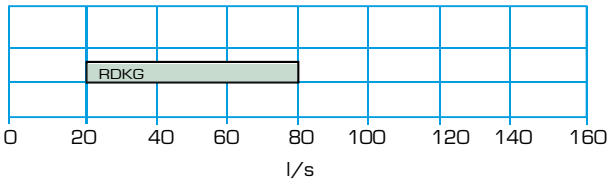
Heat recovery unit RDKG

The RDKG heat recovery unit is a component in the Minimaster/Minivent systems. The unit has a cross flow heat exchanger which gives good heat recovery. RDKG has built-in control equipment and can be supplied with an external control panel. It is primarily intended for homes and small commercial premises. All connection ducts are on the top of the unit and it is intended for wall mounting. The forced air flow of the cooker hood gives a bypass function if the unit is used in the Minimaster system. This gives a greater forced air flow and better odour extraction when cooking.

Energy consumption

RDKG is an energy efficient heat recovery unit that in comparison with a mechanical exhaust air ventilation system reduces energy consumption remarkably. The reduction is made through recycling of the energy of the exhaust air in the heat exchanger. The fans have AC-motors that are easily adjusted to the right speed.

Air flow chart



Product data

- Up to 73% temperature efficiency
- Supply and exhaust air flows between 20-80 l/s
- Can serve living areas up to 155 m^2
- Filters up to class F7
- Individually adjustable fans
- Easy to install
- Service friendly

Product code example

RDKG-1-2-2-1-2

Description, material, technical data

Casing

The outer and inner casing are made of galvanized sheet metal with 15 mm insulation made of expanded polystyrene. The service hatch is secured with quick-release screws.

Fans

The fans have AC-motors. They are easy to remove for servicing and maintenance. The fan speed can be adjusted in nine steps.

Heat exchanger

The cross flow heat exchanger is made of aluminium with completely separate supply and exhaust air ducts. It has a temperature efficiency up to 73%. The unit is fitted with an automatic defrost function controlled by time and outside temperature. The heat exchanger is easily removed for cleaning.

Preheater and afterheater

The unit has an afterheater that heat the supply air to set value when the heat recovery is not sufficient. A preheater is recommended for areas where the outdoor temperature drops below -25°C. Please note that preheater for this unit is not included in the selection range of Fläkt Woods.

Filter

The unit is equipped with G3/G3 filter. Filters up to class F7 are available as accessories.

Sound power level in octave bands

The sound power level L_w in octave bands to ducts is calculated by adding the correction factor (with the relevant characters) to the sound power level L_{wt} read off diagram 1.

	Octave band, mid-frequency Hz					
	63	125	250	500	1000	2000
Correction, dB	+11	–3	–5	–12	–10	–16
Tolerance ±dB	6	3	2	2	2	2

Sound level

Sound level L_{A10} is shown for a room with a 10 m² sound-absorption area. To obtain the true sound level the following are added dB(A) values (with the relevant characters) to the value read off in diagram 2.

Area of room	Normally furnished room	Heavily furnished room, for example kitchen
5 m²	+2 dB(A)	+7 dB(A)
10 m²	±0 dB(A)	+4 dB(A)
15 m²	–1 dB(A)	+1 dB(A)

Supply air fan

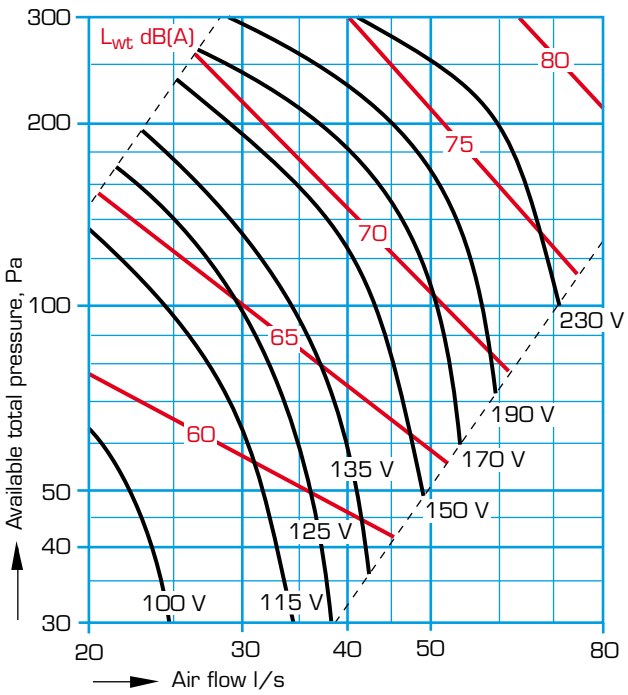


Diagram 1. a) Supply air fan, (supply voltage 100-230V)
b) Sound to duct, L_{wt}, for supply air and exhaust air fans
c) Filter G3

Exhaust air fan

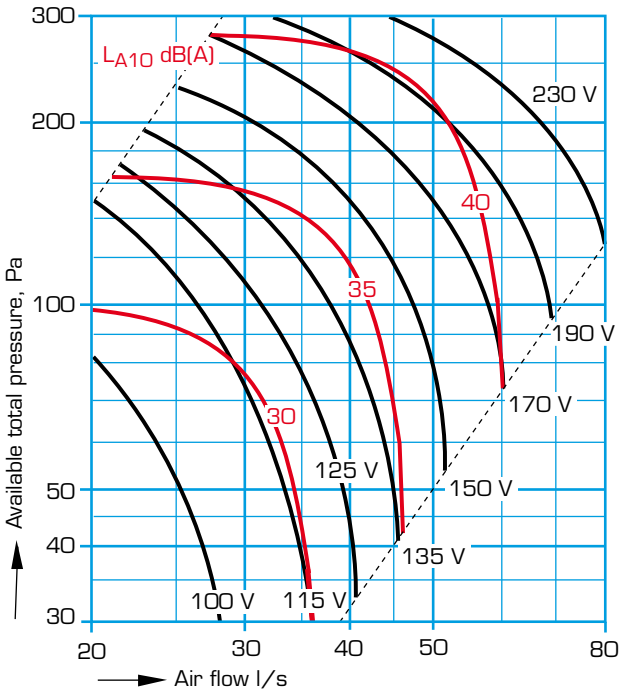
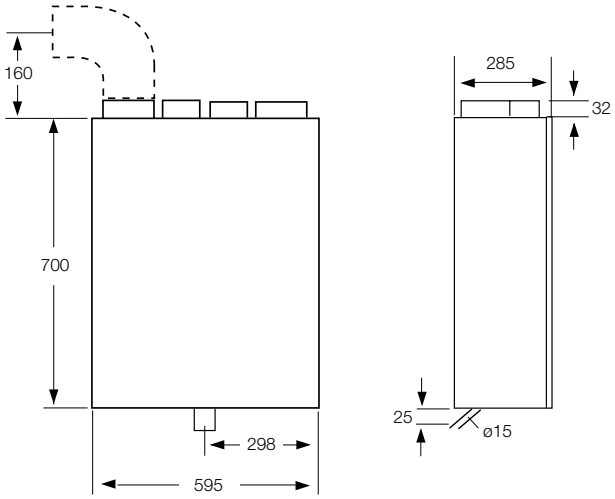


Diagram 2. a) Exhaust air fan, (supply voltage 100-230V)
b) Sound to room, L_{A10}, from unit including cooker hood with flow 10 l/s
c) Filter G3

Dimensions, electrical data, control equipment

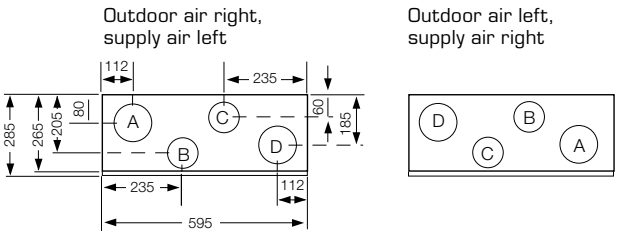
Dimensions and weight



Weight 35 kg

Conn. (female)	A	B	C	D
Diameter	125	100	100	125
	Supply air	Exhaust air[1)]	Outdoor air[1)]	Extract air

[1)] Increased to ø125 as space permits.



Electrical data

Voltage: 230V, single phase 50Hz

Code	Fan motors rated output, W	Afterheater electric, W	Rated output electric, W	Rated output with cooker hood
RDKG	2 x 105	600	820	840

Control equipment

The unit is supplied with a built-in electronic control unit that regulates the fan speed and afterheater.

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 fan speed can be adjusted independently in nine steps through the control panel (accessory).

The fans can also be controlled through a cooker hood when the unit is installed in a kitchen.

Temperature control

For the most part of the year the heat exchanger recycles enough heat to obtain an acceptable supply air temperature. The control unit regulates the temperature by activating the afterheater if the recycled heat is insufficient to deliver the desired temperature.

During cold periods the unit has an automatic defrosting function. It is activated when the outdoor temperature drops below – 5°C and melts the frost that has developed on the heat exchanger.

Alarm

The control panel (accessory) has a filter alarm to indicate when it is time to change the filter.

Packaging

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

Accessories, product code

Accessories

Control panel RDKZ-41

External control panel for wall installation. The fan speeds to select are AWAY, HOME or FORCED. The panel also shows filter alarm and can be used to adjust the air flow.

Summer insert RDKZ-100

For use in the summer when no heat recovery is normally required. Cool outdoor air can be drawn in to lower the indoor temperature, at night for example.

Mounting kit RDKZ-102

The fitting kit is used to attach the decorative panel in front of the ventilation unit when it is installed between two continental height high level cabinets.

Combined air terminal device RDKZ-26

The combined air terminal device takes in outdoor air and removes extract air from the heat recovery device serving a home. It is mounted on an outside wall. Outdoor air is taken in at the bottom and extract air is blown straight out. Both openings are fitted with screens. The screen over the extract air opening can be easily removed for inspection and cleaning.

Air intake BSDB-20

For positioning on outside walls. The intake consists of a box which has a outside wall grille as a rain guard. So it does not need to be positioned where it is not exposed to rain.

Ventilation hood CBAE-12

For connection to kitchen fans, exhaust air systems or ventilation systems with heat recovery. It is connected to sheet metal ducting or flexible steel tubing.

Pipe insulation RDKZ-45

For condensation and heat insulation for ducts routing cold air through heated spaces. Pipe insulation consists of non-flammable cellular polyethylene plastic. The thickness of the insulation is 15 mm and it comes in one metre lengths. Pipe insulation is pushed on from the end of the duct.

Silencer BDER-38

Rectangular silencer for 125 mm diameter pipes.

L x W x H = 1000 x 250 x 175.

	Centre frequency, Hz							
Noise attenuation at	63	125	250	500	1k	2k	4k	8k
BDER-38-012-100	13	12	18	34	46	43	44	24

Product code

Heat recovery unit **RDKG-a-b-c-d-e**
with cross flow exchanger

Connection (a)
1 = Outdoor air right, supply air left
2 = Outdoor air left, supply air right

Function type (b)
2 = Electric battery with bypass function

Casing (c)
1 = Galvanised sheet metal
2 = White enamelled

Filter Supply air/Exhaust air (d)
1 = G3 flat filter/G3 flat filter

Generation (e)
2

Accessories

Filter **RDKZ-13-b-c**

Filter Supply air/Exhaust air (b)
1 = G3 flat filter
2 = F5 bag filter
3 = F7 bag filter

Generation (c)
1

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

Model (b)
1 = 6-pole flat cable

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

Generation (d)
1

Control panel	**RDKZ-41-1**
Summer insert	**RDKZ-100**
Mounting kit	**RDKZ-102**
Cooker hood for RDKG-1-b-c-d-2	**CPDK-b-cc-d-1-1**
Cooker hood for RDKG-2-b-c-d-2	**CPDK-b-cc-d-2-1**
Combined air terminal device	**RDKZ-26-000**
Air intake	**BSDB-20-012**
Ventilation hood	**CBAE-12-111**
Pipe insulation ø 100	**RDKZ-45-010**
Pipe insulation ø 125	**RDKZ-45-012**
Silencer	**BDER-38-012-100**