

AL-KO RUN-AROUND-COIL SYSTEMS



QUALITY
AND
EFFICIENCY.

RUN-AROUND-COIL SYSTEMS ENGINEERED BY AL-KO

SUPERB QUALITY AND MAXIMUM ENERGY EFFICIENCY

In central ventilation systems, heat recovery is one of the most important factors for improving energy efficiency. That's exactly why the research and development at AL-KO focusses on the advancement and constant improvement of the interaction of all components for our run-around-coil systems.



YOUR ADVANTAGES:

| **PLUG & PLAY**

Connect 4 pipes, connect to power. Done!

| **MSR-AUTOPILOT**

Power adjustment of the pump, frost protection, function monitoring. All set in the factory.

| **APPLICATION FRIENDLY**

Compact dimensions, low weight, forklift optimised construction. Planned down to the last detail.

| **COST OPTIMISED**

Maintenance-free operation, automatic energy-efficiency check, simple functional testing. The return on investment is assured.

HEAT EXCHANGER IN AL-KO AIR CONDITIONING AND VENTILATION EQUIPMENT

THE HEART OF THE ENERGY EFFICIENCY

AL-KO only uses heat exchangers whose performance is confirmed by an independent testing institute and is thus guaranteed. Because, over a period of five years, a reduced output of only four percent of the energy recovery coefficient causes additional costs that correspond to the cost of a heat exchanger.





TÜV NORD Systems

TÜV NORD Systems GmbH & Co. KG
 Bereich Energietechnik
 Langemarckstrasse 20
 45141 Essen, Germany
 Tel.: +49 201 - 825-0
 www.tuev-nord.de
 TÜV®

INSPECTION BODY FOR REFRIGERATION, AIR CONDITIONING AND VENTILATION TECHNOLOGY

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 Order no.: 81 11 09 09 39 Lks

Short report

Performance measurements on heat exchangers as components of a closed-cycle system in accordance with DIN EN 1216 and DIN EN 308

The measurements and extrapolations have shown that the application of the software from the manufacturer leads to dependable results. Thus, the comparison of the metrological and calculated values generally lead to excellent consistency. The identified deviations of the temperature change degrees range between +0.7 % points and +1.3 % points. The identified deviations of the air-side pressure losses range between -3.4 % and +7.1 % relative or -3 Pa and + 16 Pa absolute.

Inspection body for refrigeration, air conditioning and ventilation technology



Dipl.-Ing. (FH) Mario Lukas, MBA

14_2011_AL_KO_Therm-Kurzbericht-Prüfung_KVS-2014_03_12.docx

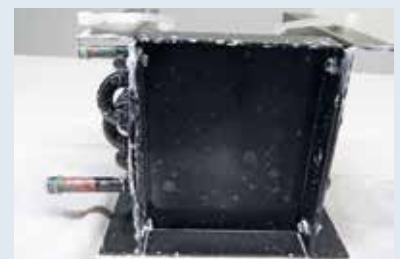
For hygienic reasons, it must be possible to clean heat exchangers down to the core. The institute for air hygiene confirms that AL-KO only uses heat exchangers which are proven to be cleanable down to the core.



Whether the upgrading of existing installations or new projects, a run-around-coil system must be optimally protected against corrosion – as proven by these images of heat exchangers that were pressurised with corrosive air:



Standard heat exchanger after 3 months in the salt spray test.

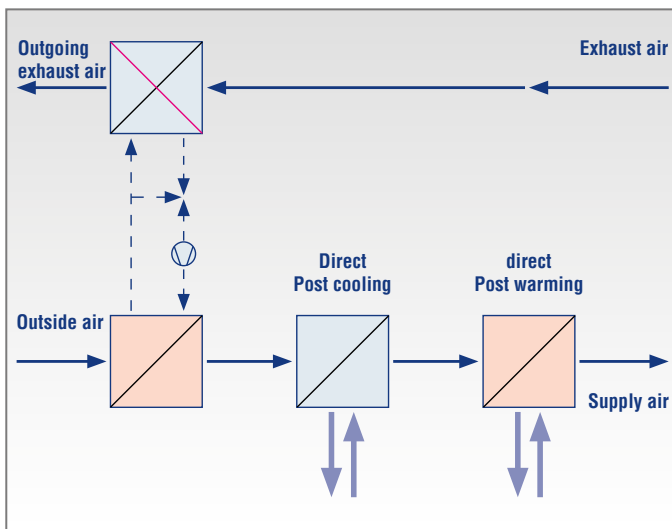


Heat exchanger used by AL-KO for corrosive environments with electrochemical corrosion protection of class C5 after 3 months in the salt spray test.

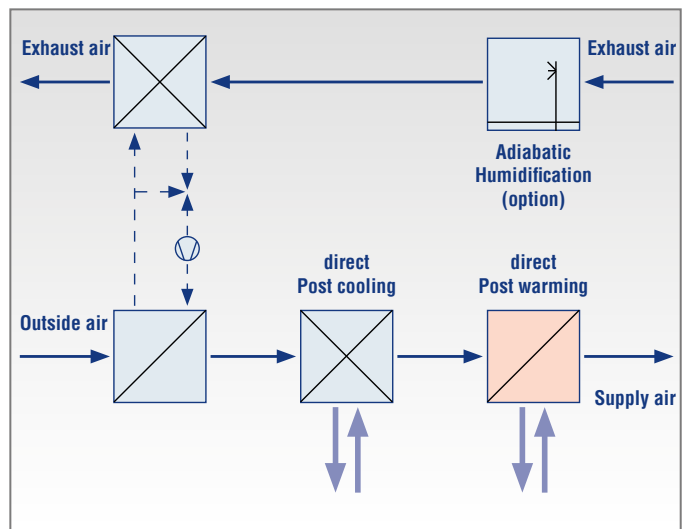
RUN-AROUND-COIL SYSTEMS AT A GLANCE

THE EASY WAY TO CONSERVE ENERGY

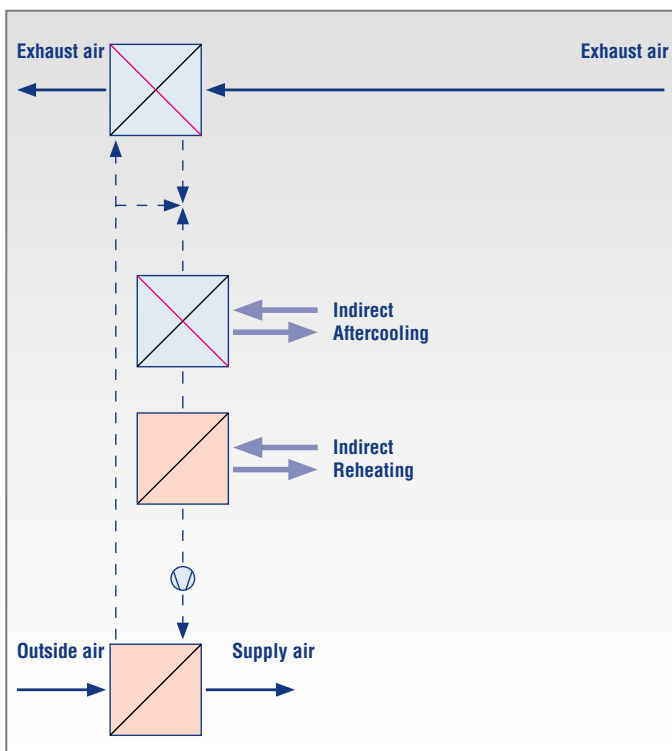
Run-around-coil systems essentially include one or more finned heat exchangers in the supply air and exhaust air that are connected with each other via a hydraulic circuit. Further functionalities are added as required.



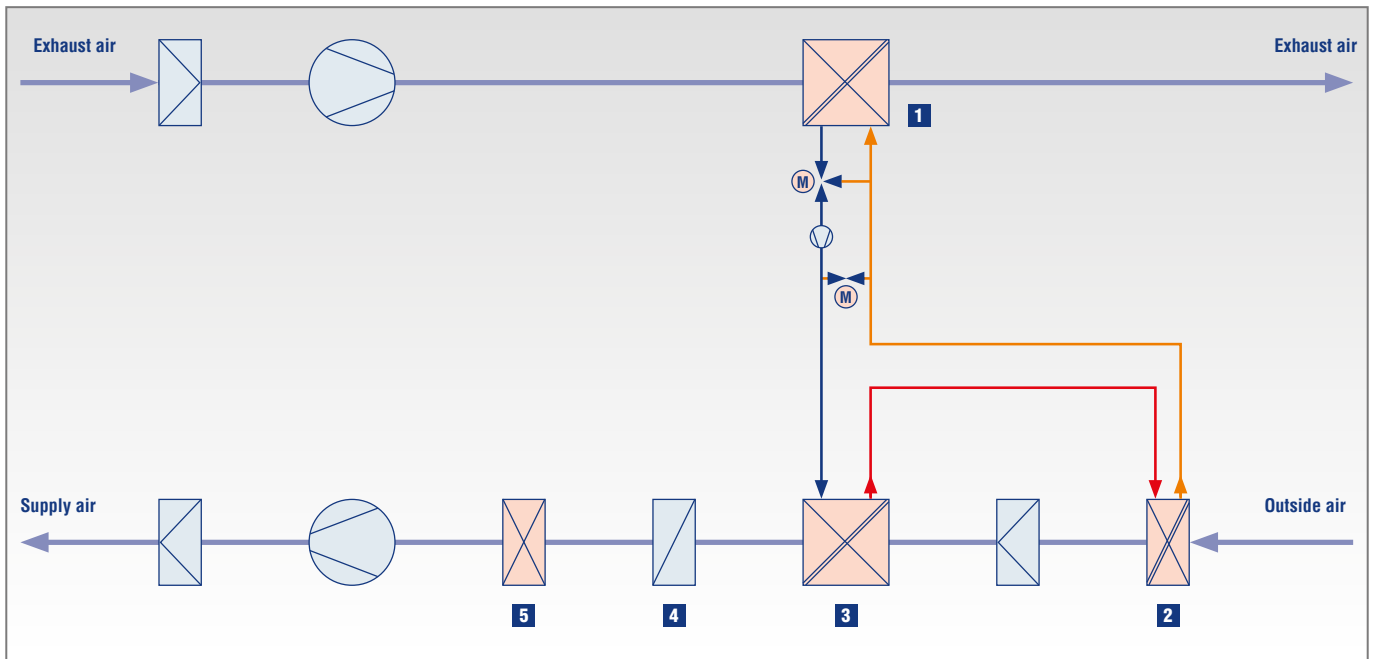
The basics of the run-around-coil system:
Finned heat exchanger in the supply air and exhaust air, connected by a hydraulic circuit.



Run-around-coil system with direct reheating
(also possible with several supply air and exhaust air units connected together)

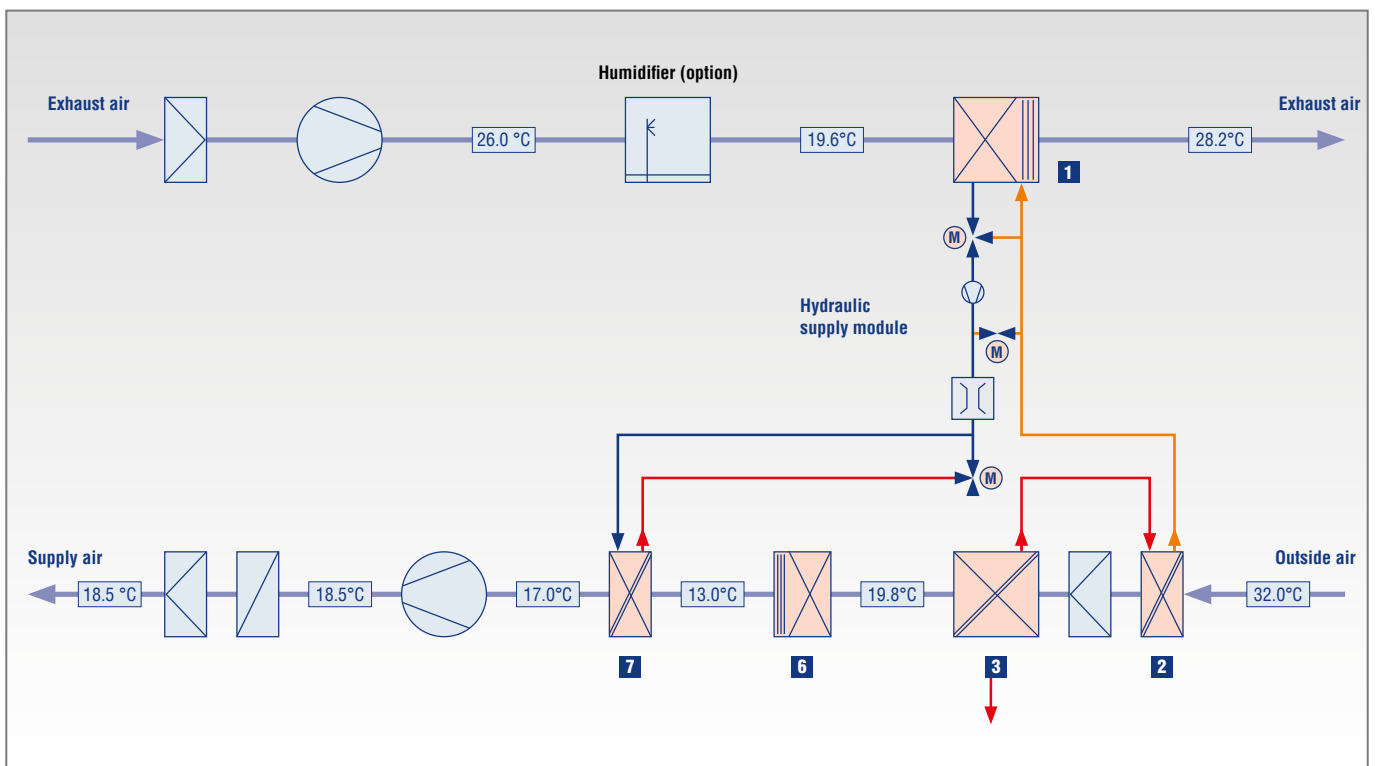


Run-around-coil system with indirect reheating or aftercooling (use of the closed-cycle heat exchangers as air heaters or coolers. Energy input via plate heat exchanger)



Run-around-coil system with filter pre-heater

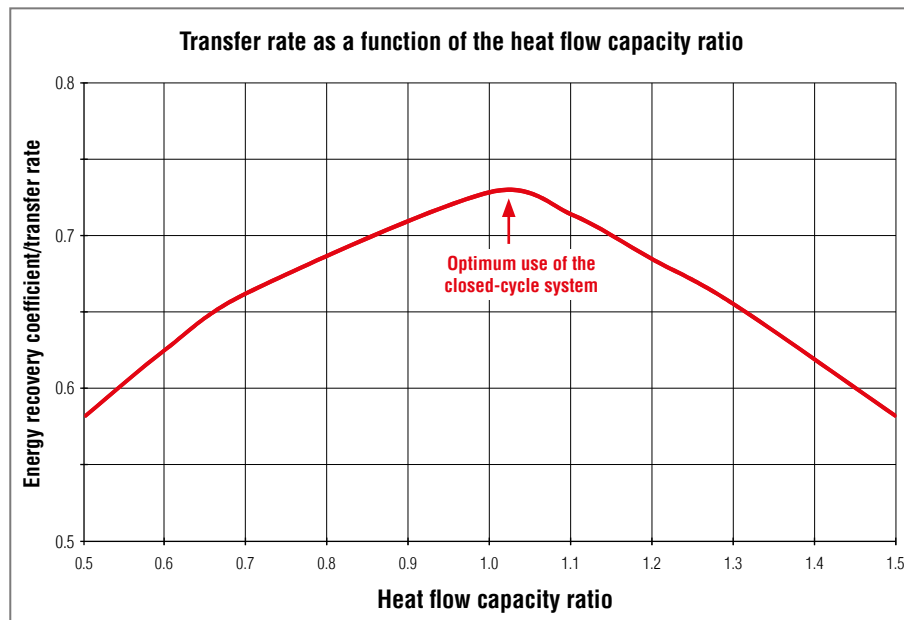
- 1** Heat exchanger run-around-coil system exhaust air
- 2** Heat exchanger run-around-coil system as "Filter pre-heater"
- 3** Heat exchanger run-around-coil system supply air
- 4** Reheater
- 5** Aftercooler
- 6** Dehumidification cooler
- 7** Heat exchanger run-around-coil system reheater



Run-around-coil system with cold recovery

THE HYDRAULIC CIRCUIT

OPTIMISED EXCHANGE TO THE MEDIUM



Optimum ratio between water/glycol quantity and air volume flow.

The hydraulic circuit of a run-around-coil system is used for the transfer of heat from the exhaust air side to the supply air side. It is essential that the circulating water/glycol mixture is always set in an optimal ratio to the exhaust air volume flow.

Required components in the hydraulic circuit are: Controllable pump, performance and frost protection control valve, flowmeter, expansion tank, safety valve, system pressure monitoring, filling and venting equipment, as well as a control and optimisation unit with temperature and fault indication.

COMPARISON OF AL-KO HYDRO OPT® S AND AL-KO HYDRO OPT® M

Functional feature	AL-KO HYDRO OPT® S	AL-KO HYDRO OPT® M
Max. number of supply air devices	1	1
Max. number of exhaust air devices	1	3
Control unit	Integrated in FC	Switch cabinet with controller and FC
Power control with pump and valve	√	√
Power control depending on air volume	External via central ventilation control unit	Control via separate pressure sensor on the supply air fan
Enable signal and interfering signal	√	√
Control 0-10 V	√	√
System pressure monitoring	Shut-down	Warning and shut-down
Frost protection control	√	√
Bus coupling	Modbus RTU, Bacnet MSTP additional board	Bacnet IP, Modbus RTU, LON additional boards
Pump	Variable, with venting valve	Variable, with anti-lock and venting valve. Optional double pump
Display of in-flow and return flow temperature	√	√
Flow measurement	Mechanical	Electrical
Optional feed-in of heat, - cooling energy		√
Temperature display and frost protection warning for feed-in		√
Pressure gauge	√	√
Dirt filter		√
Expansion tank and safety valve	√	√
Filling and venting equipment	√	√

AL-KO HYDROOPT® S AND M

AL-KO **HYDROOPT® M** is the right choice if a hydraulic station is required, that dynamically and independently optimises the brine volume flow and thus the degree of efficiency.



AL-KO **HYDROOPT® S** is the simple, ingenious solution when a hydraulic station in the range of 0.35 to 11 m³/h brine volume flow is required, which is easy to handle and install, and works reliably with the brine volume flow.



AL-KO THERM GMBH
Ventilation and Air-Conditioning
Technology

Hauptstraße 248 – 250
89343 Jettingen-Scheppach
Germany
Phone +49 8225 39-0
Fax +49 8225 39-2113
klima.technik@al-ko.de
www.al-ko.com

Figures show configuration examples that are not available in all markets.
Please ask your AL-KO consultant.

Presented by your AL-KO:

Subject to modifications in response to technical developments.
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