EFFECTA KOMPLETT III

- INSTALLING
- MAINTENANCE
- SERVICE
- ASSEMBLY

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Light
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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 efficiency 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:**

<table>
<thead>
<tr>
<th>Installer:</th>
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<tbody>
<tr>
<td>Date:</td>
<td></td>
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<tr>
<td>Electrical installer:</td>
<td></td>
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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 regulation.

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 an 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 too 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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Combustion fan with tachometer</td>
</tr>
<tr>
<td>2.</td>
<td>Fan seal</td>
</tr>
<tr>
<td>3.</td>
<td>Under pressure switch</td>
</tr>
<tr>
<td>4.</td>
<td>Flame sensor</td>
</tr>
<tr>
<td>5.</td>
<td>Rear housing</td>
</tr>
<tr>
<td>6.</td>
<td>Rear housing seal</td>
</tr>
<tr>
<td>7.</td>
<td>Cover for overheating protection</td>
</tr>
<tr>
<td>8.</td>
<td>Ignition console</td>
</tr>
<tr>
<td>9.</td>
<td>Fall shaft</td>
</tr>
<tr>
<td>10</td>
<td>Overheating protection</td>
</tr>
<tr>
<td>11</td>
<td>Seal for fall shaft</td>
</tr>
<tr>
<td>12</td>
<td>Pellet retarder</td>
</tr>
<tr>
<td>13</td>
<td>Inner combustion tube</td>
</tr>
<tr>
<td>14</td>
<td>Outer combustion tube</td>
</tr>
<tr>
<td>15</td>
<td>Stop plate</td>
</tr>
</tbody>
</table>
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 commissioning of the product must be made by a professional, according to Effecta directions and current legislations. Controls and tuning of the product should be made by a professional. A chimney sweeper should also be contacted when commissioning the product. The electrical connections must be done by a qualified electrician, according to Effecta 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 liabilities 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](http://www.effecta.se).
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

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

* Not on model Komplett Light
**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.

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**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 efficiency of the boiler. Other actions are increasing the power output of the burner or removing/cutting off turbulators. This will however decrease the burners efficiency 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 everyone's 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 turbulators

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.

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<table>
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<tbody>
<tr>
<td>1</td>
<td>Magnet motor</td>
</tr>
<tr>
<td>2</td>
<td>Lifting shaft</td>
</tr>
<tr>
<td>3</td>
<td>Flipper</td>
</tr>
<tr>
<td>4</td>
<td>Suspension</td>
</tr>
<tr>
<td>5</td>
<td>Turbulator</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th></th>
<th>Compressor</th>
<th>Solenoid</th>
<th>Silencer</th>
<th>Pressure Switch</th>
<th>Safety valve</th>
<th>Non return valve</th>
<th>Air container</th>
<th>Capacitor</th>
</tr>
</thead>
</table>
## The motherboard

### Warning

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 everyone's 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 boiler. There is a connection cable located behind the cover plate (1). Turn off 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.

**Warning**

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.
1, 2 or 3 Phase connection
Connection expansion cards
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 control. 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
## Menu system

### Boiler temp
- Current boiler temp. G1
- Current temperature of the flue gases G2
- Current effect of the electrical heater in the boiler.
- Current temp of the acc. tank top. (Only shown when sensor is installed)
- Current temp of the acc. tank bottom. (Only shown when sensor is installed)
- Current room temperature. (Only shown when installed and activated in software.)
- Current burner mode. (Ignition-Running-Cooling-Standby-Off)
- Current strength (brightness) of flame in boiler.

### Operation
- Settings for burner.
- Settings for heating systems.
- Remaining settings.

### Heating System
- Burner mode (on/off)
- Settings for the fan of the burner.
- Settings of the augers feeding control.
- Settings for the burners operation temp.
- Operations log of the burner.
- Menu for burner service settings.
- Settings for automatic cleaning etc.

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

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

### Temperature set
- Shows the boiler temp, start/stop sensor with overheating function.
- Temperature when the burner goes to standby mode.
- Temperature when the burner starts up from standby mode.
- When loading acc. tank, sensor G6 is installed at the tank top of the primary tank. The sensor starts the burner at set temp.
- 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.
- Temperature when burner stops.
- Maximal allowed temperature G6, tank overheated.
- Temperature when burner starts.
- Temperature when loading pump starts
- 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 >**
  Seconds the fan blows before ignition phase. Detection of "old" flame.
- **Fill feeder**
  Seconds the ignitor is active after the flame sensor has approved start value.
- **Effect high speed**
  The fan speed before operation phase.
- **Effect low speed**
  Time that the fan afterblows before standby or cleaning.
- **Testblow start**
  Menu options for the flame sensor.
- **Phase out**
  Menu options for the quick start function.
- **Fan pre oper.**
- **Fan low pre oper.**
- **Clean phase out**
- **Flame sens**
- **Quick start**

### 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

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

### El. heater

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>El. step 3-6-9</td>
<td>Options for the electrical heater. Choose between different effects on the electrical heater. 1 phase is maximum 3kW</td>
</tr>
<tr>
<td>Fuse A</td>
<td>Current load to the fuse in Amps.</td>
</tr>
<tr>
<td>El. heater 6 kW</td>
<td>Log of runtimes of the different electrical heating steps.</td>
</tr>
<tr>
<td>El. heater 3 kW</td>
<td></td>
</tr>
</tbody>
</table>

### Other settings

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>Setting of current weekday</td>
</tr>
<tr>
<td>Time</td>
<td>Setting of current time</td>
</tr>
<tr>
<td>Calibrate sensors</td>
<td>Option to calibrate/adjust all the sensors connected.</td>
</tr>
<tr>
<td>Function test</td>
<td>Test mode of the products different functions.</td>
</tr>
<tr>
<td>Alarms</td>
<td>Alarm log</td>
</tr>
<tr>
<td>Language</td>
<td>Choice of system language</td>
</tr>
<tr>
<td>Start guide</td>
<td>Initiates the Start guide</td>
</tr>
</tbody>
</table>

### Calibrate sensors

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor G1</td>
<td>Calibration of each sensor +/- °C.</td>
</tr>
<tr>
<td>Sensor G2</td>
<td></td>
</tr>
<tr>
<td>Sensor G3</td>
<td></td>
</tr>
<tr>
<td>Sensor G4</td>
<td></td>
</tr>
<tr>
<td>Sensor G5</td>
<td></td>
</tr>
<tr>
<td>Sensor G6</td>
<td></td>
</tr>
<tr>
<td>Sensor G7</td>
<td></td>
</tr>
<tr>
<td>Outdoor</td>
<td></td>
</tr>
<tr>
<td>Indoor</td>
<td></td>
</tr>
</tbody>
</table>
Menu system

### Function test
- Flame sensor
- Igniter
- Feeder
- Fan
- Compressor
- Solenoid valve
- Test air clean.
- Convection cleaning
- Shunt motor (+/-)
- Electr. heater
- Radiator pump
- Loading pump
- Flue gas fan

Function test of the flame sensor. Must be illuminated to test function.
Activates ignitor, the fan starts at 40% to protect the ignitor.
Activates the auger/feeder.
Activates the fan
Activates compressor for cleaning.
Activates and tests the full AERO cleaning cycle.
Activates the flue cleaning.
Activates the shunt motors open or close, +/-
Activates electrical heater.
Activates the radiator pump.
Activates the loading pump for another unit such as Laddomat.
Activates and tests flue gas fan

### Alarms
- Ignition failure
- Start phase failure
- Oper. phase failure

Amount of failed ignitions
Amount of Start 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 have run out. Flame sensor can also be covered by soot.
  - The burner has missed the ignition phase, most likely problem is poorly adjusted starting dose. Also check the ignitor in the function test.

#### Alarm
- **Ignition**
  - The flue gas temperature has been above 320°C. This is an extremely high temperature, please check that the automatic cleaning is working (function test). Also check the flue gas sensor.

#### Alarm
- **Flue gas**
  - 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 temperature if the problem reoccurs.

#### Alarm
- **Boiler temp.**
  - The burner fan has stopped when it should be running. Check for faults on the fan.

#### Alarm
- **Flow.**

### Ignition phase of the burner

The adjusted start dose is given to the combustion chamber. The ignitor is lit for 30 seconds. The fan ramps in three cycles.

If the flame sensor detects lights the burner goes to operation mode in seq 1.
If the flame sensors doesn't detect a flame the burner gives a support dose. The fan ramps up in three cycles.
If the flame sensors still doesn't detect a flame the burner gives a support dose. The fan ramps up in three cycles.
If there is no light in seq 3 "ALARM START" will be shown in display.
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 problems 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 thermostats 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**

- **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.

---

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Temperature control</td>
<td>6</td>
<td>Flow control valve</td>
</tr>
<tr>
<td>2</td>
<td>Hot water</td>
<td>7</td>
<td>Mixing valve</td>
</tr>
<tr>
<td>3</td>
<td>Cold water</td>
<td>8</td>
<td>Vent pipe</td>
</tr>
<tr>
<td>4</td>
<td>Hot water out</td>
<td>9</td>
<td>Safety valve</td>
</tr>
<tr>
<td>5</td>
<td>Cold water in</td>
<td>10</td>
<td>Overflow pipe</td>
</tr>
</tbody>
</table>
## 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 an 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.

<table>
<thead>
<tr>
<th></th>
<th>Connected to number 3 on the motherboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Connected to number 4 on the motherboard</td>
</tr>
<tr>
<td>3</td>
<td>Connected to number 5 on the motherboard</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th></th>
<th>Connected to 1 on the motherboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Connected to 2 on the motherboard</td>
</tr>
</tbody>
</table>
- **Adjustments of heating curves**

The appropriate heating curve is essential in order to have the 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°C flow at a outdoor temperature of +0°C while another house needs 45°C.

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°C
- 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°C this is the temperature sent to the flow at a outdoor temperature of -15°C.

**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°C 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.

- The heating curve chosen in the software is the temperature to the flow at -15°C outdoor temperature. Therefore the flow temperature will change with the outdoor 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.
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 which 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) which 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 horizontally 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 1 Pa per 2 mm. (fig. 2) The hatch is preset at about 1 Pa. 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 on the situation.
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 advised before doing any adjustments.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
</table>
| 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 | - 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 (page 17)  
- 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 protection 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).

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Pt1000</th>
<th>22KΩ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C</td>
<td>1000 ohm</td>
<td>66000 ohm</td>
</tr>
<tr>
<td>10°C</td>
<td>1039 ohm</td>
<td>41800 ohm</td>
</tr>
<tr>
<td>20°C</td>
<td>1077 ohm</td>
<td>27100 ohm</td>
</tr>
<tr>
<td>30°C</td>
<td>1116 ohm</td>
<td>18000 ohm</td>
</tr>
<tr>
<td>40°C</td>
<td>1155 ohm</td>
<td>12200 ohm</td>
</tr>
<tr>
<td>50°C</td>
<td>1194 ohm</td>
<td>8450 ohm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temp.</th>
<th>Pt1000</th>
<th>22KΩ</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°C</td>
<td>1232 ohm</td>
<td>5960 ohm</td>
</tr>
<tr>
<td>70°C</td>
<td>1271 ohm</td>
<td>4280 ohm</td>
</tr>
<tr>
<td>80°C</td>
<td>1309 ohm</td>
<td>3130 ohm</td>
</tr>
<tr>
<td>90°C</td>
<td>1347 ohm</td>
<td>2320 ohm</td>
</tr>
<tr>
<td>100°C</td>
<td>1385 ohm</td>
<td>1746 ohm</td>
</tr>
</tbody>
</table>
Documentation of settings

Before you commission 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

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start temperature burner</td>
<td></td>
</tr>
<tr>
<td>Stop temperature burner</td>
<td></td>
</tr>
<tr>
<td>Fan speed</td>
<td></td>
</tr>
<tr>
<td>Temperature electrical heater</td>
<td></td>
</tr>
<tr>
<td>Power electrical heater</td>
<td></td>
</tr>
<tr>
<td>Operation dose</td>
<td></td>
</tr>
<tr>
<td>Start dose</td>
<td></td>
</tr>
<tr>
<td>Flame sensor start</td>
<td></td>
</tr>
<tr>
<td>Flame sensor running</td>
<td></td>
</tr>
</tbody>
</table>

Settings in buffer system

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acc.tank high G6</td>
<td></td>
</tr>
<tr>
<td>Acc.tank low G5</td>
<td></td>
</tr>
<tr>
<td>Stopp G5</td>
<td></td>
</tr>
<tr>
<td>Max G6</td>
<td></td>
</tr>
<tr>
<td>Start G6</td>
<td></td>
</tr>
<tr>
<td>Max G1</td>
<td></td>
</tr>
</tbody>
</table>

Performance

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 content</td>
<td></td>
</tr>
<tr>
<td>CO (ppm)</td>
<td></td>
</tr>
<tr>
<td>Flue gas temperature</td>
<td></td>
</tr>
<tr>
<td>Negative pressure in the flue (pa)</td>
<td></td>
</tr>
<tr>
<td>Burner efficiency</td>
<td></td>
</tr>
</tbody>
</table>

Type plate

![Type plate diagram]
### TECHNICAL DATA

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

EFFECTA AB
Västra Rågdalsvägen 21 - 43496 Kungsbacka
Tel: 0300-22320 - Fax: 0300-22395
E-post: info@effecta.se - www.effecta.se

COMPONENTS

1. ROOM OUTDOOR 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

INCOMING WATER
COLD WATER
HOT WATER
HEAT CURCUIIT

V505 96
V3
Hydraulic scheme extra hot water

COMPONENTS

1. ROOM / OUTDOOR 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

DOMESTIC WATER

WATER HEATER

RADIATOR
EFFECTA AB
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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 21
22. CONNECT TO 21
23. COLD WATER IN
24. SOLAR RETURN
25. SOLAR FLOW
26. EXPANSION VESSEL WITH SAFETY GROUP
27. SYSTEM PACKAGE WITH SAFETY GROUP
28. MIXING VALVE
29. THERMIC VALVE WITH PUMP AND CHECK VALVE
30. SAFETY VALVE
Declaring 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**

...som omfattas av denna försäkran är i överensstämmelse med följande direktiv
to which this declaration relates is in conformity with requirements of the following directives
auf das sich diese Erklärung bezieht, konform ist mit den Anforderungen der Direktive
auxquels la présente déclaration s’applique, sont conformes aux exigences 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 följande EN-standarter
The conformity was checked in accordance with the following EN-standards
Die Konformität wurde überprüft anhand der EN-Normen
Cette conformité été vérifiée selon les normes suivantes

* EN 287-1:2004
* EN 303-5
* EN 10 204:2005
* EN 55 014-1:2006
* EN 60 335-2-1:2003, A1:2005, A2:2008...
* EN 60 335-2-102:2006
* EN 60 335-2-2:2006
* SPCR 028

Approval testing of welders - fusion welding...
Heating boilers for solid fuels
Metallic products - type of inspection documents...
EMF
Emission
Immunity
Safety of household...

Kungsbacka 2014-04-20

Erik Andersson
CEO
Effecta Energy Solutions AB