

1 Checking book – Operation journal of the boiler room

It is the Checking Book of the automatic equipment for the wood waste combustion Equipment operator:

Manufacturer of the equipment: Smart Heating Technology s.r.o.

Heating equipment:

Supplier:

Type:

Year of production:

Heating output:

The equipment operator must perform the following checks of the automatic heating equipment during the whole time period of operation and record the checks' results in the checking book. During the checking and maintenance work execution the operator must observe all the safety rules mentioned in the "Operating Manual".

1.1 Important telephone numbers

Police:

Fire-Fighting Brigade:

Hospital:

Service:

1.2 Security, health and safety

- All safety measures and health protection has to be taken while doing maintenance and operating the boiler.
- Follow the manufacturer's instructions.
- Use personal safety elements.
- Never open burning chamber or any other part of the boiler while the boiler is in ignition process. There is a danger of saw dust explosion.
- Always turn off el. power while doing any handling – by using Emergency Switch. By doing this CU will stay under the power.
- Always turn off main switch while working inside of control unit.



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Risks which could occur while the boiler and its accessories are in normal mode.		
Source of danger.	Possible risk.	Elimination of the risk.
Boiler body	To get burnt when the inside door of the burning chamber is open. You can burnt your hand or a face while opening doors of burning chamber.	Always use fireproof gloves while opening inside door of the burning chamber, which could reach up to 400°C since they are in direct contact with exhaust fumes. While opening a check door, you have to stand far enough not to get burned, specially be careful on your eyes and other parts of your body. It takes several seconds before the under pressure is adjusted inside of burning chamber, and it is safe to look inside.
Ash bin.	Hand injuries, burns by touching the ash bin. Removal of ash from the ash bin.	Manipulate with the lid of the ash bin only by holding its handles. Place the ash only to designed area. The ash can be hot, there should be a special place for it.
Rotary an moving parts of the boiler	Injuries of hand or other parts of your body by moving and rotary parts of the boiler.	Remove the lid or any safety cover only when the boilers moving and rotary parts are safely disconnected from a power supply.
Auger channel and rotary spring wheel	You can get serious injury on your limbs while working inside of the silo.	If you for some reason have to go inside of the silo, please remember that the spring leaves are tangled around the wheel. When there is not enough fuel the springs get loose. Never performed this work alone and the boiler has to be always turned off!!



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Risks while doing maintenance of the boiler and its accessories.		
Source of danger.	Possible risk.	Elimination of the risk.
Always trun off the equipment when doing the maintenance. Boiler has to be turned off by main switch on boilers switchboard.		
Chain gears, bearing lubrication.	Scratches, cuts, falling from a ladder when lubricating bearing of turbulators. Slip of the grease. Tools falling. Motor Self-start.	Use gloves. Be cautious when working with safety covers. Place it to designated area out of your working space. Keep your tools out of boilers inclined areas, or between turbulators. Turn off el. power.
Burning chamber.	Burns, dust inhaling, eye contact with dust.	The burner can be hot if the boiler is not turned off long enough, there for you have to use fireproof gloves. While cleaning burner chamber use safety glasses and respirator, Recommended time of shutdown 4 hours.
Ignition mode.	Saw dust explosion.	Never open burning chamber or other parts of the boiler, when the boiler is in ignition process.
Electric.	Electric shock.	You can interfere in to ele. wiring when the main switch is turned off for more than 2 min.
Insufficient draft of the chimney	Low under pressure or blocked flue gases ways. Danger of CO poisoning.	Check the value of under pressure on display. Regularly check and clean chimney.
After you done with all maintenance work, check if you placed all safety covers back in place and secured it, before you put the boiler back in operation. Check all your tools to make sure that you did not forget it inside of the boiler, which could cause unexpected behavior.		

1.3 Weekly checks

Once a week it is necessary to visually check the whole heating equipment, including the fuel storage. The discovered defects must be immediately remedied.

We are recommending to check the boiler more often at least once a day, for some time, by a user, when you make a new installation, change the fuel or other major change. After you make sure that the change is not affecting normal operation of the boiler, the check does not need to be as often.

- Record all data on regular bases in to Daily report sheet. This information is crucial for analysing, when possible problem occur.
- Visual inspection of the boiler
 - Check any leaks and pressure of the water of the system.
 - Check burning chamber.
 - flame has to be bright yellow
 - any black spots from soot should not be visible
 - burner has to be clean without any layer of ash
 - check the level of ash on the lower part of the burner when it gets to high it can create build-ups please call a service organization.
 - Black smoke should not come out of the chimney, when the boiler is in normal operating mode. When the boiler is operation in low temperatures the smoke should have a white color (steam).
 - Ash bin check. Ash should be light grey color, fluffy without any build ups.
 - Check ash under the heat exchanger or second ashbin.
- If there is Alarm flashing, push red LED blinking bottom to see what Alarm there is, and reason. Record the alarm and time when it occurred in to Daily report. Call a service organization, if you can not turn off the alarm safely by yourself.
- Check the fuel inside the silo – level, quality.
- Boiler create regular noise of all moving parts, it should not create any not unidentified noises. Only when automatic heat exchange cleaning turn on it created a little higher noise than usual.

Note: If you open – service door, ash bin or ashtray of the cyclone, under pressure will drop inside of the boiler. If under pressure will not be renewed in next 2 min. power output of the boiler will turn off.

1.4 Monthly checks

It is necessary to perform monthly the following checks and record them in the checking book:

- All steps are detailed in point 1.3 Weekly check.
- Functionality of the flap valve of backward burning, especially. Manually and SW Manual control.
- Safe operation of the closing. Check tightness of flap.
- Functionality of the emergency fire extinguisher including the water supply. Press red button on the valve – max 10 sec.
- Faultless operation of the regulation. Test the errors stages of canister, flue gas fan, motor.
- Correct functions of all motors.
- Functionality of the failure message device/alarm equipment.
- Correct functions of all vens.
- Faultless operation of the combustion and exhaust fans.
- Due state of the combustion space.
- Readiness of functionality of the hand fire extinguisher.
- Due storage of the ash.
- No combustibles can be stored in the boiler room.
- Roof must be free of any combustible deposits.
- Lubrication of bearings of the turbulators and bearings placed close to the boiler walls.
- Lubrication points of moving floor in to intermedial bin.

1.5 Half-year checks

It is necessary to perform a half-yearly general inspection of the boiler, to lubricate all the bearings and to execute all the maintenance works. At least once a year this inspection should be performed by our Service Department or by a contractual service company (it is valid for the length of the guarantee period).

1.6 Records of the checks

The manufacturer should perform the maintenance of the heating equipment every three years.

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