en

WEGER
air solutions

Production plant in Kiens - South Tyrol

WEGER
air solutions

In 1977, the founder, owner and leader of the company, Mr. Walter Weger started with the production of Air Ducts and Air Distribution Components. As installation company in the local area for the catering trade the company WEGER was grown up and well known as a faithfull partner in all questions of air trading. The constantly growing internal demand of Air Handling Units caused finally thestart of a own production of the AHU's. Many different detailed solutions flowed into the development of the new device series of DIWER, which where then introduced in the year 1992.
By the constantly growing customer requirements as well as the guidance of an internal QM - System ISO 9001-2000, all our products are subject to a constant research and development process.

Production plant in Hungary

Our production techniques are state of the art – as is our fully automatic punching and laser centre.
Progress and success are due significantly, however, to the commitment of our motivated employees

Range of products:

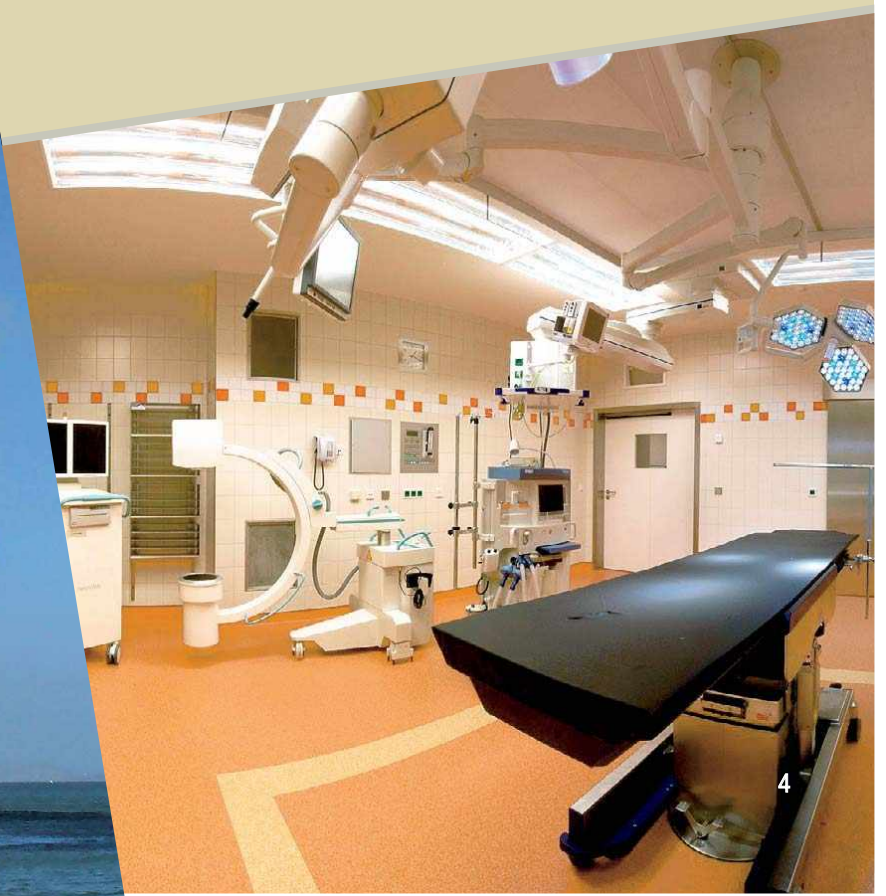
- Complete Air Conditioning Equipment for filtering, Heating, Cooling, Humidifying, and Air Drying
- Air Handling Units with Heat Recovery
- Air Handling Units for behind sealing installation
- Air Handling Units for Roof Top Mounting or Outside Installation
- Air Handling Units in Hygienic Execution for Hospitals and Clean Rooms
- Air Ducts and Distribution components
- Planning Support and Engineer Consultation

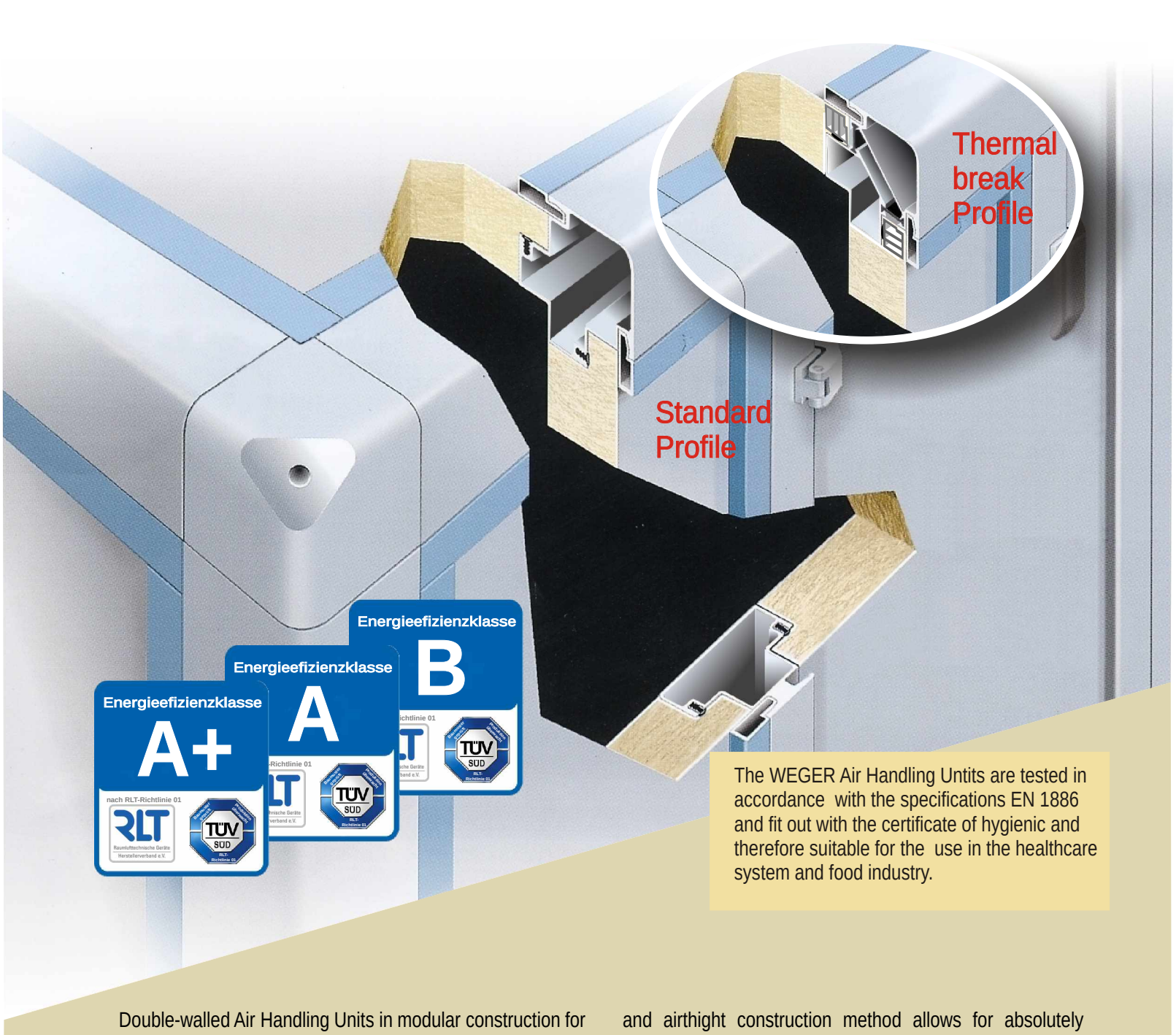
Weger climate technology for the highest demands

All over the world where the right atmospheric environment is called for – for offi ce buildings, commercial buildings, public institutions, in catering and in industry.

Even the custom air conditioning units for the meat and food stuffs processing industry and for ship building carry our name.

Weger – air solutions.





The WEGER Air Handling Untits are tested in accordance with the specifications EN 1886 and fit out with the certificate of hygienic and therefore suitable for the use in the healthcare system and food industry.

Double-walled Air Handling Units in modular construction for air conditioning for horizontal or vertical mounting, completely detachable structure of housing without welding and rivet joints.

Each module consists of a strong self supporting frame construction and double walled, insulated panels which makes each module suitable for horizontal or vertical mounting. The suo´pport frame is made from secialy extruded and anadized aluminium profiles with grooves for mounting the rubber sealing gasket and optically pleasing rounded corners on the outer edges. These frames are connected with cast aluminium corner units and secured with the use of a single screw in each corner post, which makes for easy dismanteling at the point of installation if so required. The wall, floor, and roof panels are made of double wall construction with galvanized sheet metal on the inside and outside with 40 mm mineral wool insulation between.

The insulation is non flammable and conforms to the fire class A1 and DIN 4102. If requested the panels can be insulated with rigid Polyurethan foam to fire class B2 and standard DIN 4102.

The panel edges have a 90 degree step to fit airthight into the frame and are held in place by special snap aluminium jam strips which slot into grooves in the support frame. No rivets or screws are necessary to hold the panels in place. Our special and airthight construction method allows for absolutely smooth walls inside the Air Handling Unit and easy dismanteling of the wall panels can be supplied if requested with a plastic coated colour finish and inner panels can be made of stainless steel or aluminium if required.

The service access doors are made in a similar construction as the panels and we fit strong locking handles and adjustable, sturdy metal hinges to ensure an airthight door seal over the whole life span of the Air Handling Unit.

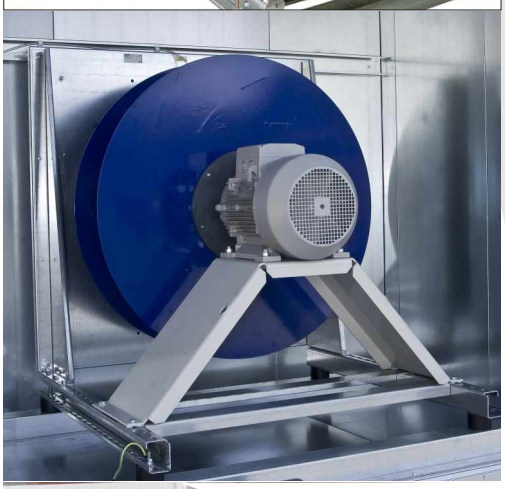
Panels which have to be complete removed for service access are held by strong screw lugs on the outside and are fitted with grab handels on the outside. Doors on larger units have handles for opening also on the inside.

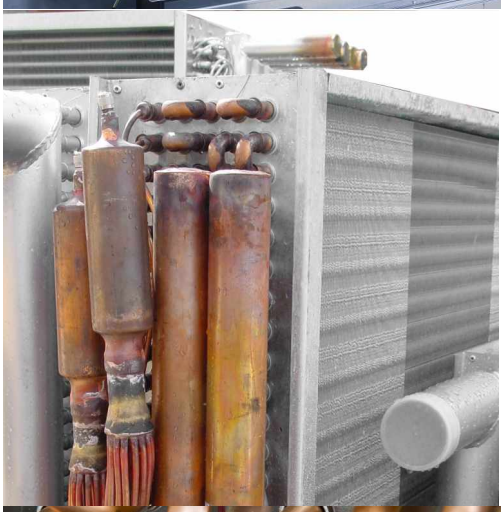
Doors of the Air Handling Unit modules which are under pressure have an additional catch system to prevent accidental opening while in operation.

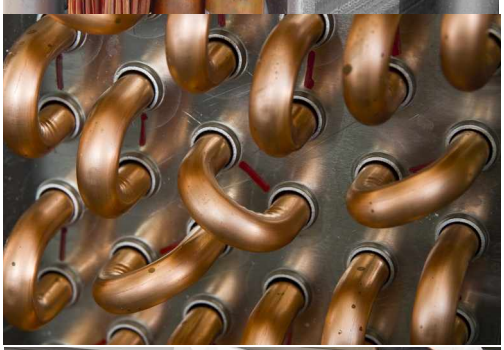
All Air Handling Units can be supplied with a galvanized steel sub-frame if requested.

For larger Air Handling Units detatchable lifting eyes for easy hanlding are supplied as standard.

The individual Air Handing Unit modules can be connected with each other simply by using the supplied sealing strip, connection bracket and screws.







Ventilatorelement

Fan section

High performance DIDW centrifugal fan with either forward or backward curved blades, The casing is made of galvanized sheet steel with aerodynamically formed inlet openings.

Depending on the fan size, the rotor is either made of galvanized steel or durable polyamide. The rotor is statically and dynamically balanced according to min. Q 6.3 as specified on VDI 2060.

We use special low noise bearings which have an operating life span of at least 20.000 hours. The fan and motor is mounted on a common base frame which is made from steel profiles. The base frame is fitted with vibration dampers (rubber or spring isolators) and these connected to the Air Handling Unit. Floor frame without transmittion of unwanted vibration.

The electro motor is mounted onto an adjustable belt tensioning base which has sliding rails and a central adjusting screw. The electro motors are of the totaly enclosed type and according to standard IP 54 and insulation class F.

We can supply single speed, two speed or stepless motors on request. We fit antistatic belt drives with cast iron or aluminium taper lock pullies.

Heating coil section

Quality heat exchangers with copper tubes and aluminium fins are used in order to provide maximum thermal transmission. The heating coils are made with frames of galvanized steel and are pressure tested to 30 bar.

The coil connection spigots are threaded and an air thight rubber seal is provided where they pass through the Air Handling Unit panel. The heat exchangers can easily be withdrawn for servicing from the Air Handling Unit via service panels and guide rails.

Options:

Coil type Cu/Cu, Cu/Al coated, Cu/Cu tinned, Fe/Al, galvanized steel, stainless steel

Cooling coil section

The coil construction and mounting features are the same as described in the heating coil section. In addition, this section features a conedsate drain pan made from stainless steel and a 1 inch drain spigot on the service side. If required droplet eliminators with plastic separator blades will be fitted and provision is made that the whole unit and the drain pan can be withdrawn from the Air Handling Unit via an access door and guide rails for cleaning.

Frost protection frame

A galvanized steel frame for mounting temperature sensors is instlled on rails between the heating and the cooling coil and can be withdrawn from the side of the Air Handling Unit.

Flat filter section

Filter medium according to EU 3 and DIN 24185 (B2) with a gravimetric efficiency of 87,5 % is mounted on flat or V-shaped carrier frames in order to provide an increased surface area for high dust storing and separation capacity for easy maintanance, the filter cells can be withdrawn on the service side of the Air Handling Unit by the means of a removable service panel or access door. gravimetrischer Abscheidegrad 87,5 %. Alternatively the filter cartriges are also available in variations in types e.g. with aluminium wire mesh as filter medium or even in higher filter grades (G4).

Bag filter section

The filter cells are equiped with high quality baga filters which have a temperature resistance of up to 90 °C, are self supporting and conform to DIN 24185 and EUROVENT norms. The bag filters are held in place by frames made of galvanized steel and are mounted air thight according to DIN 1946 with quick fastening spring clips.

The filter cells can either be withdrawn from the service side of the Air Handling Unit for filter changing or access is provided by a service compartment on the dust side of the filter

Sound attentuator

Splitter thickness 200 mm with high sound absorbtion properties and suitability properties and suitability for air speeds up to 20 m/sec are used as standard. The frames and the anti- resonance plates are made from galvanized sheet steel. The gap between the splitter is 105 mm.

Options:

Splitters for hygienic application

Air flow caps on the leading and trailing edges

Housing and frames made from stainless steel

Special applications like transparent accustic foil, wire guard

According VDI 6022

Diffusor section

A diffusor plate is mounted after the fan outlet in order to provide a more efficient air stream distribution for the filter, heating or cooling coli.

Multi leaf damper

Opposite acting and aerodynamically shaped damper blades mounted in a extruded aluminium profile frame with 30 mm flange with lip seal. The plastic gear wheels are housed inside the hollow frame profile and are completely protected from dirt and dust carried by the air stream. The patented WEGER dampers demonstrate state of the art design and technology.

Mulft leaf dampers alternatively air thight according the norm DIN 1946 part4.

Inlet-/Outlet plenum

Plenum for the inlet or outlet of the air with opening on top, bottom or on the side of the Air Handling Unit. Possible accessoires can be dampers, flexible canvas, weather proof grill, hoods or similar.

Mixing box

Mixing box for mixing two air streams complete with two inside or outside mounted dampers. On request the dampers can be coupled for opposide action.

Double mixing box

Mixing box for mixing three air streams complete with three inside or outside mounted dampers. On request the dampers can be coupled for opposide action.

Weather proof grill

Weather proof grill manufactured with special develoved aluminum profiles, with integrated bird screen in galvanized steel, weather proofed mounted at the inlet or outlet section ot the Air Handling Units.

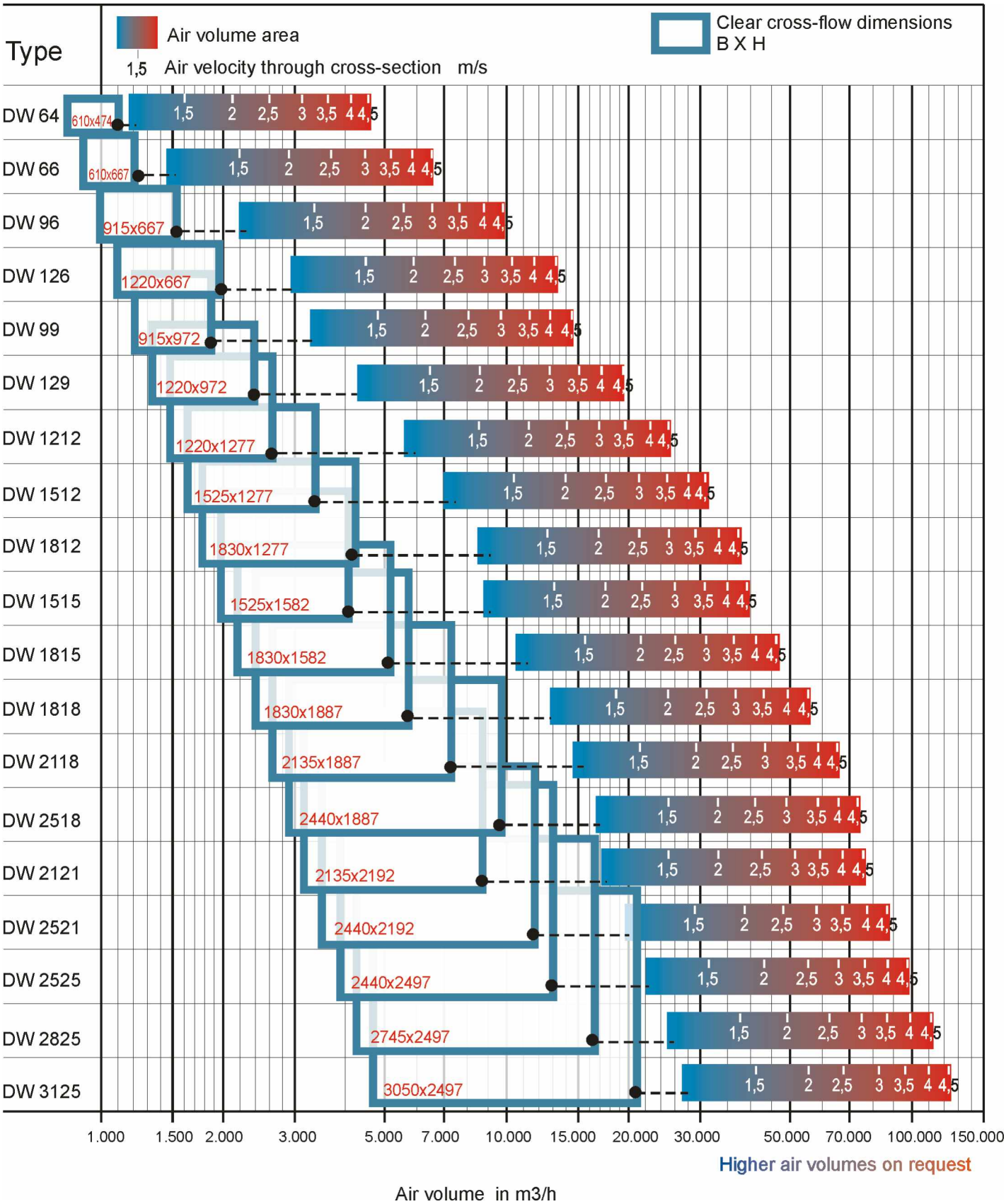
Selffalling damper

Selffalling damper consisting of freely stored, against estimate secured aluminium blades with special foam rubber sealingtape seald and against catch impacts protected.

Flexible canvas

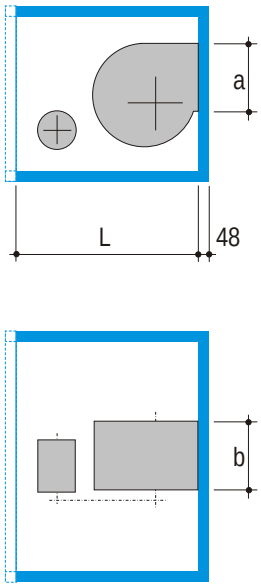
Flexible canvas with connection frame made of galvanized steel or stainless steel. Flangewidth 30 or 20 mm, length 105,150 or 200 mm. The cnavas aare used for lenght calibration and vibration uncoupling. For better thermal insulation the canvas can be complete with an additional insulation. For better heat resistance the canvas can be delivered in a special execution for temperatures upto 250 °C.

Range selection diagramm für DW 64 - 3125

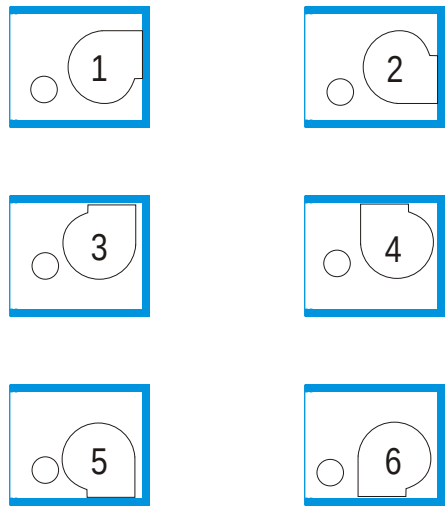


Dimensions

Belt driven fan sectionl V



Fan outlet position

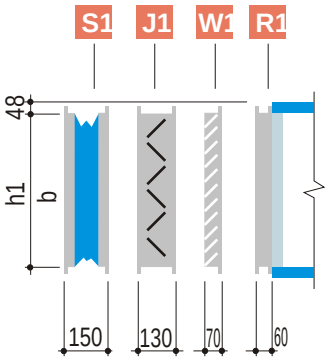


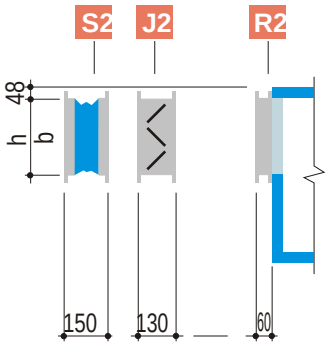
AHU type DW	Fan sizes				
64	160	180	215		
66	200	225	250		
96	225	250	280		
126	250	280	315		
99	250	280	315	355	400
129	315	355	400	450	
1212	355	400	450	500	
1512	450	500	560	630	
1812	450	500	560	630	
1515	450	500	560	630	
1815	500	560	630	710	
1818	560	630	710	800	
2118	630	710	800		
2518	630	710	800		
2121	630	710	800		
2521	800	900	1000		
2525	900	1000			
2825	900	1000	1120		
3125	900	1000	1120		

Fan-size	Fan outlet position	Motor sizes							a x b
		<112	132	160-180	200	225	250	280	
		Fan casing length L							
160	1-6	762							205
180	1-6	915							230
215	1-6	915							322
200	1-6	915							260
225	1-6	915							290
250	1-6	915	1220						320
280	1-6	915	1220						360
315	1-6	915	1220						400
355	1-6	1220	1220						450
400	1-6	1220	1220	1525					510
450	1-6	1220	1525	1525					570
500	1-2	1220	1525	1525	1525				640
	3-6	1525	1525	1830	1830				640
560	1-2	1525	1525	1525	1830	1830			732
	3-6	1525	1830	1830	1830	1830			715
630	1-2	1525	1525	1525	1830	1830			818
	3-6	1525	1830	1830	1830	2135			801
710	1-2		1830	1830	2135	2135			915
	3-6		1830	2135	2135	2135			898
800	1-2			2135	2135	2135			1024
	3-6			2135	2135	2440			1007
900	1-2			2135	2135	2135	2440	2440	1147
	3-6			2440	2440	2440	2745	2745	1130
1000	1-2			2135	2440	2440	2440	2440	1284
	3-6			2440	2745	2745	2745	2745	1267
1120	1-2			2440	2440	2440	2745	2745	915
	3-6			2745	2745	2745	3050	3050	1421

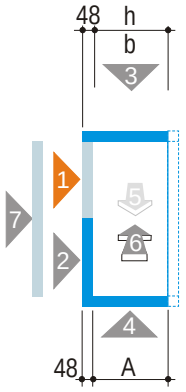
Dimensions

Duct connection

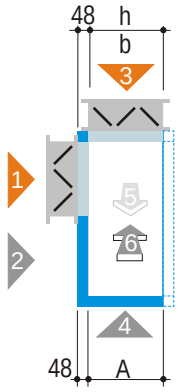




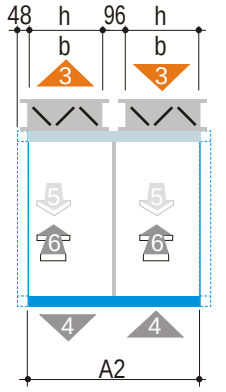
Inlet section A



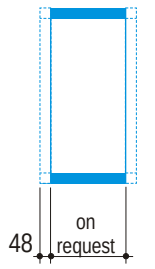
Mixing section M

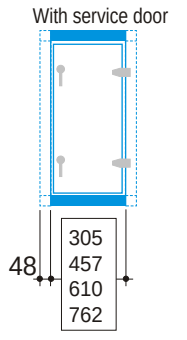


Double Mixing sectionl M2

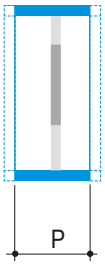


Plenum L LB

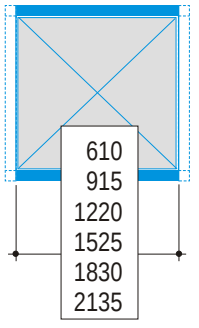




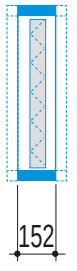
Diffussor-section P



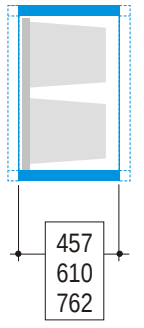
Sound attentuator SD



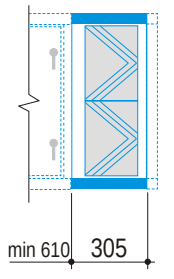
Plan-filter sectionl PF



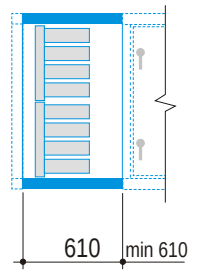
Bag-filter section TF

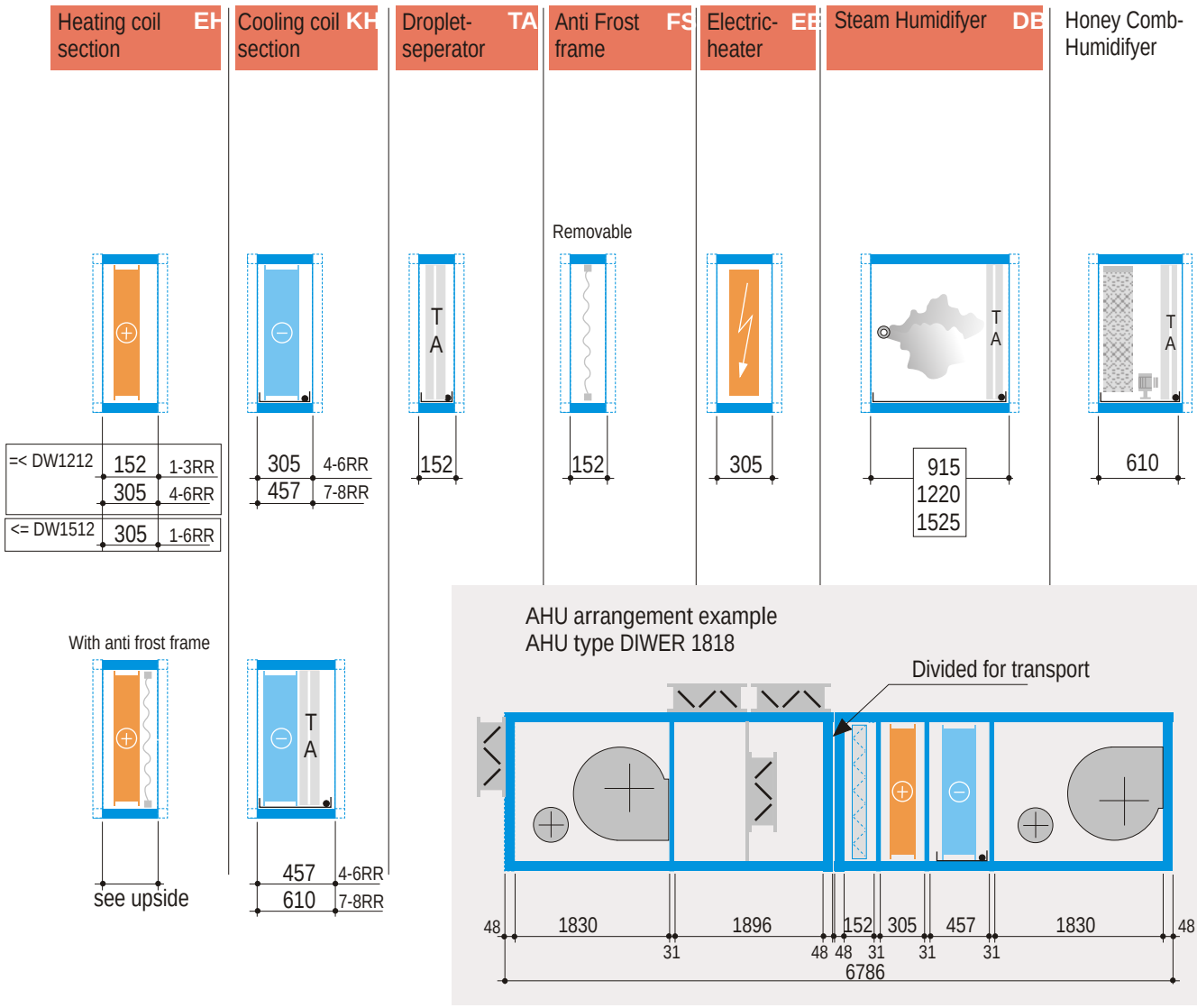


Absolute-filter sectionl AF



Active carbon-filter section AKF





AHU type

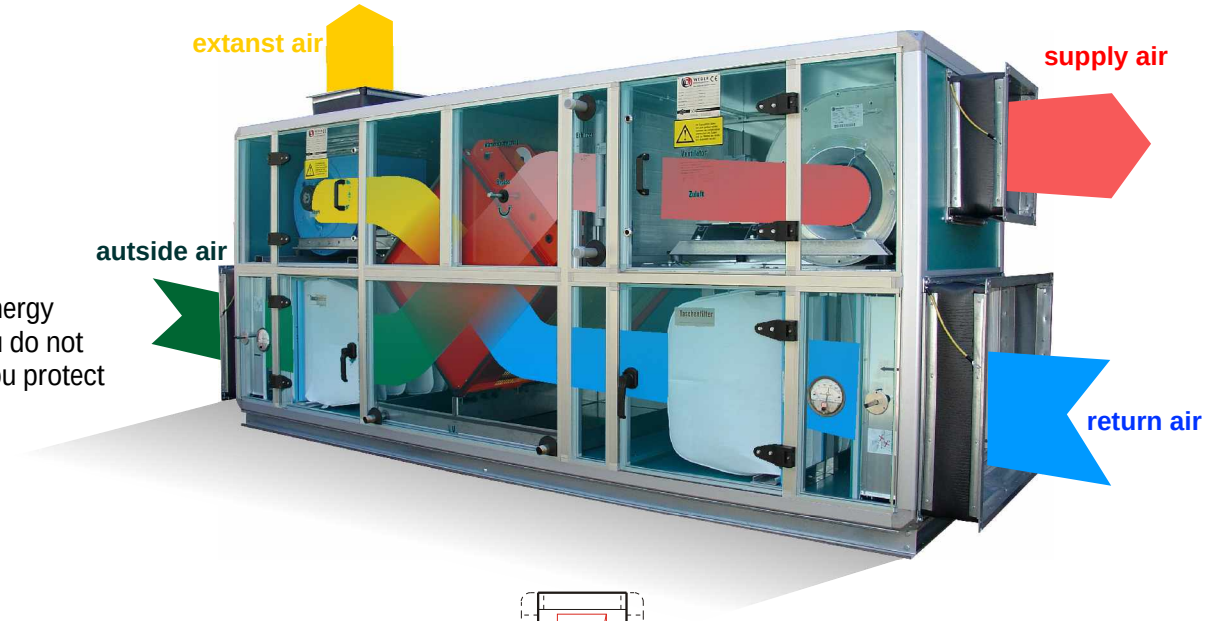
DIWER	h	h1	b	A	A2	P
64	230	474	610	230	556	457
66	230	667	610	230	556	610
96	230	667	915	230	556	610
126	340	667	1220	340	776	610
99	455	972	915	455	1006	610
129	455	972	1220	455	1006	762
1212	570	1277	1220	570	1236	762
1512	680	1277	1525	680	1456	915
1812	680	1277	1830	680	1456	915
1515	780	1582	1525	780	1656	915
1815	780	1582	1830	780	1656	915
1818	900	1887	1830	900	1896	1220
2118	900	1887	2135	900	1896	1220
2518	900	1887	2440	900	1896	1220
2121	1015	2192	2135	1015	2126	1220
2521	1130	2192	2440	1130	2356	1220
2525	1240	2497	2440	1240	2576	1220
2825	1240	2497	2745	1240	2576	1525
3125	1240	2497	3050	1240	2576	1525

Reserves of right for technical modifications
The indicated dimensions are not binding. The flexible WEGER production permits device manufacturing after measure.

Energie recovery systems

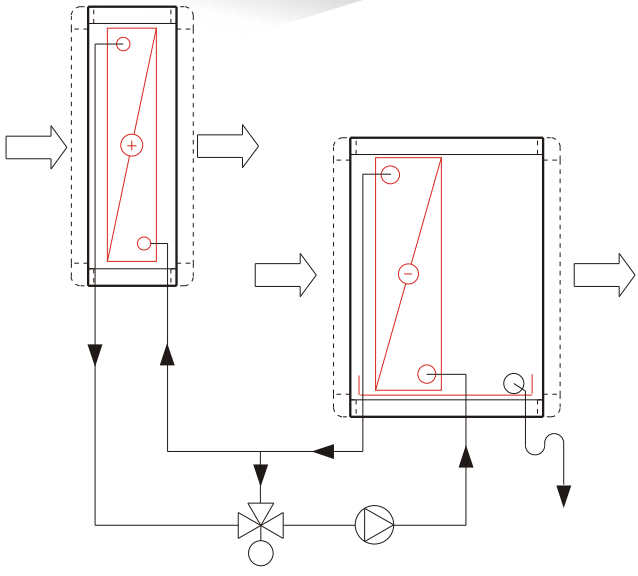
Heat recovery systems

If possible, each Air Handling Unit shut be complete with a heat recovery system. There are different types of heat recovery systems. The base principe of function of heat recovery systems is to take energy form the exhaust air and to put this energy to the fresh air.
We are able to offer all conventional heat recovery systems and can provide assistance and technical documentation to enable the customer to select the most suitable and efficient system for his application some of the systems we offer are:



Through the use of energy recovery systems you do not only save for cash, you protect also the environment.

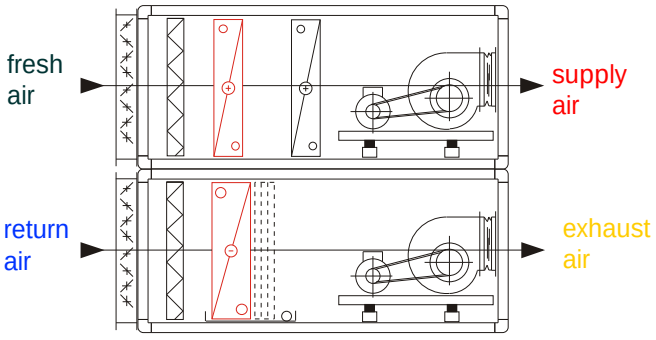
Regenerative Energie recovery system

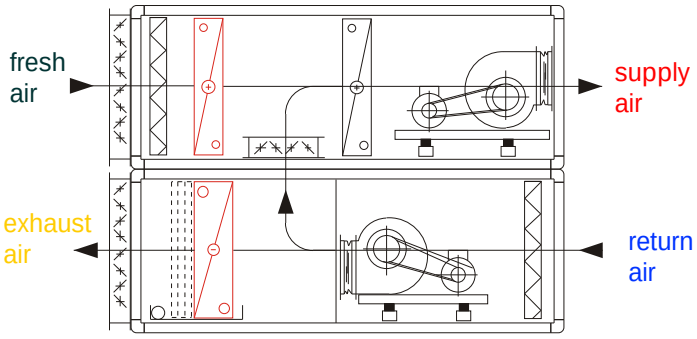


Coil Loop System

Function as described before
Advantages:
- small space for installation needed
- A.H.U. for return- and supply air can be mounted on differend positiones
- Air streams can't be mixed

Disadvantages:
- low efficiency
- electrical power is needed (for circulating Pump)



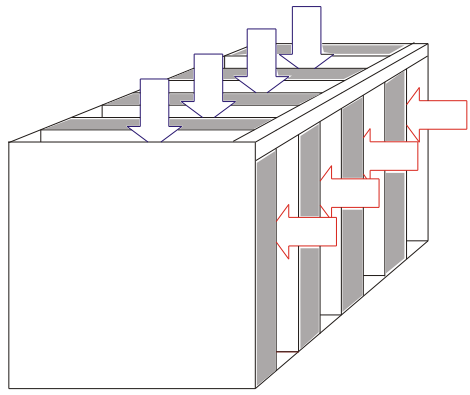


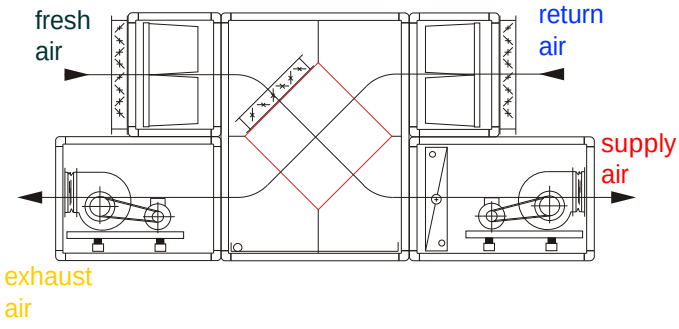
Rekuperative Energie recovery system

Plate heat exchanger

Function as described before
Advantages:
- No energy for action is needed
- No smell transfer between the air streams
- High efficiency

Disadvantages:
- Rel. big space is needed
- Exhaust- and supplyair must cross
- No humidity exchange





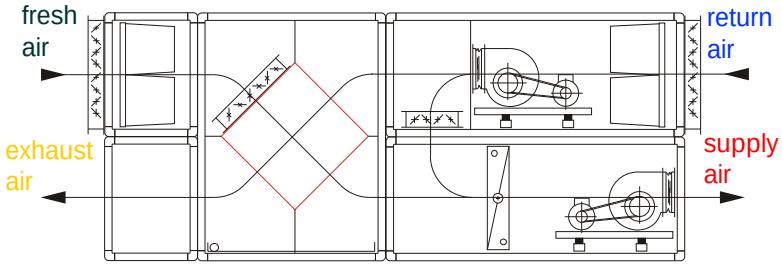


Plate heat exchanger are available in different executions

1. Without bypass.
2. With integrated bypass with damper:
   It could occure that at deep temperatures in the supply airside, the condensate, which is formed in the exhaust air, freezes. Therefore we recommend the use of plate heat exchangers with bypass. So the cold supply air can pass through the bypass section, defrost with warm exhaust air and the normal heat recovery can be recreated faster.

Materials of plate heat exchangers:

-Aluminium
-Aluminium with epoxy resin coating
-Stainless steel V2A
-Stainless steel V4A

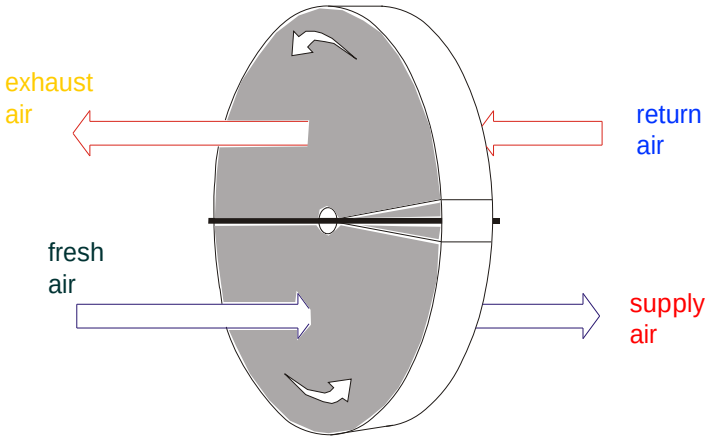
The plate heat exchangers in the executions aluminium coated and stainless steel are suitable for the use in air handling units for swimming pools.

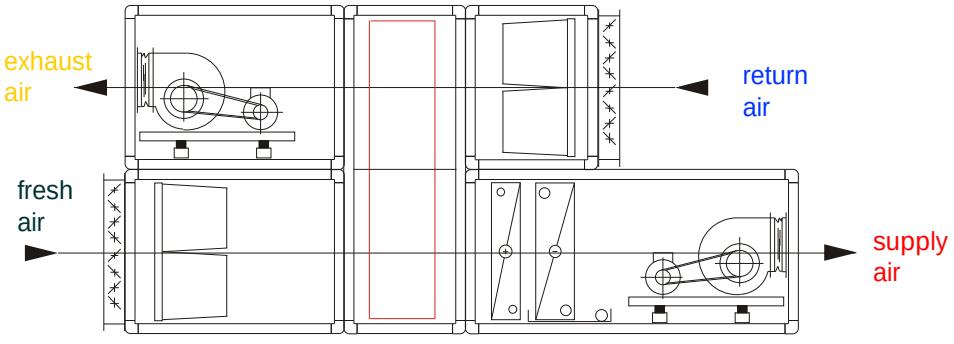
Regenerative Energie recovery system

Heat Wheel

Function as described before
Advantages:
- Also humidity can be exchanged
- Relative small space is needed
- High efficiency
- Easily power regolating by controling the wheel rotatig speed

Disadvantages:
- Also energy for put in action is needed
- Supply and exhaust air must be placed side by side
- Return air approx. 10 %, because of this also





Heatwheel executions

1. Sorbtion-regenerator

Due to a coating of the storage mass with this heatwheel also hmidity can be transfered .
The area of application of this types of heatwheels are: air handling units with humidification and cooling e.g. in office buildings and hospitals.

2. Condensation-regenerator

At this kind of heatwheel a humidifaction of the supply air takes place only at falling below the dew point of the exhausted air.
The area of application of this type of heatwheels are: simple ventilation systems without humidification and cooling e.g. schools, cinemas or churches.

3. Regenerator for industry-employment

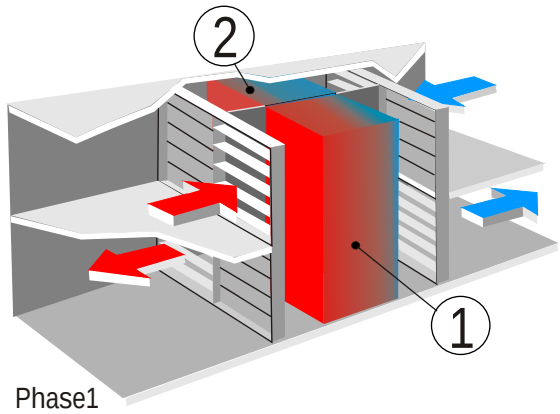
This kind of heatwheels are condensation regenerators, developed for the employment in plants with increased dirt waste in the exhausted air. They are available with cleaning equipment.
Typical operation areas are: large-scale catering establishments and industrial halls.

Regenerative energy recovery system

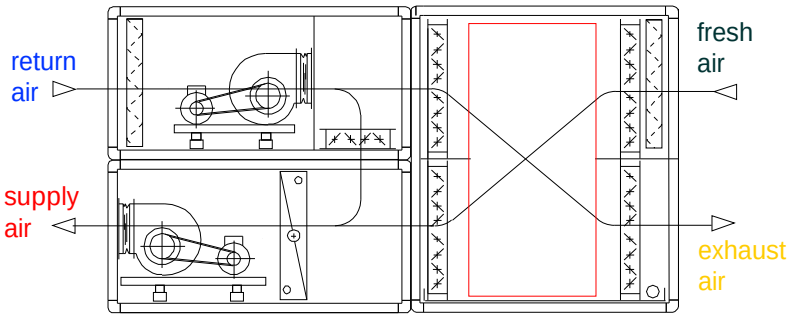
Accubloc

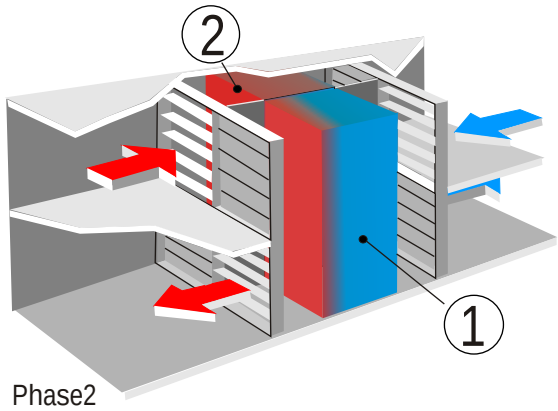
Function:
Accubloc is a regenerative heat exchanger with 2 or more static, not movable, heat packages made of highly warm-sensitive accumulator mass. By a before and after the heat package mounted damper system alternating the package will be loaded during simultaneous the other one will be unloaded. For this, the dampers are switched in regular intervals.

Depending upon assigned material a large part of humidity can be recovered also at the same time.



Phase1
The warm room air (exhaust air) will be brought by means of the damper system over the accumulator ① and heats this.
At the same time cold fresh air (supply air) flows through the in Phase 2 heated accumulator ② and warms up the air thereby nearly to ambient





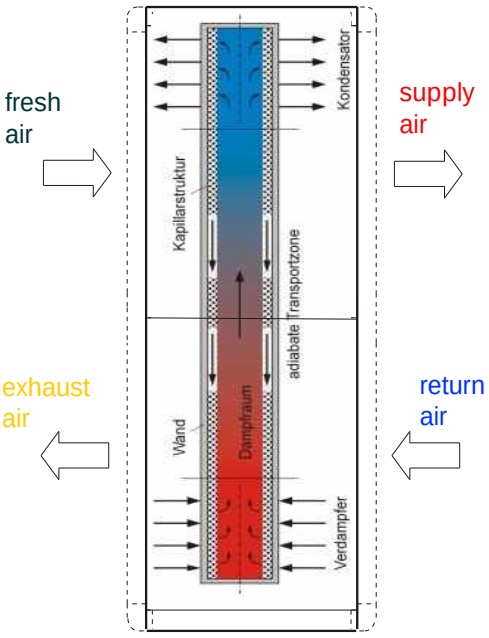
Phase2
By switching the damper cold fresh air (supply air) will be brought over the accumulator ① heated in Phase 1.
The warm exhaust air flows through the accumulator ② and heats this.

Regenerative Energie recovery system

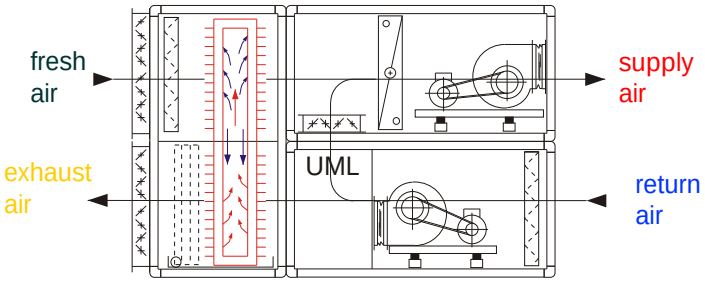
Heat Pipe

Function as described before
Advantages:
- small space for installation needed
- no energy for action is needed
- no smell transfer between the air streans

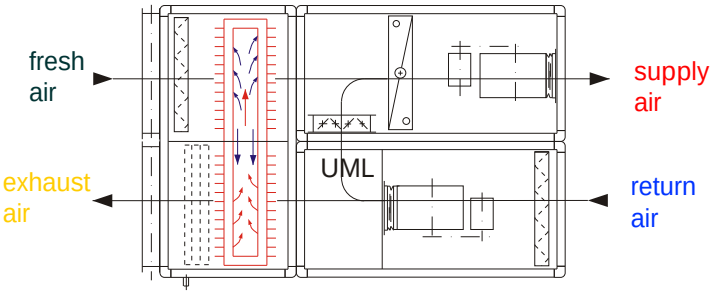
Disadvantages:
- low efficiency
- fresh and exhaust air must be aligned side by side and the warm air stream must be positioned lower than the cooler air stream



Calculation of heatpipes on demand



AHU one on the top of the other

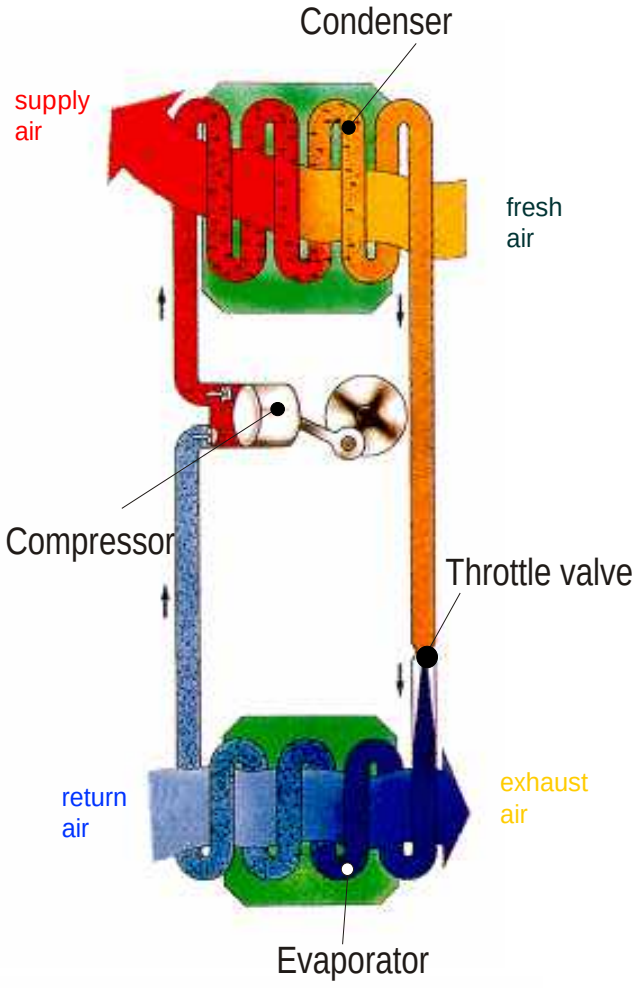


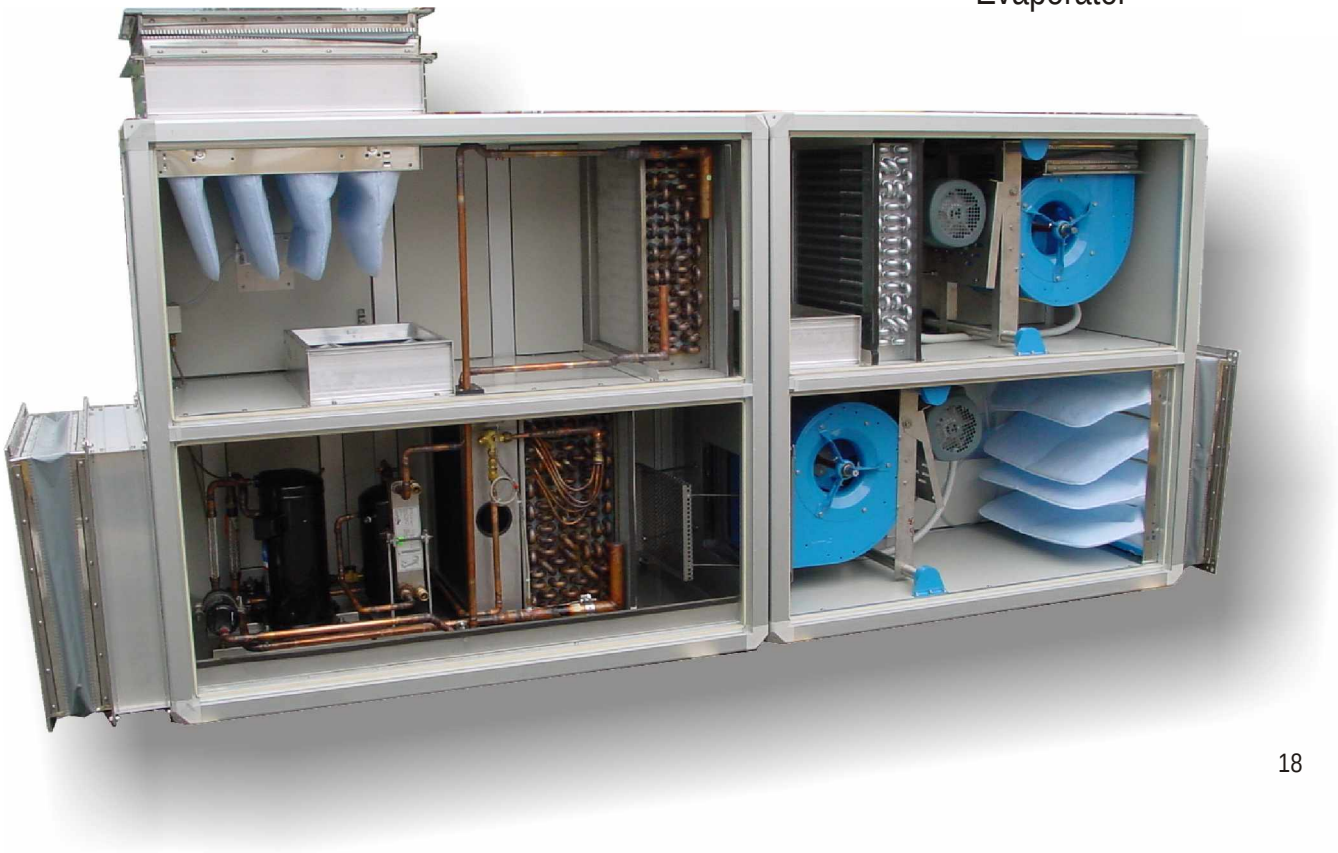
AHU side by side

Energie recovery systems

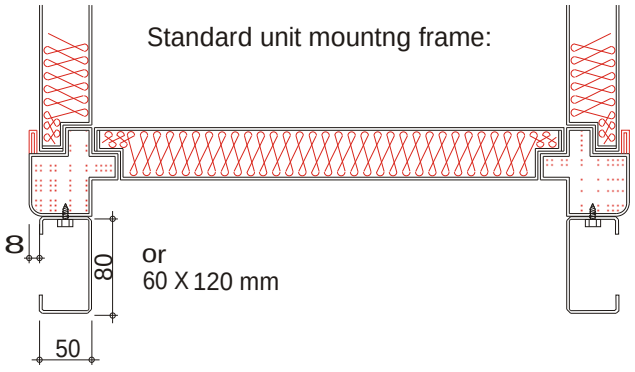
A further system of energy recovery is the “Heat Pump”

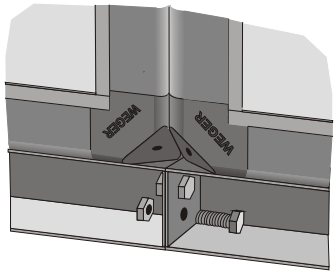
With this system warmth of the axhaust air is raised to a temperature level usable for heating purposes. A compressor carries the necessary work out for the heat formation from a low to a higter temperature level. The compressor sucks the refrigerant and compress it.This compression warms up the refrigerant. The compressed refrigerant delivers the taken up warmth to a second heat exchanger (condenser) again. The under high pressure staying refrigerant is eased over a throttle valve. Finally it is supplied to the evaporator and the circle will be closed.





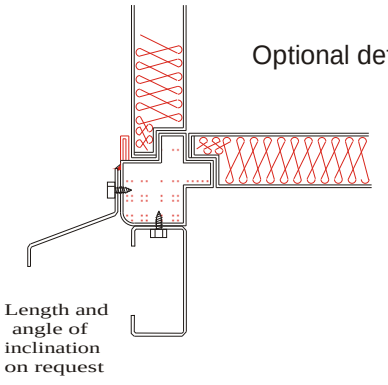
Unit mounting frames

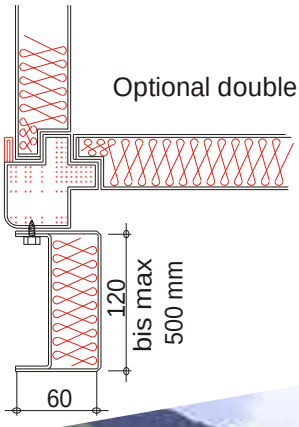




Connection of the modules
at the base frame

Connect the several modules at the base frame either with the supplied screws M8 x 30 or M10 x 30.

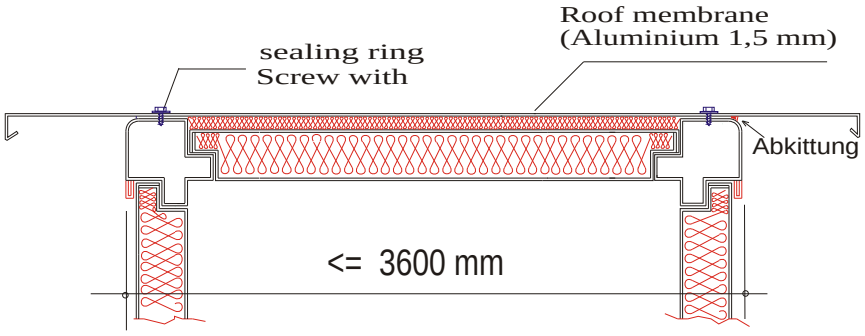




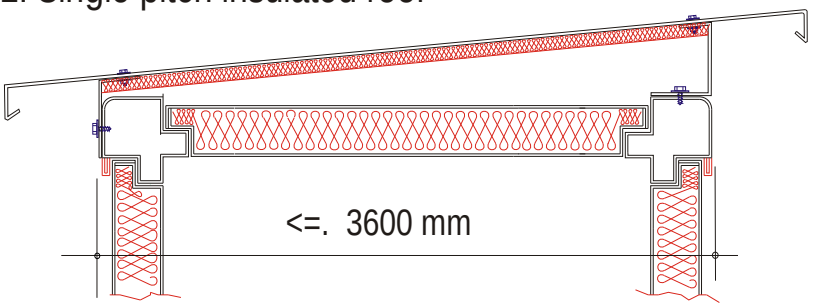
The different baseframes can aslo be combinated. For example baseframe insulated, 300 mm high, supporting panel 100 mm width with dropper nose (see example on the next page).

Roof designs

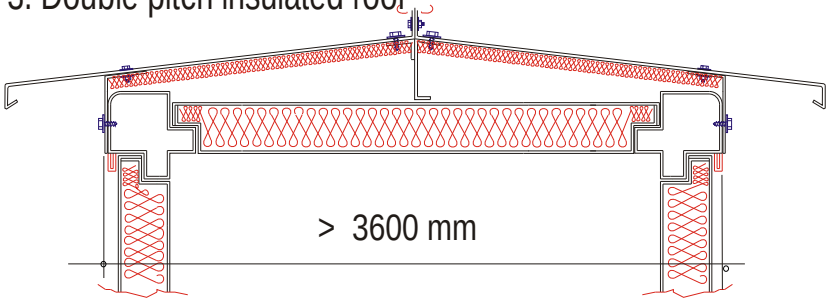
1. Standard weatherproof roof



2. Single pitch insulated roof



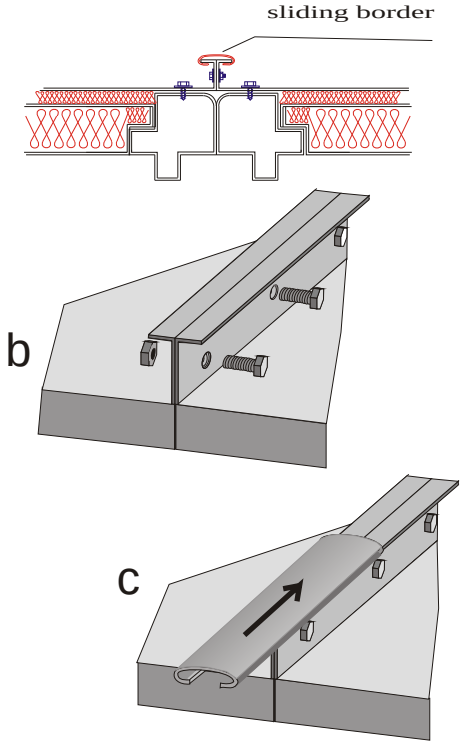
3. Double pitch insulated roof

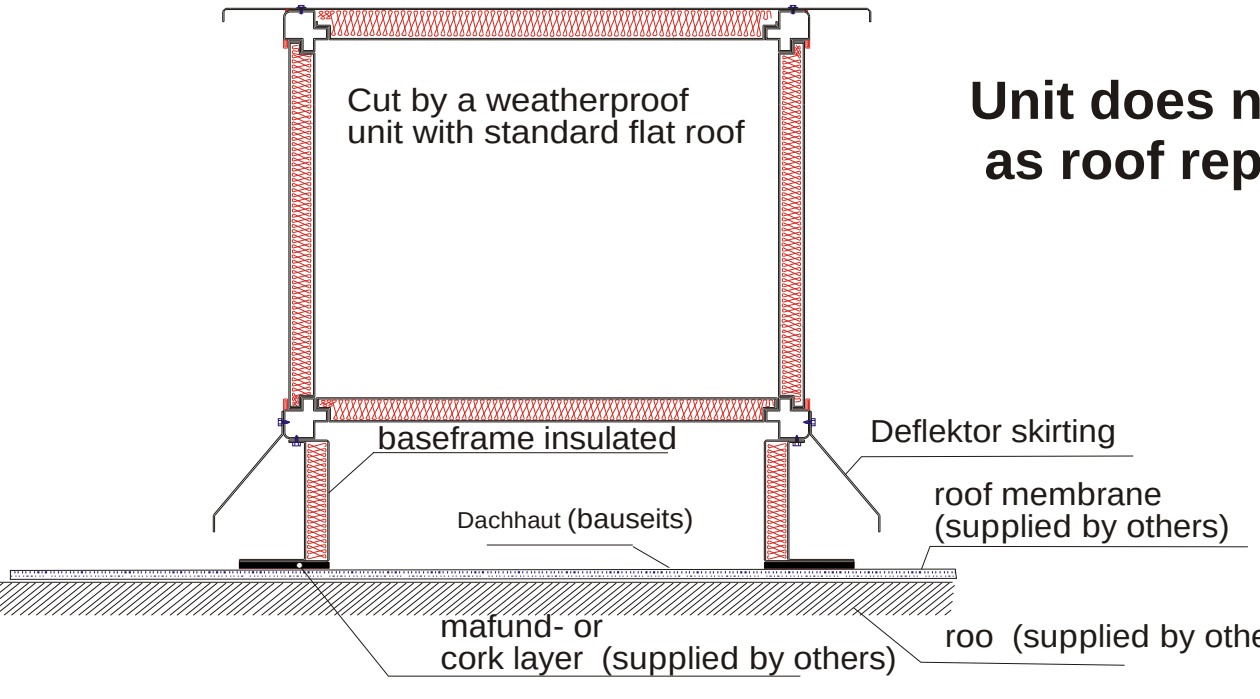


Connection of the roof-mounted units

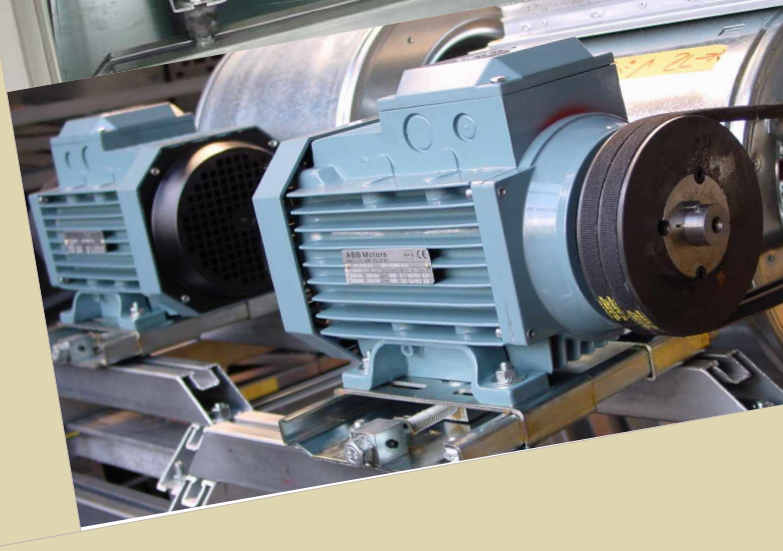
The connection of roof-mountd units follows in3 steps:
a) Sealing the unit flanges between the several modules
b) Connection with the srews (look the picture)
c) Assembly of the sliding stripe (look the picture)

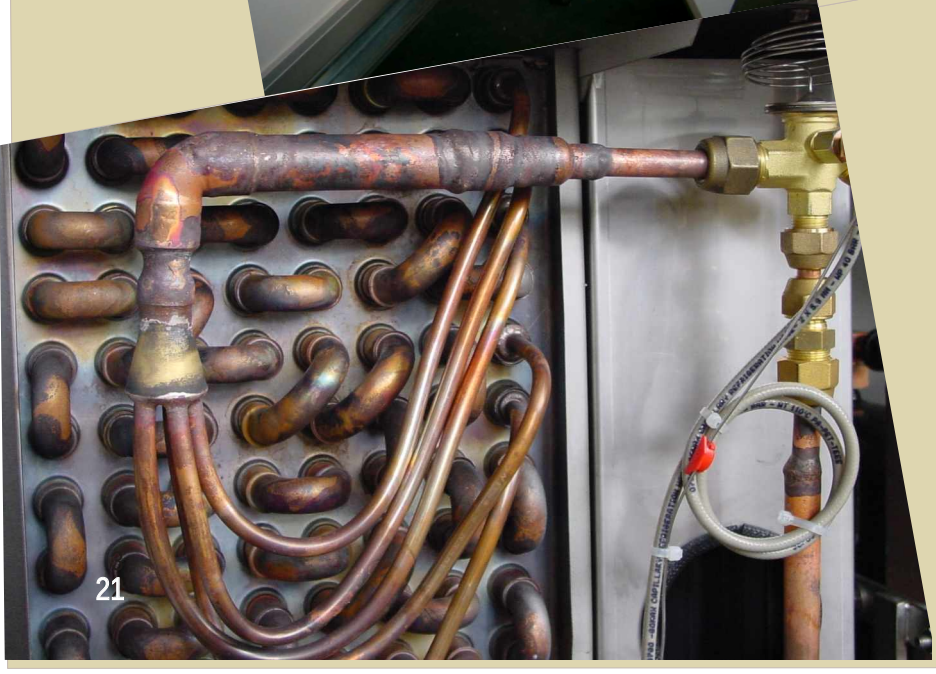
- To exactly position the unit on the base it can be manhandled over a cedntrally positioned bar using a lever action In this event the bar must only bear against the base frame.





Unit does not work as roof replacement





some details

Worldwide...

quality austria
SYSTEM CERTIFIED
ISO 9001:2008 | RT-05 | OHSAS 18001:2007

References

Automotive

Pharmaceutical industry

Banking/Services

Food industry

Retail market

Industry

A company from
SÜDTIROL

WEGER
air solutions

WEGER WALTER Srl
Zona Artigianale 5
I- 39030 CHIENES (BZ)

Tel. +39 0474 565253
Fax. +39 0474 565011

Mail: info@weger.it
Internet: www.weger.it