

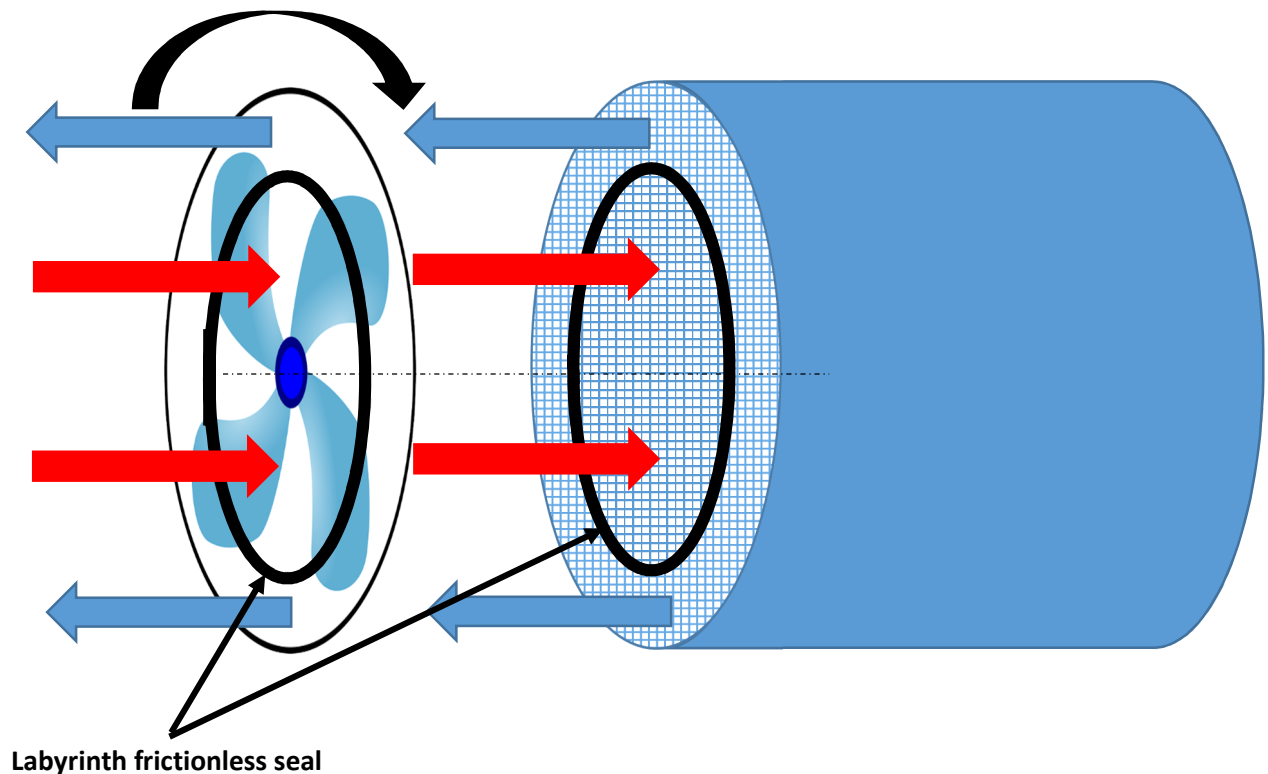
Improved regenerative ventilation system

The present invention relates to a high efficiency decentralized ventilation system for residential buildings.

The DNA (Double Number Airflow) is a special propeller with the blades having the internal sector tilted in an opposite way compared to the external sector, and separated from each other by a seal ring.

One helix generates two regular opposite countercurrent fluxes.

Operation consist in two phases:



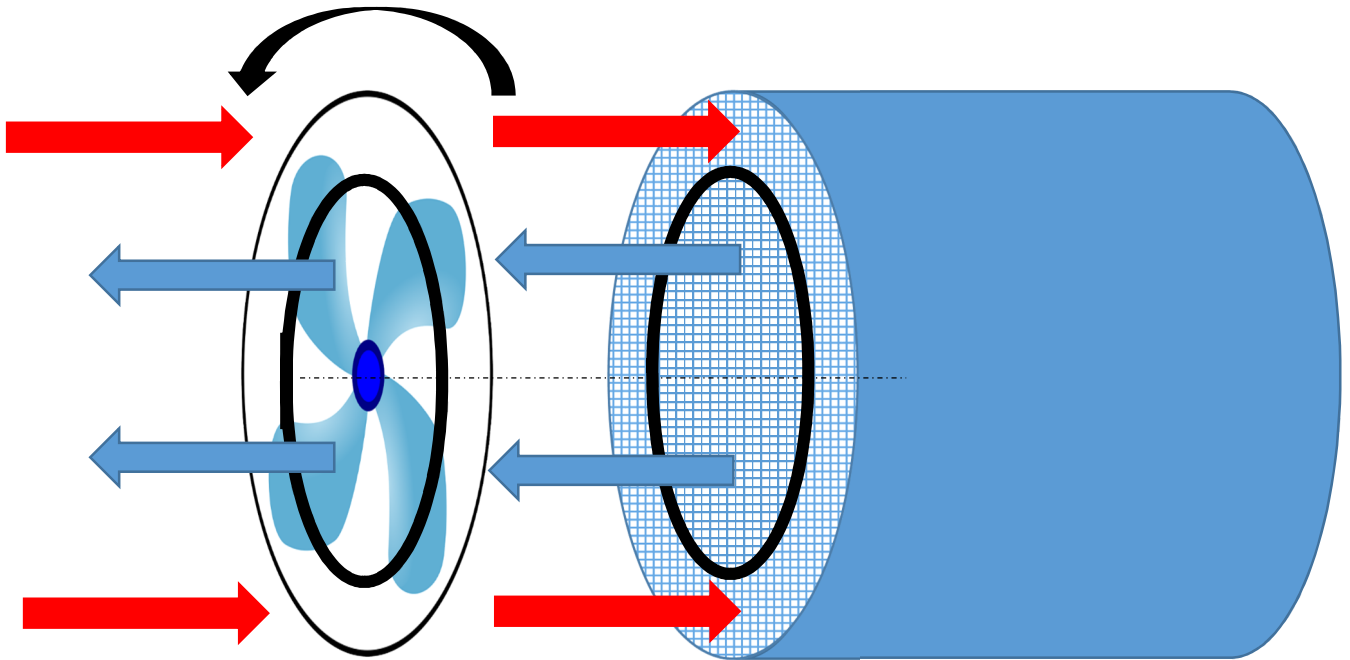
First phase (approximately 70 seconds), clockwise rotation.

The DNA propeller pushes the internal warm air through the inner core of the ceramic regenerator, and simultaneously pulls the external cold air through the outer core.

The labyrinth ring seal avoids the mixing of the two flows without frictional losses.

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Second phase (approximately 70 seconds), counterclockwise rotation.

Inverting each airflow, the heat previously stored in the inner sector of the ceramic regenerator moves to the input stream, while the opposite occurs in the external sector.

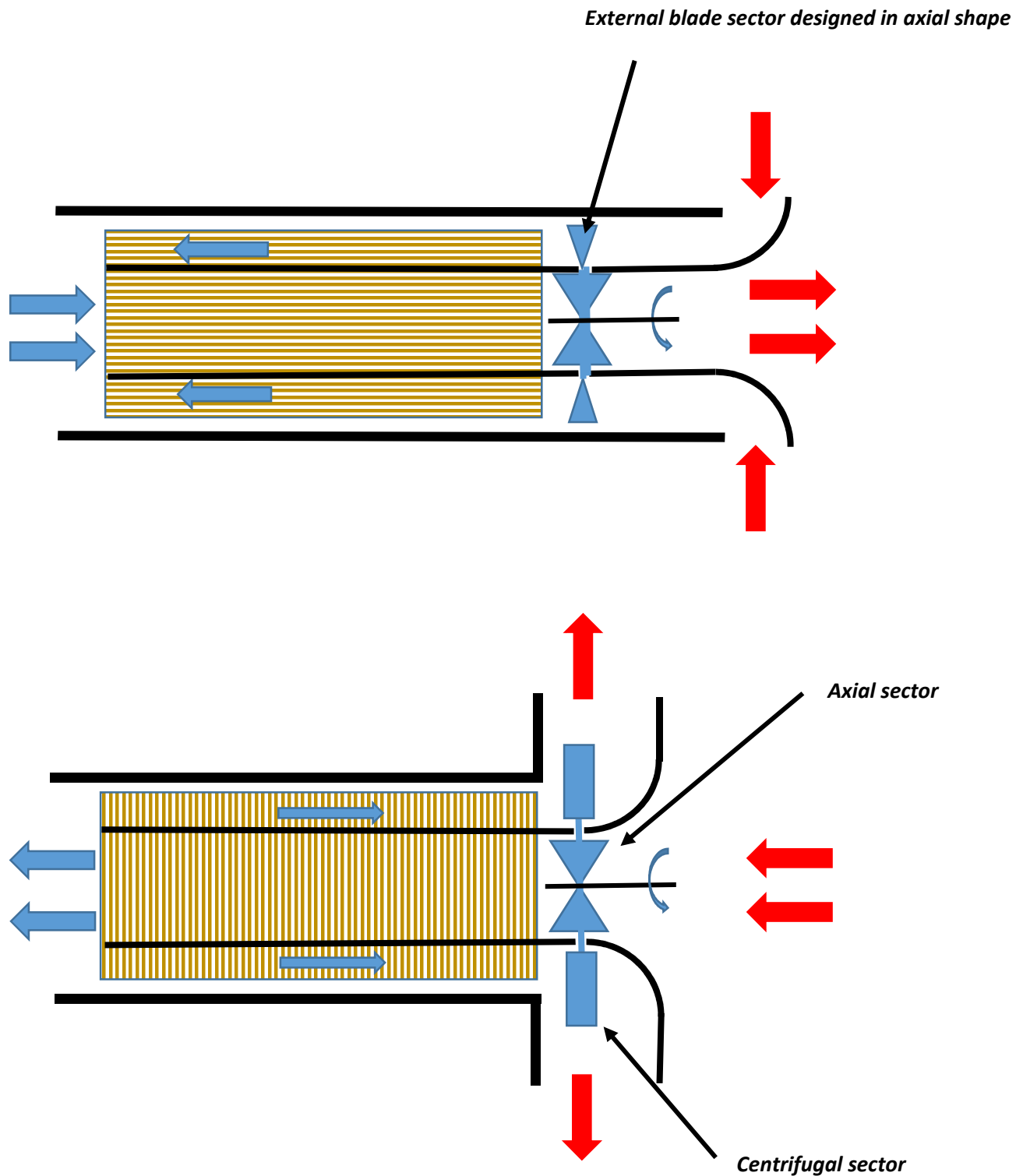
Main advantages compared with the other systems nowadays used:

- Always balanced flows, no air depression occurs in the dwellings
- Better heat exchange due to the copper helix
- More heat transferred inside the ceramic cylinder
- Only one fan for reducing drag losses
- Catalytic ceramic for purifying the air
- Propeller made of pure antibacterial copper for avoiding mould and bacterial spread

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The DNA helix can be used too in the reverse flow heat exchangers. The external sector is built in centrifugal shape, suitable for creating more pressure in the most demanding filtration needs.



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