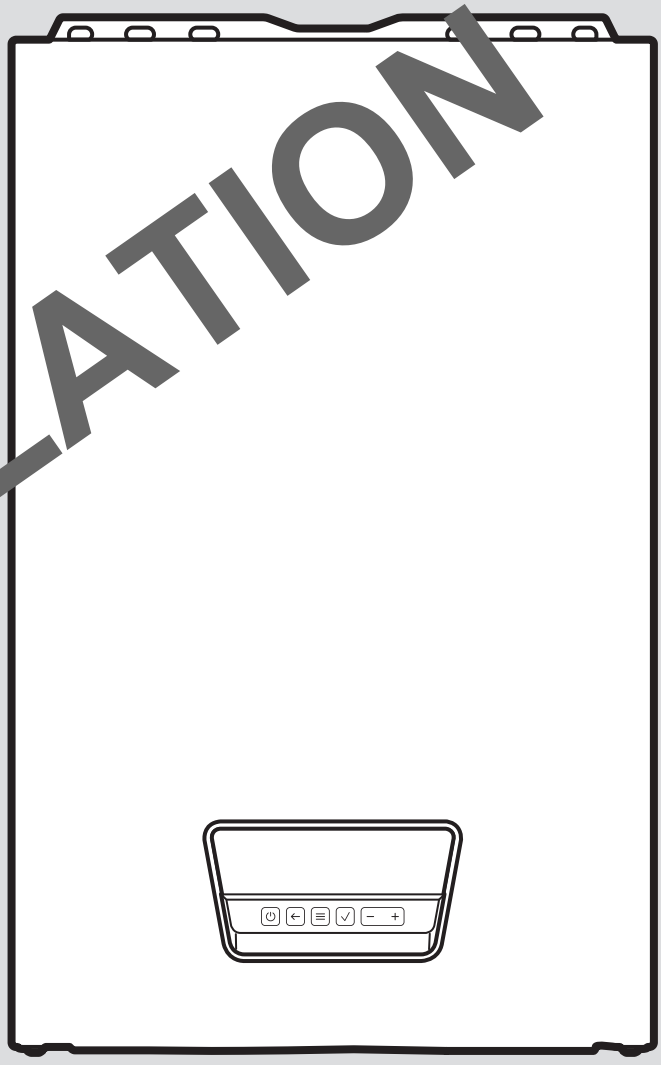
DemirDöküm

vintomiX

P18/24-AS/1
P24/28-AS/1



8000015386_01 - 31.08.2023

en Installation and maintenance instructions

Installation and maintenance instructions

Contents

1 Safety

1.1 Intended use

The product is intended as a heat generator for sealed heating installations and for domestic hot water generation.

Improper use of any kind is prohibited.

Intended use also includes the following:

- Installing and operating the product only in conjunction with accessories for the air/flue pipe which are listed in the other applicable documents and comply with the type of unit
- Using the product while observing the accompanying operating, installation and maintenance instructions for the product along with all other components of the installation
- Installing and setting up the product while observing the product and system approval
- Observing all inspection and maintenance conditions listed in the instructions
- Installing while observing the IP code

The following is classed as improper use:

- Using the product in vehicles, such as mobile homes or caravans. Units that are not classed as vehicles are those that are installed in a fixed and permanent location (known as "fixed installation").
- Using the product for a multiple-flue configuration or as a cascade
- Any direct use in industrial or commercial processes
- Any use other than those described in these instructions and any use that goes beyond what is described here

1.2 Qualification

The person carrying out the work described here must have completed professional training. The competent person must demonstrably have all of the knowledge, skills and capabilities that are required in order to carry out the work mentioned below.

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

- Set-up
- Dismantling
- Installation
- Start-up
- Inspection and maintenance
- Repair
- Decommissioning

► Proceed in accordance with current technology.
► Use the correct tool.

The above-mentioned work must always only be carried out by persons with sufficient qualifications.

This product can be used by children aged from 8 years and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the product in a safe way and understand the hazards involved. Children must not play with the product. Cleaning and user maintenance work must not be carried out by children unless they are supervised.

1.3 General safety information

The following sections convey important safety information. It is essential to read and observe this information in order to prevent risk of death, risk of injury, material damage or environmental damage.

1.3.1 Gas

If you smell gas:

► Avoid rooms that smell of gas.
► If possible, open doors and windows fully and ensure adequate ventilation.
► Do not use naked flames (e.g. lighters, matches).
► Do not smoke.
► Do not use any electrical switches, mains plugs, doorbells, telephones or other communication systems in the building.
► Close the emergency control valve or the main isolator.
► If possible, close the gas stopcock on the product.
► Warn other occupants in the building by yelling or banging on doors or walls.
► Leave the building immediately and ensure that others do not enter the building.
► Alert the police and fire brigade, and inform the emergency service department of

the gas supply company as soon as you are outside the building.

1.3.2 Flue gas

Flue gases may cause poisoning, while hot flue gases may also cause burns. Flue gases must therefore never be allowed to escape uncontrollably.

What to do if you smell flue gas in the property:

- ▸ Open all accessible doors and windows fully to provide ventilation.
- ▸ Switch off the product.
- ▸ Check the flue gas routes in the product and the flue gas diversions.

To prevent flue gas exit:

- ▸ Only operate the product if the air/flue pipe has been completely installed.
- ▸ With the exception of short periods for testing purposes, only operate the product when the front casing is installed and closed.
- ▸ In order to operate the product, ensure that the condensate siphon is always full.
  - – Water seal level for units with condensate siphon (third-party accessory): ≥ 200 mm

To ensure that the seals are not damaged:

- ▸ Instead of grease, use only water or commercially available soft soap to aid installation.

1.3.3 Air supply

Unsuitable or insufficient combustion and room air may lead to material damage, but also to life-threatening situations.

To ensure that the combustion air supply is sufficient during open-flued operation:

- ▸ Ensure that the air supply to the product's installation room is permanently unobstructed and sufficient in accordance with the relevant ventilation requirements. This also applies, in particular, for cupboard installations.

To prevent corrosion on the product and in the flue system:

- ▸ Ensure that the combustion air supply is free from sprays, solvents, chlorinated cleaning agents, paint, adhesives, ammonia compounds, dust or similar substances.
- ▸ Ensure that no chemical substances are stored at the installation site.
- ▸ If you are installing the product in hairdressing salons, painter's or joiner's workshops, cleaning businesses or similar locations, choose a separate installation room in which the room air is technically free of chemical substances.
- ▸ Ensure that the combustion air is not routed through chimneys which have previously been used with oil-fired floor-standing boilers, or with other boilers, which could cause soot to build up in the chimney.

1.3.4 Air/flue pipe

The heat generators are system-certified together with the original air/flue pipes. For installation type B23P, third-party accessories are also permitted. You can find out if the heat generator is permitted for B23P in the technical data.

- ▸ Only use original air/flue pipes from the manufacturer.
- ▸ If third-party accessories are permitted for B23P, route the flue pipe connections properly, seal them and secure them against slipping out.
- ▸ Observe the information in these instructions when selecting the air/flue pipes.

1.3.5 Electricity

The power supply terminals L and N remain live.

To prevent electric shocks, proceed as follows before working on the product:

- ▸ Disconnect the product from the power supply by switching off all power supplies at all poles (electrical partition with a contact gap of at least 3 mm, e.g. fuse or circuit breaker) or remove the mains plug (if present).
- ▸ Secure against being switched back on again.
- ▸ Wait at least three minutes until the condensers have discharged.
- ▸ Check that there is no voltage.

1.3.6 Weight

To prevent injuries when transporting the product:

- Make sure that the product is transported by at least two people.

1.3.7 Explosive and flammable substances

To prevent explosions and fire:

- Do not use the product in rooms that contain explosive or flammable substances (such as petrol, paper or paint).

1.3.8 High temperatures

To prevent burns:

- Only carry out work on components once they have cooled down.

To prevent material damage that is caused by heat transfer:

- Only solder connectors if the connectors are not yet screwed to the service valves.

1.3.9 Heating water

Both unsuitable heating water and air in the heating water may cause material damage to the product and in the heat generator circuit.

- Check the quality of the heating water. (→ Page 14)
- If you use non-diffusion-tight plastic pipes in the heating installation, ensure that no air gets into the heat generator circuit.

1.3.10 Neutralisation device

To prevent contamination of the waste water:

- Check whether a neutralising unit must be installed in accordance with national regulations.
- Observe local regulations on neutralising condensate.

1.3.11 Frost

To prevent material damage:

- Do not install the product in rooms prone to frost.

1.3.12 Safety devices

- Install the necessary safety devices in the installation.

1.4 Regulations (directives, laws, standards)

- Observe the national regulations, standards, directives, ordinances and laws.

2 Notes on the documentation

- ► Always observe all the operating and installation instructions included with the system components.
- ► Pass these instructions and all other applicable documents on to the end user.

These instructions apply for the following products only:

Product article number

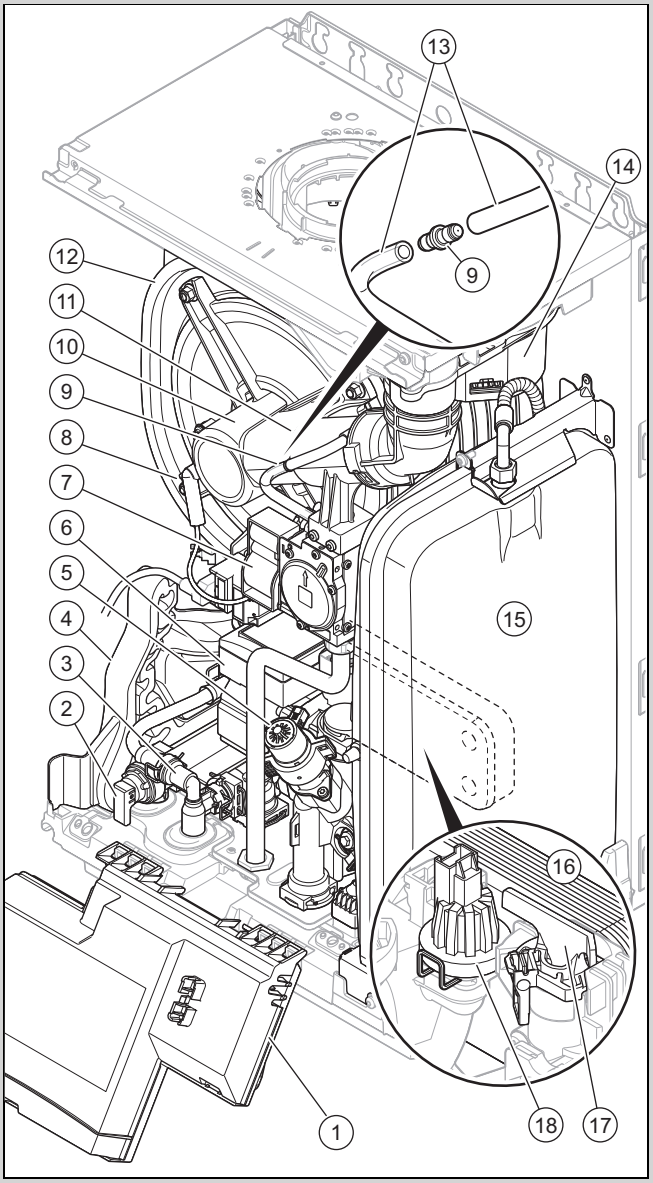
vintomiX P18/24-AS/1 (H-UA)	8000015375
vintomiX P24/28-AS/1 (H-UA)	8000015367

3 Product description

This product is a gas-fired condensing boiler.

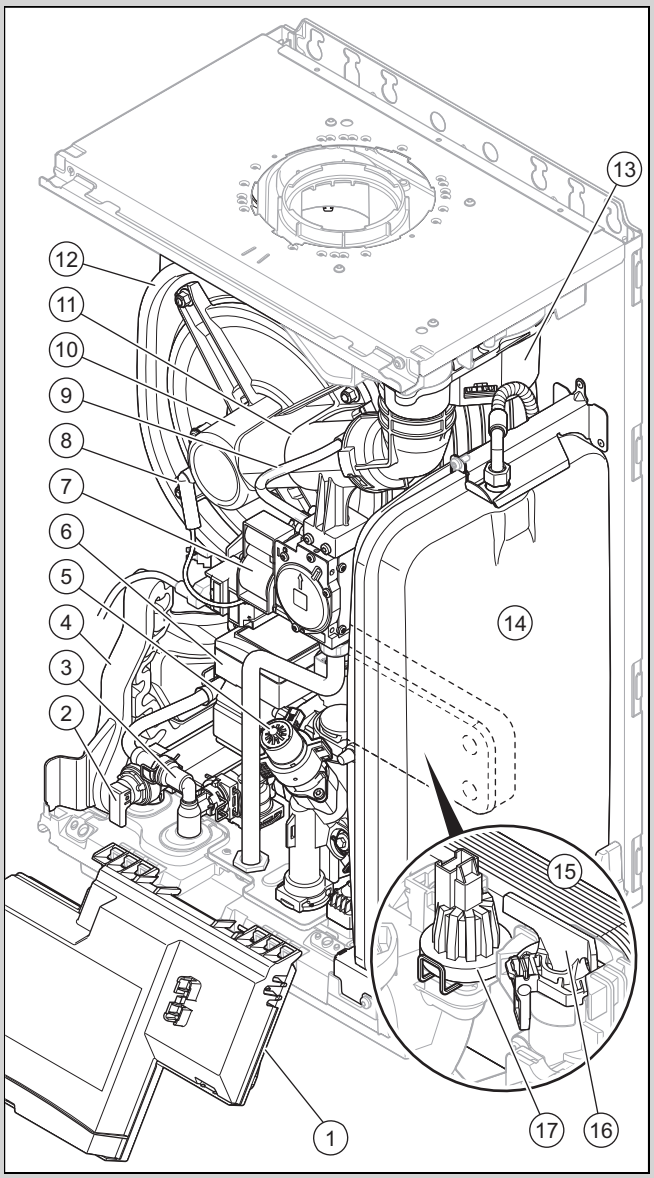
3.1 Product design

Validity: vintomiX P24/28-AS/1 (H-UA)



1	Electronics box	4	Condensate siphon
2	Expansion relief valve for heating	5	Prioritising diverter valve
3	Non-return valve	6	Pump
7	Gas valve assembly	13	Reference pressure pipe for the gas valve assembly
8	Ignition and flame control electrode	14	Fan
9	Restrictor for the reference pressure pipe	15	Expansion vessel
10	Burner	16	Domestic hot water plate heat exchanger
11	Venturi	17	Domestic hot water volume flow sensor
12	Heat exchanger	18	Pressure sensor

Validity: vintomiX P18/24-AS/1 (H-UA)



1	Electronics box	9	Reference pressure pipe for the gas valve assembly
2	Expansion relief valve for heating	10	Burner
3	Non-return valve	11	Venturi
4	Condensate siphon	12	Heat exchanger
5	Prioritising diverter valve	13	Fan
6	Pump	14	Expansion vessel
7	Gas valve assembly	15	Domestic hot water plate heat exchanger
8	Ignition and flame control electrode	16	Domestic hot water volume flow sensor
		17	Pressure sensor

3.2 Data plate

The data plate is mounted on the rear of the electronics box and on the upper side of the product at the factory. Any information that is not listed here can be found in separate sections.

Information	Meaning
	Read the instructions.
... vintomiX ...	Marketing name
TR...	Target market
Cat.	Approved gas category
Type	Products of the category
2H, 2HS, 2ELw... - G20, G31... - XX mbar (X.X kPa)	Gas group and gas connection pressure as set at the factory
T_{max}	Maximum flow temperature
PMS	Permissible operating pressure, heating mode
NOx class	NOx class (nitrogen oxide emissions)
D	Specific flow rate
V	Mains voltage
Hz	Mains frequency
W	Maximum electrical power consumption
IP	IP rating
Code (DSN)	Product code
PMW	Permissible operating pressure for domestic hot water mode
	Heating mode
Q_n	Heat input range
P_n	Nominal heat output range (75/55 °C)
P_{nc}	Condensing nominal heat output range (50/30 °C)
	DHW mode
P_{nw}	Maximum heat output in domestic hot water generation mode
Q_{nw}	Maximum heat input in domestic hot water generation mode
Hi	Lower gross calorific value
	Barcode with serial number 3rd to 6th digits = production date (year/week) 7th to 16th digit = product article number

Note

Make absolutely sure that the product is compatible with the gas group at the installation site.

3.3 Serial number

You can find the serial number on the data plate and on the sticker on the upper side of the product.

The serial number and the product designation can also be found on a sticker under the product's front casing.

3.4 Production date

You can find the production date (week, year) in the serial number on the data plate:

– The third and fourth digit in the serial number specify the year of production (two digits).
– The fifth and sixth digit of the serial number specify the week of production (from 01 to 52).

3.5 National mark of conformity for Ukraine

The product is marked with the Ukrainian national mark of conformity. This certifies that the product meets all the technical regulations of the Ukraine.

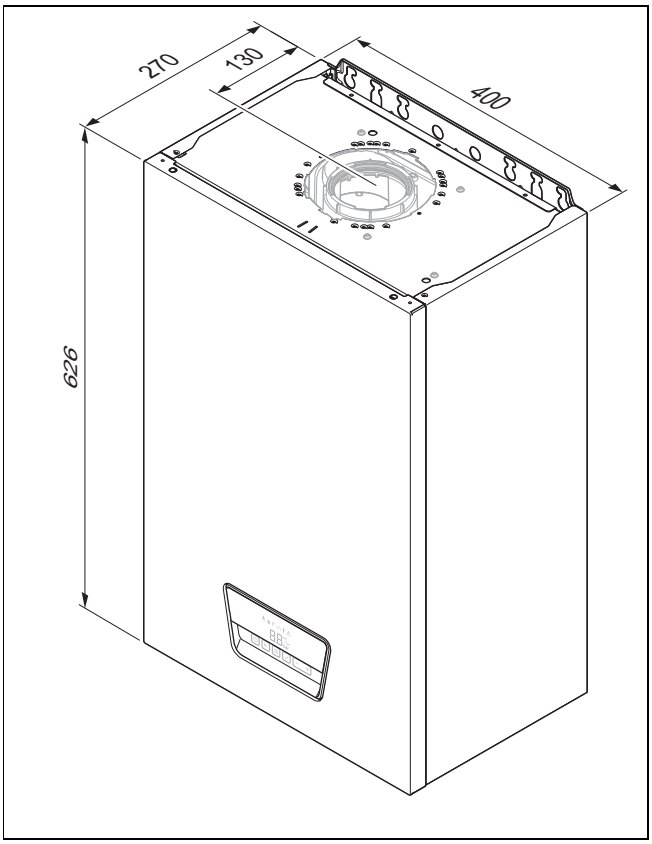
The "XX" stands for the product's year of production.

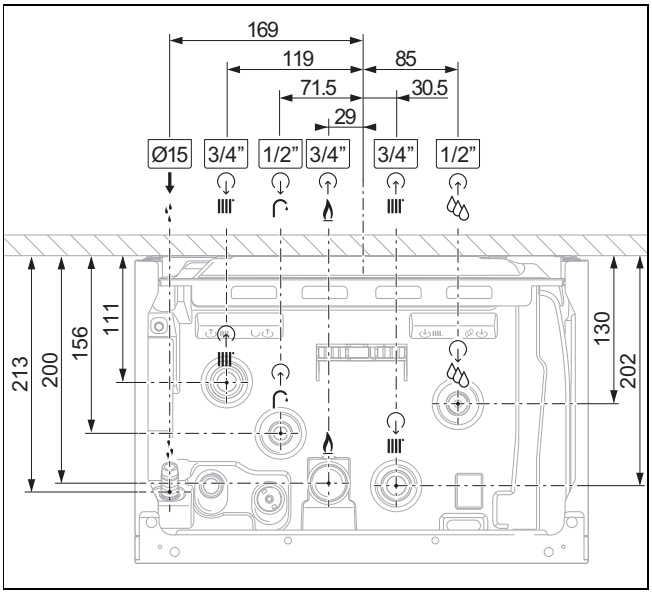
4 Set-up

4.1 Checking the scope of delivery

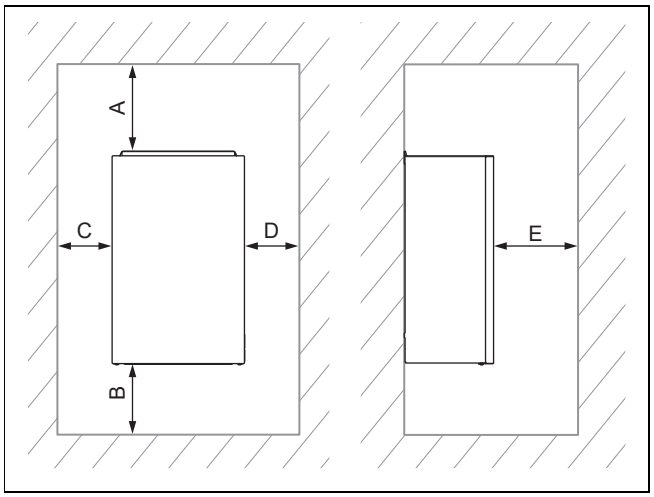
Quantity	Designation
1	Gas-fired wall-hung boiler
2	Bag with small parts
1	Condensate discharge hose
1	Enclosed documentation

4.2 Product dimensions





4.3 Minimum clearances

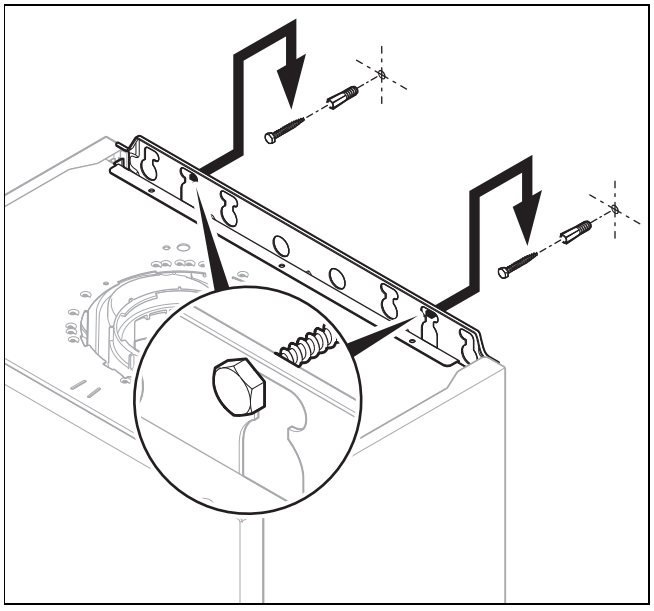


	Minimum clearance
A	60/100 mm diameter air/flue pipe: 150 mm 80/80 mm diameter air/flue pipe: 220 mm 80/125 mm diameter air/flue pipe: 276 mm
B	180 mm
C	150 mm Leave sufficient space on this side of the product. This may be required if the pump head needs to be replaced.
D	5 mm
E	500 mm

4.4 Using the mounting template

► Use the mounting template to ascertain the locations at which you need to drill holes and make breakthroughs.

4.5 Wall-mounting the product



1. Check the load-bearing capacity of the wall.
2. Note the total weight of the product. (→ Page 41)
3. Only use fixing material that is permitted for the wall.
   – Screws with a minimum diameter of 6 mm
4. If required, ensure that mounting apparatus on-site has sufficient load-bearing capacity.
5. Wall-mount the product as described.

5 Installation

Danger!

Risk of scalding and/or risk of material damage due to incorrect installation leading to escaping water.

Mechanical stresses in connection pipes can cause leaks.

► Install the connection pipes such that they are free from mechanical stress.

Caution.

Risk of material damage due to the gas leak-tightness test.

At a test pressure of >11 kPa (110 mbar), gas leak-tightness tests may cause damage to the gas valve assembly.

► If, during gas leak-tightness tests, you also place the gas pipes and the gas valve assembly in the product under pressure, use a max. test pressure of ≤ 11 kPa (110 mbar).
► If you cannot limit the test pressure to 11 kPa (110 mbar), close any gas stopcocks that are installed upstream from the product before you carry out the gas leak-tightness test.
► If, during gas leak-tightness tests, you have closed the gas stopcock that is installed upstream of the product, relieve the gas line pressure before you open this gas stopcock.

Caution.

Risk of material damage due to heat transfer during soldering.

The product's base plate is not available as a spare part. If the base plate is damaged due to excessive temperatures, the product must be viewed as a total economic write-off.

► You can solder the connectors if they have not been secured to the service valves. Once they have been secured, this is no longer possible.

Caution.

Risk of material damage caused by residues in the pipelines.

Welding remnants, sealing residues, dirt or other residues in the pipelines may damage the product.

► Flush the heating installation thoroughly before installing the product.

Warning.

Risk of adverse health effects caused by impurities in the potable water.

Sealing residues, dirt or other residues in the pipelines may adversely affect the quality of the potable water.

► Flush all of the hot and cold water pipes thoroughly before you install the product.

Caution.

Risk of material damage caused by changes to the pipes that have already been connected.

► Only bend connection pipes if they have not yet been connected to the product.

Caution.

Risk of material damage caused by incorrect handling.

The product is equipped with a hydraulic set. If you place the product on the floor, there is a risk that the pipes will be damaged.

► Do not place the product upright on the floor.

5.1 Prerequisites

5.1.1 Using the correct gas group

Using the incorrect gas group may cause fault shutdowns in the product. Ignition and combustion noise may occur in the product.

► Only use the gas groups specified on the data plate.

5.1.2 Information on the gas group

In the as-supplied condition, the product is preset for operation with the gas group indicated on the data plate.

If you have a product that is preset for operation with natural gas, you must convert it for operation with liquefied petroleum gas.

5.1.3 Carrying out basic preparation for the installation

1. Install a gas stopcock on the gas supply.
2. Make sure that the existing gas meter is capable of passing the rate of gas supply required.
3. Ensure that the volumetric capacity of the integrated expansion vessel is sufficient for the system volume.
   – If the volumetric capacity of the expansion vessel is insufficient, install an additional expansion vessel as close to the product as possible
4. Install a tundish with siphon for the condensate discharge and the drain pipe on the expansion relief valve. Route drain pipework that is as short as possible, at a downward gradient away to the tundish.
5. Insulate bare pipes exposed to environmental influences to protect them from frost using suitable insulation material.

6. Flush out the supply pipes thoroughly prior to installation.
7. Install a filling device between the cold water pipe and the heating flow.
8. Securely connect the product to the water mains. Do not use a connection hose set for this.

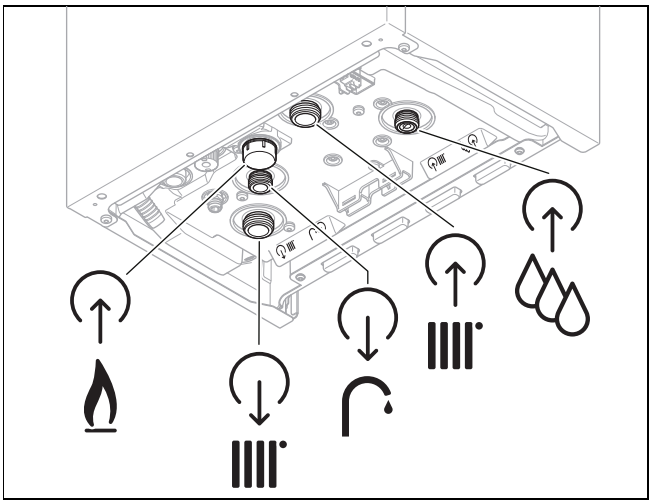
5.2 Connecting gas and water

Danger!

Risk of burns and/or risk of material damage due to incorrect installation leading to escaping gas.

Using oakum, Teflon or any other products of this sort for the gas connection thread can cause leaks.

► Only use the flat seals that are supplied with the product or those supplied by the manufacturer.



1. Install the gas pipe on the gas connection such that it is free from mechanical stress.
2. Purge the gas pipe before start-up.
3. Check the entire gas pipe properly for leak-tightness.
4. Install the water flows and returns in accordance with the relevant standards.

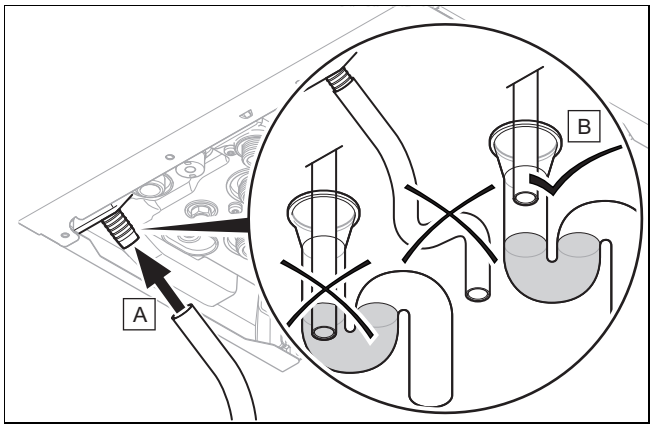
5.3 Connecting the condensate discharge hose

Danger!

Risk of death from escaping flue gases!

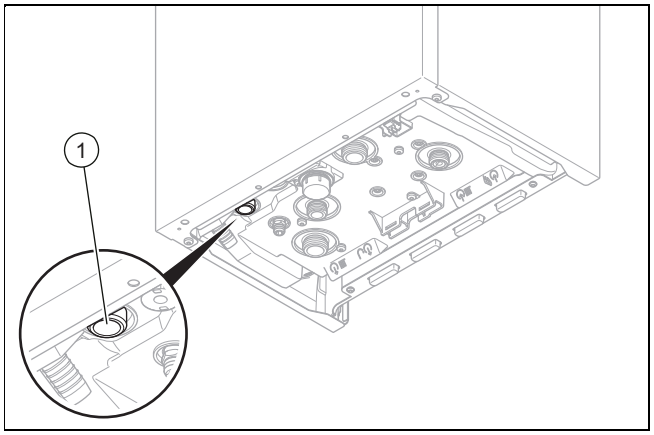
The siphon's condensate discharge hose must not be tightly connected to waste-water pipework because, otherwise, the internal condensate siphon may be drained fully and flue gas may escape.

► Have the condensate discharge hose end outside of the waste-water pipework.



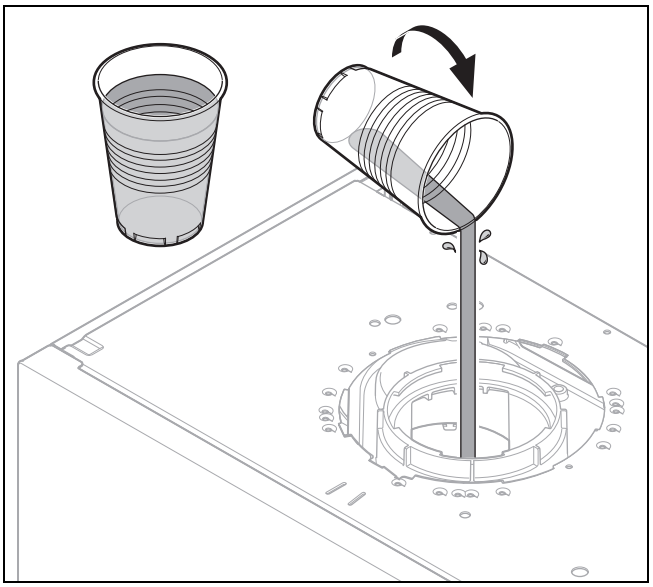
1. Follow the instructions listed here and observe the legal and local regulations on condensate discharge.
2. Use only pipes made of acid-resistant material (e.g. plastic) for the condensate discharge pipe (e.g. plastic).
3. If you cannot guarantee that the materials from which the condensate discharge pipe is made are suitable, install a system to neutralise the condensate.

5.4 Connecting the drain pipework for the expansion relief valve



1. Ensure that the pipeline is visible.
2. Connect the expansion relief valve **(1)** to a suitable discharge siphon.
   – The components must be set up in such a way that you can see the water flowing out.
3. Ensure that you can view the end of the pipe and that discharged water or steam cannot cause injury to persons or damage to electronic components.

5.5 Filling the condensate siphon



► Fill the condensate siphon with water.
  – ≈ 250 ml

5.6 Air/flue system

5.6.1 Installing and connecting the air/flue pipe

1. You can find out which air/flue pipes may be used by consulting the enclosed set-up instructions for the air/flue system.

Condition: Installation in damp rooms

► Connect the product to a room-sealed air/flue system.
  – The combustion air must not be taken from the installation site.
► Install the air/flue pipe using the set-up instructions.

5.6.2 B23 installation

A flue system for permitted unit type B23 (atmospheric gas-fired wall-hung boilers) requires careful planning and implementation.

► Observe the product's technical data when planning.
► Use the recognised rules of technology.

5.6.3 Notes and information about installing the B23P

Danger!
Risk of injury caused by unapproved air/flue pipes.

The heat generators are system-certified together with the original air/flue pipes. For installation type B23P, third-party accessories are also permitted. You can find out if the heat generator is permitted for B23P in the technical data.

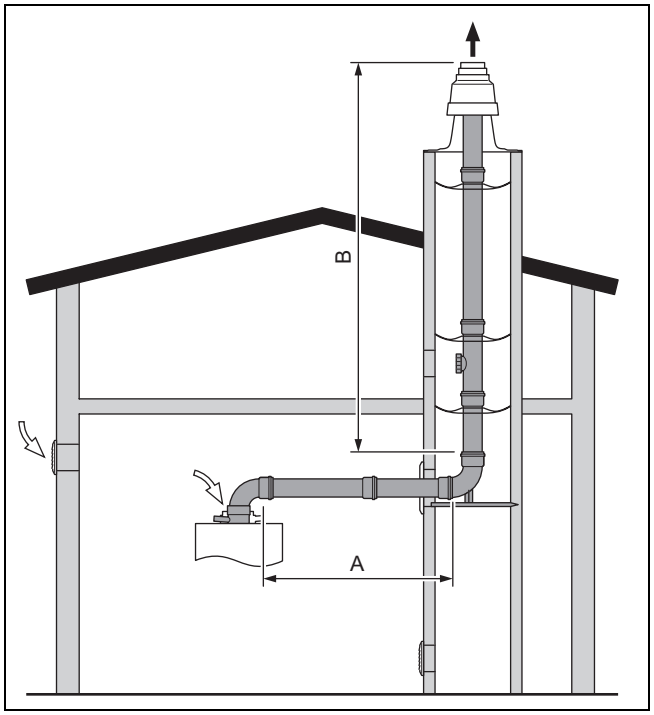
► Only use original air/flue pipes from the manufacturer.
► If third-party accessories are permitted for B23P, route the flue gas pipe connections properly, seal them and secure them against slipping out.

The flue system must at least correspond to the classification T 120 P1 W 1 in accordance with EN 1443. The maximum pipe length must be calculated based on the permissible pressure difference in the technical data.

The maximum pipe length (straight pipe only) corresponds to the maximum permitted flue pipe length without any elbows. If elbows are used, the maximum pipe length must be reduced in accordance with the dynamic flow characteristics of the elbows. Elbows must not be connected directly after one another since, otherwise, the pressure loss is increased dramatically.

If the flue pipe is installed in cold rooms or outside of the building, the temperature on the surface of the inside of the pipe may fall below the freezing point. Since the product is designed in accordance with EN 13384-1, this problem should not occur with the minimum boiler load at a flue gas temperature of 40 °C. The product must not be connected to a cascade flue system that is being used by other products.

► Observe the applicable local and national regulations for flue systems, in particular for installations in living rooms. Show the end user how to correctly operate the product.



► Note the following specifications for installing the flue system..

60 diameter horizontal – 60 diameter vertical

	A max.	B max.	87° elbow
P18/24-AS/1	≤ 3 m	≤ 15 m	≤ 2
P24/28-AS/1	≤ 3 m	≤ 15 m	≤ 2

60 diameter horizontal – 80 diameter vertical

	A max.	87° elbow
P18/24-AS/1	≤ 3 m	≤ 2
P24/28-AS/1	≤ 3 m	≤ 2

80 diameter horizontal – 80 diameter vertical

	A max.	87° elbow
P18/24-AS/1	≤ 3 m	≤ 2
P24/28-AS/1	≤ 3 m	≤ 2

5.6.4 Installing the standard connector for the 60/100 mm diameter air/flue pipe

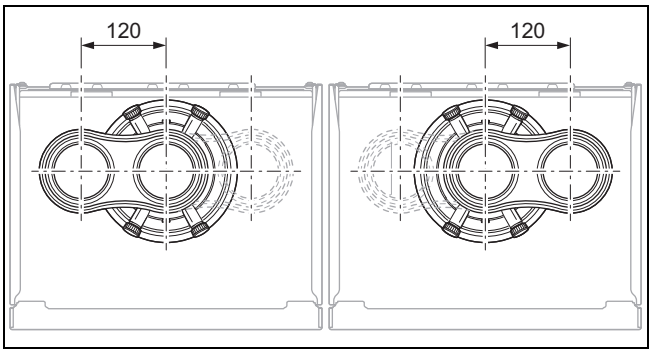
1. Insert the standard connector. In doing so, pay attention to the latching lugs.
2. Turn the standard connector clockwise until it clicks into position.

5.6.5 Installing the connector for the air/flue pipe, 80/125 mm diameter

1. Replace the connector for the air/flue pipe as required.
2. Insert the alternative connector. In doing so, pay attention to the latching lugs.
3. Turn the standard connector clockwise until it clicks into position.

5.6.6 Installing the connector for the separate air/flue pipe, 80/80 mm diameter

1. Replace the connector for the air/flue pipe as required.



2. Insert the alternative connector. The connection for the air supply can point to the left- or the right-hand side. In doing so, pay attention to the latching lugs.
3. Turn the connector clockwise until it clicks into position.

5.7 Electrical installation

Only qualified electricians may carry out the electrical installation.

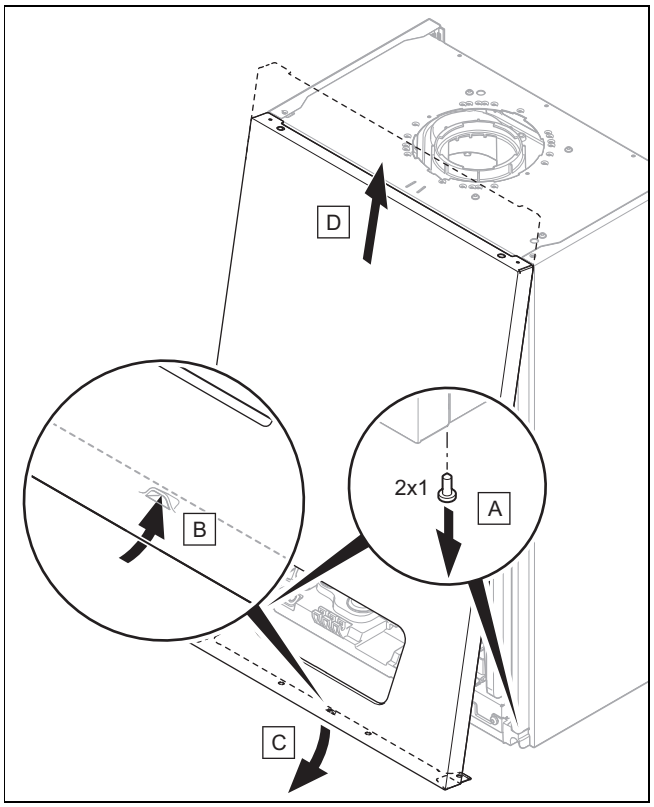
The product must be earthed.

Danger!
Risk of death from electric shock!

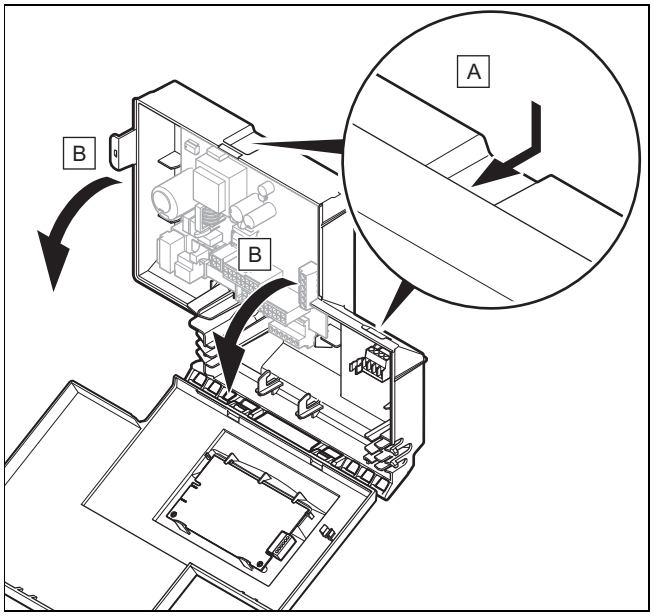
Power supply terminals L and N remain live even if the on/off button is switched off.

- ► Disconnect the product from the power supply by switching off all power supplies at all poles (electrical partition with a contact gap of at least 3 mm, e.g. fuse or circuit breaker).
- ► Secure against being switched back on again.
- ► Wait for at least 3 minutes until the capacitors have discharged.
- ► Check that there is no voltage.

5.7.1 Removing the front casing



5.7.2 Opening the electronics box



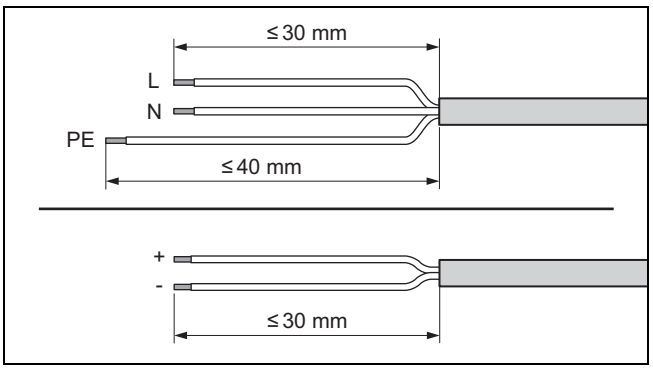
5.7.3 General information about connecting cables

Caution.
Risk of material damage caused by incorrect installation.

Mains voltage at incorrect terminals and plug terminals may destroy the electronics.

- ► Do not connect any mains voltage to the eBUS (+/-) and RT 24 V terminals.
- ► Only connect the connection cable to the terminals marked for the purpose.

1. Route the connection cable in the cable trunking on the underside of the product.
2. Ensure that the grommet is plugged in correctly and that the cables have been routed correctly.
3. Ensure that the grommets envelop the connection cables tightly and with no visible gaps.
4. Use strain reliefs.
5. If required, shorten the connection cables.

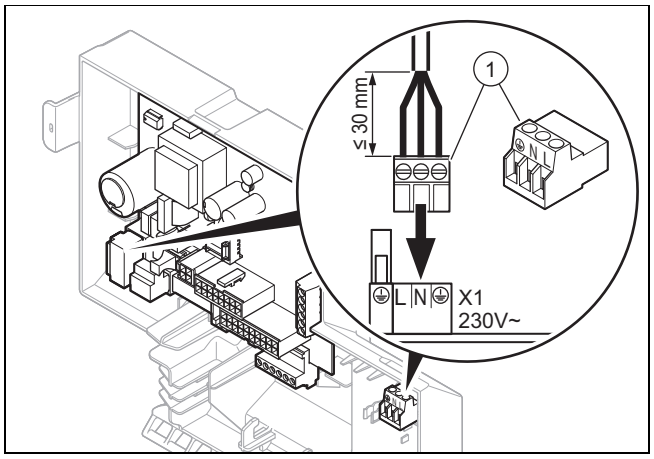


6. Strip the flexible cables as shown in the figure. In doing so, ensure that the insulation on the individual conductors is not damaged.
7. Only strip inner conductors just enough to establish stable connections.
8. To avoid short circuits resulting from loose individual wires, fit conductor end sleeves on the stripped ends of the conductors.
9. Screw the respective plug to the connection cable.
10. Check whether all conductors are inserted mechanically securely in the plug terminals. Remedy this if necessary.
11. Plug the plug into the associated PCB slot.

Wiring diagram

5.7.4 Establishing the power supply

1. Observe all relevant regulations.
   – The applicable regulations state that the connection must be made via an electrical partition with a contact gap of at least 3 mm at each pole (e.g. using a fuse or a power switch).
2. Make sure that the nominal mains voltage is 230 V.
3. Carry out the wiring. (→ Page 12)
   – Mains cable: Standardised flexible three-wire cable
4. Ensure that the power supply cable is routed through the grommet in order to guarantee the strain relief.

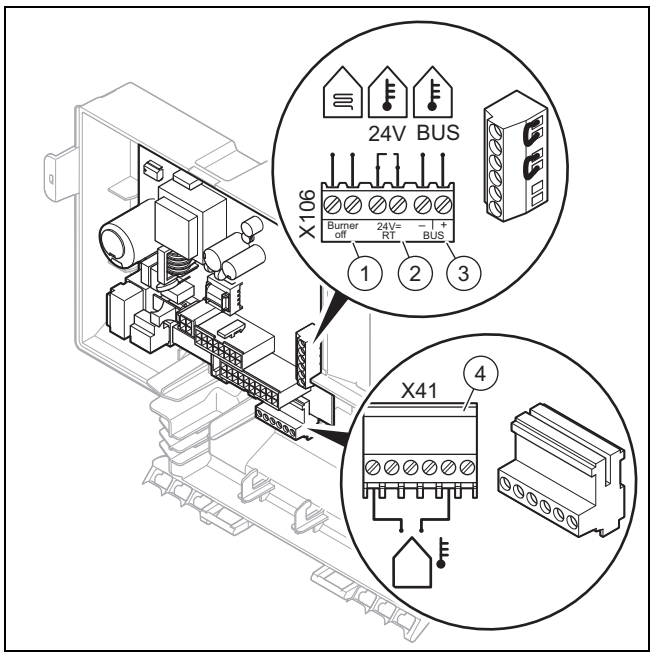


5. Plug the supplied plug **(1)** into the slot for *230V* on the PCB.
6. Make sure that access to the power supply is always available and is not covered or blocked.

5.7.5 Connecting the control

Note

When connecting to an *eBUS* room thermostat after starting up, establish the connection in order to set the heating flow and domestic hot water temperature on the product to the relevant maximum value.



1	Limit thermostat for underfloor heating	3	*eBUS* control or radio receiver unit
2	Control *24 V (ON/OFF)*	4	Outdoor temperature sensor, wired

1. Ensure that the product is voltage-free.
2. Carry out the wiring.
3. **Alternatives 1 – Connecting the weather-compensated control or room thermostat via *eBUS*:**
   - ► Connect the control to the *BUS* connection **(3)**.
   - ► Bridge the *24 VRT* connection, if no bridge is present.

3. **Alternatives 2 – Connecting the low-voltage control (24 V):**
   ► Remove the bridge and connect the control to the *24 V = RT* **(2)** connection.
3. **Alternatives 3 – Connecting a limit thermostat for underfloor heating:**
   ► Remove the bridge and connect the limit thermostat to the *Burner off* **(1)** connection.
4. Close the electronics box.

6 Operation

6.1 Calling up the installer level

1. Press ≡ repeatedly until the wrench symbol flashes.
2. Use − or + to set the competent person access code and confirm by pressing ✓.
   – Competent person access code: 96
   ◁ The **d.** diagnostics codes menu is displayed.

6.2 Using diagnostics codes

1. Call up the installer level. (→ Page 14)
2. Use − or + to select the diagnostics codes **d.** menu.
3. Confirm by pressing ✓.
   ◁ **00** is displayed.
4. Use − or + to select the diagnostics code whose value you want to change.
   Diagnostics codes (→ Page 31)
5. Confirm by pressing ✓.
6. Use − or + to select the required value for the diagnostics code.
7. Press ✓ to confirm this setting.
8. Press ← to exit the diagnostics codes.

6.3 Running check programmes

1. Call up the installer level. (→ Page 14)
2. Use − or + to select the check programmes **P.** menu.
3. Confirm by pressing ✓.
4. Use − or + to select the required check programme.
   Check programmes (→ Page 39)
5. Press ✓ to confirm.
   ◁ The check programme starts, is executed and stops after the intended time has elapsed.
   ◁ The **P.** check programmes menu is shown.
6. If you want to cancel the check programme before the intended time has elapsed, press ←.
   ◁ **oF** is displayed for 10 seconds.
   ◁ The **P.** check programmes menu is shown.
7. Press ← to exit the check programmes.

6.4 Calling up status codes

1. Call up the installer level. (→ Page 14)
2. Use − or + to select the status codes **S.** menu.
3. Confirm by pressing ✓.
   ◁ The display alternates between the current status code, the current heating flow temperature and the current water pressure.
   – **S. → XX → XX °C → X,X bar**
4. Press ← to exit the status codes.

6.5 Exiting the installer level

► Press the ← button as often as necessary in order to return to the basic display.
   ◁ The basic display is shown.

7 Start-up

During initial start-up, the operating data may initially deviate from the specified nominal data.

7.1 Checking and treating the heating water/filling and supplementary water

Caution.
Risk of material damage due to poor-quality heating water
► Ensure that the heating water is of sufficient quality.

► Before filling or topping up the installation, check the quality of the heating water.

Checking the quality of the heating water

► Remove a little water from the heating circuit.
► Check the appearance of the heating water.
► If you ascertain that it contains sedimentary materials, you must desludge the installation.
► Use a magnetic rod to check whether it contains magnetite (iron oxide).
► If you ascertain that it contains magnetite, clean the installation and apply suitable corrosion-inhibition measures (e.g. fit a magnetite separator).
► Check the pH value of the removed water at 25 °C.
► If the value is below 8.2 or above 10.0, clean the installation and treat the heating water.
► Ensure that oxygen cannot get into the heating water.

Checking the filling and supplementary water

► Before filling the installation, measure the hardness of the filling and supplementary water.

Treating the filling and supplementary water

► Observe all applicable national regulations and technical rules when treating the filling and supplementary water.

Provided the national regulations and technical rules do not stipulate more stringent requirements, the following applies:

You must treat the filling and supplementary water in the following cases

– If the entire filling and supplementary water quantity during the operating life of the system exceeds three times the nominal volume of the heating installation, or
– If the pH value of the heating water is lower than 8.2 or higher than 10.0, or
– The guideline values listed in the following table are not met.

Total heating output	Water hardness at specific system volume[1)]					
	≤ 20 l/kW		> 20 l/kW ≤ 40 l/kW		> 40 /kW	
kW	ppm $CaCO_3$	mol/m³	ppm $CaCO_3$	mol/m³	ppm $CaCO_3$	mol/m³
< 50	< 300	< 3	150	≤ 1.5	5	0.05
> 50 to ≤ 200	200	< 2	150	≤ 1.5	5	0.05
> 200 to ≤ 600	150	< 1.5	5	0.05	5	0.05
> 600	5	0.05	5	0.05	5	0.05
1) Nominal capacity in litres/heat output; in the case of multi-boiler systems, the smallest single heat output is to be used.						

Caution.

Risk of material damage if the heating water is treated with unsuitable additives.

Unsuitable additives may cause changes in the components, noises in heating mode and possibly subsequent damage.

► Do not use any unsuitable antifreeze and corrosion inhibitors, biocides or sealants.

No incompatibility with our products has been detected to date with proper use of the following additives.

► When using additives, follow the manufacturer's instructions without exception.

We accept no liability for the compatibility of any additive or its effectiveness in the rest of the heating system.

Additives for cleaning measures (subsequent flushing required)

– Adey MC3+
– Adey MC5
– Fernox F3
– Sentinel X 300
– Sentinel X 400

Additives intended to remain permanently in the installation

– Adey MC1+
– Fernox F1
– Fernox F2
– Sentinel X 100
– Sentinel X 200

Additives for frost protection intended to remain permanently in the installation

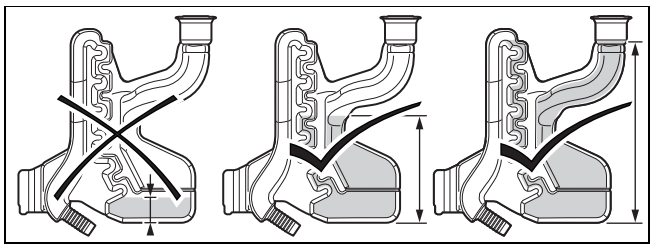
– Adey MC ZERO
– Fernox Antifreeze Alphi 11
– Sentinel X 500

► If you have used the above-mentioned additives, inform the end user about the measures that are required.
► Inform the end user about the measures required for frost protection.

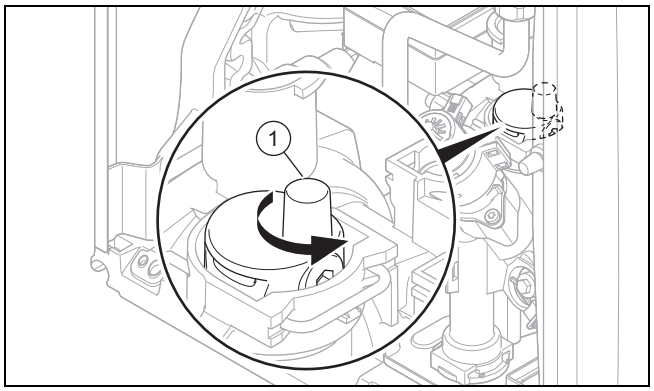
7.2 Filling the heating installation

Note

After each start-up, the product works at reduced output when starting in order to facilitate the heat transfer effect. This does not apply for check programmes and does not result in any loss of comfort for the end user. Status code **S.58** corresponds to this phase. The display shows a temperature of approx. 50 °C in this phase.



1. Ensure that the condensate siphon has been filled correctly.
2. Before filling the heating installation, ensure that it has been flushed out sufficiently.



3. Loosen the cap on the automatic air vent **(1)** by one or two rotations.
4. Connect the filling/draining cock in the heating installation to a heating water supply in accordance with the relevant standards.
5. Open all of the thermostatic radiator valves and, if required, the service valves.
6. Open the heating water supply and the filling tap so that the heating water flows into the heating installation.

Starting up the product

7. Press the on/off button ⏻.
   ◁ The display shows the basic display.
8. Start check programme **P.08**. (→ Page 14)
   Check programmes (→ Page 39)
9. Purge the highest radiator until water flows out of the purging valve without bubbles.
10. Purge all other radiators until the entire heating installation has been completely filled with heating water.
11. Close all purging valves.

12. Fill with heating water until the required filling pressure is reached.
    – 0.10 to 0.14 MPa (1.00 to 1.40 bar)
    ▽ If the heating installation extends over several storeys, higher filling pressures may be required to avoid air entering the heating installation.
13. Close the filling tap and the heating water supply.
14. Check all of the connections and the entire circuit for leaks.

7.3 Purging the heating installation

1. Start the check programme **P.00**. (→ Page 14)
   Check programmes (→ Page 39)
   ◁ **on** is shown in the display.
2. Make sure that the filling pressure of the heating installation does not fall below the minimum filling pressure.
   – ≥ 0.05 MPa (≥ 0.50 bar)
3. Check whether the filling pressure of the heating installation is at least 0.02 MPa (0.2 bar) above the diaphragm expansion vessel's counter-pressure (P_{system} ≥ $P_{diaphragm\ expansion\ vessel}$ + 0.02 MPa (0.2 bar)).
   Result:
   Filling pressure of the heating installation is too low
   ► Refill the heating installation.
4. If there is still too much air in the heating installation at the end of the check programme **P.00**, restart the check programme.

7.4 Filling and purging the domestic hot water system

1. Open the cold-water isolation valve on the product.
2. To fill the domestic hot water circuit, open all of the domestic hot water tap fittings until water escapes.

7.5 Check and gas setting

7.5.1 Checking the factory-set gas setting

► Check the information about the gas type indicated on the data plate and compare this with the gas type available at the installation site.

Result 1:

The product design is not compatible with the local gas group.

► Do not start up the product.
► Contact customer service.

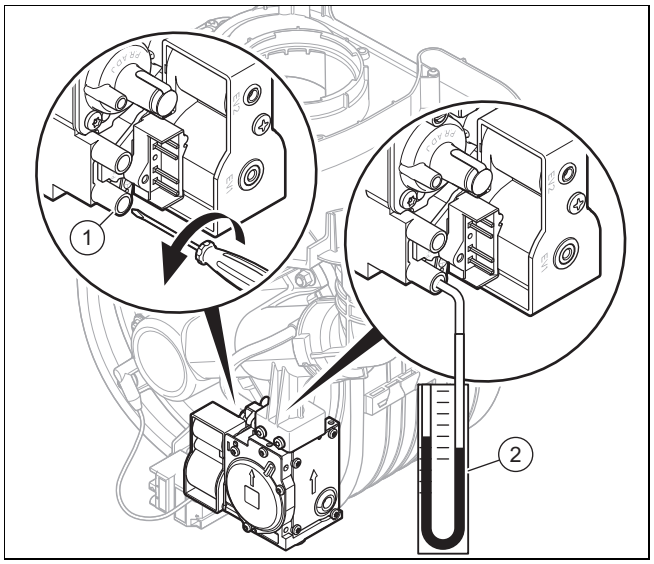
Result 2:

The product design is compatible with the local gas group.

► Check the gas connection pressure/gas flow pressure. (→ Page 16)
► Check the CO_2 content. (→ Page 17)

7.5.2 Checking the gas connection pressure/gas flow pressure

1. Temporarily decommission the product. (→ Page 30)
2. Hinge the electronics box downwards.



3. Turn the screw on the gas pressure measuring point **(1)** anti-clockwise.
   – Anti-clockwise (↺): Two rotations
4. Connect a manometer **(2)** to the test nipple **(1)**.
   – Working materials: U tube manometer
   – Working materials: Digital pressure gauge
5. Hinge the electronics box upwards.
6. Open the gas stopcock.
7. Start up the product with check programme **P.01** (in doing so, set the output to the maximum). (→ Page 14)
8. Measure the gas connection pressure/gas flow pressure against the atmospheric pressure.

Permissible connection pressure

Ukraine	**Natural gas**	**H**	1.3 to 2.5 kPa (13.0 to 25.0 mbar)
	Liquefied petroleum gas	**P**	2.5 to 3.5 kPa (25.0 to 35.0 mbar)

Note
The connection pressure is measured at the gas valve assembly, meaning that the permissible minimum value may be 0.1 kPa (1 mbar) lower than the minimum value specified in the table.

Result 1:

Gas connection pressure/gas flow pressure in the permissible range

► Temporarily decommission the product. (→ Page 30)
► Hinge the electronics box downwards.
► Remove the pressure gauge.
► Tighten the screw on the test nipple.
► Open the gas stopcock.
► Check the test nipple for gas tightness.
► Hinge the electronics box upwards.
► Install the front casing. (→ Page 17)
► Start up the product.

Result 2:

Gas connection pressure/gas flow pressure not in the permissible range

Caution.

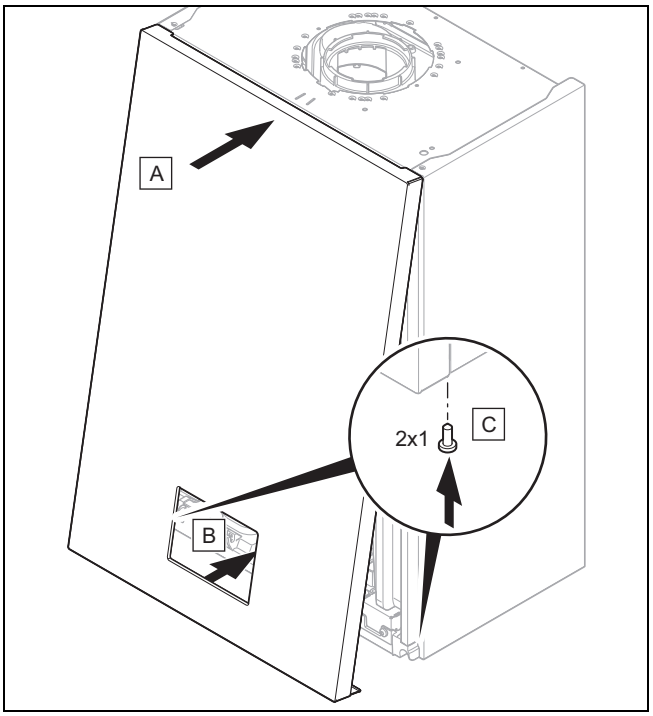
Risk of material damage and operating faults caused by incorrect gas connection pressure/gas flow pressure.

If the gas connection pressure/gas flow pressure lies outside the permissible range, this can cause operating faults in and damage to the product.

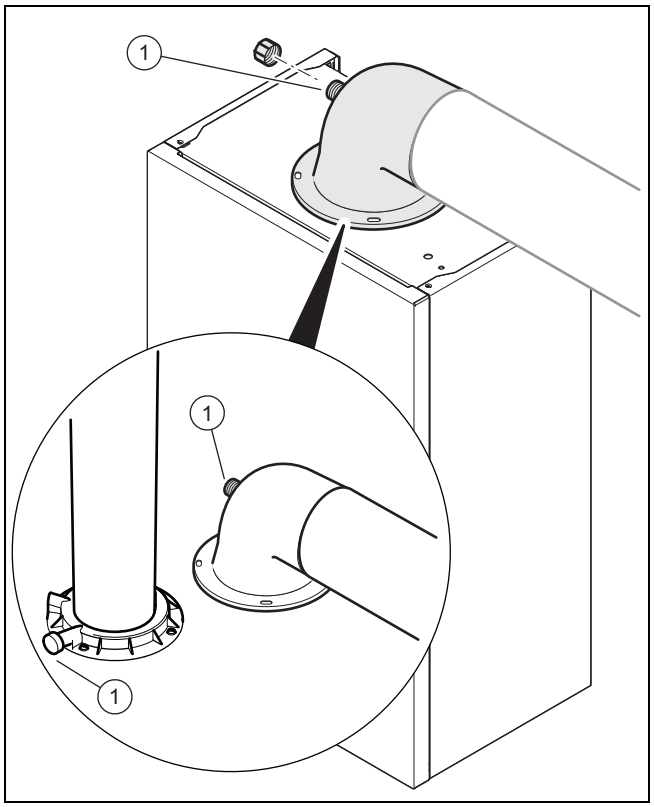
- ► Do not make any adjustments to the product.
- ► Do not start up the product.

- ► If you are unable to eliminate the fault, contact the gas supply company.
- ► Close the gas stopcock.

7.5.3 Installing the front casing



7.5.4 Checking the CO_2 content



1. Open the test opening at the flue gas analysis point **(1)**.
2. Position the sensor for the CO_2 analyser in the centre of the flue pipe.
3. Start up the product with check programme **P.01**. (→ Page 14)
4. Wait at least five minutes until the product reaches its operating temperature.
5. Measure the CO_2 content at the flue gas analysis point and log the measured value.

Checking the CO_2 content

Ukraine	**Fitted front casing**	**Natural gas**	**H**	9.2 ±0.3 %
		Liquefied petroleum gas	**P**	10.6 ±0.3 %

Result 1:

If the value is outside of the permitted range:

- ► Measure the CO_2 content at the flue gas analysis point again and log the measured value.
- ► If the value is still outside of the permissible range, do not start up the product and, instead, report this to customer service.

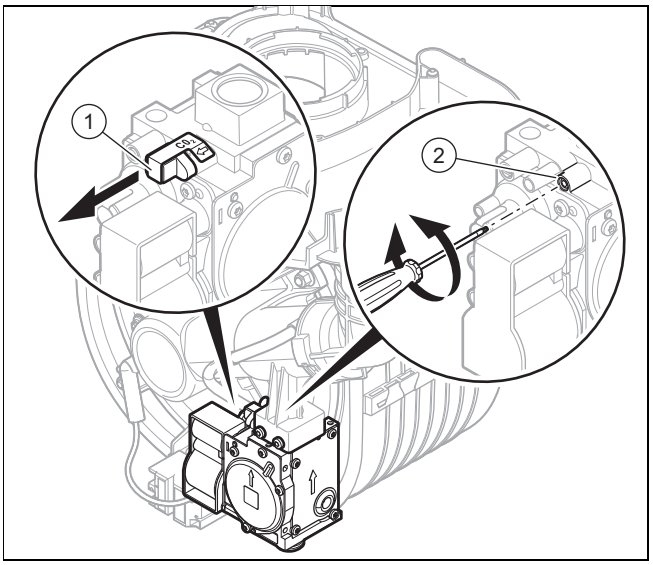
Result 2:

If the value is inside the permitted range:

- ► Continue with the process of starting up the product.

6. Remove the sensor for the CO_2 analyser and close the test opening at the flue gas analysis point.

7.5.5 Performing a gas conversion



1. Press the on/off button ⏻ in order to switch off the product.
   ◁ The display shows **oF** and then goes out.
2. Disconnect the product from the power grid.
3. Remove the plug **(1)**.
4. To convert the gas type, turn the screw **(2)** by the specified number of rotations clockwise (↻) or anti-clockwise (↺).

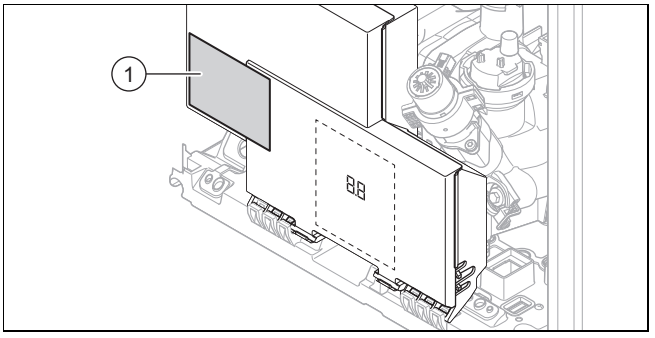
Setting the gas valve assembly

H → P	**Clockwise rotation**	Three revolutions
P → H	**Anti-clockwise rotation**	Three revolutions

5. Check the CO_2 content and adjust this. (→ Page 20)
6. Set diagnostics code **d.85** in order to adjust the product's minimum output. (→ Page 14)

Setting diagnostics code D.85

	P18/24-AS/1	P24/28-AS/1
H → P	9 kW	8 kW
P → H	6 kW	7 kW



7. Mark the gas type that is used on the gas conversion sticker.
8. Stick the gas conversion sticker **(1)** to the electronics box.

7.6 Checking the heating mode

1. Make sure that there is a heat requirement.
2. Activate the display of the status codes. (→ Page 14)
   ◁ If the product is working correctly, the display shows **S.04**.
   ▽ If the filling function for the condensate siphon has been activated, **S.58** is displayed as a priority.

7.7 Checking the domestic hot water generation

1. Open a hot water tap completely.
2. Activate the display of the status codes. (→ Page 14)
   ◁ If the product is working correctly, the display shows **S.14**.

7.8 Checking leak-tightness

► Check the gas pipe, the heating circuit and the hot water circuit for leak-tightness.
► Check that the air/flue pipe has been installed correctly.

Condition: Room-sealed operation

► Check whether the vacuum chamber has been closed tightly.

8 Adapting the unit to the installation

8.1 Adapting the heating settings

8.1.1 Burner anti-cycling time

To prevent frequent switching on and off of the burner and thus prevent energy losses, an electronic restart lockout is activated for a specific period each time the burner is switched off. The burner anti-cycling time is only active for the heating mode. Switching on domestic hot water mode during the burner anti-cycling time has no effect.

You can use diagnostics code **d.02** to set the maximum burner anti-cycling time (factory setting: 20 min.).

T_{Flow} (target) °C	Set maximum burner anti-cycling time min						
	1	**5**	**10**	**15**	**20**	**25**	**30**
30	2.0	4.0	8.5	12.5	16.5	20.5	25.0
35	2.0	4.0	7.5	11.0	15.0	18.5	22.0
40	2.0	3.5	6.5	10.0	13.0	16.5	19.5
45	2.0	3.0	6.0	8.5	11.5	14.0	17.0
50	2.0	3.0	5.0	7.5	9.5	12.0	14.0
55	2.0	2.5	4.5	6.0	8.0	10.0	11.5
60	2.0	2.0	3.5	5.0	6.0	7.5	9.0
65	2.0	1.5	2.5	3.5	4.5	5.5	6.5
70	2.0	1.5	2.0	2.5	2.5	3.0	3.5
75	2.0	1.0	1.0	1.0	1.0	1.0	1.0

T_{Flow} (target) °C	Set maximum burner anti-cycling time min					
	35	**40**	**45**	**50**	**55**	**60**
30	29.0	33.0	37.0	41.0	45.0	49.5
35	25.5	29.5	33.0	36.5	40.5	44.0
40	22.5	26.0	29.0	32.0	35.5	38.5
45	19.5	22.5	25.0	27.5	30.5	33.0

T_{Flow} (target) °C	Set maximum burner anti-cycling time min					
	35	40	45	50	55	60
50	16.5	18.5	21.0	23.5	25.5	28.0
55	13.5	15.0	17.0	19.0	20.5	22.5
60	10.5	11.5	13.0	14.5	15.5	17.0
65	7.0	8.0	9.0	10.0	11.0	11.5
70	4.0	4.5	5.0	5.5	6.0	6.5
75	1.0	1.0	1.0	1.0	1.0	1.0

8.1.2 Setting the pump output

8.1.2.1 Pump mode setting

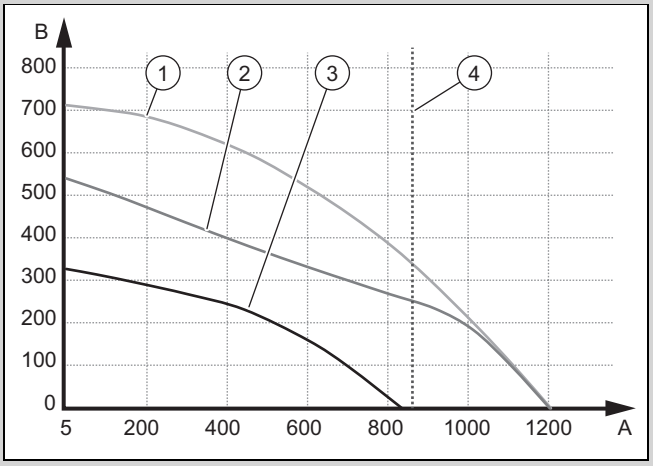
The product is equipped with a stage-controlled high-efficiency pump. In the automatic operating mode (**d.14** = 0), the pump stage is regulated in such a way that a constantly available pressure is guaranteed.

If required, you can manually set the pump mode to five fixed, selectable stages based on the maximum possible output. This switches the speed regulation off.

► To convert the pump output, change **d.14** to the desired value.
Diagnostics codes (→ Page 31)

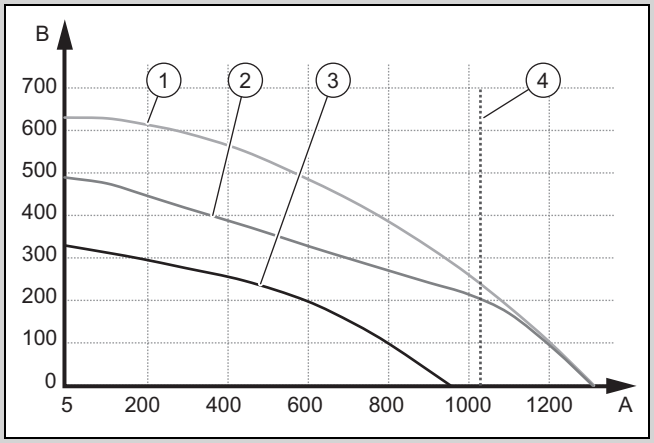
8.1.2.2 Pump curve

Validity: vintomiX P18/24-AS/1 (H-UA)



1 Max. pump speed, bypass valve closed
2 Max. pump speed, bypass valve opened by 3/4 rotation (factory setting for the bypass valve)
3 Min. pump speed, bypass valve opened by 3/4 rotation (factory setting for the bypass valve)
4 Qmax (ΔT = 20 °C)
A Installation volume flow in l/h
B Remaining pump head in hPa (mbar)

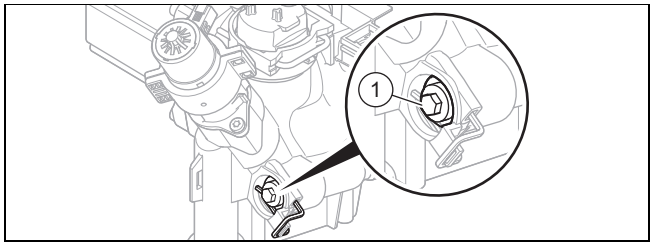
Validity: vintomiX P24/28-AS/1 (H-UA)



1 Max. pump speed, bypass valve closed
2 Max. pump speed, bypass valve opened by 3/4 rotation (factory setting for the bypass valve)
3 Min. pump speed, bypass valve opened by 3/4 rotation (factory setting for the bypass valve)
4 Qmax (ΔT = 20 °C)
A Installation volume flow in l/h
B Remaining pump head in hPa (mbar)

8.1.3 Setting the bypass valve

1. Remove the front casing.
2. Hinge the electronics box downwards.



3. Regulate the pressure using the adjusting screw **(1)**.

Position of the adjusting screw	Pressure	Notes/application
Right-hand stop (turned all the way down)	0.035 MPa (0.350 bar)	If the radiators do not heat up sufficiently at the factory setting. In this case, you must set the pump to the maximum speed.
3/4 revolution anti-clockwise	0.025 MPa (0.250 bar)	Factory setting
Three further anti-clockwise rotations starting from the mid-position	0.017 MPa (0.170 bar)	If noises occur at radiators or radiator valves.

4. Hinge the electronics box upwards.
5. Install the front casing. (→ Page 17)

8.1.4 Setting the heating and domestic hot water temperature

Condition: If installing a control is not intended

- ► Set the desired heating flow and domestic hot water temperature on the product (→ Operating instructions for the product).

Condition: If installing a control is intended

- ► Set the heating flow and domestic hot water temperature on the product to the relevant maximum value (→ Operating instructions for the product).
- ► Connect the control to the product.
- ► Set the desired heating flow and domestic hot water temperature on the control (→ Operating instructions for the control).

8.1.5 Domestic hot water

8.1.5.1 Descaling the water

Scale deposition increases as the water temperature increases.

- ► Descale the water as required.

9 Handing over to the end user

- ► When you have finished the installation, affix the enclosed sticker (which requests that the user reads the instructions) to the front of the product in the end user's language.
- ► Explain to the end user how the safety devices work and where they are located.
- ► Inform the end user how to handle the product.
- ► In particular, draw attention to the safety warnings that the end user must follow.
- ► Inform the end user that they must have the product maintained in accordance with the specified intervals.
- ► Pass all of the instructions and documentation for the product to the end user for safe-keeping.
- ► Inform the end user about measures taken to ensure the combustion air supply and flue system, and instruct the end user that he must not make any changes.
- ► Inform the end user that they must not store or use explosive or highly flammable substances (such as petrol or paint) in the product's installation room.

10 Inspection and maintenance

- ► Adhere to the minimum inspection and maintenance intervals.
- ► Carry out maintenance work on the product at an earlier point if the results of the inspection that was carried out during previous maintenance make this necessary.

10.1 Checking and setting the CO_2 content

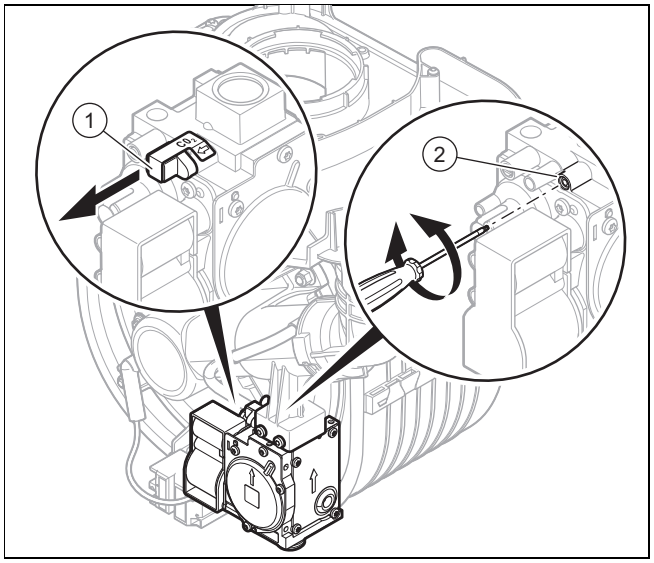
Note

Only a qualified competent person is authorised to implement the CO_2 setting on the gas valve assembly.

Each destroyed tamper-proof seal must be replaced with a new tamper-proof seal. The CO_2 adjusting screw must be sealed.

Never modify the factory setting of the gas pressure regulator of the gas valve assembly.

1. Check the CO_2 content. (→ Page 17)
   ▽ If the value is not correct, set the CO_2 content.



2. Remove the sticker.
3. Remove the covering cap **(1)**.
4. Turn the screw **(2)** to set the CO_2 content (value with front casing removed).
   ◁ To increase the CO_2 content: Turn anti-clockwise
   ◁ To decrease the CO_2 content: Turn clockwise

Note

For natural gas only: Only perform the adjustment in small increments of a 1/8 turn and wait approx. one minute after each adjustment until the value stabilises.

For liquefied petroleum gas only: Only perform the adjustment in extremely small increments (approx. 1/16 turn), and wait approx. one minute after each adjustment until the value stabilises.

5. Compare the measured value with the corresponding value in the table.

Natural gas H – setting the CO_2 content

	Ukraine	
	Natural gas	
	H	
	Removed front casing	Fitted front casing
CO_2 at full load	9.0 ±0.3 %	9.2 ±0.3 %
Set for Wobbe index W_o	14.09 kW·h/m³	14.09 kW·h/m³
O_2 at full load	4.9 ±0.5 vol. %	4.5 ±0.5 vol. %
CO at full load	≤ 250 ppm	≤ 250 ppm
CO/CO_2	≤ 0.0027	≤ 0.0027

Liquefied petroleum gas P – setting the CO_2 content

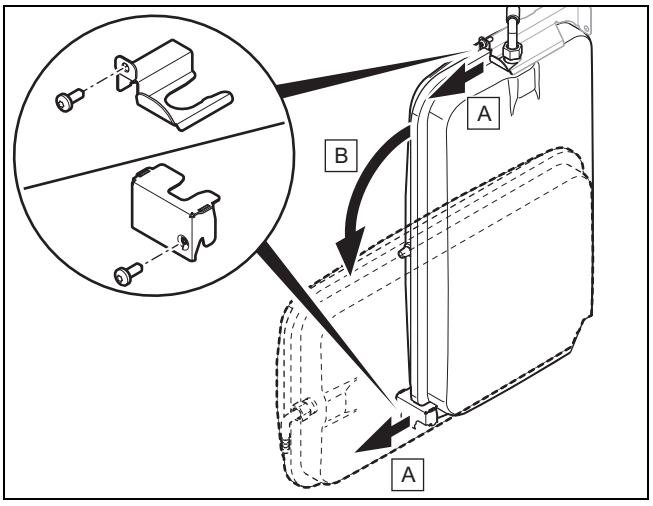
	Ukraine	
	Liquefied petroleum gas	
	P	
	Removed front casing	Fitted front casing
CO_2 at full load	10.4 ±0.3 %	10.6 ±0.3 %
Set for Wobbe index W_o	21.34 kW·h/m³	21.34 kW·h/m³
O_2 at full load	5.4 ±0.4 vol. %	5.1 ±0.4 vol. %
CO at full load	≤ 250 ppm	≤ 250 ppm
CO/CO_2	≤ 0.0024	≤ 0.0024

▽ If the setting is not in the specified adjustment range, do not start up the product.

► Contact customer service.

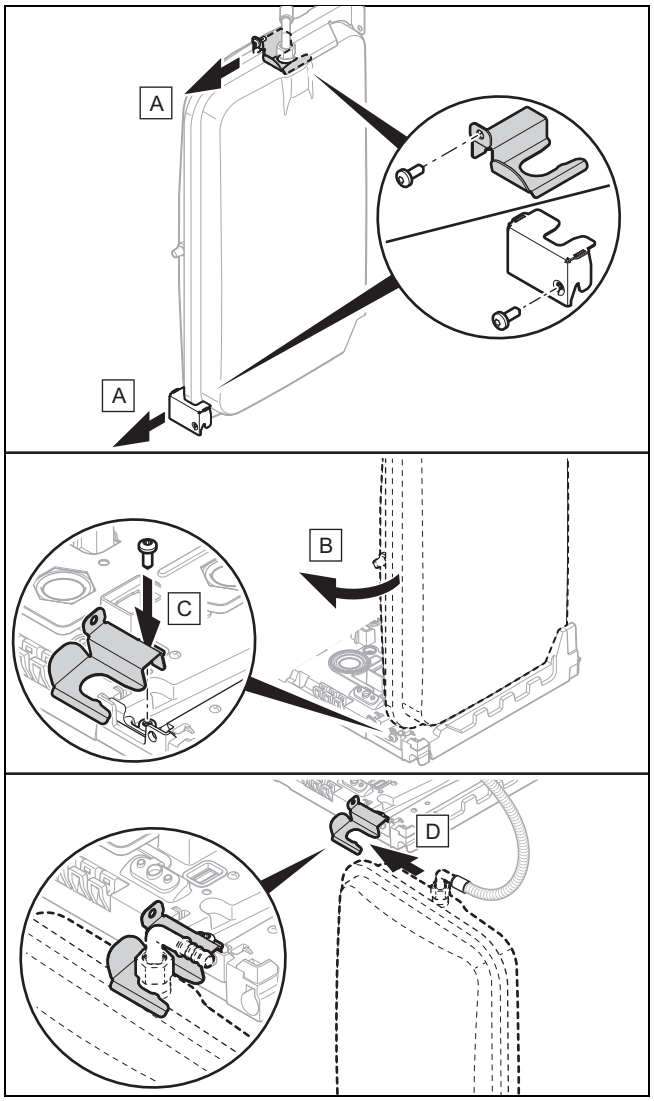
6. Check whether the requirements regarding air pollution control and/or CO have been complied with.
7. Refit the covering cap **(1)**.
8. Install the front casing.

10.2 Moving the expansion vessel to the maintenance position on the combustion block



► Depending on the components on which you want to work, move the expansion vessel to the maintenance position.

10.3 Moving the expansion vessel to the maintenance position on the hydraulic block



► Depending on the components on which you want to work, move the expansion vessel to the maintenance position.

10.4 Cleaning/checking the components

Carry out the preparatory work before cleaning/checking any of the components.

► Prepare the cleaning and inspection work. (→ Page 21)

Carry out the work required to finish the task after cleaning/checking any of the components.

► Complete the cleaning and inspection work. (→ Page 27)

10.4.1 Preparing the cleaning and inspection work

1. Drain the product when you are carrying out work on hydraulic components. (→ Page 28)
2. Temporarily decommission the product. (→ Page 30)
   – Take all necessary precautions to ensure that it cannot be switched back on again.
3. Disconnect the product from the mains power.
4. Close the service valves of the product.
5. Remove the front casing.
6. Hinge the electronics box downwards.
7. Protect the electrical components (e.g. the electronics box) from spraying water.

8. Use only new seals.

10.4.2 Removing the compact thermal module

Danger!
Risk of death and risk of material damage caused by hot flue gas.

The seal, insulating mat and self-locking nuts on the burner flange must not be damaged. Otherwise, hot flue gases may escape and cause personal injury and material damage.

- ► Replace the seal each time you open the burner flange.
- ► Replace the self-locking nuts on the burner flange each time you open the burner flange.
- ► If the insulating mat on the burner flange or on the back panel of the heat exchanger shows signs of damage, replace the insulating mat.

Note
The compact thermal module consists of four main components:

– Gas valve assembly,

– Venturi,

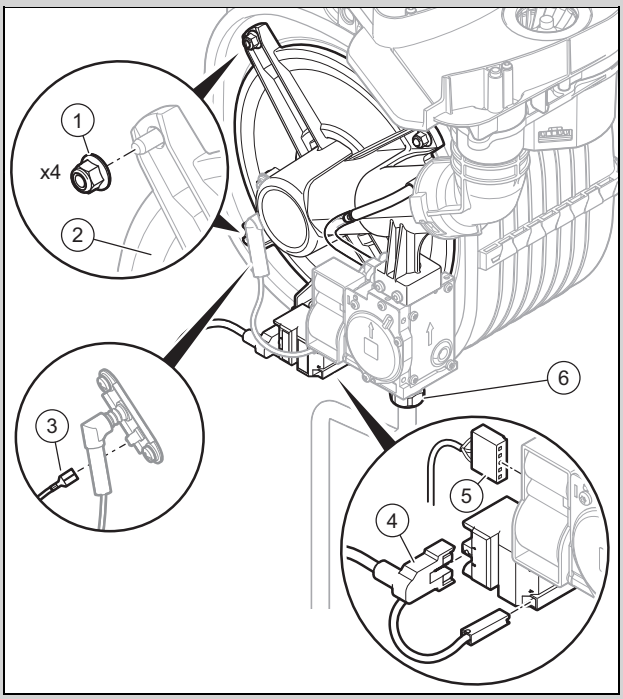
– Restrictor for the reference pressure pipe (28 kW only),

– Burner flange,

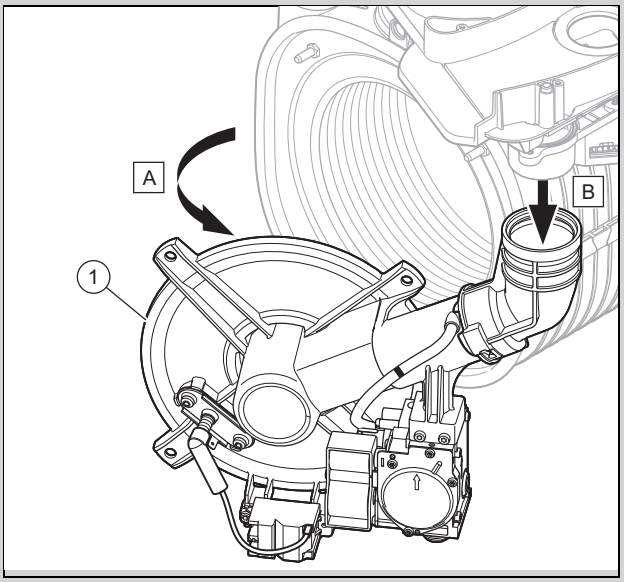
– Premix burner.

1. Never remove the venturi from the burner flange.

Validity: vintomiX P24/28-AS/1 (H-UA)

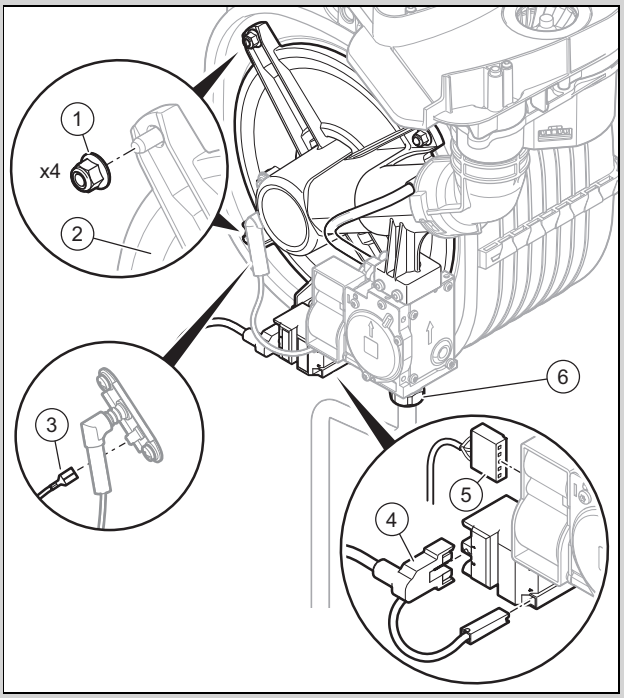


- ► Remove the plug **(5)** from the gas valve assembly.
- ► Remove the plug **(4)** from the ignition device.
- ► Remove the earth cable **(3)** from the ignition electrode.
- ► Unscrew the union nut **(6)** from the gas valve assembly.
- ► Undo the four nuts **(1)** on the burner flange **(2)**.

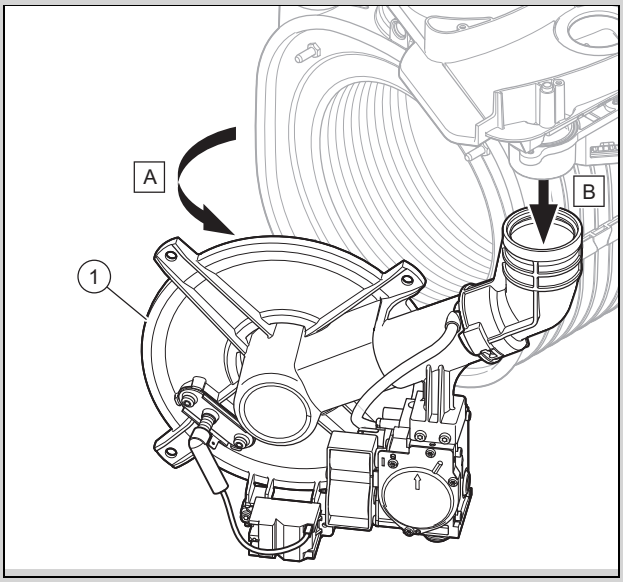


- ► Remove the entire compact thermal module **(1)** from the heat exchanger.

Validity: vintomiX P18/24-AS/1 (H-UA)



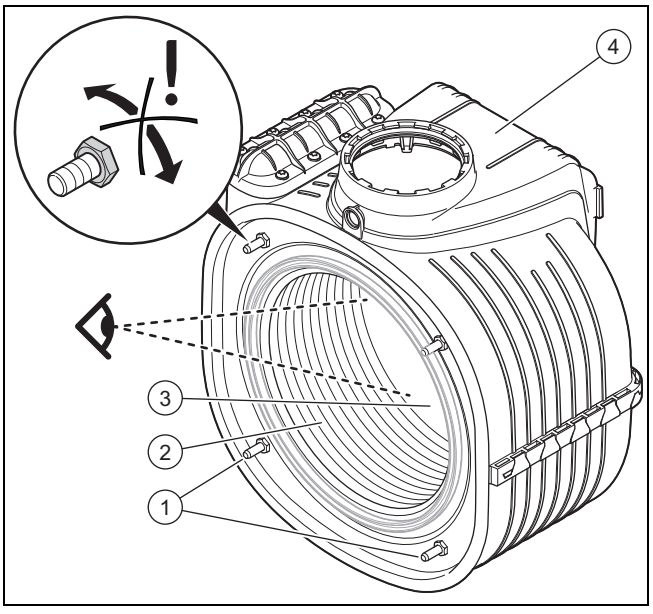
- ► Remove the plug **(5)** from the gas valve assembly.
- ► Remove the plug **(4)** from the ignition device.
- ► Remove the earth cable **(3)** from the ignition electrode.
- ► Unscrew the union nut **(6)** from the gas valve assembly.
- ► Undo the four nuts **(1)** on the burner flange **(2)**.



► Remove the entire compact thermal module **(1)** from the heat exchanger.

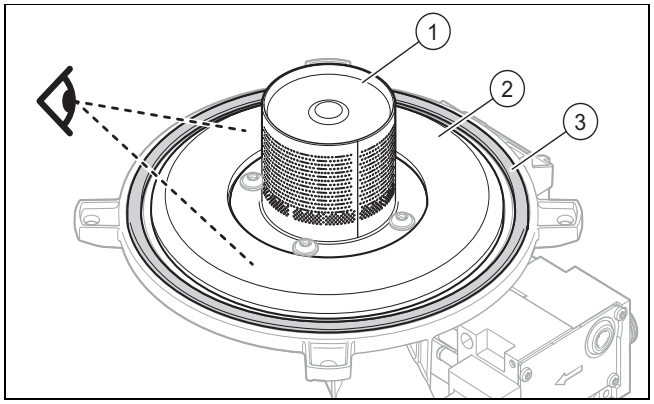
2. Check the burner and burner insulating mat for damage. (→ Page 23)
3. Check the heat exchanger for damage.
   Result:
   Heat exchanger damaged
   ► Replace the heat exchanger (→ "Heat exchanger" spare parts instructions).
4. Check the heat exchanger for dirt.
   Result:
   Heat exchanger dirty
   ► Clean the heat exchanger. (→ Page 23)
5. Check the insulating mat on the heat exchanger for damage.
   Result:
   Insulating mat damaged
   ► Replace the insulating mat (→ Spare parts instructions for the heat exchanger insulating mat).

10.4.3 Cleaning the heat exchanger



1. Clean the heating coil **(2)** on the heat exchanger **(4)** using water or, if required, vinegar (to a maximum of 5% acid).
   – Cleaning agent reaction time: 20 min
2. Use a plastic brush or sufficiently strong jet of water to remove the loosened dirt (for example, by using a spray bottle with ascending pipe). In doing so, ensure that no spraying water reaches the other components. Do not point the jet of water directly at the insulating mat **(3)** on the rear of the heat exchanger.
   ◁ The water flows out of the heat exchanger through the condensate siphon.
3. Check the insulating mat **(3)** on the burner flange for damage.
   Result:
   Insulating mat damaged
   ► Replace the insulating mat (→ Spare parts instructions for the heat exchanger insulating mat).

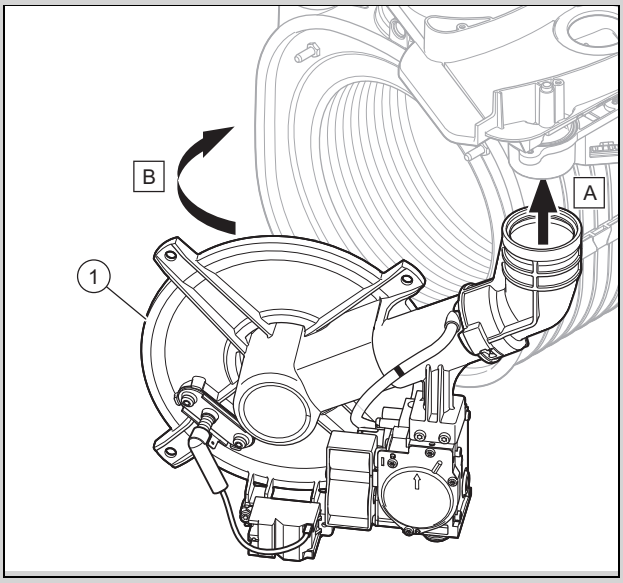
10.4.4 Checking the burner and burner insulating mat for damage



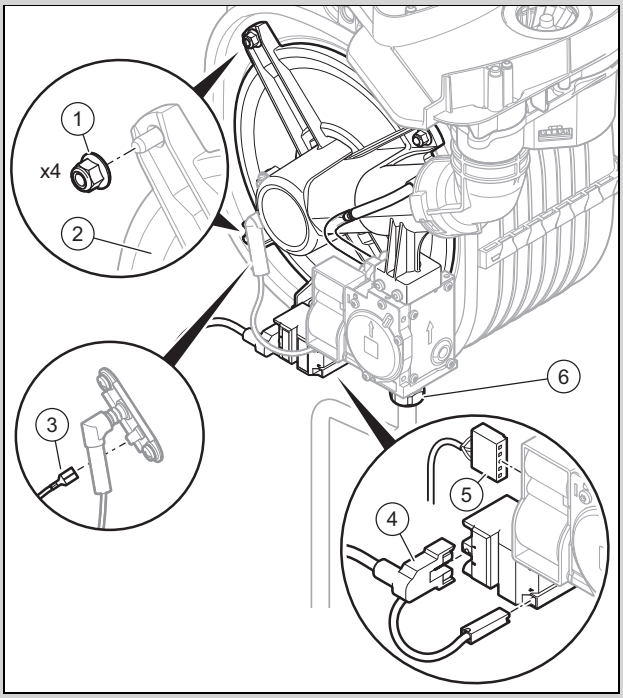
1. Check the surface of the burner **(1)** for damage.
   Result:
   Burner damaged
   ► Replace the burner.
2. Fit a new burner flange seal **(3)**.
3. Check the insulating mat **(2)** on the burner flange for damage.
   Result:
   Insulating mat damaged
   ► Replace the insulating mat (→ Spare parts instructions for the burner flange insulating mat).

10.4.5 Installing the compact thermal module

Validity: vintomiX P24/28-AS/1 (H-UA)

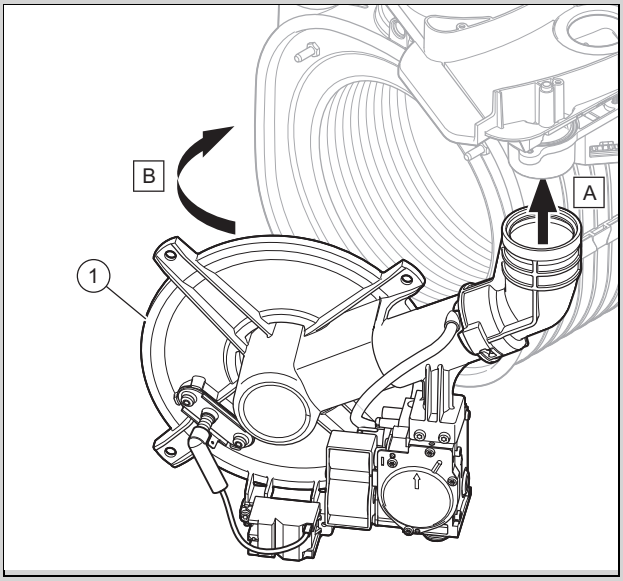


- ► Connect the air intake pipe to the intake stub.
- ► Connect the compact thermal module **(1)** to the heat exchanger.

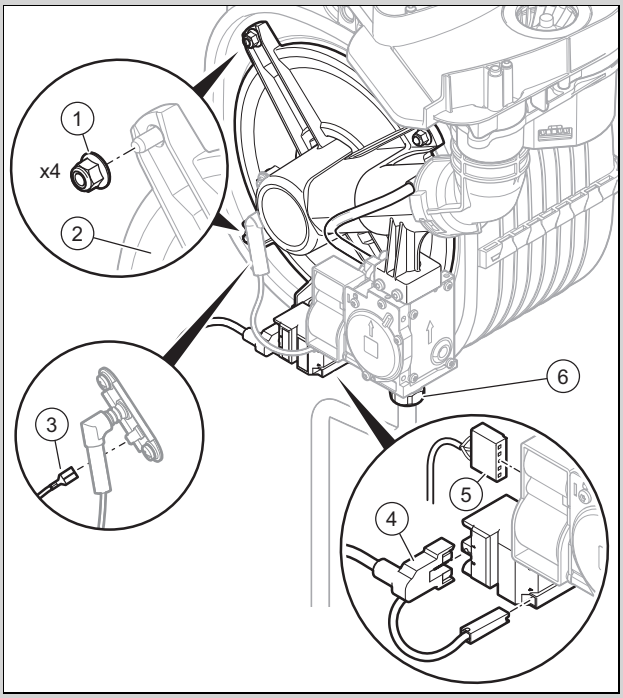


- ► Tighten the four nuts **(1)** in a cross-wise pattern until the burner flange fits closely and uniformly onto the mating surfaces.
  - – Tightening torque: 6 Nm
- ► Reconnect the earth cable **(3)** to the ignition electrode.
- ► Reconnect the plug **(5)** to the gas valve assembly.
- ► Reconnect the plug **(4)** to the ignition device.
- ► Screw the union nut **(6)** back onto the gas valve assembly with a new seal.

Validity: vintomiX P18/24-AS/1 (H-UA)



- ► Connect the air intake pipe to the intake stub.
- ► Connect the compact thermal module **(1)** to the heat exchanger.

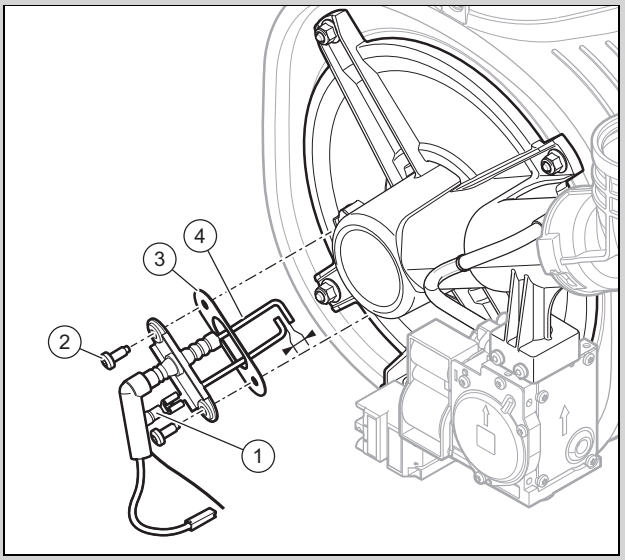


- ► Tighten the four nuts **(1)** in a cross-wise pattern until the burner flange fits closely and uniformly onto the mating surfaces.
  - – Tightening torque: 6 Nm
- ► Reconnect the earth cable **(3)** to the ignition electrode.
- ► Reconnect the plug **(5)** to the gas valve assembly.
- ► Reconnect the plug **(4)** to the ignition device.
- ► Screw the union nut **(6)** back onto the gas valve assembly with a new seal.

1. Connect the gas pipe using a new seal.
2. Open the gas stopcock.
3. Check the product for tightness. (→ Page 18)
4. Check the gas connection pressure/gas flow pressure. (→ Page 16)

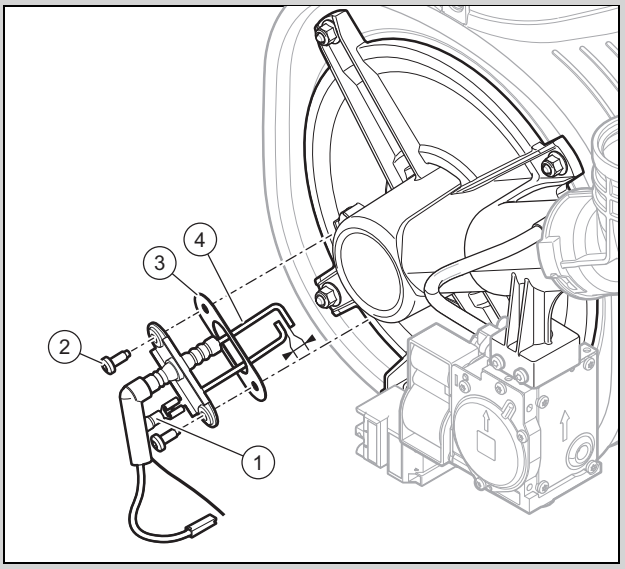
10.4.6 Checking the ignition electrode

Validity: vintomiX P24/28-AS/1 (H-UA)



- ► Remove the earth cable **(1)**.
- ► Remove the fixing screws **(2)**.
- ► Carefully remove the electrode **(4)** from the combustion chamber.

Validity: vintomiX P18/24-AS/1 (H-UA)

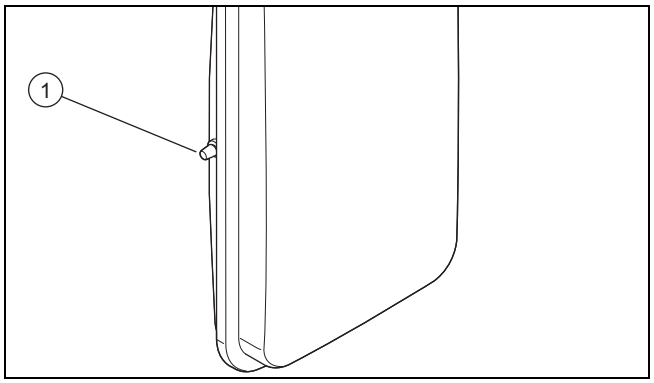


- ► Remove the earth cable **(1)**.
- ► Remove the fixing screws **(2)**.
- ► Carefully remove the electrode **(4)** from the combustion chamber.

1. Ensure that the electrode ends are undamaged.
2. Clean and check the gap between the electrodes.
   – Clearance for the ignition electrodes: 4.5 ± 0.5 mm
3. Replace the seal **(3)**.
4. Install the electrode. To do this, proceed in reverse order.

10.4.7 Checking the pre-charge pressure of the expansion vessel

1. Drain the product. (→ Page 28)



2. Check the pre-charge pressure of the expansion vessel at the expansion vessel valve **(1)**.
   – Working materials: U tube manometer
   – Working materials: Digital pressure gauge

   Result 1:

   ≥ 0.075 MPa (≥ 0.750 bar)

   The pre-charge pressure is in the permissible range.

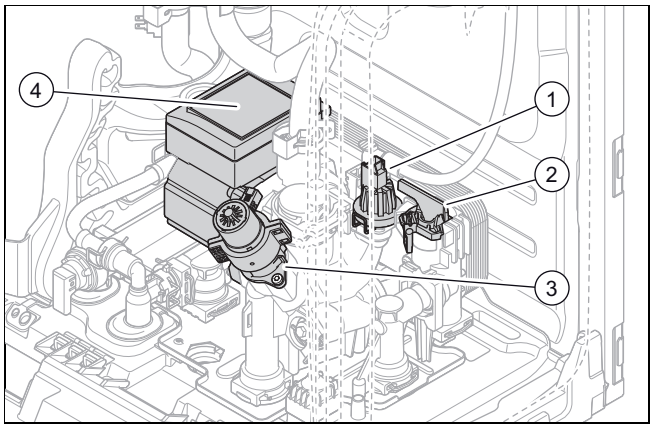
   Result 2:

   < 0.075 MPa (< 0.750 bar)

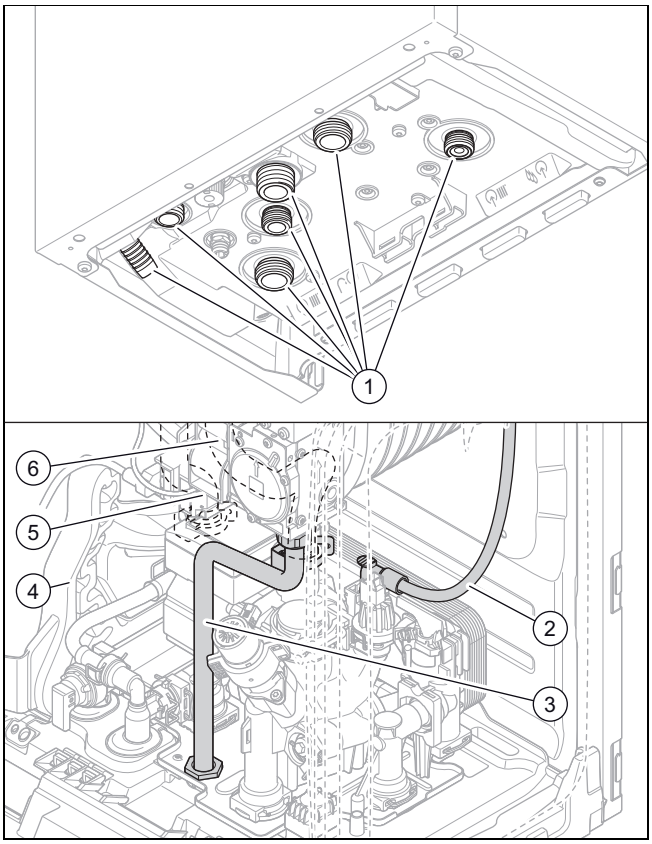
   - ► Fill the expansion vessel in accordance with the static height of the heating installation; ideally with nitrogen, otherwise with air. Ensure that the drain valve is open when topping up.
3. If water escapes from the valve of the expansion vessel, replace the expansion vessel.
4. Fill the heating installation. (→ Page 15)
5. Purge the heating installation. (→ Page 16)

10.4.8 Cleaning the heating filter

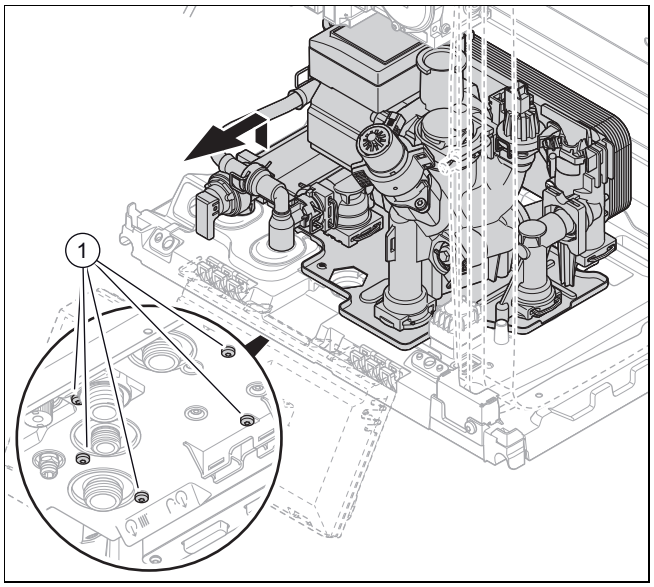
1. Drain the product on the heating side.
2. Drain the product on the domestic hot water side.
3. Hinge the electronics box forwards.



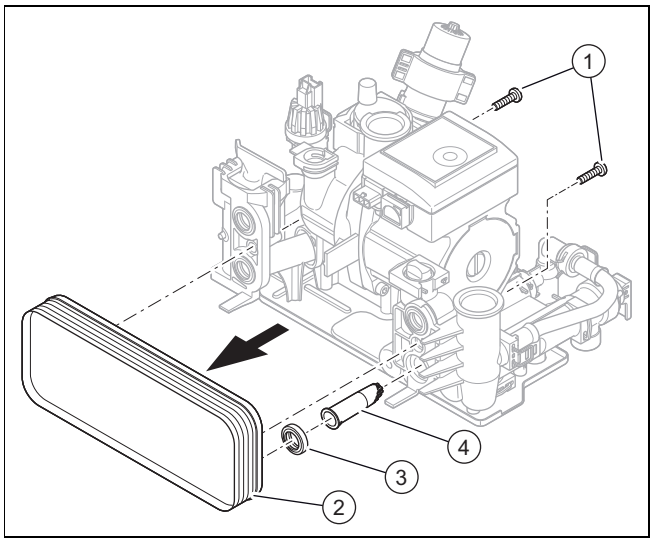
4. Remove the plug from the pressure sensor **(1)**.
5. Remove the plug from the domestic hot water volume flow sensor **(2)**.
6. Remove the plug from the 3-port diverter valve **(3)**.
7. Remove the plug from the pump **(4)**.



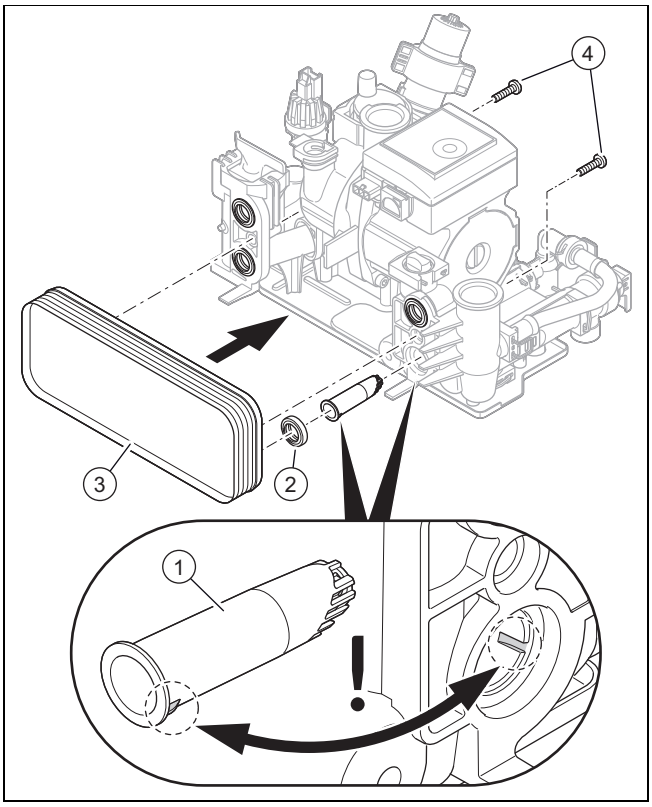
8. Unscrew the water and gas connections **(1)**.
9. Remove the flexible hose **(2)** from the hydraulic block without unscrewing the connection at the expansion vessel.
10. Remove the gas spigots **(3)**.
11. Remove the condensate siphon **(4)**. (→ Page 27)
12. Undo the heating flow pipe **(5)** from the hydraulic block by moving it vertically in the heat exchanger.
13. Undo the heating flow pipe from the heat exchanger.
14. Install the heating flow pipe in the product and the heating flow temperature sensor without changing its position.
15. Undo the heating return pipe **(6)** from the hydraulic block by moving it vertically in the heat exchanger.
16. Install the heating return pipe in the product and the heating return temperature sensor without changing its position.



17. Remove the five fixing screws **(1)** from the hydraulic block.
18. Remove the hydraulic block from the product.

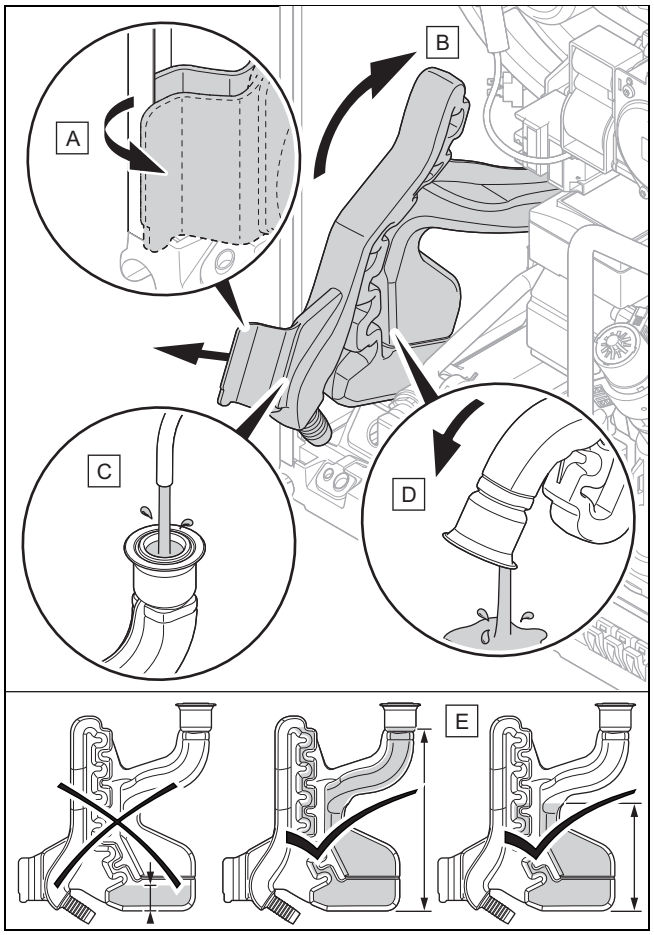


19. Remove the two fixing screws **(1)** from the domestic hot water plate heat exchanger.
20. Remove the domestic hot water plate heat exchanger **(2)**.
21. Remove the seal **(3)**.
22. Remove the heating filter **(4)** from its bracket.
23. Rinse the heating filter under running water, against the direction of flow.
24. If the strainer is damaged or it can no longer be cleaned sufficiently, you must replace the strainer.



25. Position the heating filter **(1)** using the centring system.
26. Reinsert the heating filter into its bracket in the hydraulic block.
27. Use only new seals **(2)**.
28. Install the domestic hot water plate heat exchanger **(3)** using the centring system on the hydraulic block.
29. Attach the two fixing screws **(4)**.
30. To reinstall the hydraulic block in the product, proceed in reverse order to how it was removed.
31. Attach the five fixing screws.
    – Tightening torque: 2 Nm
32. To connect the water components to the hydraulic block, proceed in reverse order to how they were removed.
33. Connect the plug to the pressure sensor.
34. Connect the plug to the domestic hot water volume flow sensor.
35. Connect the plug to the 3-port diverter valve.
36. Connect the plug to the pump.

10.4.9 Cleaning the condensate siphon

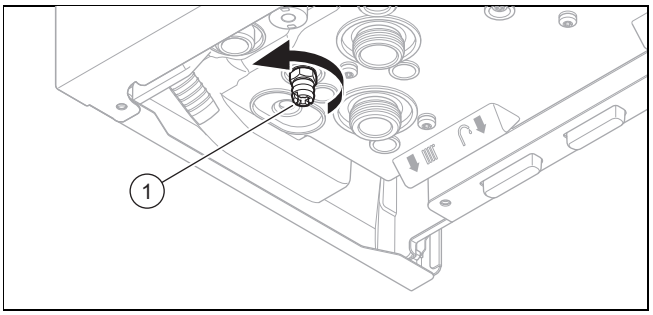


1. Disconnect the condensate discharge hose from the lower section of the siphon.
2. Clean the condensate siphon as shown in the figure → **(A)** to **(D)**.
3. Check whether the seal is still present on the heating heat exchanger.
   ▽ If the seal is no longer present or is damaged, replace it.
4. Fill the condensate siphon **(E)**.
5. Reattach the condensate siphon.
6. Connect the condensate discharge hose.

10.4.10 Completing cleaning and inspection work

1. Hinge the electronics box upwards.
2. Install the front casing. (→ Page 17)
3. Establish the power supply if this has not yet been done.
4. Open all service valves and the gas stopcock if this has not yet been done.
5. Switch the product back on if this has not yet been done. (→ Page 15)
6. Check the product for tightness. (→ Page 18)

10.5 Draining the product



1. Close the service valves of the product.
2. Remove the front casing.
3. **Alternatives 1:**
   ► Place a container under the drain cock **(1)**.
3. **Alternatives 2:**
   ► Connect the drain cock **(1)** to the sewage system.
4. Unscrew the automatic air vent cap from the internal pump.
5. Start up the product.
6. Open the drain cock **(1)**.
7. Start check programme **P.08**. (→ Page 14)
   ◁ The product (heating circuit) is drained.
8. Close the drain cock as soon as the product has drained.
9. Turn the cap on the automatic air vent to close it.
10. Install the front casing. (→ Page 17)
11. Temporarily decommission the product. (→ Page 30)

10.6 Completing inspection and maintenance work

► Check the gas connection pressure/gas flow pressure. (→ Page 16)
► Check the CO_2 content. (→ Page 17)
► Check the product for tightness. (→ Page 18)
► Log the inspection/maintenance work.

11 Troubleshooting

11.1 Querying the fault memory

1. Call up the installer level. (→ Page 14)
2. Use ⊕ to select the fault memory **F.** menu.
3. Confirm by pressing ✓.
4. Use ⊖ or ⊕ to scroll through the last 10 faults in the cylinder.
   ◁ Number **01** in the sequence corresponds to the fault that occurred last.
   ◁ The sequence position and fault number are displayed alternately.
5. Press ← to exit the fault memory.
6. Exit the installer level. (→ Page 14)

11.2 Eliminating faults

Active faults appear in the display's basic display.

► Call up the fault memory to find out which faults occurred most recently on the product. (→ Page 28)
► Use the table in the appendix to eliminate the faults. Fault codes (→ Page 34)
► Press and hold the ⏻ button for longer than three seconds to reset the product (maximum five times).
   ◁ **rE** is shown in the display.
   ▽ **rE** flashes rapidly after five reset attempts.
      ► Press ✓ to stop the flashing and to restart the product.
► If you are unable to eliminate the fault and the fault recurs despite several reset attempts, contact Customer Service.

11.3 Resetting parameters to factory settings

1. Note down the installation-specific settings and the set values for **d.50** and **d.51**. (→ Page 14)
2. Set diagnostics code **d.96** to **1**. (→ Page 14)
   ◁ Parameters are restored to the factory settings.
3. Check the installation-specific settings and the set values for **d.50** and **d.51**, and adjust these, if required.
4. Exit the installer level. (→ Page 14)

11.4 Replacing defective components

Carry out the preparatory work before replacing any of the components.

► Prepare the repair work. (→ Page 28)

Carry out the completion work after replacing any of the components.

► Complete the repair work. (→ Page 29)

11.4.1 Procuring spare parts

The original components of the product were also certified by the manufacturer as part of the declaration of conformity. If you use other, non-certified or unauthorised parts during maintenance or repair work, this may result in the product no longer meeting the applicable standards, thereby voiding the conformity of the product.

We strongly recommend that you use original spare parts from the manufacturer as this guarantees fault-free and safe operation of the product. To receive information about the available original spare parts, contact the contact address provided on the back page of these instructions.

► If you require spare parts for maintenance or repair work, use only the spare parts that are permitted for the product.

11.4.2 Preparing the repair work

1. Drain the product when you are carrying out work on hydraulic components. (→ Page 28)
2. Temporarily decommission the product. (→ Page 30)

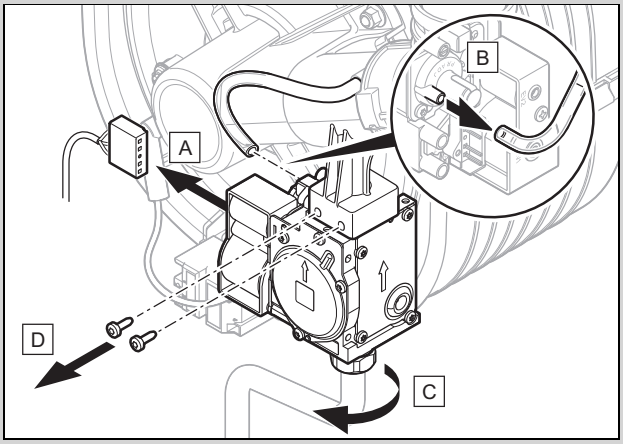
– Take all necessary precautions to ensure that it cannot be switched back on again.

3. Disconnect the product from the mains power.
4. Close the service valves of the product.
5. Remove the front casing.
6. Hinge the electronics box downwards.
7. Protect the electrical components (e.g. the electronics box) from spraying water.
8. Use only new seals.

11.4.3 Replacing the gas valve assembly

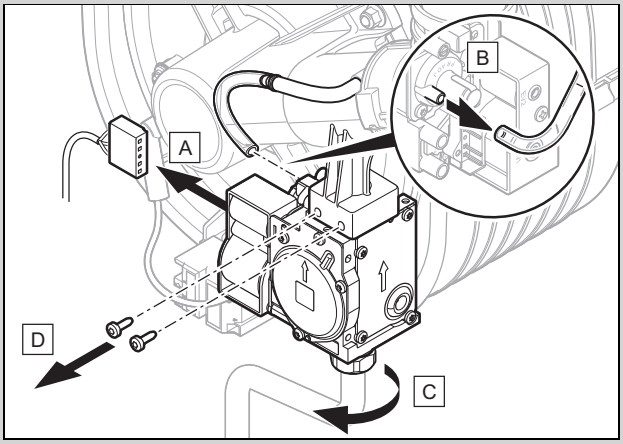
Note
Each destroyed tamper-proof seal must be replaced with a new tamper-proof seal.

Validity: vintomiX P18/24-AS/1 (H-UA)



► Remove the gas valve assembly as shown in the figure.

Validity: vintomiX P24/28-AS/1 (H-UA)

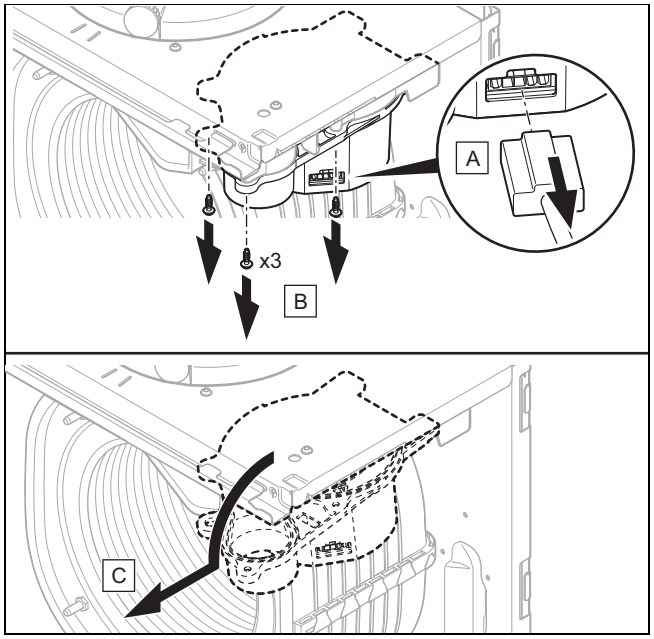


► Remove the gas valve assembly as shown in the figure.

1. Install the new gas valve assembly in reverse order.
2. Attach the two screws to the gas valve assembly.
   – Tightening torque: 2 Nm
3. When restarting the product, carry out a leak-tightness test, check the CO_2 content and, if required, adjust this.

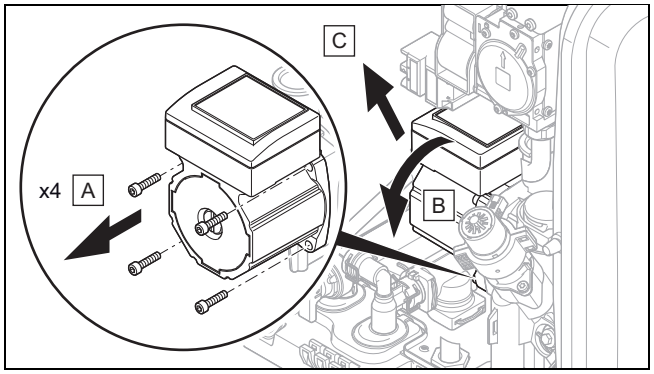
11.4.4 Replacing the fan

1. Move the expansion vessel to the maintenance position on the combustion block. (→ Page 21)
2. Remove the compact thermal module.



3. Remove the fan as shown in the figure.
4. Reinstall the new fan in the reverse order.
5. Install the compact thermal module.
6. Reinstall the expansion vessel.
7. When restarting the product, check the CO_2 content and, if required, adjust this.

11.4.5 Replacing the pump head



1. Remove the pump head as shown in the figure.
2. Install the new pump head in reverse order.

11.4.6 Completing repair work

1. Hinge the electronics box upwards.
2. Install the front casing. (→ Page 17)
3. Establish the power supply if this has not yet been done.
4. Open all service valves and the gas stopcock if this has not yet been done.
5. Switch the product back on if this has not yet been done. (→ Page 15)
6. Check the product for tightness. (→ Page 18)

12 Decommissioning

12.1 Temporary decommissioning

1. Press the on/off button ⏻.
   ◁ The display shows **oF** and then goes out.
2. Close the gas stopcock.
3. Disconnect the product from the mains power.

12.2 Permanently decommissioning

1. Drain the product. (→ Page 28)
2. Press the on/off button ⏻.
   ◁ The display shows **oF** and then goes out.
3. Disconnect the product from the mains power.
4. Close the gas stopcock.
5. Close the stopcock on the cold water connection.

13 Disposing of the packaging

- ► Dispose of the packaging correctly.
- ► Observe all relevant regulations.

14 Regulations on packaging, transportation and storage

The products are delivered in the manufacturer's packaging.

The products are transported by road, by sea and by rail in accordance with the goods transport regulations that apply to the relative means of transport. During transportation, it is absolutely essential for the product to be firmly secured against moving horizontally and vertically.

Products that are not installed are stored in the manufacturer's packaging. The products must be stored under standard conditions in closed rooms that have natural air circulation (non-aggressive and dust-free environment, temperature gradients of -10 °C to +37 °C, up to 80% air humidity, without shocks or vibrations).

15 Duration of storage

– Duration of storage: 2 years from production date

16 Service life

If the regulations on transportation, storage, installation and operation are observed, the product's expected service life is 10 years from the date of installation.

17 Customer service

Контактна інформація нашої сервісної служби знаходиться за адресою, вказаною на останній сторінці та за адресою www.demirdokum.com.

Appendix

A Diagnostics codes

Note
Since the code table is used for various products, some codes may not be visible for the product in question.

Code	Parameter	Values		Unit	Increment, select, explanation	Factory setting
		Min.	Max.			
d.00	Maximum heat output is fixed or adjusts automatically	–	–	kW	The maximum heating output varies depending on the product. → Section "Technical data" **Au** = Automatic: Product automatically adjusts the maximum output to the current system demand	**Au** = Automatic
d.01	Pump overrun time in heating mode	1	60	min	Increment = 1	5
d.02	Maximum burner anti-cycling time in heating mode	2	60	min	Increment = 1	20
d.05	Determined target heating flow temperature	Current value		°C	–	–
d.06	Target domestic hot water temperature	Current value		°C	–	–
d.08	Status of the 230 V room thermostat	Current value		–	**OF** = Open (0 V, no heating mode) **on** = Closed (230 V, heating mode)	–
d.09	Target heating flow temperature that is set on the eBUS room thermostat	Current value		°C	–	–
d.10	Status of the internal pump in the heating circuit	Current value		–	**OF** = Pump off **on** = Pump on	–
d.11	Status of the heating circuit's shunt pump	Current value		–	Applies to: Installed heating circuit shunt pump (optional) **OF** = Pump off **on** = Pump on	–
d.13	Status of the domestic hot water circuit's circulation pump	Current value		–	Applies to: Installed domestic hot water circuit circulation pump (optional) **OF** = Pump off **on** = Pump on	–
d.14	Operating mode of the modulating pump	0	5	–	0 = Speed-regulated (automatic pump operation in levels 1 to 5) 1 = PWM = 55 % 2 = PWM = 65 % 3 = PWM = 75 % 4 = PWM = 85 % 5 = PWM = 95 % 1; 2; 3; 4; 5 = Fixed rotational speeds → Section "Setting the pump output"	0
d.15	Pump speed	Current value		%	**Hi** = 100%	–
d.16	Status of the 24 V room thermostat (ON/OFF)	Current value		–	**OF** = Heating off **on** = Heating on or eBUS control used	–
d.17	Heating control	–	–	–	0 = Flow temperature 1 = Return temperature (adjustment for underfloor heating. If you have activated the return temperature control, the automatic heating output determination function is not active.)	0
d.18	Pump overrun operating mode	1	3	–	1 = Comfort (continuously operating pump) 3 = Eco (pump runs intermittently)	3
d.20	Maximum target domestic hot water temperature	50	55	°C	Increment = 1	55

Code	Parameter	Values		Unit	Increment, select, explanation	Factory setting
		Min.	Max.			
d.21	Status of the warm start for domestic hot water	Current value		–	This function is displayed by the warm start is not actually available for this product. **OF** is permanently displayed since the function is deactivated.**on** = function is activated and available	–
d.22	Status of the DHW demand	Current value		–	**OF** = No current requirement **on** = Current requirement	–
d.23	Status of the heat demand	Current value		–	**OF** = Heating off (Summer mode) **on** = Heating on	–
d.27	Function of relay 1 (multi-functional module)	1	10	–	1 = Circulation pump 2 = External pump 3 = Cylinder charging pump 4 = Extraction hood 5 = External solenoid valve 6 = Fault message 7 = Solar pump (omitted) 8 = eBUS remote control 9 = Anti-legionella pump 10 = Solar valve	1
d.28	Function of relay 2 (multi-functional module)	1	10	–		2
d.33	Fan speed target value	Current value		rpm	Fan speed = Display value x 1000	–
d.34	Value for the fan speed	Current value		rpm	Fan speed = Display value x 1000	–
d.35	3-port valve position	Current value		–	0 = Heating 40 = Mid-position (frost protection or filling) **Hi** = Domestic hot water	–
d.36	Value for the domestic hot water flow rate	Current value		l/min	–	–
d.39	Water temperature in the solar circuit	Current value		°C	The water temperature in the solar circuit is then only displayed if an optional solar set has been installed.	–
d.40	Heating flow temperature	Current value		°C	–	–
d.41	Heating return temperature	Current value		°C	–	–
d.43	Heat curve	0.2	4	K	Consult the accessory's operating instructions in order to implement this setting.	1.2
d.45	Base point of the heat curve	15	30	°C	Consult the accessory's operating instructions in order to implement this setting.	20
d.47	Outdoor temperature	°C	0	2500	–	–
d.50	Correction of the minimum fan speed	0	2500	rpm	Increment = 100 Fan speed = Display value x 1000	600 (0.6 x 1000)
d.51	Correction of the maximum fan speed	-2500	0	rpm	Increment = 100 Fan speed = Display value x 1000 (flashing)	-1000 (1.0 x 1000)
d.58	Solar circuit reheating	0	3	–	Applies to: Installed solar set (optional) 0 = Product's anti-legionella function deactivated 3 = Domestic hot water activated (min. target value 55 °C)	0
d.60	Number of blocks by the temperature cut-out (limit temperature)	Current value		–	If the value is greater than 99, the display shows the number alternately. Example using the number 1581: The display repeatedly shows the sequence 15 → 81 → __.	–
d.61	Number of unsuccessful ignitions	Current value		–		–
d.64	Average burner ignition time	Current value		s	–	–
d.65	Maximum burner ignition time	Current value		s	–	–
d.67	Remaining burner anti-cycling time (setting under d.02)	Current value		min	–	–
d.68	Number of unsuccessful ignitions at 1st attempt	Current value		–	If the value is greater than 99, the display shows the number alternately. Example using the number 1581: The display repeatedly shows the sequence 15 → 81 → __.	–
d.69	Number of unsuccessful ignitions at 2nd attempt	Current value		–		–

Code	Parameter	Values		Unit	Increment, select, explanation	Factory setting
		Min.	Max.			
d.71	Maximum target heating flow temperature	30	75	°C	Increment = 1	75
d.80	Running time in heating mode	Current value		h	Running time = Display value x 1000	–
d.81	Running time in domestic hot water mode	Current value		h	Running time = Display value x 1000	–
d.82	Number of burner ignitions in heating mode	Current value		–	Number of ignitions = Display value x 1000	–
d.83	Number of burner ignitions in domestic hot water mode	Current value		–	Number of ignitions = Display value x 1000	–
d.85	Increase in the min. output (heating and domestic hot water mode)	–	–	kW	Increment = 1	–
d.88	Flow rate limit value for ignition in domestic hot water mode	0	1	–	0 = 1.5 l/min (no delay) 1 = 3.7 l/min (2 s delay)	0
d.90	Status of the eBUS room thermostat	Current value		–	0 = Not connected 1 = Connected	–
d.91	Status DCF77	Current value		–	0 = No reception 1 = Reception OK 2 = Synchronised 3 = Valid	–
d.93	Setting the product code	0	99	–	Increment = 1 The Device Specific Number (DSN) can be found on the data plate.	–
d.94	Delete fault list	0	1	–	0 = No 1 = Yes	–
d.96	Default setting (reset)	0	1	–	0 = No 1 = Yes	–
d.149	Precise information about circulation fault **F.75**	–	–	–	If fault **F.75** occurs, read the explanation below for the relevant value of the diagnostics code in order to analyse the problem. 0 = No fault 1 = Pump blocked 2 = Electrical pump fault 3 = Pump dry run 5 = Pressure sensor fault 6 = No feedback from the pump 7 = Incorrect pump detected 8 = Flow rate at the end of the purge programme is insufficient	
d.165	Bypass valve for the siphon-filling function	0	1	–	0 = bypass valve inactive 1 = bypass valve active Value is automatically reset to 0 after four operating hours or on/off	0

B Status codes

Note
Since the code table is used for various products, some codes may not be visible for the product in question.

Code	Meaning
S.00	Heating has no heat demand. The burner is off.
S.01	The fan start-up for heating mode is activated.
S.02	The pump prerun for heating mode is activated.
S.03	The ignition for heating mode is activated.
S.04	The burner for heating mode is activated.

Code	Meaning
S.05	The pump and fan overrun for heating mode is activated.
S.06	The fan overrun for heating mode is activated.
S.07	The pump overrun for heating mode is activated.
S.08	The anti-cycling time for heating mode is activated.
S.10	The domestic hot water demand is activated.
S.11	The fan start-up for domestic hot water mode is activated.
S.13	The ignition for domestic hot water mode is activated.
S.14	The burner for domestic hot water mode is activated.
S.15	The pump and fan overrun for domestic hot water mode is activated.
S.16	The fan overrun for domestic hot water mode is activated.
S.17	The pump overrun for domestic hot water mode is activated.
S.20	The domestic hot water demand is activated.
S.21	The fan start-up for domestic hot water mode is activated.
S.23	The ignition for domestic hot water mode is activated.
S.24	The burner for domestic hot water mode is activated.
S.25	The pump and fan overrun for domestic hot water mode is activated.
S.26	The fan overrun for domestic hot water mode is activated.
S.27	The pump overrun for domestic hot water mode is activated.
S.28	The burner anti-cycling time for domestic hot water mode is activated.
S.30	Room thermostat blocks heating mode.
S.31	The summer mode is actived or the eBUS control is blocking the heating mode.
S.32	The waiting period for the fan start-up is activated.
S.34	The frost protection function is activated.
S.39	"Burner off contact" has triggered (e.g. surface-mounted thermostat or condensate pump)
S.41	The system pressure is too high.
S.42	Flue non-return flap return signal blocks burner operation (only in conjunction with the multi-functional module) or condensate pump defective, heat demand is blocked.
S.46	Comfort protection mode for flame loss at minimum load is activated.
S.53	The product is within the waiting period of the modulation block/operating block function as a result of low water pressure/water deficiency (flow/return spread too large).
S.54	Waiting period: No water in the system, flow/return sensor temperature increase too high.
S.58	The burner's modulation limit or the function for the siphon filling is activated
S.76	A service message is activated. Check the water pressure.
S.88	The purge programme is active.
S.91	The exhibition mode is activated.
S.96	The self-test for the return temperature sensor is activated. Heat demands are blocked.
S.98	The self-test for the flow/return temperature sensor is activated. Heat demands are blocked.

C Fault codes

Note
Since the code table is used for various products, some codes may not be visible for the product in question.

Code/meaning	Possible cause	Measure
F.00 Flow temperature sensor interruption	Plug for flow temperature sensor loose/not plugged in	► Check the plug and the plug connection for the flow temperature sensor.
	Flow temperature sensor defective	► Check and, if required, replace the flow temperature sensor.
	Multiple plug loose/not plugged in	► Check the multiple plug and plug connection.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.

Code/meaning	Possible cause	Measure
F.01 Return temperature sensor interruption	Plug for return temperature sensor loose/not plugged in	► Check the plug and the plug connection for the return temperature sensor.
	Return temperature sensor defective	► Check and, if required, replace the return temperature sensor.
	Multiple plug loose/not plugged in	► Check the multiple plug and plug connection.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
F.10 Flow temperature sensor short circuit	Flow temperature sensor defective	► Check and, if required, replace the flow temperature sensor.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
	Flow temperature sensor cable defective	► Check the flow temperature sensor cable.
F.11 Return temperature sensor short circuit	Return temperature sensor defective	► Check and, if required, replace the return temperature sensor.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
	Return temperature sensor cable defective	► Check the return temperature sensor cable.
F.13 Cylinder temperature sensor short circuit	Cylinder temperature sensor defective	► Check and, if required, replace the cylinder temperature sensor.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
	Short circuit in the connection cable	► Check the connection cable and, if required, replace it.
F.20 Temperature cut-out safety shutdown	Flow temperature sensor defective	► Check and, if required, replace the flow temperature sensor.
	Return temperature sensor defective	► Check and, if required, replace the return temperature sensor.
	Earth connection faulty	► Check the earth connection.
	Black discharge via the ignition cable, ignition plug or ignition electrode	► Check the ignition cable, ignition plug and ignition electrode.
F.22 System pressure too low	Insufficient/no water in the product.	► Fill the heating installation. (→ Page 15)
	Water pressure sensor defective	► Check and, if required, replace the water pressure sensor.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
	Cable for the pump/for the water pressure sensor is loose/not connected/defective	► Check the cable for the pump/for the water pressure sensor.
F.23 Safety switch-off: Temperature difference too great	Pump blocked	► Check that the pump is working correctly.
	Air in the product	► Purge the heating installation.
	Pump runs with insufficient output	► Check that the pump is working correctly.
	Flow and return temperature sensor connection inverted	► Check the connection for the flow and return temperature sensor.
F.24 Safety switch-off: Temp. incr. too fast	Pump blocked	► Check that the pump is working correctly.
	Pump runs with insufficient output	► Check that the pump is working correctly.
	Air in the product	► Purge the heating installation.
	System pressure too low	► Check the system pressure.
	Non-return valve blocked	► Check that the non-return valve is working correctly.
	Non-return valve installed incorrectly	► Check the installation location of the non-return valve.
F.25 Safety shutdown: Flue gas temperature too high	Flue gas safety cut-out plug is not plugged in or is loose	► Check the plug and the plug connection.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.

Code/meaning	Possible cause	Measure
F.27 Safety switch-off: Flame simulation	Moisture on the PCB	► Check that the PCB works correctly.
	PCB defective	► Replace the PCB.
	Gas solenoid valve not leak-tight	► Check that the gas valve assembly is working correctly and, if required, replace it.
F.28 Ignition unsuccessful	Gas isolator cock closed	► Open the gas isolator cock.
	Gas meter defective	► Replace the gas meter.
	The gas pressure monitor has been triggered	► Check the gas flow pressure.
	Air in the gas supply (e.g. during initial start-up)	► Reset the unit once.
	Gas flow pressure too low	► Check the gas flow pressure and the external gas pressure switch.
	The thermal isolator device has been triggered	► Check the thermal isolator device.
	Condensate discharge pipe blocked	► Check the condensate discharge pipe.
	Incorrect replacement gas valve assembly	► Check the replacement gas valve assembly.
	Incorrect gas valve assembly offset	► Check the offset setting for the gas valve assembly.
	Gas valve assembly defective	► Check the gas valve assembly.
	Multiple plug loose/not plugged in	► Check the multiple plug and plug connection.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
	Ignition system defective	► Replace the ignition system.
	Earthing defective	► Check the product's earthing.
	Electronics defective	► Check the PCB.
	Air/flue pipe blocked	► Check the air/flue pipe.
	Restrictor for the reference pressure pipe blocked	► Check the condition of the restrictor on the gas valve assembly's reference pressure pipes.
F.29 Ignition and check faults during operation – flame has gone out	The gas supply is interrupted	► Check the gas supply.
	Incorrect flue gas recirculation	► Check the flue gas recirculation.
	Earthing defective	► Check the product's earthing.
	Ignition misfire	► Check that the ignition transformer works correctly.
	Condensate discharge pipe blocked	► Check the condensate discharge pipe.
	Air/flue pipe blocked	► Check the air/flue pipe.
	Reference pressure pipe not connected	1. Check whether the reference pressure pipe is connected between the gas valve assembly and the restrictor for the reference pressure pipe. 2. Check whether the reference pressure pipe is connected between the restrictor for the reference pressure pipe and the distribution pipe.
F.32 Fan fault	Plug on fan not plugged in or is loose	► Check the plug on the fan and the plug connection.
	Multiple plug loose/not plugged in	► Check the multiple plug and plug connection.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
	Fan blocked	► Check that the fan works correctly.
	Hall sensor defective	► Replace the Hall sensor.
	Electronics defective	► Check the PCB.
F.33 Excessive pressure losses from the air/flue system	Air/flue pipe blocked or partially blocked	► Check the entire air/flue pipe.
	Fan defective	► Check that the fan works correctly.
	PCB defective	► Replace the PCB.

Code/meaning	Possible cause	Measure
F.33 Excessive pressure losses from the air/flue system	Temperature sensors defective or not connected correctly	► Ensure that the electrical connection for the temperature sensors has been established correctly, that they are not corroded, and that they click into place correctly on the connecting piece.
	CO_2 content too low	► Check the CO2 setting and, if required, increase the CO_2 content while taking the tolerances into consideration. (→ Page 20) ▽ If the increase in the CO_2 content is not sufficient, set diagnostics code **d.85** to 10.
	Presence of a shunt pump in the circuit	► This product is not compatible with a shunt pump in the installation; remove the shunt pump and change the installation's basic diagram accordingly.
	Excessive counter-pressure in the air/flue pipe	► If required, protect the product (wind deflector).
F.46 Cold water sensor short circuit	Cold water sensor defective	► Replace the cold water sensor.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
F.49 Fault: eBUS	Short circuit in the eBUS connection	► Check all eBUS connections.
	eBUS overload	► Check that the eBUS connection works correctly.
	Different polarities at the eBUS connection	► Check the polarity (±) of the eBUS connections.
F.61 Fault: Fuel control valve	Fault in the electrical connection for the gas valve assembly	► Check and, if required, replace the wiring harness for the gas valve assembly.
	Gas valve defective	► Replace the gas valve.
	PCB defective	► Replace the PCB.
F.62 Fault: Delayed shutdown of the fuel control valve	Gas valve defective	► Replace the gas valve.
	PCB defective	► Replace the PCB.
	Ignition electrode defective	► Check and, if required, replace the ignition electrode.
F.63 Fault: EEPROM	PCB defective	► Replace the PCB.
F.64 Fault: Electronics/temperature sensor	Flow temperature sensor short circuit	► Check that the flow temperature sensor works correctly.
	Return temperature sensor short circuit	► Check that the return temperature sensor works correctly.
	PCB defective	► Replace the PCB.
F.65 Electronics temperature fault	Electronics overheated	► Check the external heat effects on the electronics.
	PCB defective	► Replace the PCB.
F.67 Fault: Electronics/flame	Implausible flame signal	► Check the flame signal.
	PCB defective	► Replace the PCB.
	Fault in the flue gas route	► Check the entire flue gas route.
F.68 Fault: Unstable flame signal	Air in the gas supply (e.g. during initial start-up)	► Reset the unit once.
	Gas flow pressure too low	► Check the gas flow pressure and the external gas pressure switch.
	Incorrect air ratio	► Check the CO_2 content at the flue gas analysis point.
	Incorrect flue gas recirculation	► Check the flue gas recirculation.
	Condensate discharge pipe blocked	► Check the condensate discharge pipe.
F.70 Invalid device specific number (DSN)	Device Specific Number not set/is incorrect	► Set the correct Device Specific Number.
F.71 Flow temperature sensor fault	The flow temperature sensor signals a constant value	► Check the positioning of the flow temperature sensor.
	Flow temperature sensor in the incorrect position	► Check the positioning of the flow temperature sensor.
	Flow temperature sensor defective	► Check and, if required, replace the flow temperature sensor.

Code/meaning	Possible cause	Measure
F.72 Fault: Return temperature sensor	Flow temperature sensor defective	► Check and, if required, replace the flow temperature sensor.
	Return temperature sensor defective	► Check and, if required, replace the return temperature sensor.
F.73 Water pressure sensor signal in the wrong range (too low)	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
	Water pressure sensor defective	► Check and, if required, replace the water pressure sensor.
F.74 Water pressure sensor signal outside correct range (too high)	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
	Interruption in the wiring harness	► Check the wiring harness including all plug connections and, if required, replace it.
	Water pressure sensor defective	► Check and, if required, replace the water pressure sensor.
F.75 Fault: Pump/water deficiency	Water pressure sensor defective	► Check and, if required, replace the water pressure sensor.
	Internal heating pump defective	► Replace the internal heating pump.
	System pressure too low	► Check the system pressure.
	Insufficient/no water in the product.	► Fill the heating installation. (→ Page 15)
	Air in the product	► Purge the heating installation.
F.76 Fault: Thermal cut-out	Defective thermal fuse	► Check the heat exchanger for leakages. If the heat exchanger has no leaks, bypass the thermal fuse. If you can then start the product, replace the thermal fuse.
F.77 Fault: Flue non-return flap/condensate pump	No feedback from the flue non-return flap or the feedback is incorrect	► Check that the flue non-return flap functions correctly.
	Flue non-return flap defective	► Replace the flue non-return flap.
	Condensate pump defective	► Replace the condensate pump.
F.78 Interruption: Domestic hot water outlet temperature sensor with external control	NTC sensor defective	► Replace the NTC sensor.
F.83 Fault: NTC temperature fluctuation	System pressure too low	► Check the system pressure.
	Flow temperature sensor: No contact	► Check whether the flow temperature sensor is lying against the flow pipe correctly.
	Return temperature sensor: No contact	► Check whether the return temperature sensor is lying against the return pipe correctly.
	Insufficient/no water in the product.	► Fill the heating installation. (→ Page 15)
F.84 NTC temperature difference is implausible	Flow temperature sensor installed incorrectly	► Check whether the flow temperature sensor has been installed correctly.
	Return temperature sensor installed incorrectly	► Check whether the return temperature sensor has been installed correctly.
	Flow and return temperature sensors inverted	► Check whether the flow and return temperature sensor has been installed correctly.
F.85 Flow and return temperature sensors have been installed incorrectly (inverted)	Flow/return temperature sensors have been installed on the same pipe/wrong pipe	► Check that the flow and return temperature sensors have been installed on the correct pipe.
F.86 External safety shutdown	Limit thermostat settings incorrect	► Check the limit thermostat settings.
	The flow temperature sensor measures deviating values	► Check the flow temperature sensor.
	3-port diverter valve blocked	► Check the 3-port diverter valve.
	Condensate pump defective	► Replace the condensate pump.
F.87 Fault: Igniter	Igniter not connected	► Check the igniter's connection.
	Igniter connected incorrectly	► Check the igniter's connection.

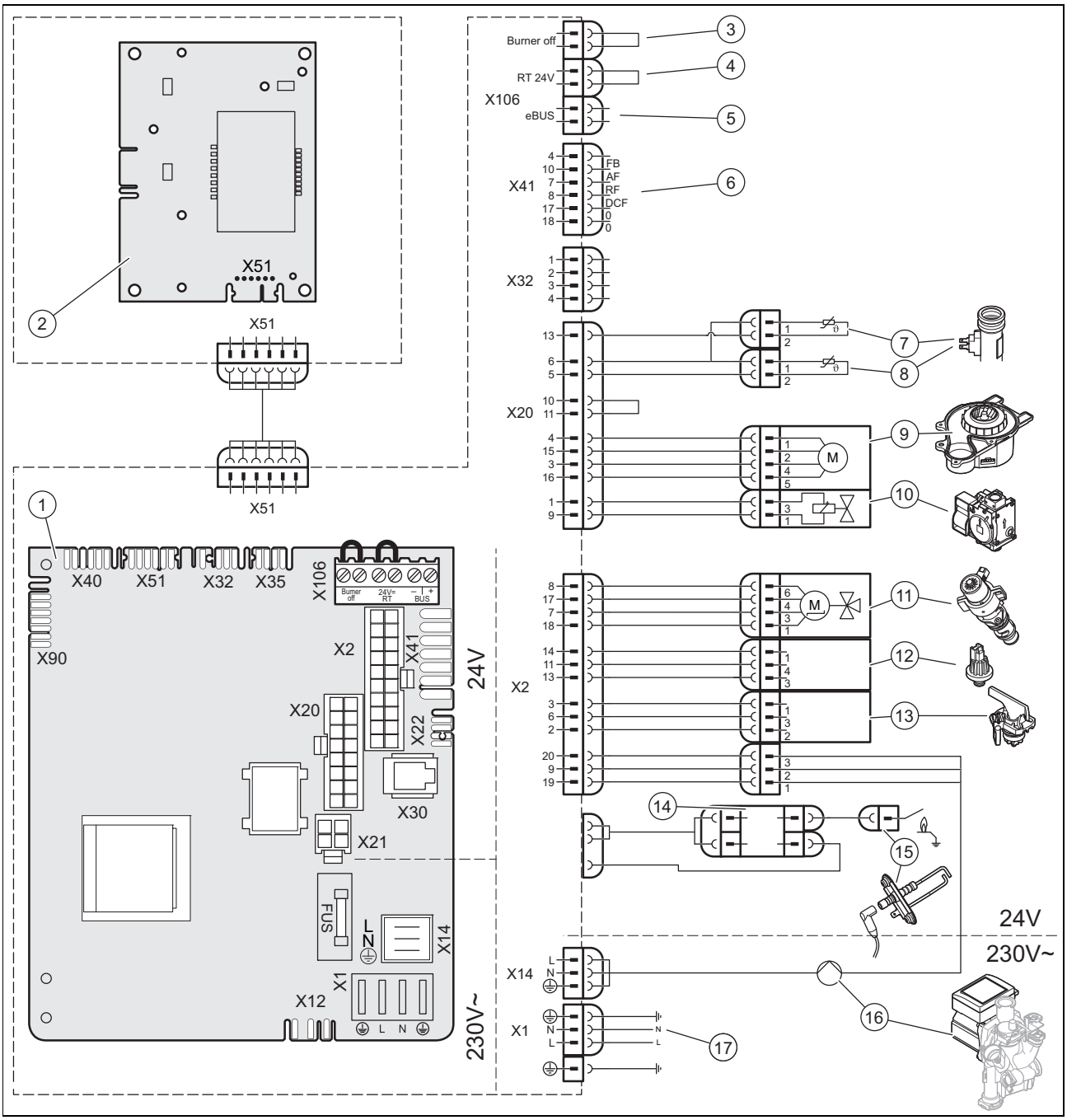
Code/meaning	Possible cause	Measure
F.87 Fault: Igniter	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
F.88 Fault: Gas valve assembly	Gas valve assembly not connected	► Check the connection to the gas valve assembly.
	Gas valve assembly connected incorrectly	► Check the connection to the gas valve assembly.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
F.89 Fault: Pump	Pump not connected	► Check the pump connection.
	Pump connected incorrectly	► Check the pump connection.
	Incorrect pump connected	► Check whether the pump that is connected is the one that is recommended for the product.
	Short circuit in the wiring harness	► Check the wiring harness and, if required, replace it.
F.97 Main PCB self-test failed	PCB defective	► Replace the PCB.

D Check programmes

Note
Since the code table is used for various products, some codes may not be visible for the product in question.

Check programme	Meaning
P.00 Purging the domestic hot water and heating circuit	The function is activated in the small domestic hot water circuit for 4 minutes and then in the heating circuit for 1 minute. The pump runs and stops at regular intervals. The function is active for five minutes.
P.01 Start up the burner at the adjustable heat input in heating mode	Following successful ignition, the product is operated at the heat input shown in the display. This value can be set from 0% (**0** = min. output) to 100% (**Hi** = max. output) using ⊖ and ⊕. The function is active for 15 minutes.
P.03 Start up the burner at partial load	Following successful ignition, the product is operated at the partial heat load that is set using diagnostics code **d.00**. The function is active for 15 minutes.
P.04 Chimney sweep function	If there is a domestic hot water demand, the product runs in domestic hot water mode and at maximum heat input. If there is no domestic hot water demand, the product runs in heating mode with the partial heat load that is set using diagnostics code **d.00**. The function is active for 15 minutes.
P.08 Filling or draining the product	The prioritising diverter valve is moved to the mid-position. To fill or drain the product, the burner and pump are switched off. The function is active for 15 minutes.

E Wiring diagram



1	Main PCB	8	Heating return temperature sensor
2	PCB for the control element	9	Fan
3	Limit thermostat with contact for underfloor heating, *Burner off* (optional)	10	Gas valve assembly
		11	Prioritising diverter valve
4	Room thermostat, *RT 24 V* (optional)	12	Water pressure sensor
		13	Water flow switch
5	Bus connection for control/room thermostat (optional)	14	Igniter
		15	Ignition electrode
6	Outdoor temperature sensor, flow temperature sensor (external), DCF receiver (optional)	16	Pump
		17	Main power supply
7	Heating flow temperature sensor		

F Inspection and maintenance work

The table below lists the manufacturer requirements with respect to minimum inspection and maintenance intervals. If national regulations and directives require shorter inspection and maintenance intervals, you should observe these instead of the intervals listed. Each time inspection and maintenance work is carried out, carry out the required preparatory and completion work.

#	Maintenance work	Interval	
1	Check the tightness of the air/flue pipe, make sure that it is not damaged and has been attached correctly, and check that it has been set up correctly	Annually	
2	Removing dirt from the product and the vacuum chamber	Annually	
3	Visually checking the condition of the heat cell, checking for corrosion, rust or damage	Annually	
4	Checking the gas connection pressure at maximum heat input	Annually	
5	Checking the CO_2 content	Annually	17
6	Recording the CO_2 content (the air ratio)	Annually	
7	Check that the connections/electrical plug connections have been connected correctly/function correctly (product must be voltage-free)	Annually	
8	Check that the gas stopcock and service valves function correctly	Annually	
9	Cleaning the condensate siphon	Annually	27
10	Checking the pre-charge pressure of the expansion vessel	If required, at least every 2 years	25
11	Checking the insulating mats in the combustion area and replacing damaged insulating mats	If required, at least every 2 years	
12	Checking the burner and burner insulating mat for damage	If required, at least every 2 years	23
13	Checking the ignition electrode	If required, at least every 2 years	
14	Cleaning the heat exchanger	If required, at least every 2 years	23
15	Checking the filling pressure of the heating installation	Annually	
16	Run a function test for the product/heating installation and the domestic hot water generation. If required, carry out purging.	Annually	
17	Completing inspection and maintenance work	Annually	28

G Technical data

Technical data – General

	P18/24-AS/1	P24/28-AS/1
Designated country (designation in accordance with ISO 3166)	UA (Ukraine)	UA (Ukraine)
Permissible gas categories	II2H3P	II2H3P
Product-side gas connection	3/4"	3/4"
Product-side flow/return heating connections	3/4"	3/4"
Expansion relief valve connection pipe (min.)	15 mm	15 mm
Condensate discharge hose (min.)	14.2 mm	14.2 mm
Gas connection pressure, G20 natural gas	2.0 kPa (20.0 mbar)	2.0 kPa (20.0 mbar)
Gas connection pressure, liquefied petroleum gas G31	3.0 kPa (30.0 mbar)	3.0 kPa (30.0 mbar)
Maximum flue gas temperature	89 °C	89 °C
Min. gas volume flow at 15 °C and 1013 mbar, G20	0.66 m³/h	0.76 m³/h
Min. gas volume flow at 15 °C and 1013 mbar, G31	0.65 kg/h	0.56 kg/h
Max. gas volume flow at 15 °C and 1013 mbar (based on heating mode), G20	1.99 m³/h	2.59 m³/h
Max. gas volume flow at 15 °C and 1013 mbar (based on heating mode), G31	1.47 kg/h	1.91 kg/h
Max. gas volume flow at 15 °C and 1013 mbar (based on domestic hot water generation), G20	2.54 m³/h	2.96 m³/h
Max. gas volume flow at 15 °C and 1013 mbar (based on domestic hot water generation), G31	1.86 kg/h	2.18 kg/h

	P18/24-AS/1	P24/28-AS/1
Permissible installation types	C13, C33, C43, C53, C83, C93, B23P, B33, B53P	C13, C33, C43, C53, C83, C93, B23P, B33, B53P
Nominal efficiency in partial load mode (30%)	107.8 %	108.2 %
NOx class	6	6
Nitrogen oxide emissions, NOx weighted (Hs) (G20)	27.11 mg/kW·h	32.40 mg/kW·h
CO emissions	137.2 ppm	121.7 ppm

Technical data – Power/load (G20)

	P18/24-AS/1	P24/28-AS/1
Nominal heat output range P at 50/30 °C	6.6 to 20.0 kW	7.7 to 25.9 kW
Nominal heat output range P at 60/40 °C	6.4 to 19.3 kW	7.5 to 25.1 kW
Nominal heat output range P at 75/55 °C	6.0 to 18.3 kW	6.9 to 23.9 kW
Max. heat input for domestic hot water (Qmax) (Hi)	24.0 kW	28.0 kW
Flue gas mass flow rate in heating mode at P min.	3.2 g/s (11.52 kg/h)	3.7 g/s (13.32 kg/h)
Flue gas mass flow rate in heating mode at P max.	8.9 g/s (32.04 kg/h)	11.6 g/s (41.76 kg/h)
Nominal heat input range for heating	6.2 to 18.8 kW	7.2 to 24.5 kW

Technical data – Power/load (G31)

	P18/24-AS/1	P24/28-AS/1
Nominal heat output range P at 50/30 °C	9.0 to 20.0 kW	7.7 to 25.9 kW
Nominal heat output range P at 75/55 °C	8.1 to 18.3 kW	6.9 to 23.9 kW
Max. heat input for domestic hot water (Qmax)	24.0 kW	28.0 kW
Flue gas mass flow rate in heating mode at P min.	4.0 g/s (14.40 kg/h)	3.4 g/s (12.24 kg/h)
Flue gas mass flow rate in heating mode at P max.	9.1 g/s (32.76 kg/h)	11.8 g/s (42.48 kg/h)
Nominal heat input range for heating	8.4 to 18.8 kW	

Technical data – Heating

	P18/24-AS/1	P24/28-AS/1
Maximum heating flow temperature (factory setting – D.71)	75 ℃	75 ℃
Maximum flow temperature adjustment range	30 to 75 ℃	30 to 75 ℃
Maximum operating pressure (MWP)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Nominal water flow (ΔT = 20 K)	788 l/h	1,029 l/h
Approximate value for the condensate volume during nominal load operation (pH value between 3.5 and 4.0) at 50/30 °C	1.89 l/h	2.46 l/h
Remaining pump head (at nominal circulation water volume)	0.027 MPa (0.270 bar)	0.017 MPa (0.170 bar)
Contents of the heating expansion vessel	8 l	8 l

Technical data – Domestic hot water

	P18/24-AS/1	P24/28-AS/1
Minimum water flow	1.7 l/min	1.7 l/min
Specific flow rate D (ΔT = 30 K)	11.5 l/min	13.4 l/min
Permissible operating pressure	0.03 to 1 MPa (0.30 to 10 bar)	0.03 to 1 MPa (0.30 to 10 bar)
Recommended supply pressure	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Hot water comfort in accordance with the standard EN 13203	**	**
Flow rate limiter for cold water	8.0 l/min	10.0 l/min
Domestic hot water output temperature range	35 to 55 ℃	35 to 55 ℃

Technical data – Electrics

	P18/24-AS/1	P24/28-AS/1
Electrical connection	230 V/50 Hz	230 V/50 Hz
Permissible connected voltage	195 to 253 V	195 to 253 V
Built-in fuse (slow-blow)	T2/2 A, 250 V	T2/2 A, 250 V
Maximum electrical power consumption	90 W	90 W
Standby electrical power consumption	1.7 W	1.7 W

Index

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