

## 84.15

**84.15 - Air conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, including those machines in which the humidity cannot be separately regulated (+).**

8415.10 - Of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or "split-system"

8415.20 - Of a kind used for persons, in motor vehicles

- Other :

8415.81 -- Incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)

8415.82 -- Other, incorporating a refrigerating unit

8415.83 -- Not incorporating a refrigerating unit

8415.90 - Parts

This heading covers certain apparatus for maintaining required conditions of temperature and humidity in closed spaces. The machines may also comprise elements for the purification of air.

They are used for air conditioning offices, homes, public halls, ships, motor vehicles, etc., and also in certain industrial installations requiring special atmospheric conditions (e.g., in the textile, paper, tobacco or food industries).

The heading applies **only** to machines :

- (1) Equipped with a motor-driven fan or blower, **and**
- (2) Designed to change both the temperature (a heating or cooling element or both) and the humidity (a humidifying or drying element or both) of air, **and**
- (3) For which the elements mentioned in (1) and (2) are presented together.

In these machines the elements for humidifying or drying the air may be separate from those for heating or cooling it. However, certain types incorporate only a single unit which changes both the temperature and, by condensation, the humidity of the air. These air conditioning machines cool and dry (by condensation of water vapour on a cold coil) the air of the room in which they are installed or, if they have an outside air intake (damper), a mixture of fresh air and room air. They are generally provided with drip pans to catch the condensate.

The machines may be in the form of single units encompassing all the required elements, such as self-contained window or wall types (referred to as "through-the-wall" units). Alternatively, they may be in the form of "split-systems" which operate when connected together, i.e., a condenser unit for external installation plus an evaporator unit for internal installation. These "split-systems" are ductless and utilize a separate evaporator for each area to be air conditioned (e.g., each room).

From the structural point of view, the air conditioning machines of this heading must therefore incorporate, in addition to the motor-driven fan or blower for circulating the air, **at least** the following elements :

An air heating device (operated by hot water, steam or hot air tubes or by electric resistances, etc.) **and** an air humidifier (generally consisting of a water spray) or an air de-humidifier;

- or** A cold water coil or a refrigerator unit evaporator (either of which changes both the temperature and, by condensation, the humidity of the air);
- or** Some other type of cooling element with a separate device for changing the humidity of the air.

In certain cases, the de-humidifier makes use of the hygroscopic properties of absorbent materials.

This heading covers, *inter alia*, reversible heat pumps designed, through a single system fitted with a valve for reversal of the cooling/heat cycle, to perform the dual function of heating and cooling premises. In the cooling cycle, the reversing valve directs the flow of hot, high pressure vapour to the outdoor coil where the heat released during condensation is fanned into the outdoor air and then compressed refrigerant flows into an indoor coil where it vaporizes and absorbs heat and cools the air that is driven around the premises by a fan. In the heating cycle, the shifting of the valve for reversal of the cooling/heat cycle causes the refrigerant flow to reverse so that the heat is released inside the premises.

Air conditioning machines may be supplied with their means of heating or cooling from an external source. They are usually fitted with air cleaners consisting of one or more layers of filtering material, often impregnated with oil (textile material, glass wool, steel or copper wool, expanded metal, etc.) through which the air is passed to remove suspended dust, etc. They may also be provided with devices for adjusting or automatically controlling the temperature and humidity of the air.

This heading also covers apparatus which, although not fitted with a device for separately regulating the humidity of the air, change the humidity by condensation. Examples of such apparatus are the above-mentioned self-contained units and split-systems which utilize a separate evaporator for each area to be air conditioned (e.g., each room), and also apparatus for cold stores consisting of a combined cooling evaporator and motorized blower. Also included are units for heating/cooling a closed chamber (lorry, trailer or container), consisting of a compressor, a condenser and a motor in a housing mounted on the outside of the goods compartment and of a ventilator and an evaporator within the container.

However, the heading **excludes** refrigeration units designed to maintain a fixed temperature well below 0 °C in a closed chamber (e.g., lorry, trailer or container), and fitted with a heating system to raise the temperature in the chamber, within certain limits, when the outside temperature is very low. Such equipment is classifiable in **heading 84.18** as refrigerating or freezing equipment, the heating function being subsidiary to the equipment's essential function, which is to keep perishable products cool during transportation.