OPERATING INSTRUCTIONS

HAC 2.0

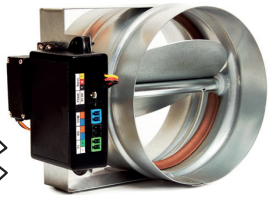
HETA AUTOMATIC COMBUSTION

Door sensor

LED-indicator

Temperature sensor

Bluetooth air controler



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HETA

EN

DANISH DESIGN . DANISH QUALITY . DANISH PRODUCTION

THANK YOU FOR USING OUR PRODUCT

Thank you for purchasing our product, the HAC 2.0 Automatic Regulation of combustion. This product is the result of our many years of experience with burn control systems.
We trust the product will fulfill your expectations.

HAC 2.0 is compatible with the models:
Scan-Line 900 series
Scan-Line 910-920 series
Icon-Line Moderna series

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Heta’s HAC 2.0 technology can be easy to control using Heta’s app for Android/ iOS via Bluetooth.

HAC 2.0 is, first and foremost, a convenient aid in getting the highest possible heating value out of the firewood and, thus, the best possible value for money compared to manual operation. In addition, HAC 2.0 ensures against user error, as the temperature in the fire chamber will always be perfect.

An LED-indicator is attached to the stove, which uses colour codes (red, yellow and green) to alert you if reignition is necessary or too much firewood has been loaded. The stove’s door is equipped with a door sensor that registers hen new firewood is added.

Magnetic door sensor detects when firewood is added and thereby starts a new combustion cycle, it is automatic, no need to use a phone/tablet. The combustion cycle will be displayed in the color codes on the LED indicator.

LED indicator Indicates the status of the combustion process by sending a discreet light (in red, yellow and green colors) down to the floor.

Temperature sensor measures the temperature in the combustion chamber itself during the combustion process.

Bluetooth HAC 2.0 air control, controls the air volume throughout the combustion process with input from the temperature sensor.

1 DEVICE DESCRIPTION

1.1 Basic Description

The HAC 2.0 is an automatic burn control device for wood stoves.

This product offers unique features representing the cutting edge in burn control technology for an enhanced user experience.

- Overheating indication
- App color indicates optimal fuel quantity
- Control through mobile app

The HAC 2.0 is a fully autonomous control system. It is not necessary to connect the control unit to the mobile app. Not connecting will, however, make it impossible to adjust settings.

The HAC 2.0 Puts an End to Overheating

Overheating is possibly the most wasteful home heating practice. It is very common to introduce more fuel than necessary for your heating needs; this results in most of the “extra” energy from the fuel escaping uselessly through the chimney. Aside from wasting fuel, this also significantly increases wear on the heating system, including the chimney.

The HAC 2.0 can detect overheating and inform the user to add less fuel in the next refueling.

The mobile app informs the user about the current status throughout the entire burn process. Based on the current firebox temperature, the app displays 3 color indicators (yellow, green, red). The user should adjust the fuel amount so that when the firebox is at maximum temperature, the app shows the green indicator. Once the current burn has progressed sufficiently, the app evaluates the adequacy of the fuel load used by displaying a colored dot in the top left corner of the app screen:

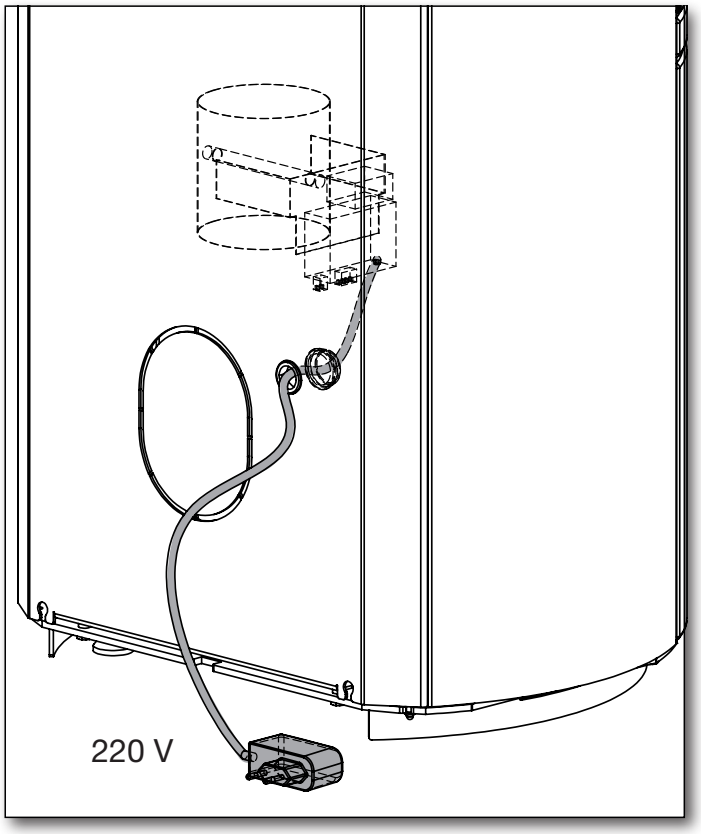
- yellow: fuel load was less than optimal
- green: fuel load was optimal
- red: fuel load was more than optimal (overheating)

1.2 Advantages of Automatic regulation of burning

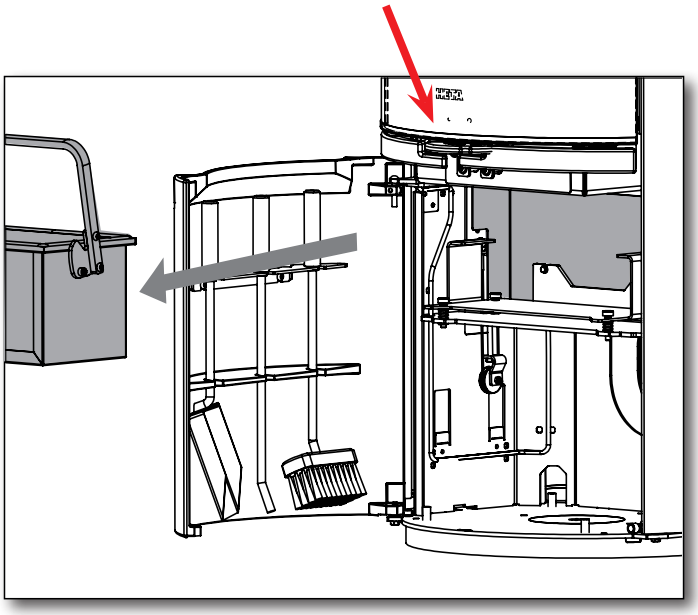
- Increases burn time and refueling interval
- Improves fuel economy by up to 30%
- Prevents overheating
- Improves burning and heating efficiency
- Enhances safety of heating
- Improves heating system longevity
- Signals when refueling is needed
- Provides information on heating system performance

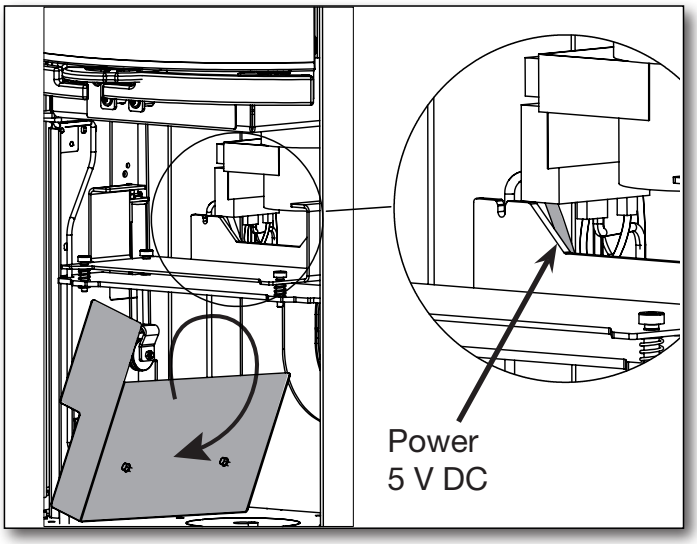
Connect 220V Power to HAC 2.0

Scan-Line 900 series

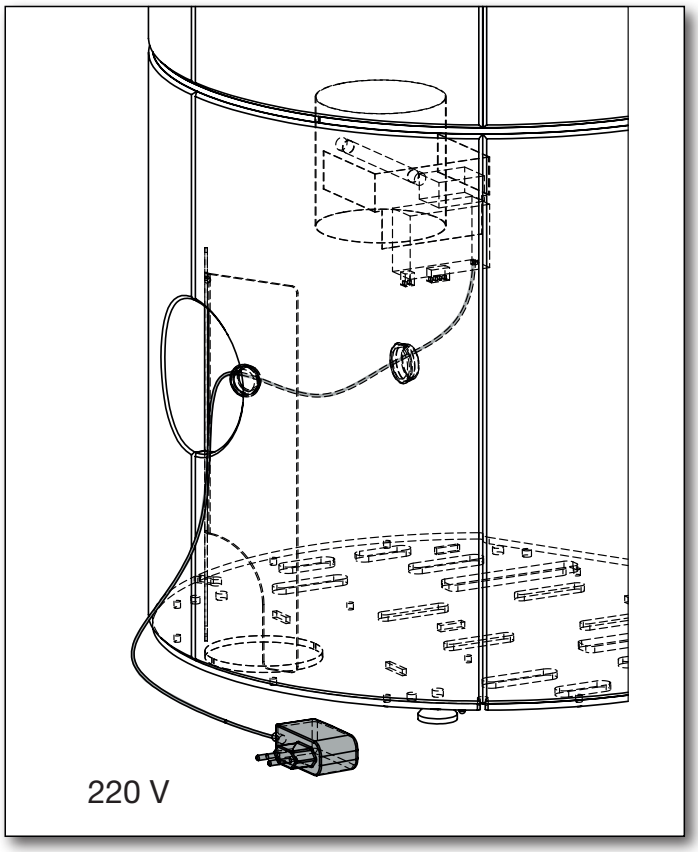


Important, the stoves air must be fully open at all times, when using HAC 2.0.





Scan-Line 910 - 920 series



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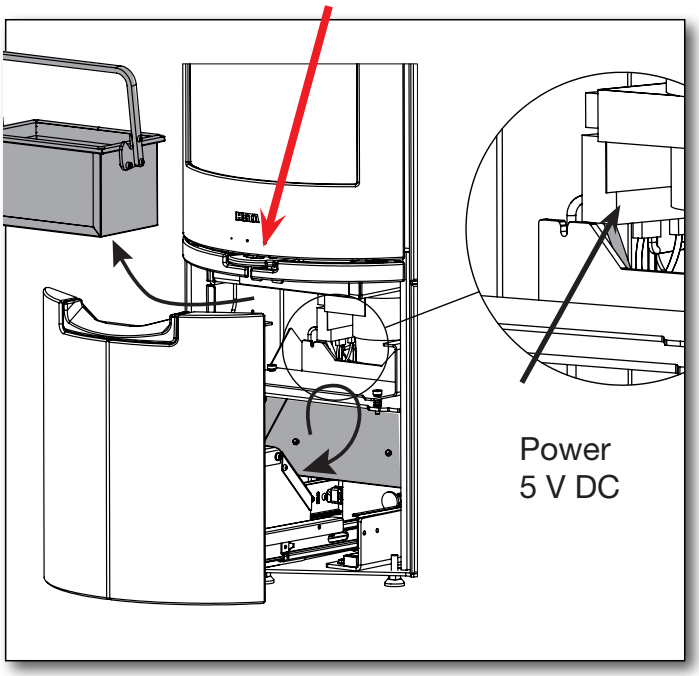
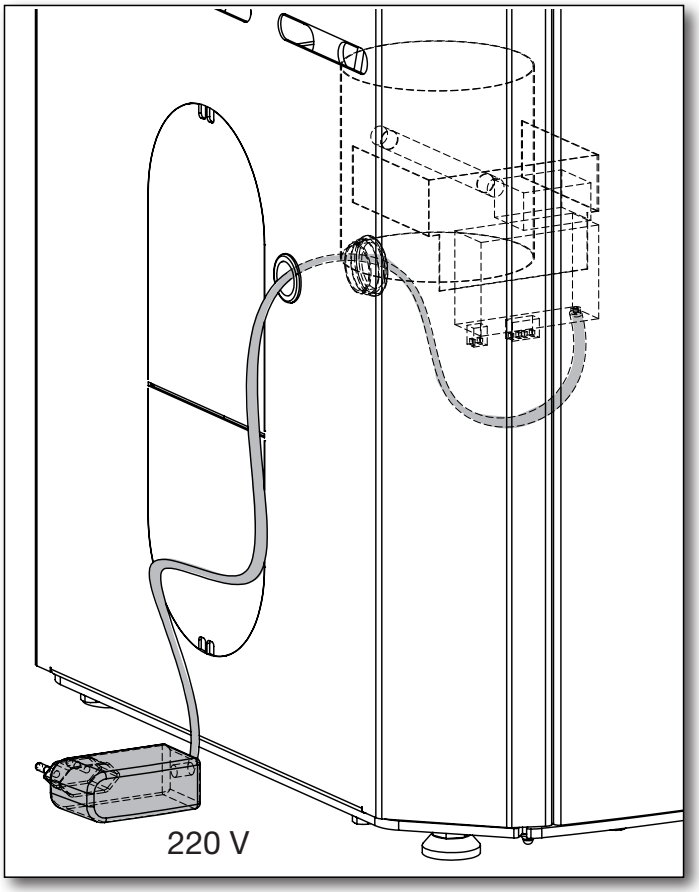


Icon-Line Moderna series



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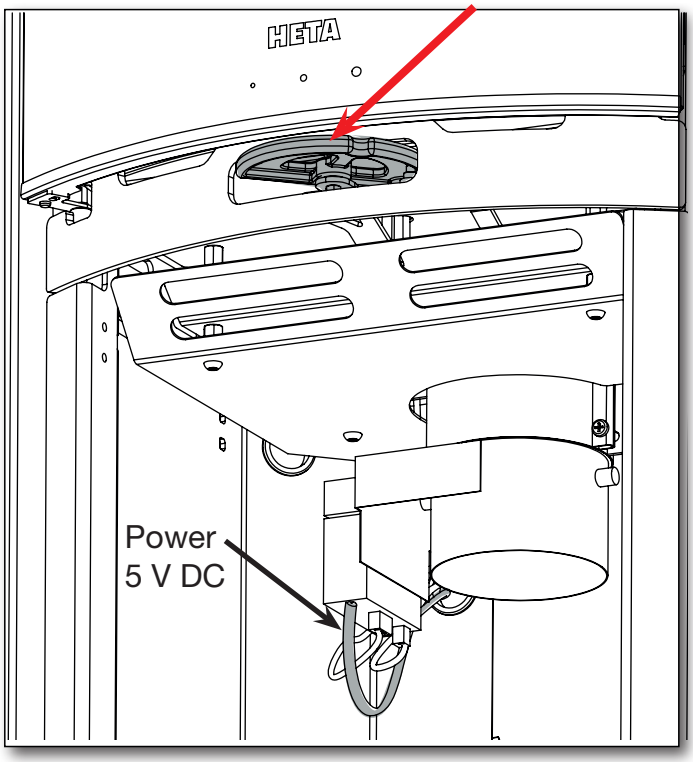


2 MOBILE APP REQUIREMENTS

2.1 Android Devices

- Android 9 or newer Android OS
- Bluetooth LE
- GPS module

The app is available on Google Play under the name HetaHAC2.0.

QR Code for download:

2.2 Apple iOS Devices

- Apple iOS 13,6 or newer
- Bluetooth LE
- GPS module

The app is available on the App Store under the name HetaHAC2.0.

QR Code for download:

The app communicates with the control unit using your phone's Bluetooth connection. The app syncs data with the control unit every 10 seconds.

3 INSTALLING THE MOBILE APP

The language of the app follows the language setting of the mobile device, only the following languages are available: English, German, French, Danish and Czech. If another language is selected in the mobile device, the language will be automatically set to English.

3.1 Downloading the Mobile App

The mobile app is available on the Google Play Store and the Apple App Store; the app name is HetaHAC2.0. Open the app details in the store and tap "Install"; the app will then be auto-matically installed on your phone.

3.2 Pairing the App with the HAC 2.0 Control Unit

1. Turn on Bluetooth and GPS positioning on your device.

2. Launch the mobile app.

3. The app will need permission to access your device's location. This is necessary because the app searches for your specific HAC 2.0 control unit only near your position.

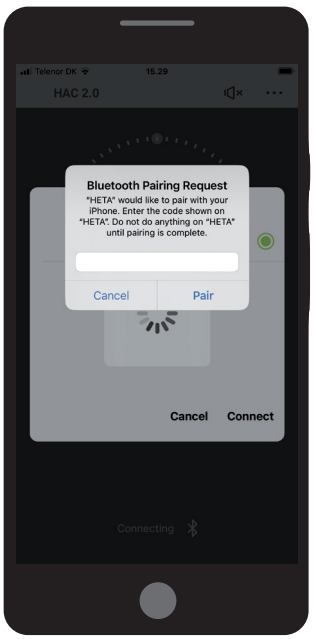
4. Once launched, the app starts an automatic search for nearby HAC 2.0 devices. Once the search completes, the app will show a list of units found. Select the one called HETA.

5. The app will then request a pairing password.
Enter the default **password 123456** and press OK to confirm.

Note: If the app failed to request a pairing password, check your phone's notification bar. Some Android devices move the password request and entry to a notification item.

6. The mobile app is now paired with the HAC 2.0 device.

Note: The HAC 2.0 can only be paired with a single mobile device at a time. If you wish to connect another mobile device, you will need to disconnect the current one first.



4 MOBILE APP DOCUMENTATION

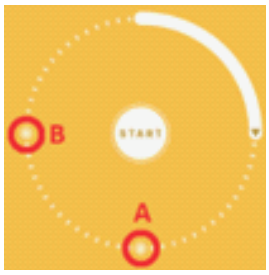
4.1 Menu

Open the menu by tapping *** at top right of the screen.

Indication amount of refueled wood
Shows the adequacy of the current fuel load. Only shows once the “Burning phase” circle reaches position A.

Sound signalization
Turns the control unit’s sound alerts on or off – see “Control Unit Sound Alerts” page 10. If you turn the alerts off, the unit will no longer use sounds to notify you of important situations.

“Burning phase“ circle
- Maximum burn point – A.
- Refueling point (with sound alert) – B



START button
Press to start a new automatic burn control cycle. Details see page 10 section 6.1.

Shutter position
The current position of the external air intake (EAI) shutter

- 100% = EAI shutter fully open
- 0% = EAI shutter fully closed

Status bar
Shows whether the app is connected to a control unit.

Background color
The app background alternates between four colors based on current firebox temperature:

- yellow - firebox temperature below optimum
  - should only show when starting a fire or when down to hot coals
- green - firebox at optimum temperature
  - best fuel efficiency – shows a green leaf icon
- red - firebox overheated
  - excess energy lost via chimney – shows a chimney icon

Grey colour means cold firebox (firebox at room temperature, no fire).

Combustion control mode
Turn the automatic burn control process on or off. When set to **off**, automatic burning regulation is inactive. The EAI shutter can then be moved manually using its attached handle, or the stove's own shutter handle can be used. (See page 101
When automatic control is off, the Main Screen shows **MAN**, for "manual mode".

Current flue gas temperature
Current temperature of flue gas exiting the firebox, as read by the exhaust temperature sensor. The temperature readout stops showing when exhaust temperature drops to room temperature.

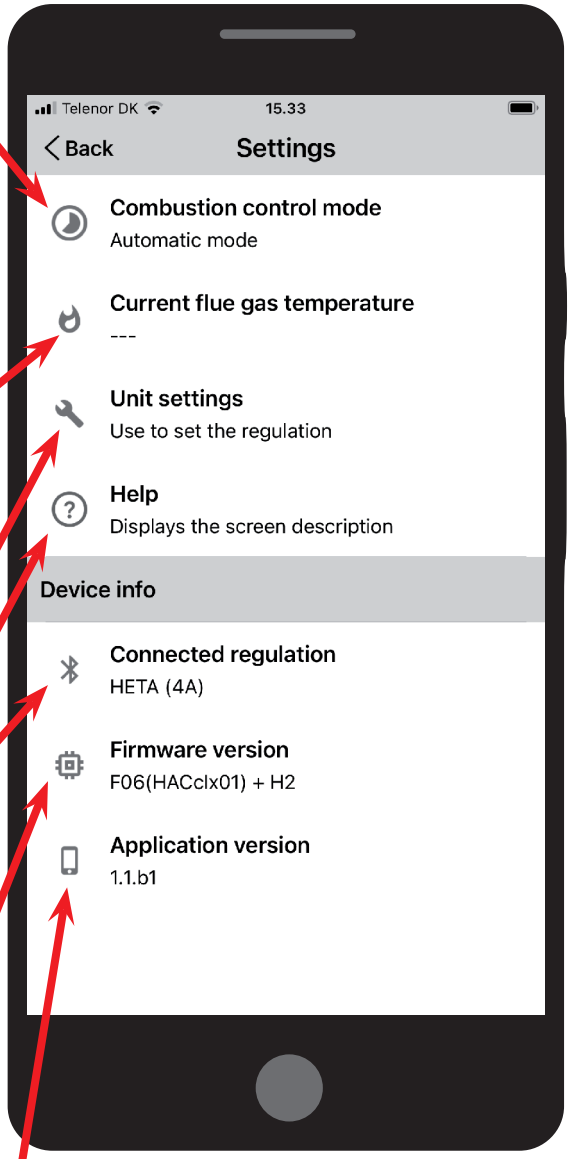
See page 9

See page 7 (Section 4.1)

Connected regulation
Shows the type of control unit the app is currently connected to.
Tap this item to disconnect the app from the current control unit.

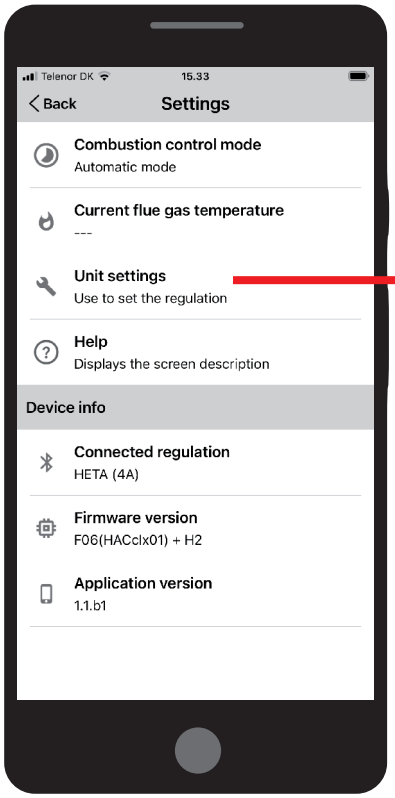
Firmware version
Shows the firmware version of the control unit connected to the app.
A text notification is shown by this item when a new firmware version is available for your control unit.
We recommend updating the firmware whenever available to ensure your control unit remains up to date.

Application version
Displays the software version number of the mobile app.
We recommend checking for app updates regularly through Google Play (Android) or the App Store (Apple), or setting the app to auto-update.



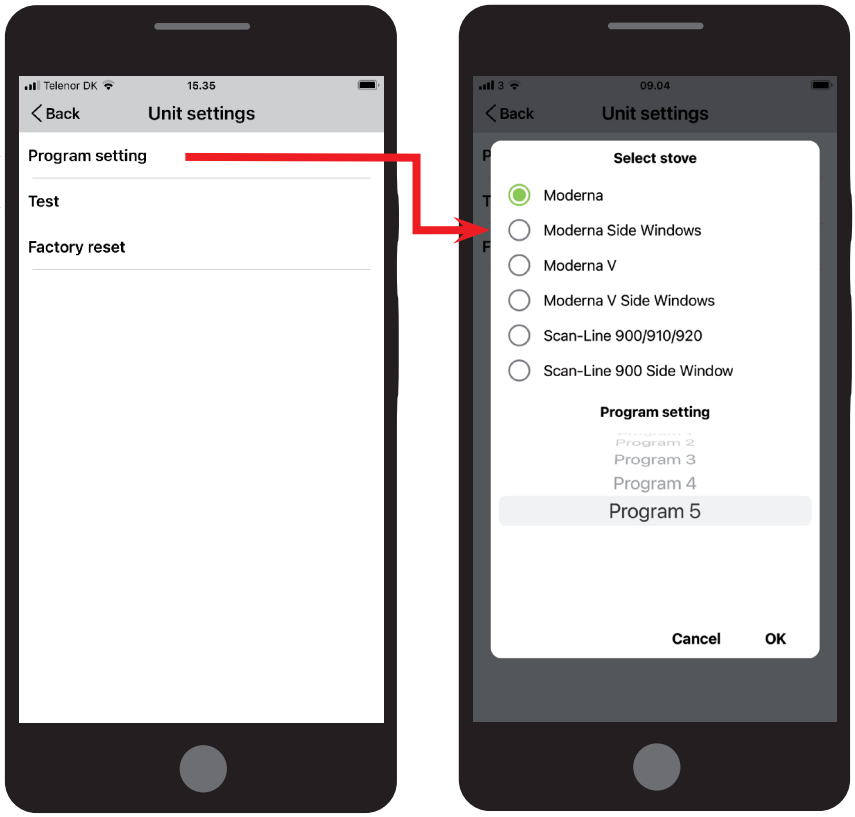
Unit Settings

Here you can configure the control unit for your stove and perform some maintenance tasks. The Settings menu is password-protected; the default **password is 1234**.



- **Program setting**

- Allows you to select one of a number of pre-set control curves, each of which maps exhaust temperature to shutter position in a different way. The factory setting is no. 5.

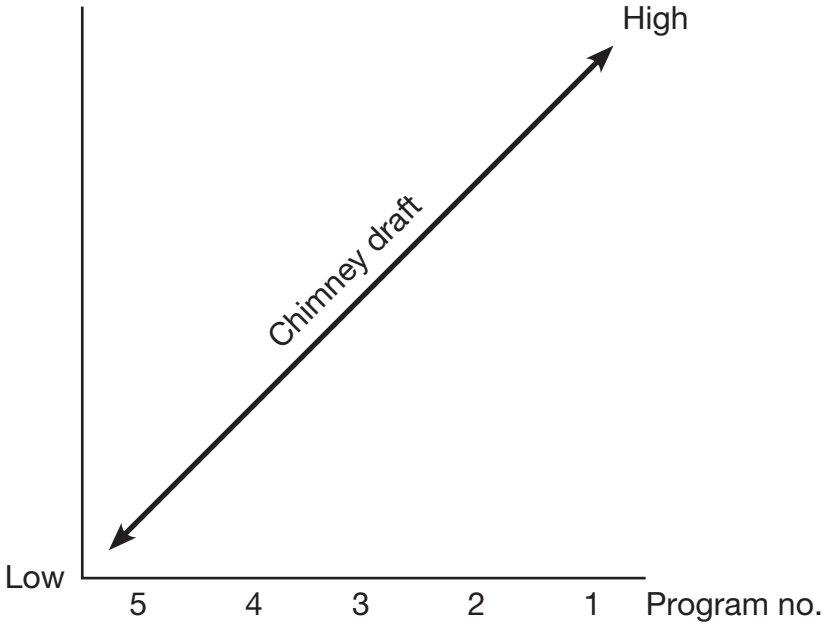


- **Test**

- Test the functionality of the automatic regulation system. Click an item to test EAI shutter open / close, sound alerts, relay contacts on / off, and color LED function.

- **Factory reset**

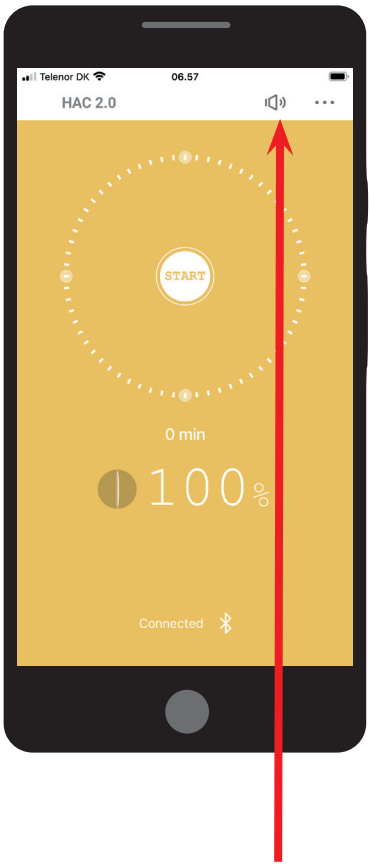
- Resets the control unit to factory default settings.



Program 5 to be used when there is low draught
Program 1 to be used when there is high draught

5 CONTROL UNIT SOUND ALERTS

The control unit can signal certain states and requests using an internal beeper module mounted on the unit's circuit board.



Beeper signals:

- Unit power-on
  - o 3 short beeps
- New burn start (stove refueled, EAI shutter open to 100%)
  - o 3 short beeps
- Stove door open too long
  - o 3 long beeps every 3 minutes
- Request to refuel
  - o 1 long beep + 4 medium-length beeps
- Going to standby (stove was not refueled, EAI shutter closed to 0%)
  - o 1 long beep + 4 medium-length beeps
- Thermal sensor malfunction
  - o 1 short beep every minute

Audio signals can be turned on / off by tapping the speaker icon in the mobile app main screen.

6 USING AUTOMATIC REGULATION OF BURNING

6.1 Start

Starting burn control launches a new controlled-burn process. At start, the EAI shutter opens fully to provide maximum airflow into the firebox. An audio signal of 3 short beeps is played to confirm successful launch.

Burn control can be started automatically or manually:

- Automatic: A new combustion cycle starts when the door opens and is closed again
- Manual: Pressing the START button in the app

6.2 Refueling

When refueling is needed, the control unit emits a beep signal (1 long beep + 4 medium-length beeps). The mobile app displays refueling requests by moving the "Burning phase" indicator to position B.

The maximum load (kg) of wood that must not be exceeded, can be found in the user manual.

The warranty will be voided if this amount is exceeded.

7 SAFETY INSTRUCTIONS

7.1 What to Do in Case of Power Outage

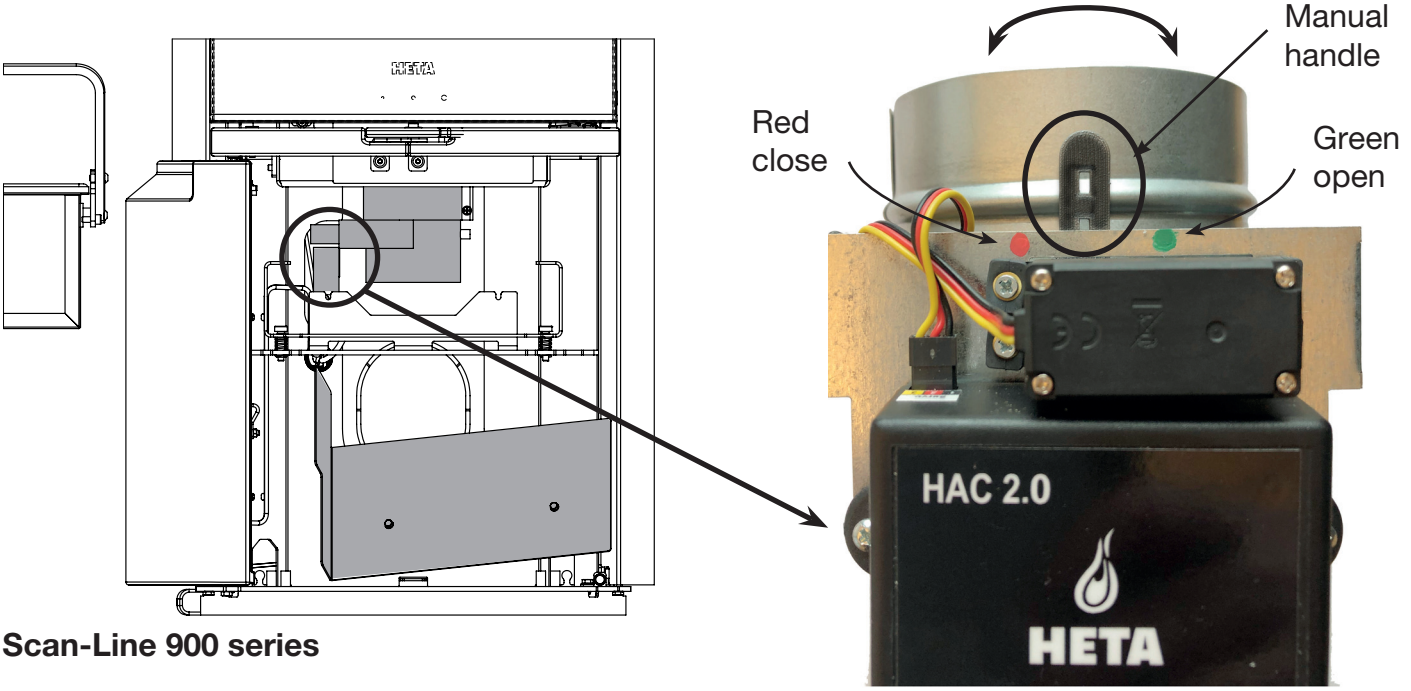
In the event of mains power failure to the automatic regulation process, there is no need to reduce or stop heating, regardless of which phase the burning control program was in at the time of the outage. However, keep in mind that the air intake shutter will have remained in whatever position it was in before power failed.

If you subsequently need to refuel, it is **essential** to manually open the air intake shutter to the 100% position.

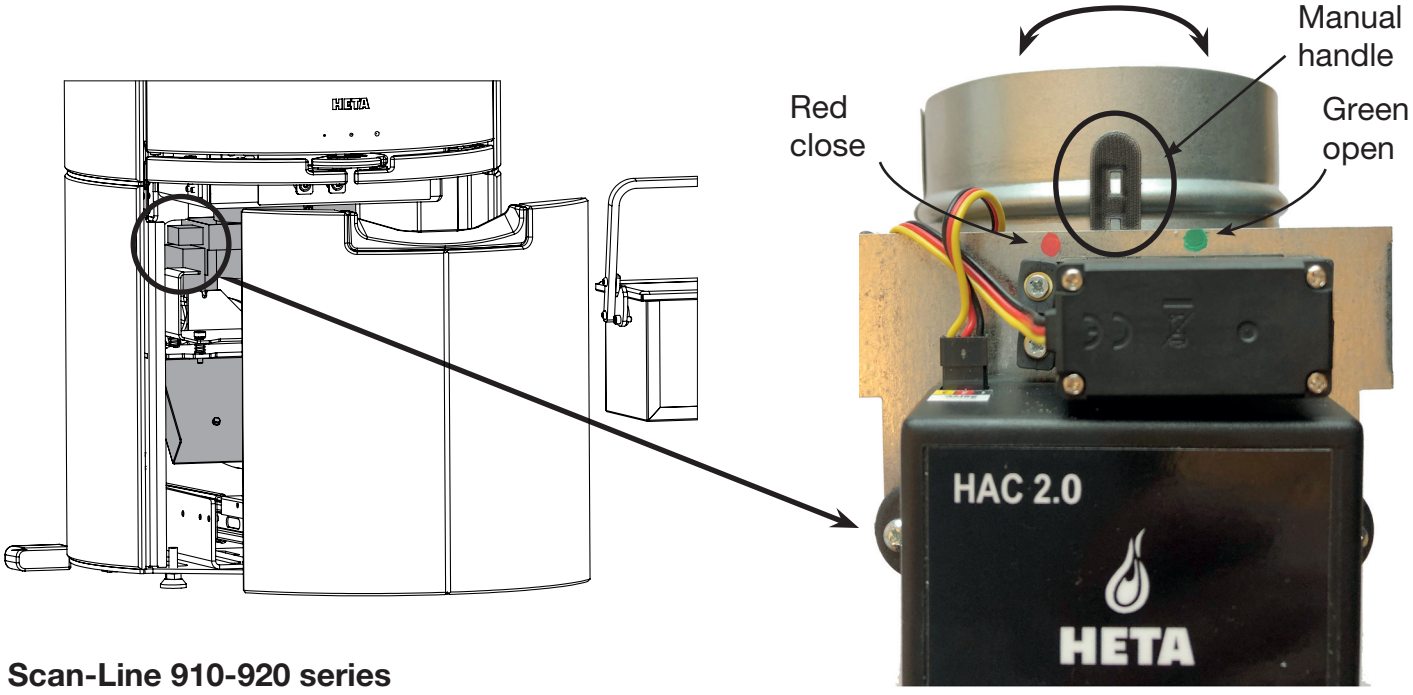
Once electric power has been restored, no further manual changes to the combustion control system are required.

7.1.1 Manually opening the EAI shutter

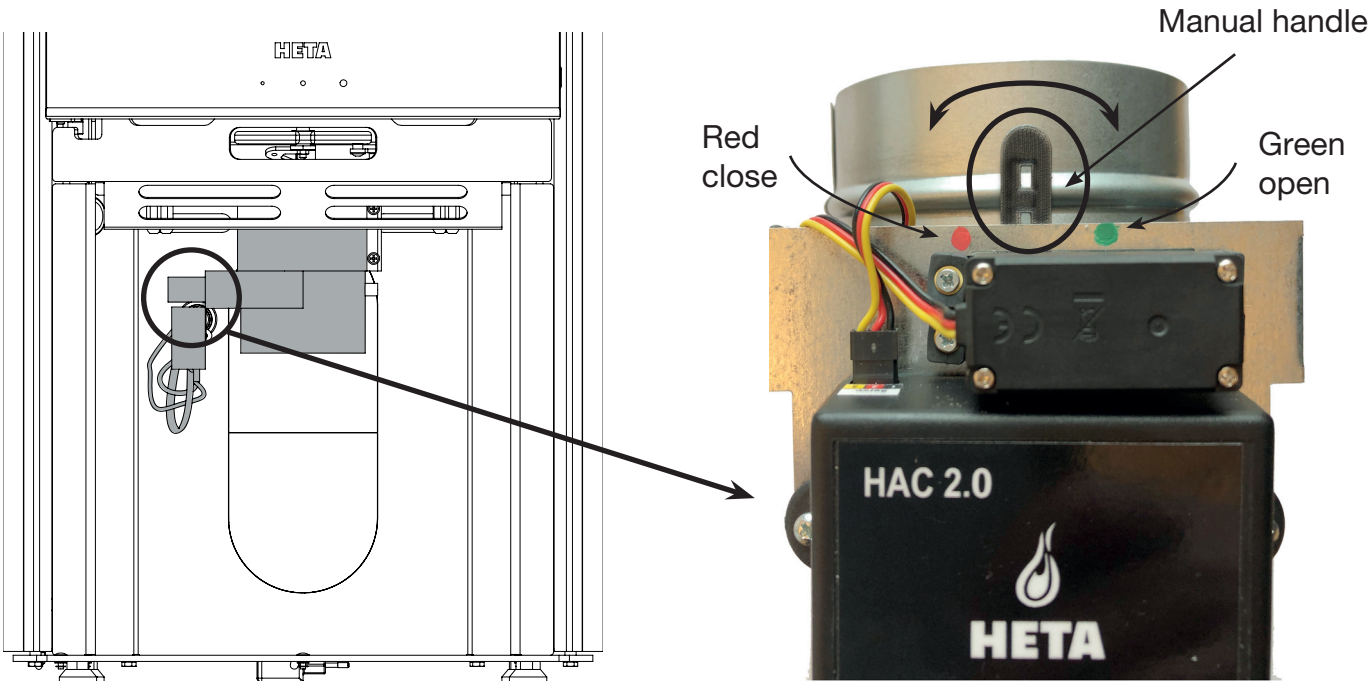
The EAI shutter can be manually opened using the plastic handle attached to its shaft. Turn the handle clockwise as far as it will go. (Avoid using excessive force to prevent damage to the silicon seal of the shutter).



Scan-Line 900 series



Scan-Line 910-920 series



Icon-Line Moderna series

8 HEATING WITH AUTOMATIC REGULATION

8.1 Starting Fire and Refueling

Whenever refueling, a new automatic burn control cycle must be started. This may be done automatically or manually (see “Start” section on page 10, section 6,1). Once the burn control system is started, the mobile app background turns yellow (stove is warming up).

Once a burn control cycle has started, the system opens the EAI shutter to 100% and subsequently gradually closes it in accordance with the selected control curve (program).

8.2 Automatic Regulation Mode

Once the starting temperature has been reached, automatic regulation of burning starts. The program ensures optimal combustion and maximizes heating efficiency.

Once the stove is reaches **maximum** temperature, the app background should ideally turn **green**. If it does not, there is too little (yellow) or too much (red) fuel.

As the temperature decreases, the app background will return to **yellow**.

The app displays an **indicator dot** at the top of the Main Screen showing the amount of refueled wood in last burning cycle.

8.3 Residual Heat

Once the conditions for residual heat mode (i.e., hot coals) have been reached, an audio signal is played to indicate that you might wish to add fuel. It is not necessary to refuel immediately; the signals are notifications only.

8.4 Program End

If no fuel is added, the program continues closing the intake shutter, until it eventually closes completely (0%) and the app background turns grey.

9 COMMON ERRORS AND SOLUTIONS

In case of error
• First try restarting the device by unplugging it for 10 seconds.

App background is red during whole burn cycle
• Most likely bad wiring on the thermal sensor. Make sure that wires to the sensor are correctly and tightly plugged in, and check that the sensing tip and the wiring of the sensor itself are undamaged.

App background remains only yellow or grey throughout the burn cycle
• Your firebox may not be capable of reaching the temperature preset as optimal for the selected program. Go to the mobile app and switch to a cooler (lower-numbered) program.

The EAI shutter keeps opening to 100% (full open)
• Magnetic Door Sensor (with SDS turned off), check that the gap between the main body of the sensor and the magnet is not greater than the recommended maximum of 10 mm.

The app rejects the PIN
• The correct PIN is always **123456**. Some mobile phone manufacturers choose to display "helpful" suggestions of other "commonly used" default PINs. These are, in this case, incorrect and should be ignored.

The app fails to connect to the control unit
• First, make sure that your device meets the app's software requirements.

• Second, verify that no other mobile device is currently paired to the control unit. The control unit is only capable of being paired with one device at a time.

The app displays "MAN" on the main screen and automatic regulation is not working
• Automatic regulation is turned off in the app Settings. Turn it on in menu.

Current exhaust temperature readout shows "- - -"

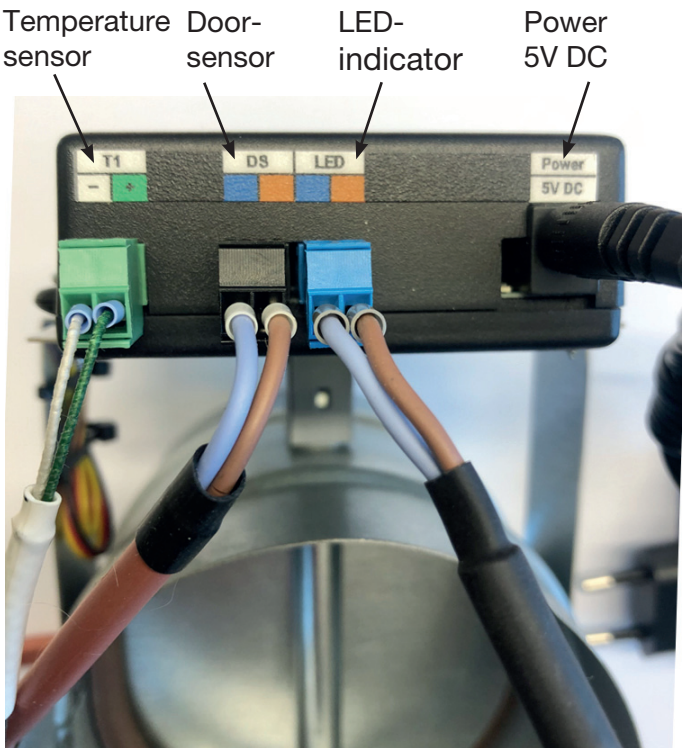
• The exhaust temperature readout only shows when flue gas is warmer than the environment. Temperatures below 25 Celsius are not shown; the "- - -" symbol displays instead.

• If "- - -" continues to show even when the firebox is hot, check the thermal sensor for bad wiring and / or damage.

The app background is grey (cold firebox), but the EAI shutter is 100% open
• There may have been a malfunction on the thermal sensor during the last burn cycle. In this case, the control unit reacts by opening the shutter to 100%, for safety reasons.

• Try press START button.
If the sensor problem has resolved itself, a new burn cycle should continue normally without the need for you to do anything. If it does not, check the thermal sensor for bad wiring and / or damage.

Correctly connected wires on HAC 2.0



10 GENERAL NOTICES

• This Manual is an integral part of your purchase; we recommend storing it near the device so as to have it available for reference when needed.

• The device is not designed for any use other than those described in the User.

• The operator should regularly visually check the condition of the device and provide basic care and maintenance.

• Do not expose the control unit to temperatures over 50 Celsius, contact with water or excessive humidity. Only use the unit within its operating parameters. Do not expose the unit to a combination of high humidity and large temperature swings, which may cause water vapor to condense inside and damage the unit.

• Disconnect all electrical connections before performing any maintenance on the device!

• In the event of malfunction, contact Heta.

11 TECHNICAL DATA

• Control unit input power	5V/DC, 50Hz 0,3A
• Control unit heat resistance	max 50°C
• Temperature sensor heat resistance	iron part max 700°C
• Disposal method	dispose of as separate waste
• Cable attachment method	connector connection
• Control unit IP	IP 40
• Software class	A (control functions do not affect device safety)