



# RTR 3000

## Reversible Thermodynamic Recuperator

Energy performance combined  
with comfort in all seasons



User-friendly, comfortable, silent,  
the **RTR 3000** **DATEC**  
circulates filtered-pre-heated or  
dehumidified-cooled air throughout the  
house in line with the season.

Enjoy a new concept in improved  
living standards with the **RTR 3000** -  
**THERMOdynamic ventilation**



# PERFORMANCE



## Energy performance

- ◆ **30 to 40% savings** - the end user can achieve this with a RTR 3000 installed according to our specification.
- ◆ Compatible with **all heating systems**, electric, oil, gas, wood, soft energy or thermodynamic process, the **DAFEC** concept uses air as an **energy vector** via a **dual flow, low flow rate, low pressure system**.
- ◆ Combined with "air preparation" using **earth heat exchanger** results in even better performances.
- ◆ The coupling device with recovery in a **closed heat source** is also an interesting alternative if using the **Tempo tariff**.
- ◆ **The lack of system inertia** provides an instant response to isolated heating requirements.

## Air quality, control and management

- ◆ **The true lungs of the house**, thermodynamic ventilation meets this new challenge - **air quality**.
- ◆ The RTR 3000 protects the accommodation from **dust** and outside **pollution** by its extremely efficient air **filtering**.
- ◆ Faster air renewal rates than traditional CMV methods prevent all **danger of condensation, odours or mould**.
- ◆ Although the RTR 3000 is still predominantly the domain of the private house, it is nevertheless interesting for **medical, small service sector and commercial applications**.
- ◆ Air management is of particular importance in these specific areas for **hygiene** and **health** reasons.



# QUALITY

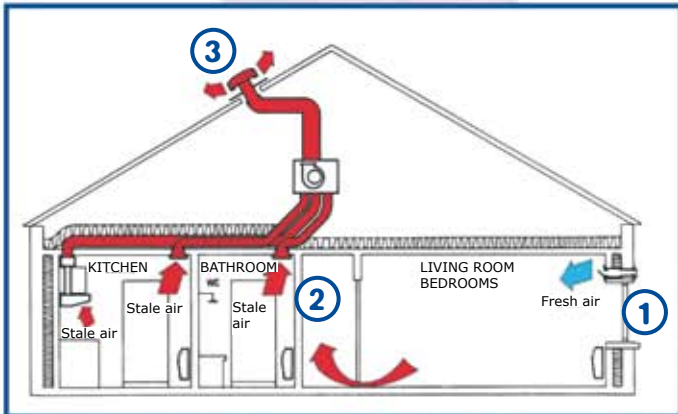
## Unique comfort in all seasons

- ◆ In the **cool, half-season**, the **RTR-3000** responds instantly to a touch on the thermostat and circulates fresh, filtered and reheated air. The **DAFEC** process contributes to **savings** in heating in the cold season.
- ◆ It maintains a **healthy atmosphere** in those rooms that are only slightly heated (spare rooms, games room).
- ◆ At the height of summer, the **RTR-3000 dehumidifies and cools** the atmosphere despite the fact that its deliberately limited cooling capacity does not claim to provide true air conditioning.
- ◆ This idea of **summer comfort** or “**soft air-conditioning**” is especially appreciated in bedrooms (**nocturnal comfort**).



# COMPARISON

## Single flow CMV



- ① The fresh air required for air renewal is brought in from the cold outside (e.g. 10°).
- ② The air extracted from the damp, polluted rooms is warm (20°)..
- ③ This warm, stale air is released into the outside at 20°.

The single-flow CMV, the standard ventilation system for dwellings, provides essential renewal of air inside the house to evacuate odours and pollution. The CMV also makes the building "breathe" to prevent condensation and mould.

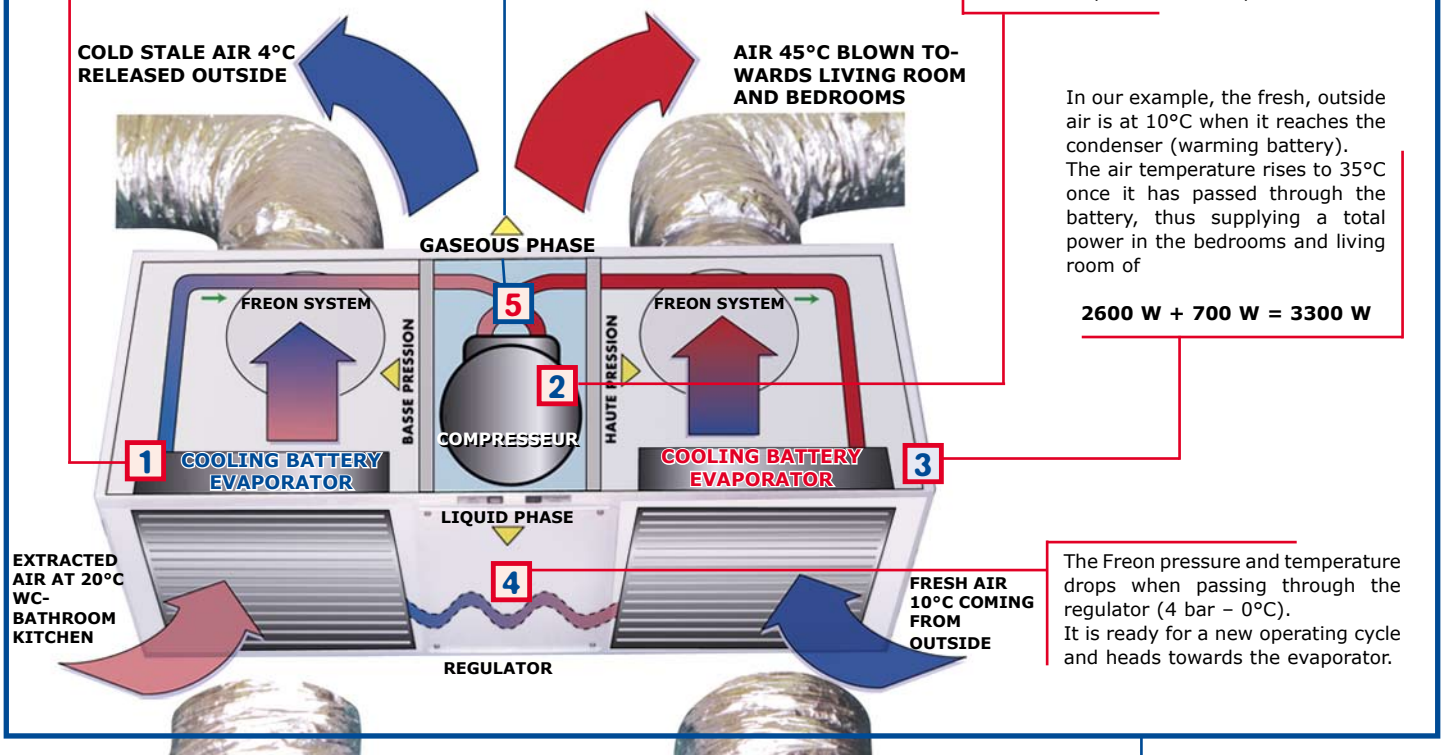
This ventilation system does, however, have distinct drawbacks because it brings in cold air which is then released as warm air. In addition, the air inlets (1) can be a source of noise, dust and discomfort.

The evaporator (cooling battery) cools the extracted air intensely from 20°C to 4°C. Thus the energy recovered free - 2600 W - is taken by the Freon to the compressor.

When the **RTR 3000** 3000 control unit is moved to cold (summer), a 4-way valve reverses the Freon movement direction. The evaporator becomes condenser and vice versa. Thus the fresh, outside air is cooled prior to entering the house and after passing through the evaporator. The stale air extracted is however reheated and thus cools the warming battery.

The compressor fulfils **two functions**:

- a) It acts as the recirculating suction pump and moves the Freon between the various components in the cooling system.
- b) It compresses the Freon and thus increases its temperature and pressure (45°C - 15 bar). This is where the **RTR 3000** scores: **700 W** compressor consumption



In our example, the fresh, outside air is at 10°C when it reaches the condenser (warming battery). The air temperature rises to 35°C once it has passed through the battery, thus supplying a total power in the bedrooms and living room of

$$2600 \text{ W} + 700 \text{ W} = 3300 \text{ W}$$

The Freon pressure and temperature drops when passing through the regulator (4 bar - 0°C). It is ready for a new operating cycle and heads towards the evaporator.

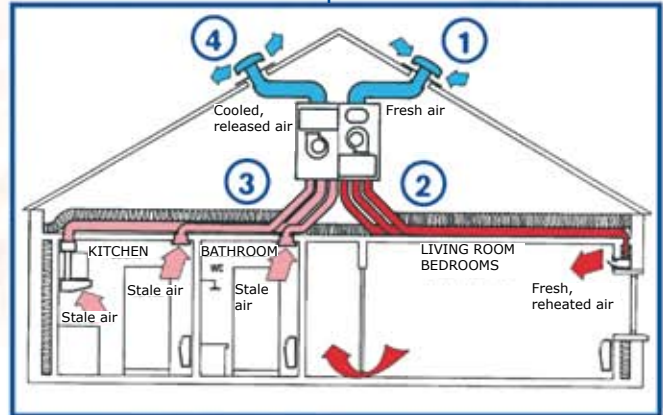
# COMPARISON

## CMV THERMOdynamic



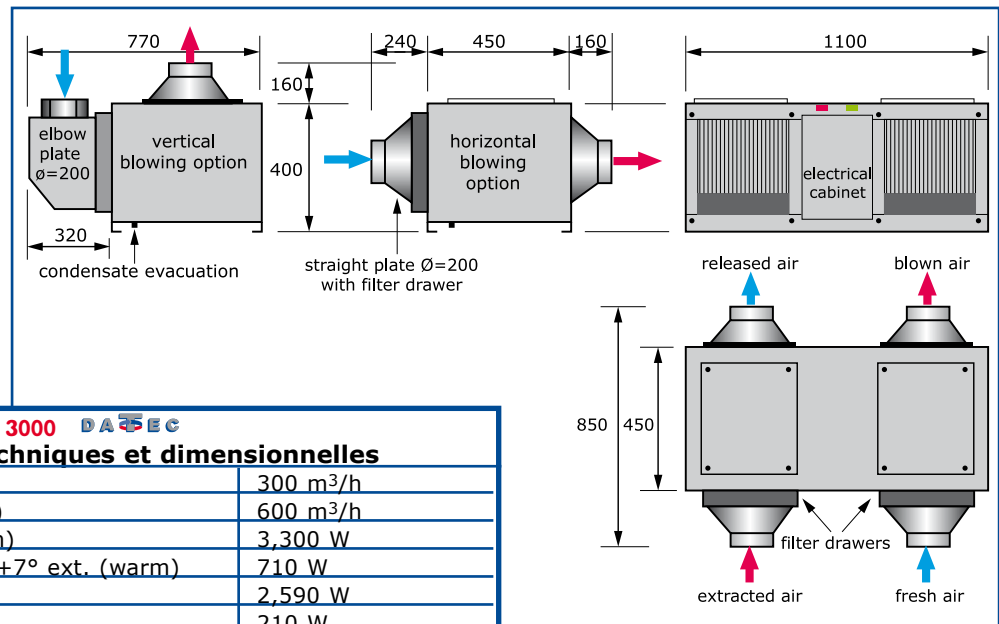
The **RTR 3000** is an innovative new design in air management, the **THERMOdynamic CMV**.

- ① Fresh, cold air is collected in the **RTR 3000** where it is filtered.
- ② The reheated fresh air is blown by elegant diffusers to bedrooms and living room
- ③ The hot, stale air is collected in the **RTR 3000**
- ④ Once cooled, the air is released outside the dwelling



### Explanations:

- ◆ Acting like a refrigerator, the **RTR 3000** cools the extracted air intensely and restores all the calories thus removed to the fresh, blown air.
- ◆ The result energy savings (30 to 40%) come from the fact that four times less electricity is needed to transfer the energy (thermodynamic effect) than to produce it (Joule effect).
- ◆ Both air circuits (extracted air/fresh air) are leaktight and independent.
- ◆ Reversing the cycle in summer cools and dehumidifies the dwelling (soft air-conditioning).



<b>RTR 3000 DAFEC</b>	
<b>Caractéristiques techniques et dimensionnelles</b>	
Air flow rate (low winter rate)	300 m <sup>3</sup> /h
Air flow rate (high summer rate)	600 m <sup>3</sup> /h
Output power at +7° ext. (warm)	3,300 W
Compressor absorbed power at +7° ext. (warm)	710 W
Recovered power (warm)	2,590 W
Fan absorbed power (warm)	210 W
Total absorbed power at +7° ext. (warm)	920 W
Cold power optimised at +32° exterior	3,300 W
Static pressure available at RTR 3000 output	10 mm CE
Supply voltage	230 volts
Recommended protection	10 A (AM)
Dimensions (excluding plates and filter drawers)	11 x 40 (H) x 45 cm
Weight	65 kg



# S P E C I F I C A T I O N



Enjoy a new concept in improved living standards

**RTR 3000**

**THERMOdynamic ventilation**

- ◆ Private house
- ◆ Medical sector
- ◆ Small service sector
- ◆ Commercial applications

**Energy performance**



**Unique comfort in all seasons**

**Air quality, control and management**



DATEC is a registered trademark of Genie Application Climatique

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