

Remeha Avanta Plus 28c
Remeha Avanta Plus 39c
Remeha Avanta Plus 24s



User guide

Remeha Avanta Plus



remeha

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INTRODUCTION

The Remeha Avanta Plus range are a series of fully condensing high-efficiency central heating boilers, available in the following types:

- Remeha Avanta Plus 28c and 39c
 - with integrated domestic hot water system (combi-type)
- Remeha Avanta Plus 24s
 - without integrated domestic hot water system (system-type)

The Avanta Plus series ensures optimum domestic hot water heating and space heating in your home.

Apart from instructions on operation / maintenance and tips on how to achieve lower energy consumption, this User Guide contains information on options for operating the boiler with various types of controls, for use with conventional or under floor heating and in conjunction with solar panels.

This User Guide represents the documentation for the **end user**.

- Apart from the documents for the end user, the following are provided for the installer:
- Installation and Service Manual.



- Keep this User Guide with the boiler.
- Broag Ltd. will not be liable for any damage resulting from the instructions in this User Guide not being followed.
- Broag provides a 2-year warranty on parts for the Remeha Avanta Plus and a 10-year warranty on the heat exchanger. Please ensure that your installer hands over the completed Boiler Log Book and that the warranty card returned to Broag to register the boiler. Also ensure that the relevant sections are completed at each service visit. The Log Book will be required in event of any warranty work, therefore keep it in a safe place.

We continually seek to improve our products. The data published in this User guide is based on the most recent information and is issued subject to later modifications. We reserve the right to modify the construction and/or finish of our products at any given time without any obligation to adapt earlier supplies accordingly.

Please do not hesitate to contact us if you have any suggestions to improve this documentation.

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1 SAFETY

This User Guide uses specific terms and pictograms to draw particular attention to instructions. Broag does this to enhance the user's safety, to prevent problems and ensure the technical reliability of the boiler.

1.1 General safety

The following pictograms are used in this Installation and User manual to specifically draw certain points to your attention:

Tip		Useful tip or practical advice.
Indication		Important instruction in carrying out a particular operation.
Warning		Possible danger of personal injury or material damage to the regulator, building or environment.
Danger		Serious personal injury can occur because of risk of electric shocks.



Can you smell gas? What to do:

- Do not smoke and do not create any flame or sparks.
- Do not use any electric switches.
- Turn off the main gas stop cock.
- Open windows and doors.
- Warn those present and leave the building together.
- Call your gas suppliers / installer once you are outside the building, TRANSCO tel. 0800 111 999.



Can you smell smoke or flue gases? What to do:

- Switch off the boiler.
- Open windows and doors.
- Warn those present and leave the building together.
- Call your installer once you are outside the building.



Installation location for the boiler!

- Do not store or use any flammable materials, aggressive substance and/or aerosols near the boiler.
- The installation area must be frost-free.
- The switched spur unit for the boiler must always be accessible.



Water and pipe temperatures!

- The factory setting for the tap water temperature is 55°C; this temperature can be set to 65°C.
- The maximum water temperature in the Avanta Plus can reach 90°C. This means that pipes and/or radiators can reach this temperature.
- If the boiler is running, the flue duct can reach a high temperature.

Service once a year

The boiler must be inspected once a year by a qualified engineer to ensure optimum, safe operation.

Repairs

Repairs to the Avanta Plus must only be carried out by a qualified engineer and in accordance with the applicable regulations and (safety) requirements.

2 BOILER

2.1 **Operation and components**

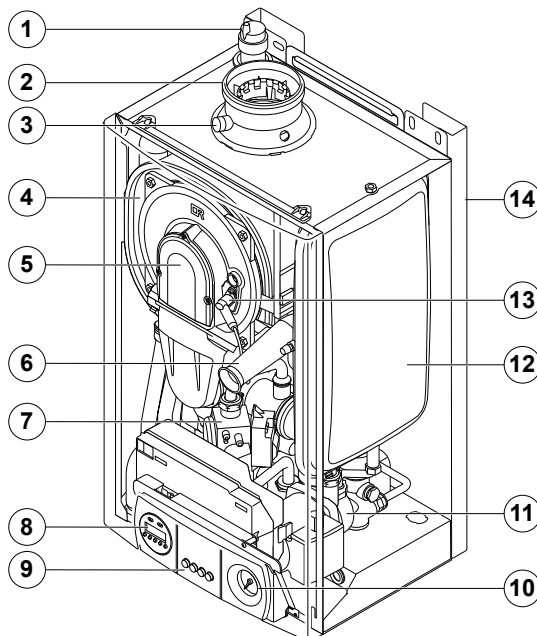
The Avanta Plus is a high-efficiency system or combi boiler for domestic space heating and hot water production.

The combi boiler provides space heating and contains a plate heat exchanger, three way diverting valve and additional components to supply instant DHW direct from the boiler on a priority basis without the need for storage

The system boiler provides space heating and can be used in conjunction with a cylinder/calorifier and other external controls to provide DHW indirectly

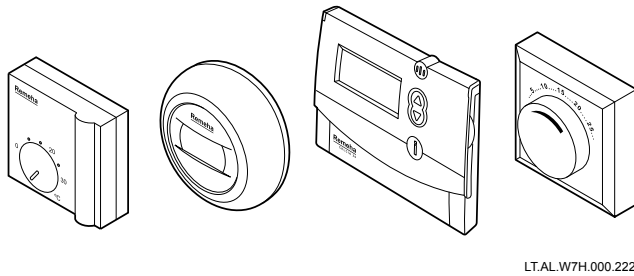
Both models have helical stainless steel heat exchanger's c/w a premix burner ensuring high heat transfer efficiency with flue gases being discharged via the concentric flue system. Condensation which forms during the combustion process is discharged via the siphon on the underside of the boiler.

An intelligent advanced boiler control unit ('abc®') provides all the necessary safety and operational safeguards using internal and external sensors etc to ensure that the boiler operates reliably with maximum efficiency



1. Automatic air vent
2. Flue/ Air inlet connection
3. Flue gas measuring point
4. Heat exchanger
5. Front plate heat exchanger
6. Air inlet tube
7. Gas combination block
8. Two channel time clock (optional)
9. Control panel
10. Pressure gauge
11. Circulation pump
12. Expansion vessel
13. Ignition/ionization electrode
14. Stand off frame (optional)

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2.2 Controls

The Remeha Avanta Plus is a fully modulating boiler and can be controlled using one or more of the following methods;

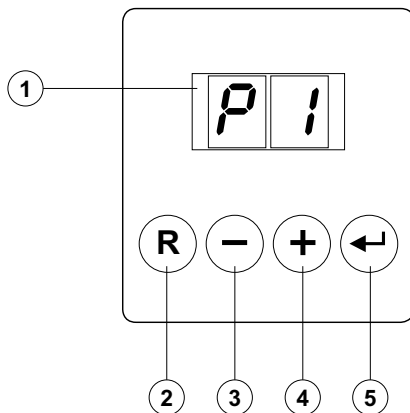
1. Open Therm – 2 wire interface compatible with the Remeha Celcia 15 room compensator and the Remeha Celcia 20 outside weather compensator or with any other OpenTherm control.
2. Open Therm thermostat in combination with 230 V time clock.
3. On/Off room thermostat – volt free (Celcia 10)
4. On/Off room thermostat – 230 V
5. 230 V Switching time clock - Internal 230 V Broag option or any other external two channel 230 V switching clock.

2.2.1 Advanced boiler control ('abc®'-control)

An intelligent advanced boiler control ('abc®') continuously monitors the boiler conditions and ensures a very reliable supply of heat. In the event of problems with water and air flow, the boiler will temporarily switch off (depending on the nature of the circumstances), and then after a short while simply try again.

3 OPERATING THE BOILER

The control panel of the Avanta Plus has 4 function keys and a display. The function keys are used to read or change settings and temperatures (see *par.3.3*; 'Changing settings').



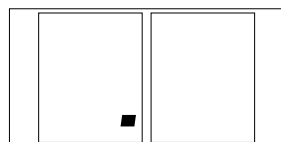
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- 1 Display
- 2 'Reset'-key
- 3 [-] key
- 4 [+] key
- 5 'Enter' key

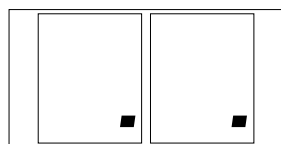
The display has two positions and displays information on the current operating status of the boiler and any errors.

Numbers, dots and/or letters can appear in the display. The symbols above the function keys indicate what the function of that particular key then is. If no key is pressed for longer than three minutes with the "boiler in stand-by mode", only one dot is lit. With the "boiler operating", two dots are displayed.

- Press any key and the current boiler status and operation code will appear in the display.
- In the event of a fault, the fault code is displayed instead of the dots.



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3.1 Normal start-up procedure

Activate the switch on the spur unit for mains supply; the boiler will run the start-up program.

- A display test will briefly appear showing all segments of the display.

F **XX** software version;

P **XX** parameter version;

- A venting cycle of 2 minutes now follows, the version numbers will be displayed alternately;

- Next, the following will appear in the display;

1; boiler is ventilating;

2; boiler is igniting;

4; boiler is operating for DHW;

7; boiler pump is running after heating DHW;

0; boiler is stand-by.

3.2 Reading operating codes and settings

Reading operating codes

The display can show the following operating codes if one of the keys is pressed.

Operating status consecutively

Hot water tap open (DHW demand)	1	2	4
Hot water tap closed (DHW satisfied)	1	7	0
Room thermostat set higher	1	2	3
Room thermostat set lower	4	1	7
	(boiler already heating up)		
Room thermostat set lower	1	6	0
	(boiler not yet heating up)		

Boiler checking water temperature

8 (once water temperature has fallen sufficiently, it auto matically starts running again)

Boiler waiting time

5 (boiler will start again within 3 till 10 minutes)

Boiler temporarily non-operational

9 (automatic restart attempt after 10 minutes)

Boiler stand-by

0 (boiler running normally)

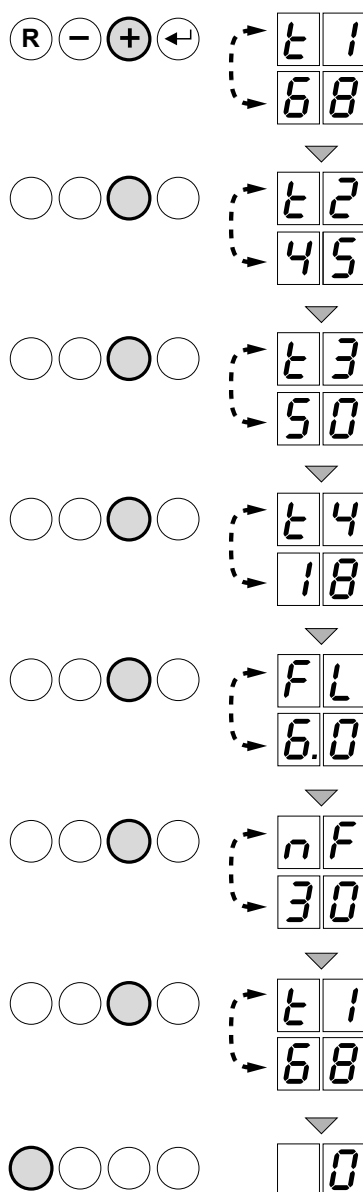
Read out settings

The following settings can be read out in the 'user menu':

- **1** = flow temperature [°C];
- **2** = return temperature [°C];
- **3** = boiler temperature [°C];
- **4** = outside temperature [°C];
- **FL** = ionisation current [µA];
- **nF** = fan speed [t/min] (rpm);

Proceed as follows to read the settings:

- Press the **[+]** key, until **1** appears and, for example, **68** (68°C), the current flow temperature;
- Press the **[+]** key again until **2** appears and, for example, **45** (45°C), the current return temperature;
- Press the **[+]** key again until **3** appears and, for example, **50** (50°C), the current boiler temperature;



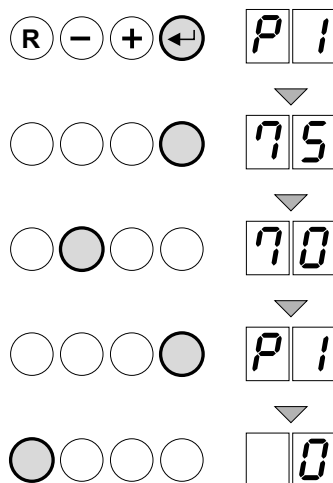
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- Press the **[+]** key again until **[E][4]** appears and, for example, **[I][8]** (18°C), the current outside temperature;
- Press **[+]** key again until **[F][L]** appears and e.g. **[6][0]** (6uA), the present ionisation current;
- Press **[+]** key again until **[n][F]** appears and e.g. **[3][0]** (3000 rpm), the present fan speed;
- Press **[+]** key again and the read-out cycle will start again with **[E][I]**, etc.;
- Press **'Reset'**- key to return to the display with the current operating status.

3.3 Changing settings

The user can change the following settings:

- [P][1]** Maximum flow temperature (= water temperature that leaves the boiler) [°C], adjustable between 20 and 85°C (factory setting = 75°C)
- [P][2]** Maximum domestic hot water temperature [°C], adjustable between 40 and 65°C (factory setting = 55°C)
- [P][3]** Boiler regulation; central heating and domestic hot water mode adjustable at four levels:
 0 = central heating OFF and domestic hot water OFF
 1 = central heating ON and domestic hot water ON (= factory setting)
 2 = central heating ON and domestic hot water OFF
 3 = central heating OFF and domestic hot water ON
- [P][4]** Eco or comfort mode adjustable at 3 levels:
 0 = comfort setting
 1 = eco mode
 2 = regulated by controller (= factory setting)
- [P][5]** Anticipated current for on/off thermostat (ask your service engineer for further details)
 0 = no anticipated current (= factory setting)
 1 = anticipated current
- [P][6]** Display off automatically
 0 = display stays off
 1 = display stays on
 2 = display switches off automatically after 3 minutes (= factory setting)



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Changing P1 setting: flow temperature of water in central heating system

Reduce the flow temperature as follows:

- Press **'Enter'**- key until codes **[P][]** and **[][I]** are displayed alternately.
- Press **'Enter'**- key again; set value for maximum flow temperature is displayed: 75°C (factory setting).
- Press **[+]** or **[-]** -key to change this value, for example to 70°C.
- Press **'Enter'**- key to confirm value; codes **[P][]** and **[][I]** are displayed alternately.
- Press **'Reset'**- key to switch boiler to operating mode.

Summer holidays

In summer a reduced flow temperature setting may be adequate for your heat requirement. Reduce the flow temperature and save energy.

Changing P2 setting: domestic hot water temperature

Increase the domestic hot water temperature as follows:

- Press **'Enter'- key** until codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{1}$ are displayed alternately.
- Press **'[+]- key** until codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{2}$ are displayed alternately.
- Press **'Enter'- key**; set value for domestic hot water temperature is displayed: 55°C (= factory setting).
- Press **[+] or [-]- key** to change this value, for example to 65°C.
- Press **'Enter'- key** to confirm value; codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{2}$ are displayed alternately.
- Press **'Reset'- key** to switch boiler to operating mode.

Changing P3 setting: boiler regulation (domestic hot water and central heating mode)



DHW use only

If the Remeha Avanta Plus is, for example, only being used to provide domestic hot water, switch the boiler regulation system for the central heating system off.

- $\boxed{0}$ = CH_{off} / DHW_{off}
- $\boxed{1}$ = CH_{on} / DHW_{on} (factory setting)
- $\boxed{2}$ = CH_{on} / DHW_{off}
- $\boxed{3}$ = CH_{off} / DHW_{on}

Change the boiler regulation as follows:

- Press **'Enter'- key** until codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{1}$ are displayed alternately.
- Press **'[+]- key** 2x until codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{3}$ are displayed alternately.
- Press **'Enter'-key**: central heating and domestic hot water mode setting is displayed.
- Press **[-] or [+]- key** to change this mode, e.g. level $\boxed{3}$ (= central heating OFF and domestic hot water ON).
- Press **'Enter'- key** to confirm this mode; codes $\boxed{P}\boxed{1}$ and $\boxed{1}\boxed{3}$ are displayed alternately.
- Press **'Reset'- key** to switch boiler to operating mode.

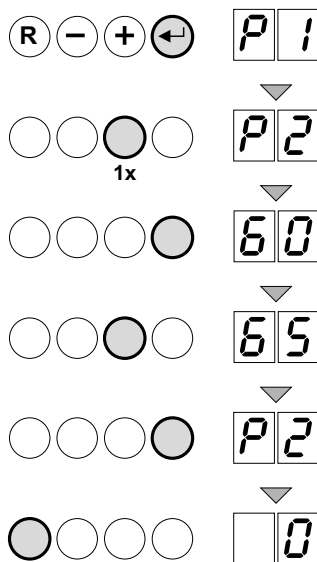
Changing P4 setting: Eco or comfort mode

Tip: Comfort mode offers DHW on the combi boiler to be maintained at a min temperature (the boiler will top up the plate heat exchanger even when there is no DHW demand) to ensure faster response. The Eco mode disables this option therefore uses less energy.

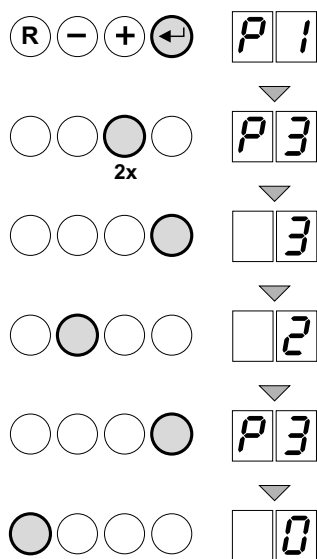


No hot water

Beware; the system boiler in combination with an external calorifier will not warm up the calorifier in the Eco-mode. So, if the calorifier is empty, the tap water will be cold.



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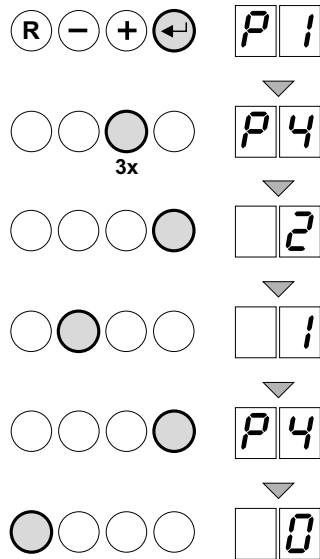
In the comfort mode the boiler will be seen to run occasionally even if time clocks are in the off position.

= Comfort mode

= Eco mode

= regulated by controller (= factory setting)

Change the mode as follows:



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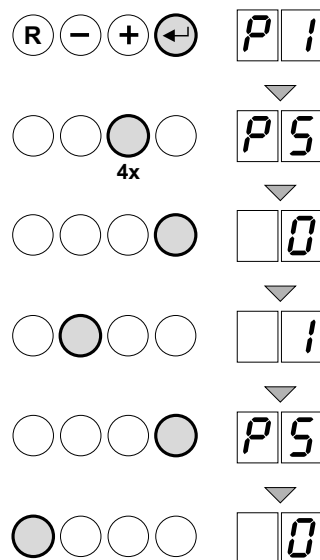
- Press **'Enter'- key** until codes and are displayed alternately.
- Press **[+]- key** 3x until codes and are displayed alternately.
- Press **'Enter'- key**; setting of 'eco or heat retention' mode is displayed (mode = heat retention and regulator-dependent, factory setting).
- Press **[-]- key** to change this mode, for example mode (=eco mode).
- Press **'Enter'- key** to confirm this mode; codes and are displayed alternately.
- Press **'Reset'- key** to switch boiler to operating mode.

Changing P5 setting: (no) anticipated current



Boiler responds to temperature changes after a certain time, input via on/off thermostat. Response time can be reduced by enabling 'Anticipated current' option (only when the on/off thermostat has an anticipation current setting device). When the boiler is installed this setting has been already been adjusted. Ask your service engineer for further details.

Change the anticipated current (if necessary) setting as follows:



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- Press **'Enter'- key** for 1 second until codes and are displayed alternately.
- Press **[+]- key** 4x until codes and are displayed alternately.
- Press **'Enter'- key**; (no) anticipated current setting is displayed (mode 0 = no anticipated current, factory setting).
- Press **[-]- key** to change this mode, for example mode 1 (=anticipated current).
- Press **'Enter'- key** to confirm this mode; codes and are displayed alternately.
- Press **'Reset'- key** to switch boiler to operating mode.

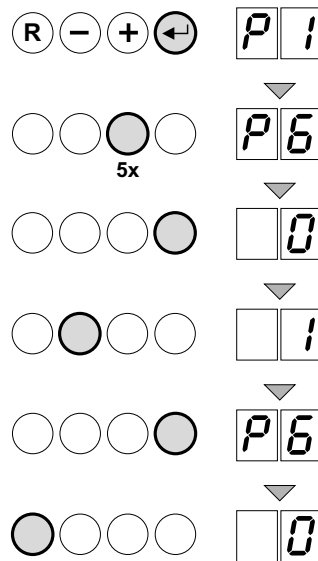
P6 setting: display on/off



Display off

Operating codes on display change constantly as a result of different operating modes. If boiler is in visible location, this can be annoying. Display is therefore set to 'Automatically off'. Display goes off after 3 minutes, i.e. one or two dots remain visible to indicate that boiler is operational (two dots) or non-operational (one dot). You can change display to 'Display on' so that you can always read operating codes.

Change the display setting as follows:



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- Press **'Enter'**- key until codes **P 1** and **1** are displayed alternately.
- Press **[+]**- key 5x until codes **P 1** and **P 6** are displayed alternately.
- Press **'Enter'**- key; you will see mode **0** (= 'Display automatically off', factory setting).
- Press **[-]**- key to change this mode to mode **1** (= 'Display remains on').
- Press **'Enter'**- key to confirm this mode; codes **P 1** and **P 6** are displayed alternately.
- Press **'Reset'**- key to switch boiler to operating mode.



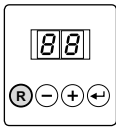
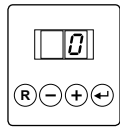
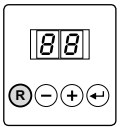
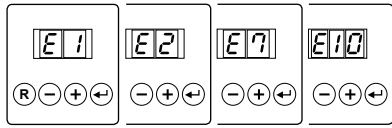
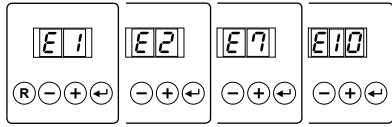
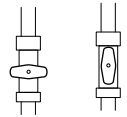
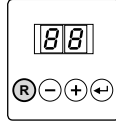
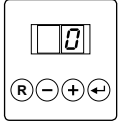
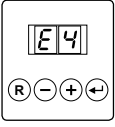
Access code

Changing settings for which an access code is required can only be carried out by the installer.

4 PROBLEMS WITH BOILER AND/OR CENTRAL HEATING SYSTEM

See par. 4.1 for problems with the boiler and/or central heating system which the user can resolve himself. See par.4.2 for error codes which have to be remedied by the installer. Other problems are listed in the error table in par. 4.3.

4.1 Error codes – errors which can be resolved by the user

E1 / E2 E7 / E10	 Check water pressure: water pressure is greater or equal to 1 bar.  Check water pressure: water pressure is greater or equal to 1 bar.	 Press R-key  Top up your central heating system (see par. 5.1 for details)	 Wait for recovery; display shows 0.0, boiler functions properly.  Press R-key Wait for recovery; display shows 0.0, boiler functions properly.	Or  Wait for recovery; display shows 0.0, boiler functions properly. Or  Display shows E1, E2, E7 or E10 again: note down the error code and boiler type and call your installer.
E4	 Closed Opened Check gas valve: gas valve must be open, if necessary open valve.	 Press R-key	 Wait for recovery; display shows 0.0, boiler functions properly. Or  Display shows E4 again: note down the error code and boiler type and call your installer.	

4.2 Error codes – errors which have to be remedied by the installer

If the display indicates a different error code from that described above, note down the error code and boiler type and call your installer. Contact your installer also in the event of a water leak.

4.3 Other problems

Problem or error	Possible cause	Solution/points to check
A. No hot water when tap is turned on	Boiler is not running	Check whether the boiler is switched on check whether a fuse has blown; check whether the gas tap is properly open.
	Water pressure is too low (less than 1 bar)	Check mains cold water pressure
	Economy shower head is letting too little water through	Remove the shower head and clean; fit a new shower head if necessary
B. Radiators are not (properly) hot	Room thermostat is set too low	Set room thermostat higher
	Radiator valve is not open	Open radiator valve (further)
	Boiler is not running	Check whether the boiler is switched on check whether a fuse has blown; check whether the gas tap is properly open.
	System pressure too low	Top up central heating; <i>see par. 5.1</i>
C. Boiler not working	Room thermostat is set too low	Set room thermostat higher
	Boiler is not running	Check whether the boiler is switched on check whether a fuse has blown; check whether the gas tap is properly open.
	System pressure is too low	Top up central heating; <i>see par. 5.1</i>
	Boiler has a fault	Reset the boiler (using the 'Reset' key); remedy the fault (<i>see par. 4.1</i>) or consult your installer (<i>see par. 4.2</i>).
	Gas pressure is too low	Check gas pressure at boiler and meter
D. System water pressure is too low (less than 1 bar)	Insufficient water in central heating system	Top up central heating; <i>see par. 5.1</i>
	Water leak	Consult installer
E. Major temperature fluctuations in the DHW	Water supply insufficient	Check supply pressure : Open water tap further
F. Ticking noises from central heating pipes	Central heating pipes clipped too tightly	Loosen clips; lubricate clips with grease; enlarge sleeves (in walls and/or floors).
G. Gurgling noises in central heating pipes and/or radiators	Air in central heating system	Bleed central heating and top up system afterwards; <i>see par. 5.2</i>
H. Flow noises in central heating pipes	Water in central heating system flowing too quickly	Consult installer
I. Serious leak under or near boiler	Boiler or central heating pipes are faulty or damaged	Consult installer

Error codes

When contacting your installer, please have details of the error code on the display, the serial number, year of manufacture and type of the boiler (see label on base of the boiler).

5 TOPPING UP, BLEEDING AND DRAINING SYSTEM

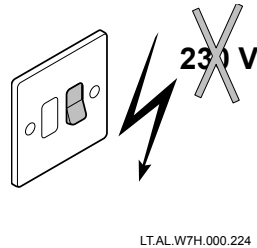
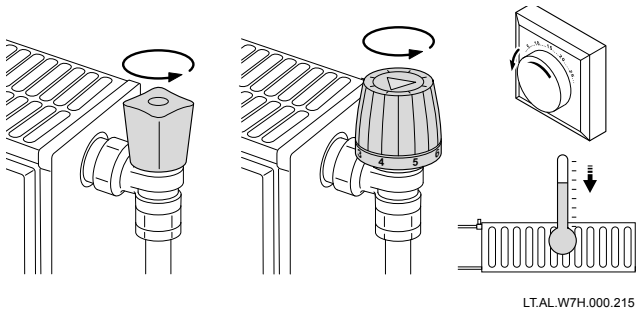
It may be necessary to bleed the central heating system or top it up with water to ensure optimum operation of the boiler and central heating system. If the water pressure is less than 1 bar, the system has to be topped up with water. This section provides information on topping up, bleeding and draining.

5.1 Topping up the central heating system

Disabling the boiler

Before the central heating system can be topped up, the boiler must be disabled. Proceed as follows:

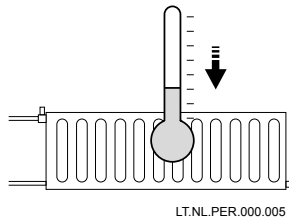
- Open radiator valves and set the room thermostat as low as possible.



- Switch off the boiler.

Topping up the central heating system

The Remeha Avanta Plus runs best with a water pressure of between 1.5 and 2 bar (see the water-pressure meter at the bottom of the boiler). If the water pressure falls below 1 bar, the system has to be topped up with water.

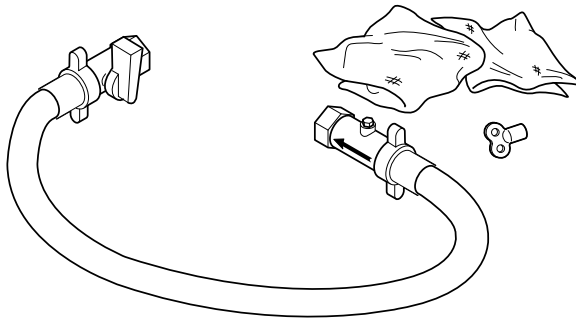


- Wait until the temperature is below 40°C (the radiators feel cold) before topping up.



Boiler off

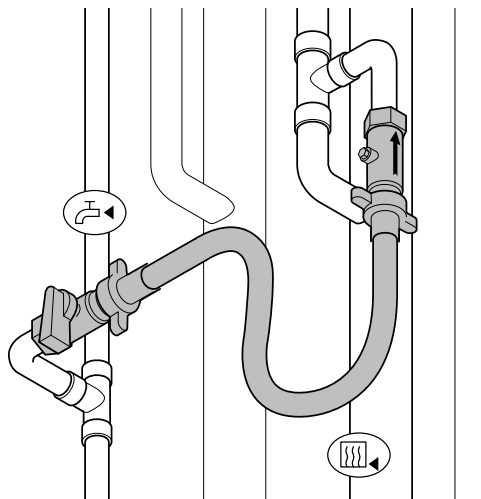
Ensure that the boiler is disabled.



LT.AL.W7H.000.229

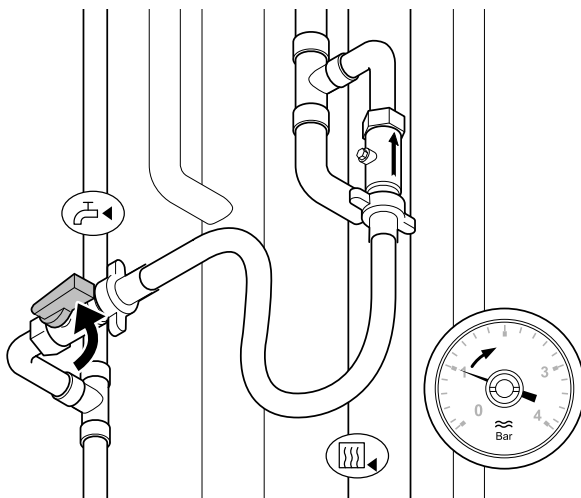
- When topping up, use a filling loop, a cloth and a bleed key.

Top the Avanta Plus up as follows:



LT.AL.W7H.000.235

- Attach the filling loop between mains cold water inlet and CH return.



LT.AL.W7H.000.236

- Turn the filling loop valve open by a quarter turn.

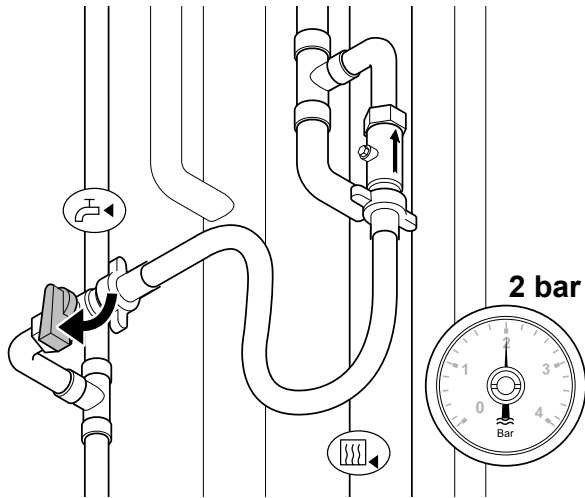


Drain cock

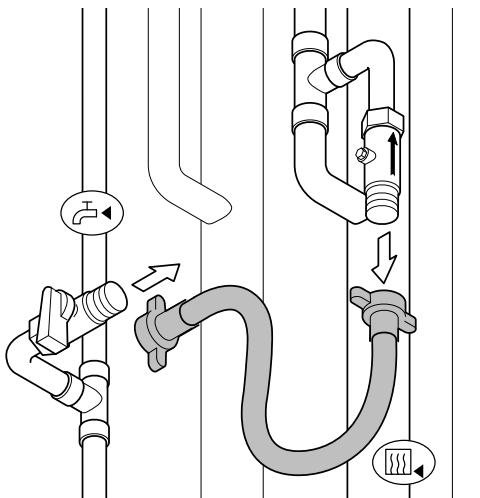
The filling loop does not have to be near the boiler.

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- Turn the filling loop valve off again once the water-pressure meter shows 2 bar.
- Remove the filling loop after topping up the system.



LT.AL.W7H.000.237



LT.AL.W7H.000.238

Air gets into the central heating system when topping up with water. Bleed the central heating system as described *in par.*

5.2. After bleeding, the water pressure may be below the required level again, so the system has to be topped up with water. Topping up and bleeding twice ought to be sufficient to reach the correct water pressure.

Consult the installer if the central heating system has to be topped up more than three times a year.

Enabling the boiler

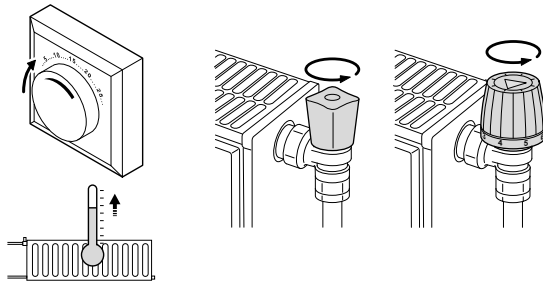
Once the central heating system has been topped up, enable the boiler again, *see section 7.*

5.2 Bleeding the central heating system

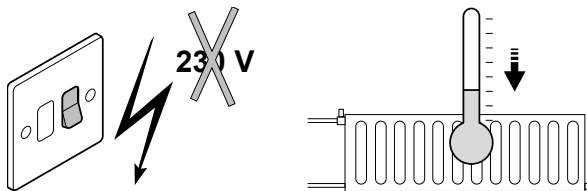
A gurgling noise in pipes and/or radiators which only partially heat up indicate(s) air in pipes and radiators. The central heating system has to be bled.

Before bleeding, the following preparations have to be made:

- Open all radiator valves and set the room thermostat as high as possible; wait until the radiators feel hot.



LT.NL.WH7.000.210 + LT.NL.CZ1.000.098

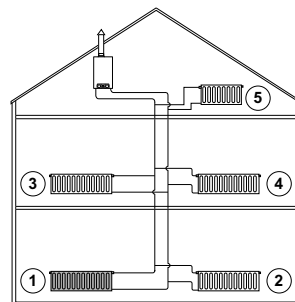


LT.AL.W7H.000.224 + LT.PER.000.005

- Switch off the boiler and wait approx. 10 minutes until the radiators feel cold.

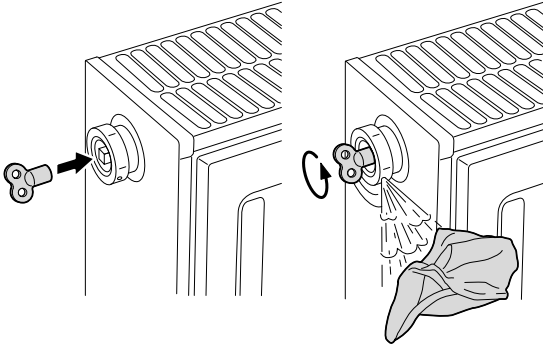
Bleed the central heating system as follows:

- Bleed the lowest radiator first and then work towards the highest radiator.



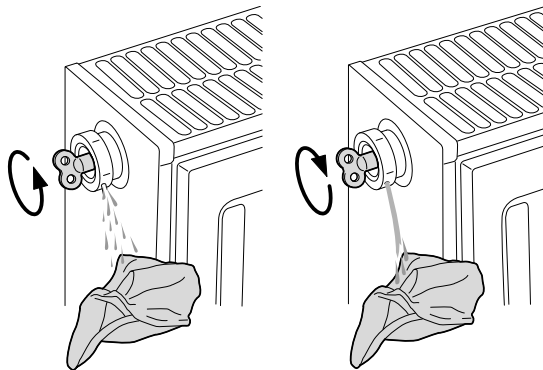
LT.AL.W7H.000.214

Remeha Avanta Plus



LT.NL.PER.000.017 + LT.NL.PER.000.018

- Hold a cloth against the bleed nipple, open the nipple with a bleed key and allow air to escape slowly.



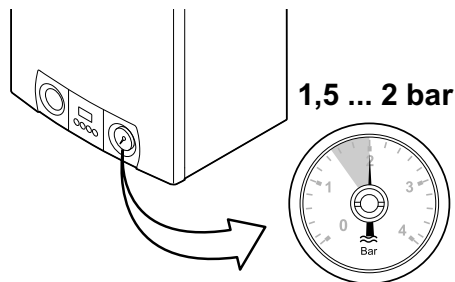
LT.NL.PER.000.019 + LT.NL.PER.000.020

- Wait until water comes out of the bleed valve (without spluttering) and then close the bleed nipple.



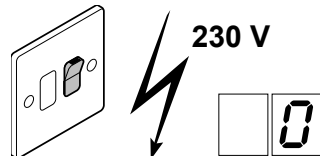
Hot water

The water may still be hot.



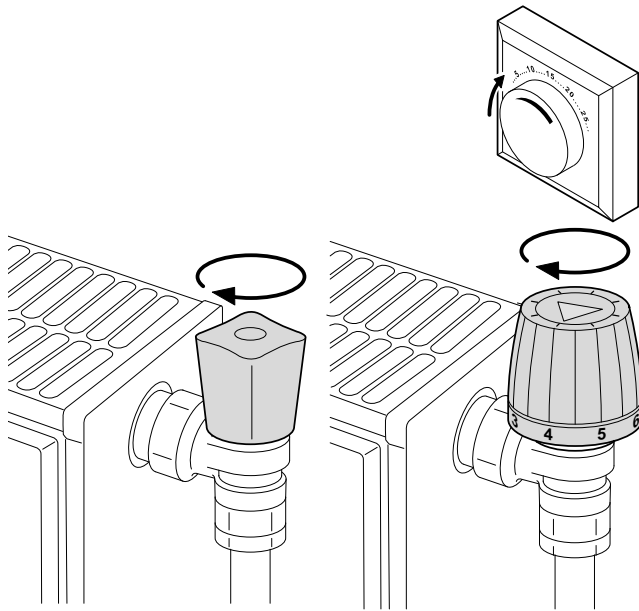
LT.AL.W7H.000.211

- After bleeding, check whether the water pressure in the central heating system is still adequate; if not, top up. See par.5.1.



LT.AL.W7H.000.226

- Plug the boiler back in. The boiler starts up automatically. The boiler will now run through a bleed cycle for approx. 2 minutes, after which normal operation will start. See par. 3.2 for an explanation of the codes on the display.



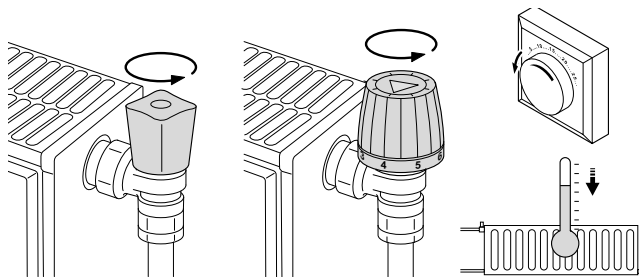
LT.AL.W7H.000.212 + LT.NL.PER.000.024 + LT.NL.PER.000.025

- Set the room thermostat to the desired temperature and close the radiator valves in those rooms which do not have to be heated.

5.3 Draining the central heating system

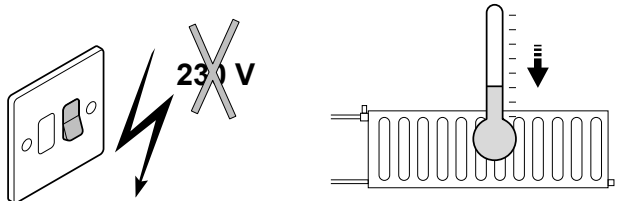
Draining the central heating system may be necessary if the radiators have to be replaced, if there is a serious leak, or if there is a risk of freezing.

Drain the central heating system as follows:



LT.NL.CZ1.000.098 + LT.AL.W7H.000.005

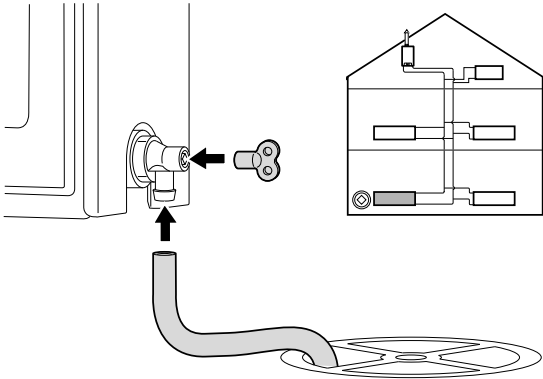
- Open radiator valves and set the room thermostat as low as possible.



LT.AL.W7H.000.224 + LT.NL.PER.000.005

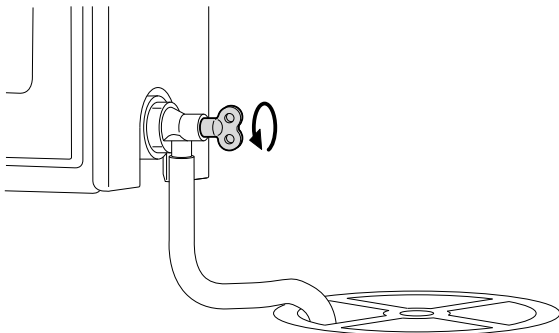
- Switch off the boiler and wait until the radiators feel cold.

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LT.AL.W7H.000.216

- Connect a drain hose to the lowest drainage valve; place the other end of the hose in a drain or in a place where drained system water will not cause any damage.

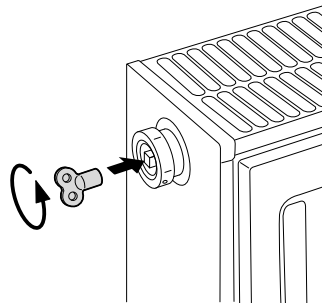


LT.NL.PER.000.027

- Open the drainage valve by turning it through a quarter-turn and allow the central heating system to empty.

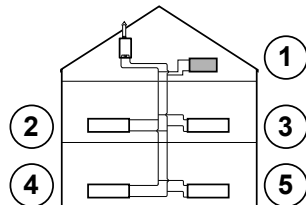
Stains

Drained water can be warm and can cause stains.



LT.NL.PER.000.028

- Open the radiator valves and bleed nipples of all the radiators, starting with the highest radiator. Carefully open the bleed nipple. If water is still running out of it, close the bleed nipple again and try again later.



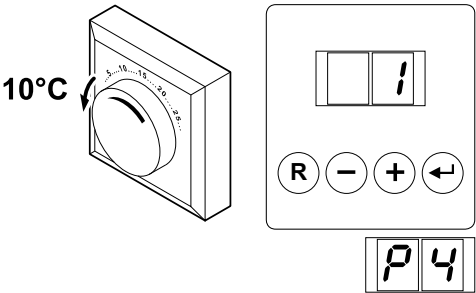
LT.NL.PER.000.029

- Once no more water is coming out of the drainage valve, close the drainage valve, radiator valves and bleed nipples.

6 DISABLING THE BOILER

The boiler must be disabled before any maintenance or repairs are carried out. If the central heating system is not used for a long time (during the holidays, for instance, or periods of milder weather) it is advisable to disable the boiler.

Boiler with frost protection, during longer periods of non-use



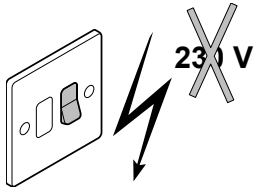
LT.AL.W7H.000.217 + LT.AL.W7H.000.218

- Set the room thermostat to a low temperature, e.g. 10°C,
- Switch setting **P4** to 1 (Eco mode), this will switch off the heat retention function.

Now the boiler will only start working to protect itself against freezing.

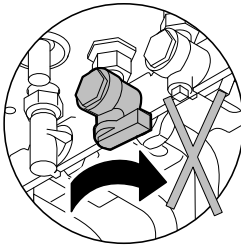
With an external frost protection connected, the boiler can also prevent the central heating system from freezing.

Boiler without frost protection, during longer periods of non-use



LT.AL.W7H.000.224

- Switch off the boiler.



Gas

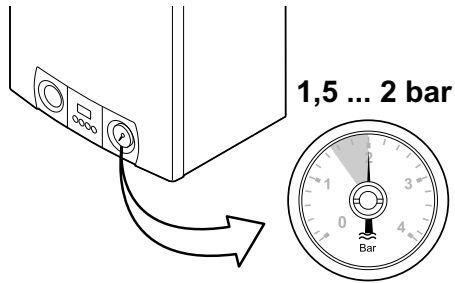
LT.AL.W7H.000.228

- Turn off the boiler gas tap.

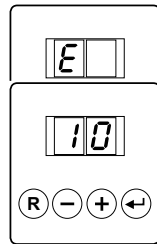
Drain boiler

Drain the boiler and central heating system if you will not be using the home for a long period and there is a chance of night frost.

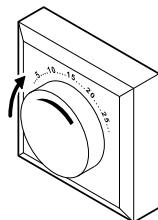
7 ENABLING THE BOILER



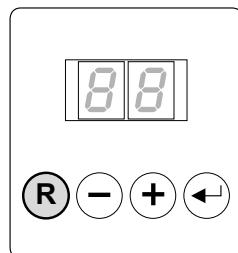
LT.AL.W7H.000.211



LT.AL.W7H.000.223



LT.AL.W7H.000.212



LT.NL.W6H.000.079

- Check the boiler water pressure. If the water pressure is less than 1 bar, the system has to be topped up with water, see *par.5.1*.

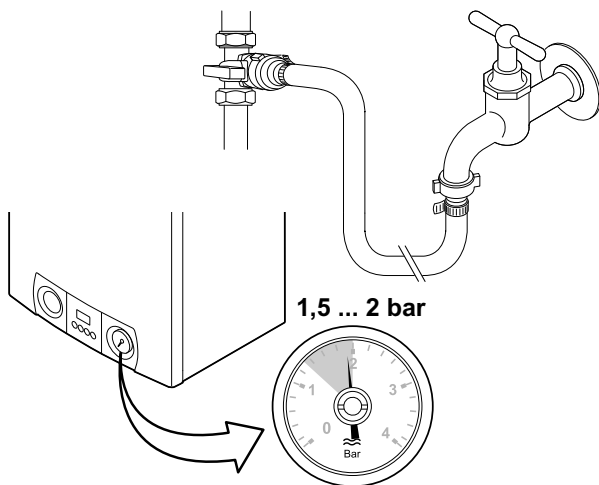
- Switch on the boiler at the fused spur unit; the boiler will run the start-up program.
 - A display test will briefly appear showing all segments of the display.
 - $F \square \square \square$ software version;
 - $P \square \square \square$ parameter version;
 - A venting cycle of 2 minutes now follows, the version numbers will be displayed alternately;
 - Next, the following will appear in the display;
 - $\square 1$; boiler is ventilating;
 - $\square 2$; boiler is igniting;
 - $\square 4$; boiler is operating for DHW;
 - $\square 7$; boiler pump is running after heating DHW;
 - $\square 0$; boiler is stand-by.
- Set the room thermostat to the desired room temperature.

The boiler will now automatically start operating. See *par. 3.2* for an explanation of the codes on the display.

Error message

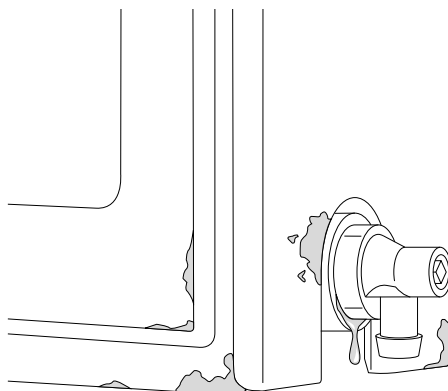
If the boiler does not start operating and an error message is displayed, consult the error table in *par. 4.1* and, if necessary, consult the installer.

8 TIPS FOR MAINTAINING THE BOILER AND CENTRAL HEATING SYSTEM



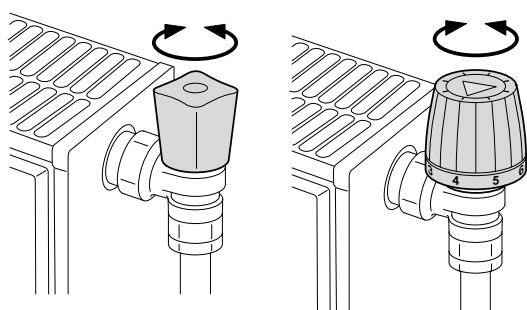
LT.AL.W7H.000.220

- Check the water pressure of the central heating system several times a year. If the water pressure is too low, top up with water (see par. 5.2). The optimum pressure is between 1.5 and 2 bar.



LT.NL.PER.000.033

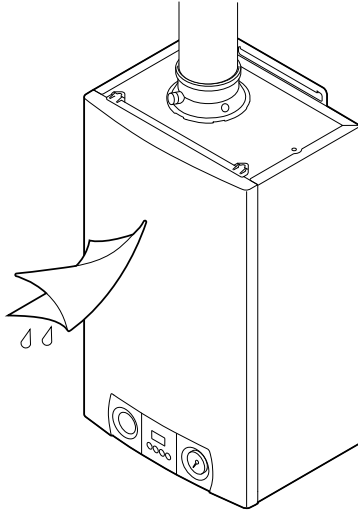
- Check radiators for leaks and (particularly in damp rooms) for rust. Treat patches of rust as early as possible.



LT.NL.PER.000.034 + LT.NL.PER.000.035

- Open and close radiator valves fully several times a year. This ensures that valves continue to turn smoothly.

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LT.AL.W7H.000.221

- Clean the outside of the boiler with a damp cloth and mild detergent.



Cleaning

The inside of the boiler may only be cleaned by the installer.



Service contract

Soiling may reduce the performance of boiler components. For this reason the boiler and central heating system must be inspected once a year by the installer. Ask the installer or the utility company about taking out a service contract.

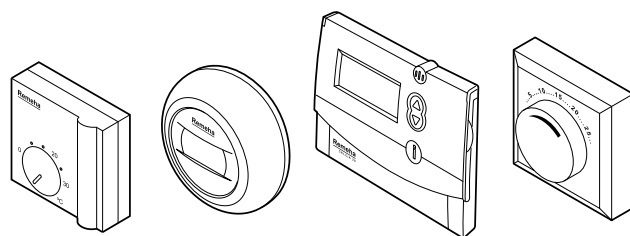
9 ENERGY SAVINGS AND ENVIRONMENTAL PROTECTION

Comfort, cost savings and environmentally-aware use can go hand-in-hand. This sections contains:

- tips on saving energy
- tips on correctly setting the room thermostat.

9.1 *Tips on saving energy*

- Ensure that the room in which the Remeha Avanta Plus is fitted is well ventilated. Do not seal up ventilation openings.
- Place radiator foil on walls behind radiators; this reflects heat which is otherwise wasted.
- Do not box radiators in or hang curtains in front of them.
- Insulate pipes in rooms which do not have to be heated (cellars and crawl spaces).
- Close radiator valves in rooms which people are not using.
- Do not let hot (and cold) water flow unnecessarily.
- Fit an economy shower head; this can save up to 40% energy.
- Take a shower instead of a bath; a bath uses twice as much water and energy.



LT.AL.W7H.000.222

9.2 *Room thermostats and settings*

The room thermostat is available in the following designs:

- 2-wire on/off thermostat
- Modulating thermostat (in combination with a timer clock)
- Timer-operated and programmable thermostat

The thermostat type and settings affect the total energy consumption.

A few tips:

- A modulating thermostat, possibly in combination with thermostatic radiator valves, is energy-efficient and offers a high level of comfort; this combination enables the temperature to be set individually for each room. However, do not fit a thermostatic radiator valve in the room where the room thermostat is located.
- Opening and/or closing thermostatic radiator valves fully results in undesirable temperature fluctuations; turn the thermostat control or valve up or down in small steps.
- Set the thermostat to its night-time level (approx. 15°C) half an hour before going to bed. This saves fuel costs and energy.
- Set the thermostat to a lower level well before leaving a room.
- Set the water temperature  lower in summer than in winter (e.g. 60° and 80°C, respectively) if an on/off thermostat is being used.
- When setting a timer-operated and programmable thermostat, don't forget to take account of holidays and days when no one is at home.

10 EXPANDING THE CENTRAL HEATING SYSTEM

Connecting thermostats

A 2-wire on/off thermostat (e.g. the Remeha Celcia 10) or to a modulating thermostat (e.g. the Remeha Celcia 15 or 20) can be connected to the Avanta Plus. Consult the installer about connecting the thermostat you have chosen.

Connecting an under floor heating system

A under floor heating system can be directly connected to the Avanta Plus (provided it is sealed to prevent oxygen diffusion). Consult the installer about connecting to a floor heating system.

Use of solar panels

The Remeha Avanta Plus is suitable for use as a post-heater for solar panels. Consult the installer about installing a solar panel.

11 TECHNICAL DATA

Appliance type Remeha Avanta Plus		24s system	28c combi	39c combi
General				
Boiler control		on/off or modulating ¹⁾		
Nominal central heating capacity (80/60°C)	kW	21.6	21.6	33.3
Assembly dry weight	kg	29.0	30.5	34.5
Noise level at distance of 1m from the boiler (at full load)	dB(A)	< 44 ⁴⁾		
Gas and flue details				
Gas consumption natural gas				

¹⁾ = a modulating boiler permits infinitely adjustable matching of heat production to heat demand.

²⁾ = minimum flow rate of water from the tap to start the boiler running.

³⁾ = splash proof; under certain circumstances the boiler may be installed in damp rooms such as bathrooms. Check with your installer.

⁴⁾ = noise level of a quiet conversation.

12 APPENDICES

12.1 Remeha factory test

Before it leaves the factory, each Remeha Avanta Plus boiler is optimally adjusted and tested for:

- electrical safety;
- CO2- adjustment;
- hot water function;
- water tightness;
- gas tightness;
- automation parameters.

12.2 EC regulations

The Remeha Avanta Plus is certified in accordance with the requirements of the CE-marking directives. See also the CE Declaration of Conformity.

EC – DECLARATION OF CONFORMITY

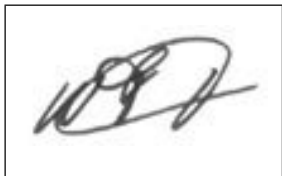
Manufacturer : Remeha B.V.
Address : Kanaal Zuid 110
Town, Country : Postbus 32, NL-7300 AA Apeldoorn

- hereby declares that the appliance(s) : Remeha Avanta Plus

comply / complies with the specifications of the following EEC directives:

EEG Directive:	90/396/EEG	applied standards: (pr)EN 297(1994), 483(1999), 625(1995), 677(1998)
	73/23/EEG	(pr)EN 50165(1997), 60335-1(1994)
	92/42/EEG	
	89/336/EEG	EN 50165(1997), 55014-1(2000), 55014-2(1997) EN 61000-3-2(2000), 61000-3-3(1995)
	97/23/EG	(Art.3, sub 3)

Apeldoorn, July 2005



W.F. Tijhuis
Approval Manager

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SEDBUK 'A'



WRAS
APPROVED
PRODUCT

British Gas



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Tel: +44 118 9783434, Fax: +44 118 9786977

E-mail: boilers@broag-remeha.com, Internet: uk.remeha.com

remeha

Operating instructions for the built in Two Channel Digital electronic time clock

Remeha
AVANTA PLUS



1.	Factory default set times	2
2.	General	3
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9.	Setting switching programs for P2 - DHW	6
10.	Checking timer settings	7
11.	Skip function - Timer override	7
12.	Programming Errors	7

1. Factory set default times

Program P1

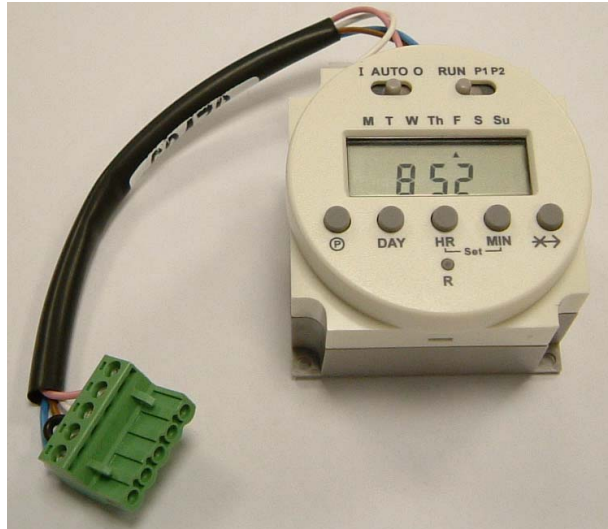
Days	ON	OFF
M to F	6:30 ¹ ₁ 	8:30 ¹ ₂
M to F	16:30 ¹ ₃ 	22:30 ¹ ₄
S to Su	7:00 ¹ ₅ 	9:00 ¹ ₆
S to Su	16:00 ¹ ₇ 	23:00 ¹ ₈

Program P2

Days	ON	OFF
M to F	6:30 ² ₁ 	8:30 ² ₂
M to F	16:30 ² ₃ 	22:30 ² ₄
S to Su	7:00 ² ₅ 	9:00 ² ₆
S to Su	16:00 ² ₇ 	23:00 ² ₈

P1 and P2 - Programs 9 to 16 set to 0.00 (flashing)

Internal time clock for the AVANTA PLUS Boilers



Built in Two Channel Timer Kit for System Boiler - Part No S62432

Built in Two Channel Timer Kit for Combi Boiler - Part No S62432C

Electronic digital timer with Day/Week programme function enables operation on individual days or groups of days (e.g. Monday to Friday or Saturday to Sunday) each with up to 8 pairs of ON/OFF switchable times on each channel (P1 and P2)

Channel P1 for Heating (System and Combi boilers)

Channel P2 for Domestic Hot Water (system boiler only - dissabled on the Combi version)

=====

2. General

Please read this setting and operating instruction carefully before installing, connecting or using this digital electronic timer.

3. Safety Notes

- Power supply to boiler must be isolated before fitting Timer and connecting harness
- The timer is powered by the boiler's 230v supply voltage.
- Never touch the live contacts at the back of the timer.
- Avoid contact with water.

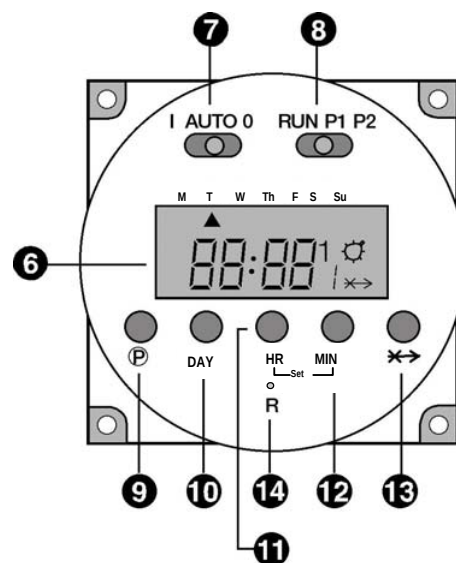
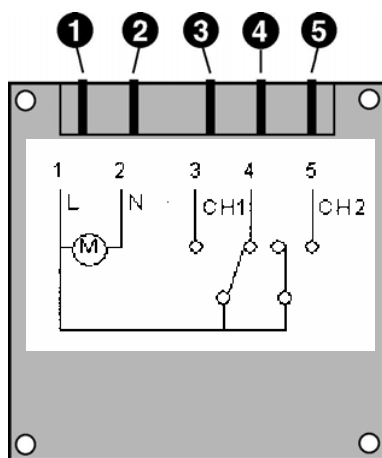
4. Main Timer Features

- Individual and groups of days can be selected
- 8 pairs of ON/OFF switching times possible per day on each channel
- Simple installation with supplied wiring harness and plug set
- Simple button and switch selections for programming
- Large, clear digital display
- Symbols in display to indicate the function of the programmed time
- Time format in 24 hour mode
- Battery backup to retain times and programs in the event of a mains power failure
- Re-set function to return timer to factory defaults

5. Position of Timer in boiler when fitted



6. Description of setting buttons and display



- 1 to 5 Power and switch connections (cable and plug X2 supplied as std)
- 6 LCD Display
- Sliding three position Switches
- 7 Three position sliding switch to set operating mode
 I Permanently ON (Current time of day must be set before this is active)
 AUTO Switches ON and OFF in accordance with programmed switch times
 O Permanently OFF
- 8 Three position sliding switch to set Current time/day and switching times
 RUN Switch program and clock run
 P1 Input switch times for Channel 1(Heating)
 P2 Input switch times for Channel 2 (Domestic Hot Water)

Setting Buttons

- 9 P Button for activating in sequence the 16 available switch points
 When time switch points 1, 3, 5, 7, 9, 11, 13, 15, (ON times) are
 selected, the bulb symbol - will appear in the right of the
 display.
 If time switch points 2, 4, 6, 8, 10, 12, 14, 16 (OFF times)
 are selected, there will be no bulb symbol.
- 10 DAY Button to scroll between days (current day and switching
 days). Indicated with Δ below the day or days set
 When programming, individual days and the following block day
 programs are possible:
 M-F (Monday to Friday) M-S (Monday to Saturday)
 S-Su (Saturday to Sunday) M-Su (Monday to Sunday)
- 11 H Button to set time in hours
 (for current time and switching times)
- 12 MIN Button to set time in minutes
 (for current time and switching times)
- 11+12 H+MIN Simultaneously pressing both buttons for 2-3 seconds enables the
 actual time and day to be set or edited
- 13 -X-> Skip-Function
 Pressing the Skip button reverses the current function mode
 ie: If the timer is ON it will be switched OFF and vice-versa.
- 14 R Reset button will return the timer to factory default times and delete
 current time, day and all changed switching times.
 Display will show flashing **0:00** - Timer will need to be re-programmed

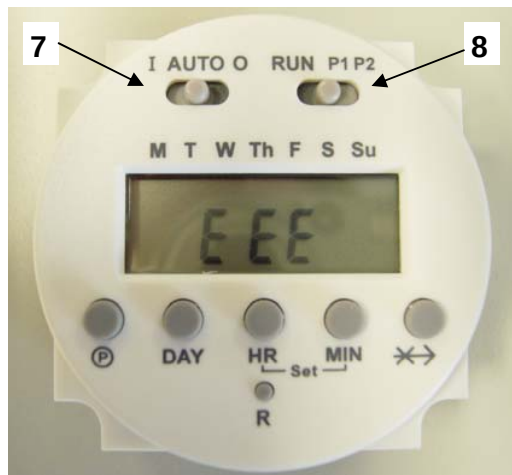
Note: When setting times

Pressing the buttons momentarily - changes the display one digit at a time

Pressing the buttons for longer than 1 second - changes the display more rapidly

If you overshoot the time or day required continue to press the button until it scrolls around

7. Initialising Timer



On removal from box the display will appear as shown above and MUST be Initialised before it can be used in any of the modes including manual override using switch 7 to I

To initialise timer set with the day pointer under **M**

1. Set program switches 7 to **AUTO** and 8 to **RUN**
 2. Press **HR** and **MIN** buttons together for 3 seconds - display changes to **0:00**
 3. Set current time - button **HR** for the hour and **MIN** for minutes
 4. Set current day - button **DAY** until pointer is under correct day (**M-Su**)
- Note: if time is not set within 15 seconds the : flashes and timer starts from **0:00** (midnight)
5. Repeat 2 - 4

8. Setting switching programs P1 - Heating

- ⇒ Set program switches 7 to **AUTO** and 8 to **P1** for Heating times - the display will show factory default times with a ¹ to the right of the time and ₁ below it (ie: **6:30¹₁**) with the bulb symbol confirming channel **P1** and first ON switching position
- ⇒ Set day or group of days using **DAY** button - use button to scroll between set choices, individual days or groups of days to suit needs (**M** to **F** or **S** to **Su** etc)
- ⇒ Edit first on time required for that day or group of days using **HR** and **MIN** buttons
- ⇒ Button **P** to select first off time - again factory default time is displayed with a ¹ to the right of the time and ₂ below it (ie: **8:30¹₂**) without the bulb symbol confirming channel **P1** and first OFF switching position

Repeat process for up to 8 pairs of ON/OFF switching times

NOTE :

1. Odd numbers are ON and even numbers are OFF times - a "light bulb" symbol will also appear during the ON time setting
2. Any unused switching times should be checked and deleted to avoid them overriding any of your set times - press buttons **-X->** and **P** together for 3-4 seconds, the display will change to 0.00 flashing confirming that the switching setting is deleted

9. Setting switching programs P2 - Domestic Hot Water

- ⇒ Set program switches 7 to **AUTO** and 8 to **P2** for DHW times - the display will show factory default times with a ² to the right of the time and ₁ below it (ie: **6:30²₁**) with a light bulb symbol confirming channel **P2** and first ON switching position
- ⇒ Repeat process described above for channel **P1**

Set program switch back to **RUN**

Timer will now operate the boiler in accordance with the switch times set

10. Checking the Timer settings

To check and edit existing times or to add new times

- ⇒ Set program switches 7 to **AUTO** and 8 to **P1 or P2** - the display will show the first ON time set with the day or group of days it applies to
- ⇒ Button P to select first off time - again the display will show the first OFF time set with the day or group of days it applies to

Repeat button P to scroll through each ON and Off setting time editing where necessary

Note: See section 11. for programming errors

11. Skip Function - Timer override

The skip or override function changes the current switching mode of the timer channel P1 or P2 from ON to OFF or from OFF to ON until the next programmed switching time

- ⇒ Set program switches 7 to **AUTO** and 8 to **RUN**

To override channel P1 - Heating

- ⇒ Button **-X->** once ¹ will appear to the right of the time display (ie: 6.30¹) with the light bulb and override symbol displayed - if the override was to ON and not if it was to OFF - (symbols can take 2-4 seconds to appear and disappear)
- ⇒ Button **-X->** again to cancel the override if necessary

To override channel P2 - DHW

- ⇒ Button **-X->** twice ² will appear to the right of the time display (ie: 6.30²) with the light bulb and override symbol displayed if the override was to ON and not if it was to OFF
- ⇒ Button **-X->** again twice to cancel the override

Note:

1. The ¹ returns on the first press but both disappear after 2-4 seconds
2. When overriding the timer to OFF there is a 2-4 second delay before the ¹ and ² and light bulb disappear from the display

To override both channels P1 and P2 to ON

- ⇒ Press button **-X->** twice and the ² appears with the light bulb and override symbol
- ⇒ Press button **-X->** again and the ¹ appears

Both channels are now ON

To override both channels P1 and P2 to OFF

- ⇒ Press button once and the ¹ disappears
 - ⇒ Press button twice and the ² disappears along with the light bulb and override symbol
- Both channels are now OFF - The ¹ returns on the first press but both disappear after 2-4 seconds

12. Programming Errors

Each ON switching point is linked to the next in sequence OFF switching time therefore the following combinations of ON/OFF switching can lead to errors preventing the timer working or creating unexpected switching times - If in doubt re-set timer and program again

Switch ON time	Switch OFF time
ON time set	Next OFF time not set
No time set	Next switch OFF time set
Day block ie: M to F	Different day block ie: S to Su
On time set to eg: W - 08.00	Next OFF time set before ON time eg: W - 07.30
On time set to eg: Su - 09.00	OFF time set same eg: Su - 09.00

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