




# Janfire Combiflame

Boiler for wood pellets, log and brown coal





manual



## 1 Legend to symbols

	advice of danger for person and material assets
	very important advice
	special informations or hints for assembly or operation

### Advices for usage

	Please read this manual before you begin to assemble or start operation of the boiler. Follow the instruction in this manual.
	This manual is part of the boiler. It is only legal for the Janfire Combiflame pellet boiler. It contains useful informations for safe operation, handling and maintenance. This manual has to be kept close to the boiler and it has to be on hand anytime of operation. Local terms have to be followed.
	According to the WEEE-directive this boiler is a stationary device. Because of this any electric or electronic part will not be taken back by Janfire. Please give those parts to your local recycling partner.
	<b>Warning: Do not open the front door until you have opened the start-up flap by pulling the lever on the right side of the boiler. After the opening of the flap you have to wait a couple of seconds before you may open the front door!</b>

## 2 Warranty terms




The warranty will only be issued on faults on our product concerning material and fabrication. Warranty will only be issued by proper handling and installation which is conform with the legal conditions and our instructions. The installation has to be done by an expert person.

Start of warranty is the date of our invoice. The period of warranty for the boiler takes two years. For any part of the boiler which is in contact with fire, warranty will be given for one year. For the pellet burner warranty will run out after two years or after the consumption of 20.000 kg pellets, whatever may occur first.

In case of damage we claim the right to check the installation and take a look at the damaged parts before compensation.

None of our products may be used until they were set into operation by a Janfire authorised expert. The protocol has to be signed by the expert and the customer. It has to be sent to Janfire AB. Otherwise there will be no warranty claim at all.

**There will be no compensation for any costs of replacement.**

	<b>Warranty will be lost if the product is not installed, set into operation, maintained and handled properly.</b>
	<b>Janfire will not give any warranty for faults concerning the hydraulic, the electric installation or the flue gas system.</b>
	<b>The boiler may not be used without adequate water pressure or without being connected to the hydraulic - and the flue gas system.</b>

Warranty will be lost by the use of not permitted fuel, insufficient draft, insufficient handling, maintenance and no proper installation.

Warranty will be lost too, if changes or repairs are made without our permission.

There will be no responsibility for damages evoked by leakage water, corrosion, aggressive vapours, dust, humidity (for example laundry dryer or washer in the boiler room), overpressure, assembly of the boiler in areas with explosive atmosphere or damages evoked by oxygen or dirt in the hydraulic system.

Advanced claims are excluded, especially any claim for damages, if they are not founded by law.

If a warranty claim was not justified, we will bring our costs to account.

### **3 Brief description / scope of delivery / allowed fuels**

The usage of the Janfire Combiflame guaranties an environmentally friendly and economic operation during heating. By the use of renewable fuels like wood pellets or log the heating is CO<sub>2</sub>-neutral. Only the same amount of CO<sub>2</sub> will be released to the atmosphere that the tree has collected during its growth.

Advantages:

- good value combi boiler for heating and domestic hot water supply
- simple design and high performance
- can be used as an additional boiler to existing oil- or gas heating systems
- good isolation, causes only few thermal lost
- nominal heat output for pellets 20 kW
- only 15 Pa natural draft is needed
- easy to change from pellets into a log boiler and reverse
- easy to clean and maintain

The Combiflame is a steel boiler conform with EN 303-5. The combustion chamber consists of 5 mm sheets from ST35JR (EN10025). The outside of the pressure vessel consists of 3 mm. 100 mm

of high quality isolation material is used to prevent thermal lost. Powder coated sheets are used for the cover panel. Cast iron is used for the grill and the handholds.

The connectors for flue gas, thermal relief valve and the water supply are on the backside of the Combiflame. The boiler can be placed on 4 adjustable feet.

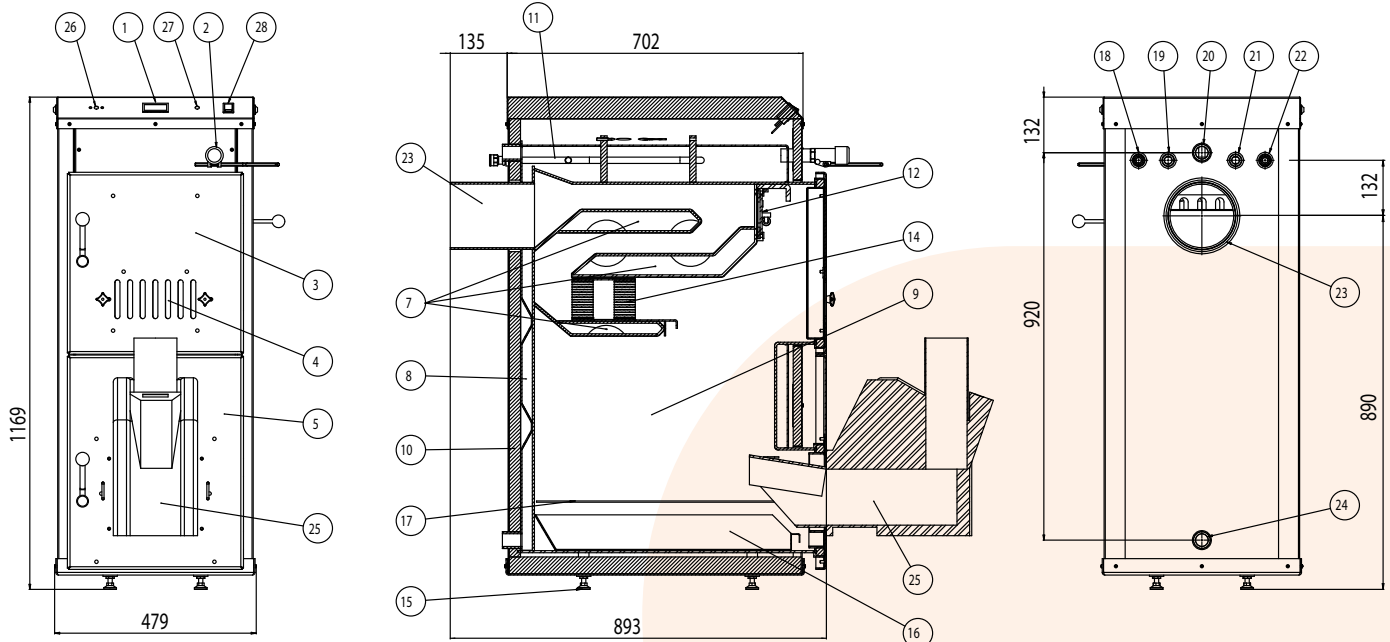
The Combiflame will be delivered including the catalytic converter, the Janfire pellet burner NH and this manual.

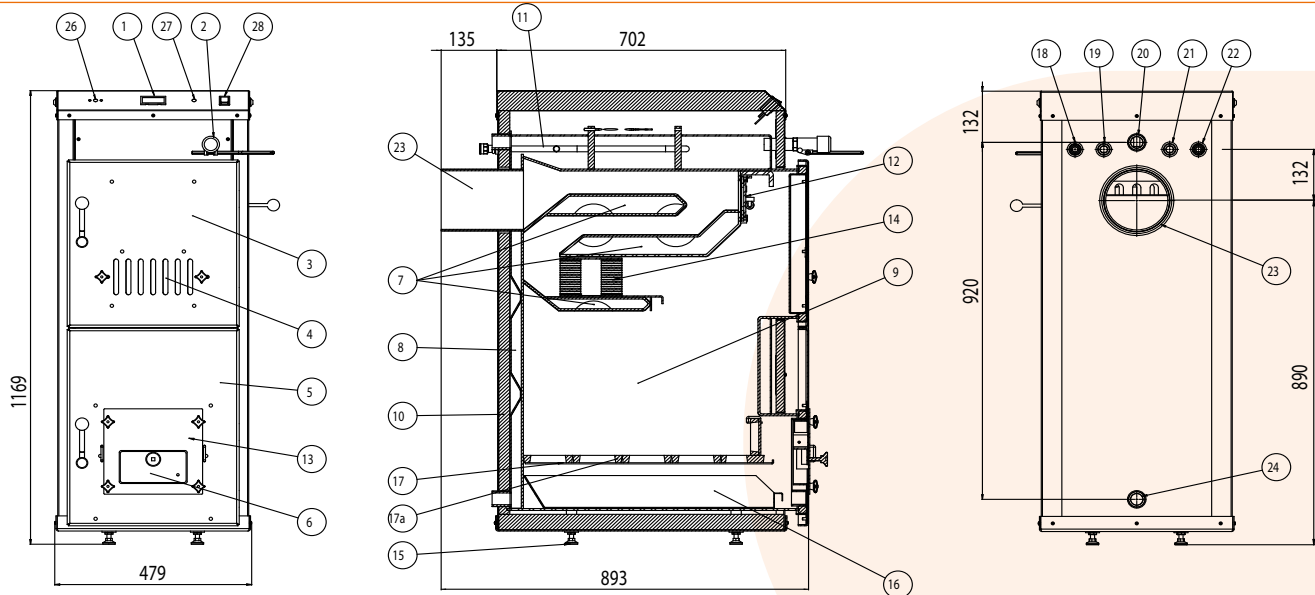
### Purchased parts package :

- Boiler Combiflame including the catalytic converter
- four adjustable feet
- ash pit
- grill for operation with log
- pellet burner NH
- thermal controller for the draft flap (only used for operation with log)
- manual
- muffles



**This manual is part of the boiler. It is only legal for the Janfire Combiflame pellet boiler. It contains useful informations for safe operation, handling and maintenance. This manual has to be kept close to the boiler and it has to be on hand anytime of operation. Local terms have to be followed.**





- |   |  |  |
|---|--|--|
| (1) thermometer   | (12) start up flap   | (22) connector 1/2" female screw thread for thermal relief valve |
| (2) muffle 3/4" according to therm. controller (log only) | (13) frame for prim. air flap (log only)                           | (23) flue gas connector  |
| (3) upper boiler door                                     | (14) catalytic converter   | (24) muffle 1" for backflow                                      |
| (4) flap for secondary air                                | (15) adjustable feet   | (25) pellet burner   |
| (5) burner door   | (16) ash pit   | (26) thermostat  |
| (6) flap for primary air (log only)                       | (17) grill (log only)  | (27) safety relief switch  |
| (7) heat exchanger  | (18) connector 3/4" external screw thread for thermal relief valve | (28) main switch   |
| (8) pressure vessel                                       | (19) muffle 1/2" for customer use                                  |  |
| (9) combustion chamber                                    | (20) muffle 1" for heat  |  |
| (10) isolation  | (21) muffle 1/2" for customer use                                  |  |
| (11) heat exchanger for thermal safety relief valve       |  |  |

therm. relief heat exchanger	conform to DIN 4751/2	
efficiency	conform to EN 303-5	class 3
emission	conform to EN 303-5	class 3

### Allowed fuel:

The Janfire NH burner can burn pellets from 6 up to 10 mm. We specify pellets which are conform with EN 14961-2 A1. If the boiler is changed into a solid fuel boiler untreated log up to a length of log from about 50 cm and briquets of brown coal can be burned, too.

	<p><b>Other fuels are not allowed. Especially any kind of waist may not be used as fuel.</b></p>
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## 4 Technical Data

		Pellets	Log	Brown Coal
nominal heat output	kW	20	15	15
<b>boiler class (EN303-5)</b>				
efficiency	-		3	
emission	-		3	
efficiency	%	90,5	86,4	81,9
fuel:		wood pellets	untreated	
max. moisture	%	6 or 8 mm	18-22	18-22
max. length of log	cm	EN 14961-2 A1	50	-
burning time at nominal heat output	h	-	2 charge: 7 kg	3 charge: 10 kg
adjustment range of therm. controller (log, brown coal only)	°C	30 to 90		
<b>flow temperature</b>				
max allowed	°C		95	
minimal	°C		55	
min. return temperature	°C	55		
<b>flue gas</b>				
average temperature	°C	190	170	198
mass flow	g/s	9,7	10,0	12,2
cross-section of flue gas connector	mm	160	160	160
average CO <sub>2</sub> -level in flue gas at nominal heat output	Vol. %	13,6	9,7	13
average CO-level (13% O <sub>2</sub> ) at nominal heat output	mg/m <sup>3</sup>	33,7	801,2	322,8
max. allowed system pressure	bar	3		
required natural draft*	Pa	<b>11</b>	<b>14</b>	<b>15</b>
max. allowed natural draft:	Pa	<b>20</b>	<b>20</b>	<b>20</b>
max.:	l	80		
	l	65		
overall weight (without water)	kg	ca. 260	ca. 245	
water-side resistance (Δ t = 10 K)	mbar	2,9		
opening upper door (B x H)	mm	297 x 335		

\* Take care of the connection piece between boiler and chimney. The resistance of that piece has to be added to the required natural draft of the boiler.

## 5 Safety installations

During the assembly attention must be paid to the safety installations. Only safety parts which are tested and labelled for safety may be used. Before setting the boiler into operation make sure that all safety installations are in place and belong to the state of the art and work. If necessary check them again. Especially the pressure relief valve, the thermal safety relief valve and the expansion vessel have to be checked before the boiler is allowed to start running. All safety installations have to be checked by an expert every year.



**Safety installations are not part of the purchased parts package.**

### safety relief switch:

The safety relief switch is connected to the pellet burner. If the temperature of the boiler rises above 95°C the safety relief switch stops the burner. The burner will not start on its own if the boiler temperature falls below 95°C. You have to reset the switch by hand. Check the water pressure, the hydraulic system, especially every pump, the heating controller and the sensors before resetting the safety switch (DIN EN 303-5 clause 3.21). **Please look at chapter 10, too!**

### thermal safety relief heat exchanger:

The Combiflame has a welded thermal safety relief heat exchanger.



**The thermal safety relief heat exchanger may not be used as a domestic hot water supply.**

This heat exchanger has to be used with a thermal safety relief valve which is tested and labelled for safety.

### Thermal safety relief valve:

The thermal safety relief valve has to open at 95°C. The assembly of the thermal safety relief valve has to be conform to EN 303-5 clause 4.1.5.11.3. The valve must be placed in the cold water supply. It is not allowed to have any other valve in front of or behind the safety relief valve.





**Make sure that there is always at least 2 bar water pressure in front of the thermal safety relief valve. It is not allowed to have any other valve in front or behind the safety relief valve! The drain of the thermal safety relief system has to be visible. The cross-section of any tubing concerning to the thermal safety relief system has to be at least 15 mm.**

It is not allowed to set the Combiflame into operation without this safety system! The thermal safety relief system has to be installed by an expert and checked every year.

### Safety pressure relief valve:

The Combiflame has to be equipped with a pressure safety relief valve which is tested and labelled for safety. The maximal system pressure is 3 bar. The drain of the pressure safety relief system has to be visible.



	<b>The relief capacity of the pressure relief system has to refer to the nominal heat output of the boiler!</b>
	<b>Safety installations are not part of the purchased parts package.</b>

## 6 *Mode of operation*

The wood pellets are stored in a pellet store (4). Out of the store the pellets will be transported by an auger system (3). From the end of the auger system the pellets will reach the store of the burner (5) through a plastic hose (2). The hose is part of the burner safety system. Only Janfire certified hoses may be used.

There is a level sensor in the store of the burner. Until this sensor is not covered with pellets, the auger system will run. Than it will stop. Because of the consumption of the burner the pellet level in the storage will fall and after a while the sensor will not be covered anymore. The LED of the sensor goes out. This process will repeat depending on the power output of the burner, its parameter can be adjusted in the menu of the burner. If the level sensor is not covered after the maximal operation time (adjustable in burner menu) a fault message will appear in the display of the burner. This case normally happens at the first start running or if you run out of pellets!!!

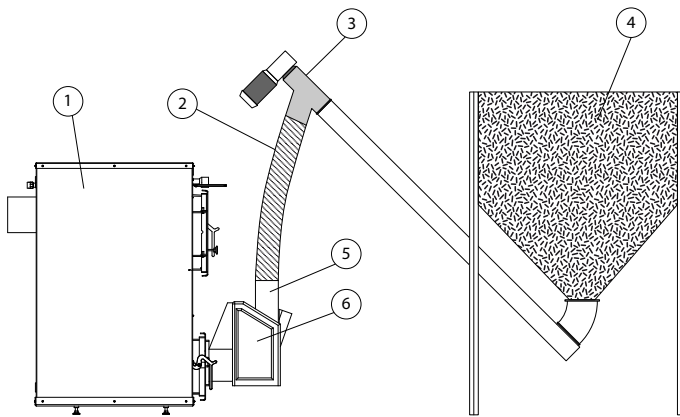
The internal dosing auger of the burner (6) transports the pellets according to the power output of the burner from the storage to the dropshaft. The pellets will fall down the dropshaft into the burner bowl where the combustion proceeds. The combustion air is transported by a fan according to the power output of the burner into the burner bowl. The ratio from pellets and air has to be adjusted during the setup process. An optional lambda-sonde, which does this adjustment automatically, is available too.

The burner is equipped with an electric ignitor. During the startup process a part of the combustion air is heated by the ignitor and inflames the pellets. Two temperature sensors are monitoring the combustion process.

When the burner stops, the deashing system is cleaning the ash out off the burner bowl into the ash pit of the boiler.

Make sure that the boiler room is vented properly. To avoid back burn it is compulsory that there is an under pressure in the boiler compared to the boiler room in every mode of operation.





- (1) pellet boiler Combiflame
- (2) hose for pellets
- (3) auger system
- (4) pellet store
- (5) storage of burner with level sensor
- (6) pellet burner

## 7 Installation and place requirement

A separate central heating room is required for the installation of the Janfire Combiflame. The use of this room should be only for heating. This room has to be conform to the local terms. The Combiflame may not be installed in living space. The heating room has to be vented and lighted properly. Ask your local authorities for permission before installation.

	<b>The assembly of the Combiflame has to be done by an expert.</b>
	<b>Before setting the boiler into operation make sure that the installation is state of the art and conform to all according laws. Make sure that all safety installations are in place and belong to the state of the art and work.</b>
	<b>Ask local authorities before installation.</b>

The heating room has to be conform to the local fire protection requirements.

	<b>If a ventilating system is installed, make sure that there is a separate ventilation for the boiler room. There may not be any under pressure in the boiler room at any time.</b>
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The boiler room has to be protected against freezing. The basement has to be robust, fire-proofed and plane. If you have any doubts, please ask an expert to check.

There has to be enough space around the boiler. At least 50 cm to any flammable material has to be kept. Ask your local authorities.

	<b>We advise to isolate surrounding surfaces with mineral wool.</b>
	<b>The heating room has to be conform with the local terms.</b>

## 8 Control of heating

### 8.1 Need of control

- Because of permanent changing weather conditions the output of the heating system has to be adjusted automatically.
- Heating control is needed to run the heating system with the highest efficiency.
- For adjusting the temperature of a room according to its use.

### 8.2 Mode of operation

There are several modes of operation for a heating controller. We like to introduce some of them:

#### 8.2.1 Alternating Start - Stop - operation

The burner is controlled by a switch. If the temperature rises above the triggered temperature of the switch the burner will stop. If the temperature of the boiler falls below the triggered temperature the burner will start again.

This kind of regulation is very inefficient and uncomfortable.

#### 8.2.2 Modulating operation

The burner can be equipped with a modulation sensor. This sensor enables the burner to adjust the power output level according to the water temperature. The set point is adjusted in the burner menu. By modulating the power output the controller of the burner tries to keep the boiler temperature constant.

An additional outside temperature sensor can be added to the burner too.

#### 8.2.3 Operation with external controller

The pellet burner can be controlled by an external controller too. Because of this the Combiflame can be integrated in a solar system easily.





**The Combiflame may not be used without a not adjustable return temperature increase. The minimal temperature of the return flow is 55°C.**

## 9 chimney

To assure proper operation of the Combiflame, the chimney and the flue gas connection have to fit to the requirements of the boiler. If you like to connect the boiler to an existing chimney, ask your chimney cleaner for permission. The flue gas system has to be conform to EN 18160 and your local terms.

At all modes of operation the natural draft of the chimney measured at the flue gas connector of the boiler has to be above 10 Pa. A draft regulator is required. The regulator has to be adjusted to 15 Pa. Natural draft above 18 Pa has to be prevented. No part of the flue gas system is allowed to be more tight than the flue gas connector of the boiler. Janfire advises a cross-section for the flue gas system from 180 mm. The flue gas system should be as tight, as short and should have as few angles as possible.

If you like to run the Combiflame as an additional boiler to an existing heating system, a separate flue gas system for each boiler is required. Ask you local authorities for permission if you like to connect the Combiflame and a second boiler to the same chimney.

	<p><b>Any data which are necessary for the design of the flue gas system can be found in chapter 4. No part of the flue gas system is allowed to be more tight than the flue gas connector of the boiler.</b></p>
	<p><b>A draft regulator is required. This regulator is not part of the purchased parts package.</b></p>

### 9.1 Adjustment of draft

Before setting the Combiflame into operation check the draft. The draft has to be measured in the flue gas pipe about 0.5 m behind the boiler.

If the boiler and the chimney are cold, 10 Pa to 15 Pa natural draft are required. Start the burner and let it run on the boilers maximum power level for at least 15 min. Now check the draft again. In this mode of operation not more than 18 Pa natural draft are allowed. If the draft is higher than 18Pa adjust the required draft regulator.

## 10 Connection of thermal safety relief valve / thermal safety relief switch

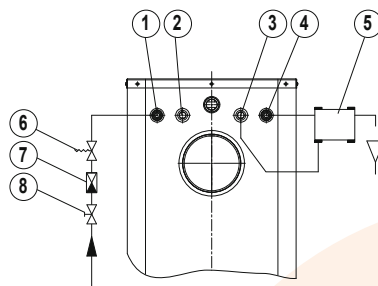
The Combiflame is equipped with a weld thermal relief heat exchanger. This heat exchanger prevents the Combiflame from overheating for example during an electric power failure. It has to be connected to the domestic cold water supply by a thermal safety relief valve. The thermal safety relief valve has to open at 95°C. The assembly of the thermal safety relief valve has to be conform to EN 303-5 clause 4.1.5.11.3. The valve must be placed in the cold water supply. It is not allowed to have any other valve in front of or behind the safety relief valve.

The following must be considered:

- The valve must be placed in the cold water supply before the heat exchanger (1) or (4).
- A thermal safety relief valve which is tested and labelled for safety must be used.
- The thermal safety relief system has to be under examination by an expert every year.
- Make sure that there is always at least 2 bar water pressure in front of the thermal safety relief valve.
- It is not allowed to have any other valve in front or behind the safety relief valve!
- The drain of the thermal safety relief system has to be visible.
- The cross-section of any tubing concerning to the thermal safety relief system has to be at least 15mm.
- You may not run the boiler with log or brown coal during a failure in the domestic cold water supply. But it is allowed to operate the boiler with pellets in this case.

The Combiflame is equipped with a built-in thermal safety relief switch conform with EN 303-5 clause 3.21. In case of the risk of overheating during the operation with pellets, the thermal safety relief switch closes down the power supply of the NH pellet burner and stops the combustion immediately. When the boiler temperature reduces the burner will not start automatically again! The thermal safety relief switch has to be reset by hand.

The sensor of the safety relief switch has to be placed by using a thermometer pocket in muffle (2) or (3). The thermometer pocket is not part of the purchased parts package.



- (1) connector  $\frac{3}{4}$ " external screw thread for thermal safety relief system
- (2) Muffle  $\frac{1}{2}$ " for sensor (safety switch)
- (3) Muffle  $\frac{1}{2}$ " for sensor
- (4) connector  $\frac{1}{2}$ " female screw thread for thermal safety relief system
- (5) Thermal safety relief valve

## 11 Pellet burner assembly and adjustment

1. Boiler and pellet burner are not assembled at delivery!
2. The pellet burner will be placed in the bottom door of the boiler.
3. Fasten the burner by using the screw hook on the eyes of the door. The screw hooks have to be adjusted.



**Make sure that the burner flange is close to the door. No air should be sucked through the gasket.**

4. Check the strain of the screw hooks after 2 days. Adjust them again, if necessary.
5. Connect the plugs of the burner according to the electric plan!



**The electric connection has to be made according to the local terms by an expert.**



**The hose between the auger system and the pellet burner is part of the safety system. Because of that the discharge of the auger system and the infeed of the pellet burner have to be eccentric (min 20 cm). A distance in high from at least 30 cm has to be adhered too. Only Janfire certified hoses may be used.**



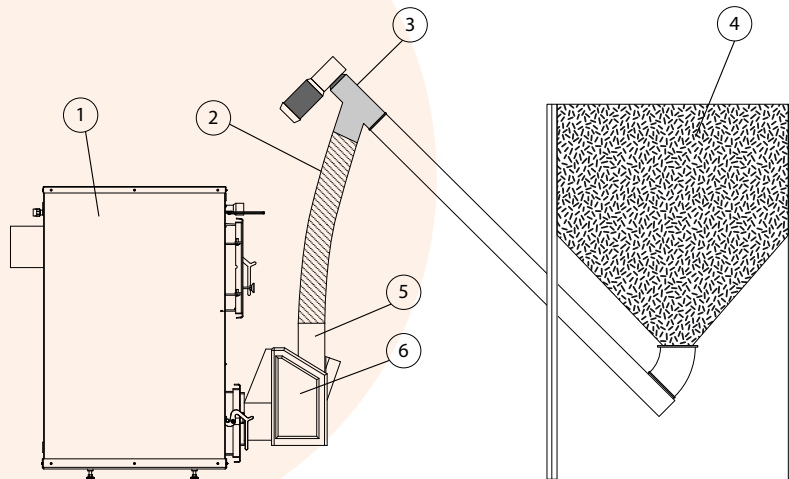
## 12 Change from pellet burner to log operation



**Make sure that the burner is stopped for at least an hour before you make the change! Watch out for hot burner parts and glow!**



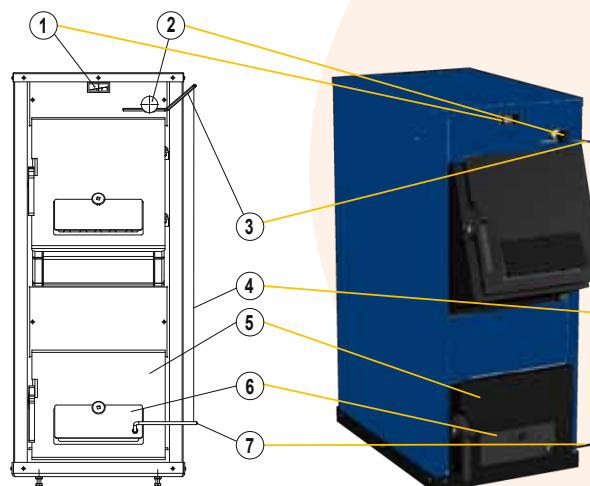
**The firing controller has to be assembled by an expert. This has to be done before the boiler is filled with water. We suggest to put the controller in place even if you do not plan to run the boiler with logs jet.**



The following must be considered:

- Remove the hose (2) by opening the clamps on either ends of the hose.
- Unplug the power supply of the burner and the connection between burner and auger system and the modulation sensor.
- Open the screw hooks and remove the burner (6). Make sure that the burner and the hose will be stored properly.
- The draft flap has to be put in the burner hole and bolted.
- Connect the draft flap and the firing controller with the chain.
- The 5 parts of the cast iron grill have to be put onto the grill frame in the boiler. There is one part of the grill with an adapter for the front grill. This part has to be put in as last.
- Put the front grill in its adapter.
- If you want to run the boiler with pellets again, all steps have to be done reverse.

## 12.1 Draft flap assembly and adjustment



- Adjust the firing controller to 60°.
- Heat up the boiler to 60°.
- Adjust the length of the chain so that the draft flap is open for 1mm at the bottom.
- Adjust the firing controller to your wished temperature.

## **13 Electric power supply**

The connection to the grid has to be done by an expert. We require an earth leakage circuit breaker and a 16 amp. fuse. All wiring has to be temperature proofed up to 120°C. We advice to use silicon cable.

## **14 Setting into operation**

The Combiflame has to be set into operation by a Janfire certified expert. We do not take any response for any damage which is founded in a not proper setting into operation of the boiler.

## **15 Usage by the customer**

### **pellet burner:**

Read the manual of the NH pellet burner before usage too. Start and adjust the burner as said in the manual. Make sure that the ash pit is empty and the main heat exchanger and the catalytic converter are clean. Do not open any door of the boiler during operation of the pellet burner.

### **log or brown coal:**

1. Make sure that the ash pit is empty, the main heat exchanger and the catalytic converter are clean.
2. Make sure that the pressure of the domestic water supply is proper.
3. Adjust the firing controller to your needed temperature. Close the bottom door of the boiler.
4. The Combiflame is filled with log or coal through the upper door.



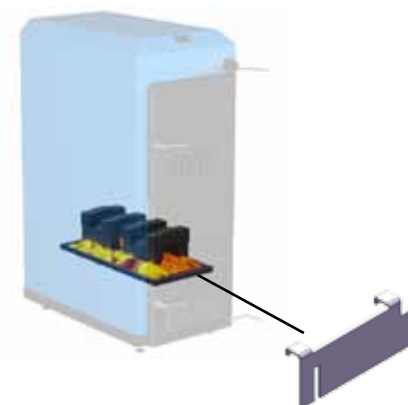
## heating with log:

1. Fill the boiler with log. Start with big log (diameter 8 - 10cm), make sure that there are some small pieces at the top of the filling. Put some very dry shavings on top.
2. Light the shavings on top. We suggest to use a BBQ charcoal lighter.



## heating with brown coal:

1. Maximal 10 briquette (about 10 kg) of brown coal are allowed to put into the boiler at once.
2. Generate a 5 cm thick bed of glow. Than put the briquette on top of the glow. There should be a distance from about 5 cm between the briquettes.
3. The front grill has to be covered by the delivered cover sheet.

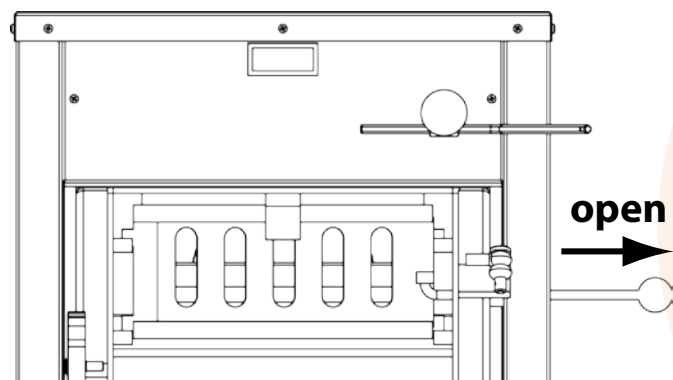


## start up:

During start up the lever of the start-up flap (12) has to be pulled out to the end. You can find the lever on the right side of the boiler.



**Not opening the start-up flap during start-up might cause damage of the catalytic converter.**



Ten minutes after you ignite the fire the start-up flap has to be closed. Make sure that a strong fire is burning. Than push in the lever as much as possible to close the flap.

## start up with brow coal





To ignite the brown coal a proper bed of glow is needed. Start the boiler with log. We suggest to burn about half a filling of log until you have a bed of glow about 7cm thick. Homogenize the bed of glow and fill in the briquettes of brown coal as described.

### refilling:

Make sure that there is stable bed of glow before refilling. In our suggestion the bed of glow should be thick at least 5 cm. For refilling the maximal rate of fuel is 10 kg of brown coal and 7 kg of log.

Burn the fuel down to a stable bed of glow before refilling again.

Close all doors of the boiler when refilling is completed.

	<b>Always were fire proofed glows when refilling the boiler. All parts of the boiler can be hot.</b>
	<b>Smoke can escape into the boiler room during refill. Make sure that the room is vented properly.</b>
	<b>Never let the boiler without supervision when any door is opened.</b>
	<b>Warning: Do not open the front door until you have opened the start-up flap by pulling the lever on the right side of the boiler. After the opening of the flap you have to wait a couple of seconds before you may open the front door!</b>

## 16 Cleaning

To achieve the highest efficiency the Janfire Combiflame has to be cleaned continuously. Depending on the used fuel and the power output cleaning might be necessary every week or even more often.

### Pellets:

If you run the boiler with pellets only, the following must be considered:

1. Empty the ash pit and clean the catalytic converter every two weeks.
2. Additionally to Nr. 1 clean the burner bowl every month.
3. Additionally to Nr. 1 and 2 clean the main heat exchanger an the flue gas system two times a year. We suggest to do this service before christmas and easter. Ask your Janfire Service to help you with this work.

Open the burner door and remove the roof of the burner bowl. Clean the burner bowl with a hand broom. Ash and slag which are adhere to the surface of the bowl have to be scraped out with steel brush for example. We advice to put a little bit of water on the surface of the bowl to dissolve the

adhesions. About 5 ml of water are enough. To clean the pellet burner follow the instruction in the burner manual too.

See at the description below how to clean the catalytic converter and the main heat exchanger.



**Never use a vacuum cleaner to clean the burner bowl. There is a high risk of fire because of remaining glow in the burner bowl.**

### log ore brown coal:

1. Depending on the fuel you use, clean the grill and empty the ash pit every day. The interstitials of the grill have to be opened. The distance should be at least 5 cm between the grill and the ash in the ash pit.
2. Clean the catalytic converter every week.
3. Additionally to Nr. 1 and 2 clean the main heat exchanger an the flue gas system every month.

### cleaning of the grill:



**Never use a vacuum cleaner to clean the grill. There is a high risk of fire because of remaining glow.**

Open the bottom door of the boiler. If necessary empty the ash pit. Put the ash pit back into the boiler than open the front grill. Clean the grill with the delivered tools or a brush. Be careful to provide ash to fall out of the boiler. Adhesions on the grill and on the surface of the boiler walls should be scraped away. Empty the ash pit again.

### cleaning of the catalytic converter:



**Always wear fire proved gloves when you remove the cartridge of the catalytic converter. Surface and lever can be very hot.**

By using the lever on the front of the cartridge drag the cartridge of the catalytic converter out of the boiler. Be careful, the cartridge is heavy. Prevent the catalytic converter from any shock!



Clean the surface of the catalytic converter with a mellow brush. Use a vacuum cleaner to suck out the dirt in the converter ducts.



**Never use compressed air to clean the catalytic converter.**

Put the cartridge back into position.

### **cleaning of the main heat exchanger:**

Remove the catalytic converter out of the boiler.

Remove the start-up flap. Hook of the lever. Now you can lift up the flap and drag it out of its bearing. If the flap stuck into its bearing you can free it with some easy beats of a hammer.

Depending on the type of boiler there are vortex generators in the ducts of the heat exchanger. Remove them before cleaning.

Clean the ducts of the heat exchanger with the delivered tools, a brush or a vacuum cleaner. If necessary clean the flue gas pipes from the boiler to the chimney too.

## **17 Advice to averting of a danger**



**To reduce risk you have to follow all instructions of this manual everytime you use this boiler.**

### **autumn and spring:**

The natural draft of the chimney depends on the temperature outside. If the temperature outside is higher than 10°C the natural draft can be too weak to run the boiler. Contact your chimney cleaner.

### **problems with draft:**

Problems with natural draft of your chimney can cause in the location of your building. If your building is located in a valley or in a very windy area, the natural draft of your chimney can be weak depending on the weather conditions. In this case it can be necessary to heat up the chimney before you can start the boiler. Ask your chimney cleaner how to do it safe.

### **failure in domestic water supply:**

You may not run the boiler with log or brown coal during a failure in the domestic cold water supply because the thermal safety relief system will not work in this case. But it is allowed to operate the boiler with pellets during that failure.

## 18 Safety instructions

You have to take care anytime you operate the Combiflame!

Never run the boiler without supervision. You may not leave the boiler unobserved if any door is opened. There is a risk of injury because of edges caused by the design of the boiler. Take care of this risk during transport and operating the boiler.

You may not use any kind of easily inflammable substances like gasoline or ethyl alcohol to ignite the fire in the boiler. Please use BBQ charcoal lighter instead.

After ignition every door of the boiler has to be kept close. Wear fire proved gloves any time you open a door during heating.

Do not open the front door until you have opened the start-up flap by pulling the lever on the right side of the boiler. After the opening of the flap you have to wait a couple of seconds before you may open the front door!

Use allowed fuels like wood pellets conform with EN 14961-2 A1, untreated wood and briquettes of brown coal only. You may not put any wood or brown coal into the boiler while the pellet burner is assembled.

Cleaning should only happen if the boiler is cold.

Never store any inflammable goods in front of the boiler.

You may not dry any laundry or other inflammable goods on the surface of the Combiflame or the flue gas system.

