

OPERATING AND INSTALLATION MANUAL PKOM⁴



250 m³/h



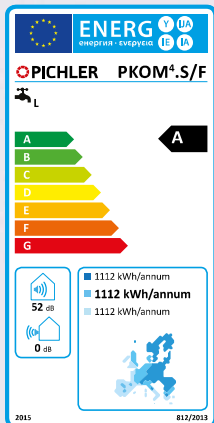
1.300 Watt



1.300 Watt



4 – 5 Persons



**COMFORT
VENTILATION**



PICHLER

Systematic ventilation.

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USER GUIDE

6. Customer service

Please contact the installer of your ventilation and air conditioning system or contact us directly for any questions relating to the heat pump combi unit PKOM⁴.



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7. Product description

One device, 4 benefits:

Ventilating – heating – cooling – hot water

The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m². Controlled ventilation of living rooms will constantly ensure fresh and filtered outside air in the rooms and ensure hygienic exchange of air. The highly efficient heat recovery system is also optionally available as a design with recovery of waste air humidity.

To prevent overly high summer temperatures in the living rooms, heat recovery may also be bypassed during cooler night hours by means of a bypass flap.

We differentiate between 2 versions:

- PKOM⁴ classic: Version with household hot water.
- PKOM⁴ trend: Version without household hot water

7.1 PKOM⁴ CLASSIC

The PKOM⁴ classic heat pump combi unit is the pre-ferred compact overall solution for passive house construction homes with up to 130 m² living area. The volume of household hot water will comfortably provide for a family of 4 – 5.

A controlled heat pump will in addition condition the supply air, i.e. heated or cooled on demand.

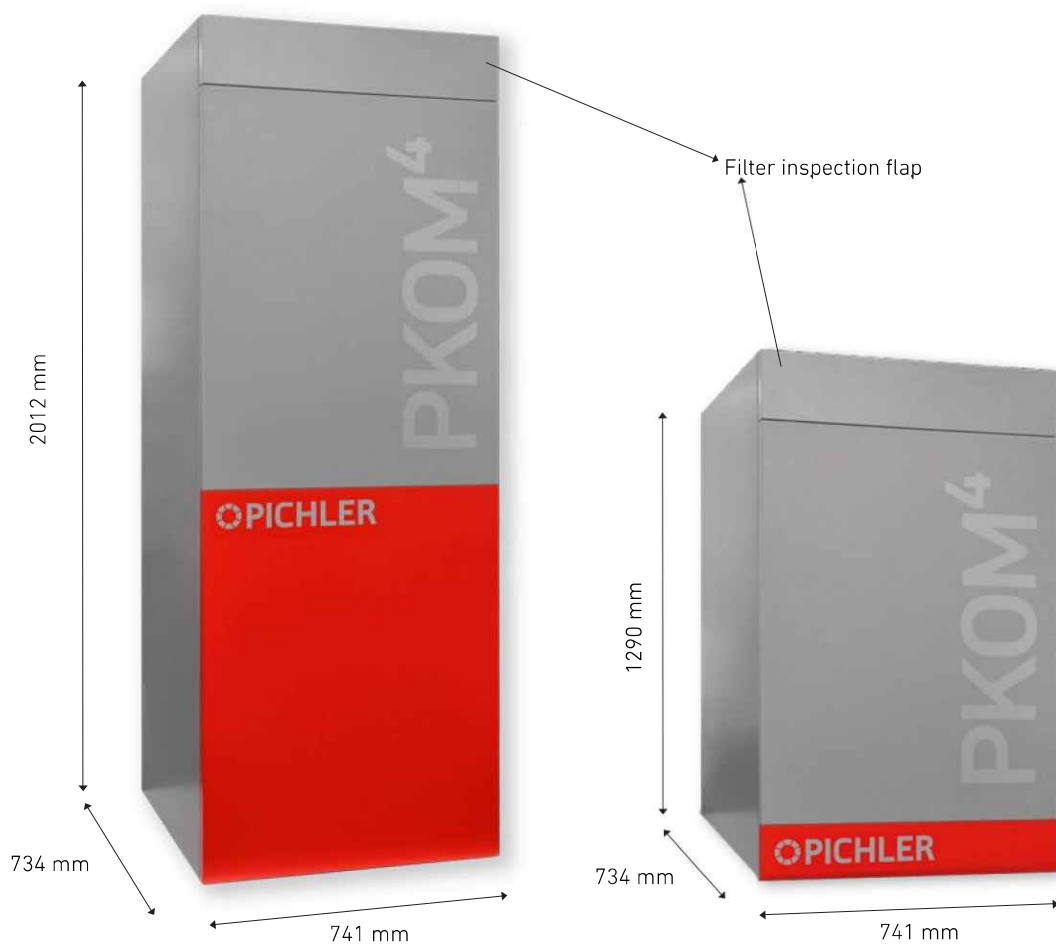
Another heat pump is used for efficient provision of household hot water. Both heat pumps may be operated in parallel to ensure uninterrupted provision of air and water.



7.2 PKOM⁴ TREND

Household hot water storage and the associated heat pump are omitted in the PKOM⁴ trend unit version. The PKOM⁴ trend heat pump combi unit is the best alternative to conventional living room ventilation units. The supply air into the living rooms will be cooled and dehumidified during summer, as needed. The supplied air will be heated in the colder months.



7.3 DEVICE VIEW PKOM⁴ CLASSIC AND TREND

8. TOUCH control unit

8.1 START MENU

All heat pump combi units PKOM⁴ are pre-configured by the factory and can generally be commissioned without changing the settings. The top level is always the start

menu. Here, the most important information are shown at a glance.

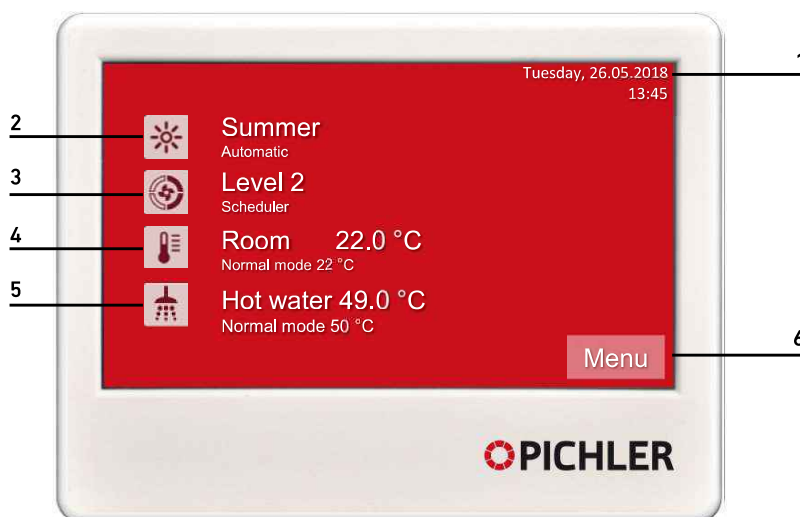


Illustration: Control unit - start menu

- 1 Date and time
- 2 Operating mode
- 3 Ventilation level
- 4 Room temperature
- 5 Hot water temperature
- 6 Menu

8.1.1 Date and time

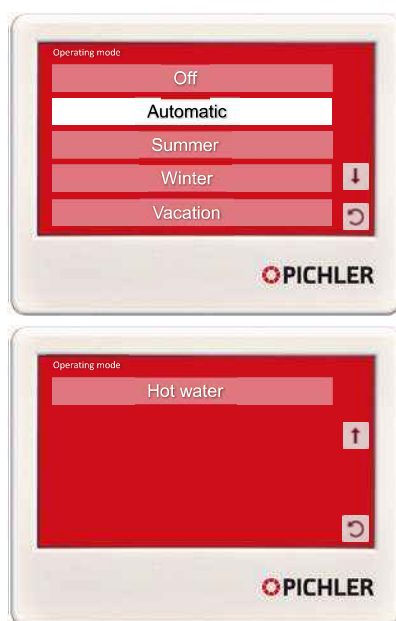
Date and time are updated in the menu [Settings] > [Date and time], *see Section 8.2.2, page 20.*

The change-over between summer and winter time is carried out automatically.





8.1.2 Operating mode



Off: The system is in standby mode.

Automatic: In automatic mode an automatic change-over between summer and winter mode is effected. This depends on the outdoor air temperature.

The automatic mode is shown in brackets below the current operating mode.



Summer: In this operating mode no heating operation with the heat pump takes place (exception: frost protection).

An active cooling operation with the heat pump can be optionally enabled or inhibited. The service water (hot water) is heated via the heat pump.



Frost protection: If the room temperature falls below 10 °C or the outdoor temperature falls below the frost protection limit, the heat pump switches on automatically for the purpose of heating.



Winter: In this operation mode the heat pump generates heat if required. Cooling operation is inhibited. The service water (hot water) is heated via the heat pump.



Vacation: In this operation mode, the heat pump generates heat. Cooling operation is inhibited. Hot water operation is inhibited. A desired room temperature specially for the period of absence can be entered. The time of return can be also set. On the date of return the program skips back automatically to the operating mode before the vacation mode, which was selected last.



Hot water: In this operation mode only the service water heating is active. The ventilation unit and the heat pump for heating and cooling remain inactive.



8.1.3 Ventilation level



In principle: "As much ventilation as required"

Adjustment of air volume requires relevant expertise and is performed by a specialist during initial start-up.

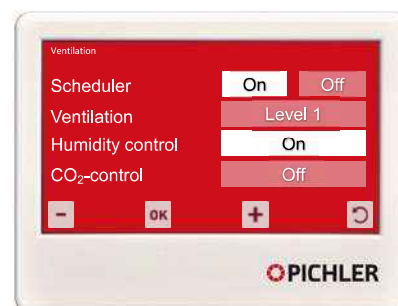
If ventilation is too low, poor indoor air quality or mould formation may result in living areas.

If ventilation is too high, indoor air may become too dry – particularly in the colder months.

The active ventilation level is displayed by various buttons. The selected ventilation level can be changed by pressing the button.

The following selection options are available:

Scheduler



The system runs on the ventilation level that is currently active in the scheduler. The scheduler can be programmed in the [menu] under [settings].

A demand-controlled air volume regulation is carried out in the scheduler of the ventilation level and with activated CO₂ and/or humidity sensors. Sensors available as accessories. (For details see section 14.6, page 37 and section 17, pages 55)



Manual selection

When the time program is deactivated [OFF], the ventilation level can be selected manually. This selection is carried out via the [+] or [-] button and via the [OK] button in the lower section of the operating unit.

- **Level 1:** The system is running in ventilation level 1.
- **Level 2:** The system is running in ventilation level 2.
- **Level 3:** The system is running in ventilation level 3.
- **Level 4:** The system is running in ventilation level 4.



Heat pump mode

If the heat pump is running in heating mode, ventilation level 3 is generally activated for this period of time. If the heat pump is running in cooling operation, ventilation level 4 is activated. These minimum air volumes are necessary to be able to transport the heating or cooling energy in each case.

GENERAL

USER

SPECIALIST PERSONNEL

8.1.4 Demand-controlled air volume regulation

There are various configurations and operating modes that result in your ventilation unit being operated with air volumes other than those set. These include:

CO₂-controlled regulation (Figure 1)

Acceptable indoor air should not exceed a CO₂ value of 1000 ppm, meaning that active ventilation should take place every 1 to 2 hours. A living room ventilation unit with CO₂ concentration-based control (CO₂ sensor module available as part of the accessories) automatically ensures that a defined

CO₂ value of 1000 ppm is not exceeded.

Humidity-controlled regulation (Figure 2)

The relative humidity is a factor that also contributes significantly to a comfortable living climate. Acceptable humidity is defined by a comfort window.

When humidity regulation is activated, the air volume flow is reduced below a relative room humidity of 35 % and increased above a relative room humidity of 60 % (see Section 14.3, page 37).

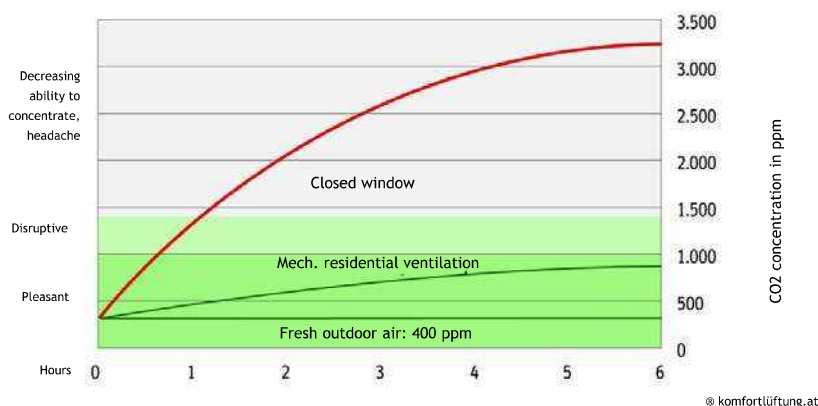


Figure 1: Increase in CO₂ concentration in a flat/room with occupants and without mechanical ventilation.

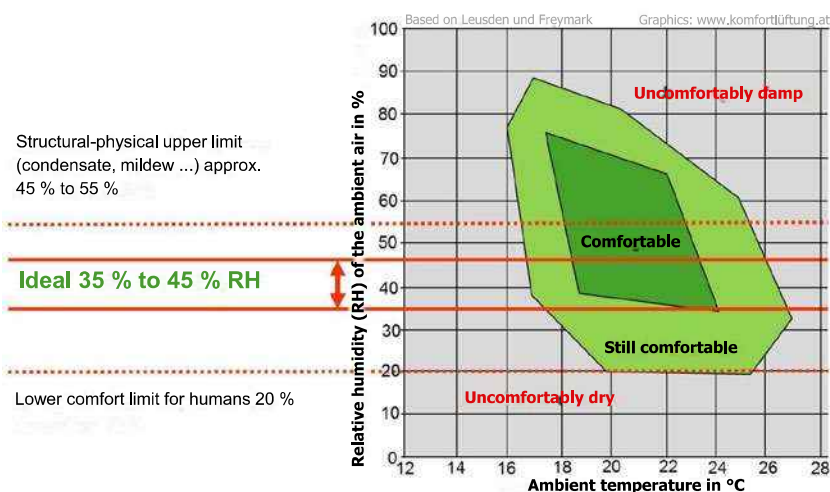
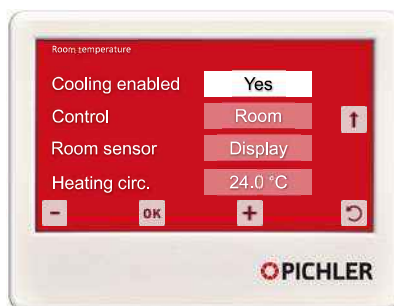
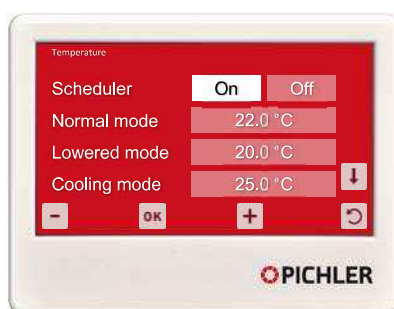


Figure 2: Comfort window as a function of the air temperature and relative humidity of the room.



8.1.5 Room temperature



Depending on the setting, regulation is based on the room air or extract air temperature, the desired temperature can be entered via the control unit.

Scheduler

When the scheduler is activated, a change-over between normal and operation and reduced operation takes place. The scheduler can be programmed in the [menu] under [settings].

Normal mode

Here, the setpoint temperature for the ventilation and heating mode is entered.

Lowered mode

Here, an additional setpoint temperature for the ventilation and heating mode is entered. Only possible in connection with the activated scheduler.

Cooling mode

Setpoint temperature for cooling operation. If cooling is enabled by the user, a setpoint for the active supply air cooling via the heat pump can be entered.

Cooling enabled

Here, an active supply air cooling via the heat pump can be enabled or inhibited. In addition to a permanent cooling activation also the possibility of only enabling this activation during ECO mode is provided.

Control

Here it is defined whether the temperature is to be regulated via the extract air sensor integrated into the heat pump combi unit or via a room sensor.

Room sensor

In the case of regulation via a room sensor this sensor can be specified in greater detail. Sensors integrated into the control unit or a separate room sensor are provided for selection (*see accessories page 56*).



In the case of regulation via the room sensor, adjacent heat sources or direct solar radiation may have undesired impacts on the control behaviour.

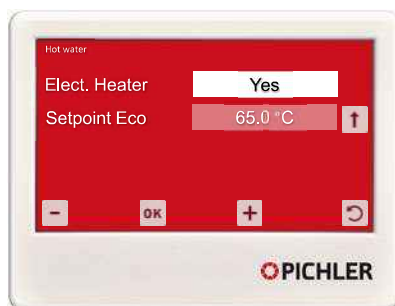
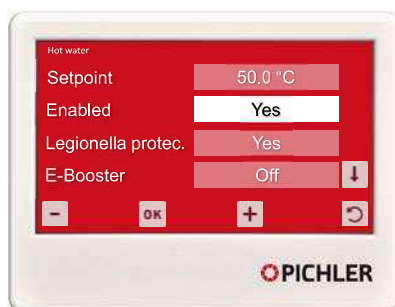
Heating circuit

If the additional function of a heating circuit is executed (*see Section 14.3, page 35*), here the desired room setpoint can be entered.





8.1.6 Hot water temperature



Setpoint

The desired hot water temperature can be set here.

Enable

Hot water operation can be enabled, inhibited or activated via a scheduler.

Legionella protection

Legionella protection is carried out by default every 14 days. This function can be activated or deactivated here.

E-booster

Serves to start rapid warm-up of the tank via the heat pump and the heating element. After the setpoint temperature has been reached, this function is deactivated again.

E-heating

The function of the E-heating can be generally enabled or inhibited here.



The inhibit is temporarily cancelled for the time legionella protection is executed. The E-booster function, however, is not provided!

Setpoint Eco

Here, the desired hot water temperature for the eco mode (see Section 14.6.3, page 38) can be entered.



Main menu

8.2 MAIN MENU

The main menu is opened by pressing the [Menu] button. Information on the ventilation unit is displayed here, and various settings can be made and actions performed.



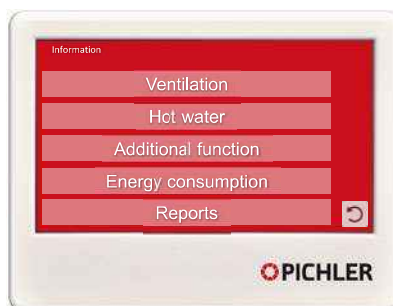
The user is returned to the Start menu by pressing the [Home] button.



Illustration: Control unit - main menu



8.2.1 Information



This submenu provides all relevant information for the operation of the heat pump unit.

Ventilation

Information regarding the ventilation unit and the corresponding heat pump.

Hot water

Information regarding the hot water unit and the corresponding heat pump.

Additional function

Information regarding an optionally activated solar, heating circuit or a duct heating battery

Energy consumption

Information regarding the electrical energy consumption over the period of the past 12 months.

Reports

Display of current and historical errors.

Firmware

Firmware versions used for the control and control unit as well as the type of ventilation unit are shown here.



The device ID displayed is relevant for remote access via the Internet (remote maintenance) or if the Pichler app is used.





8.2.2 Settings



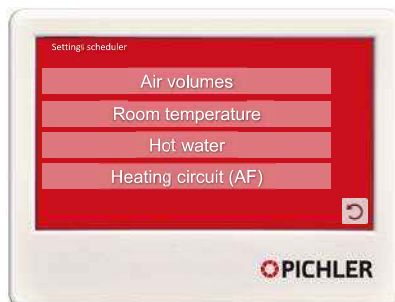
In this submenu the following settings can be made.

Air volumes



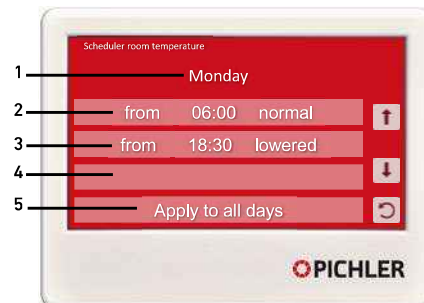
- **Level 1:** Required air volume for the minimum hygienic air change (absence mode).
 - **Level 2:** Required air volume in normal ventilation mode in presence mode.
 - **Level 3:** Required increased air volume in heat pump operation – heating.
 - **Level 4:** Required increased air volume in heat pump operation – cooling.
- If the heat pump is running in heating or cooling mode, level 3 or 4 is activated automatically for this period of time. A minimum air volume is necessary to transport a sufficient amount of heating or cooling energy.

Schedulers



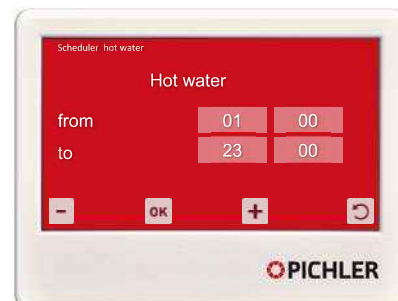
Here the schedulers for the different areas can be programmed.

Schedulers air volumes and temperature



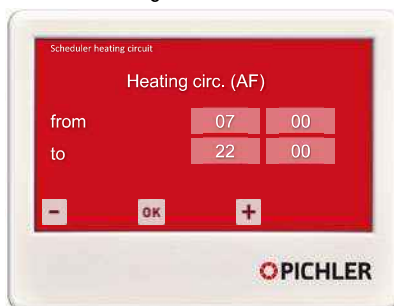
- 1 Day on which the scheduler applies
- 2 Starting time of the air volume or temperature selected
- 3 Second starting time of the air volume or temperature selected
- 4 A third starting time can be selected
- 5 The scheduler of this day is accepted for all days of the week

Scheduler hot water



During the period selected, water heat-up by the heat pump and the E-heating is enabled.



Scheduler heating circuit (AF)

During the period selected, the heating circuit pump of the optional heating circuit module PKOM⁴ HBK33 is enabled.



If a sufficient amount of hot water is available in the tank and a heating request is active, the pump is running.

Additional functions

If additional functions are installed and configured, they can be switched on or off by the user here.

Date & time

In this menu item settings regarding the date and time can be made.

Language

In this menu item the language can be changed.

**8.2.3 Premature filter change****Air filter changed**

If the air filters are changed outside the filter change interval defined – without any filter message – the filter timer under [Menu] > [Filter change] must be reset. This process is documented automatically in the filter log.



9. Filter service

Clean and hygienic air filters are the basic requirement for a high air quality. Filters that are maintained poorly or not at all substantially affect the living comfort and result in an increased power consumption of the fans. Heavily polluted filters may cause faults and malfunction of the heat pump combi unit.

It's in your own interest that you check and change the filters at regular intervals. Depending on the site of installation, ambient conditions, weather conditions and operating mode of the unit, the time it takes until the filters are soiled may vary. In the case of coarse soiling, the filters must be changed immediately.



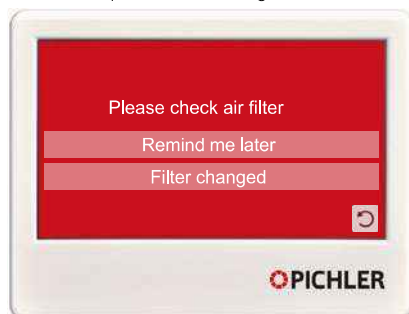
Check the condition of the air filters regularly!

WHAT	TASK	INTERVAL	WHO
Filter service	Check / replace	approx. 2-3 times p.a.	User / technical staff



Filter change required

The control unit reminds you of the filter replacement at regular intervals!



Reset the filter signal on the control unit after every filter change.

For premature filter change see Section 8.2.3, page 20!

Do I always have to change both filters?

We recommend always changing both filters at the same time, since an optical check of the filters only shows the dust particles. Non- visible micro particles and germs can collect in the filter nevertheless.

How do I change the filters?

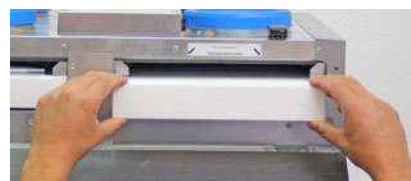
The filter change is easy and can be done in only a few steps

1. Open both caps on the top side of the unit and carefully fold down the inspection flap.

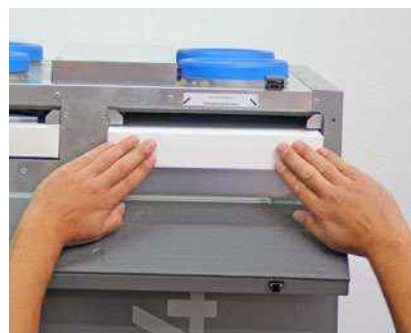
2. Pull out the two push-pull devices.



3. Remove the polluted filter.



4. Insert the new filter.



When inserting the new filters, observe the direction of air. It is marked by an arrow on the filter.



5. Press the push-pull device back in.



6. Close the inspection flap and the caps.



7. Reset the time meter for the filter change interval.



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Where can I order filters?

Only use original replacement filters taking the filter class specified into consideration.

Symbol	Item	Filter medium	Item number
	ETA filter ISO ePM10 75 % (extract air)	Synthetic	40LG050280
	ODA filter ISO ePM1 55 % (outdoor air)	Glass fibre	40LG050290

