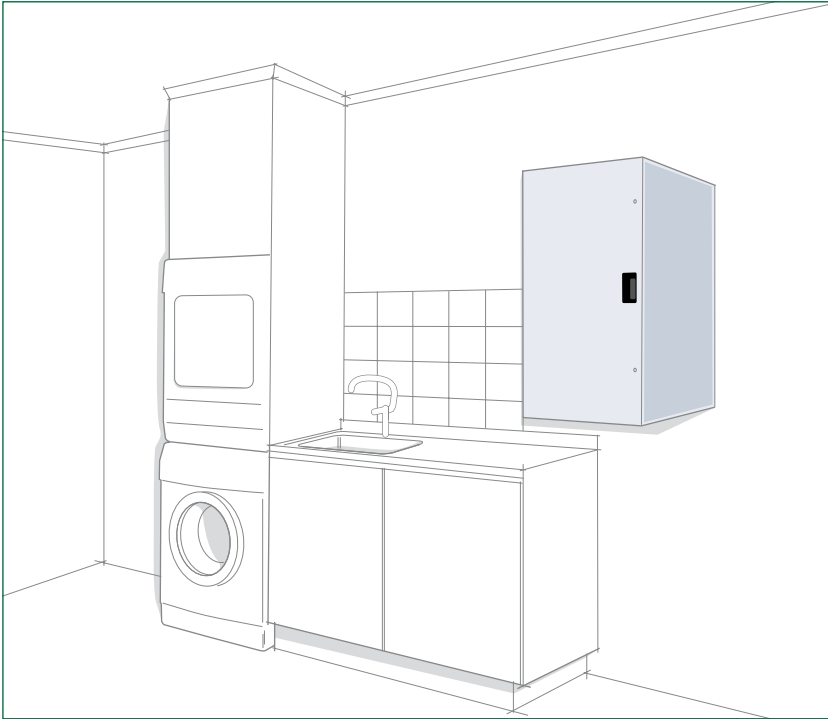


Heat recovery unit RDAR

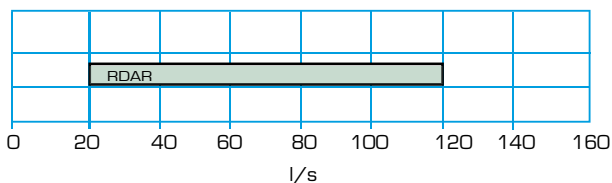


The RDAR heat recovery unit is a component in the Rexovent/Minivent systems. This unit has been developed from our RDAB unit and has a rotary heat exchanger with high temperature efficiency. RDAR has a built-in control equipment and can be supplied with an external control panel. It is primarily intended for homes and small commercial premises. The unit does not need draining, which is a great advantage when replacing existing installations. The unit has all connectors facing upwards and is intended for wall mounting or standing or lying with the door facing upwards. RDAR can be placed in cold spaces, for example attics.

Energy consumption

RDAR is an extremely energy efficient heat recovery unit that reduces energy consumption remarkably. The reduction is possible because the fans are driven by EC motors, which have an energy consumption of only 50 - 60 percent of that of an equivalent AC motor. The RDAR unit also has a rotary heat exchanger. It is so effective that supplementary heating is only needed at outside temperatures of below 10° C.

Air flow chart



Product data

- Up to 83% temperature efficiency
- Supply and exhaust air flows between 20-120 l/s
- Can serve living areas up to 350 m²
- Filter, class F5/G4
- High efficient EC motors
- Individually adjustable fans
- No need for drainage
- Easy to install
- Service friendly

Product code example

RDAR-01-1-1-1

Description, material, technical data

Casing

The outer casing is made of white painted sheet metal and the inner casing of galvanized sheet metal with an intermediate layer of 25 mm mineral wool insulation. The unit door is locked with screws and has flush handles.

Fans

The fans are driven by very quiet and energy efficient EC motors. The fans are easy to remove for service and maintenance. The speed of the fans can be independently regulated steplessly.

Heat exchanger

The heat exchanger is an aluminium rotary heat exchanger. It has a temperature efficiency up to 83%.

The unit is fitted with an automatic defrost function controlled by outside temperature.

The heat exchanger can easily be removed for cleaning.

Preheater and afterheater

The unit is prepared for a built-in electric preheater and afterheater. In areas where the rated outside temperature (DUT5) is lower than -25°C the installation is fitted with a preheater.

The preheater is controlled by a thermostat. The afterheater in the unit regulates the supply air temperature. The unit can easily be retrofitted with a preheating and afterheating battery. The afterheater is available as electric coil or water coil. Valve, actuators, frost protection and control of water coil are not included.

Filter

The unit is fitted with filters in F5/G4 classes.

Sound data

The fan curves in the diagrams relate to the supply air duct and the exhaust air duct on the outlet side of the unit.

Sound power level per octave band dB, is calculated from (L_{wA}) + in the diagram + octave band correction (with sign) according to the table below.

Sound path	Octave band, mid-frequency, Hz							
	63	125	250	500	1k	2k	4k	8k
Supply air duct, dB	13	9	2	-4	-8	-11	-16	-21
Exhaust air duct, dB	18	11	2	-4	-16	-23	-33	-41
To room, dB [-13]	11	14	9	-2	-6	-12	-16	-17

Supply air duct = L_{wA} in the diagram for supply air fan

Exhaust air duct = L_{wA} in the diagram for exhaust air fan

Noise to room = L_{wA} in the diagram for exhaust air fan minus 13 dB gives sound pressure level, dB(A) at 10 m² room absorption

Supply air fan

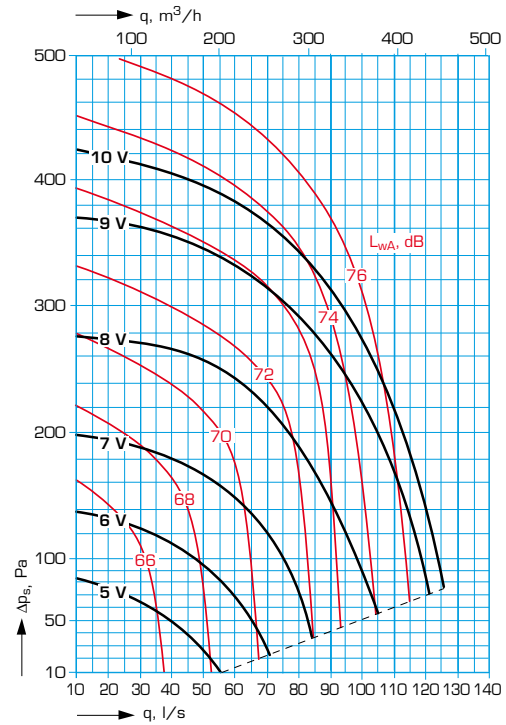


Diagram 1. a) Supply air fan, pentimeter setting
b) Sound to duct, L_{wTA} for supply air fan
c) Filter F5

Exhaust air fan

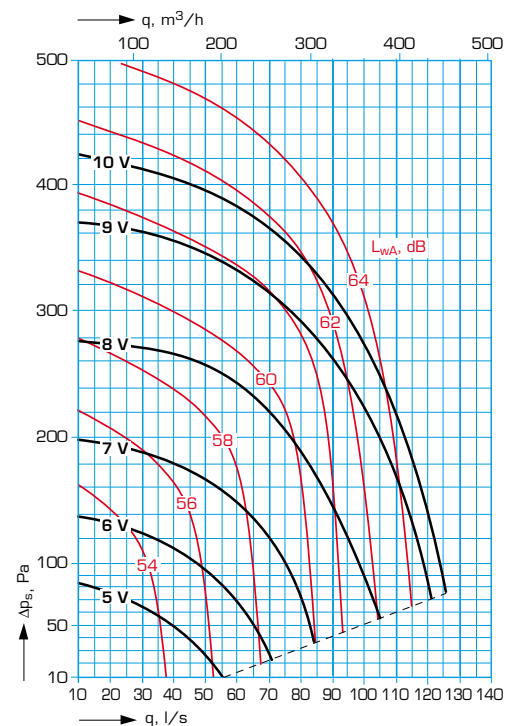
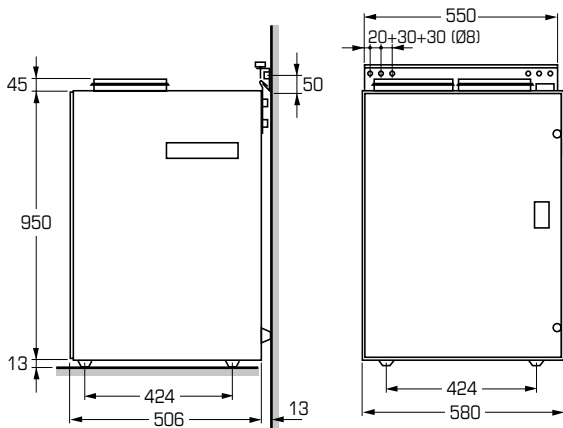


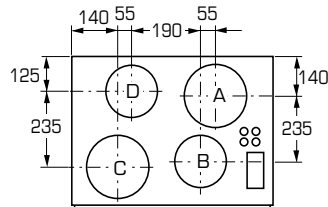
Diagram 2. a) Exhaust air fan, pentimeter setting
b) Sound to room, L_{A10} from unit with the forced air damper in the cooker hood closed
c) Filter G4

Dimensions, electrical data, control equipment

Dimensions and weight



Weight: 67 kg



Connection	A	B	C	D
Diameter	200	160 ¹⁾	200	160 ¹⁾
	Supply air	Exhaust air	Outdoor air	Extract air

¹⁾ Increased to $\varnothing 200$ as space permits.

Electrical data

Voltage: 230V, single phase 50 Hz

Code	Fan motors Output, W	Preheater Electrical, W	Afterheater Electrical, W	Output ¹⁾ Electrical, W
RDAR-01	2 X 175	1000	1000	2360

¹⁾ Rated output when both preheater and afterheater are installed.

Packaging

The unit is supplied in a cardboard box. Mounting brackets for wall mounting, rubber suspension studs and all instructional documentation are enclosed.

Control equipment

The unit is supplied with a built-in electronic control unit. It regulates the fan, the rotary heat exchanger and possible electric heater.

Fan control

There is three different modes that can be chosen through the control panel (accessory):

- "AWAY" is used when nobody will be at home for a longer period to save energy.
- "HOME" is used for normal ventilation.
- "FORCED" is used when there is a greater need of ventilation (it will automatically return to the "HOME" mode after 120 minutes).

The control panel (accessory), that can be installed at desired location, has a button with an arrow on it that is used to choose mode.

The speed of the fans can be adjusted independently of one another. The air flow of the three different modes can be regulated with a potentiometer on the control unit. There is normally only need for adjusting the air flow of the "HOME" mode.

Temperature control

The control unit regulates the rotary heat exchanger and potential preheater and afterheater to deliver the desired temperature. There are two different energy modes:

- In the "NORMAL" position, the supply air temperature is adjusted to the desired reference value in two stages. As a first stage with the energy recovery from the rotary heat exchanger, and, if this is insufficient, as a second stage with the electrical after heater.
- In the "REDUCED" position, the impeller and the electrical afterheater have separate reference values. If the impeller is not able to recover sufficient heat, the electrical after heater is used, but with a reference value that is 2° C lower than the normal reference value.

In both energy operating modes, the electrical after-heater can only heat the supply air if the rotary heat exchanger is in operation. The heat recycling can get too high during some periods of the year and result in a slightly higher temperature which has to be accepted in order to save energy.

The control unit handles defrosting during very cold periods when frost may develop on the heat exchanger. This occurs when the outdoor temperature drops below -10°C.

Alarm

The control panel (accessory) has an alarm to indicate when it is time to change the filter and also temperature alarm. An external alarm such as fire alarm can be connected to stop the unit from operating.

Accessories, product code

Accessories

Control panel RDKZ-41

External control panel for installation on wall. There is three different settings for choosing the fan speed; "AWAY", "HOME" and "FORCED" air flow. The control panel also has a filter replacement indicator lamp.

Combined air terminal device ABRZ-01

For mounting on an outside wall. Outdoor air is taken in at the bottom and extract air is blown straight out of the unit to prevent the two from mixing. It is made of black plastic coated sheet metal and consist of a wall piece, wall hood and front cover.

Silencer BDER-30

Circular silencer for 200 mm diameter pipes.
L x Dy = 900xØ300.

Noise attenuation at	Center frequency, Hz							
	63	125	250	500	1k	2k	4k	8k
BDER-30-020-090	2	7	13	24	31	44	31	20

Product code

Heat recovery unit **RDAR-aa-b-c-d-e**

Size (aa) _____
01

Connection (b) _____
1 = Outdoor air left, supply air right

Recovery unit (c) _____
1 = not hygroscopic impeller

Supplementary heater (d) _____
0 = without
1 = afterheater, electric 1000 W
2 = preheater + afterheater, electric 2 x 1000 W
3 = preheater, electric 1000 W + afterheater water coil¹⁾

Generation (e) _____
1

¹⁾ Valve, actuator, frost protection and control of wate coil are not included.

Accessories

Installation cable for control panel **RDKZ-43-b-cc-d**

Model (b) _____
1 = 6-pole flat cabel

Length (cc) _____
10 = 10 meters
25 = 25 meters

Generation (d) _____
1

Control panel **RDKZ-41-1**

Replacement filters **RDAZ-10**
Set of 2+2, supply air and exhaust air

Combined air terminal device **ABRZ-01-1**

Silencer **BDER-30-020-090**