

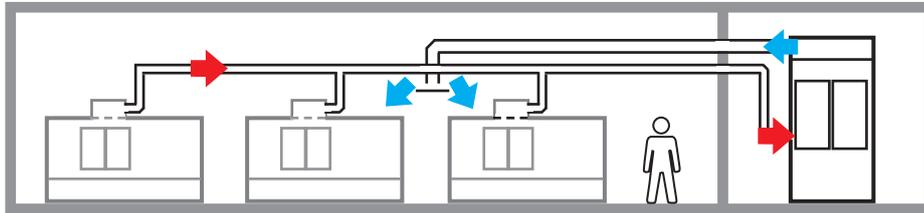
We offer energy-saving solutions for maintaining clean air inside production plants, and also for heat recovery processes

A recent lifecycle cost analysis of air pollution control systems indicated that energy-optimized components and processes are substantial cost reducers for both new systems as well as retrofitted systems.



ProTerm, the thermal energy recovery module, utilizes heat from exhaust air processes to create ideal indoor temperatures.

Separating & Filtering Dust Emissions



Example: Central VARIO eco dust collector with energy-saving clean air recirculation

A prerequisite for the efficient cleaning of air surrounding enclosed production machinery is direct extraction of dirty air inside the work space.

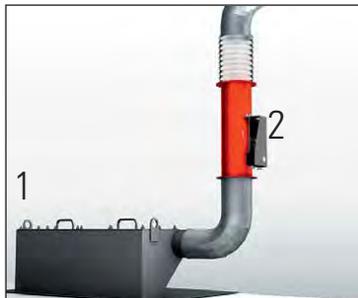
Various filtration technologies which ensure recirculation can be utilized, depending on the different application processes involved.

Clean air recirculation conforming to VDI 2262-3 is permissible, provided that the residual dust content in the clean air is max. 1/5 of the occupational dust exposure limit value.

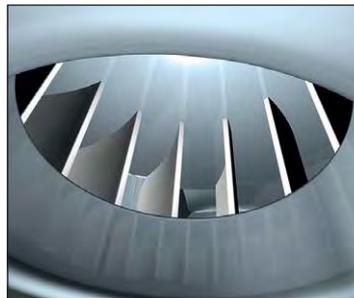
Saving energy with intelligent systems

Airflow regulation provides potentially significant savings with the fast, automatic adjustment of the fan's efficiency. Without this type of control, the airflow for the separation of enclosed machines or process systems is typically set for the maximum required value, which ensures that, eg. while opening a

housing door, the airflow is uninterrupted. With ProFix, the airflow requirement of each system is automatically controlled according to its specific need. The fan itself creates the actual required airflow. Once adjusted, the ProFix operates automatically.



¹Separation of process dust emissions with ProChip. ²The essential airflow requirement is provided automatically with the ProFix air flow controller.



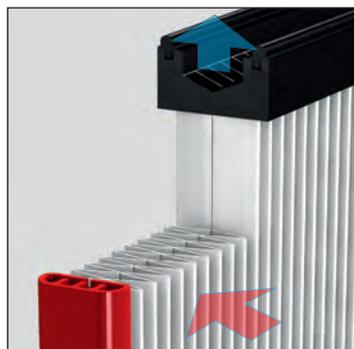
Flow-optimized fans of all Keller separation systems can also be equipped with an energy-saving IE3 motor.



The new generation VARIO eco dust collector effectively takes advantage of all the energy efficient features of the KLR-Filter®.

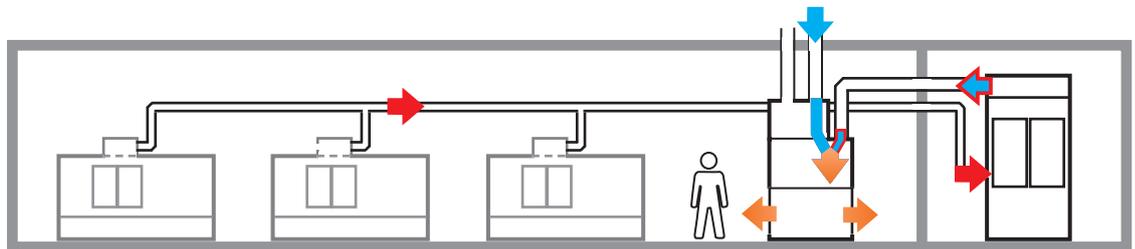
New energy saving filtration technology

Because of the quality of the KLR-Filter®, only one filter stage is required for numerous applications. Omitting the fine filter stage facilitates additional energy savings.



KLR-bran filter with high separation efficiency for energy-saving air recirculation. KLR-bran filter includes PTFE membrane.

Using ProTERM ensures energy-saving use of heat from process exhaust air



During the separation of dust emissions, part of the process heat is withdrawn from the manufacturing area. Following the filtration of the dirty air, the clean, outdoor air is brought in and directed to

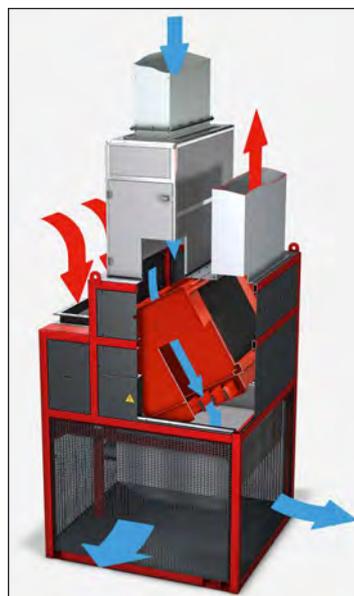
the ProTERM thermal energy recovery module, where it is combined with the ambient air and can be heated on demand.

As a result, we can heat the manufacturing area during Winter and cool in the Summer.

The utilization of process heat with ProTERM is the fundamental concept in energy saving climate control



Example A: The cleaned exhaust air and the outdoor air are heated on demand and combined with ambient air inside the plant.



Example B: Outdoor supply air and exhaust air are cooled by an optional air-conditioner during high outdoor temperatures.

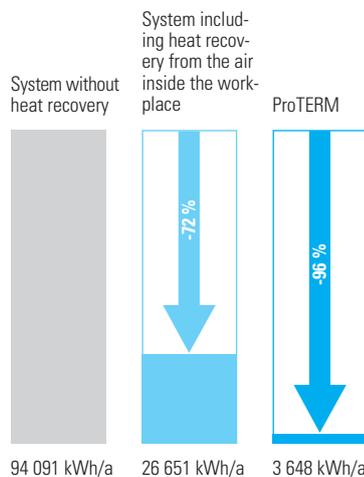


Example C: Air circulation inside the plant can be modulated with an integrated heater following longer pauses in production.

Keller's energy-saving technology has been proven in practice to be a cost reducing factor.

These types of protective measures for operators and the environment pay off quickly. The scope of energy-savings can be seen in the illustrated example of ventilation heat demand within one year.

Sample reference calculation (at right):
 Exhaust air temperature room 20° C
 Exhaust air temperature process 26° C
 Space temperature 18° C
 Airflow 10 000 m³/h
 Location Germany
 12 hours of operation per day





Integrated project consulting

Air pollution control for machining processes in connection with energy-savings, as well as the use of energy from exhaust air are highly complex subjects when taking into consideration all the existing standards and regulations. Keller will support your

plans and projects with our extensive knowledge. We also offer the installation of company-specific energy monitoring, which assists you in strategically enhancing your energy management efforts.

If you require total air conditioning included in the overall design concept, Keller will arrange a working collaboration with qualified partners.

Contact Us

This brochure gives you a brief overview of Keller's capabilities in integrating energy efficiency with air pollution control for industrial processes. As echnology advances, there is no doubt that energy efficiency optimization will be a continuous improvement process.

For more information on our air pollution control systems, please visit our website, or contact your local Keller representative.



With the GREEN BALANCE initiative, Keller commits to Global Sustainability. We balance Technological, Social, and Economic resources to sustain the environment.



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