

AIR MAGNA 150

GREEN ENERGY SYSTEMS

Green
Energy

ANTEK®

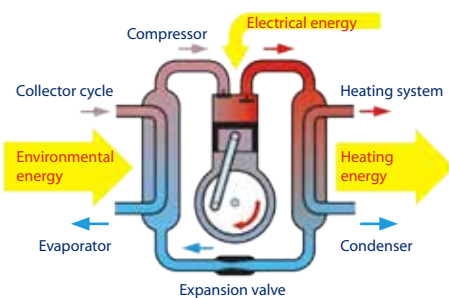
AIR MAGNA 150 Air-Source Heat pump for heating, cooling and domestic water

An air source heat pump can be the solution in case your property is not eligible for installing a vertical borehole or a horizontal collector for a ground source heat pump. These types of heat pumps are suitable not only for new buildings with a small parcel, but also for old buildings which have to be renovated. The AIR MAGNA 150 geothermal heat pump you can use the environmental energy, which is freely available in your own garden. Compared with conventional heating systems, fed with fossil fuels, you can save up to 50% of your heating costs.

Therefore the AIR MAGNA 150 has not only ecological but also economical advantages. With our system it is possible to heat and cool your house independently, environment-friendly and cost-effectively.



Operation mode of the heat pump - heating with energy, gathered from environment



The AIR MAGNA 150 heat pump gathers the energy for the heating and for the domestic water production from the outside air. The thermal energy that is gathered from the air is around the temperature of -25°C to $+43^{\circ}\text{C}$, with the help of the operating energy (electrical energy) it gets into the heating circle approximately at 35°C to 65°C . The ratio of the energy put into the heating system and the devoted operating power is the so-called COP (coefficient of performance). The lower the rise of the temperature, the less the need of operating energy, and the better the energy efficiency. In every household there can be found an apparatus that operates like the heat pump: a refrigerator. The heat pump also can be built in such a way, to heat during winter and to cool during summer.

Operating principle

The refrigerant (like the R407C type gas, which is FCKW, so doesn't deplete the ozone layer) evaporates by heat transfer at a low boiling point, then it densifies in the compressor, thus raises its temperature. The refrigerant transmits the heat in the condenser and meanwhile condenses. The liquid that comes through the expansion valve, volatilizes with distracting heat from the environment, and gets into the condenser through the compressor where it is cooling down and the process starts from the beginning. Predominantly the compressor of the heat pump is driven by an electrical engine.

Performance figures

The performance figures of modern electrical heat pumps are constantly raised in the past few years. This of course was helped by the new type of refrigerants, the improved compressors, etc. The efficiency of the electrical heat pumps can be measured with the annual work-output, which shows the relationship between the effective work and the used electrical energy. With this number we can demonstrate the effectiveness of the heat pumps.

Integration into heating systems

Mostly the heat pumps are used in family houses. Till the beginning of the 80's it was common that in these houses they used heat pumps with 20kW (or more) output. Nowadays this output is less than 12kW. The gradual improvement of the thermal isolation (low-energy building, passive house) caused a strong decrease of the heat demand.

Conclusion

The heat pump system developments of the last few years - new refrigerants and progressive compressor designs - have been generating a significant increase of the performance figures at the same operating conditions.



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Characteristics of the AIR MAGNA 150

The AIR MAGNA 150 contains a circulation pump for the attached heating system (radiators or underfloor heating), a brine pump for the primary side, a 3-way-valve for the domestic water and an internal control unit for a comfortable controlling.

The AIR MAGNA 150 is a compact central device, provides domestic hot water and heating. Used it with ventilator-convector units or through the underfloor- or wall heating pipes it is possible to cool the house during summer. Active cooling is optional. A single device has a heating performance between 8 kW and 60 kW. But in serial connection up to 3600 kW heating performance can be achieved.

Quality - high operating reliability and long service life

The usage of high-quality materials within the ANTEK heat pumps ensures a high operating reliability and a long service life. As a result of the constant tests and developments the ANTEK heat pumps belong to the most efficient aggregates.

Control unit - integrated display

The device is shipped with a comfortable control unit. With the help of this unit, which responds to the different weather conditions, the owner clearly and easily can read all values. And, if necessary, the house owner can modify the device for new conditions.

