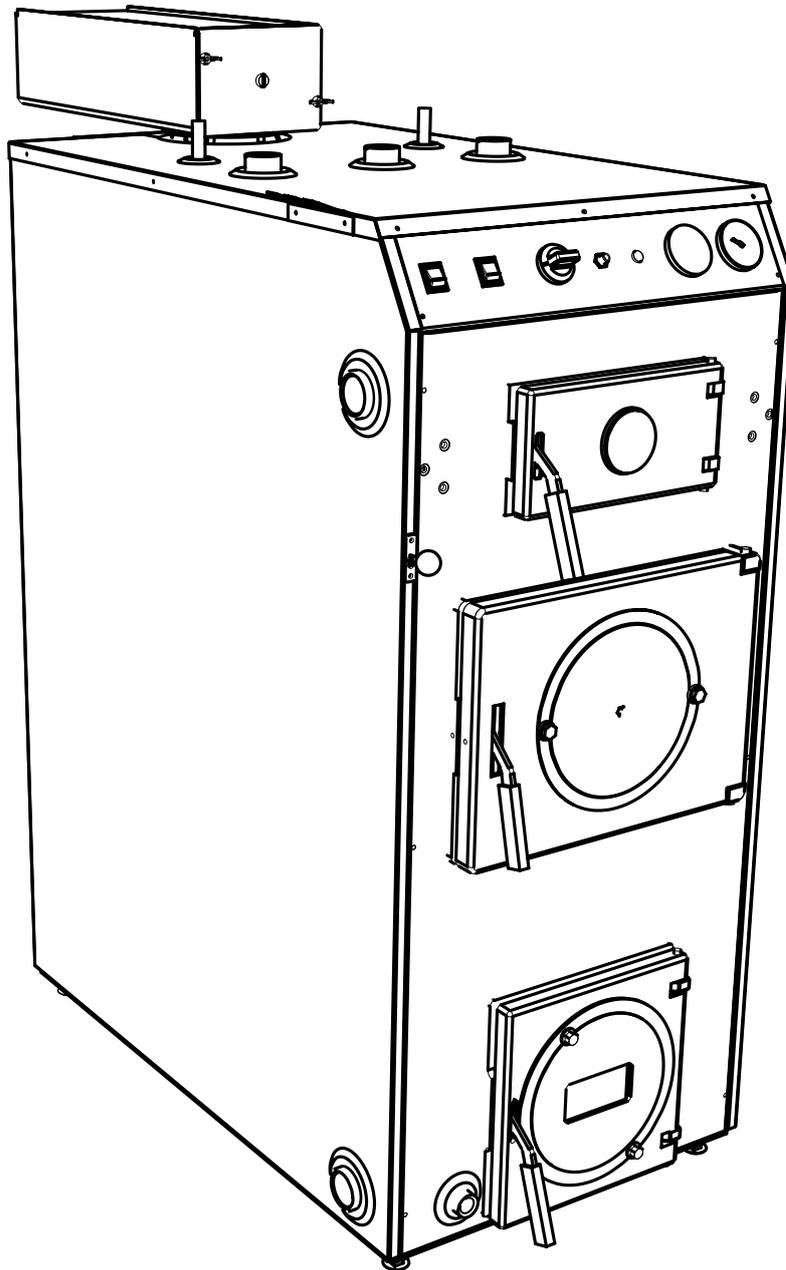


Vedolux 37



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Firewood			
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Function

Vedolux 37

- is a firewood boiler with a suction fan, designed for heating houses and smaller properties.
- is environmentally-approved for firewood burning with an accumulator tank.
- is designed for half metre firewood.
- is designed to be connected to an external water heater.
- is primarily designed to be fired by firewood, but can also easily be modified for use with an oil or pellet burner.
- has an output of 37 kW when burning firewood and 50 kW when burning oil/pellets.

Ceramic combustion chamber

The combustion chamber is designed for reverse combustion. The depth of the combustion chamber is 550 mm. A bypass damper prevents smoke entering the room when firewood is added.

Flue cleaning

All flue ducts in the boiler are cleaned from the same hatch at the front of the boiler. The hatch is hinged and is opened with a single operation. The flue ducts are round, which means there are no awkward corners when flue cleaning.

Chimney

The Vedolux 37 has a suction fan minimising the chimney requirements of the boiler.

Accumulator tank

To optimise combustion and efficiency, and to meet environmental requirements relating to firewood burning, the boiler must be connected to an accumulator tank. The accumulator tank is dimensioned according to the requirements of the building.

Delivery

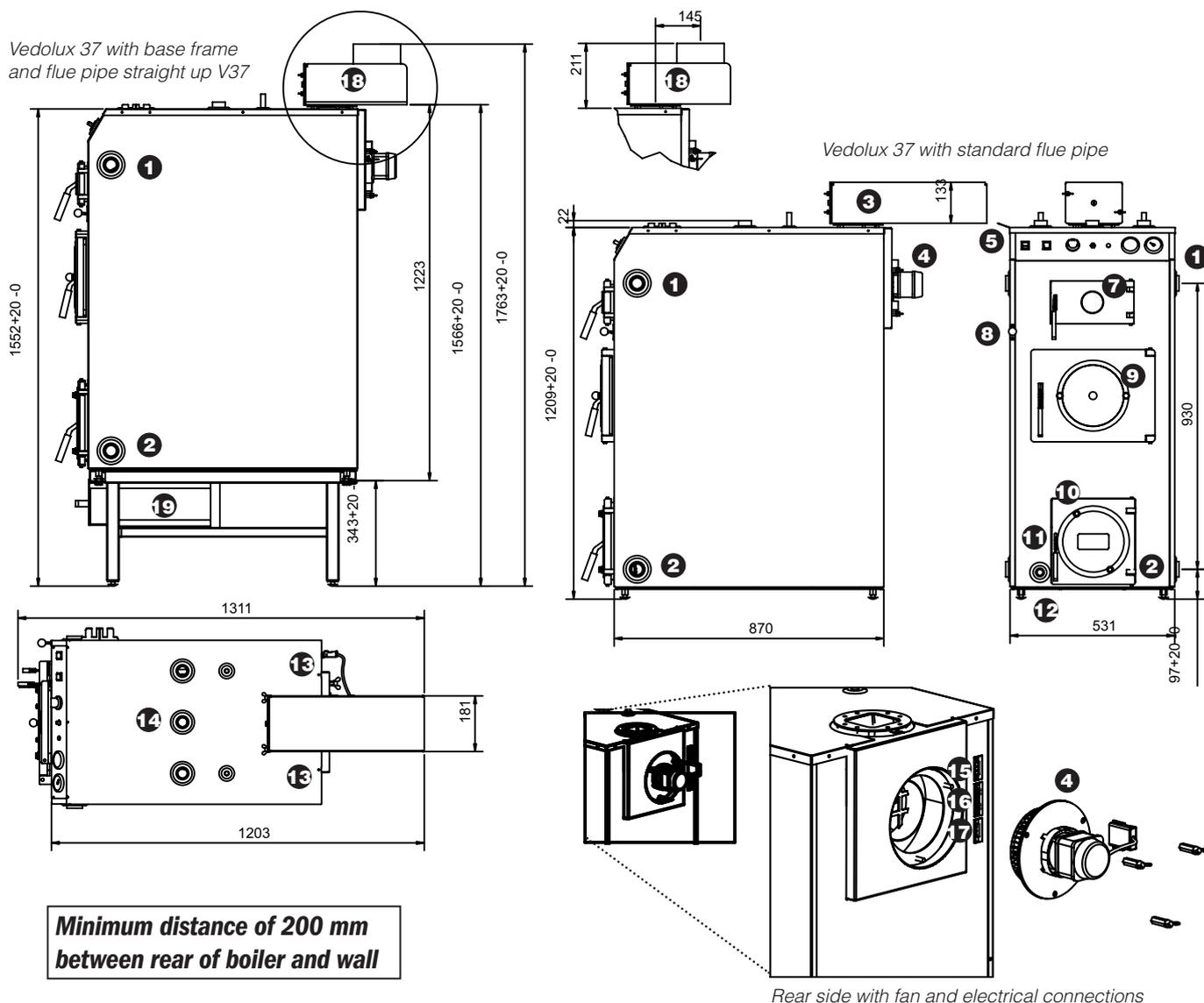
The product is delivered with the following components:

- flue pipe.
- flue cleaning tool with bracket.
- flue gas thermometer.
- drain valve.
- gas lighter.

Accessories

- base frame to make firewood burning more convenient.
- Accumulator Control 3.
- accessory for oil/pellet firing (cover plate with draught hatch for fan).

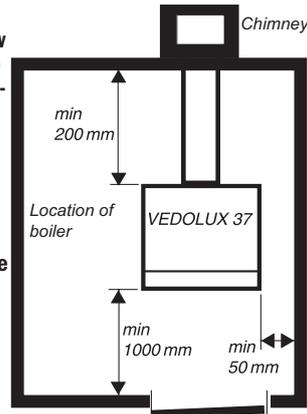
Weight	empty	320	kg	Wood diameter		150	mm
	filled with water	440	kg		Burning cycle	combustion chamber full,	2.5-3
Volume		120	litre	Firewood hatch		moisture 16 ±4%	
Design pressure		1.5	bar		Chimney requirement	w x h	290 x 235
Test pressure		2.15	bar	flue duct recommended		height	min 3.5
Pressure drop	water flow 0.54 l/s	10	mbar		flue duct min	Ø 145	mm
Design temperature		110	°C	draught		165	cm ²
Operating temperature	max	110	°C		Flue gas temperature	Ø100	mm
Output wood	moisture 16 ±4%	37/42	kW	Flue gas quantity		79	cm ²
	oil	50	kW		Boiler group as per EN 303-5	10	Pa
	pellets	42	kW				°C
Combustion chamber	volume	105	litre				
	depth	550	mm				
Length of wood		500	mm				



- Hot water outlet, riser, R32.
- Hot water outlet, return, R32.
- Flue pipe, standard.
- Fan motor.
- Bracket for cleaning tool.
- Upper cleaning hatch.
- Control for bypass damper.
- Firewood hatch.
- Ash hatch/draught hatch.
- Draining.
- Base bolts, adjustable.
- Connections for cooling coil, 15 mm Cu.
- Expansion connection, R25.
- Electrical connection, supply, 230V~.
- Electrical connection, fan.
- Electrical connection, circulation pump for accumulator charging.
- Flue pipe straight up, with socket, R25, for support pipe, accessory.
- Base frame, accessory.

The manufacturer reserves the right to make changes without notice.

- Boiler installation must be carried out in accordance with the Regulations for New Buildings [Nybyggnadsreglerna] and the Hot Water Instructions [Hetvattenanvisningarna].
- The boiler must be installed indoors in a cellar or on the ground floor. The installation site must be able to support the combined weight of the boiler, the accumulator tank and any chimney.
- The boiler can support up to 250 kg of the weight of the chimney.
- Adjust the base bolts to make the boiler level.
- A temperature limiter must always be installed with the boiler.
- The boiler must be connected to an accumulator tank, and the installation must include an accumulator control.
- You must contact the chimney sweep before changing to a different form of energy.
- Contact the municipality to find out about restrictions on the use of solid fuels in built-up areas.
- The fresh air intake of the boiler room must have at least the same cross sectional area as the chimney, and it must be designed so it is impossible to close it by mistake.



Flue gas thermometer

The supplied flue gas thermometer is fitted to the removable plate at the front of the flue pipe, in the predrilled and threaded hole.

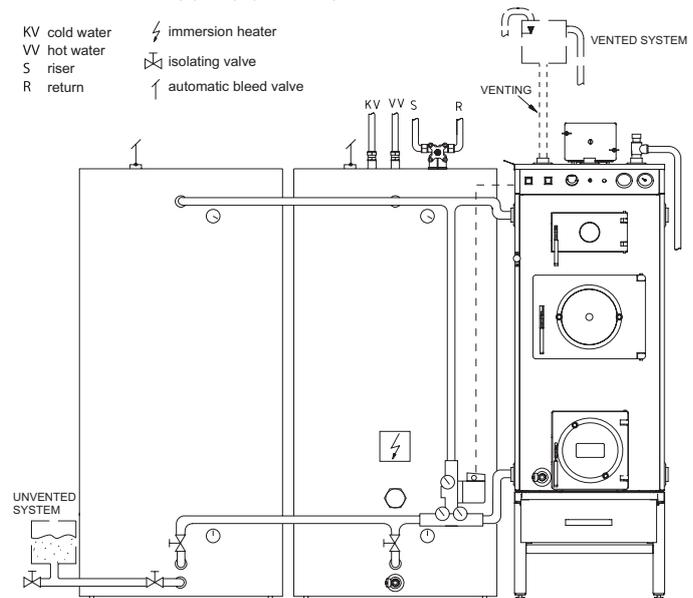
Connection to accumulator system

The boiler must always be connected to an accumulator tank with an accumulator control.

The accumulator volume is dimensioned according to the surface area to be heated. Allow for 8 – 10 litres of tank volume per square metre of heated surface area.

The schematic diagram below shows the Vedolux 37 with the Aqualux and Aqualux UB accumulator tanks plus Accumulator Control 3. For more details, refer to the documentation supplied with the relevant product. Follow the installation instructions in the documentation.

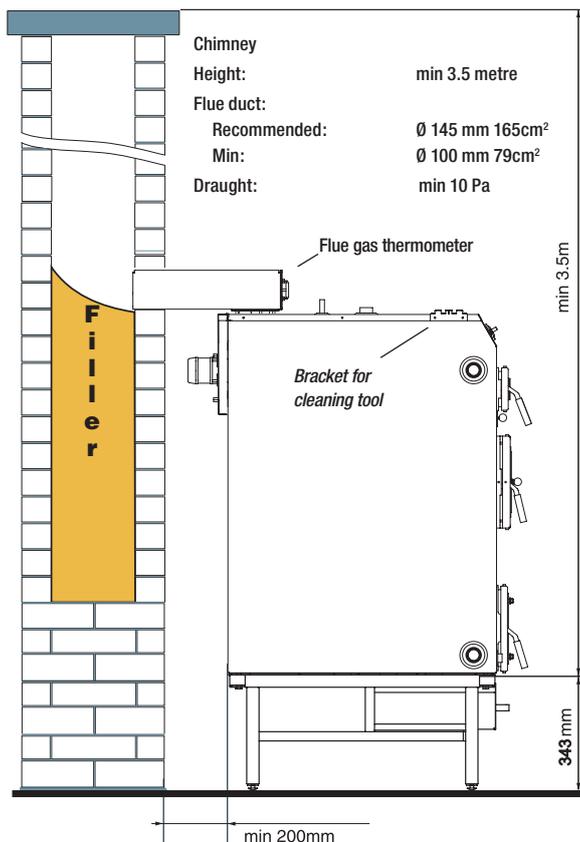
The pipe dimension between the boiler and the tank should be 28/35 mm for copper pipe or equivalent.



Chimney

The Vedolux 37 has a suction fan minimising the chimney requirements.

If the boiler is connected to the chimney higher up than the previous boiler, the lower, unused, part must be filled.



Flue pipe

The boiler is supplied with an angled flue pipe – a flue pipe for steel pipe is available as an accessory. The flue pipe can be turned, and is fixed with four bolts. If the angle is not correct initially, the bolts can be inserted in alternative locations. Do not forget the washers. See also the diagram on the next page.

Function of accumulator control

The accumulator control ensures that the boiler reaches a high working temperature before it starts charging the accumulator tank. It also prevents the return temperature to the boiler falling too low, helping to minimise the risk of condensation in the combustion chamber.

The charging pump of the accumulator system is controlled by a flue gas thermostat. When the flue gas temperature reaches the value set on the thermostat, the pump starts running, circulating hot water from the top of the boiler, through the accumulator control, and back to the return connection on the boiler.

When the boiler temperature reaches around 70°C, some of the hot water from the top of the boiler is circulated to the top of the accumulator. Cold water is taken from the bottom of the accumulator and is circulated to the accumulator control, where it is mixed with hot water from the top of the boiler to prevent the return temperature to the boiler falling below 72°C. This creates pronounced temperature stratification in the tank.

To prevent the accumulator water cooling down unnecessarily, the flue gas thermostat stops the charging pump when the flue gas temperature falls below the specified value.

A non-return valve in the accumulator control prevents unwanted natural circulation when the charging pump is not running.

Shunt valve

The Vedolux 37 does not have a shunt valve to control the temperature to the heating system. In Värmebaronen systems, the valve is fitted to the accumulator tank with water heater, Aqualux CU.

You are recommended to equip the shunt with a system for automatic shunt control. The benefits of automatic shunt control include constant temperatures in the building, the option of night-time temperature reduction, better use of the accumulated heat, etc.

Expansion system

The boiler is connected to a vented or unvented expansion system.

The volume of the expansion vessel is dimensioned according to the circumstances. The guideline values for volume are approx. 5 % of the total system volume for vented systems, or 13- 15 % for unvented systems.

Vented

The distance between the top of the highest radiator and the expansion vessel must be at least 2.5 metres in order to prevent oxygen saturation of the water in the heating system.

The expansion vessel is connected in a continuous and unisolatable rise from the boiler's expansion connection.

To prevent damage occurring if the expansion system fails, for example because of freezing, the boiler should be fitted with a type approved safety valve, 1.5 bar.

Unvented

In unvented systems, the boiler must be fitted with a type approved safety valve, 1.5 bar, connected using an unisolatable pipe from the connection at the top of the boiler, as well as a bleed valve.

The expansion vessel is best connected using 15 mm Cu pipe, as shown in the diagram on the previous page.

Cooling coil - temperature limiter

The boiler system must be equipped with a temperature limiter in accordance with the Hot Water Instructions [Varm- och Hetvat-tenanvisningarna].

The boiler has a cooling coil which, combined with a suitable thermal valve, is used to reduce the boiler temperature if the water boils. Follow the instructions of the valve manufacturer when installing the valve.

Radiator pump

The radiator pump is dimensioned according to the size, pipe dimensions and design of the system.

Filling the heating system

The boiler must be fitted with valves for filling and draining. For filling, the shunt valve must be fully open.

Turbulators

The five turbulators are installed in the flue gas pipes as shown in the diagram. The purpose of the turbulators is to introduce turbulence to the flue gases, causing more heat to be transferred to the boiler water.

If the flue gas temperature falls too low, there is a risk of condensation in the flue duct. To increase the temperature, the three upper turbulators can be removed, or cut to a length that produces a suitable flue gas temperature.

Bracket for cleaning tool

The bracket for the cleaning tool can be fitted to either side of the boiler or any suitable place close to the boiler.

Draught hatch

An extremely high chimney and/or strong winds can create a draught that is strong enough to allow combustion with the fan turned off. The solution is to install a draught hatch, which can reduce the draught to 10-15 Pa.

Pellet burner

The Vedolux 37 is primarily designed to be fired by firewood, but can also be modified for pellets using a pellet burner. The burner is fitted to firewood hatch.

When the pellet burner is installed, the accessory for oil/pellet firing must be used (cover plate with draught hatch instead of the fan).

Because of the risk of condensation you should monitor the flue gas temperature. Check that the flue gas temperature is appropriate for the chimney type.

The boiler temperature should not be allowed to fall below 70°C. Otherwise, follow the instructions of the burner manufacturer.

Oil burner

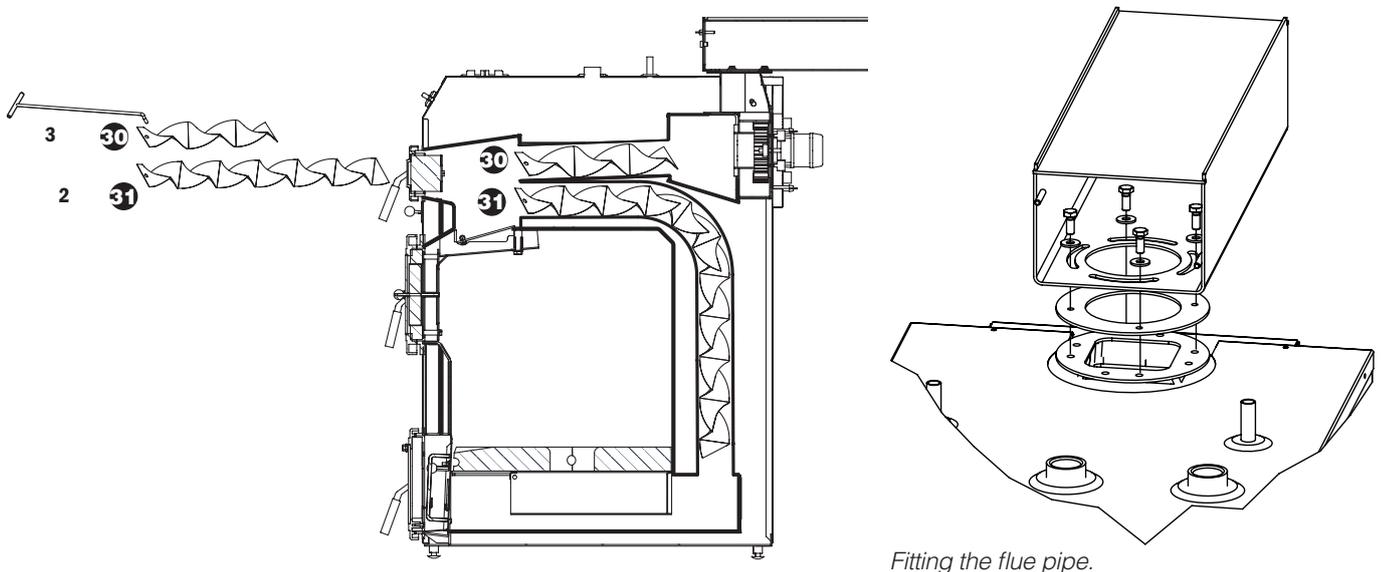
The Vedolux 37 is primarily designed to be fired by firewood, but can also be modified for oil firing.

When the oil burner is installed, the accessory for oil/pellet firing must be used (cover plate with draught hatch instead of the fan).

The output of the oil burner must be compatible with the output range of the boiler.

Because of the risk of condensation you should monitor the flue gas temperature. Check that the flue gas temperature is appropriate for the chimney type.

The boiler temperature should not be allowed to fall below 70°C. Otherwise, follow the instructions of the burner manufacturer.



Fitting the flue pipe.

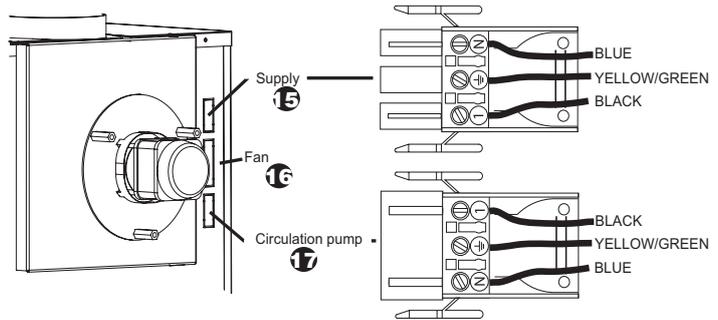
Installation must be in accordance with the High Current Regulations [Starkströmsföreskrifterna], under the supervision of an authorised electrical installer.

Electrical connection

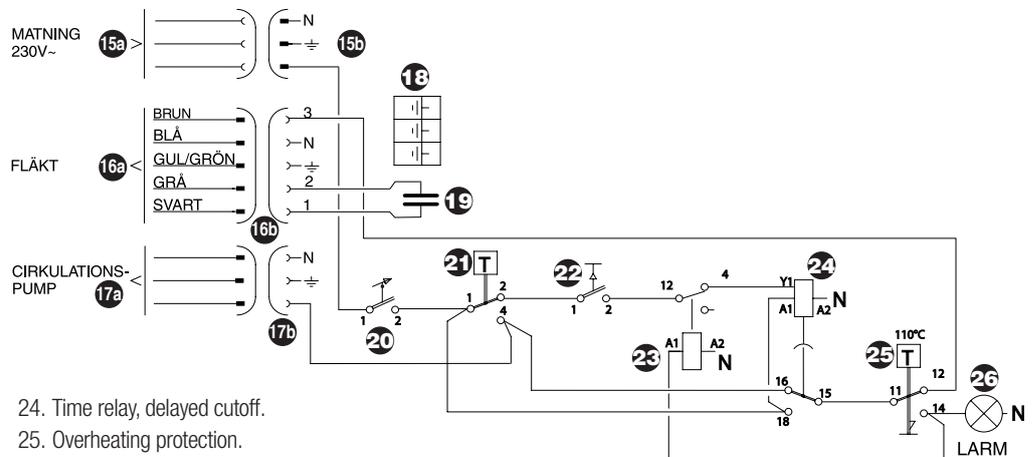
The boiler is connected directly to the mains (no plug) using a rubber cable, via an all-pole circuit breaker with a contact gap of at least 3 mm.

The electrical connections are at the rear of the boiler, in the form of three quick connectors:

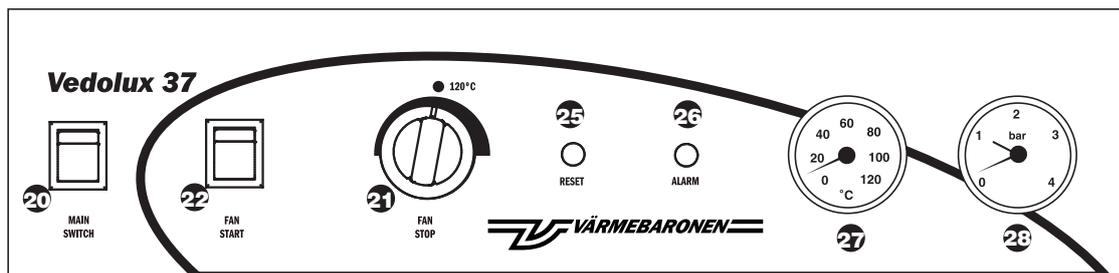
- 15. Mains connection, 230V~. Cable with quick connectors supplied.
- 16. Fan.
- 17. Circulation pump, for charging the accumulator system.



- 15. Supply connection, 3-pole connector.
 - a. cable part, socket.
 - b. chassis part, plug.
- 16. Fan connection, 5-pole connector.
 - a. cable part, plug.
 - b. chassis part, socket.
- 17. Connection for accumulator system charging pump, 3-pole connector.
 - a. cable part, plug.
 - b. chassis part, socket.
- 18. Terminal block for internal earth connections.
- 19. Start capacitor for fan motor.
- 20. Main switch.
- 21. Thermostat for fan and charging pump.
- 22. Fan start when the boiler is cold.
- 23. Relay.



- 24. Time relay, delayed cutoff.
- 25. Overheating protection.
- 26. Indicator showing triggered overheating protection.
- 27. Thermometer, displays the boiler temperature.
- 28. Pressure gauge showing the water pressure in the heating system.



Function

Start with the boiler cold.

Set the main switch, 20, to the ON position – the green area must be visible.

Set the thermostat, “FAN STOP”, 21, to 120°C. The thermostat detects the flue gas temperature.

Press “FAN START”, 22, the time relay, 24, is activated and the fan starts.

When the time set for the time relay, 30 minutes, is reached, the contact changes, which means that the fan and the charging pump for the accumulator system are controlled by the thermostat, 21.

When the firewood is burnt out and the flue gas temperature falls below the value set for the thermostat, 21, the fan and charging pump stop running.

If the boiler temperature exceeds 110°C, the overheating protection is triggered. The fan stops running and the charging pump continues to operate.

If the overheating protection, 25, is triggered, the “ALARM” indicator, 26, is lit. The relay, 23, prevents the time relay activating when the overheating protection is triggered.

To reset the overheating protection, press “RESET”, 25, on the boiler control panel. It is not possible to reset the system until the boiler temperature has dropped below 95°C.

After installation, check with the installer that the system is in perfect condition.

Ask the installer to demonstrate the settings and functions so you know how to operate and care for the system.

Checks

Before putting the system into operation, check that:

- the system is filled with water
- all connections are watertight
- flue gas connections to the boiler and to the chimney are tight
- the filling/drain valve has been closed properly.
- the safety valves are working correctly
- the necessary valves are open
- the circulation pump is working and the direction of flow is correct
- the correct temperature has been set on the charge thermostat

Firewood

Firewood as a fuel

Vedolux 37 has a ceramic grate and an afterburning chamber made of high-temperature resistant stainless steel. The boiler works on the principle of reverse combustion. If the boiler is correctly operated, it burns firewood and gases very effectively, with high efficiency and low environmental impact.

Using firewood as a fuel is not simply about burning the wood – the techniques used have a decisive effect on the result.

Firewood

Hardwoods generally have a higher energy content than conifers. However, the most important thing is that the wood must be dry – moisture content 12-30 %.

If the wood is damp, much of the energy is wasted on drying it out, combustion is impaired and the risk of tarring increases.

Because of the high acidity of oak wood, it should not be used as a fuel for extended periods. Oak should be seasoned for more than three years before it is burned.

The blocks of wood must be the correct size for the combustion chamber, around 50 cm long and around 15 cm wide, allowing three blocks to fit the width of the grate.

To allow the wood to dry out, the tree should be felled at least one season in advance. An alternative method is to fell the tree in spring just after the leaves have come out, then wait a few weeks before trimming and splitting the wood. During these weeks, the leaves wilt and draw out the moisture. After another few weeks of drying, the wood has 25-30 % moisture content.

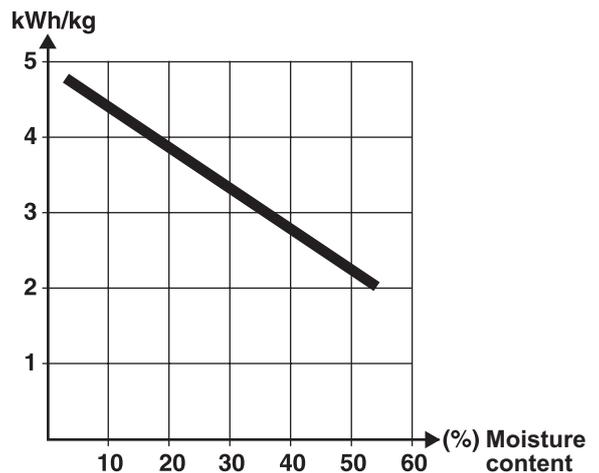
After cutting, the wood must be split. The more it is split, the faster and easier it will dry. If logs are difficult to split, the bark can be stripped to speed up drying. Fresh wood is easiest to split.

The wood should not be in direct contact with the ground, as this causes the wood to take on moisture instead of drying out. Ideally the wood should be kept under a roof but in a place where the sun and wind can help dry it. The best place for final drying is the boiler room, for 2-3 weeks before the wood is used. The moisture content after drying is around 20 %.

Heat content

The heat content is the amount of heat that can be extracted by the boiler and transferred to the boiler water. Heat content should not be confused with energy content, which increases with the size of the block of wood. The heat content increases with the dryness of the block of wood, because less heat is wasted on drying the wood.

Newly cut wood has a moisture content of around 55 %. Firewood that has been dried out following our instructions has around 20 % moisture.

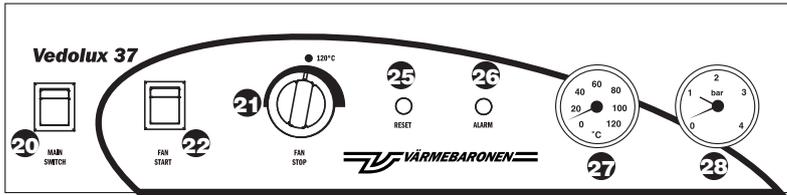


The chart illustrates how the heat content changes.

If a building uses 25 m³ of newly cut firewood (55 % moisture), around 14 m³ of water needs to be dried through the chimney. In other words, the energy needed to vaporise 14 m³ is wasted. Other problems using damp wood include poor combustion and dirty emissions, which in turn impair efficiency.

First burning cycle

In the first burning cycle, or if the boiler has not been used for a while, it is important to just light a small fire. The ceramic parts of the boiler may contain moisture, which must be vaporised slowly so as not to crack the ceramic. Once the ceramic parts are dry, you can light a full-size fire. The ceramic does not take on moisture when the boiler is being used. See also the section on "Operation and care".



20. Main switch.
21. Thermostat for fan and charging pump.
22. Fan start when the boiler is cold.
25. Overheating protection.
26. Indicator showing triggered overheating protection.
27. Thermometer, displays the boiler temperature.
28. Pressure gauge showing the water pressure in the heating system.

Startup

1. the bypass damper must be in the closed position.
2. place kindling in the boiler, with paper if you are using it.
3. the main switch must be set to on (the green area must be visible).
4. thermostat, FAN STOP, set to 120°C.
5. press "FAN START", the fan starts.
6. light the boiler – gas is recommended.

First burning cycle

The first fire to be lit should be started carefully so that any remaining moisture in the ceramic can vaporise slowly. Lighting a fierce fire may crack the ceramic. Only light a small fire the first time. Once the ceramic parts are dry, you can light a full-size fire. The ceramic does not take on moisture when the boiler is being used.

Lighting - start

- Place kindling in the boiler, followed by crumpled newspaper.
- Press "FAN START", the fan starts. Light the paper. Leave the firewood hatch slightly open.
- Wait a while before closing the firewood hatch. The wood must have properly ignited (flue gas temperature approx. 120°C). Leave it to burn until there is a layer of vigorous embers.

Lighting a fire with the gas lighter

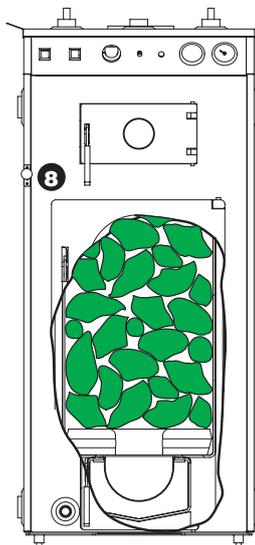
- Arrange medium size blocks of wood over a layer of kindling, then fill the rest of the combustion chamber with large blocks.
- Close the firewood hatch.
- Ignite the gas lighter and insert it into the nozzle in the hole at the top of the inner ash hatch. Move the flame from side to side, and the wood should have ignited after about a minute.

Adding wood

When the time comes to add more wood, open the bypass damper before the firewood hatch. This prevents smoke entering the room and the risk of flames exiting the boiler when you add firewood.

Even out the layer of embers. Add more firewood. The amount of firewood added depends on the temperature in the accumulator – do not allow the temperature to get too high. Filling the boiler with firewood increases the temperature of the boiler and a 1500 litre accumulator by about 55°C. Stack the wood carefully. Close the firewood hatch followed by the bypass damper.

If the flue gas temperature increases, you know that the firewood has ignited. When the firewood has burnt and the flue gas temperature has fallen to below 120°C, the fan and charging pump to the accumulator stop running.



RISK OF BURNS

Never open the boiler hatches if the fan is not running and you think there might be a fire burning in the boiler.

Bypass damper

The boiler's bypass damper must only be used for adding wood during a burning cycle, in order to prevent smoke entering the room.

When the bypass damper is open, the boiler works like an up-draught burner with shorter flue gas paths. This increases the flue gas temperature and reduces efficiency.

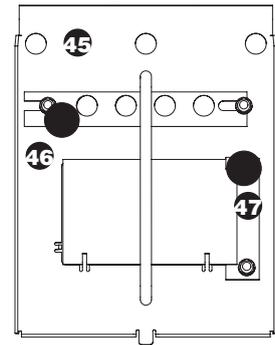
Do not forget to close the damper after adding firewood.

Controlling combustion

All air passes into the boiler through the draught hatch in the ash hatch. Combustion is controlled by the draught created by the fan, and by the addition of oxygen in primary, secondary and tertiary air through the inner ash hatch.

To optimise combustion and efficiency, the flue gas temperature should be 175- 200°C.

45. Hole for gas lighter.
46. Secondary damper, normally closed.
47. Tertiary damper.

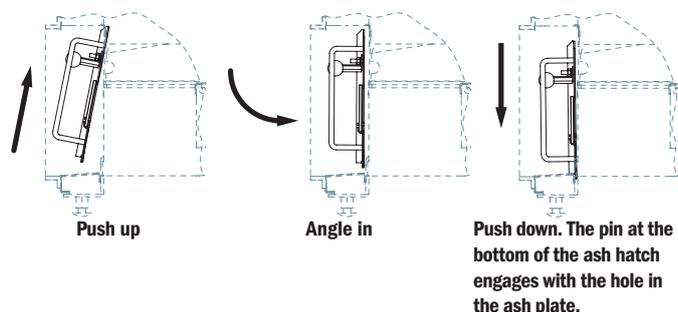


The tertiary air, 47, can be adjusted so that the flame is light yellow.

The soot indicates the quality of combustion. If it is very dark or black, the combustion process is not receiving enough air. In this case, the damper should be opened more. Efficient combustion gives the soot a grey-brown colour. If you are burning wood with a moisture content of 18%, the opening should be about 4 mm.

Inner ash hatch

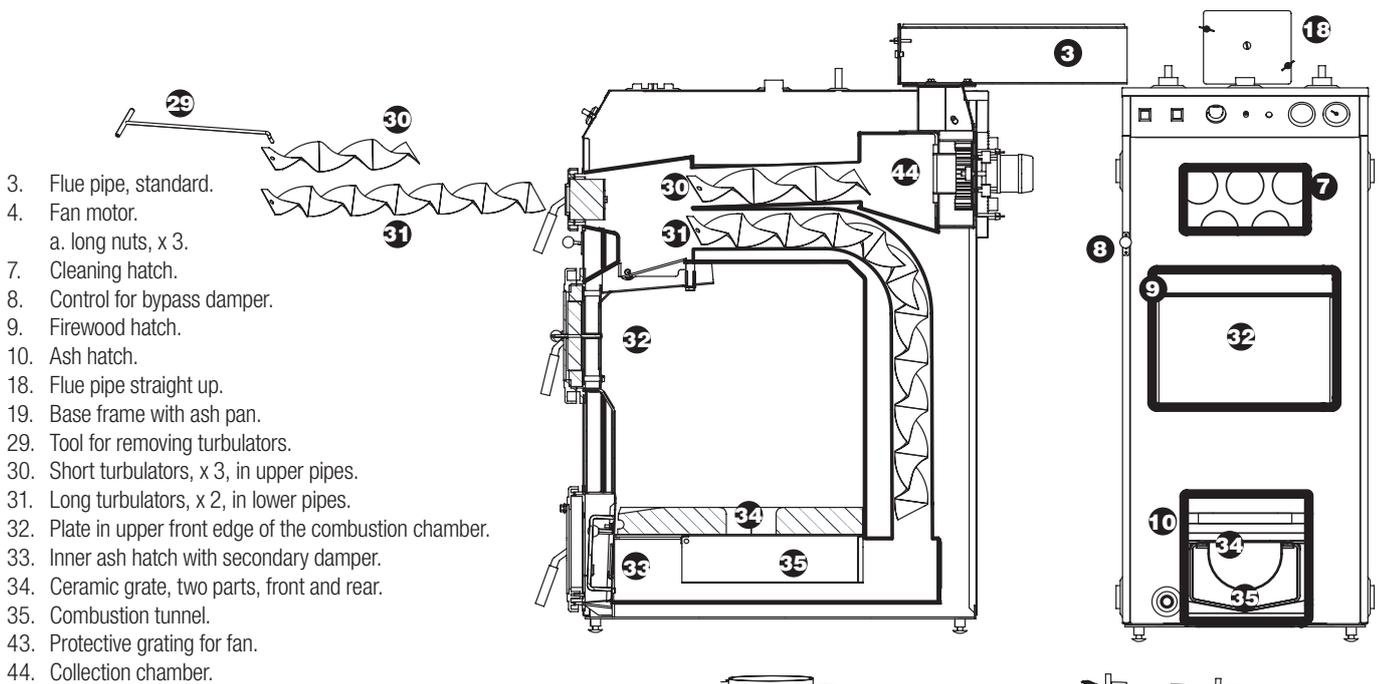
The diagram below shows how to insert the inner ash hatch. Follow the steps in reverse to remove it.



When cleaning, do not leave any remains of wood or embers on the grate.
All boiler cleaning takes place from the front.
Disconnect the power supply to the boiler before cleaning.
Rake out the ash from the combustion tunnel before each burning cycle.

Ashes may contain embers for a long time after the burning cycle, so keep them in a non-flammable container with a cover.

Tarring in the combustion chamber does not normally cause any problems if the correct burning procedures are followed with an accumulator tank.



- 3. Flue pipe, standard.
- 4. Fan motor.
 - a. long nuts, x 3.
- 7. Cleaning hatch.
- 8. Control for bypass damper.
- 9. Firewood hatch.
- 10. Ash hatch.
- 18. Flue pipe straight up.
- 19. Base frame with ash pan.
- 29. Tool for removing turbulators.
- 30. Short turbulators, x 3, in upper pipes.
- 31. Long turbulators, x 2, in lower pipes.
- 32. Plate in upper front edge of the combustion chamber.
- 33. Inner ash hatch with secondary damper.
- 34. Ceramic grate, two parts, front and rear.
- 35. Combustion tunnel.
- 43. Protective grating for fan.
- 44. Collection chamber.

Cleaning the boiler

Rake out the ash from the combustion tunnel before each burning cycle.

It is normal for tar to form on the walls of the combustion chamber. The tar does not need to be removed because it will burn off once the layer has reached a certain thickness. The tar does not affect the efficiency of the boiler, and the output of the boiler is calculated and dimensioned on the basis of the heat conversion surface area in the flue ducts. The flue ducts must be kept clean at all times. In a cleaned boiler, less of the heat escapes with the flue gases. One way of telling whether it is time for cleaning is to check the flue gas thermostat. It is a good idea to clean the boiler if the flue gas temperature is approx. 25SDgrC higher than the temperature in a clean boiler.

- Open the cleaning hatch, 7.
- Pull out the five turbulators, 30 (x 3) and 31 (x 2), using the tool 29.
Clean the pipes with the pipe brush.
When cleaning the three upper pipes, be careful not to push the pipe cleaner through the grating, damaging the fan. Do not push the pipe cleaner further than the end of the pipe. You can feel when you have reached the end from the difference in the amount of force needed to push the cleaner. Replace the turbulators.
- Open the firewood hatch, 9, and the bypass damper, 8.
Remove the ash on the plate in the upper front edge of the combustion chamber, 32.
There should always be a small quantity of ash on the ceramic grate, 34, in order to extend the service life of the grate.
- Open the ash hatch, 10, and remove the inner ash hatch.
Rake out the ash from the combustion tunnel, 33, but leaving a protective layer of a couple of centimetres.
Clean the chamber around the combustion tunnel.
Close all hatches and dampers.

Chimney sweeping

After the chimney has been swept, unscrew the wingnuts on the front of the flue pipe, 3 and 18, and remove the cover. Remove soot and ash. Before restarting the boiler, remove any soot and ash that has fallen onto the fan and into the collection chamber 44.

Cleaning the fan

If necessary the fan can be removed and cleaned. You should handle the fan with care.

- Remove the fan connector, 16, from the boiler plug.
- Unscrew the long nuts, 4a, securing the fan.
- Clean the fan blades carefully so they keep their shape. You are recommended to use a paintbrush.
- Replace the fan and connect the cables.

Ceramic – combustion tunnel

The ceramic grate and combustion tunnel are wearing parts that will have to be replaced over time. Wearing parts are not covered by any guarantee. Small cracks in the ceramic are not abnormal and no action is necessary.

To increase the service life of these parts, follow these instructions:

- **Do not remove the ceramic when cleaning the boiler combustion chamber.**
- **Scrape the ceramic gently and carefully when removing ash from the boiler.**
- **Leave a couple of centimetres of ash as a protective layer on the grate and the combustion tunnel.**
Pieces of charcoal from the previous burning cycle can be left for the next cycle.
- **Only use “real” wood, avoiding plastic, treated timber, refuse, etc.**
- **Place the wood in the boiler, do not throw it in.**
- **If the boiler/ceramic is new or if the boiler has not been used for a while, light a small fire to heat the ceramic and remove any moisture.**

Safety valves

In order to preserve the safety function, the safety valves for the domestic hot water system and the heating system must be operated regularly, around four times a year.

Open and close the safety valve manually around four times a year, checking that a small amount of water escapes and that the valve closes again properly.

Also check that there is sufficient pressure in the system. If necessary, add more water.

Venting

Regularly check that there is sufficient water in the heating system.

Air may remain in the system for a while after installation, so bleeding should be repeated a few times. After bleeding, check the pressure and add water if necessary.

Water pressure in the system

The pressure required in the heating system depends on the height difference between the lowest and highest points in the system, the static head. If the level difference is 5 metres, the pressure is 0.5 bar, if it is 10 metres, the pressure is 1 bar.

The pressure required in the heating system depends on the height difference between the highest and lowest points in the system, the static head.

Note that the pressure in the system varies with the boiler temperature – do not add water unnecessarily.

The volume of water changes with the temperature, and the change in volume affects the pressure in the system. The higher the temperature the greater the volume and the higher the pressure. The expansion vessel takes up the changes in volume. The flow temperature – and therefore also the pressure – is higher in the summer than the winter.

Unvented expansion system

The pressure in the unvented expansion vessel should be checked at intervals of several years. The vessel must not be exposed to any pressure from the heating system.

Overheating protection

The overheating protection, which stops the fan if the boiler temperature is too high, is reset on the boiler control panel. The boiler temperature must have fallen to below 95°C before you can do this.

If there is a risk of freezing

In severe cold weather, no part of the heating system should be turned off as this would involve a risk of burst pipes.

Never start a burning cycle if you suspect that any part of the heating system might be frozen. Call the installer.

If the heating system will be turned off for an extended period, the water should be drained.

Draining the boiler

The boiler must not be running while it is being drained.

Close the valves to the heating system.

Run the water to a floor drain via a hose connected to the boiler drain valve, R15.

Allow air into the system by opening the boiler safety valve.

The drain valve for the heating system must be located in a convenient place.

Boiler cleaning

Keep the boiler clean and tidy.

Alkaline cleaning agents are useful for removing soot marks from the boiler. Do not use strong solvents.

Pellet burner

For optimum reliability and efficiency, it is essential to check and adjust the burner regularly.

The boiler temperature should not be allowed to fall below 70°C

Oil burner

For optimum reliability and efficiency, it is essential to check and adjust the burner regularly.

The boiler temperature should not be allowed to fall below 70°C

The most common problems that occur when burning firewood are usually the result of the boiler failing to reach a high enough temperature so that the boiler never really gets going. Another common problem is that the heat is not transferred to the accumulator tanks even though the wood is burning well in the boiler.

Poor combustion in the boiler	Damp wood.	A ceramic boiler requires a high combustion temperature. To achieve this, the wood must be dry, moisture content 12- 30%.
	Incorrect handling.	Read the instructions.
	The wood is not suitable for the boiler.	The firewood should be 50 cm long. The thickness should allow three blocks to fit the width of the grate.
	Shaped wood, rectangular wood.	If uniform blocks of wood are stacked on each other, a solid mass of wood is created with limited surface area for the fire to act on. Arrange the wood so there are gaps between the blocks.
	Fails to burn.	This happens when the wood is bent and is not suitable for the boiler. Use wood that is suitable for the boiler.
	Inadequate air supply.	The fresh air intake of the boiler room must have at least the same cross sectional area as the flue duct. Check that the air valve is open.
	Secondary/tertiary damper too open.	If the damper is too open, the primary and secondary air will be incorrectly distributed. Start with the secondary damper fully closed. It will never normally be necessary to open it by more than a few millimetres (glass).
	The chimney runs downwards from the boiler connection.	The turbulence created takes away some of the draught. Fill the lower part with sand or similar material.
	No accumulator control.	A ceramic boiler is at its most efficient when the ceramic is hot. The temperature in the boiler therefore needs to be increased quickly before charging begins. Add a control system.
	Ceramic not correctly positioned.	If the boiler is new, check that the ceramic has not moved during transport. There is no need to remove the ceramic, even for cleaning. However, if it is removed anyway, make sure it is replaced correctly. Check the seal with the combustion chamber walls.
High flue gas temperature.	Tar, soot in the pipes.	Due to incorrect combustion. Check the firewood, the draught, the air intake and the handling. Clean the boiler.
	Bypass damper open.	Close the damper. The bypass damper must only be opened for adding wood.
	Combustion tunnel in wrong position.	The combustion tunnel must be inserted as illustrated on page 9.
	Faulty flue gas thermometer.	The thermometer may have been damaged by cleaning or by long periods of updraught burning.
Tar and large quantities of soot in the pipes.	Incorrect combustion.	See the section about high flue gas temperature.
	Wrong connections.	Check.
Heat is not transferred from the boiler to the accumulator.	Circulation pump too small.	The pump must have sufficient capacity to transfer the heat. Change to a larger pump.
	Air.	If you make the connections as suggested, the system will not be sensitive to air problems. Vent.
	Wrong connection of accumulator.	See the points above.
Boiling noises in the boiler.	Low pressure head.	Check the pressure, which should be about 1 bar. The expansion vessel must be dimensioned for the volume and for the temperature variations that occur.
Fan fails to start	Main switch in position O.	Set the main switches to position I.
	Forgotten to connect the instant connector.	Connect the instant connector.
	Overheating protection triggered.	Reset the overheating protection.
The safety valve opens when the system heats up.	Expansion vessel too small.	See the section about the "Expansion system" on page 5.
	Initial pressure in the expansion vessel too high/low.	Check the pressure in the vessel, see the section about the "Expansion system" on page 5.

item	prod.no.	name	qty.
25	12 00 17	Overheating protection 1-pole, alt. 110°C	1
21	12 00 53	Thermostat 1-pole 100-500°C	1
	12 00 09	Handle thermostat	1
22	13 00 31	Switch 2-pole, auto-return	1
20	13 00 32	Switch 2-pole	1
18	16 00 01	Terminal block 3-pole	1
	16 00 06	End plate	1
23	17 00 06	Relay 1-pole alt.	1
24	17 00 21	Time relay	1
26	19 00 06	LED 230 V, red, pin	1
	23 00 75	Damper arm	1
	23 00 76	Damper arm lock	1
31	23 22 52	Turbulator 1000 mm	2
30	23 22 53	Turbulator 436 mm	3
11	24 03 50	Drain valve. R15ext	1
5	29 50 05	Cleaning tool bracket	1
	30 00 09	Glass fibre cord 6mm (m)	0.6
	30 00 11	Glass fibre cord 10mm (m)	1.4
	30 00 30	Ceramic fibre paper 1x25mm (m)	2
34	3104 00	Grate front, V-37	1
34	31 04 01	Grate rear, V-37	1
9	32 00 07	Firewood hatch	1
10	32 00 18	Draught hatch, V-37	1
	37 00 60	Handle knob 25 mm	2
28	38 00 01	Manometer 0-4 bar	1
27	38 00 03	Thermometer. 0-120°C	1
	38 00 30	Flue gas thermometer 50-500°C	1
	44 00 02	Pipe cleaner 89 mm	2
	44 00 05	Pipe cleaner 595x80x60/30mm	1
	44 00 11	Spring steel shaft 1500 mm	2
15b	44 01 53	Inlet 3-pole female	1
	44 01 54	Panel fixing 3-pole	2
17a	44 01 59	Plug 3-pole	1
16b	44 01 66	Outlet 5-pole for panel	1
16a	44 01 67	Plug-on contact 5-pole	1
17b	44 01 68	Inlet 3-pole male	1
15a	44 01 69	Plug 3-pole	1
	44 02 27	PowerJet gas lighter	1
4	50 00 09	Fan V-37F	1
	70 00 75	Insulation for cover of flue gas fan	1
	70 00 86	Fan gasket	1
	71 01 90	Base plate of ash hatch	1
35	71 01 95	Combustion tunnel	1
	71 01 98	Bypass damper	1
	71 02 00	Damper arm	1
	71 02 57	Inner ash hatch	1
29	71 02 60	Turbulator tool	1
	71 02 61	Inner damper of draught hatch	1
	904 56	Ash rake	1
7	909 21	Cleaning hatch	1

The item numbers refer to the number of the component in these instructions.