

B60H

ARRANGEMENTS OF HEATING, COOLING, VENTILATING OR OTHER AIR-TREATING DEVICES SPECIALLY ADAPTED FOR PASSENGER OR GOODS SPACES OF VEHICLES

Definition statement

This place covers:

Arrangements or adaptations of heating, cooling, ventilating or other air treating devices specially for passengers or goods in spaces of vehicles.

Only inventions, that relate exclusively to vehicles are covered by this subclass.

Relationships with other classification places

Devices providing other air treatment (humidifying, dehumidifying, scenting, filtering) [B60H 3/00](#)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Garments or clothes including a HVAC	A41D
Filters per se	B01D
Ventilating solely by opening windows, doors, roof parts or the like	B60J
Heating or ventilating devices for vehicle seats independent from the vehicle HVAC	B60N
Window or windscreen cleaners using air, e.g. defrosters	B60S
HVAC for railway vehicles	B61D
HVAC for boats or ships	B63J
HVAC for air crafts	B64D 11/0626
Compressors per se	F04B
Heat exchangers comprising heat generating means	F24H
HVAC for buildings	F25B
Heat exchangers per se	F28F , F28D
Heating, cooling or ventilating batteries or accumulators and independent from the cabin HVAC	H01M

Special rules of classification

Refrigerated goods vehicles: [B60P](#) if the vehicle aspect is pertinent

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

HVAC	Heating, Ventilating and Air Conditioning (devices or systems)
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B60H 1/00

Heating, cooling or ventilating {[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](#))

Definition statement

This place covers:

Heating, cooling and/or ventilating (HVAC) devices for the air inside a vehicle cabin or a load area.

References

Limiting references

This place does not cover:

Devices for other treatment of air (e.g. scenting, moistening, drying, filtering)	B60H 3/00
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Special rules of classification

[B60H 1/00](#) and subgroups: vehicle specific documents

[B60H 1/32](#) and subgroups: refrigerant circuit and component specific documents

B60H 1/00014

{for load cargos on load transporting vehicles}

Definition statement

This place covers:

Structure of HVAC units the vehicle, air ducts.

References

Limiting references

This place does not cover:

If refrigeration circuit features are characterizing	B60H 1/3232
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Refrigerated goods vehicles in general	B60P 3/20
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B60H 1/00271

{HVAC devices specially adapted for particular vehicle parts or components and being connected to the vehicle HVAC unit}

Relationships with other classification places

Heating/cooling liquid urea for exhaust gas treatment:

[F01N 3/2066](#) and Indexing Code [F01N 2610/11](#) cool, [F01N 2610/10](#) heat.

B60H 1/00278

{for the battery (arrangement of batteries [B60R 16/04](#))}

Definition statement

This place covers:

Battery cooling and/or heating linked to the vehicle interior air conditioning circuit.

References**Limiting references**

This place does not cover:

When the battery cooling circuit is completely separate from the cabin air conditioner	H01M
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Mounting batteries in electric vehicles	B60K 1/04
Batteries in hybrid vehicles	B60K 6/28
Monitoring batteries	B60L 58/00
Arrangement of batteries	B60R 16/04
Cooling batteries	H01M 6/5038
Battery technology as such	Y02E 60/10

Special rules of classification

If there is an additional evaporator for cooling the battery in an airstream, also classify in [B60H 1/323](#).

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](#))}

Relationships with other classification places

Software for engine control related to temperature: [F02D 41/00](#)

Heating engine with electric means: [F02N 19/04](#)

B60H 1/00321

{Heat exchangers for air-conditioning devices ([B60H 1/3227](#) takes precedence)}

Relationships with other classification places

Heat exchangers per se: [F28D](#), [F28E](#)

B60H 1/00328

{of the liquid-air type}

Definition statement

This place covers:

Coolant / air heat exchangers are classified here.

Special rules of classification

In general: [F28D 1/0233](#), [F28D 1/024](#), [F28D 1/0246](#).

Convectors: [F28F 1/14](#), [F28F 1/16](#), [F28F 1/18](#)

In houses: [F24D 19/04](#)

B60H 1/00335

{of the gas-air type ([B60H 1/18](#) takes precedence)}

Definition statement

This place covers:

Refrigerant / air heat exchangers are classified here

References**Limiting references**

This place does not cover:

Air / Air heat exchangers	B60H 1/00321
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B60H 1/00342

{of the liquid-liquid type}

Definition statement

This place covers:

Refrigerant / water or refrigerant / refrigerant or water/water heat exchangers, e.g. stacked plates.

B60H 1/00357**{Air-conditioning arrangements specially adapted for particular vehicles}****Definition statement***This place covers:*

HVAC characterized by features related to the type of vehicle are classified here and in the subclasses.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Vehicle bodies	B62D 29/00 , B62D 31/00 , B62D 39/00
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B60H 1/00364**{for caravans or trailers}****Definition statement***This place covers:*

HVAC for camping trailers, recreational vehicles and other trailers.

References**Limiting references***This place does not cover:*

HVAC for load transport vehicle trailers (aspects of the trailer)	B60H 1/00014
HVAC for load transport vehicle trailers (aspects of the refrigeration unit itself)	B60H 1/3232

Informative references*Attention is drawn to the following places, which may be of interest for search:*

Animal transport vehicles as such	B60P 3/04
Refrigerated goods vehicles as such	B60P 3/20

B60H 1/00371**{for vehicles carrying large numbers of passengers, e.g. buses}****Definition statement***This place covers:*

HVAC specific to all road vehicles carrying more passengers than a standard passenger car.

References

Limiting references

This place does not cover:

Railway vehicles,	B61D 27/00
Aircrafts	B64D 13/00

B60H 1/00378

{for tractor or load vehicle cabins}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Truck cabins with sleeping accommodations	B62D 33/0612
Tractor and off-road vehicle cabins	B62D 33/0617

B60H 1/00385

{for vehicles having an electrical drive, e.g. hybrid or fuel cell}

Relationships with other classification places

When batteries or fuel cells are cooled or heated: [B60H 1/00278](#)

References

Limiting references

This place does not cover:

When the fuel cell is used for driving the AC components only	B60H 1/00428
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Hybrid vehicles	B60K 6/00
Electric vehicles with batteries or fuel cells	B60L 50/50
Series hybrid vehicles	B60L 50/61
Control	B60W 20/00
Heating a fuel cell	H01M 8/04022
Cooling a fuel cell	H01M 8/04059
For electric or hybrid cars	FI:B60H1/22&671

B60H 1/00392

{for electric vehicles having only electric drive means}

Definition statement

This place covers:

Vehicles driven by an electric motor. Includes fuel cell vehicles and vehicles having a combustion motor only for generating electric power ("range extender").

References

Limiting references

This place does not cover:

When electric and hybrid vehicles are mentioned equally	B60H 1/00385
If a fuel cell is used only for driving a HVAC	B60H 1/00428

B60H 1/004

{for vehicles having a combustion engine and electric drive means, e.g. hybrid electric vehicles}

Definition statement

This place covers:

All hybrid vehicles where the combustion engine can be mechanically coupled to the wheels for vehicle propulsion.

References

Limiting references

This place does not cover:

When electric and hybrid vehicles are mentioned equally	B60H 1/00385
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B60H 1/00407

{for open or convertible vehicles}

Definition statement

This place covers:

Vehicles having body parts that can be opened (e.g. convertibles, golf carts) and this affects the air conditioning system.

Relationships with other classification places

Seats: [B60H 1/00285](#)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Convertibles in general	B60J 7/00
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Seats having "air scarfs"	B60N 2/5671
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B60H 1/00414

{for military, emergency, safety or security vehicles}

Definition statement

This place covers:

Vehicles like ambulances, tanks, anti bacteriological warfare vehicles etc. where the air conditioning system is specially adapted to the use of the vehicle (e.g. germ filters, pressurized cabin).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ambulances	A61G 3/008
Armored vehicles in general.	F41H 7/00

B60H 1/00428

{electric}

Definition statement

This place covers:

Aspects of power supply (e.g. use of converters / inverters) to drive components (e.g. compressors) of the HVAC.

Solar power and fuel cell power used for air conditioning when the vehicle drive is not electric.

Relationships with other classification places

Domestic air conditioning using natural energy, see [F24F 5/0046](#)

Semiconductor Solar Cells per se: [H01L 31/042](#)

References

Limiting references

This place does not cover:

DC-DC converters	H02M 3/00
AC-AC converters	H02M 5/00
AC/DC converters	H02M 7/00

B60H 1/00457

{Ventilation unit, e.g. combined with a radiator (control systems for ventilators [B60H 1/00828](#))}

Definition statement

This place covers:

Fans in combination with other components of the HVAC unit, e.g. with heat exchangers.

Relationships with other classification places

Ventilators in general: [F04D 15/0005](#), [F04D 25/08](#)

Electrical motors: [H02K](#)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fan casings	F04D 29/40
For radial fans:	F04D 29/4226
For axial fans:	F04D 29/526
Assembly / disassembly of fans:	F04D 29/626
Heaters & casing details & integrated fans	F24D 19/06

B60H 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 [H10N 10/00](#))}

Definition statement

This place covers:

Thermoelectric modules (based on the Peltier or Seebeck effect) in HVAC units are classified here.

References

Limiting references

This place does not cover:

Thermoelectric modules in fuel burning heaters	B60H 2001/2275
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Machines using Peltier	F25B 21/02
Thermoelectric cooling devices per se	H10N 10/00
Peltier elements	FI: B60H1/32&621G

B60H 1/00485

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

Definition statement

This place covers:

Vehicle HVAC characterized by specially adapted valves for refrigerant and/or coolant.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Expansion Valves	F25B 41/31
Control of expansion valves	G05D 7/0635

B60H 1/00492

{comprising regenerative heating or cooling means, e.g. heat accumulators}

Definition statement

This place covers:

HVAC units comprising accumulators storing heat or both heat and cold are classified here.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

If only cold storage is included in the HVAC	B60H 1/005
Cold storages used in domestic HVAC	F28D 20/00

B60H 1/00521

{Mounting or fastening of components in housings, e.g. heat exchangers, fans, electronic regulators}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Mounting heat exchangers in vehicle bodies	B60K 11/04
Front end modules	B62D 25/085
Sealings	F16J 15/00
Fastening elements on heat exchangers	F28F 9/002

B60H 1/0055

{the housing or parts thereof being integrated in other devices, e.g. dashboard}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Dashboards	B60K 37/00
Dashboards having incorporated ventilation channels	B62D 25/142

B60H 1/00564

{of air ducts}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Dashboards, e.g. with integrated air ducts	B60K 37/00
Ducts, integrated guide vanes	F15D 1/04
Ducting arrangements for domestic air treatment	F24F 13/02

B60H 1/00571

{of liquid ducts, e.g. for coolant liquids or refrigerants}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Pipes, joints of fittings per se	F16L
Flexible pipes with four or more layers, e.g. for refrigerants	F16L 11/045
Couplings with fluid cut-off means using two valves	F16L 37/36
Fluid-circulation arrangements for domestic cooling	F25B 41/00

B60H 1/00585

{Means for monitoring, testing or servicing the air-conditioning}

Definition statement

This place covers:

Service units for servicing the vehicle HVAC.

Includes units for purging, evacuating, filling and testing such an HVAC.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

For filling	F25B 45/00
For testing	F25B 49/005

B60H 1/00592

{Add-on devices, e.g. heat/cooling boxes, compartment dividers, upgrade sets}

Definition statement

This place covers:

Receptacles connected to the vehicle HVAC for cooling or heating.

Partition elements used inside the vehicle cabin for separating a cooled or heated compartment.

References

Limiting references

This place does not cover:

Receptacles for food or beverages with refrigerating or warming systems:	B60N 3/104
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B60H 1/0065

{Control members, e.g. levers or knobs ([B60H 1/00985](#) takes precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Remote control devices	G07C 5/008
Switches per se	H01K15/00
Touch switches per se	H03K 17/96
Capacitive switches	H03K 17/962

B60H 1/00664

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Air flow control members for domestic air-conditioning	F24F 13/08
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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}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Monitoring multiple temperatures	G01K 1/026
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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}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Sensors in seats	B60N 2/002
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B60H 1/0075

{the input being solar radiation}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Solar sensors	G01J
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B60H 1/00764

{the input being a vehicle driving condition, e.g. speed ([B60H 1/00828](#), [B60H 1/00864](#) take precedence)}

Definition statement

This place covers:

Control systems using vehicle speed as input.

Relationships with other classification places

[B60H 1/3208](#) if control of the compressor is based on the vehicle speed.

References

Limiting references

This place does not cover:

If the vehicle position is characterizing	B60H 1/00771
Stop/Idle related control methods	B60H 1/00778

B60H 1/00771

{the input being a vehicle position or surrounding, e.g. GPS-based position or tunnel}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Specially adapted for navigation in a road network	G01C 21/26
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B60H 1/008

{the input being air quality}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Air quality sensors per se	G01D
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B60H 1/00835

{Damper doors, e.g. position control (construction or arrangement of damper doors [B60H 1/00664](#); [B60H 1/00864](#) takes precedence)}

Relationships with other classification places

Means (levers, gears...) for moving doors see [B60H 1/00857](#)

B60H 1/00857

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

Definition statement

This place covers:

Drive means for doors etc are classified here.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gears	F16H
Domestic use	F24F 13/1426

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](#))}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

The system uses a heat pump	F24D 19/1039
Heat pumps	F25B 30/00

B60H 1/00978

{Control systems or circuits characterised by failure of detection or safety means; Diagnostic methods}

Definition statement

This place covers:

Methods for detection of insufficient refrigerant charge (when performed by the vehicle itself) are classified here.

Relationships with other classification places

See [B60H 1/3233](#) for compressor saving methods.

[F25B 2700/04 \(B60H\)](#): detecting the charge level of refrigerant

References

Limiting references

This place does not cover:

Devices for Testing HVAC are classified in	B60H 1/00585
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Safety devices for refrigeration machines, e.g. level control of refrigerant	F25B 49/005
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Synonyms and Keywords

In patent documents, the following abbreviations are often used:

DE	Füllstandserkennung
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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)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments in dashboards	B60K 35/00
Display or monitoring for domestic air-conditioning	F24F 11/50

B60H 1/02

the heat being derived from the propulsion plant {([B60H 1/00492](#) takes precedence)}

References

Limiting references

This place does not cover:

The use of heat of electric motors	B60H 1/143
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B60H 1/038

{from the cooling liquid of the propulsion plant and from a viscous fluid heater}

Relationships with other classification places

If no cooling water of the engine is used, then classify in [B60H 2001/146](#)

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Viscous fluid heaters	F24V 40/00
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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)}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Liquid cooled brakes	F16D 65/853
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B60H 1/143

{the heat being derived from cooling an electric component, e.g. electric motors, electric circuits, fuel cells or batteries}

Definition statement

This place covers:

The source of heat is waste heat from electric components.

Relationships with other classification places

If an electric heater is provided: [B60H 1/2215](#)

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)}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Water heaters	F24H 1/00
Air heaters	F24H 3/00
Details of heaters in general	F24H 9/00

B60H 1/2203

{the heat being derived from burners (burners in general [F23C](#), [F23D](#), [F24H 9/18](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Fuel burning heaters with evaporation means	F23D 3/40
Exhaust systems	F23J 11/00
Fuel supply	F23K

Controlling combustion	F23N
Vehicle heating	F23N 2241/14
Ignition means	F23Q
Fluid fuel water heaters	F24H 1/165

B60H 1/2215

{the heat being derived from electric heaters}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Supply of electric power to heating circuits in electric vehicles	B60L 1/02
Electric resistance heating for domestic use	F24D 13/02
Electric water heaters in general	F24H 1/162
Electric heating for vehicles	H05B 1/0236

B60H 1/2218

{controlling the operation of electric heaters}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Helically or spirally coiled water heaters with electrical energy supply	F24H 1/162
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B60H 1/2221

{arrangements of electric heaters for heating an intermediate liquid
 ([B60H 1/034](#) takes precedence)}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Heating means for windscreen-cleaning liquid	B60S 1/488
Water heaters specially adapted for vehicle systems	F24H 1/009
Air heaters using electric energy supply	F24H 3/0429

B60H 1/241**{characterised by the location of ventilation devices in the vehicle}****Definition statement***This place covers:*

Ventilating systems in a vehicle characterized by the position of the nozzles relative to the vehicle.

B60H 1/247**{Disposition of several air-diffusers in a vehicle for ventilation-air circulation in a vehicle cabin}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Dashboards having incorporated ventilation channels	B62D 25/142
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B60H 1/249**{using one-way valves}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Check valves	F16K 15/00
Air-flow control members with movable members for domestic air-conditioning	F24F 13/14

B60H 1/26**Ventilating openings in vehicle exterior; Ducts for conveying ventilating air****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Radiator guards	B60R 19/52
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B60H 1/262**{Openings in or on the vehicle roof}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Roof Hatches per se	B60J 7/1635
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B60H 1/28**the openings being situated directly in front of vehicle front window****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cowls for vehicles	B62D 25/081
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B60H 1/3201**{using absorption or adsorption}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Liquids for absorption type circuits	C09K 5/047
Sorbition machines 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](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Domestic air-condition systems using evaporation	F24F 5/0035
Machines using evaporation of refrigerant without recovery of the vapour	F25B 19/00
Devices using evaporation without recovery of the vapour	F25D 7/00
Heat-exchange apparatus having stationary conduit assemblies for one heat-exchange medium only, the media being in contact with different sides of the conduit wall, using the cooling effect of natural or forced evaporation	F28D 5/00

B60H 1/3204

{using compression ([B60H 1/3233](#) takes precedence)}

References

Limiting references

This place does not cover:

Cooling devices characterised by condensed liquid drainage means	B60H 1/3233
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Refrigerant liquids	C09K 5/041
Cooling devices using compression, in general	F25B , F25D

B60H 1/3222

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

Definition statement

This place covers:

Hybrid compressor drives (mechanic and electric) are classified here

References

Limiting references

This place does not cover:

Vehicle drive related control of the compressor drive means	B60H 1/3208
Self-contained devices	B60H 1/3226

B60H 1/323

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

Relationships with other classification places

If batteries are cooled, use [B60H 1/00278](#).

B60H 1/3232

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

Definition statement

This place covers:

Refrigerant units for truck cargo space

Relationships with other classification places

[B60H 1/00014](#) if the aspects of the vehicle are characterizing.

References**Limiting references**

This place does not cover:

Self-contained devices	B60H 1/3226
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Refrigerated goods vehicles	B60P 3/20
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B60H 1/3233

{characterised by condensed liquid drainage means}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Evacuating condensate in domestic air-conditioning	F24F 13/222
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B60H 1/34

Nozzles; {Air-diffusers} (dispositions of air diffusers in a vehicle [B60H 1/247](#))

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Outlets for windshield defrosting	B60S 1/54
Outlets for directing or distributing air into rooms or spaces for domestic air-conditioning	F24F 13/06 , F24F 13/08 , F24F 13/10 , F24F 13/14 .
Air-flow control members, e.g. louvres, grilles or flaps for domestic air-conditioning	F24F 13/08

B60H 1/3457

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Domestic air-conditioning	F24F
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B60H 3/00

Other air-treating devices

Definition statement

This place covers:

Devices for treating air inside or flowing into a cabin or load area of a vehicle, characterized by other aspects than heating, cooling or ventilation.

These aspects are e.g: Scenting, Deodorizing, Ionizing, Humidity control, Filtering.

Relationships with other classification places

Control methods using detection of air quality or humidity as input: [B60H 1/00735](#).

B60H 3/0007

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

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Human necessities	A61L 9/122
Air treatment other than cooling or heating in domestic air-conditioning systems	F24F 3/12 , F24F 8/00

B60H 3/0071

{Electrically conditioning the air, e.g. by ionizing}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

By UV-Light	A61L 9/20
Deodorizing by ionizing of air,	A61L 9/22
Air stream with ions	A61N 1/44
Electric means for purifying	F24F 8/192
Sterilizing with UV light	F24F 8/22
Ionizing	F24F 8/30
Odorizing	F24F 8/50
Ion type	FI-Terms: B60H3/06&A
Deodorizing	FI-Terms B60H3/00&F
Moistening	FI-Terms B60H3/00&Z

B60H 3/0085

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

Definition statement

This place covers:

Cleaning or disinfecting of the interior of the HVAC for preventing or removing smell or malodour, e.g. malodour caused by fungi or accumulated dirt.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Methods or apparatus for disinfecting or sterilising materials or objects other than foodstuffs or contact lenses	A61L 2/00
Cleaning internal surfaces in general	B08B 9/027
Cleaning substances	C11D
Cleaning by jets	F28G 1/163
Cleaning by using chemical substances	F28G 9/00

B60H 3/02

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

Definition statement

This place covers:

- Means for reducing or increase of air humidity.
- Control of air humidity.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Domestic air-conditioning systems with air treatment by humidification or dehumidification	F24F 3/14
Air-humidification of domestic rooms	F24F 6/00

B60H 3/06

Filtering {([B60H 3/0078](#) takes precedence)}

Definition statement

This place covers:

Cleaning outside or recirculated air entering the vehicle cabin by the use of filters.

References

Limiting references

This place does not cover:

Cleaning the environmental atmosphere (not the air for the cabin) by a filter in a vehicle	B01D , B01D 2279/40
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Informative references

Attention is drawn to the following places, which may be of interest for search:

For general filter aspects	B01D 46/0027
Filtering by adsorption or absorption	B01D 46/0036
Filter condition indicators	B01D 46/0086
Filters with stationary adsorbents	B01D 53/04
Arrangement or mounting of filters for domestic air-conditioning	F24F 13/28