

## B60H

### ARRANGEMENTS OR ADAPTATIONS OF HEATING, COOLING, VENTILATING, OR OTHER AIR-TREATING DEVICES SPECIALLY 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

##### Limiting references

*This place does not cover:*

Garments or clothes including a HVAC	<a href="#">A41D</a>
Ventilating solely by opening windows, doors, roof parts or the like	<a href="#">B60J</a>
Heating or ventilating devices for vehicle seats independent from the vehicle HVAC	<a href="#">B60N</a>
Window or windscreen cleaners using air, e.g. defrosters	<a href="#">B60S</a>
HVAC for railway vehicles	<a href="#">B61D</a>
HVAC for boats / ships	<a href="#">B63J</a>
HVAC for air crafts	<a href="#">B64D 11/0626</a>
HVAC for buildings	<a href="#">F25B</a>
Heating, cooling or ventilating batteries or accumulators and independent from the cabin HVAC	<a href="#">H01M</a>

##### Informative references

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

Filters per se	<a href="#">B01D</a>
Compressors per se	<a href="#">F04B</a>
Heat exchangers comprising heat generating means	<a href="#">F24H</a>
Heat exchangers per se	<a href="#">F28F</a> , <a href="#">F28D</a>

#### 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 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)	<a href="#">B60H 3/00</a>
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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	<a href="#">B60H 1/3232</a>
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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	<a href="#">B60P 3/20</a>
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**B60H 1/00271**

{Heating, cooling or ventilating 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	<a href="#">H01M</a>
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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	<a href="#">B60K 1/04</a>
Batteries in hybrid vehicles	<a href="#">B60K 6/28</a>
Monitoring batteries	<a href="#">B60L 58/00</a>
Arrangement of batteries	<a href="#">B60R 16/04</a>
Cooling batteries	<a href="#">H01M 6/5038</a>
Battery technology as such	<a href="#">Y02E 60/12</a>

**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	<a href="#">B60H 1/00321</a>
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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	<a href="#">B62D 29/00</a> , <a href="#">B62D 31/00</a> , <a href="#">B62D 39/00</a>
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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)	<a href="#">B60H 1/00014</a>
HVAC for load transport vehicle trailers (aspects of the refrigeration unit itself)	<a href="#">B60H 1/3232</a>

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

Animal transport vehicles as such	<a href="#">B60P 3/04</a>
Refrigerated goods vehicles as such	<a href="#">B60P 3/20</a>

**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,	<a href="#">B61D 27/00</a>
Aircrafts	<a href="#">B64D 13/00</a>

### Informative references

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

Buses	FTerm: 3L211/AA05
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## 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	<a href="#">B62D 33/0612</a>
Tractor and off-road vehicle cabins	<a href="#">B62D 33/0617</a>

## 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	<a href="#">B60H 1/00428</a>
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### Informative references

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

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

Hybrid vehicles	FTerms: 3L211/AA10
Electric vehicles	FTerms: 3L211/AA11

## 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	<a href="#">B60H 1/00385</a>
If a fuel cell is used only for driving a HVAC	<a href="#">B60H 1/00428</a>

## 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	<a href="#">B60H 1/00385</a>
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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	<a href="#">B60J 7/00</a>
Seats having "air scarfs"	<a href="#">B60N 2/5671</a>

## 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	<a href="#">A61G 3/008</a>
Armored vehicles in general.	<a href="#">F41H 7/00</a>

## 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	<a href="#">H02M 3/00</a>
AC-AC converters	<a href="#">H02M 5/00</a>
AC/DC converters	<a href="#">H02M 7/00</a>



**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	<a href="#">F04D 29/40</a>
For radial fans:	<a href="#">F04D 29/4226</a>
For axial fans:	<a href="#">F04D 29/526</a>
Assembly / disassembly of fans:	<a href="#">F04D 29/626</a>
Heaters & casing details & integrated fans	<a href="#">F24D 19/06</a>

**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 [H01L 35/00](#))}

**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	<a href="#">B60H 2001/2275</a>
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**Informative references**

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

Machines using Peltier	<a href="#">F25B 21/02</a>
Thermoelectric cooling devices per se	<a href="#">H01L 35/00</a>
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	<a href="#">F25B 41/062</a>
Control of expansion valves	<a href="#">G05D 7/0635</a>

**B60H 1/00492**

{characterised by 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****Limiting references**

*This place does not cover:*

If only cold storage is included in the HVAC	<a href="#">B60H 1/005</a>
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**Informative references**

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

Cold storages used in domestic HVAC	<a href="#">F28D 20/00</a>
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**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	<a href="#">B60K 11/04</a>
Front end modules	<a href="#">B62D 25/085</a>
Sealings	<a href="#">F16J 15/00</a>

Fastening elements on heat exchangers	<a href="#">F28F 9/002</a>
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## 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	<a href="#">B60K 37/00</a>
Dashboards having incorporated ventilation channels	<a href="#">B62D 25/142</a>

## B60H 1/00564

{of air ducts}

### References

#### Informative references

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

Integrated air ducts	<a href="#">B60K 35/00</a> , <a href="#">B60K 37/00</a>
Ducts, integrated guide vanes	<a href="#">F15D 1/04</a>
Ducting arrangements for domestic air treatment	<a href="#">F24F 13/02</a>

## 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	<a href="#">F16L</a>
Flexible pipes with four or more layers, e.g. for refrigerants	<a href="#">F16L 11/045</a>
Couplings with fluid cut-off means using two valves	<a href="#">F16L 37/36</a>
Fluid-circulation arrangements for domestic cooling	<a href="#">F25B 41/00</a>

## 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	<a href="#">F25B 45/00</a>
For testing	<a href="#">F25B 49/005</a>

## 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:	<a href="#">B60N 3/104</a>
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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	<a href="#">G07C 5/008</a>
Switches per se	<b>H01K15/00</b>
Touch switches per se	<a href="#">H03K 17/96</a>
Capacitive switches	<a href="#">H03K 17/962</a>

## 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	<a href="#">F24F 13/08</a>
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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	<a href="#">G01K 1/026</a>
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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	<a href="#">B60N 2/002</a>
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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	<a href="#">G01J</a>
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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	<a href="#">B60H 1/00771</a>
Stop/Idle related control methods	<a href="#">B60H 1/00778</a>

## 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	<a href="#">G01C 21/26</a>
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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	<a href="#">G01D</a>
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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	<a href="#">F16H</a>
Domestic use	<a href="#">F24F 13/1426</a>

## 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	<a href="#">F24D 19/1039</a>
Heat pumps	<a href="#">F25B 30/00</a>

## 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	<a href="#">B60H 1/00585</a>
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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	<a href="#">F25B 49/005</a>
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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	<a href="#">B60K 35/00</a>
Display or monitoring for domestic air-conditioning	<a href="#">F24F 11/50</a>

## 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	<a href="#">B60H 1/143</a>
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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	<a href="#">F24V 40/00</a>
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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	<a href="#">F16D 65/853</a>
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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	<a href="#">F24H 1/00</a>
Air heaters	<a href="#">F24H 3/00</a>
Details of heaters in general	<a href="#">F24H 9/00</a>

**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	<a href="#">F23D 3/40</a>
Exhaust systems	<a href="#">F23J 11/00</a>
Fuel supply	<a href="#">F23K</a>

Controlling combustion	<a href="#">F23N</a>
Vehicle heating	<a href="#">F23N 2041/14</a>
Ignition means	<a href="#">F23Q</a>
Fluid fuel water heaters	<a href="#">F24H 1/165</a>

## B60H 1/2215

{the heat being derived from electric heaters (in general [H05B](#); for electric traction vehicles [B60L 1/02](#))}

### 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	<a href="#">B60L 1/02</a>
Electric resistance heating for domestic use	<a href="#">F24D 13/02</a>
Electric water heaters in general	<a href="#">F24H 1/162</a>
Electric heating for vehicles	<a href="#">H05B 1/0236</a>

## 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	<a href="#">F24H 1/162</a>
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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	<a href="#">B60S 1/488</a>
Water heaters specially adapted for vehicle systems	<a href="#">F24H 1/009</a>
Air heaters using electric energy supply	<a href="#">F24H 3/0429</a>

**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	<a href="#">B62D 25/142</a>
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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	<a href="#">F16K 15/00</a>
Air-flow control members with movable members for domestic air-conditioning	<a href="#">F24F 13/14</a>

**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	<a href="#">B60R 19/52</a>
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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	<a href="#">B60J 7/1635</a>
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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	<a href="#">B62D 25/081</a>
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**B60H 1/3201****{using absorption or adsorption (in general [F25B 15/00](#), [F25B 17/00](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Liquids for absorption type circuits	<a href="#">C09K 5/047</a>
Sorbition machines in general	<a href="#">F25B 15/00</a> , <a href="#">F25B 17/00</a>

**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	<a href="#">F24F 5/0035</a>
Machines using evaporation of refrigerant without recovery of the vapour	<a href="#">F25B 19/00</a>
Devices using evaporation without recovery of the vapour	<a href="#">F25D 7/00</a>
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	<a href="#">F28D 5/00</a>

**B60H 1/3204**

{using compression ([B60H 1/3233](#) takes precedence; in general [F25B](#), [F25D](#))}

**References****Informative references**

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

Refrigerant liquids	<a href="#">C09K 5/041</a>
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**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

**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****Informative references**

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

Refrigerated goods vehicles	<a href="#">B60P 3/20</a>
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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	<a href="#">F24F 13/222</a>
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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	<a href="#">B60S 1/54</a>
Outlets for directing or distributing air into rooms or spaces for domestic air-conditioning	<a href="#">F24F 13/06</a> , <a href="#">F24F 13/08</a> , <a href="#">F24F 13/10</a> , <a href="#">F24F 13/14</a> . FI: B60H1/34&611 , 631, 651, 671 FTerms: 3L081/...
Air-flow control members, e.g. louveres, grilles or flaps for domestic air-conditioning	<a href="#">F24F 13/08</a>

**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	<a href="#">F24F</a>
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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	<a href="#">A61L 9/122</a>
Air treatment other than cooling or heating in domestic air-conditioning systems	<a href="#">F24F 3/12</a> , <a href="#">F24F3/18</a> , <a href="#">F24F 2003/1689</a>

### 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	<a href="#">A61L 9/20</a>
Deodorizing by ionizing of air,	<a href="#">A61L 9/22</a>
Air stream with ions	<a href="#">A61N 1/44</a>
Electric means for purifying	<a href="#">F24F 3/166</a>
Sterilizing with UV light	<a href="#">F24F 2003/1664</a>
Ionizing	<a href="#">F24F 2003/1682</a>
Odorizing	<a href="#">F24F 2003/1689</a>
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	<a href="#">A61L 2/00</a>
Cleaning internal surfaces in general	<a href="#">B08B 9/027</a>
Cleaning substances	<a href="#">C11D</a>
Cleaning by jets	<a href="#">F28G 1/163</a>
Cleaning by using chemical substances	<a href="#">F28G 9/00</a>

## 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	<a href="#">F24F 3/14</a>
Air-humidification of domestic rooms	<a href="#">F24F 6/00</a>

## 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	<a href="#">B01D</a> , <a href="#">B01D 2279/40</a>
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**Informative references**

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

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