EFFECTA KOMPLETT III

- INSTALLING
- MAINTENANCE
- SERVICE
- ASSEMBLY

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Light
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effecta

Rev. JG. 014-09-03

Introduction

We at Effecta would like to thank you for putting your trust in us when choosing your new boiler. The "Effecta Komplett III" has been developed to give you maximum performance, comfort and quality. In order to get the best results from your boiler, we suggest that you follow the recommendations in this installation guide.

Checking your delivery

Check that the boiler has not been damaged during transportation. If the boiler has been damaged, you must report this to the transportation company immediately.

Your safety

If you discover any faults or defects in our products, it is important that you report them as quickly as possible to your installation engineer, so that the fault can be rectified. Make sure that there are no flammable materials close to the boiler, to help prevent risk of fire. You must use your own judgement when operating the pellet boiler. Remember that the hatches and some surfaces can get hot. You must take caution to avoid being burnt.

The user

It is the user´s responsibility to operate the boiler according to our instructions. If you do not operate and maintain your boiler correctly, the environmental impact of the boiler will be greater, its efficency will be reduced and the service life of some components will be shorter. If there is anything that you are not sure about, please contact your installation engineer or Effecta for advice.

Warranty

The warranty takes effect from the date on which the boiler is installed. The supplied installation form must be completed and returned to Effecta. You can find the other guarantee terms on (page 3).

Scope of delivery

Please check all components delivered.
The standard delivery as follows:
- Effecta Komplett III boiler
- Cleaning handle with brush
- Rake with scraper
- Fluetube
- Draft stabiliser (optional)
- Turbulators, 8pcs.(mounted)
- Drain cock
- Shunt valve + motorized shunt control, not in "Light" version
- Electrical heater 3-9 kW (mounted), not in "Light" version
- Thermostatic mixer valve, not in "Light" version
- Room thermostat, optional in "Light" version
- Outdoor sensor, optional in "Light" version

Warranty

Effecta products are guaranteed to be free of defects in materials and workmanship. The main body has a 5 year warranty against leakage of water and all other parts have a 2 year warranty. The warranty also covers original spare parts. Any faulty products will be replaced or repaired at the discrimination of the retailer or Effecta. If a faulty product is detected, Effecta is entitled to replace it with a new or reconditioned product of the same or a similar type.

If you have a complaint, you must contact your retailer before starting any servicing work.You must submit your complaint without delay. You must always state the type of product, the date of purchase and the serial number.

Otherwise the heating and plumbing industry's current regulations apply in case of complaints.

Guarantee terms:

The guarantee is valid on condition that:

- The boiler and the heating system have been installed in accordance with the installation instructions and in a professional manner.
- The location where the product is installed is suitable for the purpose.

The guarantee does not cover:

- The overall functioning of the heating system, costs incurred as a result of the heating system being out of operation, or the cost of the temporary replacement of products.
- Damage or injury caused by negligence during the installation or by operating the boiler in a way which conflicts with the installation and user instructions.
- Damage caused by abnormal wear, incorrect operation and maintenance.
- Damage caused by the use of non-original spare parts.
- Damage caused by the boiler being positioned in an unsuitable location.
- Damage caused by vermin.

System data:

Installer:	
Date:	
Electrical installer:	

Contents

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In general

The Boiler

Effecta Komplett III is a boiler which is to be fueled with wood pellets. No other kind of fuel is allowed to be used. Not logs or oil.

Disassembly and disposal

It will be many years before your Effecta boiler is worn out, but it is important that you follow the regulations in force at the time concerning disassembly and disposal of your boiler.

The fuel

The boiler should burn 6 mm pellets which come either in sacks or are supplied by bulk truck. If you have built a bulk storage, you should follow the current recommendations to ensure that the quality of the pellets does not deteriorate. Never use pellets which do not meet European pellet standards, as this may result in problems in operating the burner.

Symbols in this document

Information

This symbol is shown with info to the installer which can be important to know and understand. Neglecting this information can affect the performance of the product.

Dangerous electricity

This symbol means that extra caution should be taken otherwise serious personal injury might occur. When maintaining the product where this symbol is present the power must be disconnected. All electrical wiring must be done by a Professional and comply with current building regalation.

United Kingdom ”Clean Air Act”

Effecta Komplett has been recommended as suitable for use in smoke control areas when burning wood pellet.

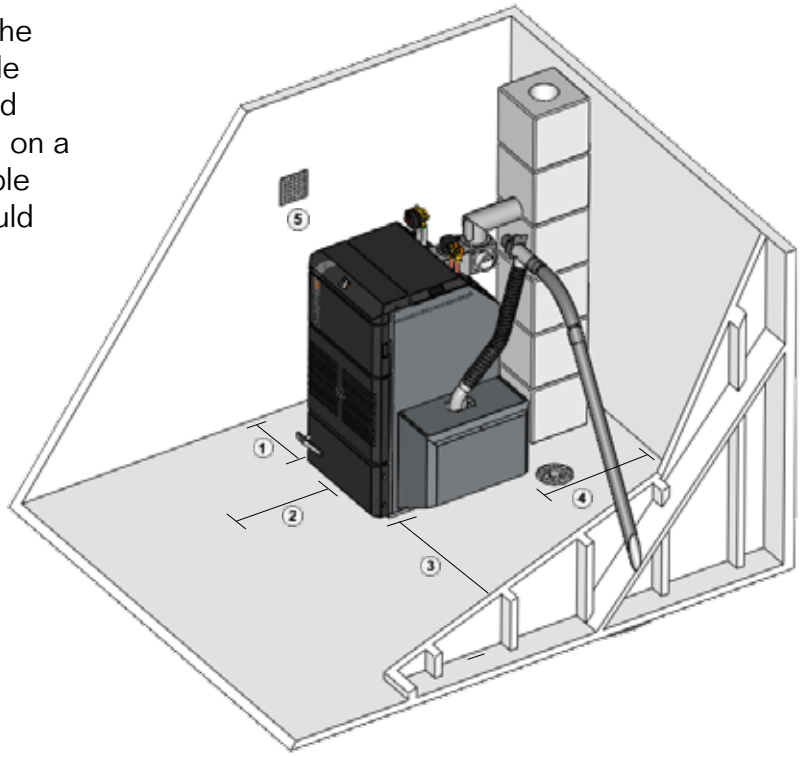
Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a smoke control area. It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated smoke control area. It is also an offence to acquire an ”unauthorised fuel” for use within a smoke control area.

Unless it is used in an ”exempt” appliance (”exempted” from the controls which generally apply in the smoke control area). The Secretary of State for Environment, Food and Rural Affairs has powers under the Act to authorise smokeless fuels or exempt appliances for use in smoke control areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been ”authorised” in Regulations and that appliances used to burn solid fuel in those areas (other than ”authorised” fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.
Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of smoke control areas and you can contact them for details of Clean Air Act requirements”

To the installer

It is time to install the Effecta Komplett III pellet boiler. Please follow the examples we provide for a safe installation. After installation, be sure to instruct the customer on how the heating system and the boiler work, in order to avoid unnecessary complications in the future. Please fill out "Documentation of Settings"(pg35).

Set up



The boiler is positioned so that the surface temperature of flammable building material does not exceed 80°C. The boiler must be placed on a non combustible floor, for example concrete or tiles. The boiler should be positioned at least 15 cm (1) from the wall. The distance from the flue tube on the boiler to a flammable wall with ignition protective covering must be at least 30 cm (4). In order to clean the boiler, a minimum clear space of 1 metre (2) is required in front of the boiler and on the side at the convection section and at any inspection panel in the chimney. A passage with a minimum width of 0.5 (3) m is required along one of the long sides of the boiler. Check the regulations of your country in order to place the pellet hopper on a approved distance from the boiler.

The boiler room

The boiler must be installed in a boiler room or boiler house. The ceilings and walls must be fitted with ignition protective covering and the floor must be made of non-combustible material. Minimum ceiling height at the boiler is 2 metres. The boiler room or boiler house must be equipped with a fresh air intake with the minimum dimensions 150 x 150 (5.) mm or with a sufficiently large free sectional area to avoid low pressure in the boiler room. It must be impossible to close the air intake.

Chimney

The draught in the chimney should be about 15 pa at low temperatures. It is important that the chimney is tested and approved by a HETAS approved installer before a new boiler is installed. If the chimney has a strong draught, a draught controller (see page 32) may need to be installed for good boiler operation. If you have a tall chimney and an outgoing flue gas temperature below 170°C, there is a risk of condensation in the chimney, which can damage the chimney in the long term. A suitable temperature is 70-80°C one metre down into the chimney. Ask your local chimney sweep for help to measure the temperature. If the chimney is tall and has a large area, a draught that is too strong may mean high levels of flue gas and overignition in the ash compartment. If this is the case, a draft stabiliser must be installed.

The components

The shunt valve

The shunt valve controls the heat supply from the boiler to the radiator circuit.
Effecta Komplett III is fitted with motorised shunt control. The room temperature can be adjusted on a scale on the thermostat. An automatic system will significantly reduce fuel usage and provide a more comfortable environment.

The thermostatic mixer valve

The mixing valve is used to ensure that the temperature of the hot water in your shower and elsewhere in the house is comfortable. Set the system to the temperature you want by turning the thermostat between +/-.

The burner

The burner is mounted on the left or right side. The burner heats the water in the boiler which provides heat to the domestic and hot water.

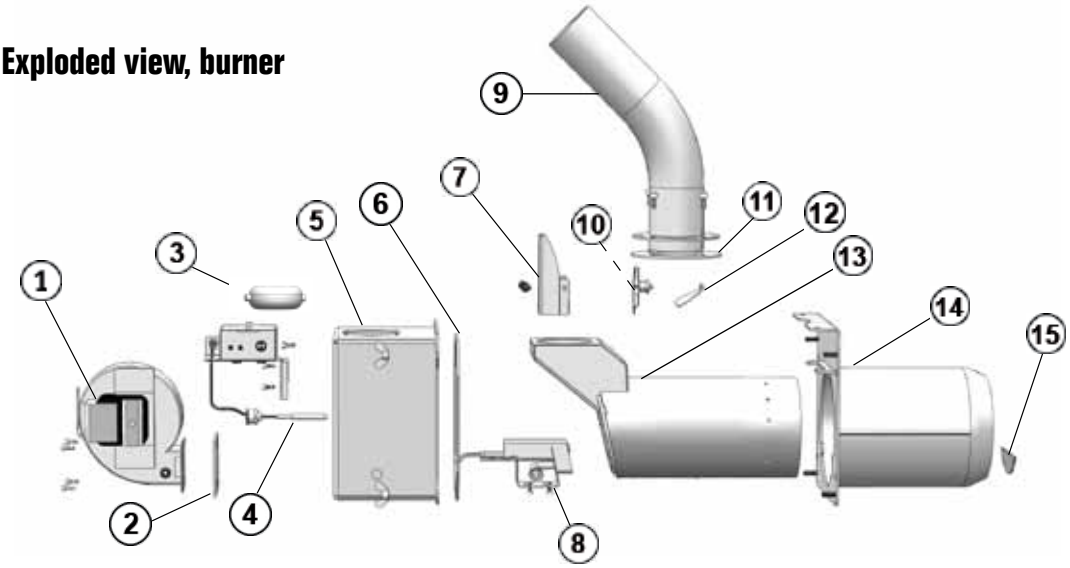
The turbulators

In the tubes in the heat exchanger hangs the turbulators. The turbulator`s function is to transfer heat from flue gas to boiler water. They must always be placed in the boiler. If the flue gas temperature should be to low, the turbulators can be cut off. Always contact the installer before doing this.

The sealings

The seals on the hatches must be checked every year. If the hatches do not seal properly, the efficiency and the combustion process of the boiler will deteriorate.

Exploded view, burner



1.	Combustion fan with tachometer	9.	Fall shaft
2.	Fan seal	10	Overheating protection
3.	Under pressure switch	11	Seal for fall shaft
4.	Flame sensor	12	Pellet retarder
5.	Rear housing	13	Inner combustion tube
6.	Rear housing seal	14	Outer combustion tube
7.	Cover for overheating protection	15	Stop plate
8.	Ignition console		

Safety and function

Before using the product, the owner and/or other user must read and understand the content in this manual. The directions must be followed. This is to make sure that the product is functioning correctly and accidents and injuries are avoided. Incorrect use or burner adjustment can result in damage to property and personal injury or poorer performance in the product. The boiler room where the product is installed, the chimney and other components must be approved according to current legislation.

The commisioning of the product must be made by a professional, according to Effectas directions and current legislations. Controls and tuning of the product should be made by a professional. A chimney sweeper should also be contacted when commisioning the product. The electrical connections must be done by a qualified electrician, according to Effectas instructions in this manual.

The casing outside of the burner must always be fitted on the boiler when the boiler is connected to the electrical power. Before cleaning and maintenance of the product, make sure it is disconnected from the main power.

It is strictly forbidden to open any doors when the burner is igniting. If any door or hatch is opened when the burner is running, great caution must be taken. Any kind of interference or using of other than original spare parts can result in damage to the product or person. It also removes Effecta from any liability.

It is strictly forbidden to make any changes or alterations on the boiler without prior approval from Effecta. If any changes are made, the safety functions, or any other function, might not work as it is supposed to, and all warranties and liabilites from Effecta are cancelled.

This manual should be kept during the whole life span of the product. Any updates will be reported on the Effecta web page: **www.effecta.se.**

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The safety systems

The overheat protection on the fall shaft

This stops the feeding if the fan temperatures gets too high. Reset is made manually.The cover must always be in place when connected to main power. It only cuts the power to the auger.

Flame sensor

The flame sensor monitors the flame in the burner. If the flame disappear for a set time during operation the burner stops and goes into cooling phase.

Overheat protection on the boiler

There is overheat protection on the boiler which cuts the power to both the boiler and the burner if the temperature in the boiler exceeds 95°C.

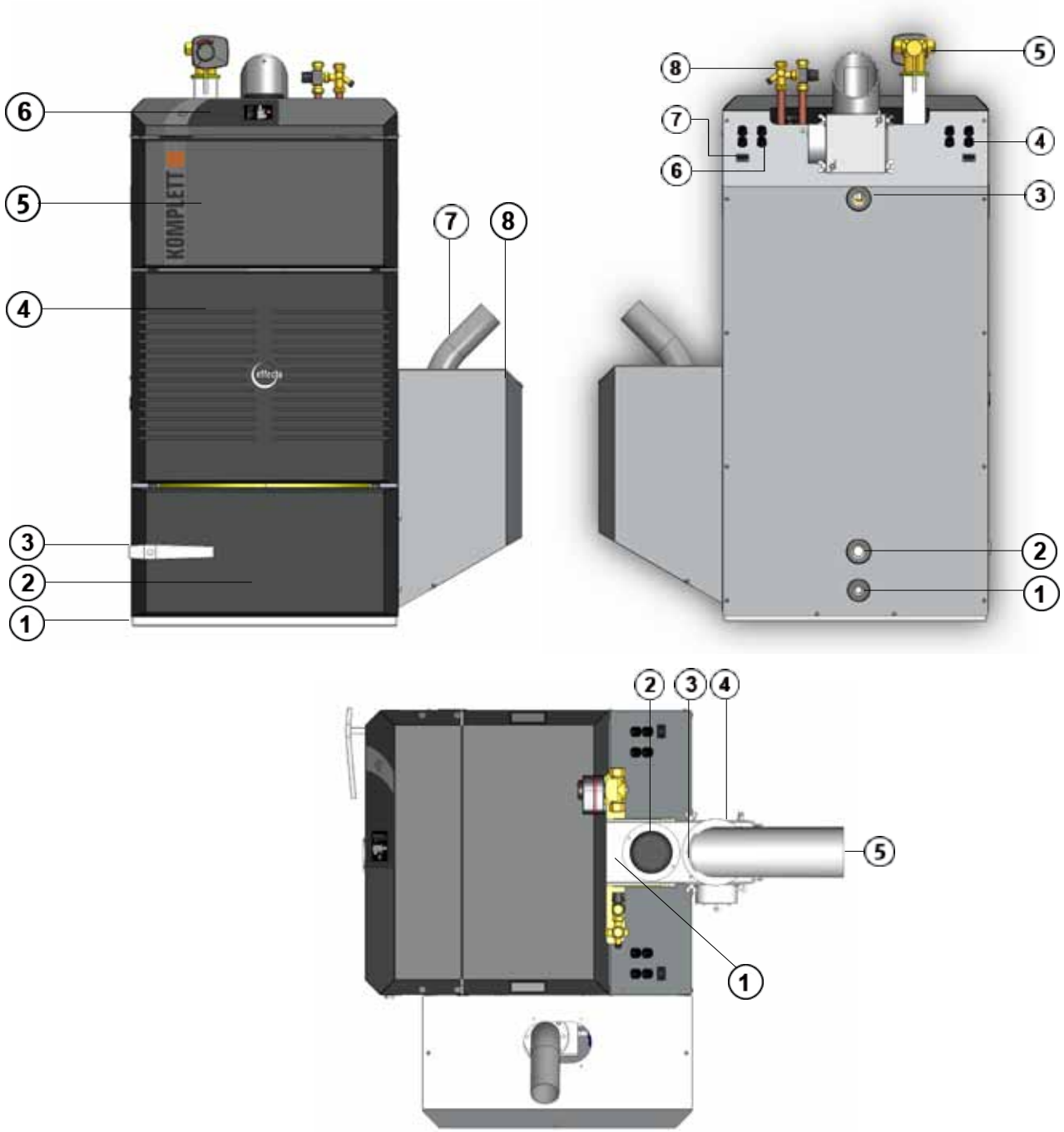
Power outage

After a power outage the control system remembers where in the sequence the burner was. If it was in the ”Run” mode, the fan blows for four minutes to burn out any pellet rests. Then it goes into normal mode.

Under pressure switch

If the under pressure in the combustion chamber is lost, the auger stops and no more pellets is fed into the burner. If the soot door not is closed, the under pressure is lost and the burner will switch off. The auger starts when underpressure is obtained again.

Placement of the components



	Front		Back		Top
1	Adjustable feet	1	Drain cock 1/2"	1	Flue gas measuring point
2	Soot door	2	Return hot water circuit 1"	2	Flue fan
3	Handle soot door	3	Flow hot water circuit 1"	3	Soot door flue tube
4	Front cover	4	Hoses electrical wiring	4	Soot door 3 pc.
5	Over heat protection (behind front)	5	Shunt valve *	5	Flue tube
6	Display	6	Conduit for sensor		
7	Fall shaft pellet burner	7	Connector feedmotor/auger		
8	Protective cover	8	Mixing valve * for hot water		

* Not on model Komplett Light

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The fuel

Wood pellet is made of sawdust, a byproduct from handling wood. Wood contains lignin that makes the pellet hard without any glue or other binder used.

There are several different kinds of pellet on the market. The quality and energy can be different between them. The diameter is 6-8mm, the normal length is between 5 and 30mm. Pellet with high quality has a density of 600-750 kg/m3. The moist content is 5-9% in weight. Oil has an energy content of 9,9kWhr/kg and wood logs about 4,0kWhr/kg. Wood pellet has 4,7-5,0kWhr/kg in energy content. To maintain good combustion the pellets should be stored in a dry place and be protected from dirt. Pellets are delivered in sacks with 10-15kg content or in bulk by truck.

Effecta Komplett III can handle most of the different types of wood pellet that is between 6-8mm, but in UK only 6mm should be used. The quality should meet DIN+ standards. Good pellet with small amount of dust and an even quality helps achieve good combustion, less maintenance of the product and also less environmentally harmful emissions.

The worse quality of the fuel, the more cleaning and maintenance of the product.

! *The amount of pellets fed into the burner should be controlled every time the pellet brand or quality is changed. If the deviation is more than 0,5kg/hour compared to the numbers in the "Warranty and Installation" paper, the burner should be tuned.*

The chimney

Inspection

We recommend that the local chimney sweeper inspect, give advice and guidance regarding any necessary steps needed to be taken regarding the chimney and the boilers connection to it. The detailed method of installation must be in accordance with building regulations.
Some issues needed to be considered:

Dimensions

Suitable dimensions are from about ca Ø120 to Ø160 mm for a steel construction and about 140x140 mm for a bricked. The length of the chimney should be so that a draft of 15-20 Pa is reached during operation.
A much larger/smaller flue might be needed to be adjusted to receive a proper draft. If a new installation of the flue is done, the chimney manufacturer can give advice regarding the dimensioning. The draft stabiliser attached to the flue tube should always be used if nothing else is stated from Effecta.

The flue gas temperature should be checked.

The temperature in the flue directly after the boiler in the flue should be about 160 - 200°C. In low power mode around 100-120°C. With a tall and big chimney there is a risk of condensation which can lead to corrosion and/or frost damages. To control this you can check the temperature 1 meter down from the top of the chimney. The temperature should be at least 80°C at the end of a burning session. Suggestions for actions to be taken if needed is e.g. insulate the chimney or mount a steel pipe inside the chimney. This will increase the temperature in the flues without effecting the efficeny of the boiler. Other actions are increasing the power output of the burner or removing/cutting off turbulators. This will however decrease the burners efficency some. The draft stabiliser helps keeping the chimney free from condensation by ventilating it.

Cleaning system boiler

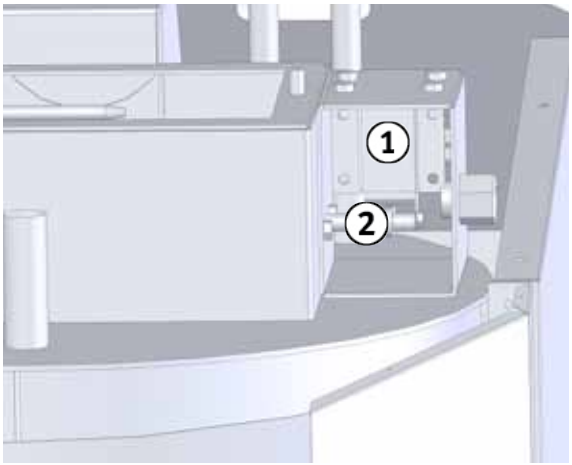
Remember to always cut the power to the boiler before starting any work on it. All electrical work should be done by a certified electrician, for everyones safety.

Function and service

Cut the power to the boiler before servicing. The magnet motor is mounted on the boiler to keep the convective part clean. It is controlled from the menu "Cleaning" on the control panel. It can be set to work/not work in different times during the day.

The magnet motor

The magnet motor is mounted on the right side of the soot hatch on the top of the boiler. The magnet motor rotates the lift shaft up and down to keep the tubes clean.



Lifting shaft

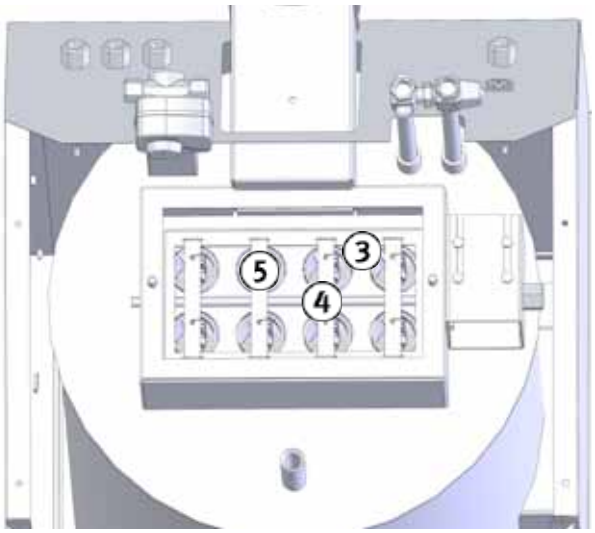
Rotating the lift shaft lifts the turbaltors

The turbulators

The turbulators in the tube help by reducing the flue gas temperature and also cleaning the tubes when pulled up and down.

Suspension

On every suspension there are two turbulators that are removed when cleaning the tubes with a brush.



Flipper

Flips when the magnet motor activates.

1	Magnet motor
2	Lifting shaft
3	Flipper
4	Suspension
5	Turbulator

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Cleaning system burner

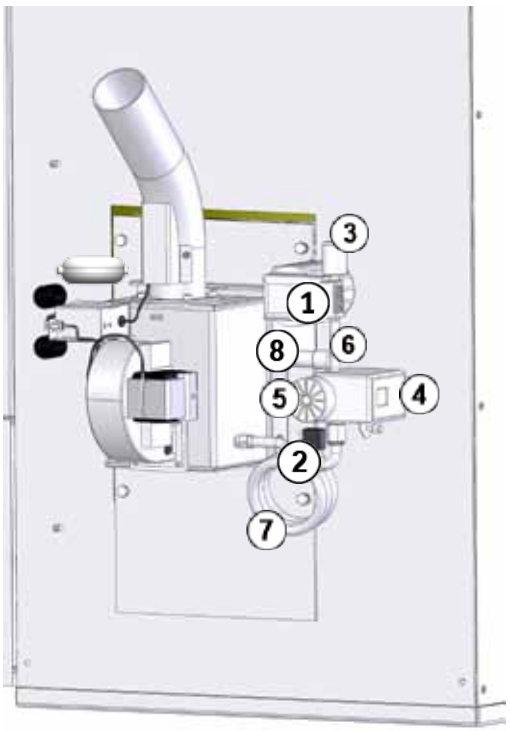
The cover of the burner must be screwed tight after service. Under no circumstances should it be possible to lift it off by hand.

Function and service

Cut the power to the boiler before servicing. Next to the burner an air compressor is mounted that provides pressurised air for cleaning the burner. This is done by letting high pressure air into the burner after the burner has made a heating cycle. The compressor builds up a pressure in the air container which is released into the burner in one blast. This is done four times and all ash and pellet remains are blown out into the ash compartment. The settings are made in the "Service" menu.

The compressor

The compressor creates a pressure in the container. The compressor has a life span of at least 2500 hours.



Air container

The air container stores the air before it is released into the burner.

The pressure gauge

Displays the pressure in the air container.

The safety valve

Prevents the pressure exceeding 9bars by releasing air if the pressure switch fails.

The pressure switch

Stops the compressor at a pre-set value. Normally 7 bars. This is also adjustable.

Non return valve

Keeps the air in the container and prevents pressure on the compressor.

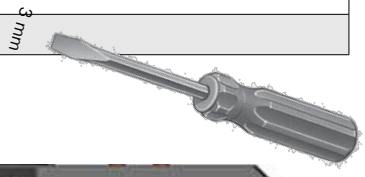
1	Compressor
2	Solenoid
3	Silencer
4	Pressure Switch
5	Safety valve
6	Non return valve
7	Air container
8	Capacitor

The motherboard

Remember to always cut the power to the controller before starting any work on it. All electrical work should be done by a certified electrician, for everyones safety.

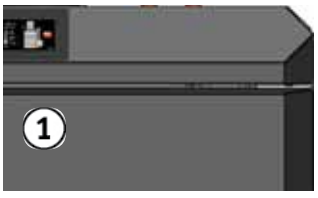
G1	Temp sensor boiler NTC 22 kΩ
G2	Sensor flue gas PT1000
G3	Extern control
G4	Tacho meter
G5	Sensor accumulator tank low NTC 22 kΩ
G6	Sensor accumulator tank high NTC 22 kΩ
G7	Sensor, radiator flow NTC 22 kΩ
G8	Flame sensor
1U.	Connection to display board
2U.	Connection electricity board
1.	Outdoor sensor
2.	Outdoor sensor
3.	Room sensor (1)
4.	Room sensor (2)
5.	Room sensor (3)
52.	
53.	Tacho meter
54.	Tacho meter
55.	Ampere meter
56.	Ampere meter
57.	Ampere meter
58.	Joint

PE	Incoming Earth
N	Incoming zero
L1	Incoming phase 6,3 A/230 VAC
PE	Earth
N	Zero
11	Radiator pump 2A/230 VAC
12	Shunt motor
N	Zero
13	Shunt motor 2A/230 VAC
PE	Earth
N	Zero
14	Solenoid valve AERO 2A/230 VAC
PE	Earth
N	Zero
15	Compressor 2A/ 230 VAC
PE	Earth
N	Zero
16	Magnet motor tube cleaning 2A/230 VAC
N	Zero
17	Loading pump 2A/230 VAC
N	Zero
18	Alarm 230 VAC
19	Alarm
20	Alarm



USB - Connection

In order to upgrade the software in the boiler you need to connect a USB-memory to the bolier. There is an connection cable located behind the cover plate .(1) Turn of the power to the boiler. Insert the USB-memory, then turn the power back on. The controller starts downloading the new software. It´s important not to interrupt the updating procedure, that will damage the controller. Wait until the picture of flags comes up on the display (2). Disconnect the USB-memory. Your boiler is now updated.



*Don´t interrupt the download. This will damage all software in the boiler. Make sure that your USB-stick contains the correct files. There should be an *.hex- and *.bin file on the USB stick.*

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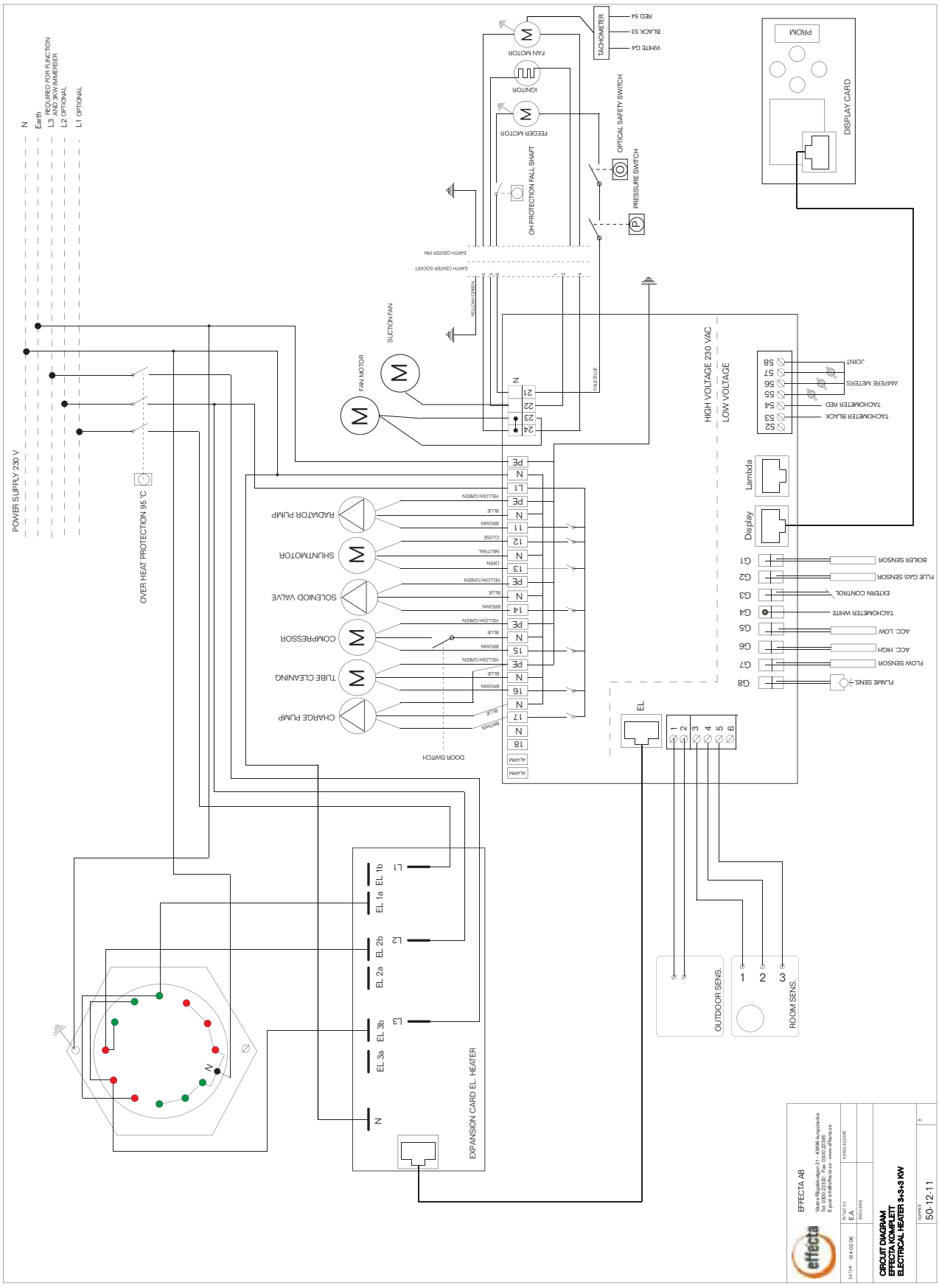
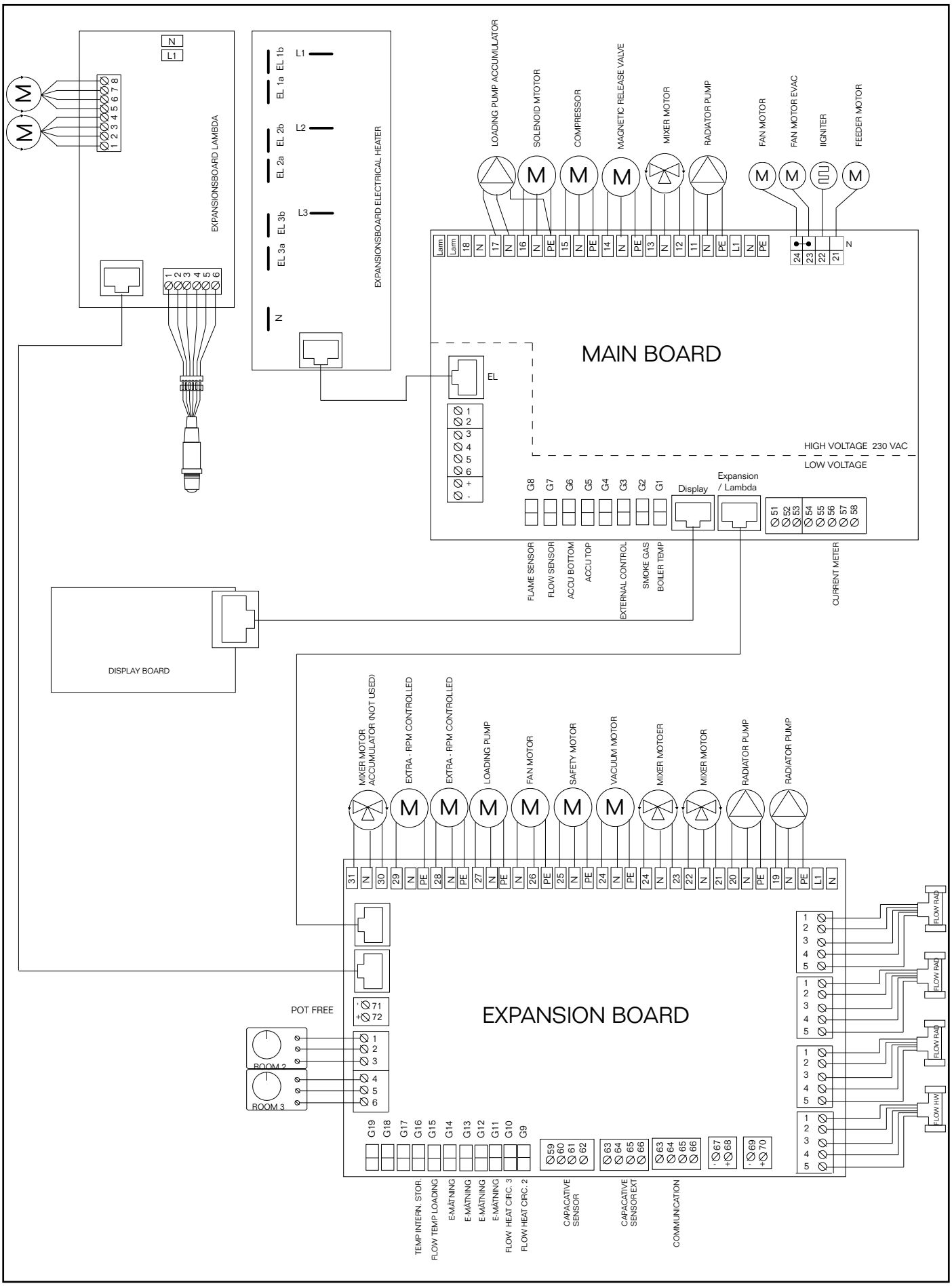
1, 2 or 3 Phase connection



Connection expansioncards



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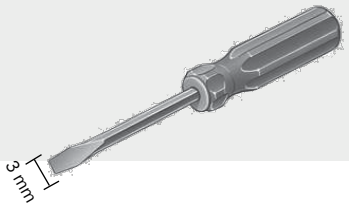
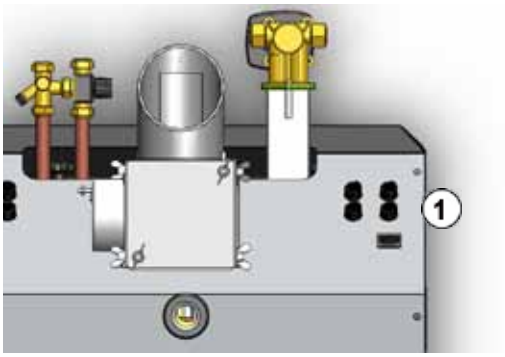
Electrical connection

NOTE! The boiler must be filled with water before the wiring begins.
NOTE! There is a ground cable in the motherboard cover.

For wiring to the motherboard you need to use a standard screwdriver with a tip width of 3mm and a length of about 12cm. You can open the spring load of the motherboard in both the tracks that are on every cable entry.



When it's time to do the electrical connection you need to remove the front casing which is in front of the motherboard. Note that there is a ground cable in the cover. On the back-side of the boiler there are four (1) conduits that end in the front of the boiler (2). These are used to connect the sensors and electrical cables. Don't put the low and high voltage in the same hose. To remove the front casing. remove the two screws(3), then pull it free using the handles.



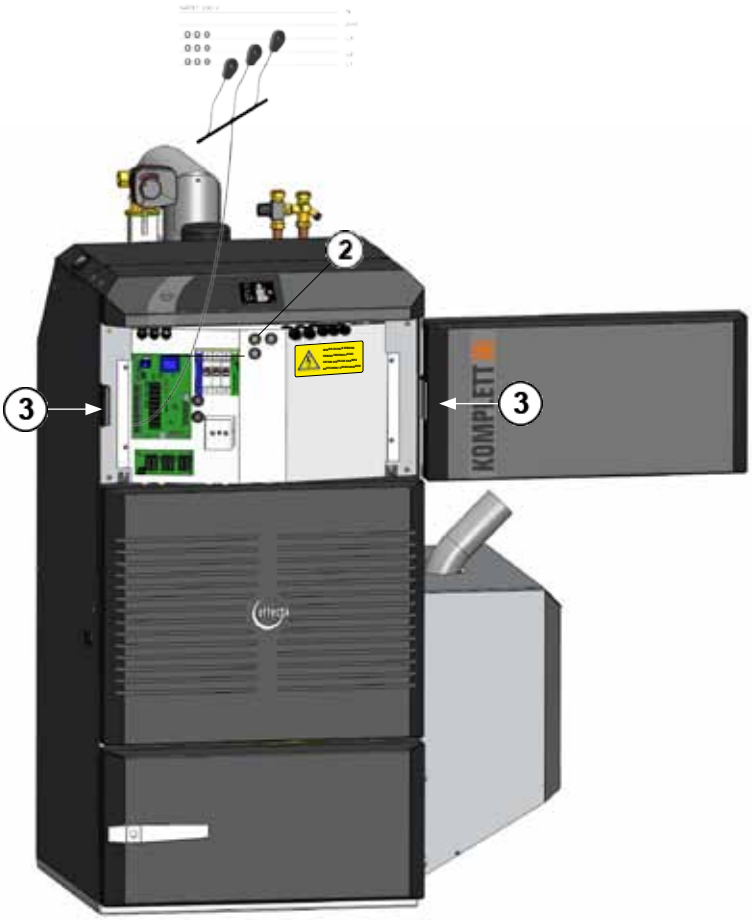
Then connect the input voltage to the card's ports, according to wiring diagram on previous page.

Current sensors

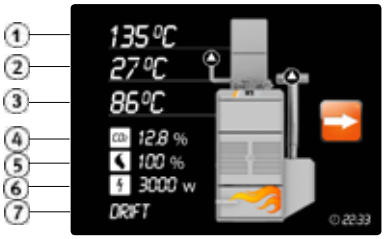
If your electrical system has a problem providing enough electricity to the electrical heater and the house at the same time you can install current sensors that lower the power to the electrical heater if its necessary. This is done by distributing the power to the building's different phases.

Connection of current sensors

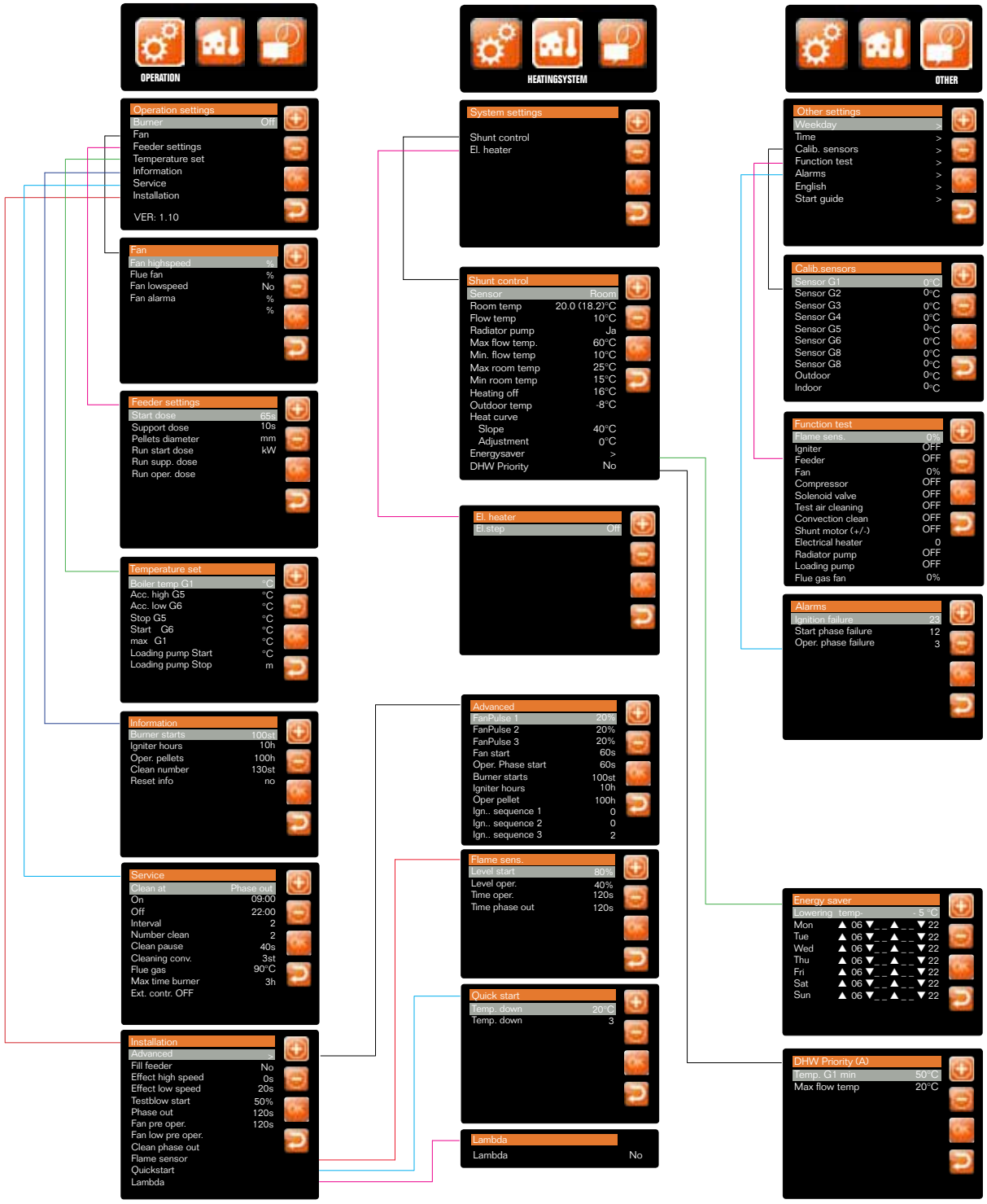
To measure the power you must install one current sensor to each incoming phase in the house. This must be done directly in the electrical contral. Connect the sensors to a cable with the area of 0,5mm2 to the circuit board. In the "electrical heater" menu you set the max power that's allowed on the fuses in your house.



The menu system



1	Flue temp.
2	Flow temp.
3	Boiler temp.
4	CO2
5	Flame sens.
6	El.heater
7	Igniter



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Menu system

Boiler temp	Current boiler temp. G1
Fluetemp	Current temperature of the flue gases G2
El. heater	Current effect of the electrical heater in the boiler.
Acc. tank high G6	Current temp of the acc. tank top. (Only shown when sensor is installed)
Acc. tank low G5	Current temp of the acc. tank bottom. (Only shown when sensor is installed)
Room temp	Current room temperature. (Only shown when installed and activated in software.)
Status	Current burner mode. (Ignition-Running-Cooling-Standby-Off)
FV ---%	Current strength (brightness) of flame in boiler.

Operation	Settings for burner.
Heating System	Settings for heating systems.
Other	Remaining settings.

Burner	Burner mode (on/off)
Fan	Settings for the fan of the burner.
Feeder settings	Settings of the augers feeding control.
Temperature set	Settings for the burners operation temp.
Information	Operations log of the burner.
Service	Menu for burner service settings.
Installation	Settings for automatic cleaning etc.

► *Fan*

Fan highspeed	Setting of the burner fan speed in full effect oper. mode.
Flue fan	Setting of flue fan. Must be 10% higher than burner fan
Fan lowspeed	Setting of the fan speed in low effect oper. mode.
Fan alarm	Set in mode OFF or Tacho
Fan alarm Tacho	Activates Tacho mode
Fan alarm 5s	Time before alarm triggers

► *Feeder settings*

Start dose	Start dose size, measured according to (page 23).
Support dose	Size of support dose, dose is given between ignition and running mode.
Pellets diameter	Size of the pellet
Run start dose	Test run of start dose for measuring. Only available in burner mode off.
Run supp. dose	Test run of supp. dose for measuring. Only available in burner mode off.
Run oper. dose	Test run of operation dose for measuring. Only available in burner mode off.

► *Temperature set*

Boiler temp G1	Shows the boiler temp, start/stop sensor with overheating function.
Stop temp.	Temperature when the burner goes to standby mode.
Start temp.	Temperature when the burner starts up from standby mode.
Acc.tank high G6	When loading acc. tank, sensor G6 is installed at the tank top of the primary tank. The sensor starts the burner at set temp.
Acc.tank low G5	When loading acc. tank, sensor G5 is installed low or at the bottom of the primary tank. The sensor stops the burner at set temp.
Stop G5	Temperature when burner stops.
Max G6	Maximal allowed temperature G6, tank overheated.
Start G1	Temperature when burner starts.
Loading pump Start	Temperature when loading pump starts
Loading pump Stop	Time loading pump runs

Menu system

► Information	
Number starts	Displays the number of burner starts been done
Igniter hours	Displays the number of hours ignitor has been lit.
Oper. pellets	Displays the number of hours the burners been running.
Clean number	Displays the number of times the AERO unit has cleaned the burner.
Reset info	Resets the information above.

► Service	
Clean at	Option if cleaning should be done prior to or after the running cycle.
On	Time when AERO cleaning is allowed (ON).
Off	Time when AERO cleaning is not allowed (OFF).
Interval	Choice of how often the AERO cleaning is to be done.
Number clean	The amount of blows in a cleaning cycle.
Clean pause	Time between each blow in a cleaning cycle.
Flue gas	Temperature when cleaning of the heat exchanger is done
Max time burner	Max operation time of the burner before pause with AERO cleaning.
Extern control	Choice of external START/STOP control to the boiler. The control could be done either by NC or NO connection.

► Installation	
Advanced >	
Fill feeder	
Effect high speed	
Effect low speed	
Testblow start	Seconds the fan blows before ignition phase. Detection of ”old” flame.
Phase out	Seconds the ignitor is active after the flame sensor has approved start value.
Fan pre oper.	The fan speed before operation phase.
Fan low pre oper.	
Clean phase out	Time that the fan afterblows before standby or cleaning.
Flame sens	Menu options for the flame sensor.
Quick start	Menu options for the quick start function.

► Flame sensor	
Level start	Set value where the burner goes from ignition mode to operation mode.
Level oper	Lowest approved value in operation mode. If lower: ”ALARM BURNER”
Time oper	Time before ”ALARM BURNER” when flame sensor lower than level oper.
Time phase out	Time the fan goes to max speed.

► Quick start	
Temp down - °C	Degrees temp shall fall before burner goes to quick start.
Temp down - min	The time in which the temp. shall fall before burner activates quick start.

Menu system

► *Shunt control*	Options for the shunt control
Sensor	Option of control, (ROOM, OUTDOOR or BOTH.
Room temp	Option of set value of the room temperature
Flow. temp.	Temp. to radiator/underfloor heating G7.
Radiator pump	On/Off control of radiator pump.
Max flow temp	Maximum allowed temperature to the flow.
Min flow temp	Minimum allowed flow temp.
Max room temp.	Maximum allowed room temp.
Min room temp	Minimum allowed room temp. Shunt opens full at set temp.
Heating off	Outdoor temp when heating turns off. Rad. pump is runned 1min/2hours.
Outdoor temp	Outdoor temperature at the outdoor sensor
Heat curve	The heating curve for the heating control (page 27).
Slope	Option of slope to the heat curve (page 27).
Adjustment	Option of adjustment to the heat curve (page 27).
Energy saver	Options for energy saver (such as day/time/temp control.
DHW Priority	Options for DHW Priority

► *El. heater*	Options for the electrical heater.
El. step 3-6-9	Choose between different effects on the electrical heater. 1 phase is maximum 3kW
Fuse A	Current load to the fuse in Amps.
El. heater 6 kW	Log of runtimes of the different electrical heating steps.
El. heater 3 kW	

► *Other settings*	
Weekday	Setting of current weekday
Time	Setting of current time
Calibrate sensors	Option to calibrate/adjust all the sensors connected.
Function test	Test mode of the products different functions.
Alarms	Alarm log
Language	Choice of system language
Start guide	Initiates the Start guide

► *Calibrate sensors*	
Sensor G1	Calibration of each sensor +/- °C
Sensor G2	
Sensor G3	
Sensor G4	
Sensor G5	
Sensor G6	
Sensor G7	
Outdoor	
Indoor	

Menu system

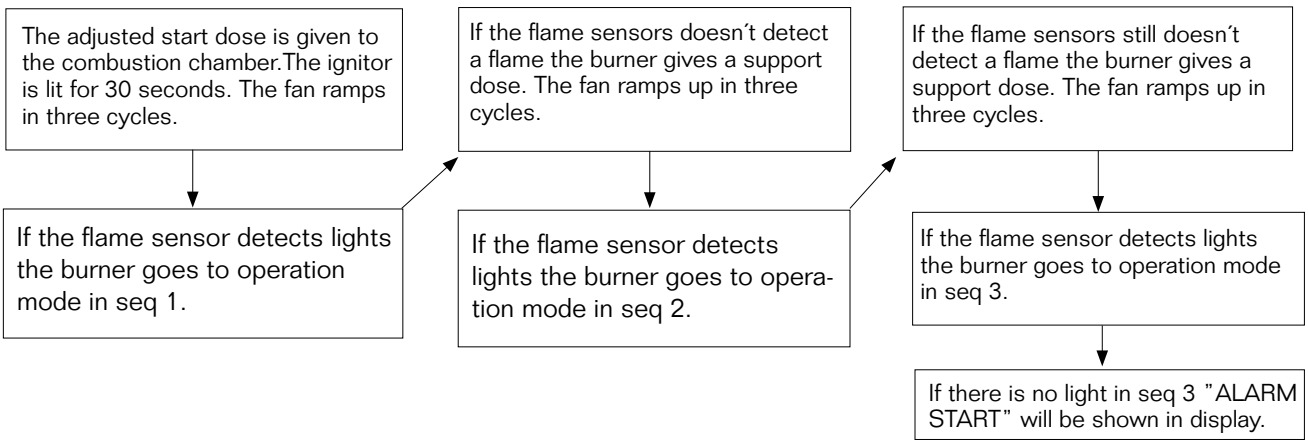
► Function test	
Flame sensor	Function test of the flame sensor. Must be illuminated to test function.
Igniter	Activates ignitor, the fan starts at 40% to protect the ignitor.
Feeder	Activates the auger/feeder.
Fan	Activates the fan
Compressor	Activates compressor for cleaning.
Solenoid valve	Activates/opens solenoid valve for cleaning.
Test air clean.	Activates and tests the full AERO cleaning cycle.
Convection cleaning	Activates the flue cleaning.
Shunt motor (+/-)	Activates the shunt motors open or close, +/-
Electr. heater	Activates electrical heater.
Radiator pump	Activates the radiator pump.
Loading pump	Activates the loading pump for another unit such as Laddomat.
Flue gas fan	Activates and tests flue gas fan

► Alarms	
Ignition failure	Amount of failed ignitions
Start phase failure	Amount of Start phase failure
Oper. phase failure	Amount of Operation phase failure

Alarm at disruption

Alarm Burner	There has been a problem during operation phase. Most likely problem is that the pellets hvae run out. Flame sensor can also be covered by soot.
Alarm Ignition	The burner has missed the ignition phase, most likely problem is poorly adjusted starting dose. Also check the ignitor in the function test.
Alarm Flue gas	The flue gas temperature has been above 320°C. This is a extrmely high temperature, please check that the automatic cleaning is working (function test). Also check the flue gas sensor.
Alarm Boiler temp.	The temperature of the boiler has been above its max value. Normally this can happen from the heat after the combustion cycle. Try to lower the stopping temeprature if the problem reoccurs.
Alarm Flow.	The burner fan has stopped when it should be running. Check for faults on the fan.

Ignition phase of the burner



First start

The boiler is only roughly set from the factory. Before first start an easier tuning must be done. Then the boiler can be started and the combustion can be controlled and fine tuned with a flue gas analyzer. After a couple of weeks in service, a check of the flue gas values should be done.

! *The values shown in the menus earlier are good for a startup of the boiler. Then fine tuning is needed.*

Tuning the boiler.

Start with the settings by entering the boilers menu (page 17.).

▶ Temperature settings
The start and stop temperatures for the burner is set in the menu "TEMPERATURE SETT." The start temperature should not be set below 75°C, there might be problem with hot water running out. The possible range is 40-85 °C.

▶ Temperature el.heater
Set the temperature for the electrical heater to start if a fault should develop or the pellets should run out. Set the temperature 5-10°C below the burners start temperature.

▶ Cleaning of tubes
Set the time when the cleaning of the tubes should be activated.

▶ Clock
In the menu, "Other settings", the time is set.

▶ Shunt
Set the desired indoor temperature. Do this by turning the room thermostat. There is no value on the knob, the value is changed on the display on the boiler. The thermostat should be placed in an open space without interference by heat from e.g a stove or cold draft. Sometimes the heating system might need to be trimmed by turning the thermo-stats on the radiators in different rooms.

▶ El. heater
Here you set what effect the electrical heater should have if activated. You can choose 0, 3, 6 or 9kW, depending on the amount of available phases. Single phase can only use 3kW. Remember to check that the fuses in the house can handle the power to the electrical heater.

Tuning the burner

When the auger runs, all doors must be closed and the feeding tube must be closed also. This must be done to activate the under pressure switch

▶ Fill feeder

Start filling the auger by setting "FILL FEEDER". The auger will run for 15 min. Put a bucket under the outlet to prevent pellet from falling out. It is important that the auger is filled properly, therefore it is a good idea to tap it with for example a rubber mallet during the filling.

▶ The fan

The rpm for the fan is set in the menu "FAN". The rpm is dependent upon the operation dose set. For the best efficiency a flue gas analyzer should be used. You also choose if the low power option should be activated.

▶ Start dose

The feeding of the pellet is the most important part in the system for a good combustion and performance. Set the start dose by activating the "RUN START DOSE". It is important that the start dose is absolutely accurate and 40 cl. It should be checked on startup and then verified when the boiler has been running about 60 hours. If the burner fails to start, the feeding and start dose is the most likely cause of failure.

▶ Boiler effect

To set the boiler effect open the "OPERATION" menu and then proceed to "INSTALLATION" menu to set the "EFFECT HIGH SPEED". It is very important that the boiler never is used at a higher output effect than the boiler rating allows!

▶ Verifying effect

Open the "OPERATION menu and access the "FEEDER SETTINGS" to activate the function "RUN OPER.DOSE". The auger will feed small doses of pellets for 6 minutes in the same way as when it is running in operation mode. Weigh the pellets fed over this period of time to verify the exact power output. 6 minutes is equal to 1/10 of an hour. The equation to use is: the fed weight x 10 = Feed rate in one hour. Multiply the hourly feeding rate with the energy containment of the pellets (normally 4,8kWh) and you have your exact output of the boiler.

▶ Service

In this menu the settings is deciding how and when the burner should be cleaned with the compressed air. The less time the cleaning is set to be prevented, the better. There will be fewer times/year the burner needs to be cleaned manually if the compressor is allowed to do the work. Here is also the maximum time set for the burner to be running before it cleans itself. It goes into cooling phase and cleans and then startup again. When the settings are made, set the burner to "ON", and the first start will take place if there is a heating need from the boiler.

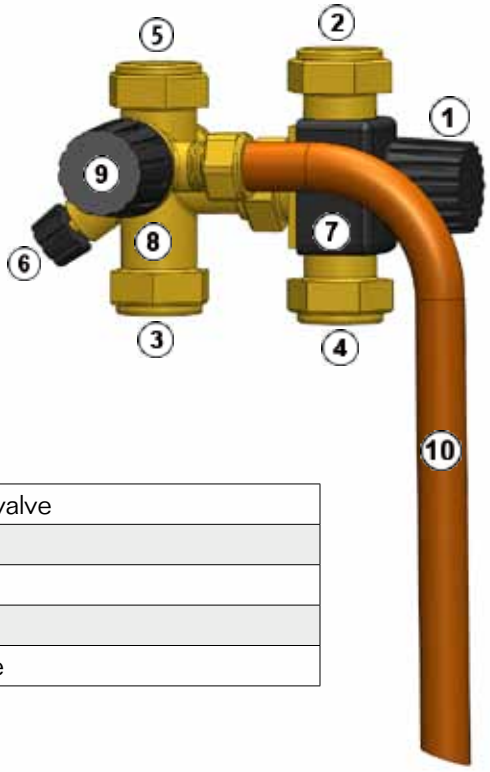
Hot water

Hot water is produced in a copper coil. There are ribbed flanges on the outside on the coil for best heat absorption. The cold incoming water is mixed with the heated water from the coil in the mixing valve (1). The mixing valve includes a thermostat where you set the temperature on the outgoing water. If you don't run the boiler with pellets there also is a possibility to heat the hot water with the electrical heater which should be set to 70°C for good hot water comfort. If the operating temperature of the burner or electrical heater is too low, the coil will not deliver the quantity of hot water as desired for larger amounts.

When hot water is prepared in a coil, legionella bacteria cannot occur.

Combination valve

The combination valve is there so the hot water temperature cannot scald. In order to increase the temperature turn (1) towards +. You may also need to tune the flow valve (6) to reduce the flow through the coil. There is a safety valve (9) that releases the water out of overflow tube (10) if the pressure in the hot water circuit is too high. Note that overflow pipe should always drain to a floor drain.



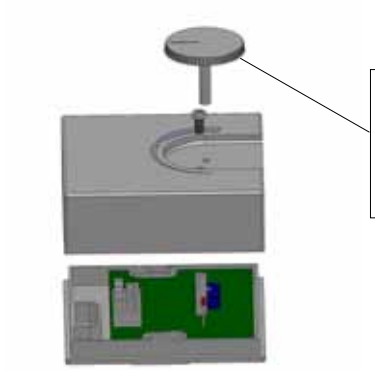
1	Temperature control	6	Flow control valve
2	Hot water	7	Mixing valve
3	Cold water	8	Vent pipe
4	Hot water out	9	Safety valve
5	Cold water in	10	Overflow pipe

Shunt control

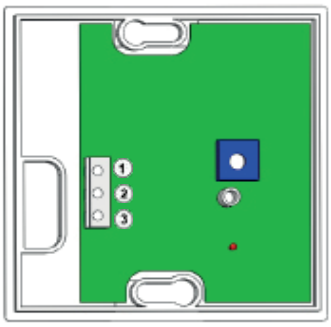
In the menu ”shunt control” there are different options of controls; indoor sensor, outdoor sensor or both in combination.

Room sensor

If the room sensor is used it is recommended to be installed in a open space near the center of the house. The sensor shouldn´t be influenced by draught, doors, sunlight directly to it or other heat sources since it then will affect the heating output to the entire house.



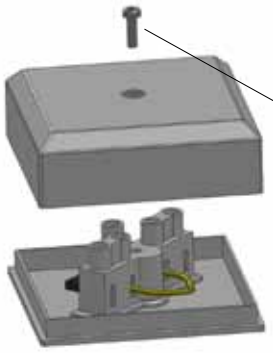
Loosen the control wheel by pulling outwards. Then loosen the screw to open the box.



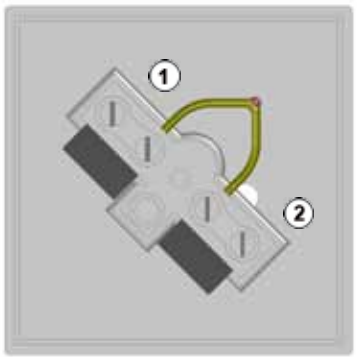
1	Connected to number 3 on the motherboard
2	Connected to number 4 on the motherboard
3	Connected to number 5 on the motherboard

Outdoor sensor

If an outdoor sensor is used this should be mounted on the facade of the house. It is important the sensor is mounted on the north side of the house. Make sure that the sensor isn´t disturbed from solar gain. It is recommended that the sensor is mounted about 2 metres from ground level and if possible protected from water and such.



Loosen the screw and split the casing. It is then possible to mount the box to the wall.



1	Connected to 1 on the motherboard
2	Connected to 2 on the motherboard

Adjustments of heating curves

The appropriate heating curve is essential in order to have to right indoor temperature. The heating curve needs to be adjusted to the specific energy demands of the house it is installed in. All houses have different demands, which could mean that one house would need a 25℃ flow at a outdoor temperature of +-0℃ while another house needs 45℃.

Adjustment to the heating curve is done in the "Shunt control" menu. In this menu it is possible to alter both the slope and the adjustment to the curve. To find and adjust the correct heating curve it is important that the following points are fulfilled:

- The outdoor temperature must not be higher than +5℃
- Energy saver function must be switched off.
- Valves on the radiators must be fully open.
- Radiators must be checked and in function.

It is normal that during the first heating season changes must be done several times in order to find the right setting for the house. When the right setting is found there is no need for any changes for years to come. This is the value of an outdoor sensor. To start out with something as a rule of thumb we could recommend these initial settings:

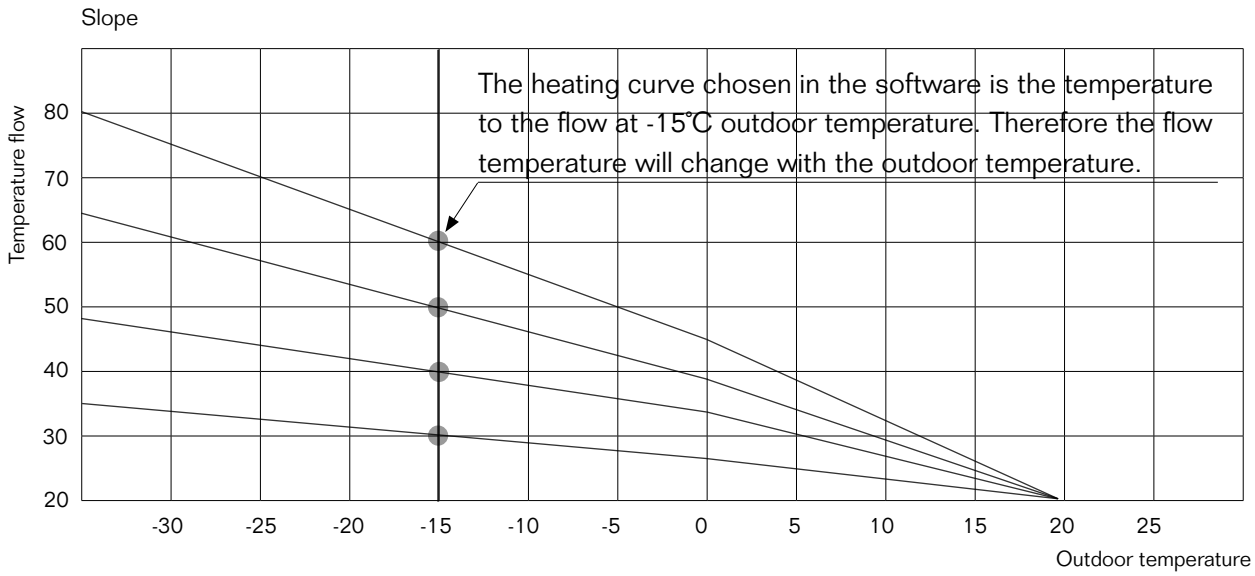
- Houses with underfloor heating in concrete. "Slope 35"
- Well insulated low energy house with low temp. radiators. "Slope 45"
- A high temp. radiator system in a older house with poor insulation. "slope 65-70"

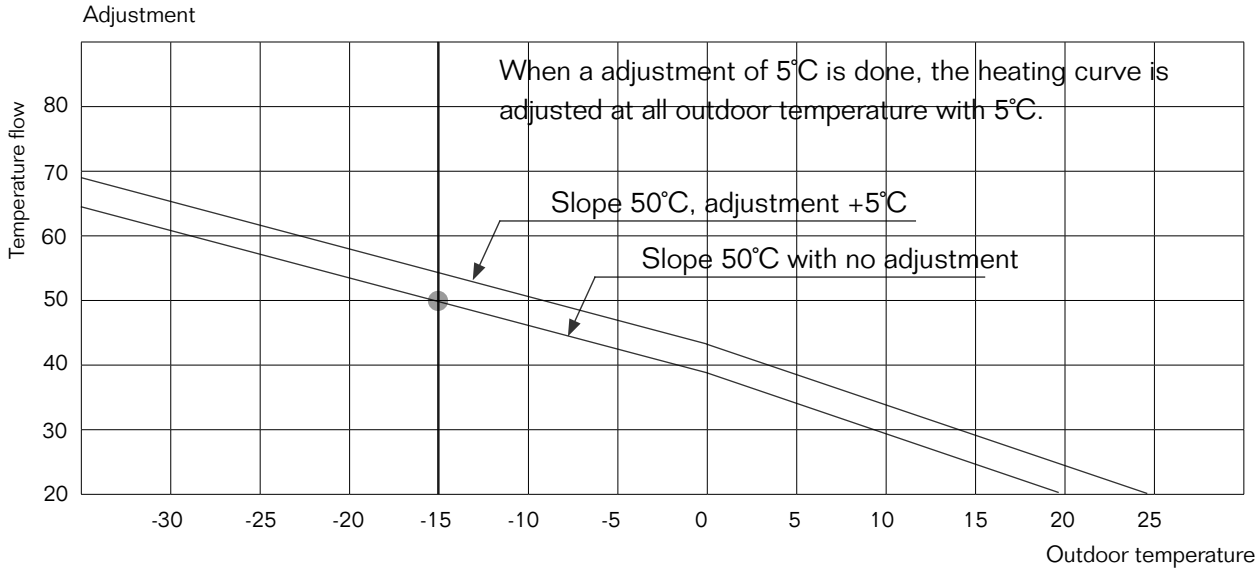
Example of slope:
If the slope is set to 50℃ this is the temperature sent to the flow at a outdoor temperature of -15℃.

Example of adjustment:
When an adjustment is done to the slope this is done parallel to the curve. Meaning that if an adjustment of 5℃ is done. This happens for the whole slope.

Example of curves

A too low heating curve will result in that the house will not have the correct indoor temperature





! If it is cold outdoors (cold winter) and the room temperature is too low. Increase the slope with 1-2°C

! If it is cold outdoors (cold winter) and the room temperature is too high. Decrease the slope with 1-2°C

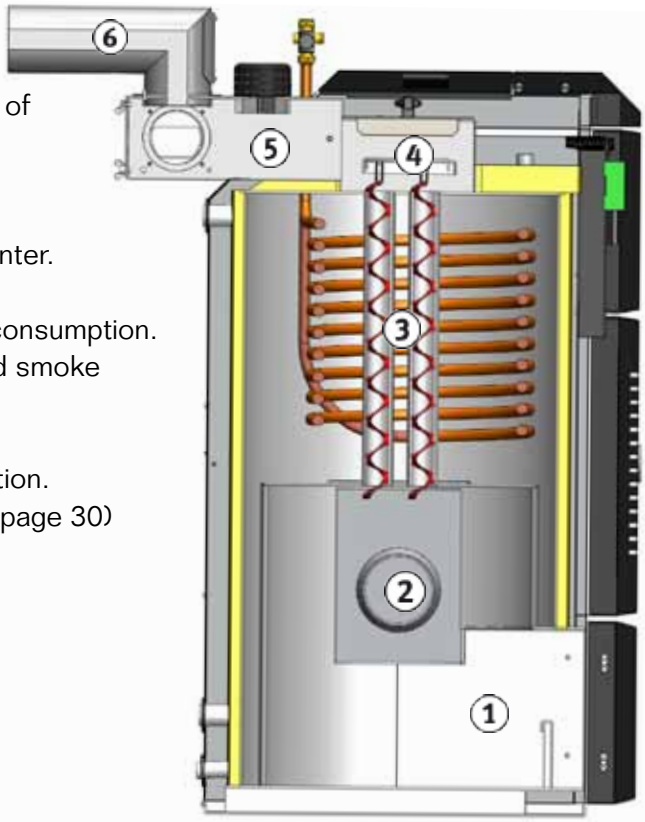
! If it is warm outdoors (average autumn/spring) and the indoor temperature is too low. Increase the adjustment with 1-2°C

! If it is warm outdoors (average autumn/spring) and the indoor temperature is too high. Decrease the adjustment with 1-2°C

! Wait at least 24 hours between adjustments and changes due to slow response of heating.

Service and cleaning

Cut the power to the boiler before starting the service. We recommend a good service/ cleaning of the burner and boiler 2-3 times a year. Do as follows for best result and minimizing the chances for downtime.



Sweeping interval

1. Ash compartment, if necessary, or at about 3 tons of pellets consumption.
2. Burner tubes after 3 tons of pellets consumption.
3. Convection part 3 tons of pellets consumption.
3. Without automatic cleaning every other week in winter.
4. Soot box if necessary.
5. Smoke connection and fan after 3 tons of pellets consumption. Make sure to clean the area between soot box and smoke connection
6. Flue tube after 3 tons of pellets consumption.
7. The burner's outer tube 6 tons of pellets consumption.
8. Flame sensor after 6 tons of pellets consumption (page 30)

Approx. life span for ware parts

1. Igniter	3-5 years
2. Flame sensor	5-10 years
3. Inner tube	3-5 years
4. Burner fan	5-10 years
5. Exhaust fan	5-10 years
6. Sealings	5-10 years

Cleaning the ash compartment

Cleaning the ash compartment is done through the ash door on the front. The easiest way is to use some type of ash cleaner. If you do not have access to a an ash cleaner, remove the ash with a scrape and keep it in a fireproof bin. Remember that ashes can contain hot particles for a long time and may not be stored near flammable materials.

Cleaning the burner

Remove the ash contained in the burner tube, this is done either through the ash compartment with the supplied scraper or by taking the burner tubes apart outside the boiler, which sometimes can be the easiest way.

Cleaning of convection

Cleaning of the tubes is done with the included brush, lifting the turbulators acc. (page 12). It is important for the efficiency that these are cleaned thoroughly at the service. Clean the area between the soot box and smoke connection.

Cleaning of ash and flue

Soot box, which is placed above the tubes must be emptied of ash, if the soot box is full, the flue gas has no place to escape out through the chimney and you will receive a disruption. Also clean the flue tube that goes to the chimney, when it is not certain that the chimney sweep do it.

The burner's outer / inner combustion tube

The space between the outer - inner tube must be cleaned out of dust and particles after about 6 tons of pellets consumption (page 32)

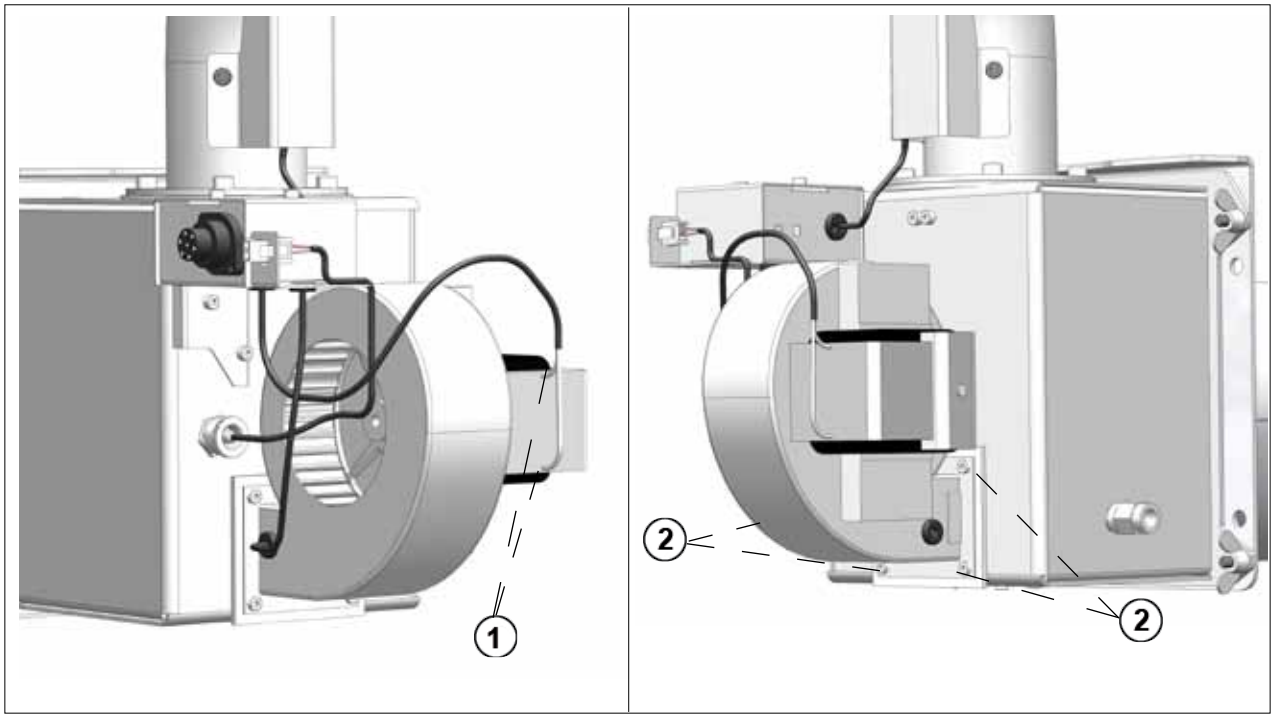
Replacing the combustion fan

Disconnect the power supply to the boiler and burner. Loosen the three wing nuts and lift the cover up. Loosen the power cable to the burner, cable to the flame sensor and the air supply if its connected. (let the ignition element remain in the ignition device). Note the electrical routing and attachment of all cables.

Disconnect power leads from the fan by pulling out the pins (1). Remove the four screws (screw 3 mm) and remove the fan (2). Install the new fan. Make sure the conduit to the ignition element cable, is in place.

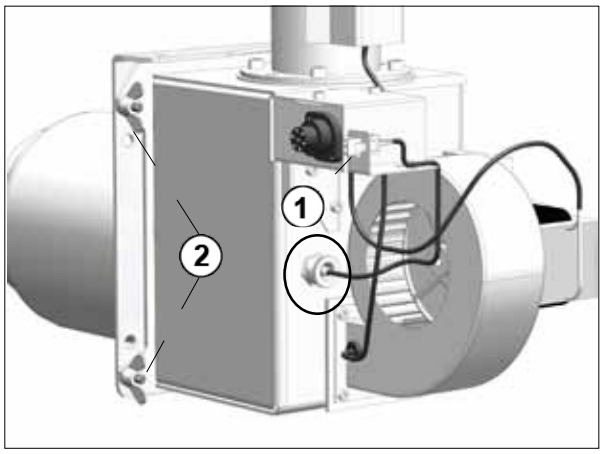
Replace the ignition device according to the "change of ignition elements"(pg 31). Attach the wires to the igniter and overheating protection and flame sensor with cable ties in the mounting bracket.

When a fan has been replaced, a new analyze of the flue gas should be done. The RPM can vary between fans.



Changing and/or servicing the flame sensor

Disconnect the power supply to the boiler. Loosen the three wing nuts and lift the cover up. Note how the flame sensors wires are colored and remove the cable tie from the mounting bracket. Disconnect the terminal block of the flame sensor (1) by pulling it straight back. Then loosen the burner from the outer tube by loosening the four wing nuts (2) Then loosen the nut that holds the flame sensor in place inside the house. Then take the flame sensor out and replace with the new. Reassemble in reverse order. When cleaning the flame sensor, use a damp cloth after you loosened the burner from the burner tube.



It is important that the cables are connected the same way to burner as they were, otherwise it will display 100% light all the time and the burner will be faulty.

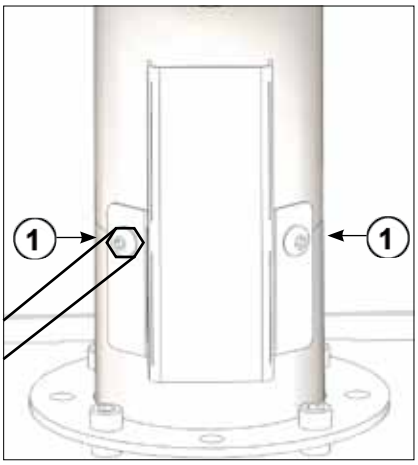
Overheated fall shaft

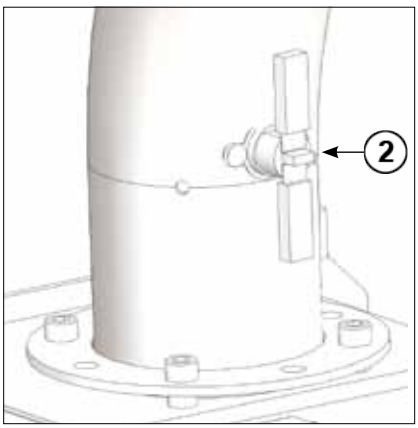
On the fall shaft of the pellet burner there is a heat protection. This activates to protect against backfires. If the protection tripped, the power is lost to the auger. The cause of overheating is usually due to large back pressure in the boiler, which in turn usually depends on:

- Inner combustion tube is full of soot.
- The boiler is full of soot.
- The chimney is too narrow.
- The burner is set too high a power.

Reset the protection by loosen the cover wich is placed in front of the overheating protection (1). Then press the reset button (2) and you will hear a click when it is restored.

If the protection is activated again, we recommend that you contact your installer to review the function and settings.





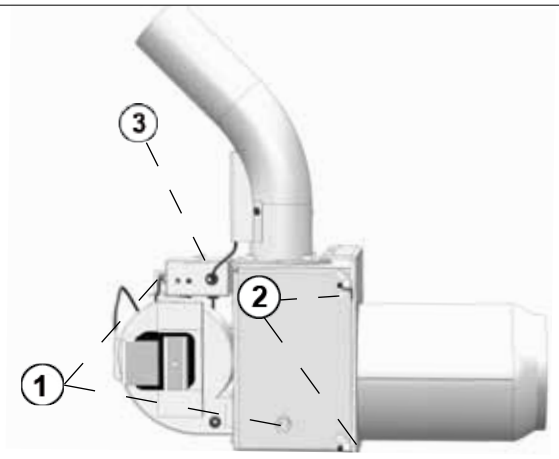
Changing the igniter.

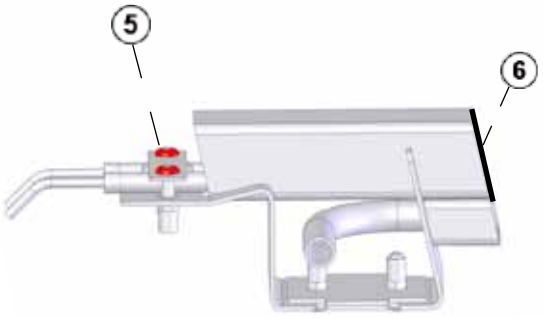
Disconnect the power supply to the boiler. Loosen the three wing nuts and lift the cover up. Loosen the power cable of the burner, the cable to the flame sensor and the air supply. (1)

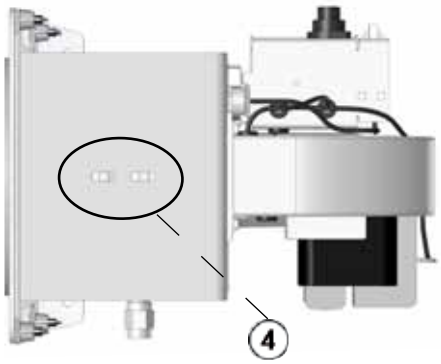
Remove the four wing nuts (2) which are holding the rear housing against the end plate of the outer combustion tube. Angle the rear housing and pull it upwards/backwards so that the fall shaft loosens from the inner tube. Then detach the pipe to compressed air by unscrewing the quick connector on the outside of the rear housing. Then disconnect the ignition element wires on the terminal block located under the metal lid of the electrical console (3). Remove the ignition device from the rear housing (two screws on the bottom of the burner (4). Ignition element clamp is removed (5) and the element is pulled out of the square tube.

Slide the new element in the square tube. Push to lie on the outer edge of the square tube (6). Install the clamp and tighten the screws with moderate force, so that the element is not going to fly back and forth.

Insert the ignition device in the rear housing. The cables should be pulled out through the fan's cable access. Connect the cables on the console. Secure the two cables to each other with a cable tie. Reassemble in reverse order, wait to fasten ignition device in the burner until the burner is mounted together with the outer tube. Push the ignition device to the burner tube and tighten the two bolts. Check that the square tube is in the middle of the hole in the inner tube.



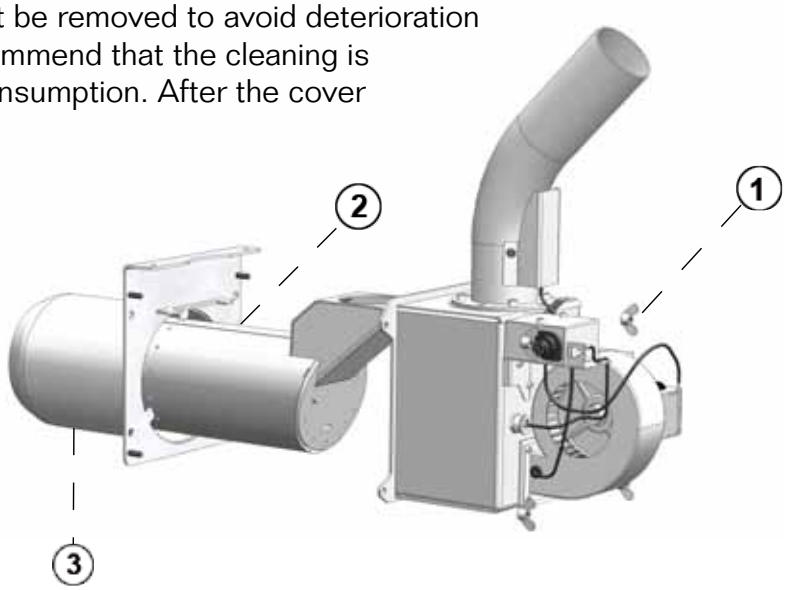




! When you re-mount ignition device and compressed air pipe, you must be careful that it is pushed as far forward as possible to the burner tube. If there is a gap in between can ignition of the pellet be difficult and cleaning impaired.

Cleaning the rear housing and outer tube

After a period of heating up, there will be dust and soot from the burner´s inner and outer tube. It must be removed to avoid deterioration in combustion and function. We recommend that the cleaning is done after about 6 tons of pellets consumption. After the cover is removed, start by loosening the four wing nuts (1) wich are holding the burner in place and then unload according to description. Then pull out the inner combustion tube (2) and clean from ash and soot. It is important that the holes are not clogged with soot, as these are essential to good combustion. Then clean the outer tube (3) from the soot and pellet residues. Reassemble in reverse order.



Mounting and adjusting of the draft stabiliser(Optional)

A draft stabiliser makes sure that a constant and stable draft is achieved. Also condensation in the chimney is avoided.

Adjusting the balancing shaft

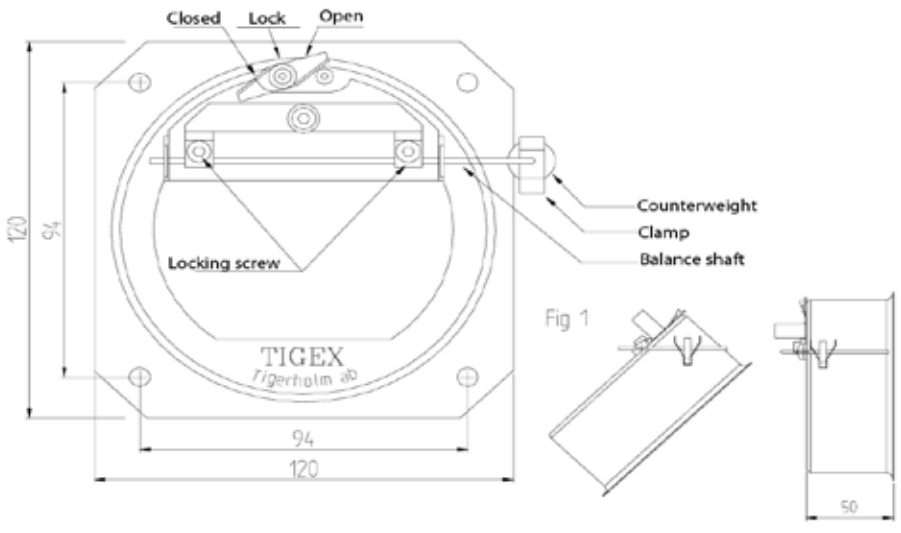
To adjust this shaft, loosen the two screws a bit and turn the shaft so that it is horisontally when the hatch is closed. Then fasten the screws.

Adjusting the draft

By moving the counterweight along the balanceshaft, the draft needed to open the hatch is adjusted. About 1Pa per 2mm.(fig.2) The hatch is preset at about 1Pa. A professional should measure the draft and make the adjustments.

Functions

Tigex draft stabiliser opens the hatch just as much as needed depending on the current draft. The draft varies a lot depending on the chimney, weather and also if the burner is running or not. This means that the hatch can be open a lot, a little or closed, depending the situation.



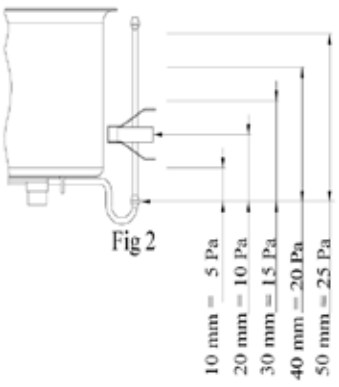


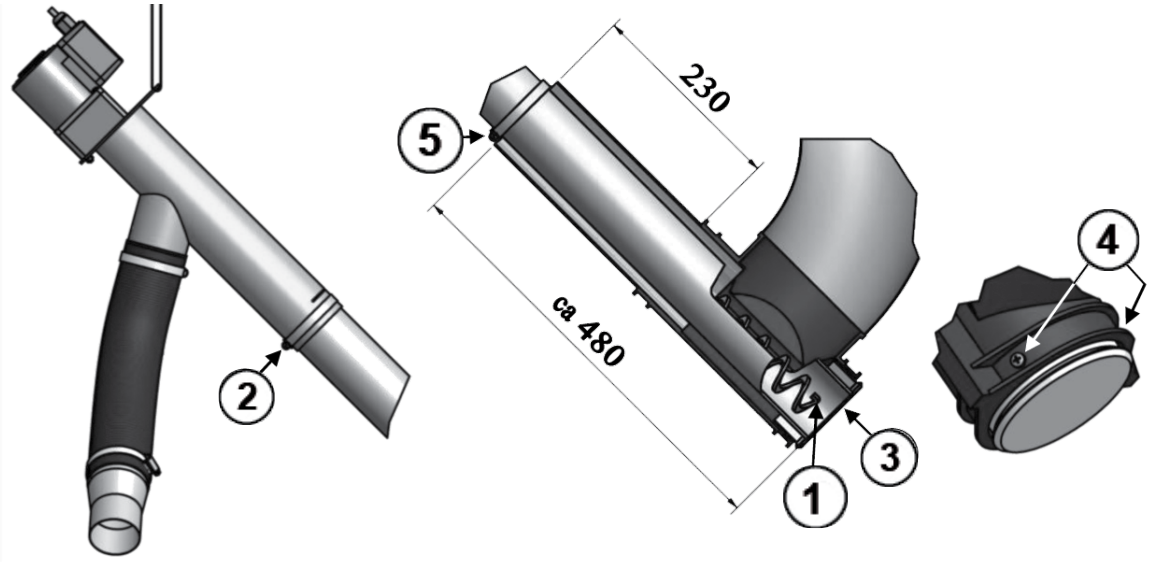
Fig 2

Mounting the auger

Ø75, 1.7 and 2.5 m, mounting in Mafa Micro, Mini or Midi Storage.

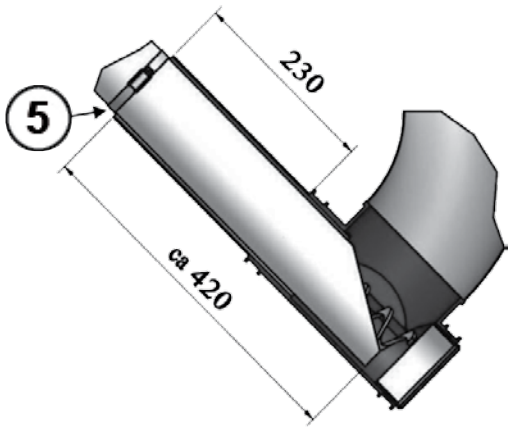
Make sure the helix spiral is 15-25 mm inside the plastic tube (1). Adjust by loosening the clamp (2) and move the plastic tube to the correct dimensions.
Adjust the store location so that the feed screw is properly positioned over the burner, with a tilt of between 30 - 45 °. Mount a hook in the ceiling above the auger for hanging it in the strap. (min. Ø6, not included).
Insert the auger into the store pipe, it shall rest entirely on the store lid (3). Secure Mafa storage lid with 2 short screws (4), alt. used a hose clamp (5) as a stop. Hang the auger on the hook with the strap. Install appropriate flexi hose and make the final adjustment to the burner. Move the screw and the storage so that the hose reduction can be pressed in to the fall shaft. The hose should not be stretched or squashed.

Check inside the store that the auger intake is completely visible. Adjust, if necessary, by loosening the clamp (2) and rotate the plastic tube to the correct position. First select the pipe location in the longitudinal direction so that the former adjustment does not change. Make sure the clamp is applied and tightened before the auger is in operation. Connect the power cable to the burners connector.



Ø90 steel, 1.7 and 2.3 m, mounting in Mafa Micro, Mini or Mini Storage.

The spiral must stay just outside or in line with the tube (not adjustable). Insert the auger 420 mm of the store pipes, mount hose clamps (5) to stop. Check inside the store that the auger intake is completely visible. Adjust and hang up as described for Ø75 feed screw.



Install the screw engine in the flange of the screw. The M8-screw with distance tube should stay in the motor plate to lock the motor from rotating. Be sure the locking screw in flange is in the groove on the motor shaft and tighten. Connect the power cable to the burner.

Trouble shooting

There are actions that the end user can take to fix a stop. However, a professional should always be adviced before doing any adjustments.

Fault	Cause	Action
The burner does not ignite	- Incorrect start dose - Igniter faulty - Igniter console poorly attached - Inner combustion tube filled with ashes	- Adjust start dose - Replace igniter - Adjust the console - Clean the burner
The burner "puffs" at start	- Incorrect start dose	- Adjust start dose
High temp protection on fall shaft activated	- Low draft - Inner combustion tube filled with ashes	- Control the draft - Clean the burner
Inner combustion tube fills up with ashes	- Poor combustion - The burner cleaning malfunctioning	- Contact your installer - Contact your installer
Ashes are totally black	- Poor combustion	- Contact your installer
Poor hot water capacity	- Low temperature in the boiler - To high flow in the pipes	- Set the burners "Stop" temperature higher - Adjust the flow on the mixing valve - Changing the water tap
Low/high indoor temperature	- Incorrect set thermostat - Sensor untrimmed - Placement of thermostat in a bad place	- Adjust thermostat - Trim sensor (page17) - Move the sensor to a better place
Soot in the boiler room	- Leaking seals	- Contact your installer
Alarm (flue gas)	- Sooty boiler - Poor combustion - Broken sensor	- Clean the boiler - Contact your installer - Contact your installer
No heat on radiators	- Shunt motor broken - Thermostat set to low	- Contact your installer - Adjust thermostat
White smoke from the chimney	- Low flue gas temperature - To big chimney - Rain water in the chimney	- Cut turbulators/increase power - Contact a professional - Mount a rain hood
The auger dont work	- Broken motor - OH prtection fallshaft activated	- Replace motor - Check combustion - Clean boiler - Reset OH protection
	- No underpressure	- Check pressure switch - Check flue - Check chimney - Check leakage from soot door

The sensors

The value of the resistance on the Pt1000 and NTC 22KΩ sensors is measured with ohm meter. Disconnect the sensor from the motherboard in order to measure. Remember that the sensors need good connection in order to get a correct result.
If the cables are lengthened, use these cables:
- For a length up to 15m 2 x 0,5m²
- For a length up to 50m 2 x 0,75m²
- Do not place these cables together with main cables(high voltage).

Temp.	Pt1000	22KΩ
0°C	1000 ohm	66000 ohm
10°C	1039 ohm	41800 ohm
20°C	1077 ohm	27100 ohm
30°C	1116 ohm	18000 ohm
40°C	1155 ohm	12200 ohm
50°C	1194 ohm	8450 ohm

Temp.	Pt1000	22KΩ
60°C	1232 ohm	5960 ohm
70°C	1271 ohm	4280 ohm
80°C	1309 ohm	3130 ohm
90°C	1347 ohm	2320 ohm
100°C	1385 ohm	1746 ohm

Documentation of settings

Before you commision the boiler system we ask you to fill out the different values set in the menus. This is important for the future services and makes it easier in the communication between the customer and the installer and between the installer and Effecta.

Basic settings

Parameters	Value
Start temperature burner	
Stop temperature burner	
Fan speed	
Temperature electrical heater	
Power electrical heater	
Operation dose	
Start dose	
Flame sensor start	
Flame sensor running	

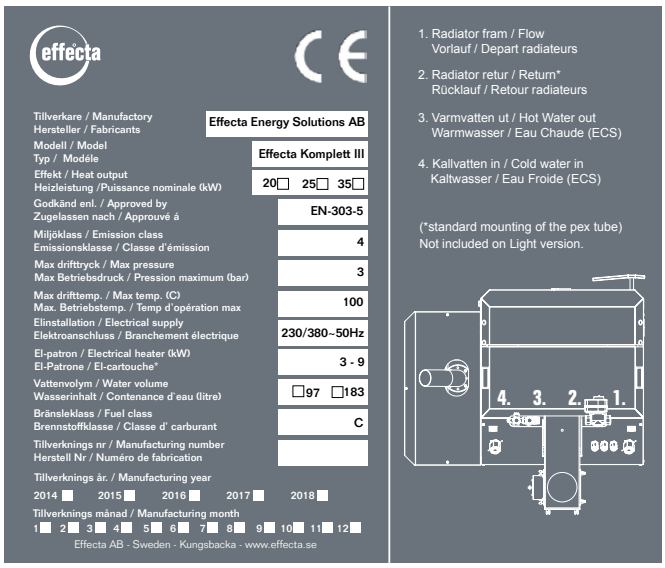
Settings in buffer system

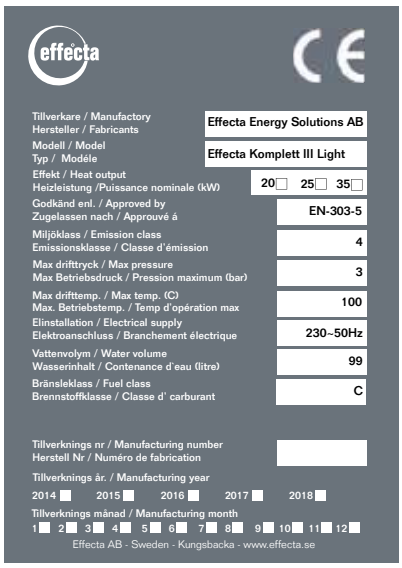
Parameters	Value
Acc.tank high G6	
Acc.tank low G5	
Stopp G5	
Max G6	
Start G6	
Max G1	

Performance

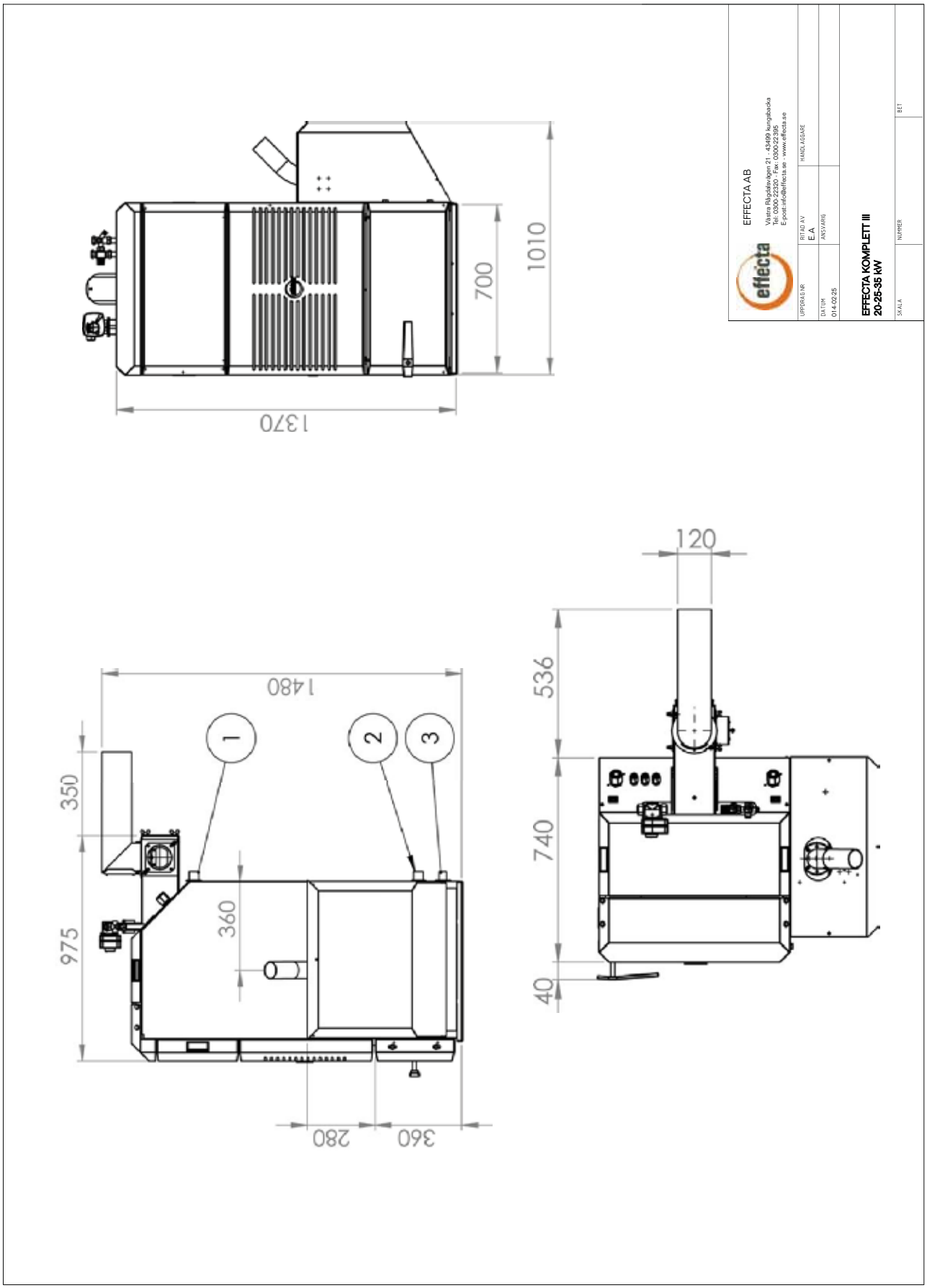
Parameters	Value
CO2 content	
CO (ppm)	
Flue gas temperature	
Negative pressure in the flue (pa)	
Burner efficiency	

Type plate





Dimensions


EFFECTA AB
Västra Råpådavägen 21 - 43499 kungsbacka
Tel: 0300-22320 - Fax: 0300-22395
E-post:info@effecta.se - www.effecta.se
UPPDRAG NR
RITAD AV
E.A
HANDLÄGGARE
DATUM
014-02-25
ÄNDRAD
EFFECTA KOMPLETT III
20-25-35 kW
SKALA
NUMMER
BET
1370
700
1010
1480
1
2
3
350
975
360
280
360
120
536
740
40

Technical data

1. FLOW HOT WATER 1”
2. RETURN HOT WATER 1”
3. DRAIN COCK 1/2”

	KOMPLETT III	LIGHT
Width	1000 mm	1000 mm
Depth incl. smoke pipe	1386 mm	1386 mm
Height	1359 mm	1359 mm
Weight	295 kg	275 kg
Maximum pressure	3,0 bar	3,0 bar
Smoke pipe angle (extra)	120 mm	120 mm
Smoke pipe diameter	150 x 150 mm	150 x 150 mm
Floor to cc smoke pipe	1430 mm	1430 mm
Water Volume	183 liter	99 liter
Recommended draft	15 pa.	15 pa.
Min. chimney area	120 mm	120 mm
Electrical connection	230/380 VAC	230 VAC
Sheet thickness mantle	4 mm	4 mm
Sheet thickness grate	4 mm	4 mm
Grate volyme	106 liter	106 liter
Grate depth	500 mm	500 mm
Max operating temperature	100 °C	100 °C
Min returntemp	40 °C	40 °C
Electrical consumtion (standby)	1 W	1 W
Electrical consumtion (start)	440 W	440 W
Electrical consumtion (operation)	45 W	45 W
Maximal heat output	20-25-35 kW	20-25-35 kW
Minimal heat output	6-8,5-11,5 kW	6-8,5-11,5 kW

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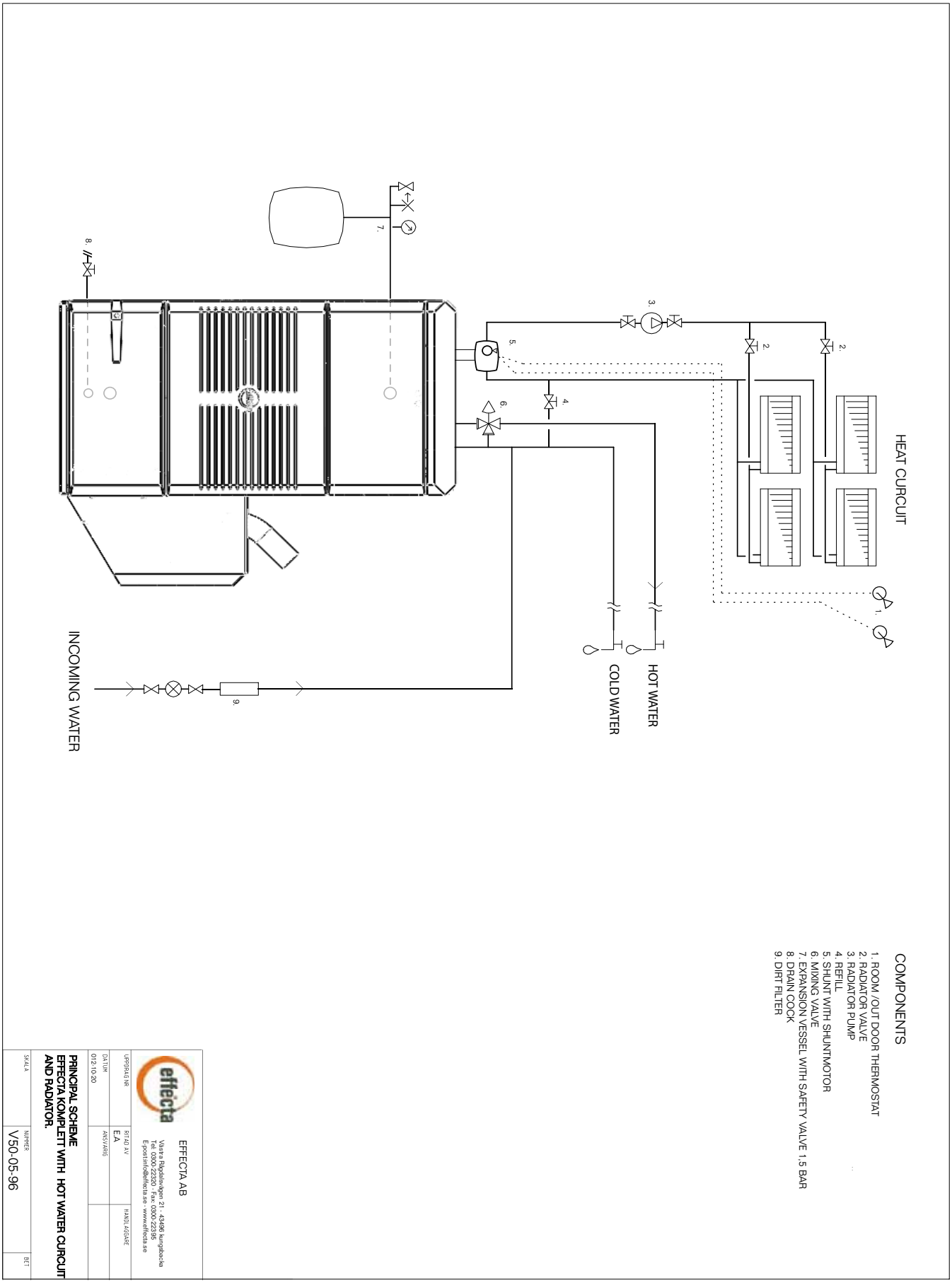
Hydraulic scheme



COMPONENTS

1. ROOM /OUT DOOR THERMOSTAT
2. RADIATOR VALVE
3. RADIATOR PUMP
4. REFILL
5. SHUNT WITH SHUNTMOTOR
6. MIXING VALVE
7. EXPANSION VESSEL WITH SAFETY VALVE 1,5 BAR
8. DRAIN COCK
9. DIRT FILTER

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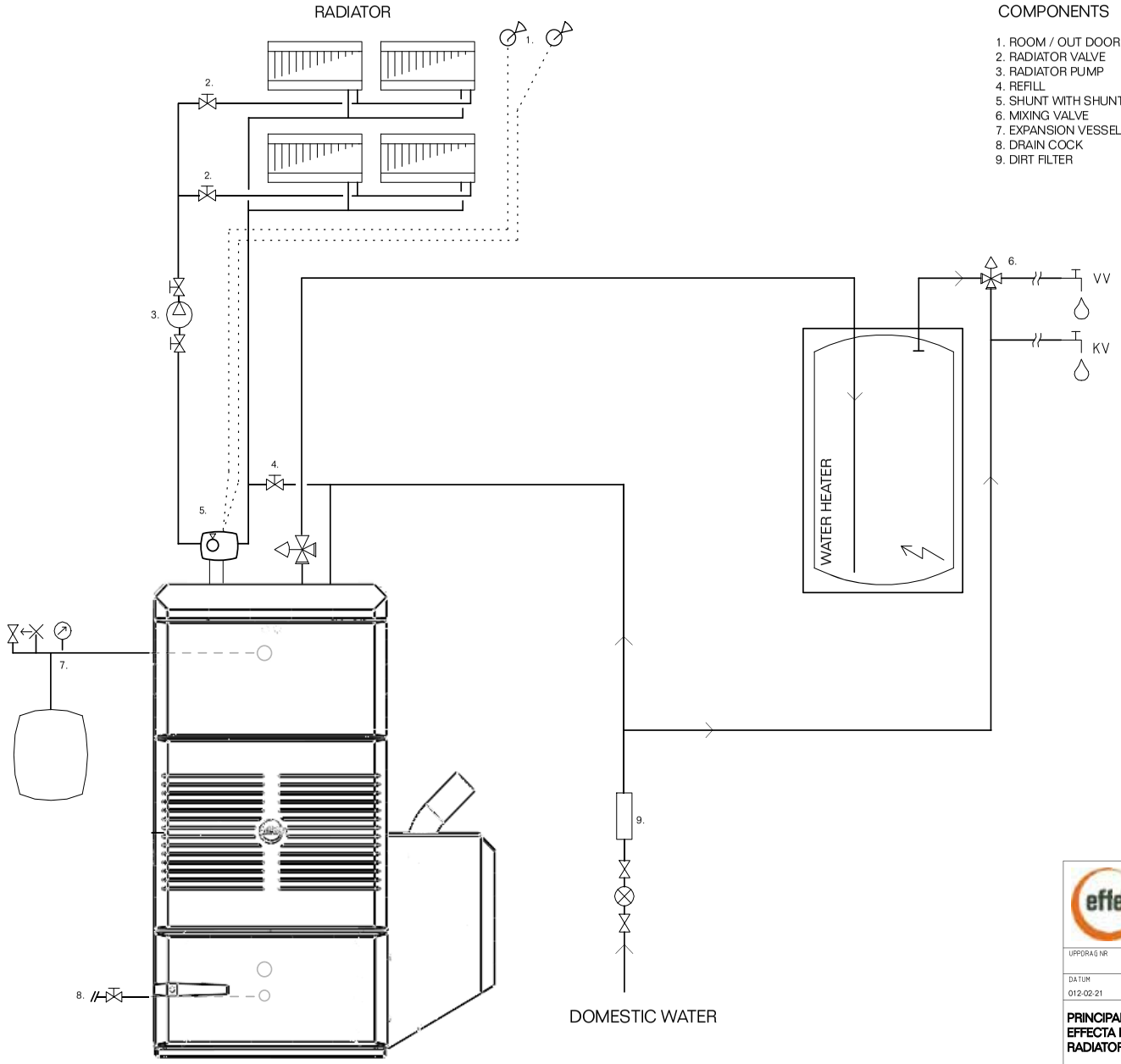
UPPDRAG NR
RITAD AV EA
ANSVARIG
DATUM 012-10-20
HANDLÄGGARE

PRINCIPAL SCHEME EFFECTA KOMPLETT WITH HOT WATER CURCUIT AND RADIATOR.

SKALA
NUMMER V50-05-96
BET

Hydraulic scheme extra hot water



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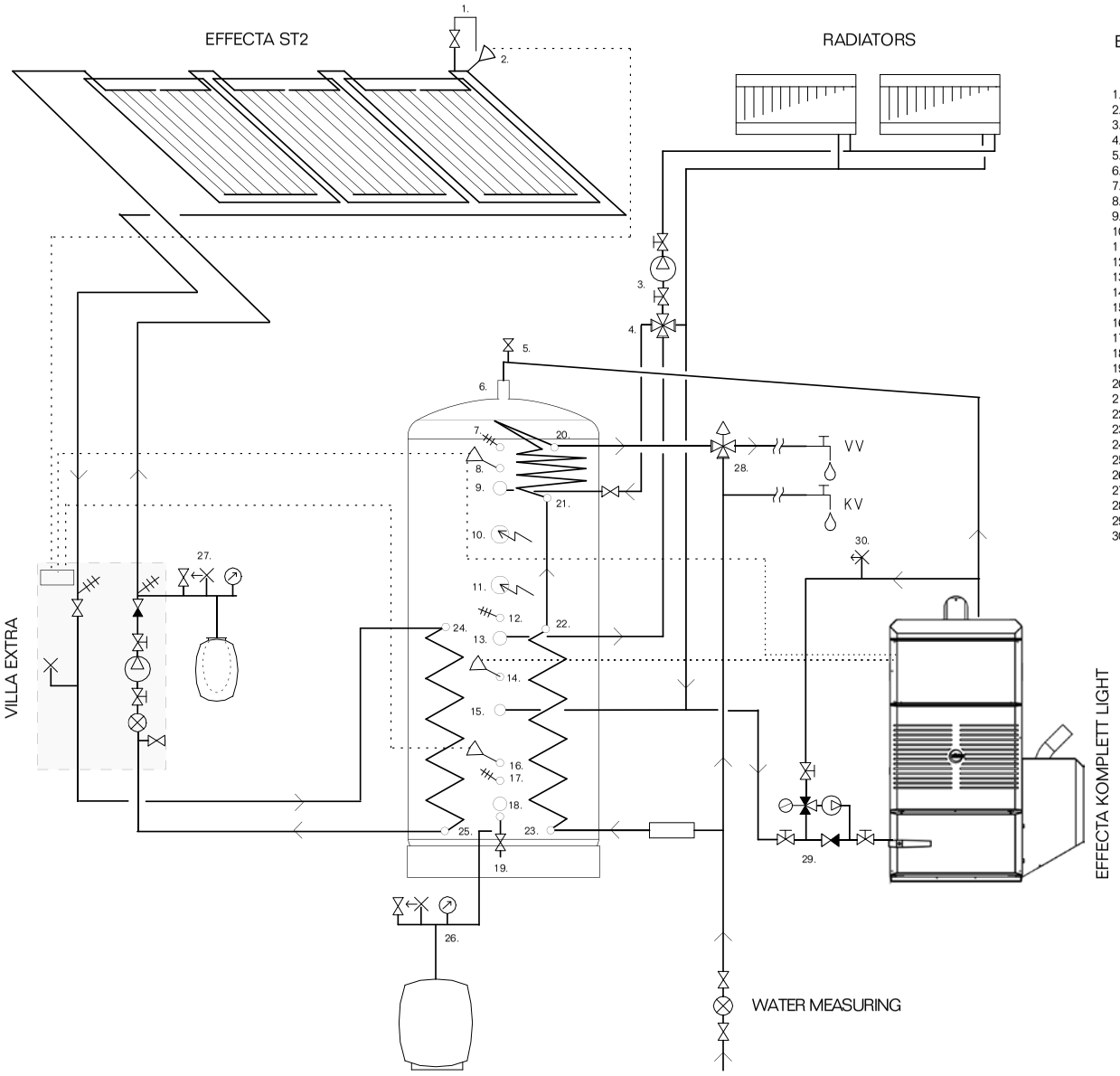
UPPDRAG NR	RITAD AV	HANDLÄGGARE
	E.A	
DATUM	ANSVARIG	
012-02-21		

PRINCIPAL SCHEME
EFFECTA KOMPLETT WITH HOT WATER CURCUIT RADIATOR AND WATER HEATER.

SKALA	NUMMER	BET
	V50-05-77	

Hydraulic scheme buffer system



EXPLANATIONS

1. AIR EVACUATER SOLAR
2. SENSOR SOLAR (T1) / SENSOR START LOADING PELLETS
3. RADIATOR PUMP
4. BIVALENT SHUNT
5. AIR EVACUATER
6. LOAD EXTERNAL HEATING SOURCE
7. THERMOMETER
8. SENSOR SOLAR (T2) BURNER STOP (G5)
9. SECONDARY RADIATOR FLOW
10. ELECTRICAL IMMERSER
11. ELECTRICAL IMMERSER (Normaly not used)
12. THERMOMETER
13. PRIMARY RADIATOR FLOW
14. SENSOR STOP LOADING PELLETS
15. RETURN RADIATORER / RETURN BOILER
16. SENSOR SOLAR T3
17. THERMOMETER
18. ALT. RETURN EXTERNAL HEATING
19. DRAINING
20. HOT WATER OUT
21. CONNECT TO 22
22. CONNECT TO 21
23. COLD WATER IN
24. SOLAR RETURN
25. SOLAR FLOW
26. EXPANSION VESSEL WITH SAFETY GROUP
27. SYSTEM PACKAGE WITH SAFETYGROUP
28. MIXING VALVE
29. THERMIC VALVE WITH PUMP AND CHECK VALVE
30. SAFETY VALVE

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	E.A	
DATUM	ANSVARIG	
014-02-10		

EFFECTA SOLID WITH SUPRA AERO COMBINED WITH SOLAR HEATING AND ACCUMULATOR TANK

SKALA	NUMMER	BET
	V50-05-44	

Försäkran om överensstämmelse, Declaration of confirmity,
Konformitätserklärung, Déclaration de conformité.

Försäkrar under eget ansvar att produkten,
Declare under our sole responsibility that the product,
Erklären in alleiniger Verantworten, daß das Produkt,
Déclare sous sa seule responsabilité que les modèles,

Pellet gasification boiler
Effecta Komplett III / 20-25-35 kW
Effecta Komplett III Light / 20-25-35 kW

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som omfattas av denna försäkran är i överensstämmelse med följande direktiv
to which this declaration relates is in confirmity with requirements of the following directives
auf das sich diese Erklärung bezieht, konform ist mit den Anforderung der Richtlinien
auxquels la présente déclaration s'applique, sont conformes aux éxigences des directives suivantes

EC directive on:
* Electromagnetic Compatibility (EMC): 2004/108/EC
* Machinery directive
* Low Voltage Directive (LVD): 2006/95/EC
* Pressure Equipment Directive (PED): 97/23/EC

This pressurized equipments are not covered by Article 3 in EU Directive 97/23/ EC.
However, as prescribed
in item 3 of this article, the equipments are designed and manufactured in accordance with the sound engineering practice of a member state in order to ensure safe use.

Överensstämmelsen är kontrollerad i enlighet med följand EN-stadarder
The conformity was checked in accordance with the following EN-standards
Die Konformität wurde überprûft anhand der EN-Normen
Cette conformité été vérifée selon les normes suivantes

* EN 287-1:2004	Approval testing of welders - fusion welding...
* EN 303-5	Heating boilers for solid fuels
* EN 10 204:2005	Metallic products - type of inspection documents...
* EN 50 366:2003, A1:2006	EMF
* EN 55 014-1:2006	Emission
* EN 55 014-2:1997, A1:2001	Immunity
* EN 60 335-1:2002, A1:2004, A2:2006, A11:2004, A12:2006,A13:2008	Safety of housseshold...
* EN 60 335-2-21:2003, A1:2005, A2:2008 ...	for storage water heaters
* EN 60 335-2-102:2006	For gas, oil and solid-fuel burning appliances having electrical connections
* EN 61 000-3-2:2006	Harmonics (equipment with rated current ≤ 16A/phase)
* EN 61 000-3-3:1995, A1:2001, A2:2005	Voltage fluctuations (equipment with rated current ≤ 16A/phase)
* SPCR 028	

Kungsbacka 2014-04-20

Erik Andersson
CEO
Effecta Energy Solutions AB

CE