Warning should be considered in order to perform a complete search.

2001/00957 . . . {comprising locations with heat exchange within the refrigerant circuit itself, e.g. cross-, counter-, or parallel heat exchange}

**WARNING**

Group B60H 2001/00957 is impacted by reclassification into group B60H 2001/00961.

All groups listed in this Warning should be considered in order to perform a complete search.

2001/00961 . . . {comprising means for defrosting outside heat exchangers}

**WARNING**

Group B60H 2001/00961 is incomplete pending reclassification of documents from groups B60H 1/00878, B60H 2001/00928, B60H 2001/00935, B60H 2001/00942, B60H 2001/00949 and B60H 2001/00957.

All groups listed in this Warning should be considered in order to perform a complete search.

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}

**WARNING**

Group B60H 1/00964 is impacted by reclassification into groups B60H 1/00073 and B60H 2001/00073.

Groups B60H 1/00964, B60H 1/00073 and B60H 2001/00073 should be considered in order to perform a complete search.

1/00971 . . . {Control systems or circuits characterised by including features for locking or memorising of control modes}

1/00978 . . . {Control systems or circuits characterised by failure of detection or safety means; Diagnostic methods}
WARNING

Group B60H 1/039 is impacted pending reclassification of documents from group B60H 1/03.
Groups B60H 1/03 and B60H 1/039 should be considered in order to perform a complete search.

1/04 . . . from cooling liquid of the plant { (B60H 1/025, B60H 1/03 take precedence)}
1/06 . . . directly from main radiator
1/08 . . . from other radiator than main radiator
1/10 . . . the other radiator being situated in a duct capable of being connected to atmosphere outside vehicle
1/12 . . . using an air blower
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)}
1/13 . . . [the heat being derived from cooling an electric component, e.g. electric motors, electric circuits, fuel cells or batteries]
2001/146 . . . [from a viscous fluid heater]
1/16 . . . the air being heated by direct contact with the plant, e.g. air-cooled motor
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)}
1/20 . . . using an intermediate heat-transferring medium
1/22 . . . the heat being derived otherwise than from the propulsion plant { (B60H 1/0025, B60H 1/00492 and B60H 1/03 take precedence)}
1/2203 . . . [the heat being derived from burners (burners in general F23C, F23D, F24H 9/18)]
1/2206 . . . [controlling the operation of burners (control of burners in general F23N 5/00)]
1/2209 . . . [arrangements of burners for heating an intermediate liquid (B60H 1/032 takes precedence)]
1/2212 . . . [arrangements of burners for heating air]
1/2215 . . . [the heat being derived from electric heaters]

WARNING
Group B60H 1/2215 is impacted by reclassification into groups B60H 1/2226 and B60H 1/2227.
Groups B60H 1/2215, B60H 1/2226 and B60H 1/2227 should be considered in order to perform a complete search.

1/2218 . . . [controlling the operation of electric heaters]
1/2221 . . . [arrangements of electric heaters for heating an intermediate liquid (B60H 1/034 takes precedence)]
1/2225 . . . [arrangements of electric heaters for heating air]
1/2226 . . . [Electric heaters using radiation]

WARNING
Group B60H 1/2226 is incomplete pending reclassification of documents from group B60H 1/2215.
Groups B60H 1/2215 and B60H 1/2226 should be considered in order to perform a complete search.

1/2227 . . . [Electric heaters incorporated in vehicle trim components, e.g. panels or linings]

WARNING
Group B60H 1/2227 is incomplete pending reclassification of documents from group B60H 1/2215.
Groups B60H 1/2215 and B60H 1/2227 should be considered in order to perform a complete search.

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]
2001/225 . . . [related to an operational state of another HVAC device]
2001/2253 . . . [related to an operational state of the vehicle or a vehicle component]
2001/2256 . . . [related to the operation of the heater itself, e.g. flame detection or overheating]
2001/2259 . . . [output of a control signal]
2001/2262 . . . [related to the period of on/off time of the heater]
2001/2265 . . . [related to the quantity of heat produced by the heater]
WARNING
Group B60H 1/3201 is impacted by reclassification into groups B60H 1/3201 and B60H 1/32011. Groups B60H 1/3201, B60H 1/32011and B60H 1/32014 should be considered in order to perform a complete search.

WARNING
Group B60H 1/32011 is incomplete pending reclassification of documents from group B60H 1/3201.

Groups B60H 1/3201 and B60H 1/32011 should be considered in order to perform a complete search.

WARNING
Group B60H 1/32014 is incomplete pending reclassification of documents from group B60H 1/3201.

Groups B60H 1/3201 and B60H 1/32014 should be considered in order to perform a complete search.

WARNING
Group B60H 1/3204 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3205 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3207 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3211 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3214 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3216 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3217 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3219 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
Group B60H 1/3222 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.
B60H

1/3222 . . . [characterised by the compressor driving arrangements, e.g. clutches, transmissions or multiple drives (B60H 1/3208, B60H 1/3226 take precedence)]

**WARNING**

Group B60H 1/3222 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3223 . . . [characterised by the arrangement or type of the compressor (B60H 1/3222 takes precedence)]

**WARNING**

Group B60H 1/3223 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3225 . . . [characterised by safety arrangements, e.g. compressor anti-seizure means or by signalling devices]

**WARNING**

Group B60H 1/3225 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3226 . . . [Self-contained devices, i.e. including own drive motor]

**WARNING**

Group B60H 1/3226 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3227 . . . [characterised by the arrangement or the type of heat exchanger, e.g. condenser, evaporator (condensed liquid drainage means B60H 1/3223)]

**WARNING**

Group B60H 1/3227 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3228 . . . [characterised by refrigerant circuit configurations]

**WARNING**

Group B60H 1/3228 is incomplete pending reclassification of documents from groups B60H 1/3204, B60H 1/3205, B60H 1/3222, B60H 1/3223, B60H 1/3225, B60H 1/3226, B60H 1/3227, B60H 1/3228, B60H 1/323 and B60H 1/3232.

All groups listed in this Warning should be considered in order to perform a complete search.

1/32281 . . . [comprising a single secondary circuit, e.g. at evaporator or condenser side]

**WARNING**

Group B60H 1/32281 is incomplete pending reclassification of documents from groups B60H 1/3204, B60H 1/3205, B60H 1/3222, B60H 1/3223, B60H 1/3225, B60H 1/3226, B60H 1/3227, B60H 1/3229, B60H 1/323 and B60H 1/3232.

All groups listed in this Warning should be considered in order to perform a complete search.

1/32284 . . . [comprising two or more secondary circuits, e.g. at evaporator and condenser side]

**WARNING**

Group B60H 1/32284 is incomplete pending reclassification of documents from groups B60H 1/3204, B60H 1/3205, B60H 1/3222, B60H 1/3223, B60H 1/3225, B60H 1/3226, B60H 1/3227, B60H 1/3229, B60H 1/323 and B60H 1/3232.

All groups listed in this Warning should be considered in order to perform a complete search.

1/3229 . . . [characterised by constructional features, e.g. housings, mountings, conversion systems (B60H 1/3227, B60H 1/3233 take precedence)]

**WARNING**

Group B60H 1/3229 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.
WARNING

Group B60H 1/323 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group B60H 1/3232 is impacted by reclassification into groups B60H 1/3228, B60H 1/32281 and B60H 1/32284.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group B60H 1/3233 is impacted by reclassification into group B60H 1/32331.

Groups B60H 1/3233 and B60H 1/32331 should be considered in order to perform a complete search.

WARNING

Group B60H 1/3233 is incomplete pending reclassification of documents from group B60H 1/3233.

Groups B60H 1/3233 and B60H 1/32331 should be considered in order to perform a complete search.

[characterised by comprising auxiliary or multiple systems, e.g. plurality of evaporators, or by involving auxiliary cooling devices]

[characterised by condensed liquid drainage means]

[particularly adapted for load transporting vehicles (B60H 1/3226 takes precedence)]

[characterised by comprising means for the use of condensed liquid, e.g. for humidification or for improving condenser performance]

[using sublimation, e.g. dry ice cooling or melting ice]

[information from a variable is obtained]

melting ice

{ using sublimation, e.g. dry ice cooling or
is impacted by

WARNING

means }

{ characterised by condensed liquid drainage
{ related to temperature }

{ comprising means for the use of condensed
{ related to the operation of the vehicle }

{ related to the operation of an expansion valve }

{ output of a control signal }

{ related to a compressing unit }

{ to control the revolving speed of a compressor }

{ related to the operation of the vehicle, e.g. the compressor driving torque }

{ to control the volume of a compressor }

{ related to a condensing unit }

{ to control the air flow }

{ related to an evaporating unit }

{ to control the air flow }

{ related to an expansion unit }

{ to control the refrigerant flow }

{ related to a condensing unit }

{ related to the operation of the vehicle }

{ related to pressure }

{ of a refrigerant }

{ of a refrigerant }

{ of a refrigerant }

{ of air }

{ of air }

{ of air }

{ of air }

{ of a refrigerant }

{ of a refrigerant }

{ of a refrigerant }

{ of a refrigerant }

{ of the refrigerant at an evaporating unit }

{ of the refrigerant at an expansion unit }

{ of the refrigerant at an evaporating unit }

{ of the refrigerant at a condensing unit }

{ of the refrigerant at an evaporating unit }

{ of the refrigerant at a condensing unit }

{ of the refrigerant at a condensing unit }

{ of the refrigerant at an evaporating unit }

{ of the air at an evaporating unit }

{ of the air at a condensing unit }

{ of the refrigerator at a condensing unit }

{ of the air at a condensing unit }

{ of the refrigerant at a condensing unit }

{ of the refrigerant at a compressor unit }

{ of the refrigerant at an expansion unit }

{ of the refrigerant at a condensing unit }

{ of the air at a condensing unit }

{ of the air at a evaporating unit }

{ output of a control signal }

{ expand }

{ compressing means other than compressor }

{ expansion means other than expansion valve }

{ Ejector-type refrigerant circuits }

{ Additional heat source }

{ Additional cooling source }

{ Locations with heat exchange within the refrigerant circuit itself }

{ Compressor drive is electric only }

{ Compressor drive is hybrid }

{ Compressing means other than compressor }

{ Expansion means other than expansion valve }

{ [Ejector-type refrigerant circuits] }

{ Nozzles: [Air-diffusers] (dispositions of air diffusers in a vehicle B60H 1/242) }

{ providing an air stream in a fixed direction, e.g. using a grid or porous panel }

{ with means for adjusting the air stream direction (B60H 1/342 takes precedence) }

{ [using only pivoting shutters] }

{ [using a set of pivoting shutters and a pivoting frame] }

{ [the frame being spherical] }

{ [with means for adjusting divergence, convergence or oscillation of air stream] }

{ [Outlets providing a vortex, i.e. a spirally wound air flow] }

{ [Details of hinges] }

{ [Details of actuators] }

{ [acting on additional damper doors] }

{ [Air temperature regulation] }

{ [Manufacturing; Assembling] }

Other air-treating devices

Adding substances other than water to the air, e.g. perfume, oxygen

[characterised by the location of the substance adding device]

[in the air-conditioning housing]

[on or near an air outlet]

[characterised by the control methods for adding the substance]

[with ventilating means for adding the substances]

[with heating means for adding the substances]

[Servicing means therefor, e.g. for renewal of substances]
[adding more than one substance]

[Electrically conditioning the air, e.g. by ionizing]

[comprising electric purifying means]

[Smell or pollution preventing arrangements
(B60H 3/0007, B60H 3/0071, B60H 3/02,
B60H 3/06 take precedence)]

[in the interior of the HVAC unit, e.g. by
spraying substances inside the unit]

Moistening

[Devices influencing humidity levels,
i.e. humidity control (B60H 1/3202, B60H 1/3207
take precedence)]

[for only humidifying the air]

[for only dehumidifying the air]

[the devices being located in the passenger
compartment]

[the devices comprising regeneration means]

[Filtering
(B60H 3/0078 takes precedence)]

[Filter arrangements in the air stream]

[with provisions for replacing the filter
element]

[with provisions for by-passing the filter
element]

[with provisions for regenerating or cleaning
the filter element]

[near ventilating openings in the vehicle
exterior]

[Details for holding filter elements in position]

[Filter elements specially adapted for their
arrangement in vehicles
(B60H 3/0608 takes precedence)]

[the filter element having non-rectangular
shape]

[Photocatalytic filters]

[the quality of the filter or the air being checked]

[Adsorption filters, e.g. activated carbon]