

Components - energy recovery systems

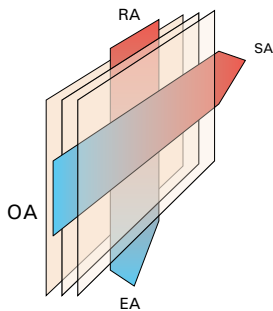
EEWärmeG 2011

The German Renewable Energies Heat Act (EEWärmeG 2011) required building owners to commit to proportionate use of renewable/regenerative energy for heating and cooling in new buildings. In § 7 paragraph 1 (a), heat recovery in HVAC systems is defined as "an alternative measure for meeting required quotas." The requirements of the Renewable Energies Heat Act are met if the heat recovery in HVAC systems covering at least 50 % of the total heating and cooling energy demand of a building.

In addition, regulation EU 1253/2014 have required minimum efficiencies for energy recovery systems since January 1st, 2016 and from January 1st, 2018, respectively.

Plate heat exchanger

Recuperators are typically designed as a cross-flow or cross-counterflow heat exchanger and implemented as a plate heat exchanger (PHE), or as a double plate heat exchanger (DPT, above right). As static systems, these recuperators are particularly uncomplicated. In addition, they provide for good air flow separation.

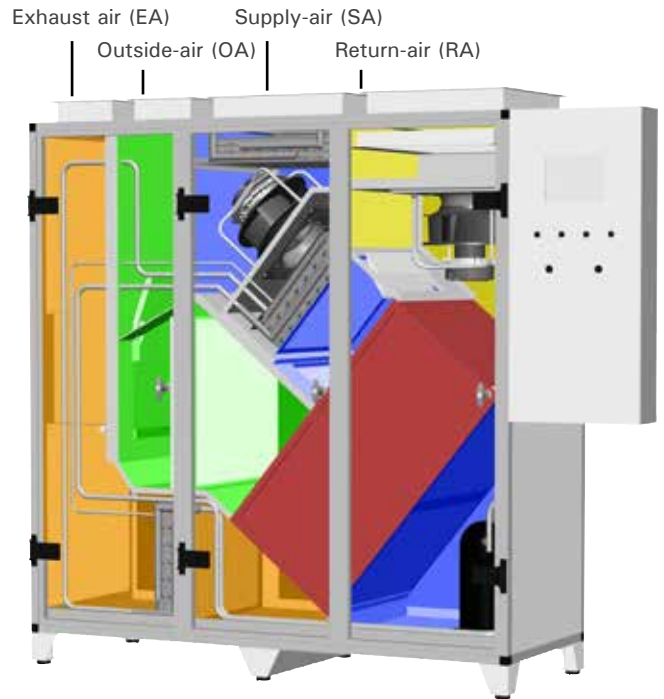


In a plate heat exchanger, the return air-exhaust air and the outside air-supply air flows stream crosswise in layers past each other and are separated by plates.

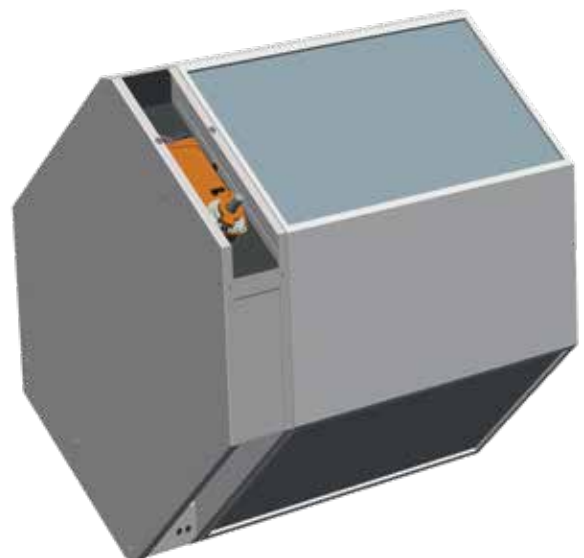
Depending on customer requirements, we install plate heat exchangers with increased corrosion protection or coatings for special applications (e.g. spray humidifier).

A very flat design featuring counter-current heat exchangers (below right) that we use in our HKG-K-GP unit series is available. These units can be easily accommodated in suspended ceilings and are available in 800 and 1,600 m³ / h (470-940 CFM) performance classes.

Also available are PHEs as regenerators conductive for moisture.



The cross-counterflow heat exchanger is designed as a double plate exchanger (marked in red) in the P-iK compact air conditioning unit. Standard colors are used to indicate the air in the unit (OA = Green, SA = Blue, RA = Yellow, EA = Brown).



Counter-current heat exchanger with a bypass valve. This design allows for extremely flat construction equipment (e.g. HKG-K-GP) at high recovery numbers.