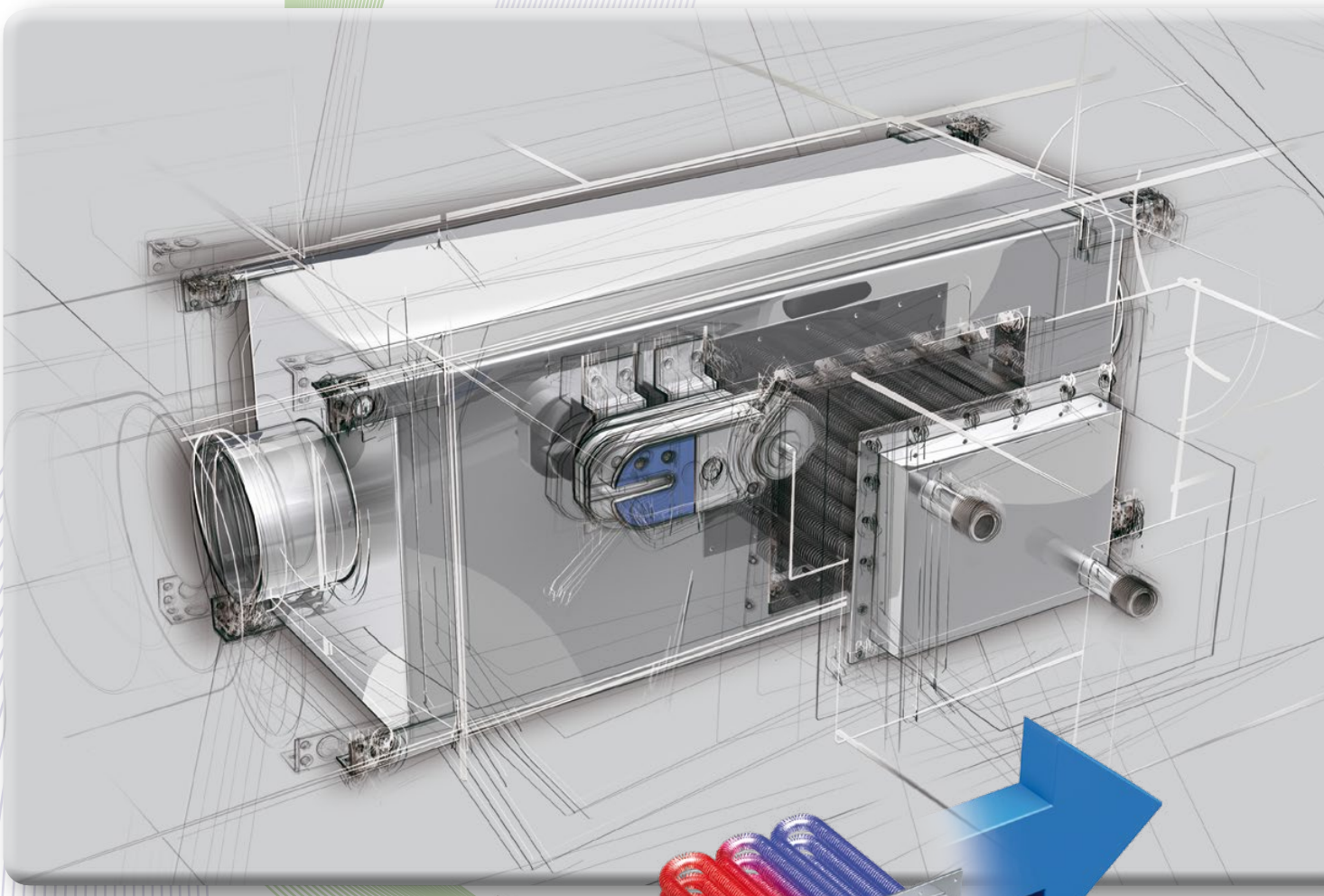
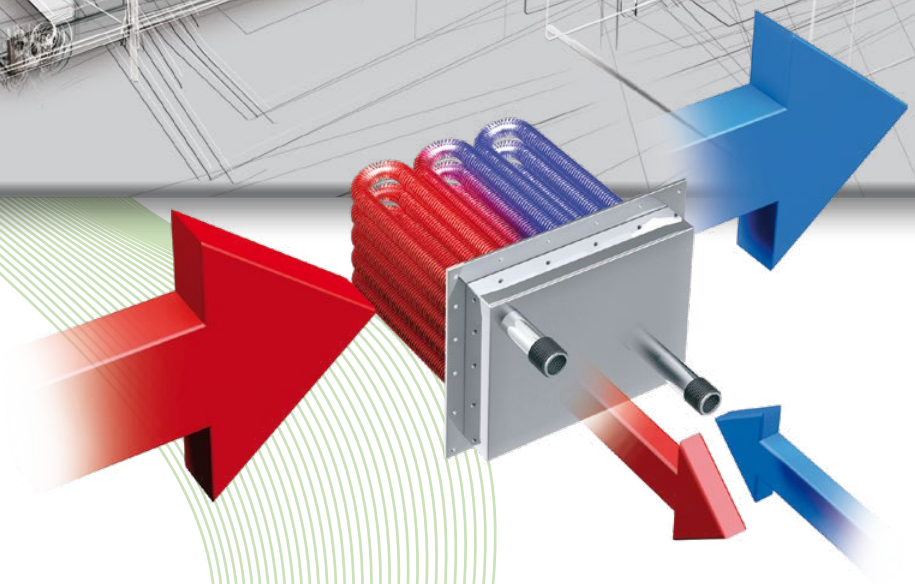
Increase energy efficiency – with exhaust gas heat exchangers made by Schräder





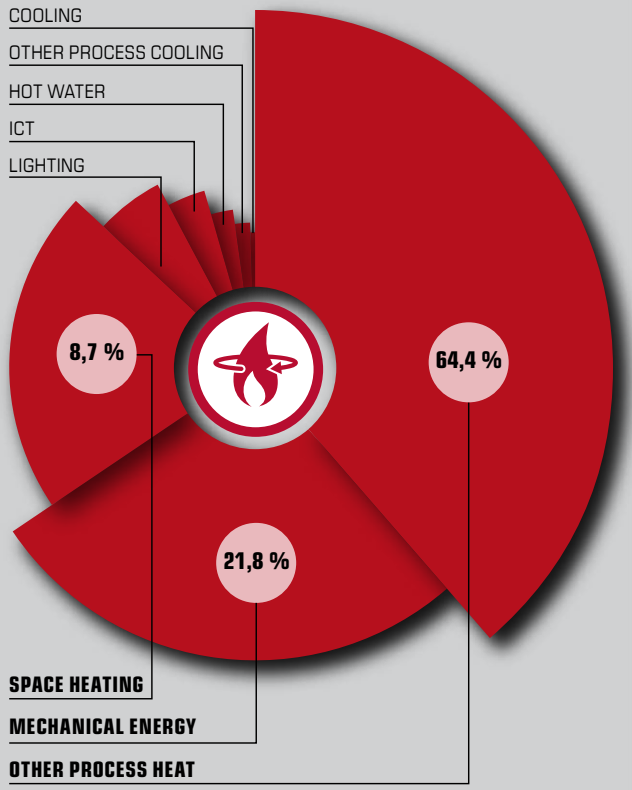
SCHRÄDER
ABGASTECHNOLOGIE

INCREASE ENERGY EFFICIENCY – REDUCE COSTS!

Process heat is generated and used to a considerable extent in many industrial productions. Examples include the heat treatment of metals or the drying of wood. But the food and baking industries are also dependent on process heat, which is produced cost-intensively in industrial or baking ovens.

Final energy consumption by application in the industry – 2014

Source: Arbeitsgemeinschaft Energiebilanzen Bundesministerium für Wirtschaft und Energie (Energy Balance Work Group German Federal Ministry of Economics and Energy).



Your benefits:

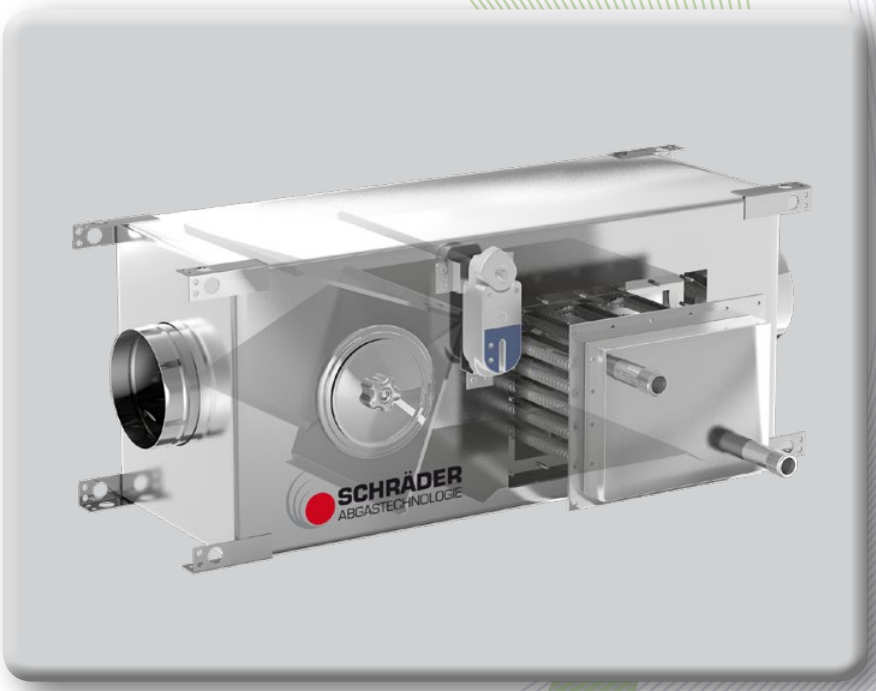
- USING ENERGY RESERVES
- PROTECTING THE ENVIRONMENT
- REDUCING COSTS

The waste heat, resulting as a by-product in this process, is released into the atmosphere via the chimney.

A LARGE PART OF THE ENERGY PRODUCED IN INDUSTRIAL OR BAKING OVENS IS THEREFORE WASTED.

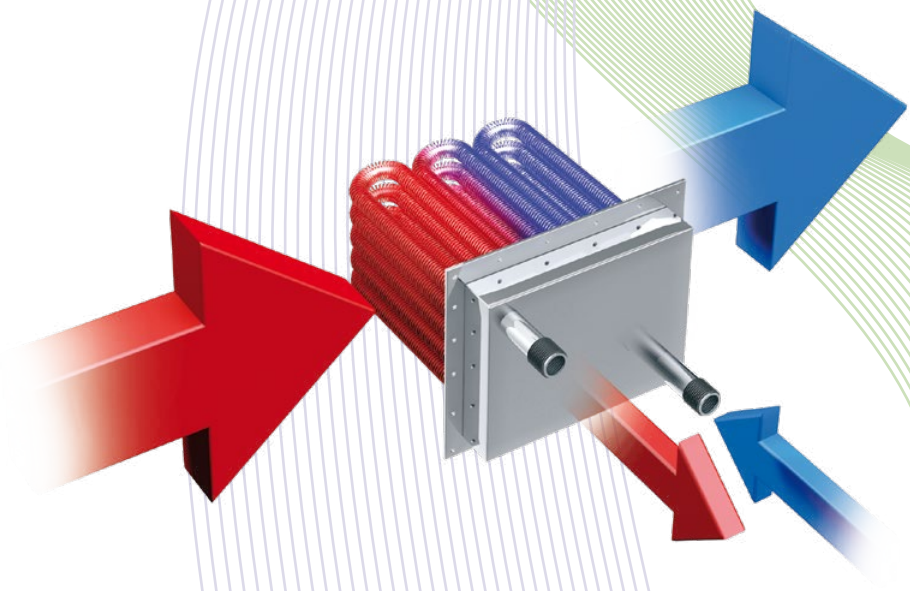
But the energy of the hot exhaust gas can be utilised: Using the exhaust gas heat exchanger made by Schräder.

HEAT EXCHANGER – THE PRINCIPLE



Heat exchangers allow the transfer of heat from a warm medium to a colder medium. In a Schräder exhaust gas heat exchanger, the hot exhaust gas flows along a finned tube bundle and thereby heats up the water that is led through this tube bundle. The hot water can then be returned to the initial process or used in-plant, for example for hot water supply or for the production of refrigeration and also the generation of electricity. Also possible is the supply to third parties, such as a local heating network.

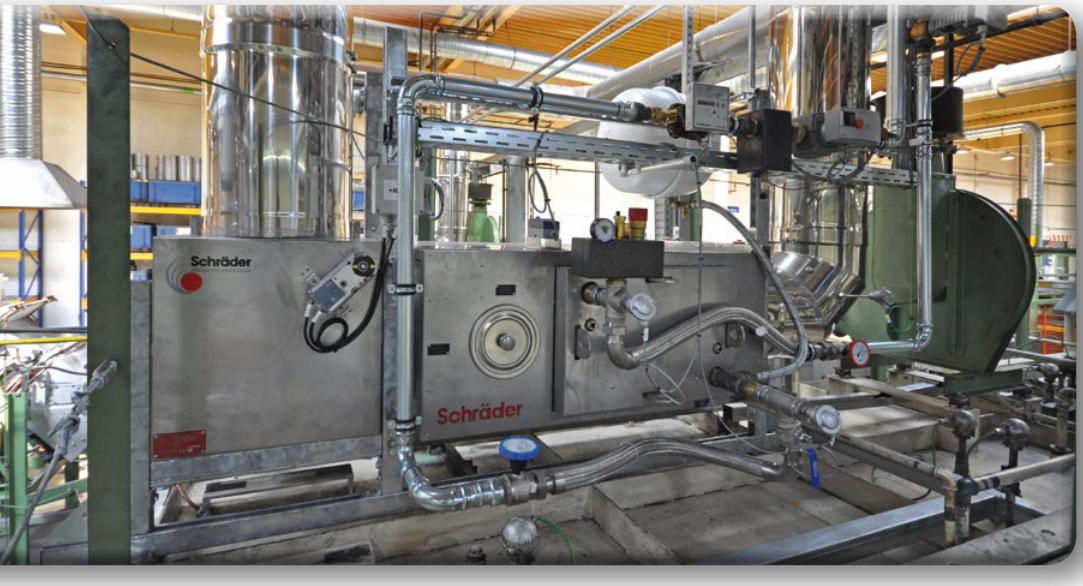
Schräder supplies the technology that not only reduces your costs, but also contributes to reducing emissions and thus actively protecting the environment.



Laser-welded finned tubes inside the Schräder heat exchanger offer a large surface area, thus ensuring particularly high heat transfer. Compared to heat exchangers with bare tubes, the Schräder heat exchangers are much more compact.

INDIVIDUAL SOLUTIONS

Schräder does not offer standardised heat exchangers. All systems are individually planned and manufactured taking the requirements and needs of each project into consideration. This guarantees highest performance with optimal adaptation to the respective location.



SCHRÄDER
ABGASTECHNOLOGIE

CONSULTING → MEASURING → POTENTIAL ANALYSIS → DESIGN → COMP CONS TIO

THE SCHRÄDER SYSTEM

The Schräder complete solution for heat recovery includes the following services:

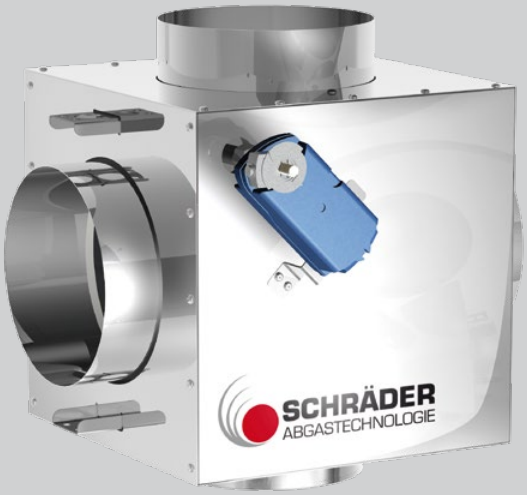
- **consultation;**
- **determination of the initial situation in your company via point and long-term measurements of exhaust gas temperatures and volume flow rates;**
- **subsequent analysis of potential with a meaningful evaluation and presentation of the measurement results;**
- **Design and planning,**
- **Construction of the heat exchangers,**
- **Assembly in your company,**
- **Connection of hydraulic and electrical systems,**
- **Commissioning**
- **and - if required - regular maintenance.**

PONENT
STRUC-
NING
ASSEMBLY
INTEGRATION
COMMISSIONING
MAINTENANCE

THE TECHNOLOGY

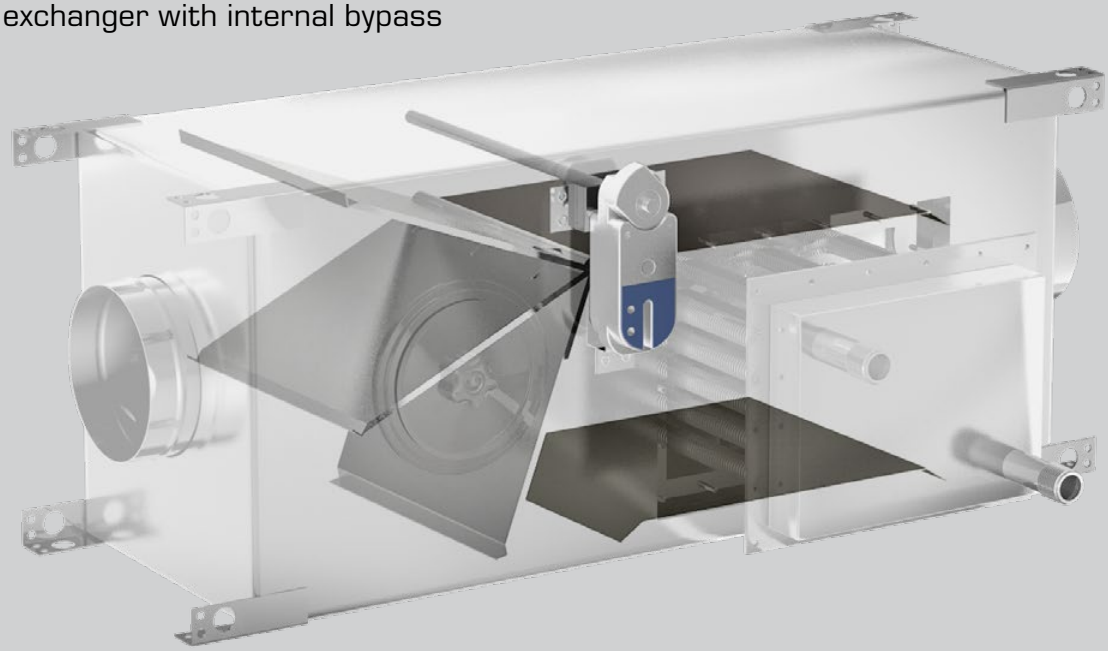
For plant or production safety reasons, heat recovery systems should be equipped with a bypass so that the heat exchanger can be bypassed if necessary. This way, the heat exchanger won't overheat, and in case of failure, the hot exhaust gases are safely removed without resistance of the heat exchanger.

Schräder heat exchangers are manufactured from high-quality stainless steel (1.4404 / 1.4571). For special process-specific requirements, manufacture to the customer's specification is also possible.



external bypass

Heat exchanger with internal bypass

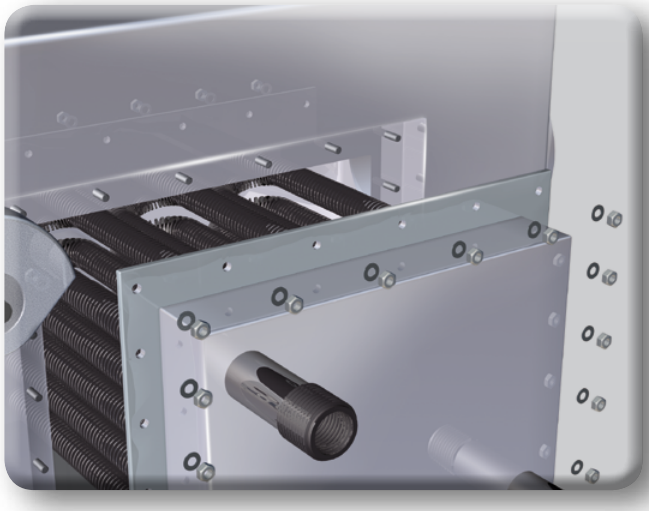


MAINTENANCE AND SERVICE FRIENDLY

The registers are flanged. This makes them easy to remove for cleaning purposes.

The cage construction around the register provides secure supporting areas. Together with the temperature-resistant and integrated ball bearing of the cage, the removal of even a heavy register is easy and ensures safe handling.

Our hydraulic connection set also offers the required measuring and shut-off options.



HARDENING TECHNOLOGY

BULTEN

Bulten GmbH produces and sells connection elements for the automotive industry. The production site in Bergkamen-Rünthe – originally under the name KHS – was founded already in 1970. In 1992, the Swedish screw producer Bulten took over the company. The production lines are among the most modern facilities of their kind in Europe.

Initial situation

When it was time to replace two cleaning systems for screws in the heat treatment plant, it made sense to use the high waste heat output of the hardening furnaces for the hot water supply of the cleaning system by means of exhaust gas heat exchangers.

The Schräder system

Schräder implemented this idea as the general contractor in close cooperation with the washing systems manufacturer Ilvet and Bulten GmbH. The complete solution hereby included the design, plant construction and assembly, as well as the integration of the hydraulic and control systems.

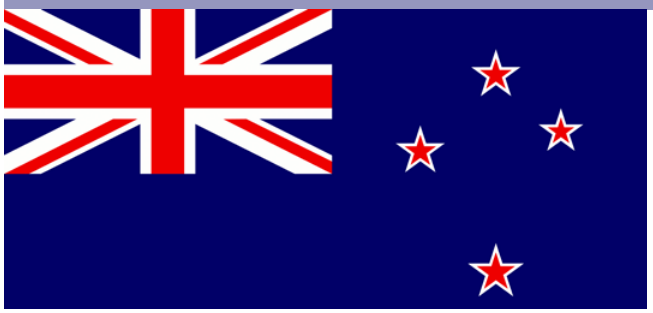
This is what our customer has to say

«With investment costs of 125,000 euros (170,000 euros of pure acquisition costs minus 45,000 euros of subsidies) and an energy consumption of the washing machines of one million euros per year with an energy price of 0.038 euros per kW / h, there is a savings potential of 38,000 euros,» explains Frank Welzel, head of project management at Bulten GmbH. «The amortisation period therefore amounts to less than 3.3 years.» Since the Bulten company considers this measure an energetic measure, even an amortisation period of up to eight years would have been acceptable.

Conclusion

The Bulten GmbH project shows that the installation of a heat exchanger pays off, especially for industrial or commercial companies that have processes with high exhaust gas temperatures. In addition, about 567,000 t of CO_2 less are emitted every year.

SCHRÄDER NEW ZEALAND



About the customer: Our customer is one of the leading suppliers of industrially manufactured baked goods in Australia and New Zealand with a surprisingly long company tradition by European standards. There are more than a dozen factories in New Zealand alone.

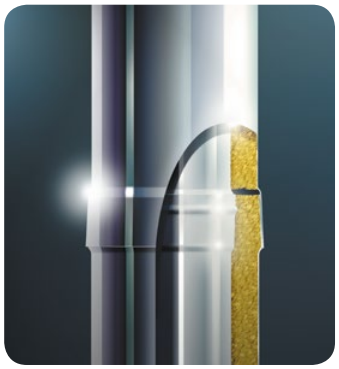
Initial situation

Our customer's goal was to reduce not only the primary energy use, but also CO_2 emissions. Due to the high exhaust gas temperatures, a location with an oven fired by two burners and a total of 900 kW of installed burner output was perfect for a particularly effective heat recovery measure.

Result

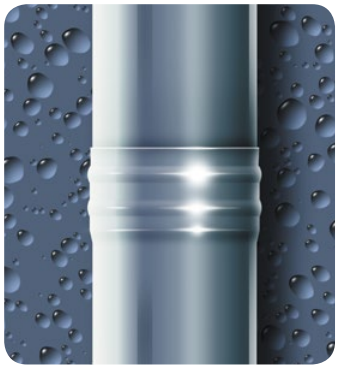
Using two heat exchangers, the energy content of the hot burner exhaust gases is used to heat water needed for a fermentation process to 90 ° C. Overall, the amount of heat that can be extracted is at 100 kW.

This means that more than 250,000 kWh of natural gas can be saved annually. CO_2 emissions go down by more than 50,000 kg / year.

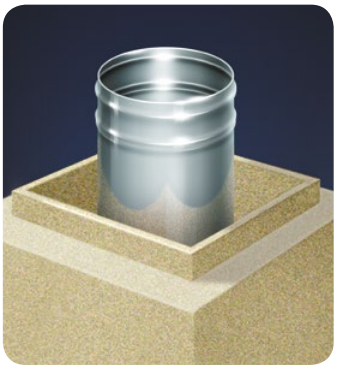


FUTURE DW
Double-walled chimney system for standard fireplaces in the over- and underfloor area Vacuum range. Insensitive to moisture, pressure-tight and as CHP line can be used.

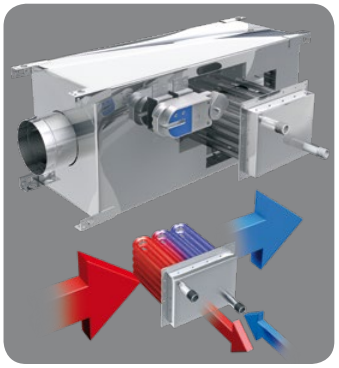
FUTURE EW
Single-walled chimney system for standard fireplaces in the over- and underpressure range. Insensitive to moisture, pressure-tight and can be used as a CHP line.



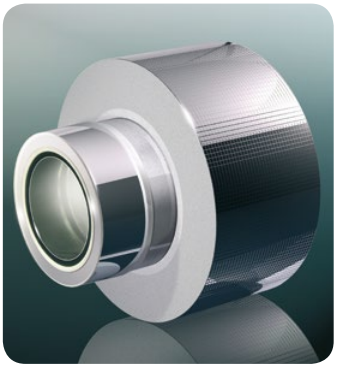
SANRO AQUA
The moisture-insensitive insert tube for all exhaust gas temperatures.



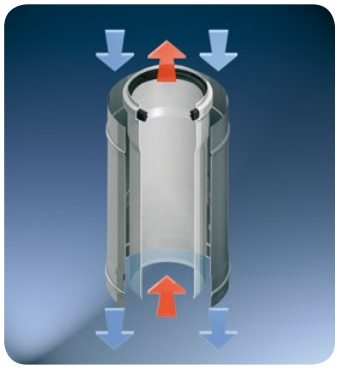
FUTURE THERM
Chimney system with shaft for all standard fireplaces for renovation and new construction.



HEAT RECOVERY
Intelligent use of industrial waste heat



WALL DUCT
The safest way of wall ducting. Ideal for all drywall houses.



FUTURE PP
Plastic exhaust pipe for condensing and low temperature applications.

REDUCTION OF FINE DUST
Fine dust filter for wood firing systems in the power range up to 1.2 MW

The Schräder product range with special systems for individual requirements. Perfectly matched components guarantee optimum functionality and maximum efficiency for every requirement.

Quality has its origin.....

Only foresighted technology has a chance today. For Schräder, this means that even proven design methods have to be continuously further developed in order to enable functional and economical manufacturing processes.

It is clear that this demand can only be met with the highest demands on the material on which production is based. Schräder therefore only uses high-quality stainless steel VA for its components (material 1.4301, 1.4404, 1.4539, 1.4571, 1.4828). The fact that the 100% recyclability of this material also noticeably reduces the environmental impact has been part of our company philosophy for decades.

But only a continuous and effective quality control - in combination with modern technology, forward-looking Manufacturing methods and many years of experience in chimney technology - the manufactured product becomes a precisely fitting wheel component.

For this reason, the entire production process is subject to continuous monitoring in order to guarantee the end product an optimum service life.

It repeatedly shows:
QUALITY IS NOT A RESULT OF COINCIDENCE BUT RESULTS OF ACCURACY, SUSTAINABILITY AND INNOVATION!

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Mitglied bei:

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AWT Arbeitsgemeinschaft Wärmebehandlung + Werkstofftechnik e.V.

ENERGY EFFICIENCY made in Germany