

## **Air Handling Units**

Heating | Cooling | Air Renewal

# Air Renewal in Combination with High Efficiency Heat Recovery

## → Why Schwank?

Since the invention of gas infrared heaters in 1939, Schwank has equipped countless buildings with high performance and efficient heating solutions. Our customers appreciate Schwank's high-quality products and reliable all-round service - from the initial concept up to the installation and service.

Modern buildings today require more than just heat and sealed buildings require air in many cases air renewal. For this purpose efficient heat recovery technology is being used in order to save energy. Likewise employees' demands at workplace are increasing just as much as the demands on modern production processes. Today, our customers demand a comprehensive, economical and ecological solution for heating, ventilation and increasingly for cooling purposes.

Schwank engineers combine modern air renewal equipment with innovative heat pumps, e.g., with a gas engine or an all electric drive. If desired a customised control technology ensures maximum system efficiency. All from one source.

Made in Germany



## Why Air Renewal in Buildings?

Mechanical air renewal systems can be necessary in industrial and commercial facilities for various reasons, for instance:

- Increase of productivity by providing
  - greater comfort to employees
  - Safeguarding employees' health and reduced downtime
- Support of seasonal needs of a building in terms of heating or air conditioning
- Removal of internal loads, e.g. machine heat
- Removal of pollutants from the facility by
  - Displacement
  - Dilution
- Avoidance of particle inflow from outside in sensitive processes
- Guarantee of defined room conditions for critical processes or storage
  - Temperature
  - Humidity





# Our System's Modules for an Efficient Indoor Climate

## Gas Heat Pump

Low energy consumption,  
Use of free environmental heat  
Can be combined with EHP

## Air Handling Unit

Compact air renewal including  
heat recovery

## Electric Heat Pump

High COP,  
wide performance classes

## Chiller

Coverage of large  
power classes



## Air Curtain

Reduction of  
heat losses

## Tube Heater

Low investment costs,  
high efficiency



## Control

Intelligent  
networking of the  
systems



## → Advantages of Decentralised Ventilation

### With Efficient Heat Recovery Technology

A decentralised system is defined by placing: several smaller units on the roof of the building opposed to a central system where only one unit supplies the whole building. Every decentralised unit has its own supply and exhaust air in combination with the temperature media integrated in one unit with only one roof penetration into the building. The supply air is supplied into the ceiling area or taken into the lower building area, depending on the requirements and structural conditions. There is no need for a complicated and expensive air duct system. This has many benefits:



Reduced pressure losses saving energy costs



More precise zone control



No cleaning of ducts



Distribution of the roof load over several units



No penetration of fire compartments within the building



Fewer collisions with other components



Increased accessibility for servicing or repairs



## Why Cooling Buildings?

There are several reasons for cooling large spaces, especially industrial buildings:

### Products

Some products require certain temperatures in order not to perish. Some of our customers have used our cooling systems to maintain temperatures especially in summer to warrant the quality of the products, such as for pharmaceutical products, chocolates or cosmetics.

### Production

In some cases it is necessary to keep the room temperature within a small tolerance to ensure precision of certain parts. In combination with cooling the system can control the temperature with the required accuracy. Another reason for cooling down the facility is when process heat is prevalent. Process heat can negatively influence the temperature conditions.

### Work Performance & Comfort

It is proven that the work performance of people decreases when exposed to higher temperatures, while the frequency of accidents increases. Economic considerations therefore lead to the question of whether it makes sense to add a cooling system.

For cooling purposes, Schwank offers various cooling generators:

- Gas heat pumps
- Hybrid systems [combination of gas engine heat pump and electric drive]
- Electric heat pumps
- Chillers

# Compact Air Handling Units

## aeroSchwank H-RI



**Decentralised air handling unit for roof top installations**

The most important advantages of aeroSchwank H-RI:

- Designed for decentralised building air renewal
- Highly efficient counterflow heat exchanger
- 4 sizes from 500 - 15,000 m<sup>3</sup>/h
- Sealing of the device's socket with hat profiles without silicone
- Integrated roof base - single penetration
- Exhaust/outlet can be integrated

## aeroSchwank H-R



**Flexible air handling unit with duct connection for outdoor installations**

The most important advantages of aeroSchwank H-R:

- Weatherproof for outdoor installation - not only for roof-top applications
- Sealing of the device's socket with hat profiles without silicone
- Highly efficient counterflow heat exchanger
- 10 sizes from 500 - 15,000 m<sup>3</sup>/h
- Extensive range of accessories, e.g., gas pre-mix modulation burners

## aeroSchwank H



**Compact air handling unit for indoor installation**

The most important advantages of aeroSchwank H:

- Highly efficient counterflow heat exchanger
- Flexible due to 10 sizes from 500 - 15,000 m<sup>3</sup>/h
- Numerous channel connection variants [lateral, top, bottom]
- Extensive range of accessories, e.g., gas pre-mix modulation burners

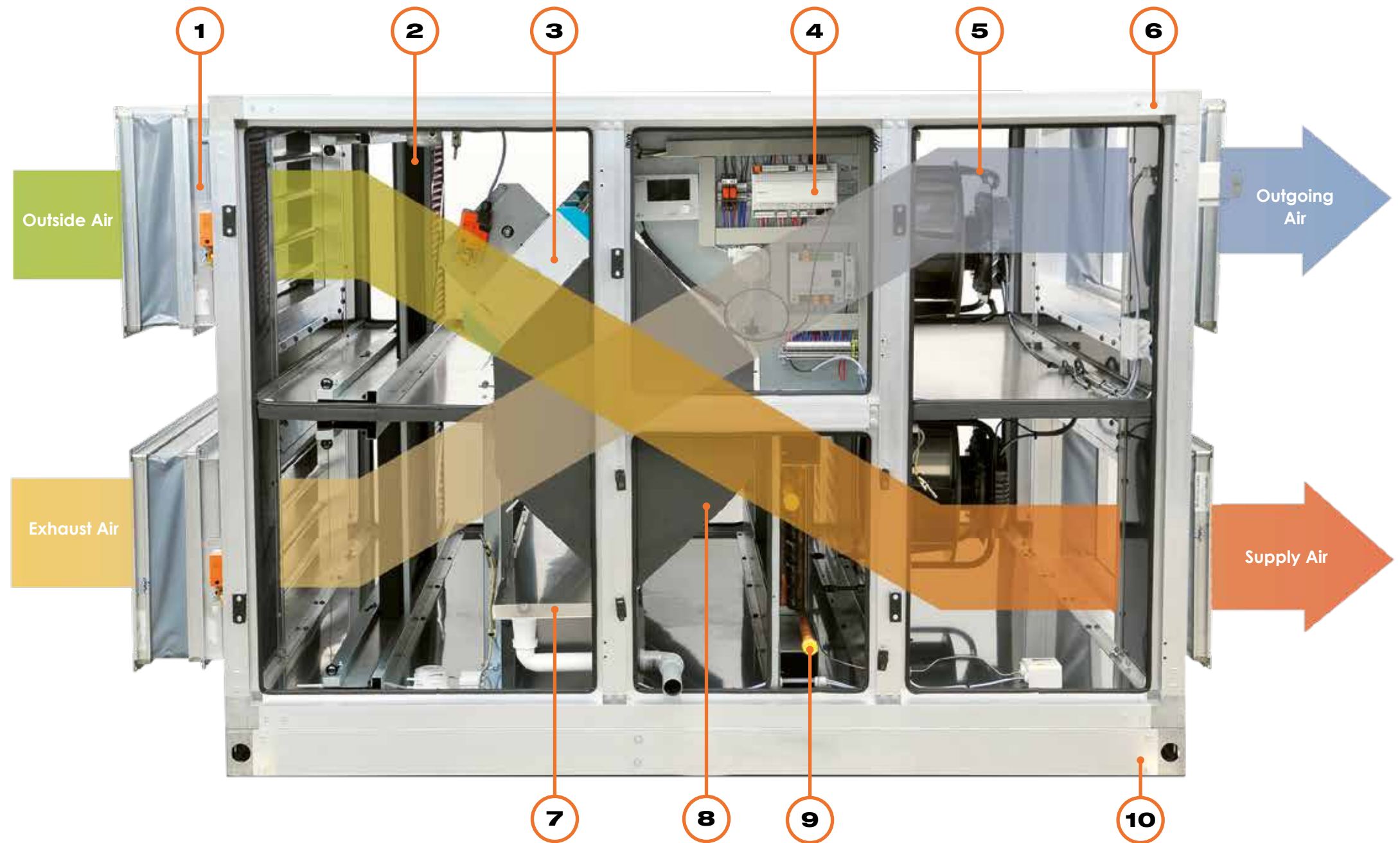


# The Principle - Heat Recovery

## aeroSchwank

All advantages at a glance

- High-efficiency plate heat exchanger for heat recovery of up to 90% efficiency
- Energy-saving EC motor technology
- Control concept for pump warm water [PWW]/electric/heat pump/free cooling
- Compact design with high-quality manufactured housing
- Optionally equipped with Z-Line filter or pocket filter
- Plug & play technology
- 100% summer bypass
- Smart accessories
- Reliable customer service



- |                         |                       |                           |                     |                 |                              |                           |  |                           |                      |
|-------------------------|-----------------------|---------------------------|---------------------|-----------------|------------------------------|---------------------------|--|---------------------------|----------------------|
| <b>1</b> Blinds-dampers | <b>2</b> Filter M5/F7 | <b>3</b> Bypass-flap 100% | <b>4</b> Regulation | <b>5</b> EC-Fan | <b>6</b> aeroSchwank Housing | <b>7</b> Condensation-tub | <b>8</b> Countercurrent heat exchanger | <b>9</b> Heating coil PWW | <b>10</b> Base-frame |
|                         |                       |                           |                     |                 |                              |                           |  |                           |                      |

# Full Control – Integrated Control Technology

## Volume flow control

- Stepless 0 - 100% via 3 step automatic

### Optional:

- Constant volume flow
- Constant pressure
- CO<sub>2</sub>-regulation
- Humidity control



## Bypass summer / winter

- Internal sensors with adjustable limit values for heat recovery
- Free Cooling

## Filter monitoring

- Pressure box 0/1

## Recirculation damper

- only in night mode ON

## Fire Alarm control panel shutdown

- Supply and exhaust air from
- Exhaust air from

## Icing protection of heat exchanger

- Pressure box 0/1

### Optional:

- Electric preheating register

## Control type

- Exhaust air cascade
- Space cascade
- Supply air cascade

## Reheating coil

### Optional:

- Pump warm water register
- Electric heating coil
- Heat pump [heating and cooling]
- Gas pre-mix burner

## Cooling

- Free Cooling

### Optional:

- Cooling coil – cold pump water
- Cooling coil DX Heat pump

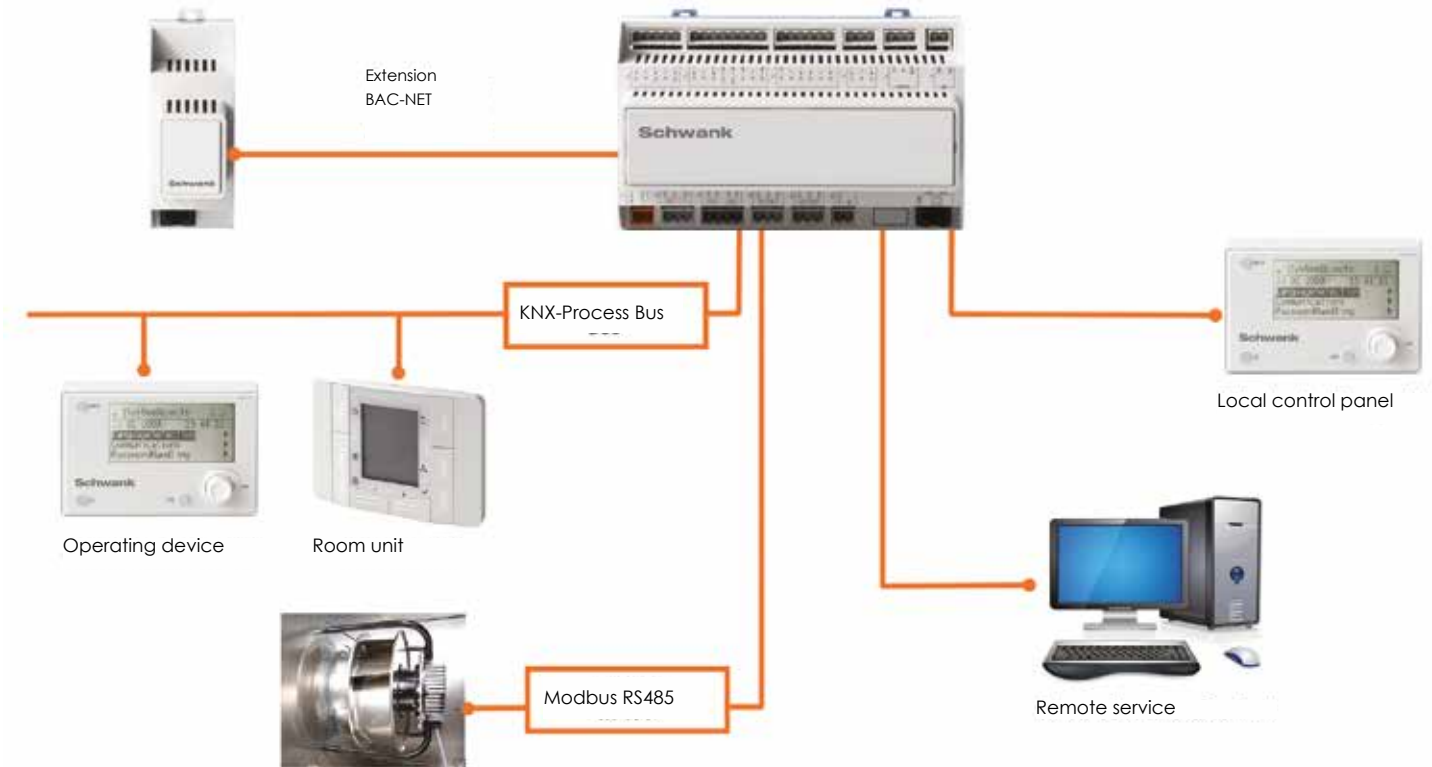
## Communication

- cloud-based remote maintenance system
- App Control
- SD card and internal memory

### Optional:

- Web communication via TCP/IP [optional]
- BACnet; Mod bus; KNX; Lon
- Connection to shop systems

# The Schwank Control Unit Prewired, tested and adapted



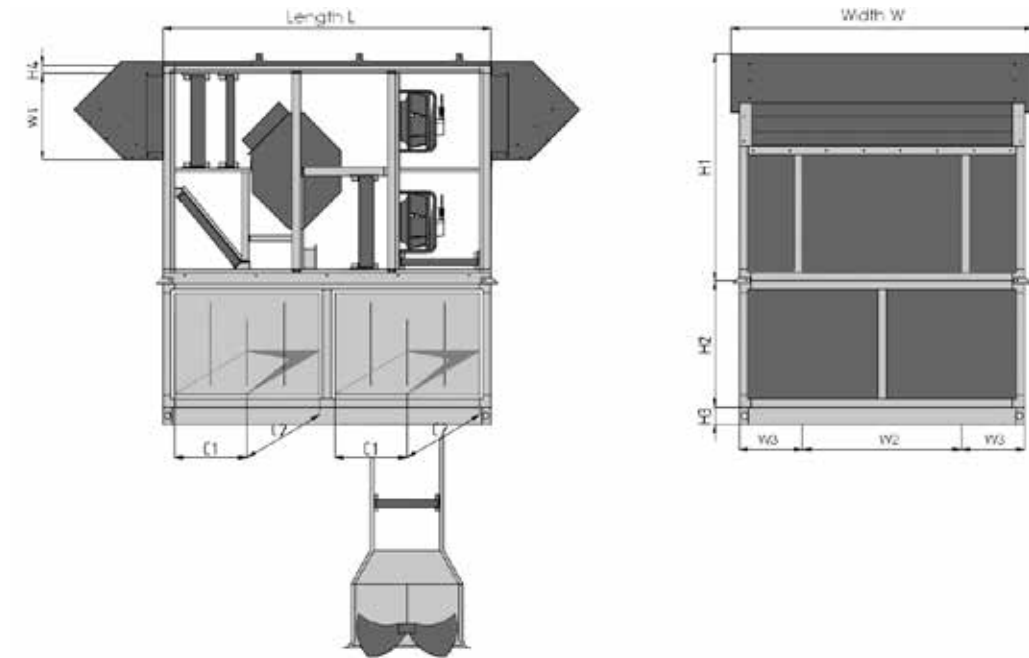
## Advantages

- Unit for onsite operation
- Operating unit [HMI] for commissioning and additional features
- Factory pre-programmed and configured control
- User-friendly menu navigation
- Expansion modules with m1 BACnet interface [pre-programmed] \*
- Remote service via TCP / IP\*
- CO<sub>2</sub> / pressure or flow rate constant control possible
- Software updates via SD card

\* optional

# aeroSchwank H-RI

Decentralised air handling unit for roof top installations



## aeroSchwank H-RI

	3500	5000	8000	12500
Panel size [mm]	42	42	42	42
Width W [mm]	1720	2260	2440	3000
Height H [mm]	1300	1300	1485	1900
Length L [mm]	1980	1980	2260	2550
H1	1300	1300	1485	1900
H2	750	750	750	750
H3	100	100	100	100
H4	50	50	50	50
W1	450	450	550	650
W2	960	1250	1800	2000
W3	380	505	320	500
C1	910	910	1050	1175
C2	1410	1910	2090	2650
Weight* [kg]	815	947	1331	1854

aeroSchwank H-RI	Volume flow m <sup>3</sup> /h	Efficiency %	Heat recovery* kW	Supply air temperature* °C	Max. ext. pressure Pa	Power consumption** kW	SFP internal [ErP] W/[m <sup>3</sup> /s]	Voltage V	ErP 2018	Sound pressure level*** dB[A]	Number of selections****
<b>3500</b>	min. 500 opt. 3500 max. 5100	95,1 89,1 87,5	5,38 35,27 50,46	20,3 18,3 17,8	400 400 200	0,415 2,135 2,914	99 505 915	230 400 400	✓	35,4 32,3 34,8	2
<b>5000</b>	min. 630 opt. 5000 max. 6200	95,2 88,7 87,9	6,79 50,16 61,63	20,4 18,2 17,9	400 400 200	0,454 3,175 3,809	88 558 885	230 400 400	✓	35,9 35,2 38,3	2
<b>8000</b>	min. 1080 opt. 8000 max. 10000	96,1 89,7 88,8	11,75 81,16 100,42	20,7 18,5 18,2	400 400 200	1,226 4,844 5,217	135 595 851	400 400 400	✓	38,8 34,3 40,1	2
<b>12500</b>	min. 1550 opt. 12500 max. 15400	96,7 90,1 89,3	16,96 127,39 155,53	20,9 18,6 18,4	400 400 200	1,355 3,528 8,422	107 577 848	400 400 400	✓	38,0 35,8 40,1	4

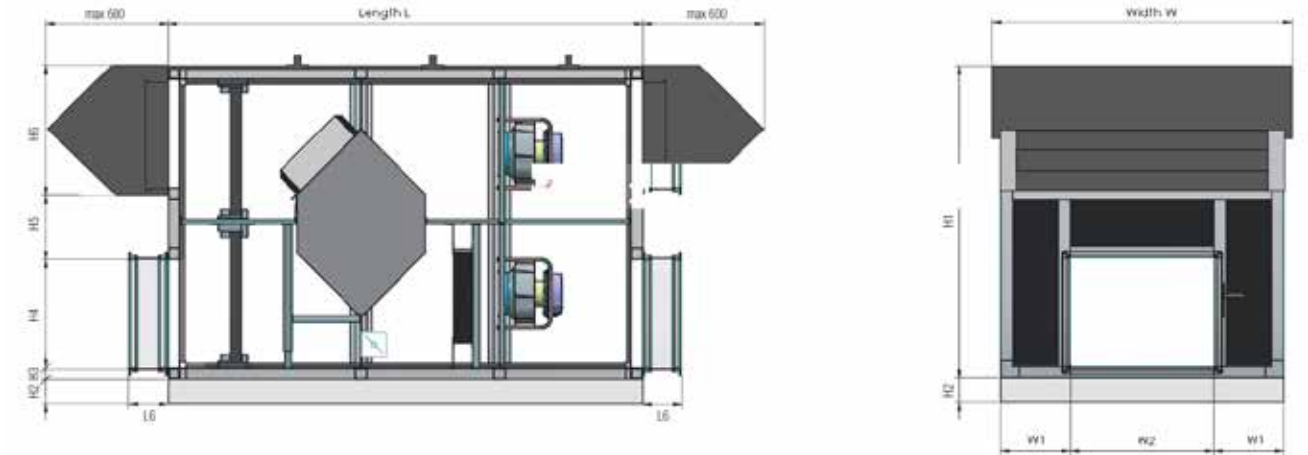
Please indicate the direction of air flow when placing your order.  
\* Exact weight data provided by design software

Exact technical data at the operating point are provided by the design software. Outside air -12°C/90%, exhaust air 22°C/50% humidity  
\* Outside air -12°C/90%, Exhaust air 22°C/50%, humid I \*\* At 400/200 Pa external pressure \*\*\* Distance from the sound source 5m, 250 Hz  
\*\*\*\* Depending on the project, the units may be delivered in several sections.



# aeroSchwank H-R

Flexible air handling unit with duct connection for outdoor installations



## aeroSchwank H-R

	1200	2500	3500	5000	6000	7500	8000	9500	11000	12500
<b>Panel size [mm]</b>	42	42	42	42	42	42	42	42	42	42
<b>Width W [mm]</b>	740	1180	1720	2260	2260	2650	2440	2760	2710	3000
<b>Height H [mm]</b>	1200	1300	1300	1300	1450	1450	1485	1485	1630	1990
<b>Length L [mm]</b>	1830	1980	1980	1980	2120	2120	2260	2260	2490	2550
<b>L6 [mm]</b>	125	125	125	125	125	125	125	125	125	125
<b>H1</b>	1200	1300	1300	1300	1450	1450	1485	1485	1630	1990
<b>H2</b>	100	100	100	100	100	100	100	100	100	100
<b>H3</b>	50	50	50	50	50	50	50	50	50	50
<b>H4</b>	400	450	450	450	550	550	550	550	650	650
<b>H5</b>	200	300	300	300	250	250	285	285	230	500
<b>H6</b>	50	290	380	505	505	575	320	380	405	500
<b>W1</b>	50	290	380	505	505	575	320	380	405	500
<b>W2</b>	640	600	960	1250	1250	1500	1800	2000	1900	2000
<b>Weight* [kg]</b>	347	512	689	837	962	1103	1183	1243	1406	1705

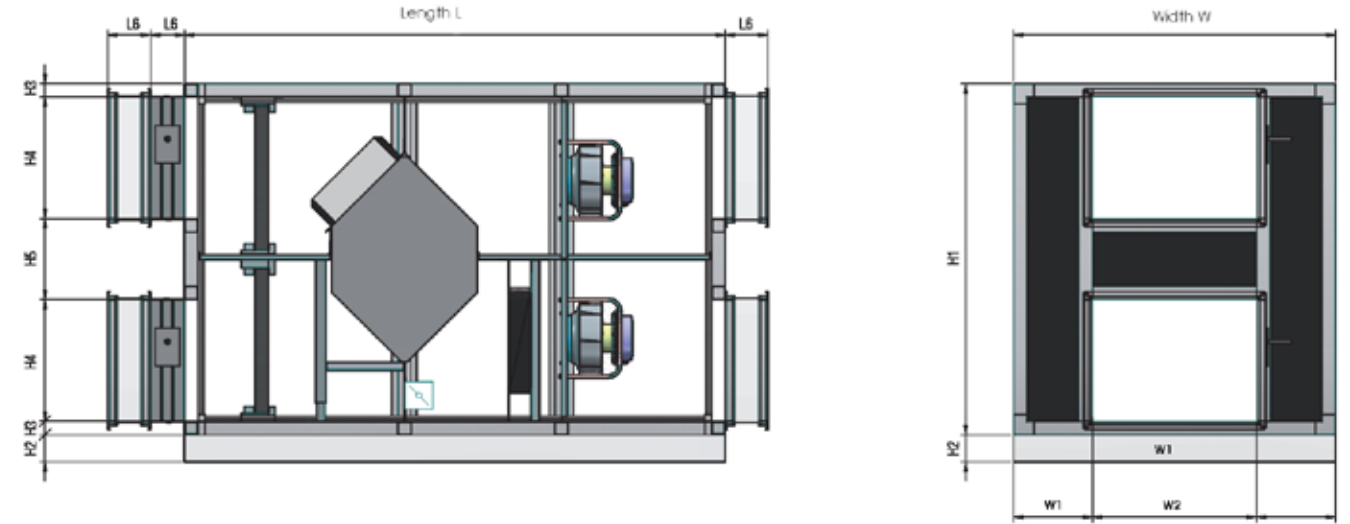
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aeroSchwank H-R	Volume flow m <sup>3</sup> /h	Efficiency %	Heat recovery* kW	Supply air temperature* °C	Max. ext. pressure Pa	Power consumption** kW	SFP internal [ErP] W/[m <sup>3</sup> /s]	Voltage V	ErP 2018	Sound pressure level*** dB[A]	Number of selections****
<b>1200</b>	min. 280	94,2	2,98	20,0	400	0,350	165	230	✓	34,9	1
	opt. 1200	88,9	12,06	18,2	400	0,847	613	230			
	max. 1800	87,3	17,77	17,7	200	1,043	1003	400			
<b>2500</b>	min. 400	94,8	4,29	20,2	400	0,384	111	230	✓	35,1	1
	opt. 2500	88,7	25,08	18,2	400	1,612	579	400			
	max. 3600	87,3	35,54	17,7	200	2,046	967	400			
<b>3500</b>	min. 500	95,1	5,38	20,3	400	0,415	99	230	✓	35,4	1
	opt. 3500	89,1	35,27	18,3	400	2,135	505	400			
	max. 5100	87,5	50,46	17,8	200	2,914	915	400			
<b>5000</b>	min. 630	95,2	6,79	20,4	400	0,454	88	230	✓	35,9	1
	opt. 5000	88,7	50,16	18,2	400	3,175	558	400			
	max. 6200	87,9	61,63	17,9	200	3,809	885	400			
<b>6000</b>	min. 780	95,8	8,46	20,6	400	1,152	171	400	✓	39,4	1
	opt. 6000	89,2	60,53	18,3	400	3,739	634	400			
	max. 7400	88,3	73,89	18,0	200	3,77	847	400			
<b>7500</b>	min. 900	95,9	9,77	20,6	400	1,183	157	400	✓	39,1	1
	opt. 7500	89,0	75,49	18,3	400	4,722	667	400			
	max. 8800	88,3	87,87	18,0	200	4,569	851	400			
<b>8000</b>	min. 1080	96,1	11,75	20,7	400	1,226	135	400	✓	38,8	1
	opt. 8000	89,7	81,16	18,5	400	4,844	595	400			
	max. 10000	88,9	100,42	18,2	200	5,217	851	400			
<b>9500</b>	min. 1240	96,1	13,49	20,7	400	1,269	122	400	✓	38,5	1
	opt. 9500	89,5	96,16	18,4	400	5,925	634	400			
	max. 11000	88,9	100,59	18,2	200	5,873	838	400			
<b>11000</b>	min. 1550	96,6	16,95	20,8	400	1,355	110	400	✓	38,0	2
	opt. 11000	90,2	112,22	18,7	400	7,784	662	400			
	max. 13100	89,5	132,6	18,4	200	7,59	875	400			
<b>12500</b>	min. 1550	96,7	16,96	20,9	400	1,355	107	400	✓	38,0	2
	opt. 12500	90,1	127,39	18,6	400	7,528	577	400			
	max. 15400	89,3	155,53	18,4	200	8,422	848	400			

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\* Outside air -12°C/90%, Exhaust air 22°C/50%, humid I \*\* At 400/200 Pa external pressure \*\*\* Distance from the sound source 5m, 250 Hz  
\*\*\*\* Depending on the project, the units may be delivered in several sections.

# aeroSchwank H

Compact air handling unit for indoor installation



## aeroSchwank H

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<b>Length L [mm]</b>	1830	1980	1980	1980	2120	2120	2260	2260	2490	2550
<b>L6 [mm]</b>	125	125	125	125	125	125	125	125	125	125
<b>H1</b>	1200	1300	1300	1300	1450	1450	1485	1485	1630	1990
<b>H2</b>	100	100	100	100	100	100	100	100	100	100
<b>H3</b>	50	50	50	50	50	50	50	50	50	50
<b>H4</b>	400	450	450	450	550	550	550	550	650	650
<b>H5</b>	200	300	300	300	250	250	285	285	230	500
<b>W1</b>	50	290	380	505	505	575	320	380	405	500
<b>W2</b>	640	600	960	1250	1250	1500	1800	2000	1900	2000
<b>Weight* [kg]</b>	310	457	615	747	859	985	1056	1110	1255	1549

aeroSchwank H	Volume flow m³/h	Efficiency %	Heat recovery* kW	Supply air temperature* °C	Max. ext. pressure Pa	Power consumption** kW	SFP internal [ErP] W/[m³/s]	Voltage V	ErP 2018	Sound pressure level*** dB(A)	Number of selections****
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→ **Innovation. Experience. Expertise.**

**Experience Creates Confidence.**

For decades the name Schwank has been synonymous with high-quality and economical heating and cooling systems. As market leader for gas infrared heating systems Schwank has extensive experience - over 200 000 satisfied customers and more than 2.5 million manufactured units.

As a German manufacturer, we stand by our claim to offer products and to deliver services of the highest quality. An economical and CO<sub>2</sub> & NO<sub>x</sub> - minimised working method guarantees each of our products. With Schwank, you can rely on a manufacturer of the highest quality.



**United Kingdom**

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