

B60H

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

Definition statement

This subclass/group 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.

Relationship between large subject matter areas

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

References relevant to classification in this subclass

This subclass/group does not cover:

Garments or clothes including a HVAC	A41D
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 / ships	B63J
HVAC for air crafts	B64D
HVAC for buildings	F25B
Heating, cooling or ventilating batteries or accumulators and	H01M

independent from the cabin HVAC	
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Informative references

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

Filters per se	B01D
Compressors per se	F04B
Heat exchangers comprising heat generating means	F24H
Heat exchangers per se	F28F , F28D

Special rules of classification within this subclass

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

Glossary of terms

In this subclass/group, 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 subclass/group covers:

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

References relevant to classification in this group

This subclass/group 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 within this group

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

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

B60H 1/00014

[N: for load cargos on load transporting vehicles]

Definition statement

This subclass/group covers:

Structure of HVAC units the vehicle, air ducts.

References relevant to classification in this group

This subclass/group 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

[N: Heating, cooling or ventilating devices specially adapted for particular vehicle parts or components and being connected to the vehicle HVAC unit]

Relationship between large subject matter areas

Heating/cooling liquid urea for exhaust gas treatment:

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

B60H 1/00278

[N: for the battery (arrangement of batteries [B60R 16/04](#))]

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group 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 batt. in electric vehicles	B60K 1/04
Batteries in hybrid vehicles	B60K 6/28
Monitoring batteries	B60L 11/1851
Arrangement of batteries	B60R 16/04
Cooling batteries	H01M 6/5038
Battery technology as such	Y02E 60/12

Special rules of classification within this group

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

B60H 1/00314

[N: 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 [F02N17/06](#))]

Relationship between large subject matter areas

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

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

B60H 1/00321

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

Relationship between large subject matter areas

Heat exchangers per se: [F28D](#), [F28F](#)

B60H 1/00328

[N: of the liquid-air type]

Definition statement

This subclass/group covers:

Coolant / air heat exchangers are classified here.

Special rules of classification within this group

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

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

Definition statement

This subclass/group covers:

Refrigerant / air heat exchangers are classified here

References relevant to classification in this group

This subclass/group does not cover:

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

[N: of the liquid-liquid type]

Definition statement

This subclass/group covers:

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

B60H 1/00357

[N: Air-conditioning arrangements specially adapted for particular vehicles]

Definition statement

This subclass/group covers:

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

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

[N: for caravans or trailers]

Definition statement

This subclass/group covers:

HVAC for camping trailers, recreational vehicles and other trailers.

References relevant to classification in this group

This subclass/group 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:

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

B60H 1/00371

[N: for vehicles carrying large numbers of passengers e.g. buses]

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group does not cover:

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

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

[N: for tractor or load vehicle cabins]

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

[N: for vehicles having an electrical drive, e.g. hybrid or fuel cell]

Relationship between large subject matter areas

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

References relevant to classification in this group

This subclass/group 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
Series hybrid vehicles	B60L 11/123
Electric vehicles with batteries or fuel cells	B60L 11/18
Control	B60W 20/00
Cooling a fuel cell	H01M 8/04059

Heating a fuel cell	H01M 8/04022
For electric or hybrid cars	FI: B60H 1/22&671
Hybrid vehicles	FTerms: 3L211/AA10
Electric vehicles	FTerms: 3L211/AA11

B60H 1/00392

[N: for electric vehicles having only electric drive means]

Definition statement

This subclass/group 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 relevant to classification in this group

This subclass/group 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

[N: for vehicles having a combustion engine and electric drive means, e.g. hybrid electric vehicles]

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group does not cover:

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

[N: for open or convertible vehicles]

Definition statement

This subclass/group covers:

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

Relationship between large subject matter areas

Seats: [B60H 1/00285](#)

Informative references

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

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

B60H 1/00414

[N: for military, emergency, safety or security vehicles]

Definition statement

This subclass/group 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).

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

[N: electric]

Definition statement

This subclass/group 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.

Relationship between large subject matter areas

Domestic: [F24F 5/0046](#) "aircos using natural energy"

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

References relevant to classification in this group

This subclass/group does not cover:

DC-DC converters	H02M 3/00
AC-AC converters	H02M 5/00
AC/DC converters (no music)	H02M 7/00

B60H 1/00457

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

Definition statement

This subclass/group covers:

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

Relationship between large subject matter areas

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

Electrical motors: [H02K](#)

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 & intergrated fans	R24D19/06E

B60H 1/00478

[N: 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 subclass/group covers:

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

References relevant to classification in this group

This subclass/group 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	H01L 35/00

Peltier elements	FI: B60H 1/32&621G
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B60H 1/00485

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

Definition statement

This subclass/group covers:

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

Informative references

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

Expansion Valves	F25B 41/062
Control of expansion valves	G05D 7/0635

B60H 1/00492

[N: characterised by comprising regenerative heating or cooling means, e.g. heat accumulators]

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group does not cover:

If only cold storage is included in the HVAC	B60H 1/005
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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	F28D 20/00
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B60H 1/00521

[N: Mounting or fastening of components in housings, e.g. heat exchangers, fans, electronic regulators]

Informative references

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

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

B60H 1/0055

[N: the housing or parts thereof being integrated in other devices, e.g. dashboard]

Informative references

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

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

B60H 1/00564

[N: of air ducts]

Informative references

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

Integrated air ducts	B60K 35/00 , B60K 37/00
Ducts, integrated guide vanes	F15D 1/04
Domestic: Ducting arrangements	F24F 13/02

B60H 1/00571

[N: of liquid ducts, e.g. for coolant liquids or refrigerants]

Informative references

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

Pipes etc.	F16L
Couplings incl. 2 valves	F16L 37/36
Domestic	F25B 41/00
With rubber layer, e.g. for refrigerants	F16L 11/045

B60H 1/00585

[N: Means for monitoring, testing or servicing the air-conditioning]

Definition statement

This subclass/group covers:

Service units for servicing the vehicle HVAC.

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

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

[N: Add-on devices, e.g. heat/cooling boxes, compartment dividers, upgrade sets]

Definition statement

This subclass/group covers:

Receptacles connected to the vehicle HVAC and cold or heated thereby.

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

References relevant to classification in this group

This subclass/group does not cover:

Receptacles for food/beverages with refrigerating or warming systems:	B60N 3/104
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B60H 1/00642

[N: Control systems or circuits, control members or indication devices for heating, cooling or ventilating devices ([B60H 1/3201](#) - [B60H 1/3208](#), [B60H 1/3225](#) take precedence; dashboards [B60K 37/00](#); systems for controlling or regulating non-electric variables in general [G05D](#))]

Informative references

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

Locks, openers, remote	G07C 9/00
Control + temperature sensors	G07C 9/00

B60H 1/0065

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

Informative references

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

Remote control devices	G07C 5/008
Switches	H01K15/00
Touch switches are treated in	H03K 17/96
Capacitive switches	H03K 17/962

B60H 1/00664

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

Informative references

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

Domestic use	F24F 13/08
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B60H 1/00735

[N: 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]

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

[N: by detection of the vehicle occupants' presence; by detection of conditions relating to the body of occupants, e.g. using radiant heat detectors]

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

[N: the input being solar radiation]

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

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

Definition statement

This subclass/group covers:

Control systems using vehicle speed as input.

Relationship between large subject matter areas

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

References relevant to classification in this group

This subclass/group does not cover:

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

B60H 1/00771

[N: the input being a vehicle position or surrounding, e.g. GPS-based position or tunnel]

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

[N: the input being air quality]

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

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

Relationship between large subject matter areas

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

B60H 1/00857

[N: characterised by the means connecting the initiating means, e.g. control lever, to the damper door]

Definition statement

This subclass/group covers:

Drive means for doors etc are classified here.

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

[N: 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](#))]

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

[N: Control systems or circuits characterised by failure of detection or safety means; Diagnostic methods]

Definition statement

This subclass/group covers:

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

Relationship between large subject matter areas

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

L60H191/00 ([B60H](#)): detecting the charge level of refrigerant

References relevant to classification in this group

This subclass/group does not cover:

Devices for Testing HVAC are classified in [B60H 1/00585](#)

Informative references

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

Of safety devices	F25B 49/005
Control level refrigerant or detection leak	F25B

Synonyms and Keywords

In patent documents the following abbreviations are often used:

DE	Füllstandserkennung
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B60H 1/00985

[N: 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)]

Informative references

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

Instruments in dashboards	B60K 35/00
Domestic	F24F 11/0086

B60H 1/02

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

References relevant to classification in this group

This subclass/group does not cover:

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

[N: from the cooling liquid of the propulsion plant and from a viscous fluid heater]

Relationship between large subject matter areas

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

Informative references

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

Viscous fluid heaters	F24J 3/003
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B60H 1/14

otherwise than from cooling liquid of the plant [N: e.g. heat from the grease oil, the brakes, the transmission unit ([B60H 1/03](#) takes precedence)]

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

[N: the heat being derived from cooling an electric component, e.g. electric motors, electric circuits, fuel cells or batteries]

Definition statement

This subclass/group covers:

The source of heat is waste heat from electric components.

Relationship between large subject matter areas

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

B60H 1/22

the heat being derived otherwise than from the propulsion plant [N: ([B60H 1/0025](#), [B60H 1/00492](#) and [B60H 1/03](#) take precedence)]

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 thereof,	F24H 9/00
Ptc, vehicle	F24H

B60H 1/2203

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

Informative references

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

"Verdampferbrenner" fuel burning heaters with evaporation means	F23D 3/40
Exhaust systems	F23J 11/00
Fuel supply	F23K
Control	F23N
Ignition means,	F23Q
Fluid fuel water heaters	F24H 1/165
Exhaust cleaners	J15
Vehicle heating	F23N 2041/14

B60H 1/2215

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

Informative references

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

El. resistance heating domestic.	F24D 13/02
Electric water heaters	F24H 1/162

El. heating for vehicles	H05B 1/0236
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B60H 1/2218

[N: controlling the operation of electric heaters]

Informative references

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

Control for vehicles	F24H 1/162
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B60H 1/2221

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

Informative references

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

For windscreen -cleaning liquid	B60S 1/488
Vehicle	F24H
Electric heaters for liquids in general	F24H 1/121

B60H 1/241

[N: characterised by the location of ventilation devices in the vehicle]

Definition statement

This subclass/group covers:

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

B60H 1/244

[N: located in the rear area]

Special rules of classification within this group

All documents of the former EC **B60H1/24F** are classified here.

B60H 1/246

[N: located in the interior of the vehicle or in or below the floor]

Special rules of classification within this group

All documents from former EC class **B60H1/24G** are classified here.

B60H 1/247

[N: Disposition of several air-diffusers in a vehicle for ventilation-air circulation in a vehicle cabin]

Informative references

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

Elements for body-finishing, identifying, or decorating; Arrangements or adaptations for advertising purposes	B60R 13/00
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B60H 1/249

[N: using one-way valves]

Informative references

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

Check valves and subcls. most relevant	F16K 15/00 , F16K 15/144
Domestic	F24F 13/14

B60H 1/26

Ventilating openings in vehicle exterior; Ducts for conveying ventilating air

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

[N: Openings in or on the vehicle roof]

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

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

[N: using absorption or adsorption (in general [F25B 15/00](#), [F25B 17/00](#))]

Informative references

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

Liquids for absorption type circuits	C09K 5/047
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B60H 1/3202

[N: 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](#))]

Informative references

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

Using evaporation	F24F 5/0035
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
In case there is a separate airflow not in contact with the wet elements	F24F 2001/0092

B60H 1/3204

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

Informative references

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

Refrigerant liquids	C09K 5/041
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B60H 1/3222

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

Definition statement

This subclass/group covers:

Hybrid compressor drives (mechanic and electric) are classified here

B60H 1/323

[N: characterised by comprising auxiliary or multiple systems,

e.g. plurality of evaporators, or by involving auxiliary cooling devices]

Relationship between large subject matter areas

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

B60H 1/3232

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

Definition statement

This subclass/group covers:

Refrigerant units for truck cargo space

Relationship between large subject matter areas

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

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

[N: characterised by condensed liquid drainage means]

Informative references

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

In domestic applications	F24F 13/222
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B60H 1/34

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

Informative references

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

Domestic use	F24F 13/06 , F24F 13/08 F24F 13/10 , F24F 13/14 . FI: B60H 1/34&611 , 631, 651, 671 FTerms: 3L081/...
Outlets for windshield defrosting	B60S 1/54

B60H 1/3457

[N: Outlets providing a vortex, i.e. a spirally wound air flow]

Informative references

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

Domestic	F24F
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B60H 3/00

Other air-treating devices

Definition statement

This subclass/group 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.

Relationship between large subject matter areas

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

B60H 3/0007

[N: Adding substances other than water to the air, e.g. perfume, oxygen]

Informative references

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

Human necessities	A61L 9/122
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In domestic use	F24F 3/12 , F24F3/18 , R24F201/18
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B60H 3/0071

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

Informative references

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

Deodorizing by ionizing of air,	A61L 9/22
By UV-Light	A61L 9/20
Air stream with ions	A61N 1/44
Ion type	FI-Terms: B60H 3/06&A
Deodorizing	FI-Terms B60H 3/00&F
Moistening	FI-Terms B60H 3/00&Z
Electric means for purifying	F24F 3/166
Ionizing	R24F201/14
Odorizing	R24F201/18
Sterilizing with UV light	R24F201/12A

B60H 3/0085

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

Definition statement

This subclass/group covers:

Disinfecting or cleaning of the interior of the HVAC are classified here.

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 chemical substances	F28G 9/00

B60H 3/02

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

Informative references

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

By humidification; by dehumidification	F24F 3/14
Air-humidification	F24F 6/00

B60H 3/06

Filtering [N: ([B60H 3/0078](#) takes precedence)]

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group does not cover:

Cleaning the environmental atmosphere (not the air for the cabin) by a filter in a vehicle	B01D , L01D259/70
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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
By adsorption or absorption	B01D 46/0036
Filter condition indicators	B01D 46/0086
Adsorption filters	B01D 53/04
For filters in domestic AirCos	F24F 13/28