

## B60V

### AIR-CUSHION VEHICLES

#### Definition statement

*This place covers:*

Vehicles that are specifically designed, or specially adapted, to be wholly or partially supported, at least some of the time during their travel over a surface (e.g. water, land, floors, railways, roads, sidewalks, runways), by a thin cushion or film of gaseous fluid (e.g. air). Wherein the gaseous fluid of the cushion or film is at least partially:

- supplied or generated by means located on the vehicle and
- propelled from the vehicle towards a nearby reaction surface that does not form a part of the vehicle (e.g. ground, lake surface, roadway) and against which the fluid pushes to sustain the vehicle a relatively short distance (e.g. less than the height of the vehicle) above the reaction surface.

Components of the above vehicles having structural features that limit them to use with vehicles supported during travel on a thin cushion or film of gaseous fluid.

The making of vehicles that are specifically designed to be:

- exclusively supported by a thin cushion or film of gaseous fluid when traveling and
- unrestricted to a particular path by fixed guiding structure.

Specially adapted method steps or apparatus, which are part of an entire manufacturing process, for the manufacture of components essential to forming or maintaining the thin cushion or film of gaseous fluid for vehicles of the type that are only partially supported, or supported only part time during travel, by the gaseous fluid.

#### Relationships with other classification places

Between [B60V](#) and other vehicle manufacturing subclasses

[B60V](#) covers the manufacture of vehicles that are designed to be exclusively supported by a thin cushion or film of gaseous fluid at all times when traveling.

Despite the fact that [B60V](#) covers the structure of certain combination or convertible types of vehicles, it does not cover the total method or means for making or assembling these vehicles. In the situations where a vehicle includes an alternative, supplemental, or primary means for supporting it during travel that is not an air cushion, the manufacture of this type of vehicle is covered in the same subclass that provides for the manufacture of vehicles relying solely for support on its particular type of alternative, supplemental, or primary means. Subclasses [B62D](#) [B63B](#), and [B64F](#) cover the manufacture of the various types of combination or convertible vehicles.

Nevertheless, [B60V](#) does cover specific manufacturing steps or apparatus that are a part of a total process used to make combination or convertible vehicles that are partially supported, or supported part time, by the gaseous fluid if the manufacturing steps or apparatus are specially adapted for the manufacture of components of the vehicles used to form or maintain the thin cushion or film of gaseous fluid.

[B62D 65/00](#) "Designing, manufacturing, e.g. assembling, facilitating disassembly, or structurally modifying motor vehicles or trailers, not otherwise provided for" covers subject matter pertaining to the designing and manufacturing of motor vehicles, rail vehicles and trailers, as well as the designing and manufacturing of convertible types and/or combination types of these vehicles.

[B63B](#) "Ships or other waterborne vessels; Equipment for shipping" provides for the construction of hulls in group [B63B 3/00](#) and the methods of designing, building, maintaining, converting, refitting, repairing or determining properties of vessels in group [B63B 9/00](#).

[B64F 5/00](#) "Designing, manufacturing, assembling, cleaning, maintaining or repairing aircraft, not otherwise provided for" covers the manufacture or assembly of aircraft.

## References

### Informative references

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

|                                                                                                                                                                                                                                                     |                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Mowers supported by an air-cushion                                                                                                                                                                                                                  | <a href="#">A01D 34/695</a> |
| General manufacturing of various vehicle parts                                                                                                                                                                                                      | <a href="#">B23P 15/00</a>  |
| Assembling and disassembling of various metal parts                                                                                                                                                                                                 | <a href="#">B23P 19/04</a>  |
| Assembling of a multiplicity of different parts to compose units                                                                                                                                                                                    | <a href="#">B23P 21/00</a>  |
| Designing, manufacturing, assembling, facilitating disassembly, or structurally modifying motor vehicles or trailers                                                                                                                                | <a href="#">B62D 65/00</a>  |
| The construction of hulls                                                                                                                                                                                                                           | <a href="#">B63B 3/00</a>   |
| Methods of designing, building, maintaining, converting, refitting, repairing, or determining properties of vessels                                                                                                                                 | <a href="#">B63B 9/00</a>   |
| Designing, manufacturing, or assembling aircraft, not otherwise provided for                                                                                                                                                                        | <a href="#">B64F 5/00</a>   |
| Devices that assist either manually moving over a short distance (e.g. within a building or buildings) or tilting heavy loads by using pressurized fluid supplied from an independent source to provide a cushion of fluid between a load and floor | <a href="#">B65G 7/06</a>   |
| Conveying articles through pipes or tubes by fluid flow or pressure and the conveying of articles over a surface using pressurized fluid jets located in the surface                                                                                | <a href="#">B65G 51/00</a>  |

## Glossary of terms

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

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vehicle | This term has been used with the following two variations in meaning within this subclass: (1) all varieties of apparatus (e.g. automobiles) intended to carry people or goods significant distances (e.g. between cities, to or from separate building complexes) across land, over water, or through the air except those restricted to one of the following types: rail vehicles , waterborne vessels, aircraft, space vehicles , hand carts, cycles, animal-drawn vehicles , or sledges. (2) In some instances in this definition, the term " vehicle " has been qualified by another word which takes its meaning outside the scope of (1) above (e.g. "rail vehicle " ), in which case the word " vehicle " takes its broader meaning in (1) above (i.e. without the specified exception of particular types of vehicles from its scope). The reader can determine from the context whether an occurrence of the word " vehicle " in this definition falls within the meaning stated in (1) or (2). |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "hovercraft" , "ground-effect vehicle" , "surface-effect vehicle" , and "air-cushion vehicle"

**B60V 1/00**

**Air-cushion (land vehicles, waterborne vessels, or aircraft adapted or modified to travel on air cushion [B60V 3/00](#))**

**Definition statement**

*This place covers:*

Air-cushion concepts.

**References****Limiting references**

*This place does not cover:*

|                                             |                           |
|---------------------------------------------|---------------------------|
| Air-cushion land vehicles                   | <a href="#">B60V 3/02</a> |
| Air-cushion waterborne vessels              | <a href="#">B60V 3/06</a> |
| Air-cushions as alighting-gear for aircraft | <a href="#">B60V 3/08</a> |

**B60V 1/02**

**wherein the cushion is generated and contained by at least one peripheral fluid curtain**

**Definition statement**

*This place covers:*

Hovercraft without skirt

**B60V 1/04**

**wherein the cushion is contained at least in part by walls**

**Definition statement**

*This place covers:*

Hovercraft with skirt

**B60V 1/043**

**{the walls being flexible (skirt details [B60V 1/16](#))}**

**Definition statement**

*This place covers:*

Hovercraft with an all-around flexible skirt

**B60V 1/06**

**wherein the cushion is formed within plenum chamber**

**Definition statement**

*This place covers:*

Hovercraft in which the air is pumped into a plenum; i.e. partially closed space

## References

### Limiting references

*This place does not cover:*

|                                                                                               |                            |
|-----------------------------------------------------------------------------------------------|----------------------------|
| Hovercraft with skirts, where air is normally pumped through the skirt                        | <a href="#">B60V 1/04</a>  |
| Hovercraft with rigid wall skirts, where air is also pumped into the plenum through the walls | <a href="#">B60V 1/046</a> |

## B60V 1/08

**wherein the cushion is created during forward movement of the vehicle by ram effect**

### Definition statement

*This place covers:*

Airplanes with wings flying on ram air effect

## B60V 1/10

**in which the curtain-forming nozzle or the vehicle base is shaped to create a vortex curtain**

### Definition statement

*This place covers:*

Vehicles in which the lift is created by jets

## B60V 1/11

**Stability or attitude control**

### Definition statement

*This place covers:*

Elements of the vehicle for stability or attitude control, e.g. rudders or wheels

## References

### Informative references

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

|                                                                               |                           |
|-------------------------------------------------------------------------------|---------------------------|
| Control of position, course or altitude of water, land, air or space vehicles | <a href="#">G05D 1/00</a> |
|-------------------------------------------------------------------------------|---------------------------|

## B60V 1/12

**by dividing the cushion**

### Definition statement

*This place covers:*

The plenum chamber is divided by additional skirt elements and the pressure of each division is individually controlled.

**B60V 1/14****Propulsion; Control thereof ([B60V 1/11](#) takes precedence)****Definition statement***This place covers:*

Disposition of propellers or other propulsion means

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

|                       |                            |
|-----------------------|----------------------------|
| Propellers in general | <a href="#">B64C 11/00</a> |
|-----------------------|----------------------------|

**B60V 1/16****Flexible skirts****Definition statement***This place covers:*

Construction details of flexible skirts, fingers, attachment to hull, etc.

**B60V 1/18****Body structure****Definition statement***This place covers:*

Details of the structure

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

|                                          |                            |
|------------------------------------------|----------------------------|
| Hulls for waterborne air-cushion vessels | <a href="#">B60V 3/065</a> |
|------------------------------------------|----------------------------|

**B60V 1/20****Spray deflectors****Definition statement***This place covers:*

Spray deflectors, normally mounted on the skirt

**B60V 1/22**

provided with hydrofoils (hydrofoils per se [B63B 1/24](#))

**Definition statement**

*This place covers:*

Air-cushion vehicles equipped with hydrofoils

**References****Informative references**

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

|            |                           |
|------------|---------------------------|
| Hydrofoils | <a href="#">B63B 1/24</a> |
|------------|---------------------------|

**B60V 3/02**

Land vehicles, e.g. road vehicles

**Definition statement**

*This place covers:*

Land or road air-cushion vehicles

**References****Informative references**

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

|                                     |                           |
|-------------------------------------|---------------------------|
| Devices for moving loads in general | <a href="#">B66F 1/00</a> |
|-------------------------------------|---------------------------|

**B60V 3/025**

{co-operating with a flat surface, e.g. transporting loads on platforms}

**Definition statement**

*This place covers:*

Moving loads on air cushion

**References****Limiting references**

*This place does not cover:*

|                                                                                                                                                             |                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Devices for short distance movement of heavy loads by providing a high-pressure fluid cushion, supplied from an independent source, between load and ground | <a href="#">B65G 7/06</a> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|

**Informative references**

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

|                         |                           |
|-------------------------|---------------------------|
| Moving loads in general | <a href="#">B66F 1/00</a> |
|-------------------------|---------------------------|

**B60V 3/04**

**co-operating with rails or other guiding means, e.g. with air cushion between rail and vehicle**

**Definition statement**

*This place covers:*

Trains travelling on air cushion

**References****Informative references**

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

|                   |                           |
|-------------------|---------------------------|
| Trains in general | <a href="#">B61D 1/00</a> |
|-------------------|---------------------------|

**B60V 3/06**

**Waterborne vessels**

**Definition statement**

*This place covers:*

Hovercraft adapted to travel on the water.

**B60V 3/065**

**{hulls therefor}**

**Definition statement**

*This place covers:*

Details of hull construction

**B60V 3/08**

**Aircraft, e.g. air-cushion alighting-gear therefor**

**Definition statement**

*This place covers:*

Air-cushions used as landing air for aircraft.

**References****Informative references**

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

|                                    |                            |
|------------------------------------|----------------------------|
| Airbags used in emergency landings | <a href="#">B64D 25/00</a> |
|------------------------------------|----------------------------|