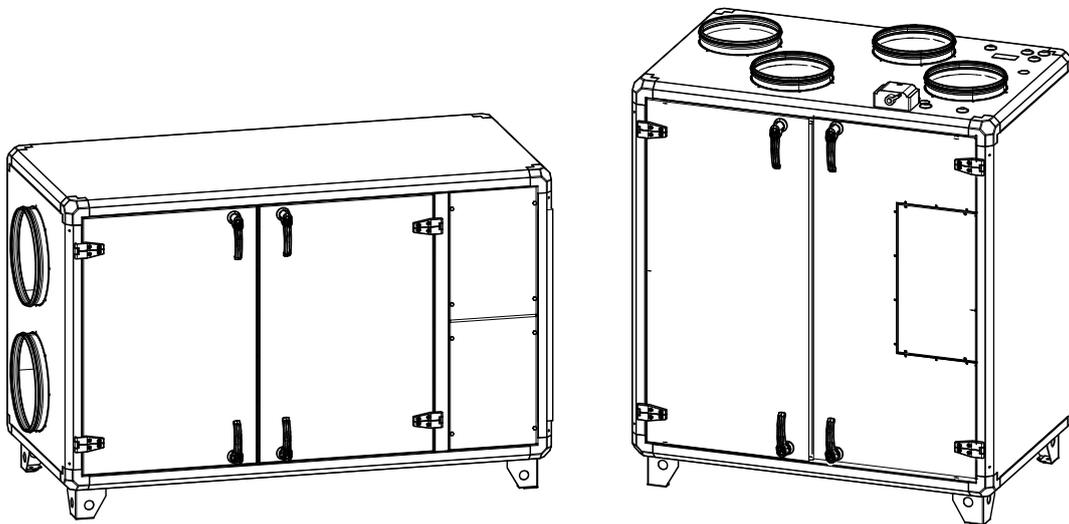


Topvex TX03-06, Topvex SX03-06

Compact Air Handling Unit



GB Operation and Maintenance Instructions

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1 Operation

1.1 General

Topvex SX and TX units with Electrical heater have 3 minutes of re-cooling after the unit has been turned off.

N.B. If the fire alarm is activated when the heater is in operation the fans stop immediately without re-cooling. This can cause the overheating protection to trip (see chapter 3.3.6).

2 Warnings

The following admonitions will be presented in the different sections of the document.

Danger

- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

Warning

- The door handles are only intended to be used during the installation and service. These must be removed before the unit is put into operation to ensure the required level of safety for the unit.
The unit must be duct connected or in some other way provided with protection so that it is not possible to come in contact with the fans through the duct connections
- The unit is heavy. Be careful during transport and mounting. Risk of injury through pinching. Use protective clothing.
- Beware of sharp edges during mounting and maintenance. Make sure that a proper lifting device is used. Use protective clothing.
- The units electrical connection to the mains supply must be preceded by an all pole circuit breaker with a minimum 3 mm gap.

Caution

- If the unit is installed in a cold place make sure that all joints are covered with insulation, and tape well
- Duct connections/duct ends should be covered during storage and installation
- Do not connect tumble dryers to the ventilation system
- Take care not to damage the water battery when connecting water pipes to connectors. Use a spanner to tighten the connection.

3 Product Description

3.1 Internal components Topvex SX03-SX06

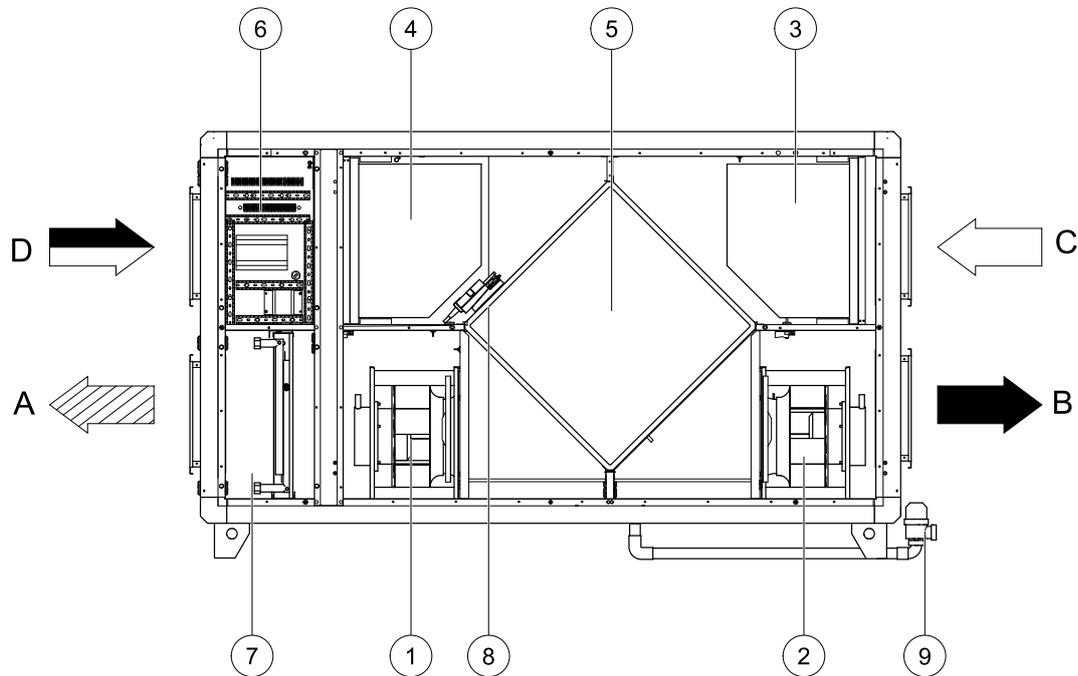


Fig. 1 Internal components with air connections symbols (Drawn as a left hand unit)

Position	Description	Symbol
A	Connection supply air	
B	Connection exhaust air	
C	Connection outdoor air	
D	Connection extract air	
1	Fan supply air	
2	Fan extract air	
3	Filter supply air	
4	Filter extract air	
5	Heat exchanger	
6	Electrical connection box	
7	Re-heater battery	
8	Bypass damper motor	
9	Condensation drainage with drain trap	

3.2 Internal components Topvex TX03-TX06

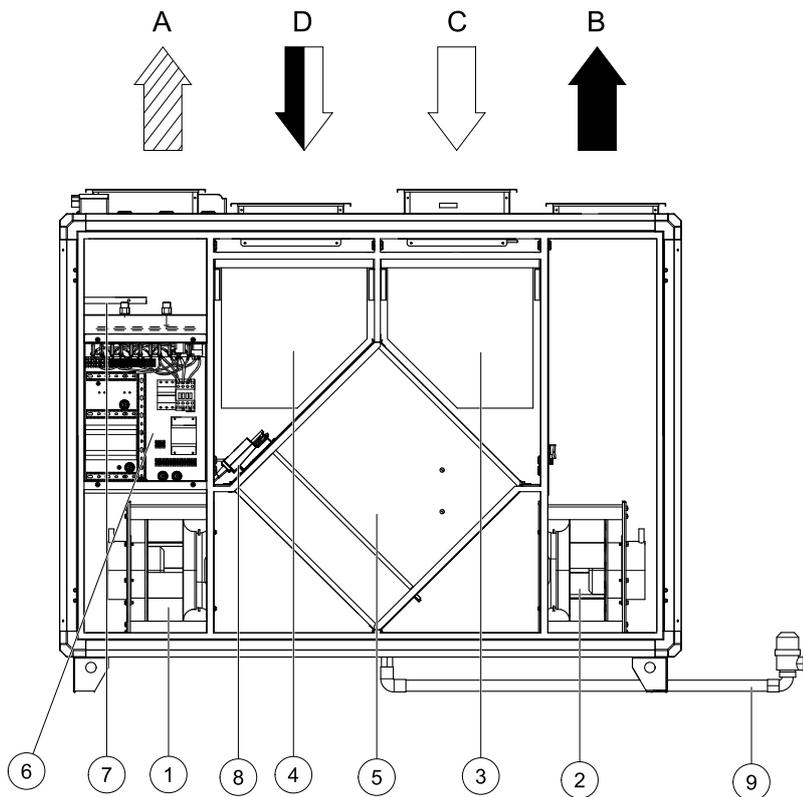


Fig. 2 Internal components with air connections symbols (Drawn as a left hand unit)

Position	Description	Symbol
A	Connection supply air	
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1	Fan supply air	
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3	Filter supply air	
4	Filter extract air	
5	Heat exchanger	
6	Electrical connection box	
7	Re-heater battery	
8	Bypass damper motor	
9	Condensation drainage with drain trap	

3.3 Description of Internal components

3.3.1 Supply and Extract air Fans

The fans have external rotor motors of EC type which are steplessly controlled individually by setting the control signal to a fixed value. It is possible to program the speed in 2 steps (normal/reduced) depending

on the programming of the week schedule. The motor bearings are life time lubricated and maintenance free. It is possible to remove the fans for cleaning, see chapter 6 for more information.

3.3.2 Supply and Extract air Filters

The filters are of bag filter type with filter quality F7 for the supply air filter and F5 for the extract air filter. The filters need to be replaced when polluted. Filter monitoring is done via a built-in timer. New sets of filters can be acquired from your installer or wholesaler.

3.3.3 Heat Exchanger

Topvex TX03-06, Topvex SX03-06 models are equipped with a cross flow heat exchanger and a by-pass damper. The operation of the by-pass damper is automatic and depends on the set temperature.

The heat exchanger is removable for cleaning and maintenance, see chapter 6 for more information.

3.3.4 Temperature sensor

3 temperature sensors (PT1000) are included in the unit from factory:

- Supply air sensor
- Extract air sensor
- Outdoor air sensor

In Topvex TX03-TX06 all temperature sensors are mounted and wired inside the unit. In Topvex SX03-SX06 the supply air sensor is loosely delivered with the unit and needs to be installed in the supply air duct externally from the unit. See Installation instructions for more detailed information.

3.3.5 Water heating battery

The hot water coil can be either HWL (hot water coil, low power) or HWH (hot water coil, high power). The coil material is copper piping with a frame of galvanized sheet steel and aluminium fins. The coil is equipped with venting and immersion sensor for frost protection.

3.3.6 Electrical heater

In the units the heating rods are located after the supply air fan in the airflow direction. The material is stainless steel. The electric heating coil has both automatic and manual overheating protection. The manual overheat protection is reset by pushing the red button on the electrical heater frame (figure 3). Desired supply/extract or room air temperature is set in the control panel.

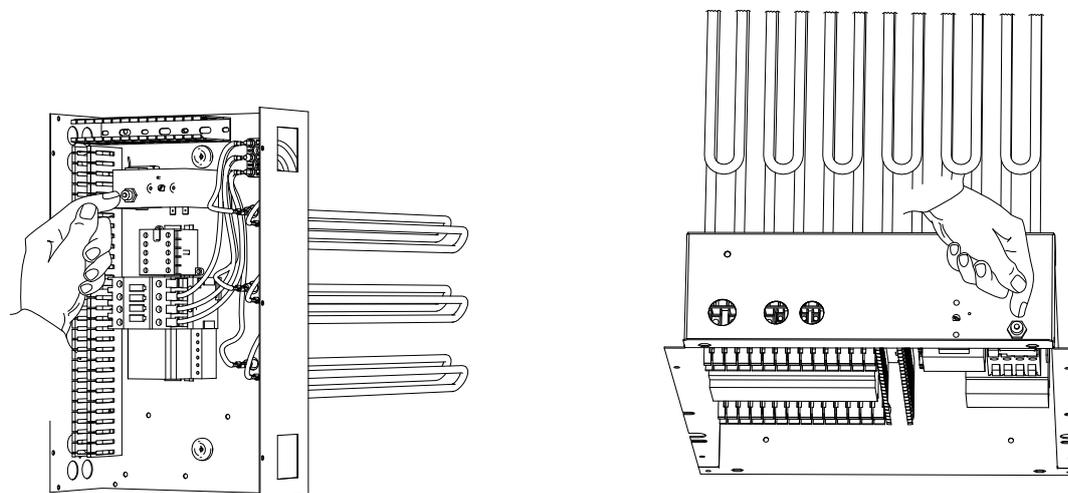


Fig. 3 Topvex SX and TX reset

⚠ Danger

- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

3.4 Internal components Electrical connection box

⚠ Danger

- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

Topvex TX03-06, Topvex SX03-06 are equipped with a built in regulator and internal wiring (figure 4).

The figure shows the electrical connection box for the Topvex TX03-TX06 units. The connection box for the Topvex SX03-SX06 has the same layout and components with the difference that the electrical heater is situated in a separate compartment.

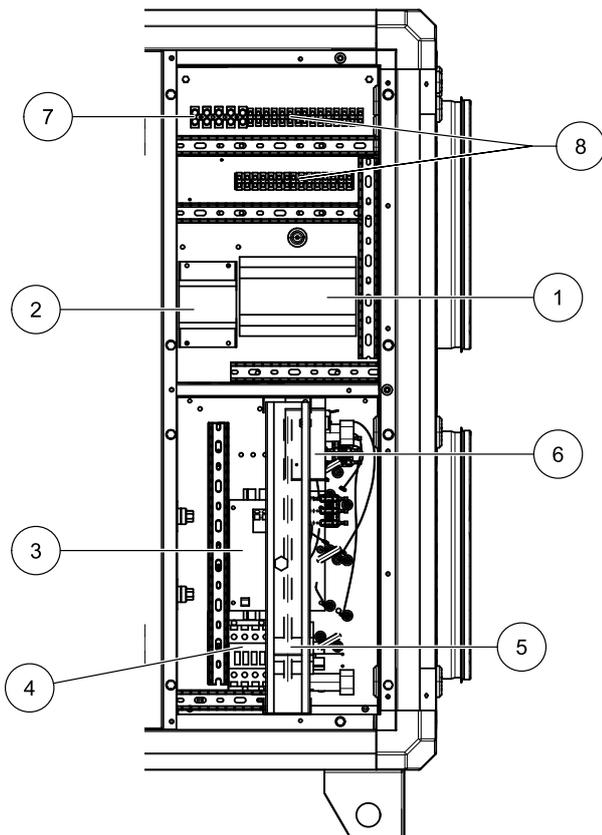


Fig. 4 Internal components

Position	description
1	Regulator E283 S
2	Transformer 230/24V AC
3	TTC

Position	description
4	Contactor (K2) for control of EL heater
5	Automatic fuse for EL heater
6	Manual over heat protection reset (EL units)
7	Terminals for mains supply to the unit
8	Terminals for internal wiring

4 Interface Description

4.1 Control panel

The SCP control panel is delivered with a 10 m cable that is connected to the panel and with a fast coupling contact, connected to the Topvex unit. The contact is connected to the **Corrigo** controller in the electrical connection box (pos. 1, figure 4). The cable can be unscrewed in the back of the control panel (figure 5).

4.1.1 Operating the control panel

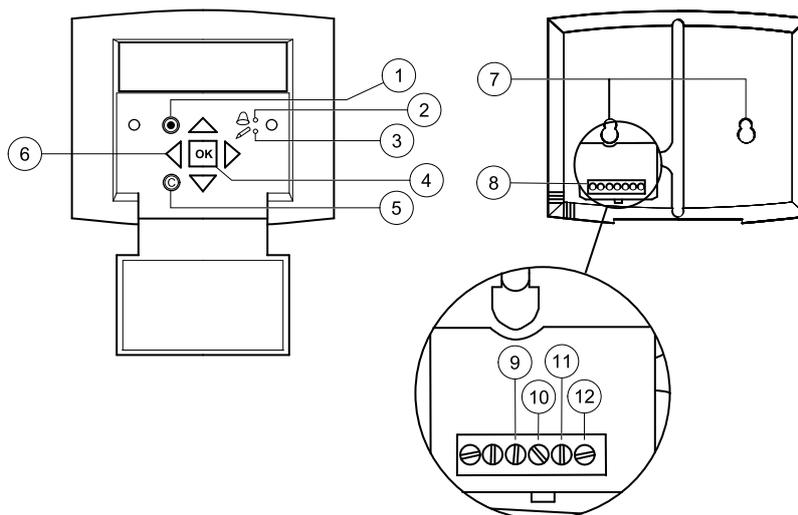


Fig. 5 The control panel

Position	Explanation
1	Alarm button: Gives access to the alarm list.
2	Alarm LED: Indicates alarm by flashing red light.
3	Write LED: Indicates by flashing yellow light that parameters can be set or changed.
4	OK button: Press this button to be able to change or set parameters whenever possible. Also used to move between changeable parameters in one dialogue window frame.
5	Cancel button: Used to abort a change and return to the initial setting.
6	Right/Left & Up/Down buttons: Used to move up, down, left & right in the menu tree. Up/Down buttons are also used to increase or decrease values when setting or changing parameters.
7	Mounting holes.
8	Connection block.
9	Connection to bown cable.

Position	Explanation
10	Connection to yellow cable.
11	Connection to white cable.
12	Connection to black cable.

4.1.1.1 Navigating the menus

The start display (the display normally shown) is at the root of the menu tree. Pressing DOWN will move you through the menu options. UP will move you back through the options. To enter a higher menu level, use UP or DOWN to place the cursor at the menu you wish to access and press RIGHT. If you have sufficient log on privileges the display will change to the menu you have chosen.

At each level there may be several new menus which you move through using UP/DOWN. Sometimes there are further sub menus linked to a menu or menu item. This is indicated by an arrow symbol at the right-hand side of the display. To enter a menu, press RIGHT again. To step back to previous menu level, use LEFT.

5 Commissioning

5.1 Before starting the system

When the installation is finished, check that:

- The unit is installed in accordance with the installation instructions
- The unit is correctly wired
- Sound attenuators are installed and that the duct system is correctly connected to the unit
- Outdoor air intake is positioned with sufficient distance to pollution sources (kitchen ventilator exhaust, central vacuum system exhaust or similar)
- All external equipment are connected
- The following data is available:
 - Intended configuration, for example temperature control functions, external control functions etc.
 - How the unit is supposed to operate according to a weekly schedule (normal and reduced speed)

5.2 Initial setup of the unit

On the first start-up, the controller will start a special program for setting language, supply air temp set point, Time & date and week schedule for normal speed. Use the "OK" button to move between changeable parameters and the UP/DOWN arrows to see the displayed alternatives. Confirm by pressing "OK" once more. Move on down in the menu structure by use of the UP/DOWN arrows.

The following will be displayed:

1

Select language by pressing "OK" and then move between the alternatives with the UP/DOWN buttons. Confirm by pressing "OK". Move to the next level by pressing the "DOWN" button.

Choose Language
English

2

Shows the actual extract air temperature

Set the supply air set point. Default is 18°C (logon to service level needed, code 2222, to change default setting)

```
Extract air temp
Actual:.... °C
Setp.: 18 °C
```

3

Check and make sure that correct time and date is displayed, if not change the settings

```
Time: 12.46
Date: 2010-03-12
Weekday: Friday
```

4

Set the week schedule for how it's intended for the unit to operate at normal speed during Monday to Friday. It's possible to set 2 periods per day.

```
Normal speed
Monday → Friday
Per 1: 07:00 - 16:00
Per 2: 00:00 - 00:00
```

5

Set the week schedule for how it's intended for the unit to operate at normal speed during Saturdays and holidays. It's possible to set 2 periods per day.

```
Normal speed
Saturday → Holiday
Per 1: 07:00 - 16:00
Per 2: 00:00 - 00:00
```

6

Set the week schedule for how it's intended for the unit to operate at reduced speed during Monday to Friday. It's possible to set 2 periods per day. Normal speed inactivates reduced speed.

```
Reduced speed
Monday → Friday
Per 1: 00:00 - 24:00
Per 2: 00:00 - 00:00
```

7

Set the week schedule for how it's intended for the unit to operate at reduced speed during Saturdays and holidays. It's possible to set 2 periods per day.

```
Reduced speed
Saturday → Holiday
Per 1: 00:00 - 24:00
Per 2: 00:00 - 00:00
```

8

Select "Yes" or "No"

```
End Wizard
No
```

After finishing the setup the menu system for "Operator level" will be available.

See below menu overviews that display the available menus in the Operator level followed by the "Service level" manual.

To enter Service level use code 2222 in the "Access rights" menu. For operator level use code 1111.

To enter Administrator level use code 3333 in the "Configuration menu".

Note:

To perform more advanced settings please see the separate “General Commissioning Record” on www.systemair.com, online catalogue

5.3 Menu overview

Below menu overview shows both the Operator, Service and Administrator level. The overview of the parts unique to the levels in below table are marked with different background color.

To logon to Operator level use code 1111 under Access rights.	To logon to Service level use code 2222 under Access rights.	To logon to Administrator level use code 3333 under Access rights.
---	--	--

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
SX03 2015-03-15 09:00 System:Normal run Sp:22.0 Act: °C			Start screen headline Can be set to 5 different layouts (Changeable at “Administrator level” under the Configuration menu).
→ Running mode	→ Running mode	Running mode Auto	Set running mode to Auto, Manual reduced run, Manual normal run or Off.
		Op time SAF: 0.0 h EAF: 0.0 h	The time in hours that the motors have been operating SAF = Supply air fan EAF = Extract air fan
	→ Selected functions	Control function Cascade extract ctrl Fan control Flow/Pressure/ Manual control	Type of air temperature control the unit is configured for. Type of fan speed control the unit is configured for.
		Heating: Water Exchanger: Plate/Rot.exc Cooling: Not connect	Type of heating selected. Type of exchanger selected. Type of cooling selected.
		Free cool active:No	Status of the free cooling function.
		Support control Active: No CO2/VOC active Never	Status of the support control function. Status of the demand ventilation (CO2/VOC) function.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		Fire damper function Not active Operation when alarm Stopped	Status of the fire damper function when fire alarm is active.
		Frost protection Active Cooling recovery Yes	Status of the frost protection function. Status of the cooling recovery function.
		External set point Not active	Status of the external set point.
	→ Alarm events		Alarm log list along with the time and date they occurred. Move down and up in the list by pressing ↑↓.
	→ Input/Output	→ AI	Status of the Analogue inputs.
		→ AI exp3	Status of the Analogue inputs for expansion unit. Only visible for counter-/crossflow units with a connected pressure module
		→ DI	Status of the Digital inputs.
		→ UI	Status of Universal Analogue inputs or Universal Digital inputs.
		→ UI exp3	Status of the Universal Analogue inputs for expansion unit. Only visible for counter-/crossflow units with a connected pressure module
		→ AO	Status of the Analogue outputs.
		→ DO	Status of the Digital outputs.
→ Temperature	Extract air temp Actual: °C Setp: 22.0°C		Configured temperature control (default is Extract air temp). Actual temperature in the chosen control mode. Set-point temperature for the chosen control mode.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		If cascade control Max/min supply setp. Max: 30°C Min: 14.0°C	Set the maximum and minimum allowed supply air temperature in case of cascade control. Logon to service level needed to change settings.
	Outdoor temp: °C Supply air temp Act.: °C Setp: 18°C	Neutral zone 0.0 °C	Actual outdoor air temperature. Actual supply air temperature. Calculated supply air set point. The extract air controller output signal generates the supply air controller's set point value. A neutral zone can be set around the setpoint value. <hr/> Note: See Corrigo manual-Ventilation application for more information.
	Frost protection Actual: °C		Actual water temperature in the water heating battery. (Only visible for HW units).
	Efficiency exch. Actual: % Output exchanger Actual: 100%		Actual heat recovery efficiency. The function calculates the heat exchangers temperature efficiency in % when the output signal to the exchanger is higher than 5% and the outdoor temperature is lower than 10° C. Efficiency calculated from the Outdoor, Extract and Efficiency air temperature. When the control signal is lower than 5% or the outdoor temperature is higher than 10° C the display will show 0%. Status of the exchanger output.
	Temp for calculation efficiency Act: NaN C		Presented temperature for supply air efficiency calculation.
→Air Control			This menu option becomes visible if the unit is configured for "Flow control", "Manual frequency" or "Pressure control".

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	Frequency control manual SAF Output: %		Frequency control manual. Fans controlled by setting fixed output signal. This menu option becomes visible if the unit is configured for "Manual frequency".
		Frequency control manual SAF Output 1/1: 75% Output 1/2: 50%	
		Outdoor comp.output. -20°C = 0 m ³ /h 0°C = 0 m ³ /h Act. Comp: 0 m ³ /h	
	Frequency control manual EAF Output: %		
		Frequency control manual EAF Output 1/1: 75% Output 1/2: 50%	
		Outdoor comp.output. -20°C = 0 m ³ /h 0°C = 0 m ³ /h Act. Comp: 0 m ³ /h	
	Flow control SAF Actual: m ³ /h Setp.: m ³ /h		Airflow for the supply air fan (constant airflow control). Only visible if the unit is configured for "Flow control" (CAV).
		Flow control SAF Setp 1/1: 1100 m ³ /h Setp 1/2: 550 m ³ /h	Set the normal (1/1) and reduced (1/2) airflow for the supply air fan.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		Outdoor comp.Setp. -20°C = 0 m ³ /h 0°C = 0 m ³ /h Act. Comp: 0 m ³ /h	Set the SAF airflow compensation for the settable outdoor temperature. The outdoor compensation is linear and is set using two parameter pairs which give the value of the compensation at two different outdoor temperatures. The compensation can be positive or negative. Shows the actual airflow compensation.
	Flow control EAF Actual: xxx m ³ /h Setp.:xxx m ³ /h		Airflow for the extract air fan (constant airflow control). Only visible if the unit is configured for "Flow control" (CAV).
		Flow control EAF Setp 1/1: 1100 m ³ /h Setp 1/2: 550 m ³ /h↓	Set the normal (1/1) and reduced (1/2) airflow for the extract air fan.
		Outdoor comp.Setp. -20°C = 0 m ³ /h 0°C = 0 m ³ /h Act. Comp: 0 m ³ /h	Set the EAF airflow compensation for the settable outdoor temperature. The outdoor compensation is linear and is set using two parameter pairs which give the value of the compensation at two different outdoor temperatures. The compensation can be positive or negative. Shows the actual airflow compensation.
	Pressure control SAF Actual: Pa Setp.: Pa		The actual external pressure and set point for the supply air fan. Only visible if the unit is configured for "Pressure control" (VAV)
		Pressure control SAF Setp 1/1: 200 Pa Setp 1/2: 100 Pa	Set the external pressure set point for normal speed (1/1) and reduced speed (1/2) for the supply air fan.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		Outdoor comp.Setp. 1 -20°C = 0 Pa 10°C = 0 Pa Act. Comp: 0 Pa	Set the SAF pressure compensation for the settable outdoor temperature. The outdoor compensation is linear and is set using two parameter pairs which give the value of the compensation at two different outdoor temperatures. The compensation can be positive or negative. Shows the actual pressure compensation.
	Pressure control EAF Actual: Pa Setp.: Pa		The actual external pressure and set point for the extract air fan. Only visible if the unit is configured for "Pressure control" (VAV).
		Pressure control EAF Setp 1/1: 200 Pa Setp 1/2: 100 Pa	Set the external pressure set point for normal speed (1/1) and reduced speed (1/2) for the supply air fan.
		Outdoor comp.Setp. 1 -20°C = 0 Pa 10°C = 0 Pa Act. Comp: 0 Pa	Set the EAF pressure compensation for the settable outdoor temperature. The outdoor compensation is linear and is set using two parameter pairs which give the value of the compensation at two different outdoor temperatures. The compensation can be positive or negative. Shows the actual pressure compensation.
	Extra flow EAF Actual: m ³ /h		Shows the extract air flow
→ Time settings	→ Time/Date		Set correct time and date. Set 00:00 - 24:00 for continuous running. Setting 00:00 - 00:00 inactivates the period (stops the unit). Normal speed overrides Reduced speed i.e. Normal speed 07:00 - 16:00 and Reduced speed 00:00 - 24:00 runs the unit on Normal speed 07:00 - 16:00 and Reduced speed the rest of the day.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ Timer Normal Speed	Normal Speed Monday Per 1: 07:00-16:00 Per 2: 00:00-00:00→ Normal Speed Monday-Friday Per 1: 07:00-16:00 Per 2: 00:00-00:00	Set week schedule Monday to Sunday, Monday-Friday+ Holiday for normal speed. Possible to set 2 periods per day. Note the settings in the commissioning record.
	→ Timer Reduced Speed	Reduced speed Monday Per 1: 00:00-24:00 Per 2: 00:00-00:00→ Reduced Speed Monday-Friday Per 1: 00:00-24:00 Per 2: 00:00-00:00	Set week schedule Monday to Sunday, Monday-Friday + Holiday for reduced speed. Possible to set 2 periods per day. Note the settings in the commissioning record.
	→ Extended running	Extended running 60 min Time in ext. running 0 min	Set the time for extended running. Use digital input to force the unit to start or increase to normal running even if the actual mode is <i>Off</i> or <i>Reduced</i> . If the running time is set to 0 the unit only runs as long as the digital input is closed. The time the extended running is active is monitored in "Time in ext. Running". It's also possible to set a time here as well in order to shorten the initial set period.
	→ Holidays	Holidays (mm:dd) 1:01-01 – 01-02 2:01-01 – 01-01 3:01-01 – 01-01	Set up to 24 separate possible holiday periods for a full year. A holiday period can be any number of consecutive days from one and upwards. The dates are in the format: MM:DD. When the current date falls within a holiday period, the scheduler will use the settings for the weekday "Holiday".

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
→ Manual/Auto			<p>In this menu the running mode of all the configured output signals and a number of control functions can be manually controlled.</p> <p>The supply air controller's output signal can be manually set (Manual/Auto) to any value between 0 and 100%. The temperature output signals will change accordingly if they are in Auto mode. It is also possible to manually control each of the temperature output signals individually.</p> <p>Since leaving any of the outputs in manual control will disrupt the normal control, an alarm will be generated as soon as any output is set to a manual mode.</p>
	Supply temp. contr. Auto Manual set: 0.0		<p>Set the supply air temperature controller to Auto, Manual or Off.</p> <p>Set the output signal between 0-100%.</p> <p>The outputs Y1, Y2 and Y3, if in Auto-mode, will follow the signal according to the set split values.</p>
	SAF: Auto Manual set: 0.0		<p>Set the output signal for SAF (supply air fan) to:Auto, Manual,1/2-speed or 1/1-speed.</p>
	EAF: Auto Manual set: 0.0		<p>Set the output signal for EAF (extract air fan) to:Auto, Manual,1/2-speed or 1/1-speed.</p>
	Heating Auto Manual set: 100.0		<p>Set the heating to Auto, Manual or Off.</p> <p>Set the manual output 0-100%.</p>
	Exchanger Auto Manual set: 0.0		<p>Set the exchanger rotor control to Auto, Manual or Off</p> <p>Set the manual output 0-100%</p>

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	Cooling Auto Manual set: 0.0		Set the cooling to Auto, Manual or Off Set the manual output 0-100% <hr/> Note: Needs to be activated in order to be visible here <hr/>
	P1-Heating Auto		Set the pump control for the heating coil to Auto, On or Off
	P1-Cooling Auto		Set the pump control for the cooling coil to Auto, On or Off
	Fire damper Auto		Set the Fire damper to Auto, Open or Close <hr/> Note: Needs to be activated in order to be visible here Configuration of fire damper functions are made at Administrator level <hr/>
	Outdoor air damper Auto		Set the Outdoor air damper to Auto, Open or Close
	Exhaust air damper Auto		Set the Exhaust air damper to Auto, Open or Close
	Extra sequence Y4 Auto Manual set: 0.0		Set the Extra sequence to Auto, Manual or Off Only visible for Topvex SC units
	Extra sequence Y5 Auto Manual set: 0.0		Set the Extra sequence to Auto, Manual or Off Not used in default setting.
→ Settings			In this menu group the settings for the activated functions are available. Depending on which choices have been made in the configuration menu some of the possible alternatives may not be displayed.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ Control temp	Supply air control P-band: 33.0°C I-time: 100.0 sec	Set P-band and I-time for the Supply air control function Note: See Corrigo manual-Ventilation application for more information.
		Extract air control P-band: 100.0°C I-time: 300.0 sec	Set P-band and I-time for the Extract air control function Note: See Corrigo manual-Ventilation application for more information.
		Shutdown mode P-band: 100.0°C I-time: 100.0 sec	Set P-band and I-time for the Shutdown function Note: See Corrigo manual-Ventilation application for more information.
		→ Frost protection Active Setp shutdown: 25.0°C P-band active: 5.0°C	Status for frost protection. When running mode switched to "Off". Shutdown controller will control the heating output to maintain a constant settable temperature at the frost protection sensor for the hot water coil. If frost protection temperature falls below Frost protection Alarm level + settable P-Band for frost protection, it will rise the internal signal and force the heating valve to open to avoid freeze-up of hot water coil.
		Fast stop at frost protection alarm Yes	Set the fast stop of the unit in case of frost protection alarm to Yes or No.
		Sequency with frost protection Y1-Heating	Frost protection control. Is available for Y1 heating, Y4 extra sequence or on both Y1 and Y4.
	→ Control flow or Control pressure		Only shown if Fan control selected to these alternatives.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		Flow control SAF P-band: 2160.0 m ³ /h I-time: 40.0 sec Min. output: 0%	Set P-band, I-time and Min. output for the supply air fan when the unit comes configured as Flow control from factory. Alternatively Pressure control if that configuration is chosen
		Flow control EAF P-band: 2160.0 m ³ /h I-time: 40.0 sec Min. output: 0%	Set P-band, I-time and Min. output for the Extract air fan when the unit comes configured as Flow control from factory. Alternatively Pressure control if that configuration is chosen
	→ Alarm settings	→ Alarm limits	Set the alarm limits and allowed deviations for the different functions
		→ Alarm delays	Set the alarm delays and allowed deviation delays for the different functions
		→ Restore alarm	Reset the service alarm (filter alarm).
	Restore factory settings: No Restore user settings: No		In this menu, it is possible to restore all parameters to their factory settings or to the user settings they were saved as earlier . Select Yes or No
	Save user settings No		The current configuration can be saved in a separate memory area and can later be restored using the previous menu, Restore user settings. Select Yes or No
Darker gray area, log in to "Administrator level" code 3333			
→ Configuration	→ Inputs/Outputs		Setup for inputs and outputs.
	→ Sensor settings		Setup of sensor types and control range.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ Control function	Control function Mode: Cascade extract ctrl	Set type of temperature control function you want the unit to operate under. Choose between Room control, Cascade extract ctrl, Outd comp room, Outd comp extr air, Supply air control, Outdoor comp. supply Extract/supply air →(possible to switch between the two depending on outdoor temp.), Room/supply air →(possible to switch between the two depending on outdoor temp.),
	Fan control		
	→ Extra sequency Y4	Topvex SC: Mode extra sequence Y4 Active w cool recov	Only active for Topvex SC Can be configured to one of the following alternatives: Active, Active with cooling recovery, Active with enthalpy control and Active with both cooling recovery and enthalpy control.
	→ Extra sequency Y5		Extra sequence Y5 can be configured to Active or Not active.
	→ Pump control	P1-Heating P1-Cooling	Set parameters for pump control. If, for any of the control circuits, no output is configured for pump control these settings will be ignored.
	→ Free cooling	Free cool active: No Outd. temp activation 22°C	Set free cooling active to Yes or No. Set the lower outdoor day temperature limit for the activation of the free cooling function. The temperature of the previous day needs to be over the set temperature in order activate the free cooling function.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
		Outd. temp night High: 15.0°C Low: 5.0°C Room temp min. 18°C	<p>Set the upper outdoor night temperature limit for the activation of the free cooling function.</p> <p>Set the lower outdoor night temperature limit for the activation of the free cooling function.</p> <p>Set the lower room temperature limit. The temperature needs to be above this value for the free cooling function to stay active.</p> <p>If no room sensor are connected extract air is valid.</p>
		Hour for start/stop Free cooling Start: 0 Stop: 7	<p>Set the start and stop time for the free cooling function</p> <p>For example Start: 0 and Stop: 6</p> <p>means that the free cooling sequence is active between 00.00 and 06.00 h.</p>
		Time to block heat output after Free cooling 60 min	<p>Set the delay in minutes from the time where the free cooling sequence has stopped until a possible heating sequence is initiated, i.e. how long a cooler room temperature than set temperature can be accepted</p>
		Fan output when free cooling SAF: 0 % EAF: 0 %	<p>Set the fan speed in percentage of the normal speed for each fan individually during the free cooling sequence</p>
		Outdoor sensor placed in intake channel (intake duct) No	<p>Set if the outdoor sensor is placed in the intake duct or not.</p> <p>Choose between No and Yes</p> <p>Preset is No.</p>
	→ Support control	Support control Active: No EAF running during Support contr.: Yes	<p>When using the control function room control or extract air temperature control, it is possible to utilize support-heating and/or support-cooling. Minimum running time is settable 0...720 minutes (factory setting 60 minutes). Choose between "Active: Yes or No".</p> <p>(For start and stop temperatures see the "Temperature" menu)</p>
		Min. run time for support ctrl: 60 min	<p>Set the minimum running time in minutes for support control</p>

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ CO2/VOC Control	CO2/VOC active Never Type: Fan Min. time: 60 min	In applications with varying occupancy the fan speeds can be controlled by the air quality as measured by a CO2/VOC-sensor. See Corrigo manual for further explanation Set active to Never, Always or If time channel off. Set what should be regulated. Select type Fan Set the min. time the unit is activated by the CO2/VOC demand function
		Activation level 1/2-speed: 800 ppm 1/1-speed: 1000 ppm diff: 160 ppm	Set the activation level at 1/2 speed Set the activation level at 1/1 speed Set allowed diff. value
		Sequency with CO2 control Y2 exchanger	CO2/VOC control can be used with mixing dampers. Select for use on Y2, Y4 or on both outputs.
	→ Fire Function	Fire damper function Not active Operation when alarm Stopped	The fire alarm input can be configured as Not active, Normally closed or Normally open. Choose operation when alarm is active Stopped, Continuous run, Normal run, Only SAF, or Only EAF
		Fire alarm input Normally open Damper exercise No	Fire alarm input can be configured to normally open or normally closed. Fire alarm input is also available to be configure from digital inputs. Note the risk of a twice changed signal can create an undesired function. Activate the fire damper exercising, choose between No, Yes unit running or Yes unit stopped. Set the parameters for damper exercise in the submenu.

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ Exchanger deicing	Exchanger deicing Yes	This sections is for units with counterflow and crossflow exchangers. Set if exchanger deicing will be used, Yes/No
		Bypass: On Stop deicing: On Activation temp: 0,0° C Stop temp SAF: -8,0° C	This sections is for units with counterflow and crossflow exchangers. Exchanger deicing allowed with bypass, On/Off. Exchanger deicing allowed with stop of the supply air fan (SAF), On/Off Outdoor temperature limit to allow deicing function. Outdoor temperature limit for forced stop deicing, interlock of bypass deicing.
		Setp Press dev: 50% Stop hyst: 60% Actual setp: xxx Pa Manual calib: Off	This sections is for units with counterflow and crossflow exchangers. Set point in percent of the pressure deviation to start deicing. Reduction of the pressure deviation in percent to cancel deicing. Actual setpoint for deicing presented. Note! The value can vary, depending on airflow. Manual calibration ON/Off to make a new calibration manually. Note! Recommended to perform this operation with a dry exchanger and normal airflow.
	→ Cooling recovery	Cooling recovery Yes Cooling limit: 2.0°C	Set the cooling recovery to Yes or No. Set the cooling limit (the difference in temperature between extract air and outdoor air that activates the cooling recovery).

Main menu item	Sub-menu item 1	Sub-menu item 2	Explanations
	→ External setpoint	External setpoint Not active Min setp.: 12.0°C Max setp.: 30.0°C	An external setpoint device can be connected. The setpoint device must follow the PT1000 resistance curve. The setting range can be restricted.
	→ Alarm settings	Alarm no(1-100): 1 Run Error Supply Air	
	→ Communication	Function Port1 Slave Function Expansion unit Slave	Choose between different communications Slave, Expansion unit, Freq conv/Press tran, External display, Exp and freq conv or Exp and ext display.
		→ Function Port2 Exp and ext display	
		PDTxxC-2	Pressure dual transmitter module.
		Expansion unit1 None Expansion unit2 None Expansion unit3 PDTxxC-2 Expansion unit4 PDTxxC-2	
→ Access rights	→ Log on	Log on Enter password xxxx Actual level: None	Log on to service level by entering a 4-digit code. After reaching the desired level go back with "LEFT" arrow (press 2 times) on the control panel. Standard code from factory to enter service level is 2222. Back to operator level: 1111. To enter Admin level code: 3333.
	→ Log off	Log off? No Actual level:None	Log off from Administrator level by changing No to Yes with the "OK" and "UP/DOWN" buttons Automatic logoff after 6 minutes of inactivity.
	→ Change password	Change password for level:None New password xxxx	Set a new password for the level of your choice. Can only be done once logged on to the service level.

5.4 Free cooling description

Free cooling is used during the summer to cool the building night-time using cool outdoor air, thereby reducing the need for cooling during the day and saving energy. During this time the heat exchanger is by-passed.

Note:

The Free cooling function is set to Not active as default.

The fans are started at `Start Cooling Hour` if the following criteria are met simultaneously:

all time channels are in OFF position and that the unit goes back to normal operation the following day (set operation time during the following 24 hours) **and**

the average outdoor temperature is higher than the outdoor temperature limit and

the actual outdoor temperature is lower than the outdoor temperature set upper limit and

the actual outdoor temperature is higher than the outdoor temperature set lower limit and

the actual outdoor temperature is lower than the actual room temperature and

the actual room temperature is higher than the set room temperature limit.

The fans are stopped at the `Stop Cooling Hour` or if the following conditions are met:

the room temperature is lower than the set room temperature limit or

the outdoor temperature exceeds the set outdoor temperature upper limit or

the outdoor temperature is lower than the lowest set outdoor temperature limit.

The unit checks the night temperature (indoor and outdoor temperature) during 3 minutes at 12.00 PM when the fans are started so that the sensors can perform a temperature measurement. If above conditions are met the free cooling function is started, if not the unit goes back to OFF position.

5.5 Defrost function, general description

The need for defrosting of the heat exchanger block is determined by the outdoor temperature. There are three possibilities for defrosting based on if you want to keep a balanced airflow or if you can accept an unbalanced airflow during the defrost cycle. The unit can be programmed for how aggressive the defrosting needs to be based on the estimated indoor humidity level. See table 1 below for explanations of the different settable levels.

1. Reduction of the supply airflow (Unbalanced airflow):

Reduces the supply airflow up to 20% to allow the higher extract airflow to defrost the heat exchanger. Starts, if activated, at a preset outdoor temperature and stays active as long as the outdoor temperature stays below the set point. During this time the supply air fan operates at a constant reduced speed

By even lower outdoor temperatures a stop defrosting sequence is started.

2. By-pass of the supply airflow (Balanced airflow):

Starts, if activated, when the outdoor temperature drops to a preset level, and keeps below that level a preset number of minutes, the by-pass damper inside the unit opens to help reduce the flow of the cold outdoor air through the heat exchanger block. As this cycle is initiated the set supply air temperature is lowered 4K. If the set supply air temperature after the re-heater battery still can't be maintained both the supply air and extract air fan are reduced in order to maintain a balanced indoor ventilation condition. If this is not enough to keep the set supply air temperature a stop defrosting sequence will start that stops the supply air fan under a preset number of minutes.

3. Stop defrosting (Unbalanced airflow) (Default):

Starts when the outdoor temperature drops below the preset stop defrosting temperature or the set supply air temperature during by-pass defrosting can't be kept. Is active a preset number of minutes based on the set defrost level (table 1). Stop defrosting is also automatically activated as necessary if none of the above options are chosen.

Table 1: Defrost level

Defrost level	Indoor humidity level ¹	Description
1	Minimum <20%	Office with small amount of plants. Low physical activities. Industrial building with processes that use no water.
2	Low 30%-40%	Office with normal amount of plants. Medium physical activities.
3	Medium 40%-60%	Day care centre. High physical activities
4	High 60%-80%	Newly constructed buildings that need to dry out.
5	Extreme >80%	Greenhouse

1. Relative humidity in extract air during cold season

6 Maintenance

6.1 Important

Danger

- Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

Warning

- Although the Mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges during mounting and maintenance. Use protective clothing.

6.2 Maintenance intervals

The table below shows recommended maintenance intervals for the unit and the installation. To ensure a long operation lifetime for the unit it is important to perform maintenance according to below recommendations and that they are performed according to the operation and maintenance instructions. A thorough and recurrent maintenance is a must for a valid guarantee.

Type of maintenance	Once a year	When necessary
Cleaning the heat exchanger	X	
Cleaning the fans	X	
Cleaning extract louvres and supply air diffusers		X
Cleaning the outdoor air intake	X	
Cleaning the duct system		X ¹

1. Or in accordance with local rules and regulations

6.3 Maintenance instructions

6.3.1 Changing the Supply/Extract air filter

Indicated as “filter to be changed” in the control panel, 1-2 times per year or when necessary.

The bag filter cannot be cleaned and must be changed (figure 7 when necessary. New filters can be ordered from Systemair. Operation time between filter changes must be reset after filter change (see chapter 5.3, Filter alarm). To change the alarm activating time see chapter 5.3, Filter alarm.

Initial pressure drop over the filter (Clean filters) is approx. 70 Pa and the final pressure drop is approx. 220 Pa.

The filters are taken out by releasing the filter locking handle as shown in (figure 6) pos 1, after which the filters can be taken out and replaced.

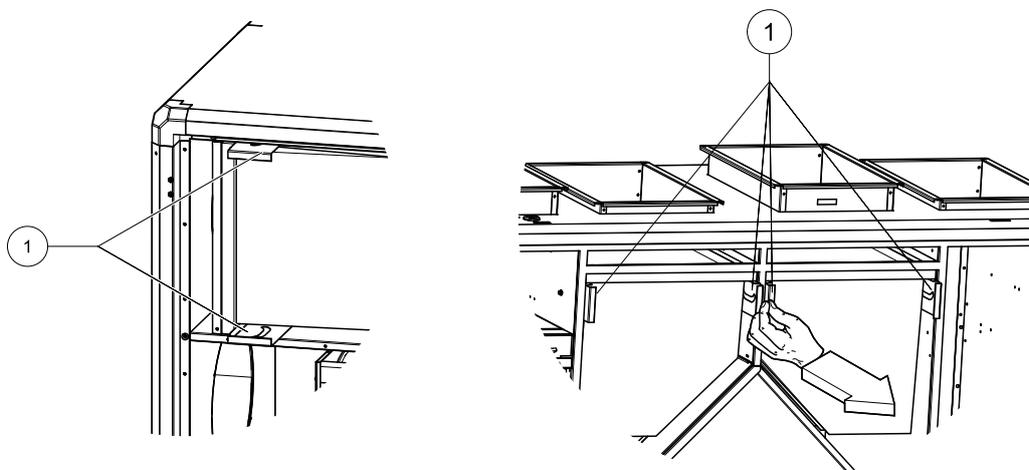


Fig. 6 Releasing filter lock

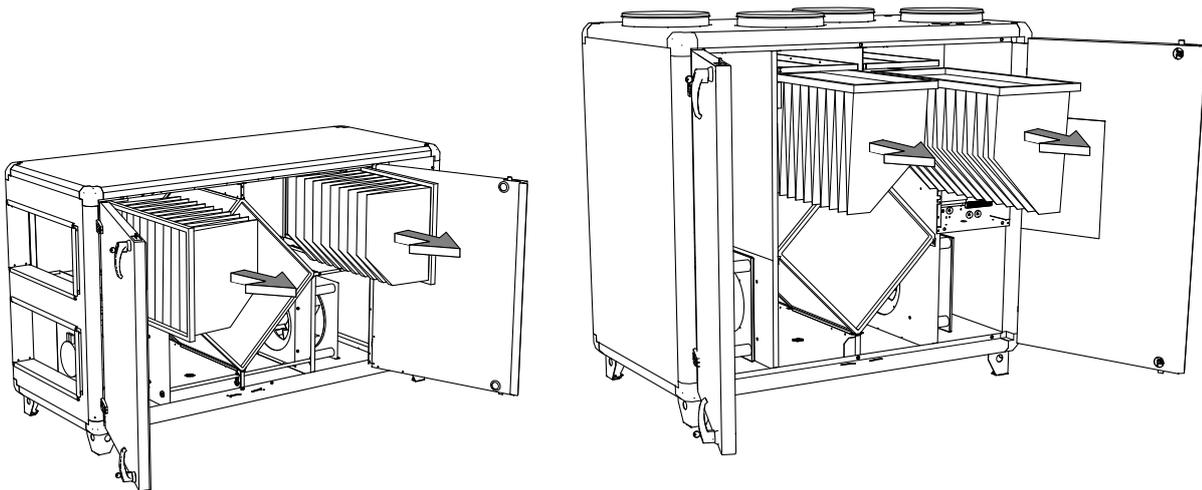


Fig. 7 Topvex SX and TX

6.3.2 Checking the heat exchanger

After a long time of use dust may build up in the exchanger and block the airflow. It is important to clean the exchanger regularly (once a year) to maintain high efficiency. The heat exchanger can be taken out of the unit for maintenance figure 8. Wash in hot soapy water or use pressure air. Do not use detergent containing ammonia.

⚠ Caution

The exchanger block is heavy. To take out the plate heat exchanger is normally a job for two persons.

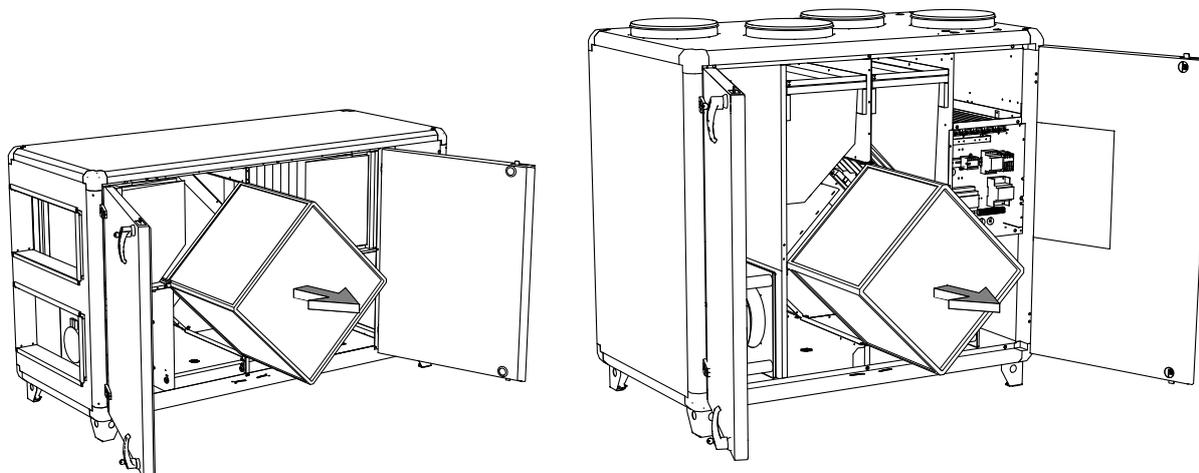


Fig. 8 Topvex SX

6.3.3 Checking the fans

Even if the required maintenance, such as change of filters, is carried out dust and grease may slowly build up inside the fans. This will reduce the efficiency.

The fans are easily taken out from the unit figure 9 and may be cleaned with a cloth or a soft brush with a recommended interval of once per year. Do not use water. White spirit can be used to remove obstinate settlements. Allow drying properly before remounting.

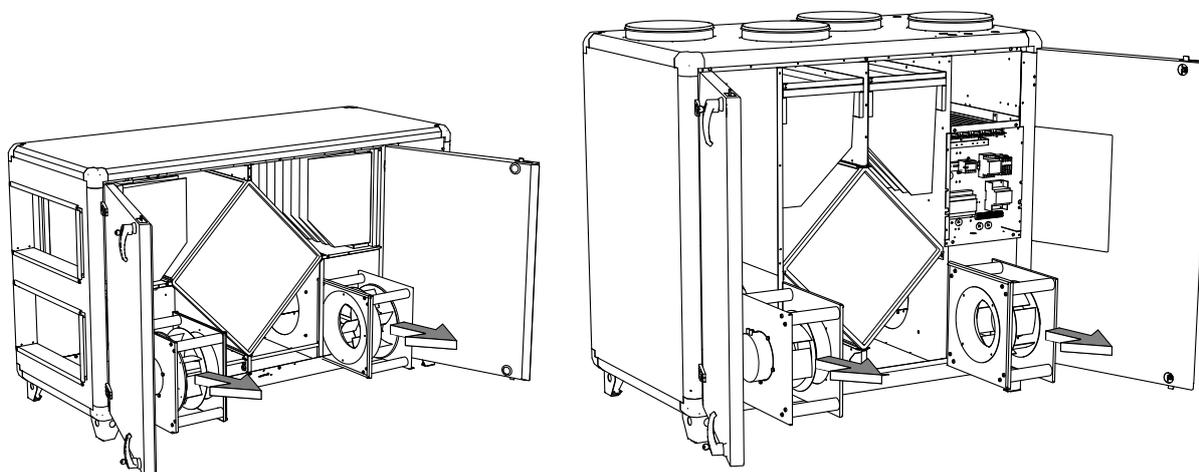


Fig. 9 Checking the fans

6.3.4 Cleaning the extract louvers and inlet diffusers

The system supplies treated outdoor air to the building and extracts the used indoor air via the duct system and diffusers/louvers. Diffusers and louvers are mounted in ceilings/walls in bedroom, living room, wet rooms, WC etc. Remove diffusers and louvers and wash in hot soapy water if required. Diffusers/ louvers must be put back with their original settings and positions in order not to unbalance the system.

The cleaning of these parts is done when necessary.

6.3.5 Checking the outdoor air intake

Leaves and pollution could plug up the air intake grille and reduce the unit's capacity. Check the air intake grille at least twice a year and clean if necessary.

6.3.6 Checking the duct system

Dust and grease settlements may build up in the duct system even if filters are changed regularly. This will reduce the efficiency of the installation. The ducts should therefore be cleaned/changed when necessary.

Steel ducts can be cleaned by pulling a brush, soaked in hot soapy water through the duct via diffuser/louver openings or special inspection hatches in the duct system (if fitted).

Note:

Possible roof cowls must be checked once a year and cleaned when necessary.

6.3.7 Changing the Internal Battery

Note:

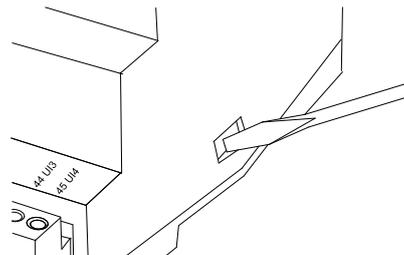
This procedure requires knowledge of proper ESD protection; i.e. an earthed wristband must be used!

When the alarm "Internal Battery" is activated and the battery LED lights up red, the battery for backup of program memory and real-time clock has become too weak. The battery is replaced as described below. A backup capacitor saves the memory and keeps the clock running for at least 10 minutes after the power supply is removed. Therefore, if the battery replacement takes less than 10 minutes, there will be no need to reload the program, and the clock will continue to run normally.

The replacement battery must be of the type CR2032.

1

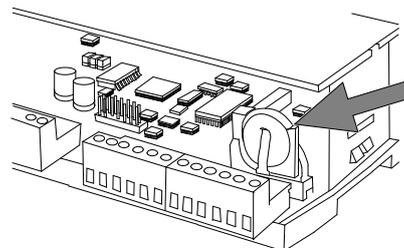
Remove the cover by pressing down the locking torques at the edge of the cover using a small screwdriver, and at the same time pulling the edges outwards.



2

Grip the battery firmly with your fingers and lift it upwards until it rises from its holder.

Press the new battery firmly down into place. Note that to preserve correct polarity, the battery can only be inserted the "right way round".



6.4 Troubleshooting

Should problems occur, please check or correct the following before contacting your service representative. Always check if there are any alarms active in the control panel.

1. Fan(s) do not start

- Check that the fuses are not defect
- Check the settings in the control panel (times, week schedule, auto/manual operation etc.)
- Check if there are any alarm messages

2. Reduced airflow

- Check the settings of Medium and Low fan speed
- Check that the Outdoor/Exhaust air damper (if used) opens
- Change of filters required?
- Cleaning of diffusers/louvers required?
- Cleaning of fans/exchanger block required?
- Is the roof unit/air intake clogged?
- Check ducts for visible damage and/or build up of dust/pollution
- Check diffuser/louver openings.

3. Cold supply air

- Check the control temperature on the control panel
- Check if the overheating thermostat has tripped. If necessary press the red button, marked RESET, in the electric heater box, see figure 3.
- Check if the extract filter must be changed
- Check if the fans have stopped due to overheating. If so the thermal contact might have tripped (shows as `Fan alarm` in the control panel).

4. Noise/vibrations

- Clean the fan impellers
- Pull the two fans out and check that the 2 screws holding the fans are tightened.

6.4.1 Alarms

The alarm button (pos.1, fig. 1) opens the alarm queue. When pressing this button active and non-acknowledged alarms will be displayed in the menu window. The alarm-LED (pos. 2, fig. 1) is flashing if there are non-acknowledged alarms and steady if the alarms are still active but have been acknowledged. If there are multiple alarms, use UP/DOWN to move between them. An alarm can be acknowledged or blocked by using OK and UP/DOWN. To abort and go back to start menu select Cancel and press LEFT.

See Commissioning record for an overview of possible alarms.

7 Service

Before calling your service representative, make a note of the specification and production number from the type label (figure 10)

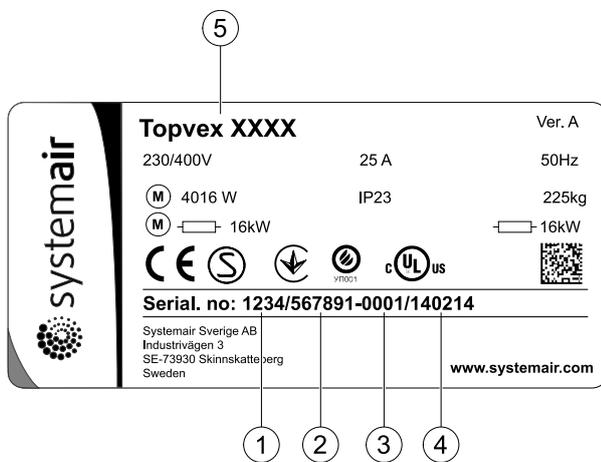


Fig. 10 Type label

Position	Description
1	Item number
2	Production order number
3	Consecutive number
4	Production date
5	Product code (product specification)

Systemair AB reserves the right to make changes and improvements to the contents of this manual without prior notice.



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