Ventilation unit Temovex Blue 2 / 4

User manual

DESIGN & TECHNICAL INFORMATION

OPERATION & CONTROL

MAINTENANCE & SERVICE

Exhaust air filter, article No: G10125
Supply air filter, article No: G10126

Contains checklist for installation, adjustment, and start-up!

CONTENTS

Ventilation unit Temovex Blue 2 / 4

Checklist installation, adjustment, and start up.

☐ **Mounting.**

The unit is mounted according to the recommendations in this manual, section

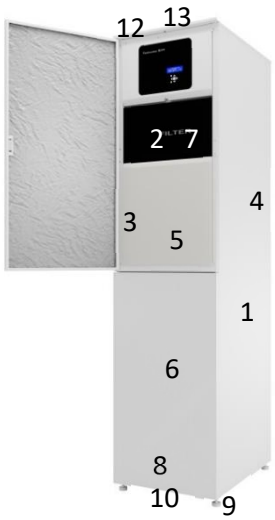
Short menu overview

The basic user functions can be accessed by scrolling with the arrow

General description

Temovex BLUE 2 / 4 is an air handling unit (compact cabinet) designed for ventilation of homes, offices, nurseries or other smaller premises.
The Temovex unit is intended to be placed in heated spaces such as laundry room, boiler room, corridor or similar.
The system consists in it´s standard version of a counterflow heat exchanger, two fans, two filters, reheater, bypass damper and a control system.

Placement guide



1. Casing
2. Exhaust air filter (behind hatch)
3. Bypass damper
4. Exhaust air fan (backside)
5. Supply air fan
6. Heat exchanger
7. Supply air filter (behind hatch)
8. Elevator device
9. Adjustable feet
10. Condensate drain
11. Control panel
12. Reheater
13. Operating /Alarm indication

1. Casing

Inside is the unit made of EPP (Expanded Polypropylene) The outside casing is made of galvanised sheet metal with 30mm insulation and powder coated in white.
The front is divided. The upper part can be opened as a door. The door can easily be changed to the right-hinged or left-hinged. It is kept closed with the help of magnets. The lower part opens as a fold hatch by gently pulling the upper part of the door. It is hinged at the bottom. The lower door has a snap lock.
The unit top has sleeve connections made of EPP, where all ducts are connected..

2. Exhaust air filter

Coarse 60%, bag (art.no. G10125)

3. Bypass damper

The Temovex AHU has an automatic bypass damper which makes the air bypass the heat exchanger whenever heat recovery is not necessary. The bypass setting is adjusted on the control panel.

4. Exhaust air fan

The unit has low-energy fan of EC type with integrated overheating.

5. Supply air fan

The same type as exhaust air fan (see point 4).

6. Heat exchanger

The heat exchanger is a standard highly efficient counterflow heat exchanger from Recair. The heat exchanger is made of very thin, pleated plastic sheets and the supply air and exhaust air sides are completely sealed off from each other. This is important in order to avoid odors and other contaminants from old air seeping through to fresh air. The heat exchanger has no moving parts, which eliminates wear.

7. Supply air filter

ePM1-50%, bag (art.no. G10126)

8. Elevator device

The elevator device must unfasten to make it possible to remove the heat exchanger for cleaning. (See chapter "Maintenance & service").

9. Adjustable feet

The cabinet has adjustable rubber feet.

10. Condensate drain

The Temovex unit is fitted with a condensate drain at the bottom of the unit. This should be connected to a drain or led to a floor drain.

11. Control panel

All settings for fan speed, reheating, bypass etc. are made via the control panel and the AHU's integrated control system.
If you have added optional parts to your Temovex AHU, these functions, too, are set via the control panel.

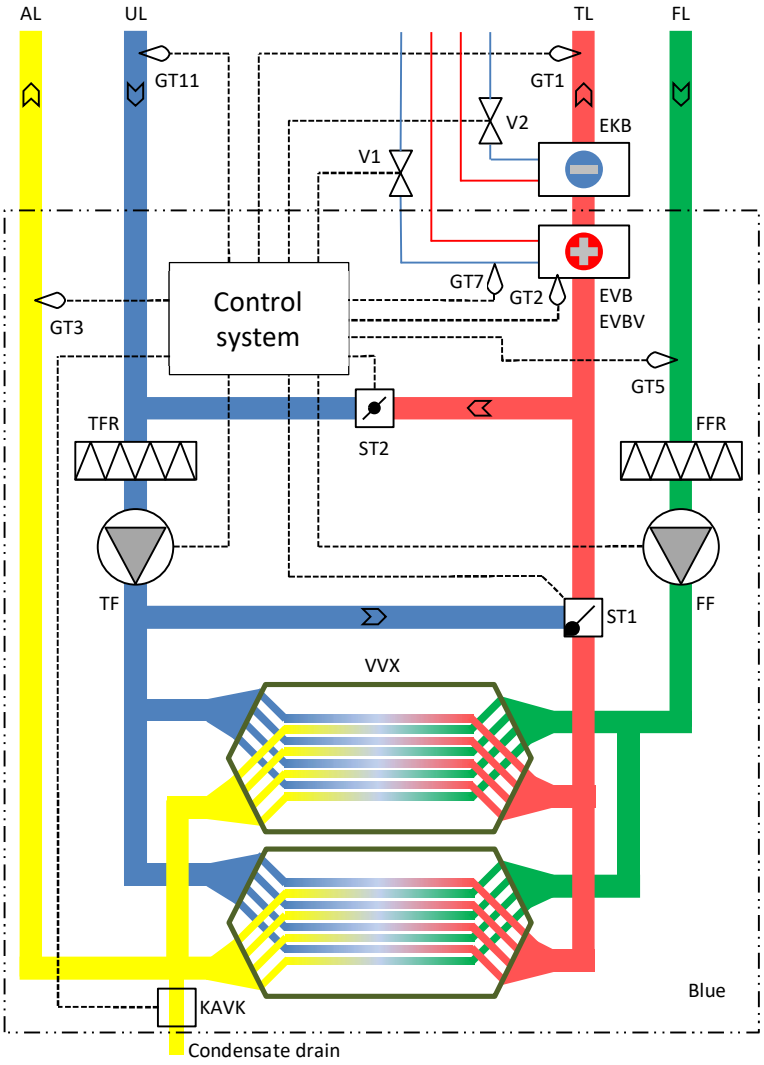
12. Reheater

Temovex Blue 4 is fitted with an electric reheater, 0.9 kW.
As an optional extra, a reinforced electric reheater, 1,8 kW, or a water coil (two different sizes) for waterborne heating is offered. The heater is integrated in the unit and settings are made via the control panel.
In the case of a water coil, the water connections are at the top of the unit, dimension DN12.
The Temovex Blue 4 with water coil includes a two-way valve and valve motor in the delivery from REC.

13. Operating / Alarm indication

Above the door is a green and a red LED.
Green light means that the unit is in operation and no alarms are present. Red light indicates that one or more alarms have been triggered or that it is time to change filters. Check further in the display to find out what the cause is.

Functional diagram



AL	Exhaust air
EKB	Cooling coil (option)
EVB	Electric reheater
EVBV	Water reheater (option)
FF	Fan, Exhaust air
FFR	Filter, Exhaust air
FL	Extract air
GT1	Temperature sensor, Supply air (red sensor)
GT2	Over heat protection (with electric heater)
GT3	Temperature sensor, Exhaust air (yellow sensor)
GT5	Temperature sensor, Extract air (green sensor)
GT7	Freeze protection (with water heater)
GT11	Temperature sensor, Outdoor air (blue sensor)
KAVK	Condenstation boiler (option)
ST1	Bypass damper
ST2	Preheat damper
TF	Fan, Supply air
TFR	Filter, Supply air (Outdoor air)
TL	Supply air
UL	Outdoor air
V1	Heating valve
V2	Cooling valve
VVX	Counterflow heat exchanger

Teknical specifications *(without options where nothing else is stated)*

	Electric heater		Water heater	
	Blue 2	Blue 4	Blue 2	Blue 4
Rated electric power (total)	1037 W	1172 W	137 W	272 W
fans	130 W	265 W	130 W	265 W
heater	900W		-	
Extended heater (option)	900W		-	
Power, water coil small	-		1000 W[1]	1500 W[1]
Power, water coil big (option)	-		1800 W[1]	2800 W[1]
Water connection	-		DN12	
Voltage/Frequency	230 V, 50 Hz			
Fuse	10 A			
Filter, supply air / exhaust air	Bag: art nr. G10126 / Bag: art nr. G10125			
Weight	98 kg			
Dimensions (WxDxH)	485x620x1940 mm			
Duct connections	4 x Ø160 mm			
Condensate drain	8 mm			
Storage Temperature Range	-20			

General

This is a description of the basic functions that you can modify to suit your own preferences and circumstances. The unit

Menu guide

On the next page is a table that represents all menus in the program. The table also shows the default setting for each parameter. If the unit, on delivery, deviates from the standard on any parameter, this is marked in the table. (Any changed settings during installation, commissioning or thereafter should also be noted in the table).
Below is a small guide to how the menu table is structured. The table also contains references to sections further back in the manual, with in-depth information about each menu.

Parameter	Default setting	Changed setting of this unit
1.1 Temperature		
1.1.1. Supply air temp. *(is displayed if supply air control is selected)*		
Setpoint	18,0	

1. Menu table user parameters

Parameter	Default setting	Changed setting of this unit
1.1. REC TEMOVEX *(Main menu)*		
Mode	*(Display of current operating mode)*	
Status	*(Display of status)*	
Temp.	*(Display of current setpoint)*	
1.1.1. Version		
Version	2.4-1-00	
S/N	*(Display of DUC serial no.)*	
(Date and time)	"Current date and time"	☐ "Current date and time"
1.1.1.1. Choose language	English	☐Polish, ☐Swedish
1.1.1.1.1. Address		
PLA	254	_____
ELA	30	_____
IP	(Display of current value)	
1.2. Temperature		
1.2.1. Supply air temp. *(is displayed if supply air control is selected)*		
Actual *(Supply air temp..)*	(Display of current value)	
Setpoint	18,0	

	Exhaust air temp.	(Display of current value)	
	Freeze P. temp. *(Appears if water heater)*	(Display of current value)	
	1.2.5.1. Room temp. living room *(appears if zone control is selected)*		
	Actual *(Room temp. living room)*	(Display of current value)	
	Setpoint	21,0	

			9	01-01 - 01-01	_____
			10	01-01 - 01-01	_____
			11	01-01 - 01-01	_____
			12	01-01 - 01-01	_____
			13	01-01 - 01-01	_____
			14	01-01 - 01-01	_____
			15	01-01 - 01-01	_____
			16	01-01 - 01-01	_____
			17	01-01 - 01-01	_____
			18	01-01 - 01-01	_____
			19	01-01 - 01-01	_____
			20	01-01 - 01-01	_____
			21	01-01 - 01-01	_____
			22	01-01 - 01-01	_____
			23	01-01 - 01-01	_____
			24	01-01 - 01-01	_____
1.5. In/Outputs					
	1.5.1. Analoga inputs *(no settings, only display of current values)*				
			AI1 OD temp	(Display of current value)	
			AI2 SA temp	(Display of current value)	
			AI3 EXT temp	(Display of current value)	
			AI4 EA temp	(Display of current value)	
			UAI1	(Display of current setting and value)	
			UAI2	(Display of current setting and value)	
			UAI3	(Display of current setting and value)	
			UAI4	(Display of current setting and value)	
	1.5.2. Digital inputs *(no settings, only display of current values)*				
			DI1	(Display of current setting and value)	
			DI2	(Display of current setting and value)	
			DI3	(Display of current setting and value)	
			DI4 SA Fan	(Display of current alarm status.)	
			DI5 EA Fan	(Display of current alarm status.)	
			DI6	(Display of current setting and value)	
			DI7	(Display of current setting and value)	
			DI8 Filter alarm	(Display of current alarm status.)	
	1.5.3. Analog outputs *(no settings, only display of current values)*				
			AO1 SA fan	(Display of current value)	
			AO2 EA fan	(Display of current value)	
			AO3 Heater	(Display of current value)	
			AO4 Chiller	(Display of current value)	
	1.5.4. Digital outputs *(no settings, only display of current values)*				
			DO1 BP opening	(Display of status)	
			DO2 BP closing	(Display of status)	
			DO3	(Display of current setting and status)	
			DO4	(Display of current setting and status)	
			DO5	(Display of current setting and status)	
			DO6	(Display of current setting and status)	
			DO7	(Display of current setting and status)	
	1.5.5. Calibrate sensors				
			AI1	0,0	_____
			AI2	0,0	_____
			AI3	0,0	_____
			AI4	0,0	_____
			UAI1	0,0	_____
			UAI2	0,0	_____
			UAI3	0,0	_____
			UAI4	0,0	_____
1.6. Manual/Auto					
	SA controller			Auto	☐Off, ☐Manual _____ % (0

	Supply air fan	Auto	☐Off, ☐Manual	_____ % (0

1.2 Temperature

Temperatures

Outdoor temperature is measured on incoming air at the point where the sensor is located. The sensor is placed in the outdoor air duct as far from the unit as possible. The temperature may differ slightly from the actual outside temperature, which may depend on the length of the duct, insulation etc.
Supply air temperature is measured in the supply air duct normally about one meter away from the unit. Supply air is the fresh air that, after possible heating, is sent to the room.
Exhaust air temperature is measured in the exhaust air duct close to the unit. Exhaust air is the air that leaves the room and returns to the unit.
Extract air temperature is measured in the extract air duct close to the unit. Extract air is the air that, after the heat has been recovered, leaves the unit, and is sent out of the house.
Room temperature is measured using an external sensor located in an appropriate place in the apartment/house.
Frost protection temperature is only used with water-based heating and shows the temperature of the return water from the heating coil. When the water temperature is too low the unit will stop, to prevent freezing of the water coil.

Control mode

What is displayed under temperature depends on the type of control mode selected. There are five different control modes to choose from depending on the application: a) supply air control, b) cascaded exhaust air control, c) cascaded room control, d) outdoor compensated supply air control and e) zonal room control.
For the temperature setting and readout, select the column below corresponding to your configuration.

1.2.1 Supply air control

This function is selected if you have a primary heating source other than ventilation, such as underfloor heating or radiators. The temperature of the supply air is regulated by means of the supply air sensor. The setpoint for the supply air is suitably set a few degrees lower than what the primary heating system is set for.

1.2.2 Outdoor compensated supply air control

This function is the same as above with the difference that the setpoint changes in relation to the outdoor temperature. The function can be used, for example, if the home is greatly affected by heat and cold, for example through large windows.

1.2.2.1. Outdoor compensated setpoint

Enter the setpoint for the supply air, at the different outdoor temperatures stated, and the program calculates a curve and controls according to that. What the currently setpoint is, can be seen in the menu.

1.2.3 Room control

At room control, a room sensor must be installed. The temperature of the supply air is then regulated to achieve the desired temperature in the room (setpoint value on the room sensor). The function is suitably used when ventilation also is the primary source of heating.

ECO adjustment
ECO adjustment is used if you want to lower the indoor temperature a few degrees, to save energy when you are not at home. A temperature range is specified, within which heating, and cooling are inactive. For example, with ECO adjustment 2 degrees and a setpoint of 20, heating and cooling will be inactive between 18 and 22 degrees. For this to work, the ECO function must be activated at the factory.

1.2.4 Extract air control

This function is a slightly simpler room control. You do not need a room sensor, but the temperature in the room is represented by the temperature in the extract air duct and control takes place for a constant extract air temperature according to set setpoint.

ECO adjustment
See section 1.2.3. above.

1.2.5 Zone control

This is a more advanced form of room control, where you can have two zones with different temperatures such as one temperature in the bedroom and another in the living room. However, it requires a little extra equipment such as extra heaters and sensors etc.

1.2.6 Limit for cooling

The default setting is that cooling is not activated until the outside temperature is above +20 degrees. If you want to change this, set the outdoor temperature at which the cooling can start. There is also an adjustable hysteresis so that the cooling does not open and close all the time if the temperature is around the set value.

1.3 Fan control

In the operating menu you can set which mode the fans should run in. You can also see if the fans are running at fixed speed or variable. You can also see current values and setpoints. The set values are seen within parentheses.

Fan mode

In the fan control the following six modes are always available:

- Auto: The most optimal mode. This automatically controls the temperature acc. to the built-in and optimized algorithms of the system.
- Min flow: This forces the system to run with the set minimum flow.
- Boost: This forces the system to boost the flow. Useful if you, for example, quickly would like to air out.
- Max flow: In this mode the fans runs with maximum flow.
- Kitchen flow: Used while the cooker fan is used. During kitchen flow the supply air fan normally has a higher flow than the exhaust air fan to compensate for the air that the cooker fan extracts.
- Off: In this mode all fans are off.

The following three modes are available if the feature is installed and configured. Even if the feature is not configured, it is visible and can be selected, but the system will after a few seconds revert to the previous selection.

- Stove: Used when a stove is being used. In the stove mode normally the supply air fan has a higher flow than the exhaust air fan to compensate for the air that the stove extracts.
- ECO: Only used with room control or exhaust air control when you are not home. The fans go down to minimum flow but are gradually increasing to normal flow based on heating or cooling needs. ECO adjust gives a temperature range around the setpoint where neither heating nor cooling is active.
- Fire: Not used on this unit!

1.4 Timer

In the timer setting menu, the clock can be set, and the timer configured.

1.4.1 Summer / wintertime

This menu allows you to indicate if the time should be adjusted automatically for summer/wintertime.

1.4.2 Activate timer

The timer is not activated on delivery but by default connected to the function Min. flow. The timer must be activated if you want the times set under the time and holiday schedule to work. If you want to use the timer for other than Min. flow, you change this in the configuration menu. See the Technician's Manual.
ATTENTION! If you use the timer to start and stop the unit at certain times, it is the time when the unit should be running that you set in the schedule.

1.4.2.1. Time schedule

There is an option of two periods per day. NOTE! If you want the timer active from e.g., Monday 20:00 until Tuesday 06:00 the setting should be Monday Per 2: 20:00

If you have the same times recurring every day in the week you can use the function Monday → Friday.
If you want the same times on both Saturday, Sunday, and all holidays (specified in the holiday settings), you can use the macro function Saturday → Holiday.
Otherwise, there is a special menu for the holiday times.

1.4.2.2. Weekend schedule

Up to 24 separate holiday periods for a full year can be set. A holiday period can be any number of days, from 1 to 365, in sequence. The dates are in the format: MM:DD (Imagine that you are entering a period from 00:00 one day until 00:00 the next day. For example, holiday June 6th is written 06:06

1.6.1 Filtertimer

In this menu, you can set the interval you want between filter changes. The menu also shows how many months remain before the filters should be changed. ATTENTION! This value is only updated once a day. This means that, if "Interval" is changed, "Time left" is not updated until the next day.
When it is time to change filter, this is indicated on the display on the row

Options

Remote panel

Display of actual temperature.

Pushing once more (within 10 s) on the menu selection key will turn off the set-point symbol, the indoor temperature symbol will start flashing and the display will show the actual value. The adjustment keys have no function in this case. When the keys have not been touched for 10 s, the display will revert to showing the set-point.

Display of the outdoor temperature.

Pushing once more (within 10 s) on the menu selection key will turn off the indoor temperature symbol. At the same time the outdoor temperature symbol is turned on and the outdoor temperature is shown in the display. The adjustment keys have no function in this case. When the keys have not been touched for 10 s, the display will revert to show the set-point.

Fan speed:

Pushing once more (within 10 s) on the menu selection key will turn on the fan symbol and the fan speed as well as MAN or AUTO. The fan symbol will start flashing and the fan speed can be changed by stepping around to the desired mode (min, normal, forced, or max) with the adjustment keys. The modes correspond to the setting in the menu selection Mode on the main display and a change on the remote panel will also be shown on the main panel.
The symbol MAN indicated that the unit is using a different mode than AUTO.
It may be that the unit is in a speed between min and max and normal and forced respectively due to forced or safe mode. The symbol fan speed will show the actual fan mode according to the following:

- At fan speed 0 — no box filled.
- < normal mode — leftmost box turned on
- = normal mode — the two leftmost boxes are turned on
- > normal mode but < = Forced mode — the three leftmost boxes are turned on
- = max mode — all boxes turned on

If the unit on the main display is run manually using Hand/Auto the fan speed will not be changed when changed on the remote panel. What happens is that the changes are made on the symbols of the display and also on the main panel in the menu Mode but are not implemented on the fans until you exit the manual mode in Hand/Auto.

The new setting is saved when you continue with menu selections or after not having touched the keys for 10 s and the display reverting to showing the set-point.

Kitchen/Stove.

The symbol kitchen/stove is turned on when the unit is operated in the stove or kitchen mode.

Away mode/ECO mode.

Pressing the away key will turn off the away mode symbol and the unit changes to ECO mode.
An additional press will make the mode revert.
The mode assumes that ECO is activated on the unit under system.

Bypass.

The bypass symbol is turned on when the bypass is > 0 % open.

Cool.

COOL is turned on if cooling is selected under system and the cooling valve is open > 0 %.

Heat.

HEAT is turned on if the controller requests > 0 % heating.

Alarm.

SERVICE is turned on if there is an unconfirmed alarm on the unit.

Off.

OFF is turned on if the unit is in the off mode.

Stove mode

Extent.

The stove mode must be activated from the factory to make the stove mode work.
In addition to the software configuration a momentary switch is included in the function (To connect and configure please see the Technician Manual).
The stove mode means reduced exhaust air and increased supply air during the initial time after the stove has been lit. It means that the cooling is blocked so that you do not cool out the nice heating from the stove.

Start of stove timer.
Pushing once on the switch starts the stove mode and a timer starts counting down at the same time. If you regret the choice you can easily turn off the mode with a new push on the switch.

Stove indication.
That the stove mode is active is indicated on the indicator lamp in the switch.

For more extensive functional description see the Technician Manual under the section I/O configuration.

Generally

If you use and take care of your ventilation unit correctly, you will benefit from it for a long time. You get a superior indoor climate, while saving energy through a high recycling rate.
Remember to save the user manual, which must be present if the unit is handed over to another person.

Cleaning

Keep the unit clean for maximum performance and long service life. The filters should be changed at least once a year or more frequently if necessary. The fans and heat exchangers must be cleaned according to the instructions below.

Filter change

The Temovex unit has two filters, exhaust air filter and outdoor air filter (fresh air).
The filters should not be washed but replaced with new ones.
New filters can be ordered from REC Indovent AB at www.rec-indovent.se or phone 031-675500.

The unit must not be operated without the intended original filters. Operation without filters seriously affects the performance of the unit and can damage the unit's fans and heat exchangers.

Instructions for changing the filter see page 4.

The unit can be used with dirty filters but performance deteriorates. Energy use will increase and heat recovery will decrease.

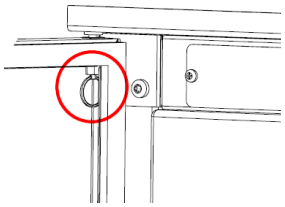
Cleaning of fans and heat exchangers

- Remove fan pack and changer as per. description.
- Unscrew respective fan plate and remove plate incl. fan.
- Clean the impeller with brush and / or compressed air.
- If necessary, also clean accessible ducts in the fan package with a damp cloth.
- NOTE! The fans must under no circumstances be cleaned under running water!
- Reassemble the fans in the fan package.
- Respective exchangers are stuck in the EPP housing and cannot be split.
- Clean the exchangers from all directions with a vacuum cleaner.
- If necessary, clean any other surfaces with a damp cloth.

Disassembly of fan pack and changer

- Switch off the power by unplugging the power cable from the wall socket.

Remove and refit the upper door

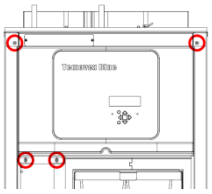


- Open the door
- Take a firm hold of the door and then pull the ring that is on the inside of the door at the top hinge so that the hinge pin releases.
- Lift the door so it hooks off from the lower hinge.
- (The door can now also be turned and mounted on any side.)

Remove the lower door

- The door is attached with a snap lock at the top.
- Grab the top of the pages and pull straight ahead.
- The door is placed on hooks at the bottom.
- Lift up slightly to release from the hooks.

Unscrew the filter cover



Remove the upper plastic cover incl. metal rail

- Unscrew 4 screws as per. Fig.

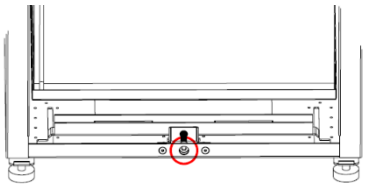
Remove the plastic cover over the supply air fan

- It is placed on hooks. Lift straight up.

Free up the fan package

- Disconnect the connectors with the fan cables from the circuit board.
- Also unplug the cable to the by-pass.

Loosen the lifting device



- Loosen the lifting device at the bottom of the front of the unit so that the fan pack and heat exchanger pack are released from the upper part.

Lift out the fan package

- The fan package is now hanging on the rails in the sides.
- Pull out the entire fan package.

Remove heat exchanger package

- Reach with your hand where the fan package was sitting and lift a little on the upper exchanger package.
- Pull out the lower exchanger package at the same time.
- Lower the upper exchanger package and remove it as well.

Checking the condensate drain

- Open and remove the lower door of the unit.
- Remove the condensation hose and make sure the hose is not blocked. Even make sure that the hose connection to the unit not is clogged.

- If the drain is clogged, try to remove the obstruction. If need be, call a plumber.
- Reconnect the hose.
- Replace the door.

Take down the diffuser. Use a vacuum cleaner or duster to clean the inner part of the duct as far as you can reach. Refit the diffuser, making sure the setting is not changed.

Checking the outdoor air intake

Once a year the outdoor air intake should be checked. Make sure it is not clogged by for example leaves, snow or ice.

Service

Service and repairs, beyond normal maintenance, should be carried out by professionals in the ventilation field, or - if electricity is involved - by an authorized electrician.

The protective plate in front of the electrical panel must not be removed by anyone other than a qualified professional. Wrong actions can affect the units warranty conditions.
Only use original spare parts.

Disposal

Prevent accidents when the AHU is disposed of. Remove the cable from the wall socket and cut it as close to the unit as possible. Store and transport the waste unit lying down.
Please leave the unit to be recycled where such facilities exist. Check with your local authority for recycling advice.

Notes:

REC Indovent AB reserves the right to make alterations to specification and construction without prior notification.

REC Indovent AB

Box 37, SE-431 21 Mölndal, Sweden
Visiting address: Kärragatan 2

Tel: +46 31 67 55 00
Fax: +46 31 87 58 45

www.rec-indovent.se

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