

VENTILATION UNIT

KUBEN 1000M3E

Kuben 1000M3E is a room-placed ventilation unit for offices, conference rooms, offices, schools, preschools etc.



Original bruksanvisning:
Teknisk beskrivning
Montageinstruktion
Elschema
Drift & skötsel



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GENERAL INFORMATION

The Kuben 1000M3E is a complete indoor air conditioning unit for offices, conference rooms, offices, schools, etc.

The unit is extremely quiet in relation to its large air flow. No special fan room is needed, the unit can be placed directly in the room to be ventilated. The Kuben 1000M3E is best placed against an external wall with the outside air and exhaust air connection directly out through the wall to a so-called combi unit.

The Kuben 1000M3E supplies most of the supply air in a grille in the lower part of the unit and the extract air is sucked out at the top, but unlike other units, the Kuben 1000M3E also has the option of additional duct connections on both the supply and extract air sides on both sides of the unit.

The unit is complete with built-in control and regulation equipment. Electrical connection is all that is needed.

The built-in heat recovery becomes very large with a highly efficient countercurrent heat exchanger.

You can choose between electric or water heating as backup heating.

Filtration takes place through efficient and economical filters on both the supply and extract air sides. The fans are separately steplessly adjustable in speed and a variety of demand-controlled air flow variants are available to choose from.

FUNCTION

The unit supplies the room with filtered and tempered fresh air through low-impulse blowing in the lower part of the unit and possibly connected ducts at the top of the unit.

The unfresh used air is sucked out on the top of the unit and/or with duct-connected extract devices from adjacent rooms. In this way, the premises are effectively ventilated without either noise or draft problems.

CONNECTION POSSIBILITIES

The Kuben unit is very flexible. No fan room is needed and the unit can be placed in a variety of ways in the room to be ventilated. Any channels are connected on the side of the unit's upper part according to the various connection options offered.

The supply air duct is connected to supply air devices placed in the residence zone's "clean" rooms, office rooms, conference rooms, meeting rooms, etc. Both "mixing ventilation" with ceiling-mounted supply air units and "displacing ventilation" with low-impulse units at the floor can be selected.

The extract air can, for example, be connected to extract air system from example toilets. Thanks to the tight countercurrent heat exchanger, there is no odor transfer to the supply air.



Kuben 1000M3E

ASSEMBLY INSTRUCTIONS

TRANSPORT

The unit is transported without a pallet standing on its own plinths. This is to facilitate handling because the aggregate is high (2.62 m). The unit is wrapped in plastic from the factory but should not be stored outdoors before assembly.

DELIVERY RECEPTION

Inspect the shipment upon delivery and check for shipping damage.

The delivery includes the following parts:

1 unit part on plinth stand.
1 unit top part (with 4 160 and 2 250 duct connections) is delivered mounted on top of the unit part.
3 cover plates for the plinth, delivered inside the doors on the floor.
2 muff 250 for exhaust air/outdoor air, delivered inside the doors.
1 control panel for external placement, delivered inside the door to the control center.

ASSEMBLY IN GENERAL

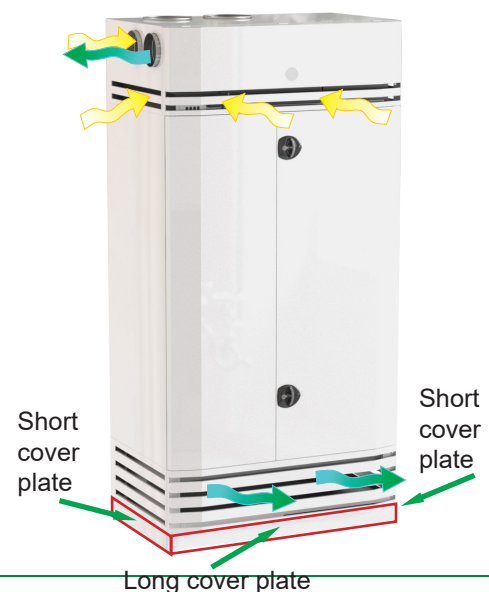
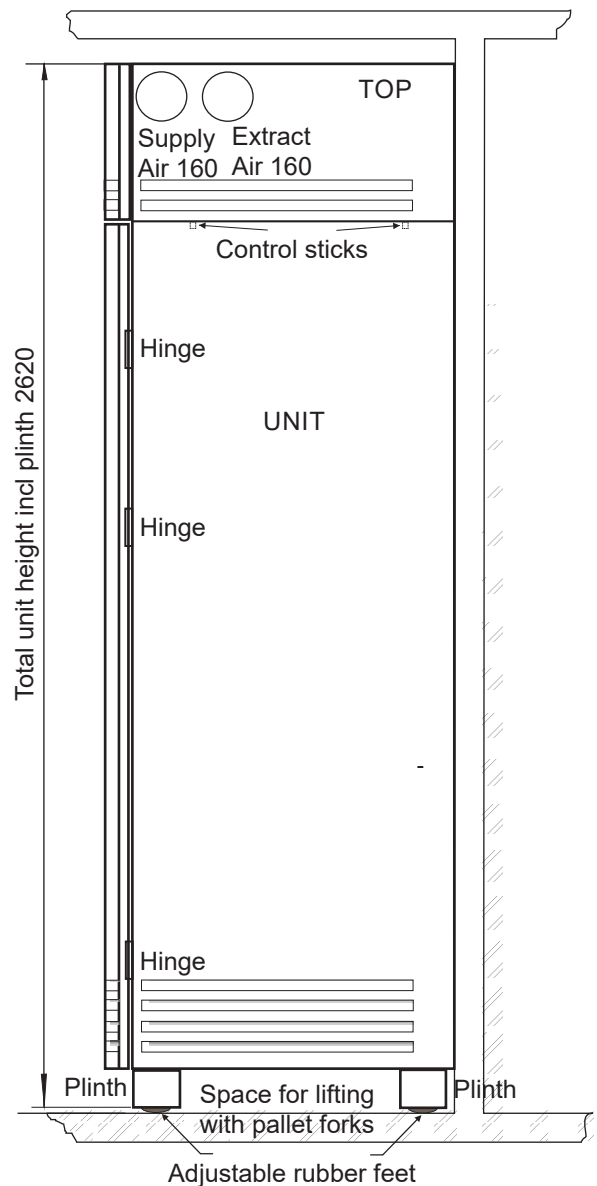
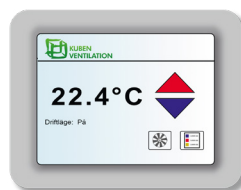
The unit is intended to be placed directly in the room to be ventilated. Placement against an external wall is preferable for the very low sound values to be contained.

During delivery and deployment, units can be moved using a pallet lift or loader. Consider the height and the high center of gravity.

The unit is very heavy to handle and several people are necessary to assemble the unit without risk of damage.

When the unit is in its final location, the cover plates for the plinths can be mounted. Fasten with mounting screw.

Finally, mount the external control display on the unit with double-sided tape or on the wall with screws. Connect the cable to the display socket on the right side of the unit.



ELECTRICAL CONNECTION & CONTROL

The unit is equipped with, among other things:

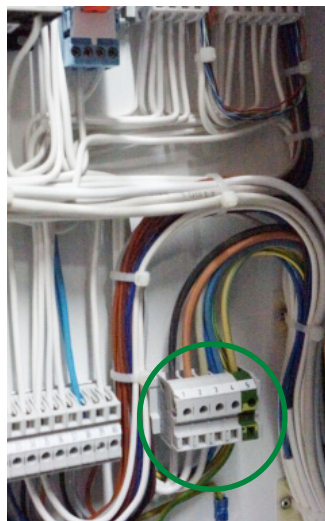
- Supply air fan and extract air fan.
- Preheating battery and post-heating electrical battery.
- Automatic bypass damper.
- Complete built-in control equipment.

The internal control panel inside the service doors is opened with the key in the lock. The entire control center can then be pulled out of the assembly on rails.



Internal control panel

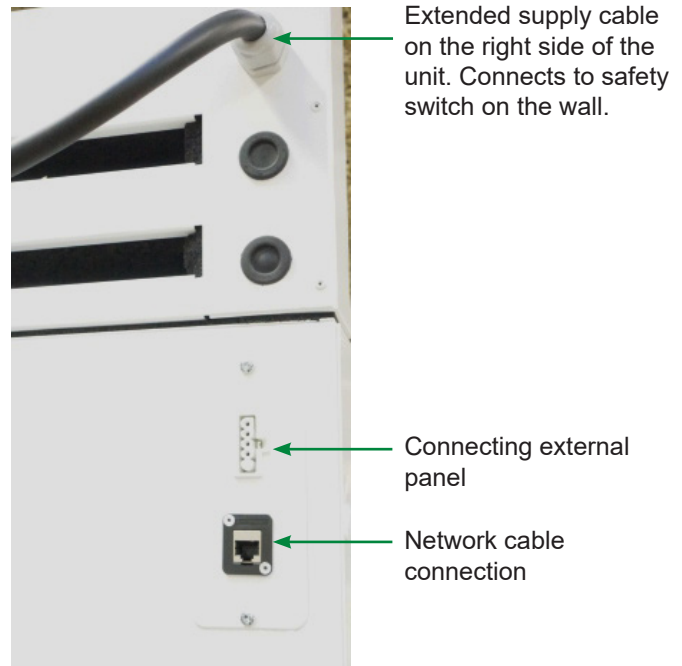
The steering wheel is internal and fully wired. The supply current is connected with 3-phase, 400 V fused 10 A .



The power supply 3 x 400V, 10 A is fully connected to the terminal block in the control center.

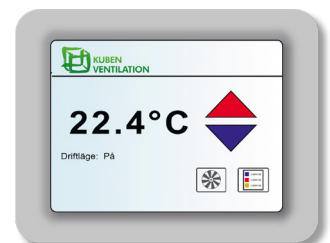
The supply cable is fully connected on the mounting plate behind the control panel. The cable is extended on the right side of the unit and must be connected to a safety switch high on the wall.

The presence sensor, CO2 sensor and all temperature sensors are internally connected in the unit and nothing other than the power supply needs to be connected and connected for the unit to be ready for operation.



For simple operating settings, however, it is recommended that the loose display be plugged into the display socket on the right side of the unit.

If the unit's built-in modem is to be used for remote control and remote control using a local network, a network cable is connected to the network socket on the right side of the unit. The modem can also be configured to run towards the cloud with a 3G or 4G connection. Instructions for the modem can be found further back in the compendium.



TECHNICAL DATA



- Extremely low noise level thanks to low internal pressure drops, good aerodynamics and technically developed sound insulation.
- Highly efficient heat recovery > 80%.
- Very compact unit which, thanks to the low noise level, can be placed directly in the room.
- Simple and quick assembly.
- Turnkey with built-in steering. Just connect the power.
- Equipped with customized regulation (CO₂) and presence sensor.
- Large optional equipment options.

ADDITIONAL HEAT

- Preheating battery 1 kW
- Afterheating battery 3 kW.
- Temperature regulation with pulse control.
- Overheating protection on the electric batteries.
- Supply air temperature control.
- Can be changed to another rule type.
- Water heating (optional): Power 7.8 kW, 55/40°C.
- Temperature regulation with electronic heat regulator.
- Built-in regulating freeze protection. PI regulation.

Air volumes	
Normal speed:	265 l/s (954 m ³ /h) 60 Pa
Forcing Flow:	330 l/s (1188 m ³ /h) 60 Pa
Additional heat	
Preheating:	1kW
Afterheating:	3kW
Electricity Data	
Connection:	3-phase, 400V, 10 A
Supply air fan:	EC 680 W, 230 V, 4,0 A
Extract air fan:	EC 680 W, 230 V, 4,0 A
Heat recovery:	Countercurrent heat exchanger Recovery > 80%
Sound level:	30 dB(A) at max 265 l/s (60 Pa) 35 dB(A) at max 330 l/s (60 Pa)
Duct connection:	Spiro channel Ø 250 on the exhaust air and outdoor air connection.
Measure:	Height: 2621 mm inkl plinth Width: 1300 mm Depth: 837 mm incl door
Door	Depth: 78 mm
Unit without door Plinth	Depth: 760 mm Height: 90 mm

OPTIONAL

- Several different control options, e.g. extract air temperature control.
- Extra heat 1 kW, water heating, 7.8 kW, 55/40°C.
- Duct connection at the ceiling instead of low impulse.
- External alarm panel. A and B alarms.
- Extract grille for installation above the unit.
- Channel set. Complete kit with insulated ducts, bendable pipes and details for a complete assembly.
- Extract air silencer and supply air silencer.
- Units and accessories in any colour.

TECHNICAL DATA

STANDARD EQUIPMENT

- Directly driven, energy-efficient EC fans.
- Countercurrent heat exchanger. Temperature efficiency >80%. Completely sealed without transfer between supply and extract air.
- Filter ISO ePM1 70%; / ISO ePM10 55%;. Cassette filter with very good filter economy.
- Additional afterheating, electricity or water.
- Built-in electrical and control center.
- Prepared for the "Kuben Cloud".
- Automatic defrost function.
- Individual stepless speed regulation with forcing.
- Supply air temperature control/extract air temperature control.
- Automatic bypass function.
- Several time channels with automatic summer time function.
- Built-in CO² sensor for stepless airflow regulation.
- Built-in presence sensor for start or forcing.
- Loose touch display for wall mounting. Color graphics.
- Programmable alarm list.

FUNCTION

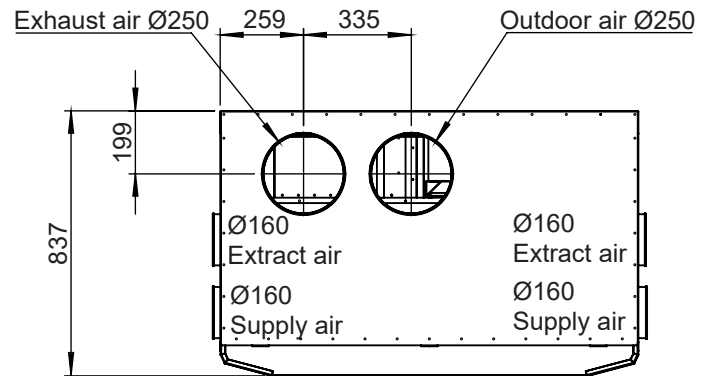
The Kuben 1000M3E is intended to almost silently ventilate a larger room, a school hall, a conference room or the like.

The unit, which is very energy-efficient, with countercurrent heat exchangers with high efficiency and energy-efficient EC fans, is best placed directly against the outer wall. Two holes are made in the outer wall for outside air and exhaust air.

The supply air is supplied slightly below temperature in the lower part of the unit and the air "flows out" over the floor and reaches far into the room. The extract air is sucked in at the top of the unit and you can also connect ducts with two 160 mm ducts on each side.

This is to be able to ventilate a WC, a kitchenette or similar spaces. The supply air can also be connected with two 160 mm supply air ducts at the top, and you can thus also ventilate some nearby smaller rooms.

DUCT CONNECTION



ALTERNATIVE UNIT HEIGHTS

With lower ceiling heights, it is possible to get the unit at a slightly lower height by ordering a lower plinth.

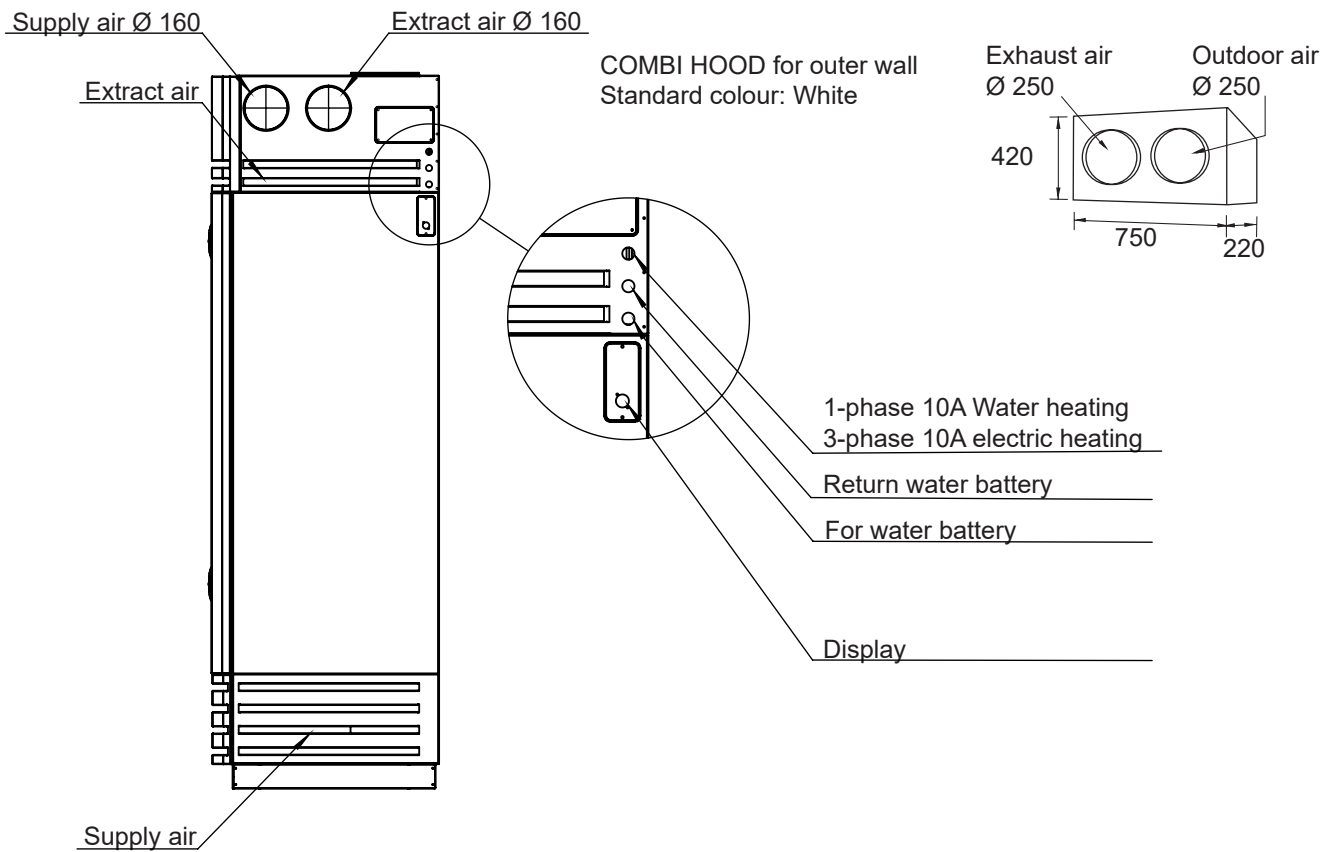
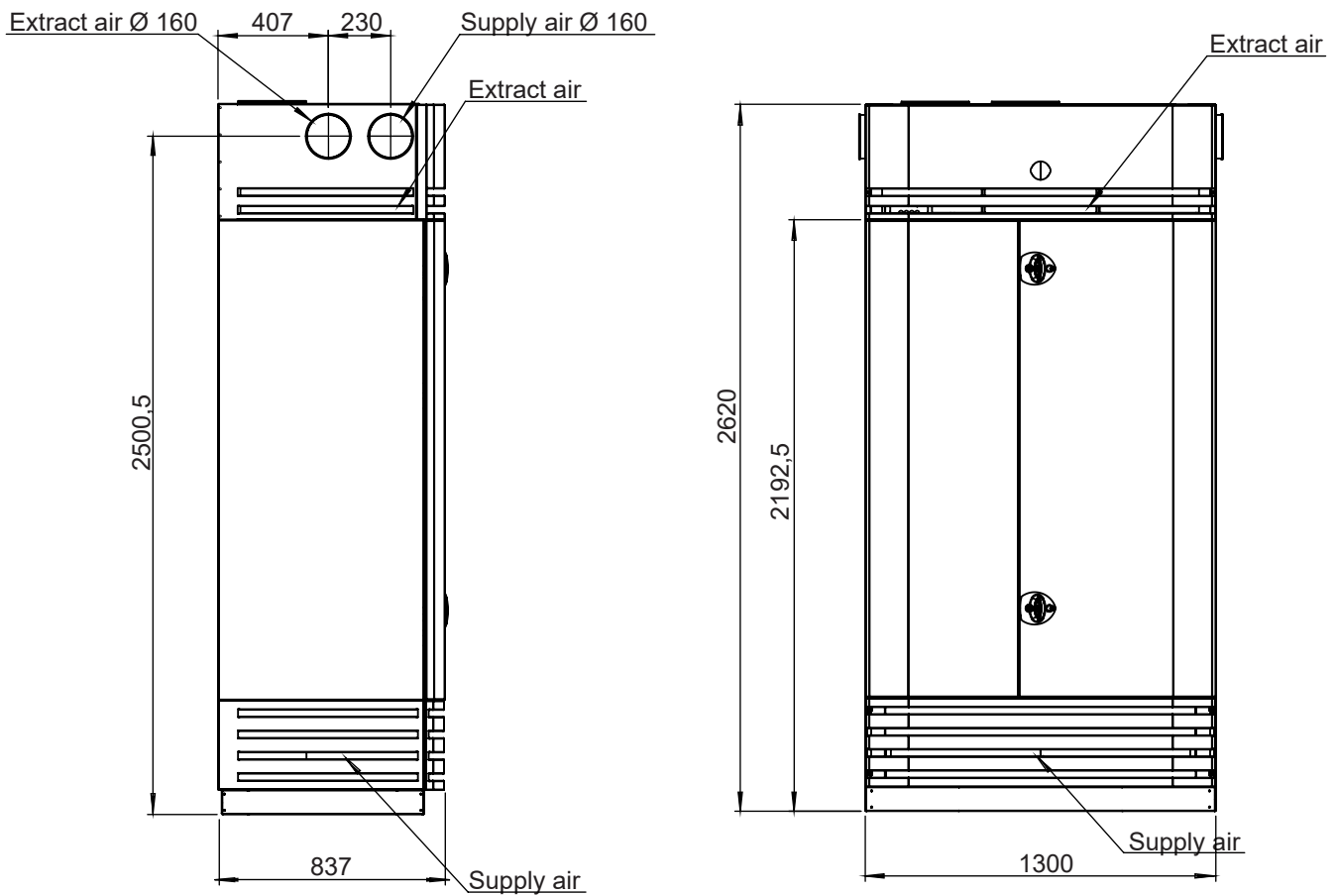
CONNECTION OPTIONS

As standard, the Kuben 1000M3E has an exhaust air and outdoor air connection on the back as shown in the sketch. If necessary, exhaust air and outside air can be moved with connections 250 on the top of the unit.

The extract air is evacuated at the top of the unit but can also be duct connected on each side with size 160 or as an option with a larger dimension.

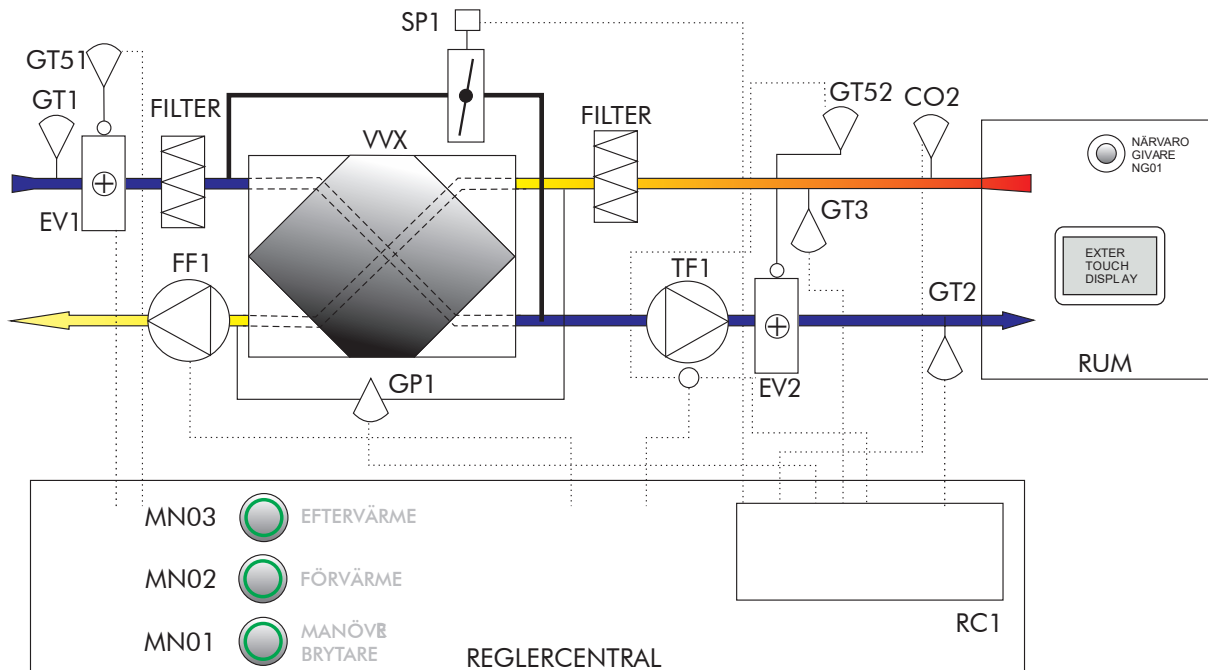
The supply air is supplied to the room through the low impulse device in the lower part of the unit. If desired, supply air to other rooms can also be connected high up on each side with size 160 or as an option with a larger dimension.

MEASUREMENT DATA



FUNCTIONAL DESCRIPTION

FLOW CHART, CONTROL FUNCTIONS



FUNCTION

The unit is started via the main switch MN01. Control center RC1 starts and stops the unit according to set times. The main switch MN01 cuts off all functions, including the power to the regulation. The control center RC1 has battery backup for power reserve. As additional heat, there is an electric battery EV1 in the outside air and an electric battery EV2 in the supply air. Switch MN02 breaks the power supply to the preheater EV1 and MN03 breaks the supply to the afterheater EV2. Duct sensor GT2 controls via control center RC1, the bypass damper and the electric batteries to maintain the set supply air temperature according to the temperature setting. Duct sensor GT3 can, with an alternative configuration, regulate the extract air temperature. Then min/max limits sensor GT2. The unit is equipped with a bypass damper SP1 which regulates in sequence with the heat regulation using control center RC1. When the heating demand is reduced, the heating control closes and only the heat exchanger heats the outside air. In the next sequence, if the heat demand is further reduced, the by-pass damper opens past the heat exchanger.

The unit is equipped with individual and stepless speed regulation of the fans in three stages: low speed, normal and forced. The fan speed for low speed is set on potentiometers in the control center,

POT ON and POT OFF, while normal speed and forced speed are programmed in the control center RC1.

Factory setting speed: The time channel is set to 24/7 operation all days at low speed. When the presence sensor NG01 in the front of the unit indicates activity or movement, the fan speed increases to the set normal speed. If the built-in CO2 sensor begins to indicate bad air, the fans steplessly force up to a set maximum value if necessary to try to keep the CO2 level at the normal value. The speed value for the fans in % or the appropriate air flow in m³/h can be adjusted in the control center RC1.

To prevent frost build-up on the heat exchanger, the preheating battery EV1 heats the outside air in cold weather. If frosting eventually still occurs, pressure sensor GP1 reacts and opens via RC1 the by-pass damper SP1. The extract air heats away the ice. The bypass damper then closes automatically.

SECURITY FEATURES

In the event of overheating on the heating battery, the overheating protection GT51 triggers and shuts off the fans and the electricity supply to the battery. The reset of the manual overheating protection takes place directly on the electric battery. When the unit's door is opened, the unit stops.

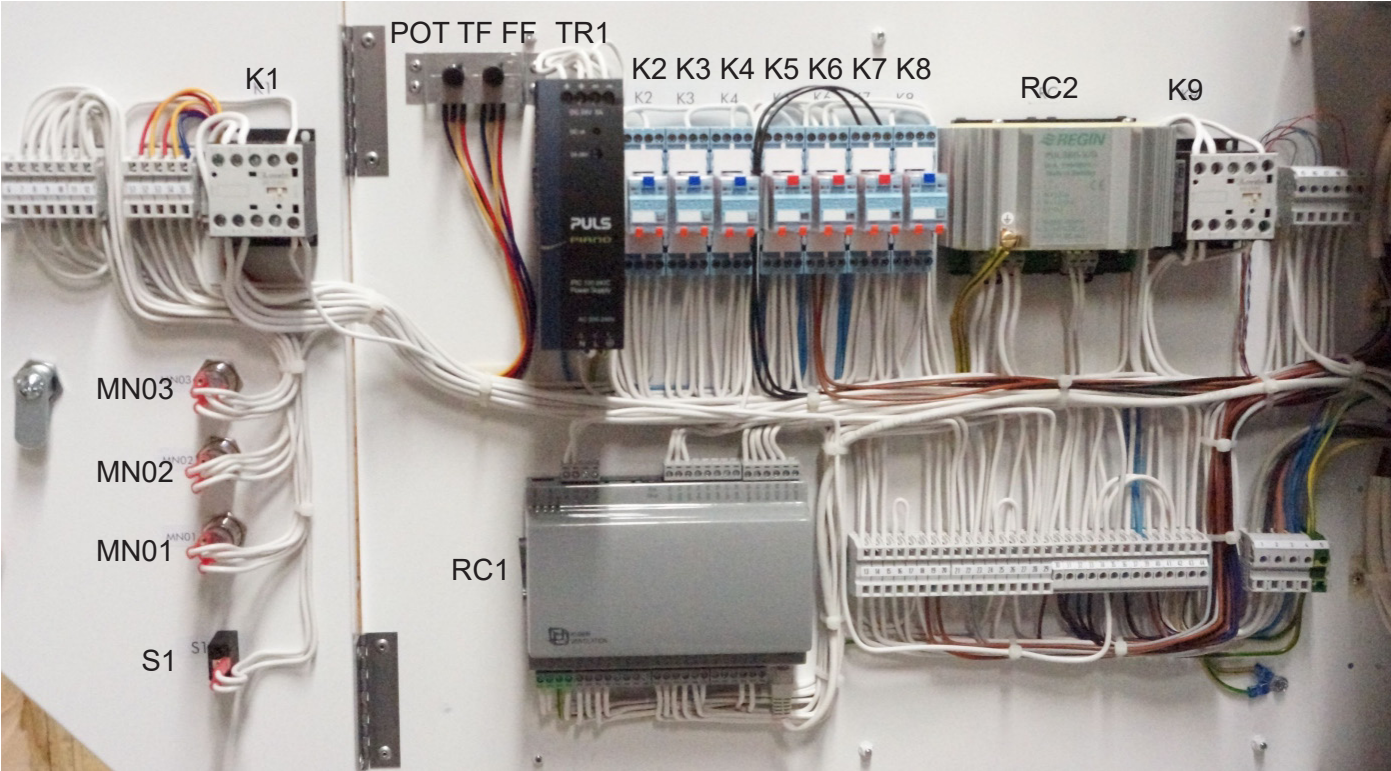
CONTROL EQUIPMENT

PARTS LIST ELECTRONICS

Pos.	Art.	Qty	Name	Description/type designation	Make
EV1	880201	1	Preheating battery	VR 400-1-3	Backer
EV2	880202	1	Afterheating battery	VR 400-3-3	Backer
TF1	880101	1	Supply air fan	D3G-250-EE51-11	EBM
FF!	880101	1	Extract air fan	D3G-250-EE51-11	EBM
K1	880302	1	Contactor	24VDCmini-16A	Lovato
K2	880306	1	Contactor	C7-A30 24DC	Releco
K3	880306	1	Contactor	C7-A30 24DC	Releco
K4	880306	1	Contactor	C7-A30 24DC	Releco
K5	880303	1	Contactor	C7-A30 230	Releco
K6	880303	1	Contactor	C7-A30 230	Releco
K7	880303	1	Contactor	C7-A30 230	Releco
K8	880306	1	Contactor	C7-A30 24DC	Releco
K9	880302	1	Contactor	24VDCmini-16A	Lovato
MN01	880331	1	Switch	LAS1-AGQ-112	OEM
MN02	880331	1	Switch	LAS1-AGQ-112	OEM
MN03	880331	1	Switch	LAS1-AGQ-112	OEM
PK3	880450	1	Door switch	M4-04-NO	GYCOM
RC1	880702	1	Control center	K10282-3	REGIN
GT1	880715	1	Outside air temperature sensor	TGKH1/PT1000	REGIN
GT2	880715	1	Supply air temperature sensor	TGKH1/PT1000	REGIN
GT3	880715	1	Extract air temperature sensor	TGKH1/PT1000	REGIN
RC2	880719	1	Pulses	Pulser XD	REGIN
S1	880901	1	Maneuver fuse	Automat 10A	OEM
GT51	880225	1	Overheat. protection	1a=manual,1b= auto in series	ELFA
GP1	880600	1	Freeze protection	Differential pressure, DTV500	REGIN
POTT	880501	1	Potentiometer	Pot linear Kolban	ELFA
POTF	880501	1	Potentiometer	Pot linear Kolban	ELFA
TR1	880502	1	Voltage aggr 24	MDR-60-24	PULS
SP1	880550	1	Bypass damper motor	LM24SR	BELIMO
NG01	880904	1	Attendant	355A	Malmbergs
PDT	880560	1	Pressure sensor fans	PD12C-2	REGIN
CO2	880565	1	CO2 sensor	CTD-T2	REGIN
DISP	880530	1	External display	ED-TCV	REGIN

CONTROL EQUIPMENT

CONTROL CENTER



Control panel back

Mounting plate control equipment (inside the control panel)

DUCT DIMENSIONING AND ALIGNMENT

BACKGROUND

The Kuben 1000M3E unit is developed as a ventilation unit with large air flows that can be placed directly in the room instead of in a separate fan room. In order to be able to place the unit in the same room it is to ventilate, right next to an office workplace or near where children play on the floor, the unit must have various special properties.

LOW NOISE LEVEL

One of the most important features is low noise level.

Low noise level is achieved with slow-rotating large fans, special sound insulation, aerodynamic design and low internal pressure drop on included components such as heat exchangers, filters, etc. and in internal air ducts.

CHANNEL SYSTEM

Since a low pressure drop is one of the most important parameters to cope with a low noise level, it is also of the utmost importance that any connected duct system is designed with as low a pressure drop as possible with regard to the building.

DIMENSIONS

On the top of the unit there are two duct connections, supply air and extract air on both sides of the unit. All four connections have a dimension of 160 mm. It is advisable to dimension the entire duct system in dim 160, right away from the unit. Supply air devices and extract air devices should be dimensioned for extra low pressure drops, below the device manufacturer's instructions. Extract devices such as control valves should generally have dim160. If the pressure drop across the device is high in order to obtain the correct air flow in the room, double 160 devices are installed. Best results are obtained if you strive to keep the air flow in the side ducts below 45 l/s per unit and the static duct pressure of approx. 10 Pa.

AIR FLOW MEASUREMENT

Before the start of the air measurement, all the devices are opened completely so that during the measurement they are successively closed closer to the unit in order to obtain the correct air flow in each room. With a very low pressure drop across the device, it is less safe to use pressure measurement with k-factor in the device and therefore a proportional measurement method is recommended, where the total flows in each channel are measured with Prantl tubes and the air flow of the different devices is distributed with, for example, an anemometer together with the appropriate cone.

In the upper part of the unit there is an extract air intake directly into the unit. The air flow is controlled in the control center and the distribution between the unit's extract air grill and the extract air connections on the sides is adjusted with the help of a damper inside the upper front plate. If the pressure drop is adjusted high in the connected duct system, the damper needs to be closed a lot to obtain the correct air flow in other rooms. Then a loud noise occurs in the upper part of the unit and the extract fan needs to be revved up with louder noise as a result.



On the right side inside the unit, under the extract air filter, there is a damper that distributes the air flow between the unit's supply air ducts on the sides and the low impulse device in the lower part of the unit. If the pressure drop is adjusted high in the connected duct system, the supply air fan may need to be revved up with louder noise as a result. It is therefore very important to keep pressure drops down.

OPERATING INSTRUCTIONS

CONTROL SWITCH

The unit is equipped with a control switch. It starts the control circuit.

DOOR SWITCH

On the edge around the instrument panel is a door switch. It closes all functions (except clock function and memory) when the doors are opened. This is a guarantee that you will not injure yourself on fans or electric batteries.

ATTENTION! Always wait a little while after opening the doors so that the fans have time to stop properly before taking measures in the unit.

START

In order to start the unit, it is required...

- that power is present in the unit. Check that the external safety switch is switched on (usually located on the wall next to the unit).
- that the control switch on the panel lights up green.
- that the unit must be in operating mode according to the settings of the time channels.
- and that the door switch is pressed.

START CONTROL

In order to check that the unit starts even though the doors are kept open, the door switch can be pushed in by hand as quickly as possible while observing great caution. Then, after a few seconds, both fans should start to rev up. Normally, the door switch is held down by the closed door.

FAN SPEED

The speed of the fans can be regulated individually and continuously in three stages: Low speed, normal speed and forcing. This means that the balance of the ventilation can be selected depending on the different pressure drops on the supply air side and the extract air side. The low speed is set steplessly with POT TF and FF on the inside of the control panel. The normal speed is obtained by selecting the desired air flow using the control panel. The forcing in % or air flow in m³/h is selected in the controller's configuration.

TIME SETTING


The internal clock has a year-based function. Weekly programs with holidays or holiday periods (up to 24 periods) can be programmed a year ahead. A weekend period can be 1 day to 365 days. The weekend period takes precedence in the schedule. Each day has two adjustable operating periods. Up to 5 time blocks can be configured, each with a separate weekly program and two activation periods per day. Automatic summer/winter time.

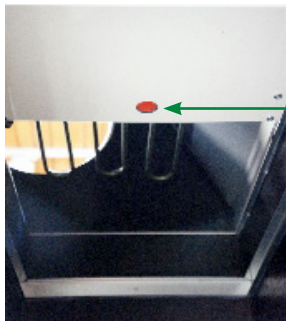


OPERATING INSTRUCTIONS

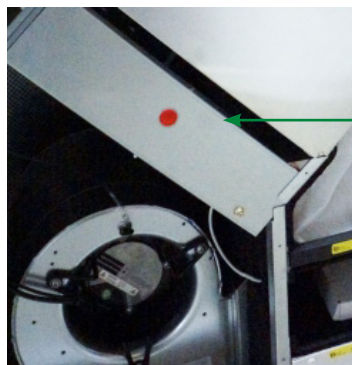
AFTERHEATING

In the unit there is a preheating battery and a after-heating battery. The preheating are going to helping to maintain the correct intake temperature during the cold period, the preheater should also ensure that the heat exchanger frosts as little as possible. The afterheating should add heat when the outside air is so cold that the preheating and heat recovery are not enough. For these batteries to be in operating mode, the respective switch on the control panel must light up green. Then the batteries heat up automatically when needed.

 Normally, the switches for preheating and afterheating should never be turned off. The control equipment takes care of this completely automatically. If, for example, the preheater is switched off in certain operating modes, too much condensation can form and problems with drainage can then arise.



Preheating battery in the outside air



Afterheating battery after the heat exchanger

TEMPERATURE SETTING

If the setpoint value in the control center falls below the temperature of the supplied air, the heating sequences start. The built-in automatic regulation then tries to maintain the set temperature. On the external touch display, the set temperature can be quickly compensated up and down.

OVERHEATING PROTECTION

The heating batteries are equipped with a manual and an automatic overheating protection. If an electric battery were to overheat, the overheating protections would trip, the alarm would be activated and the power to the electric batteries and fans would be interrupted. If overheating occurs during normal operation with the doors closed, the unit must be stopped and service personnel contacted.

EXTENDED VENTILATION

If, on the other hand, you open the doors on the unit at the same time as the supply air calls for electric heating, the electric battery can get so hot that the overheating protection triggers. It depends on the following:

If you open the doors to the unit when it is in operation, for safety reasons, the door switch must stop the electric heating and both fans. There is then no extended ventilation on the electric heating rods and these can feel very hot even though the power supply to the heating rods is broken.

The overheating protection can trigger here.

The electric heating rods which during operation have been cooled by the cold outside air may seem to get hotter continuously to even begin to glow gently. However, there is no electricity supply to the electric battery and the electric rods cool down immediately again.

These characteristics are normal, but to avoid concern and triggered overheating protection, you should turn off the heat on the heat switch a few minutes before opening the doors so that the electric rods have time to be cooled by the cool supply air.

OPERATING INSTRUCTIONS

RECOVERY

If the electric heating does not start when you close the doors and start the unit, which can happen, especially in cold weather, you must reset the manual overheating protections. It is a red button that sits directly on the respective electric battery's junction box. See pictures on the previous page. When the manual protections are reset, the overheating alarm needs to be acknowledged on the control panel (see page 23). When the overheating protections have been reset, the electric battery must become hot if the respective heating switch is on and the temperature control calls for heating.

INTERLOCKING

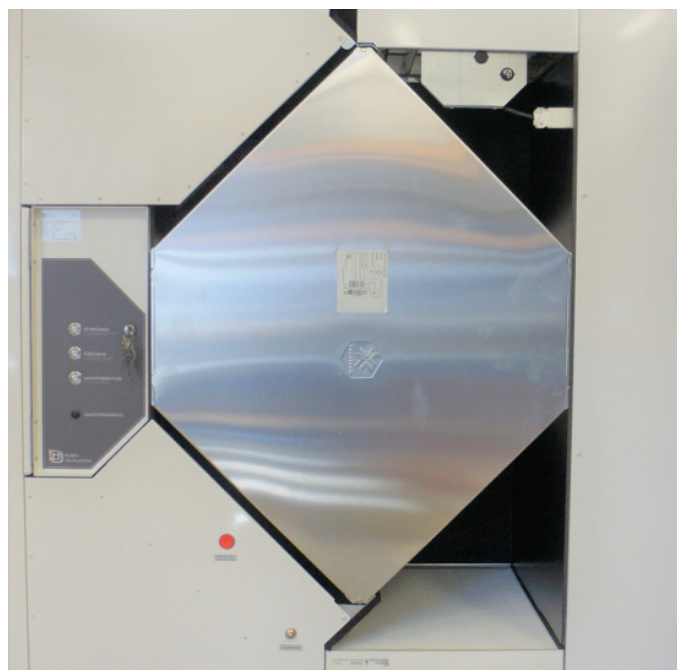
The extract fan and the electric heater are interlocked over the supply air fan. This means that if the supply air fan does not run, the extract air fan will not start either and, for safety reasons, neither will the electric heating because it will then not receive any cooling.

HEAT EXCHANGER

This unit is equipped with a countercurrent heat exchanger. This type is preferred when you want a functional and reliable unit with minimal transfer of odors and particles between the supply air and the extract air and yet a very high heat recovery.

At cold outside temperatures, the heat exchanger continuously has a cold side and a warm side. This means that at low outside temperatures and high indoor humidity, condensation can occur on the cold plate. The condensate is taken up in the condensate chute below the heat exchanger. The condensed water then runs out onto a condensation plate in the supply air stream, where the condensate is vaporized and fed back into the room.

At very cold outside temperatures, the condensate does not have time to evaporate in the supply air, even though the preheater is in operation and tries to prevent it, but the heat exchanger freezes. A sensor senses this and momentarily opens the bypass damper to allow the hot extract air to warm away the ice. The damper then closes automatically again.



Countercurrent heat exchanger in aluminum with more than 80% temperature efficiency.

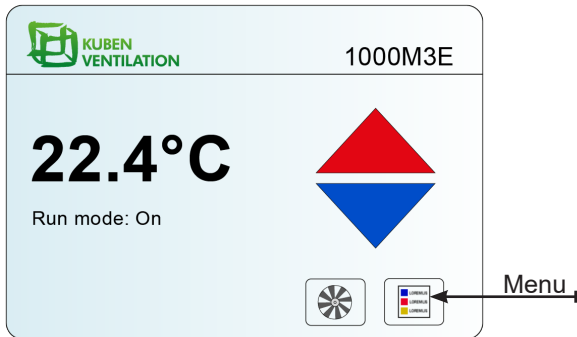
INSTRUCTIONS EXTERNAL CONTROL DISPLAY

SIGN IN

Logging in is always required when changing the display's preconfigured settings.

1 | START SCREEN

Press the Menu icon at the bottom right to access the menu.



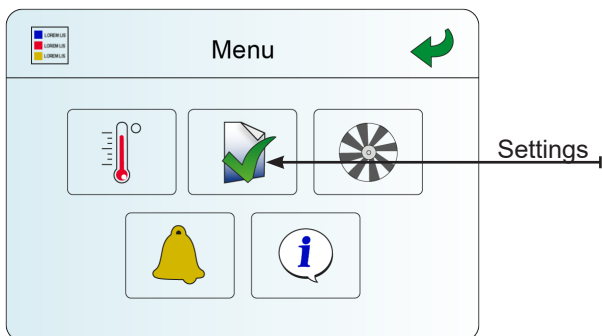
4 | LOGIN

After you press Connect, a keypad appears. Enter the code "1111" and press OK.



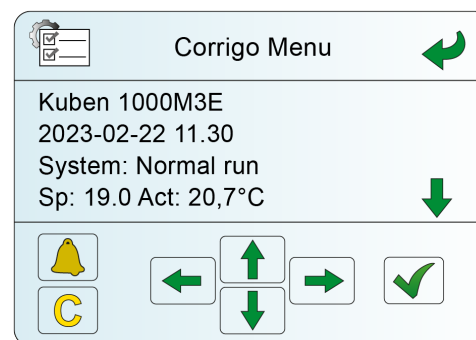
2 | MENU

Press the green tick. Settings.



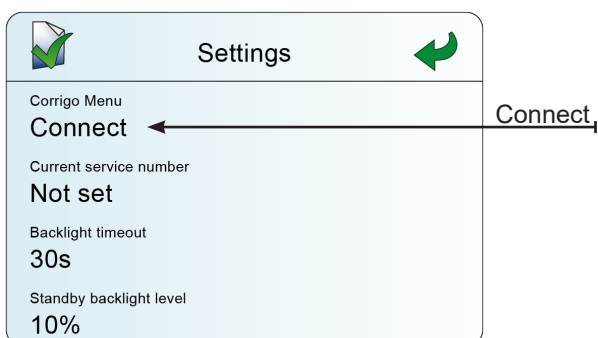
5 | AFTER LOGIN

Login menu appears. Logout occurs after a few minutes of inactivity and the start screen is displayed again. You can click back to the start screen by clicking the arrow at the top right.



3 | CONNECT

Tap the text Connect.

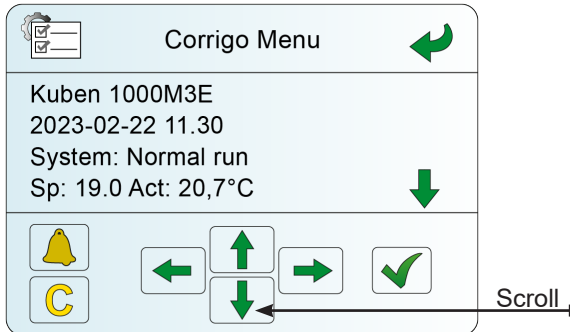


INSTRUCTIONS EXTERNAL CONTROL DISPLAY

TIME SETTINGS

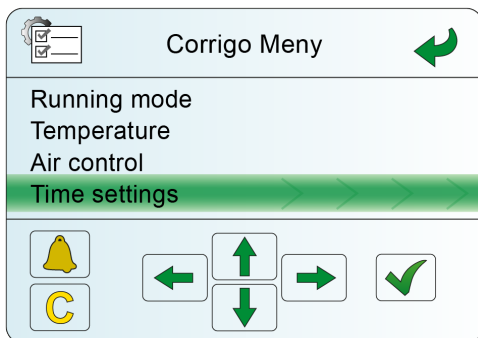
1 | CORRIGO MENU

When you are in the Corrigo Menu shown above, press the button with the green arrow down to start browsing.



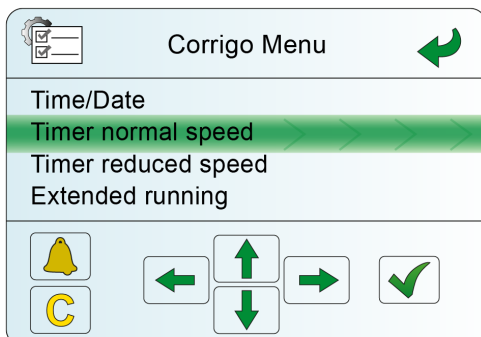
2 | TIME SETTINGS

Scroll down to Time Settings and click the right-pointing arrow to select.



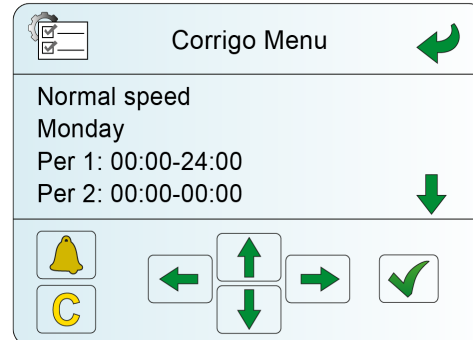
3 | TIMER SETTING NORMAL SPEED

Go to Timer normal speed and click the arrow pointing right to select.



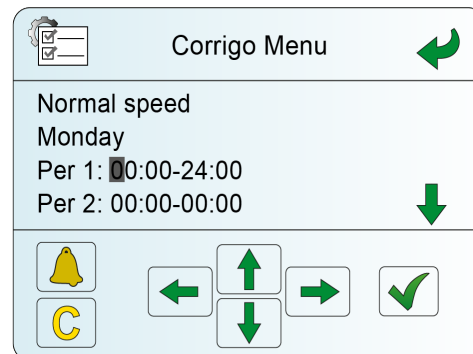
4 | CHOOSE DAY

Select day by clicking the down/up arrows.



5 | EDIT THE TIME

When you have chosen the day, click on the green tick in the bottom right corner. Then a marker appears over time, then enter any time using the arrows. Finish by clicking on the green tick until the cursor disappears.

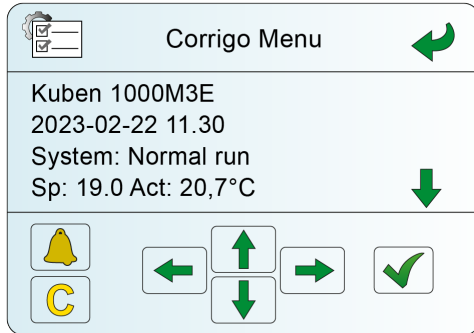


INSTRUCTIONS EXTERNAL CONTROL DISPLAY

ADJUSTMENT OF AIR FLOWS

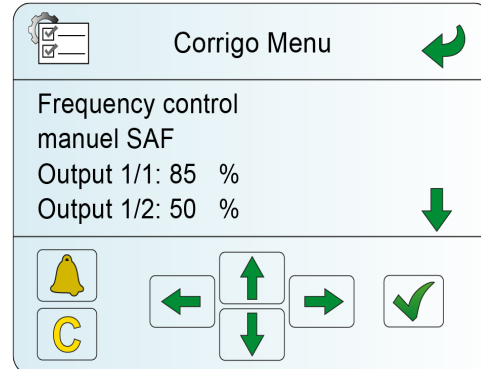
1 | CORRIGO MENU

When you are in the Corrigo Menu shown below, press the green down arrow button to start browsing.



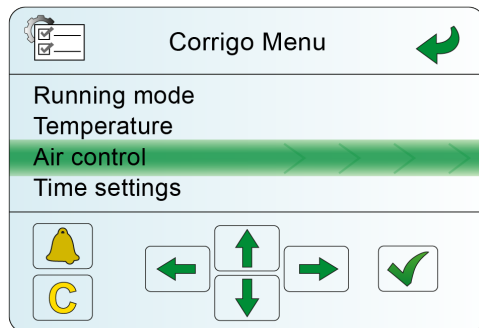
4 | FAN SPEED

Half speed (normal run) and full speed (forced run) are now displayed.



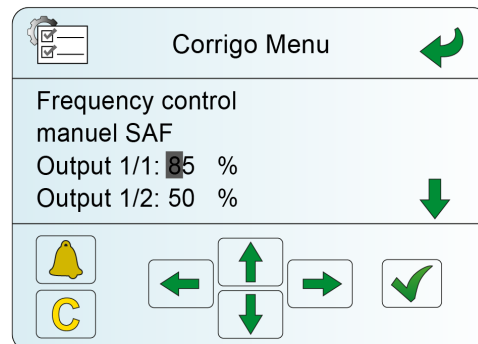
2 | AIR CONTROL

Scroll down to Air Control and click the right-pointing arrow to select.



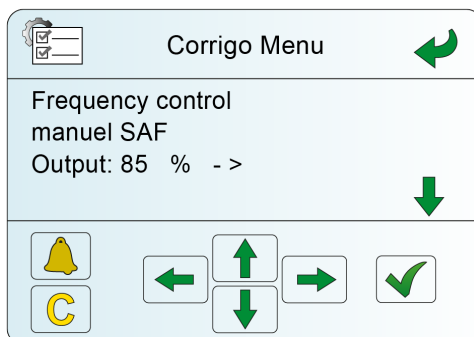
5 | EDIT VALUE

Change by pressing the green tick. A cursor appears where the desired value can be entered. Move the cursor using the arrows. Finish with a green tick and click on the left arrow to go back in the menu.



3 | FREQUENCY CONTROL

The frequency control is shown as the gearing in % for the fan speed (the supply air fan, SAF is visible in this picture). Press the arrow pointing to the right to see the gear at half speed and full speed.

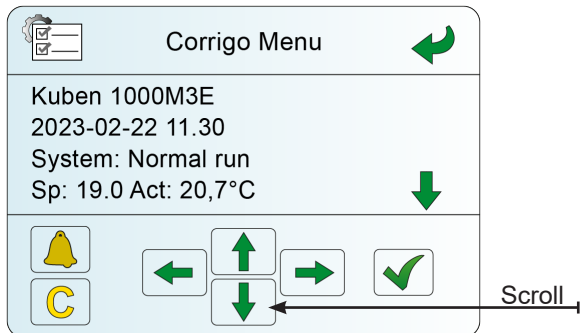


INSTRUCTIONS EXTERNAL CONTROL DISPLAY

TEMPERATURE SETTINGS

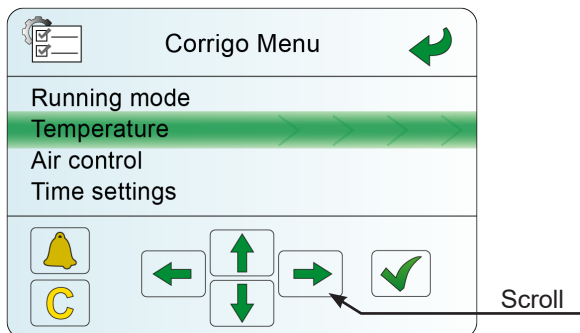
1 | CORRIGO MENU

When you are in the Corrigo Menu shown below, press the green down arrow button to start browsing.



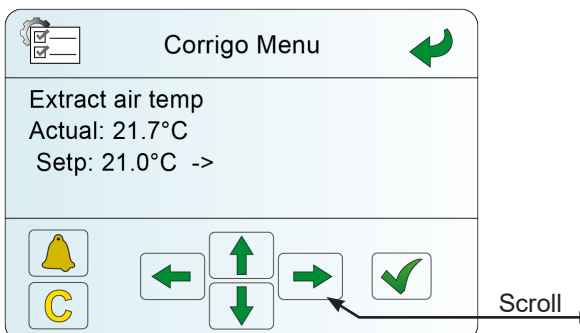
2 | TEMPERATURE

Scroll down to Temperature and click the right-pointing arrow to select.



3 | ROOM TEMPERATURE

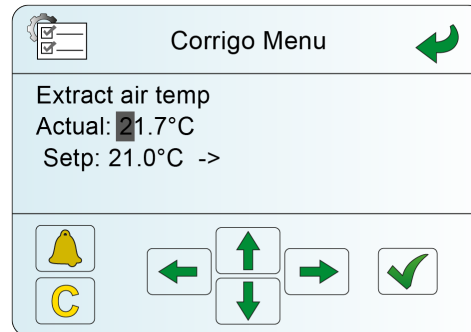
Then the Actual and Set Value page for the room temperature is displayed.



4 | CHANGE SET VALUE

Change by pressing the green tick.

A cursor appears where the desired value can be entered. Move the cursor using the arrows. Finish with a green tick and click on the left arrow to go back in the menu.

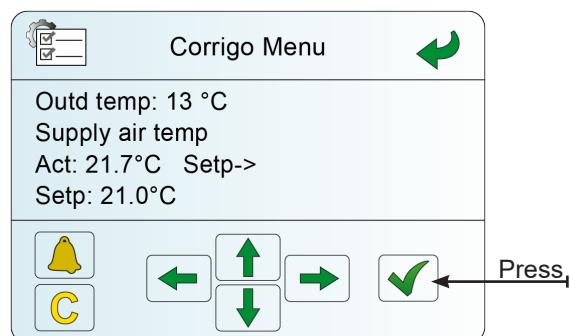


5 | CHECK SUPPLY AIR TEMP

When room control is configured, the system itself selects a suitable temperature for the supply air that blows into the supply air units. That setpoint can be seen if you click down one more image in the "Room Temp 1" image.

Supply air temp Actual value and Setpoint value can be seen in the image as well as the current outdoor temp.

The setpoint cannot be changed yourself when room control is selected. However, the room temperature setpoint can be adjusted as above and also compensated up or down 3°C with the arrow buttons in the first picture.



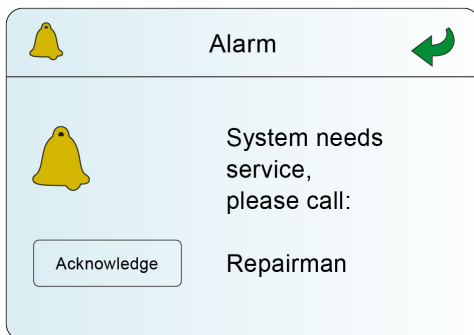
INSTRUCTIONS EXTERNAL CONTROL DISPLAY

ALARM SETTINGS

The vast majority of alarms can be fixed and acknowledged all by yourself. The alarming first alarm picture is not as dramatic as it seems. Do not call a service person directly, but go through this instruction first.

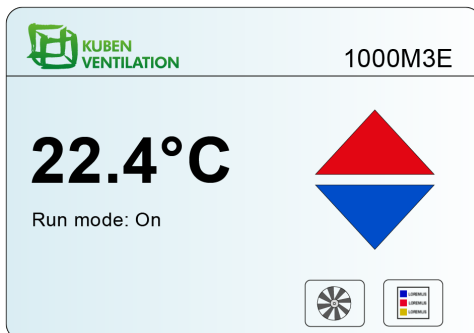
1 | ALARM

When you receive an alarm. Start by fixing the problem physically, for example pressing the reset button on the electric battery. Then press Acknowledge on the display, log into the menu and follow the instructions below.



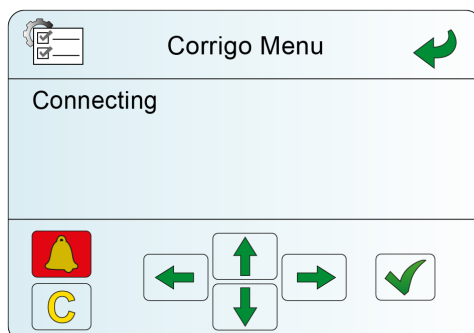
2 | SIGN IN

Log in as usual, see the instructions for Log in.



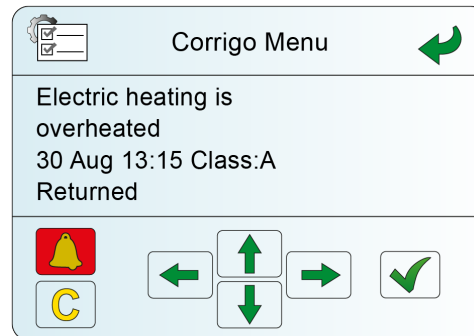
3 | RED CLOCK

When the login is complete, the alarm bell at the bottom left will light up red. Click on the clock.



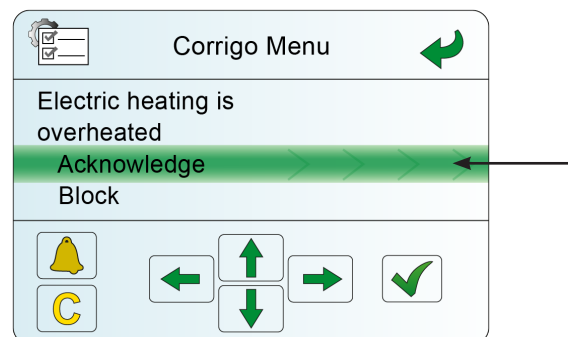
4 | THE RETURN

If the text RETURN appears - Press on the green tick. See point 6 if the text RETURN does not appear.



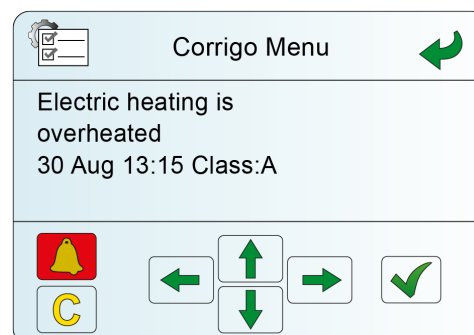
5 | ACKNOWLEDGE

Press the right arrow to acknowledge the alarm. After that, the display should return to its normal appearance.



6 | NOT THE RETURN

Should the text RETURN not appear, it is now time to contact serviceman. Contact details for Kuben's technical support can be found on the website. www.kubenventilation.se



CARE INSTRUCTIONS

GENERALLY

The ventilation unit does not require special care, apart from filter replacement and cleaning at regular intervals. If this does not happen, the filters become clogged and the air volumes are reduced. By maintaining the filters routinely, the entire ventilation unit will be kept clean, which greatly affects the good indoor climate. Operational reliability increases and the service life becomes longer with relatively small efforts.

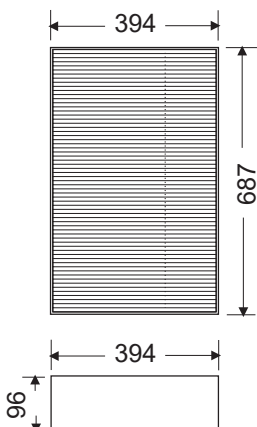
OPENING OF UNIT

The front of the unit consists of two doors. Behind one is the unit's control panel and electronics. If you open both doors, you have access to the extendable heat exchanger cassette, the filters, the electric afterheater with the overheating protection reset button and the two fans, also extendable.

1. Turn off the service switch on the wall outside the unit.
2. Wait a little while until the fans have stopped.
3. Open the doors by unfolding the T-handle and turning it until the locking rule releases.
4. Turn off the control switch on the panel.
5. Be careful when touching the electric batteries. They can still be very hot even though the power to the batteries has been cut.

FILTER

The unit is equipped with a cassette filter in class ISO ePM1 70%; for the supply air and a cassette filter in class ISO ePM10 55%; for the extract air. On the extract air side to separate fine particles and keep the heat exchanger and extract fan clean and on the supply air primarily to supply the premises with fresh air with a minimum of particles.



Extract air filter and supply air filter have the same size.

Filter Quality:
Supply air filter ISO ePM1 70%;
Extract air filter ISO ePM10 55%;

REPLACING THE EXTRACT AIR FILTER

The extract air filter is a disposable filter made of filter media M6. The filter should be changed at least twice a year.



1. Pull the extract air filter straight out. No locks hold. If it is sluggish, the filter can "tension" a little against the rails.
2. Remove the dirty filter carefully to avoid dirt spreading. The extract air filter may be very dusty.
3. Check the front surfaces of the filter. The filter needs to be changed when the surface is dirty or at the latest every 6 months.
4. Replace the filter (the old one cannot be cleaned) and slide a new filter back in.

REPLACING THE SUPPLY AIR FILTER

The supply air filter is a disposable filter of filter media ISO ePM1 70%. The filter should be changed if the front surface is dirty or at the latest every 6 months (2 times/year). The unit's unique replacement interval should be determined during the first year of operation.



1. Pull the supply air cassette straight out. No locks hold. If it is sluggish, the filter can "tension" a little against the rails.
2. Be prepared for dirt on the top. Remove the dirty filter carefully to avoid dirt spreading.
3. Change the filter at least every 6 months (the old one cannot be cleaned) and slide a new filter back.

START OF UNIT AND CLOSING OF HATCH

1. Turn on the external work switch on the wall next to the unit.
2. Start the unit with the control switch.
3. Start preheating and afterheating by pressing the respective switch. During operation, they light up green.
4. Lock the unit doors with the locking screws. A safety contact at the doors ensures that the unit does not start until the doors are closed.

CARE INSTRUCTIONS

THE HEAT EXCHANGER CARTRIDGE

If the filter changes are done with the correct periodization, there will normally not be much dust or deposits inside the unit. At each filter change, the condition of the rest of the unit is checked and IF the inside of the unit is dirty, it is first vacuumed out and then wet-dried with a damp cloth. The heat exchanger should be checked once a year in connection with changing the filter.

1. Pull the heat exchanger package straight out. No brackets hold.
2. Rinse with warm water if the filter is dusty.
3. If the exchanger package is very dirty or greasy, it should be soaked in warm water mixed with Kuben's cleaning fluid for about 15 minutes.
4. Rinse clean with water.
5. Reassemble the package.



CLEANING OF FANS

Loosen the white protective plates on the left side of the unit. Loosen the respective fan's electrical connector with its quick coupling. Then loosen the two fastening screws at the top of the fastening frame for the supply air fan (the lower fan) - NOTE, not the screws that can be seen in the picture next to it - and the front screws in the fastening frame for the extract fan (the upper fan). The fan frames have on the opposite side (seen from the fastening screws) a groove suitable for a fastening iron in the unit. Lift fan with mounting frame from the mounting bracket. There are no screws to loosen on that side of the frame.

Clean the fans gently with a soft brush if they are dusty. In case of greasy coating on the fan wheels, they can be cleaned with a cloth and a suitable solvent. Reassemble in reverse order.

FACTORY SETTINGS

The 1000M3E unit is pre-set on delivery so that it can be plugged in and started immediately without time-consuming configuration. In the factory setting, the most common parameters are preselected. Using the program CorrigoEVentilation 3.6-1-02-1169 or newer from Kuben's website, most values can be adjusted for optimal operation. Either via direct connection to the unit via computer or via remote control via the built-in modem with the cloud service Cloudigo or a VPN tunnel in the local network. See connection instructions on the next page. Some values can also be adjusted in the external control panel.

Temperature Supply temp: Extract air temperature: Outside temp when switching control type: Freeze protection temp stage 1 (water): Freeze protection temp stage 2 (water): Temp for preheating:	+19C +22C +10C +12C +7C +15C
Air flows/fan speed Air flow min supply air Air flow min extract air "Clock" inst pot my supply air "clock" inst pot min extract air Airflow normal speed supply air Airflow normal speed extract air Fan speed normal speed supply air Fan speed normal speed extract air	310 m ³ /h (86 l/s) 300 m ³ /h (84 l/s) 15:00 15:00 870 m ³ /h (242 l/s) 870 m ³ /h (242 l/s) 73% 68%
Airflow forcing supply air Air flow forcing extract air	1050 m ³ /h (292 l/s) 1050 m ³ /h (292 l/s)
Times Reduced speed (our normal) Normal speed (our forcing)	00:00-24:00 00:00-00:00
Miscellaneous K-factor supply air x-value supply air K-factor extract air x-value extract air CO2 sensor: increase the fans CO2 sensor: max forced Attendant time delay	41,58 0,61 38,95 0,60 700 ppm 1000 ppm 30 min



WARRANTY CERTIFICATE

We provide a warranty on the following products according to the warranty regulations stated below. The warranty certificate is a document of value to be attached to any warranty service/claims.

Customer's name

Customer's address

The Warranty refers to:

Product warranty..2... year

Function warranty..5... year

Article/model/drawing el. dyl.

Make/type

Ventilation unit

Kuben 1000M3E

Sale date

Point of sale

Price

Warranty provisions

Product warranty

1. The warranty covers all faults occurring on the above-mentioned products, which can be attributed to manufacturing. The warranty only applies to products, thus not damage that a faulty product may have caused. The warranty does not cover damage caused by incorrect or careless handling, by unauthorized intervention or by accident.
2. The warranty means that the product is repaired at no cost to the buyer. In case of warranty, the product must be sent to us or, where applicable, the point of sale. Any shipping costs are paid by the customer.
3. The customer must also bear the costs for dismantling the defective part and fitting a new or repaired part when these measures can be carried out without special expertise, i.e. when a visit by a fitter is not necessary. If the seller's installers are called in this situation, the costs for the unnecessary installer visit will be borne by the customer. The cost is also charged if the fitter is called without a fault having occurred.
4. In the event that the product needs to be repaired on site for logistical reasons or at the customer's place, the customer must contact Kuben to receive a form for reporting a fault and, after returning it, a confirmation of how the warranty work will be carried out. Kuben Ventilation solves the warranty measures with its own service staff where applicable, but can under certain circumstances agree with the customer that the latter will take care of the warranty work against compensation from Kuben Ventilation AB. The fault report must then be completed and the customer must have received a service order from Kuben before the warranty work begins. Warranty work carried out by the customer without the customer contacting them Kuben Ventilation AB for order numbers as above will not be reimbursed.

Function warranty

1. The warranty covers malfunctions occurring on the specified drawing/drawing part, which can be attributed to drawing errors, construction errors or adjustment/commissioning errors at the factory. The guarantee applies even if the standards applicable at the time of construction have not been taken into account.
2. The warranty does not apply to parts that have been exposed to impact, damage or careless treatment or through unauthorized intervention. The warranty does not apply to necessary readjustments of factory settings for air flow, temperatures, etc. The warranty does not apply if the unit is rebuilt or parts are replaced and assumes that service, filter changes, cleaning etc. takes place according to the prescribed service interval.
3. The guarantee means that the facility is redesigned, adjusted and remedied, at no cost to the customer, in order to regain the correct function according to settlement, practice or standards applicable at the time of construction.
4. In the event that the product needs to be repaired at the customer's location for logistical reasons, the customer must contact Kuben to receive a form for reporting a fault and then a confirmation of how the warranty work will be carried out. Kuben Ventilation solves the warranty measures with its own service staff where applicable, but can under certain circumstances agree with the customer that the customer will take care of the warranty work against compensation from Kuben Ventilation AB. The fault report must then be completed and a service order for the warranty work from Kuben must have reached the customer before the service work begins. Warranty work carried out by the customer without the customer contacting Kuben Ventilation AB for the order number as above will not be reimbursed.



CE - DECLARATION

Declaration of conformity with the EU directives listed below.

Manufacturer: KUBEN VENTILATION AB
Vassbo 64
791 93 FALUN
Tfn: 0243-22 31 15

We hereby certify that ventilation units Kuben 1000M3E 850121, 850122 are manufactured in accordance with:

Machinery Directive MD 2006/42/EC.

Low voltage directive LVD 2006/95/EC

Electromagnetic Compatibility Directive EMC 2004/108/EC

Assembly, installation and commissioning must take place in accordance with the unit's operating instructions. Operation and maintenance must take place in accordance with the unit's operation & care instructions.

We have a manufacturing control which guarantees that the manufactured product complies with the technical documentation. As a manufacturer, we assure that the specified equipment complies with the requirements of the directives as stated above.

Falun 21/10 2020

Kuben Ventilation
Technical department



TROUBLESHOOTING

In the event of a malfunction, the points below must first be checked. When these points are checked, and if the error still persists, Kuben Ventilation is contacted to get help solving the problem. Feel free to report an error on the website or contact the right person at Kuben using the contact list on our website.

OPERATIONAL DISRUPTION	CHECK THAT
The unit does not start	<ul style="list-style-type: none">• the fuses in the power station have not tripped.• the earth-fault circuit breaker has not tripped.• both control buttons are pressed (illuminates blue during operation).• power is present in the unit. 1-phase or 3-phase• Check that the external safety switch is switched on (usually placed on the wall next to the unit).• the overheating protection has not tripped.• possible freeze protection has not triggered.
The air is too cold or too hot	<ul style="list-style-type: none">• the heat switch for the preheating is pressed (lights up blue during operation).• the compensating temperature curve in the heat pump is adjusted.• the water temperature on the supply line is correct.• the setpoint for the room temperature is set correctly.• the room temperature is temporarily compensated in the display (+3°C -3°C)• the fans run at the correct speed
The ventilation is too poor	<ul style="list-style-type: none">• the fan speeds are set correctly.• the filters are not clogged.• the heat exchanger is clean.



CONTACT

ERROR REPORTING

For easier handling of fault reports and complaints, go in to our website:
www.kubenventilation.se/service and submit your fault report.

kundservice@kubenventilation.se

OTHER MATTERS

The name, direct number and email of the people responsible for each area can be found on Kuben's website www.kubenventilation.se/personal. Otherwise, contact the exchange:

Phone number: +46 243-223115
info@kubenventilation.se



KUBEN VENTILATION AB
Vassbo 64 SE-791 93 Falun
Tel: +46 243-22 31 15
info@kubenventilation.se

www.kubenventilation.se

Contact 27

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