

Hydrologic Cycle Pellet Stove

Manual of 2013 Style



Hydrologic Cycle Pellet Stove

Content

I . Cautions before Stove Operation.....	3
II . List of accessories.....	4
III. Stove Structure Diagram.....	4
1. Main View	4
2. Side Section View.....	5
3. Rear Section View.....	6
IV. Display Panel.....	7
1. Front Section View of Display Panel.....	7
2. Rear Section of Display Panel.....	8
3. Remote Control.....	8
V. Stove Installation.....	9
1. Stove Rear Connection.....	9
2. Hydrologic System Connection Sketch Map.....	10
3. Exhaust Pipe Connection	11
4. Fuel Recommendation.....	11
VI. Stove Operation.....	11
1. Pre-operation.....	11
2. Stove Operation.....	13
VII. Troubleshooting and Solution.....	23
VIII. Maintenance.....	23

Hydrologic Cycle Pellet Stove

Manual of 2013 Style

I . Cautions before Stove Operation

Before stove operation, please make sure all security components have been assembled in accordance with the installation requirement , such as the Flow Control Switch, Safety Valve, and Exhaust Valve etc.

1. The stove must be ground connection. The protection against electric shock relies on the ground connection when basic insulation fails. Please install the appropriate capacity of leakage protector in power supply circuit.

2. The power cord must be replaced by stove manufacturer, local service center or relevant specialist when it is damaged.

3. Do not use stove in the environment which contains explosive or flammable gas, liquid or dust because of the fire.

4. Someone must be on duty during the stove operation.

5. Before stove operation, please make sure that the Water Supply Valve is open and the water tank has been filled with water.

6. Do not place flammable and explosive articles within 0.5 meters of stove and outside smoke vent.

7. Don't place any covering on the stove.

8. Keep elderly and children away from high-temperature parts of stove, such as: Fire Viewing Window Glass, Front Panel, Left & Right Side Panel, Hopper Lid and Exhaust Pipe etc.

9. Please do regular maintenance and cleaning in accordance with maintenance instruction. Before doing maintenance and cleaning, please make sure that stove has been cool down.

10. If a failure occurs, please shut down the power immediately and contact local dealer for a specialist.

II. List of accessories

Item	Accessory	Quantity
1	Remote Control	1
2	Adjustable Feet	4
3	Adapter of Exhaust Pipe	1
4	Exhaust Valve	1
5	Safety Valve	1
6	Display Panel	1
7	Power Cord	1
8	Manual	1

III. Stove Structure Diagram

1. Main View



Front Section View



2. Side Section View



Right Side View



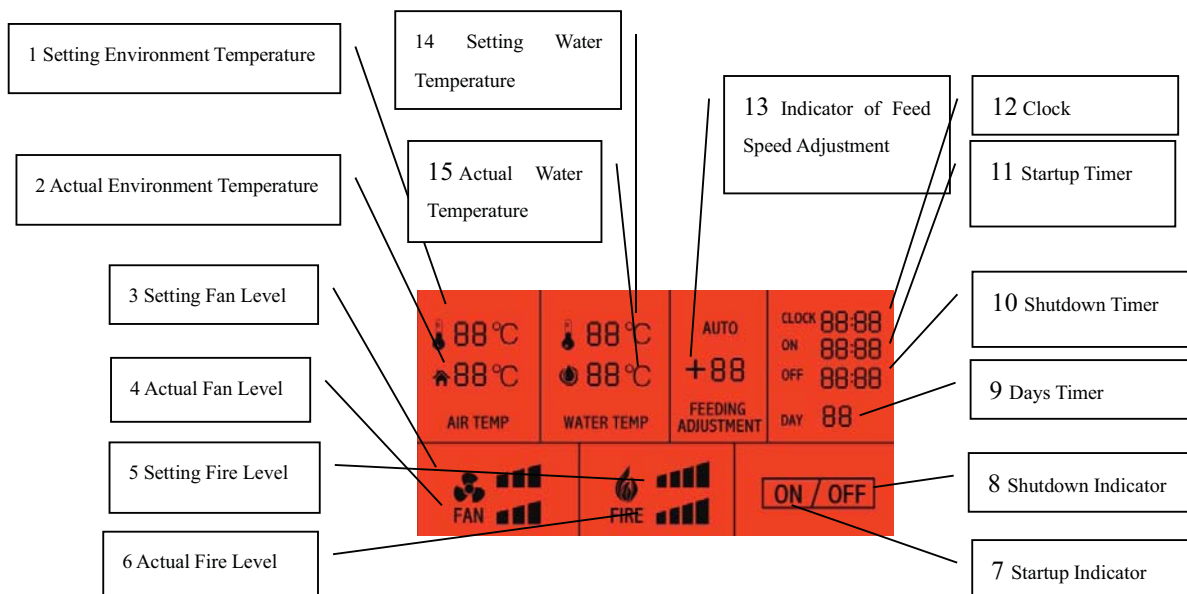
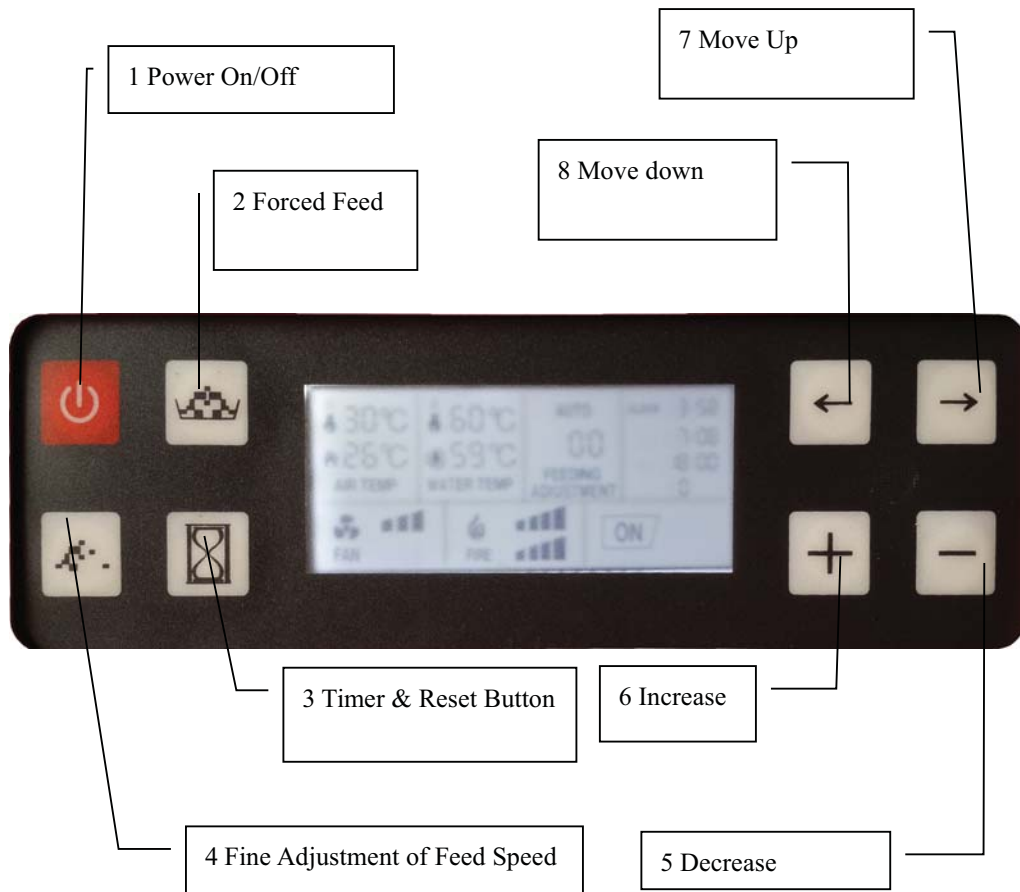
Left Side View

3. Rear Section View



IV. Display Panel

1. Front Section View of Display Panel

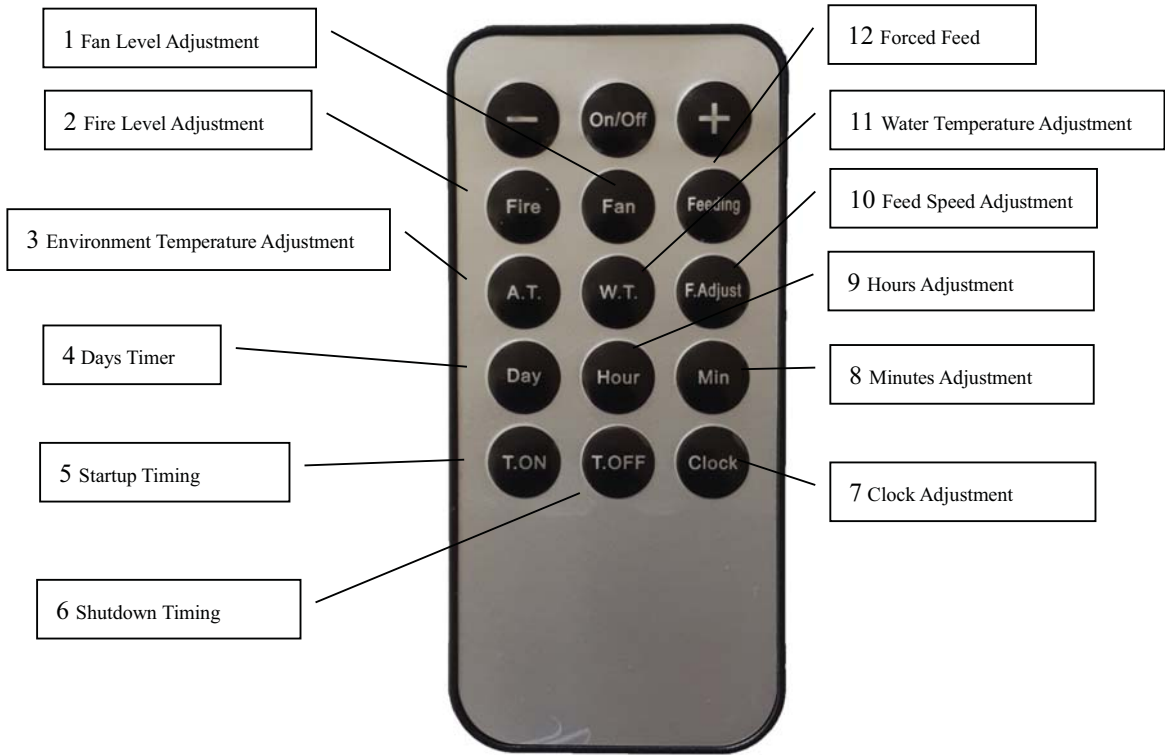


2. Rear Section of Display Panel



1 Dial Switch

3. Remote Control



1 Fan Level Adjustment

2 Fire Level Adjustment

3 Environment Temperature Adjustment

4 Days Timer

5 Startup Timing

6 Shutdown Timing

12 Forced Feed

11 Water Temperature Adjustment

10 Feed Speed Adjustment

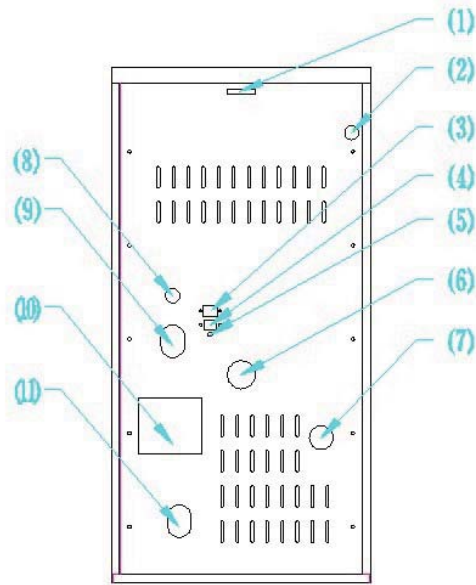
9 Hours Adjustment

8 Minutes Adjustment

7 Clock Adjustment

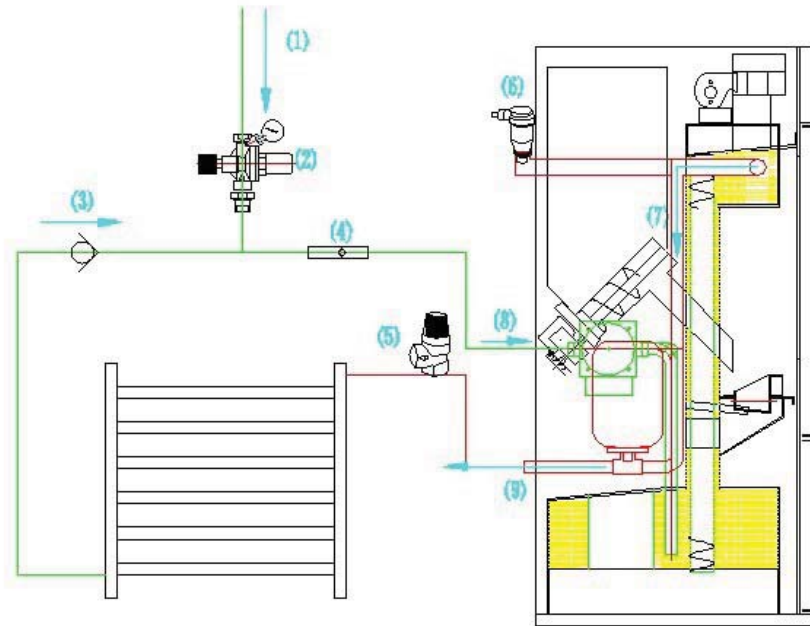
V. Stove Installation

1. Stove Rear Connection



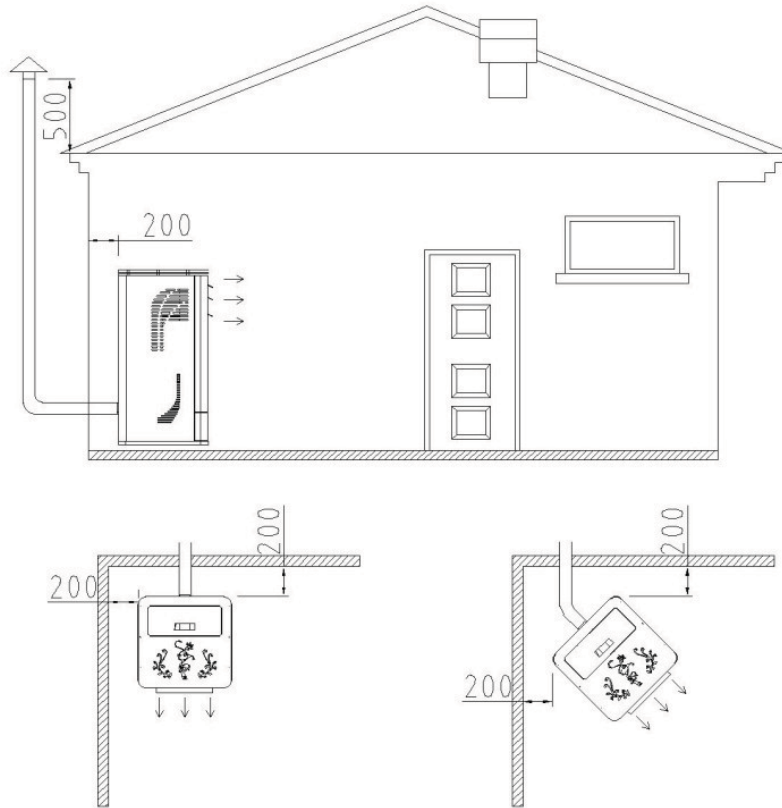
- 1) Cable Outlet
- 2) Exhaust Valve Interface
- 3) Power Socket of Water Pump
- 4) Power Socket
- 5) Environment Temperature Sensor Inlet
- 6) Air Intake
- 7) Hot Water Outlet
- 8) Water Pump Power Cord Outlet
- 9) Water Inlet of Water Pump (Cold Water Inlet)
- 10) Exhaust Pipe Outlet
- 11) Sewage Outlet

2. Hydrologic System Connection Sketch Map



- 1) Water Supply
- 2) Water Supply Valve
- 3) Cold Water after Cycle
- 4) Baffle-type Flow Switch
- 5) Relief Valve
- 6) Exhaust Valve
- 7) Hot Water
- 8) Cold Water Inlet
- 9) Hot Water Outlet

3. Exhaust Pipe Connection



4. Fuel Recommendation

For fuel, the diameter is 6 mm or 8 mm pure wood pellet is recommended. Less than 20% crop material wood pellet is also an option, but should do burning box cleaning daily, otherwise, the heating power will be affected.

Please select qualified wood pellet as fuel, there should be no any metal or hard stuff inside of wood pellet to avoid the feeder and feeder motor to be damaged.

VI. Stove Operation

1. Pre-operation

The process of pre-operation should be cared by professional staff. In principle, user will not be permitted to open the electric appliance box, if user open electric appliance box will bring potential risk.

- 1.1. According to below figure instruction to adjust the four adjustment feet. After installation complete, to check whether the stove is vertical against ground and stable. Suggestion of user don't put the stove on wood floor or carpet directly, could put one piece of marble or other heat insulator board underneath the stove.

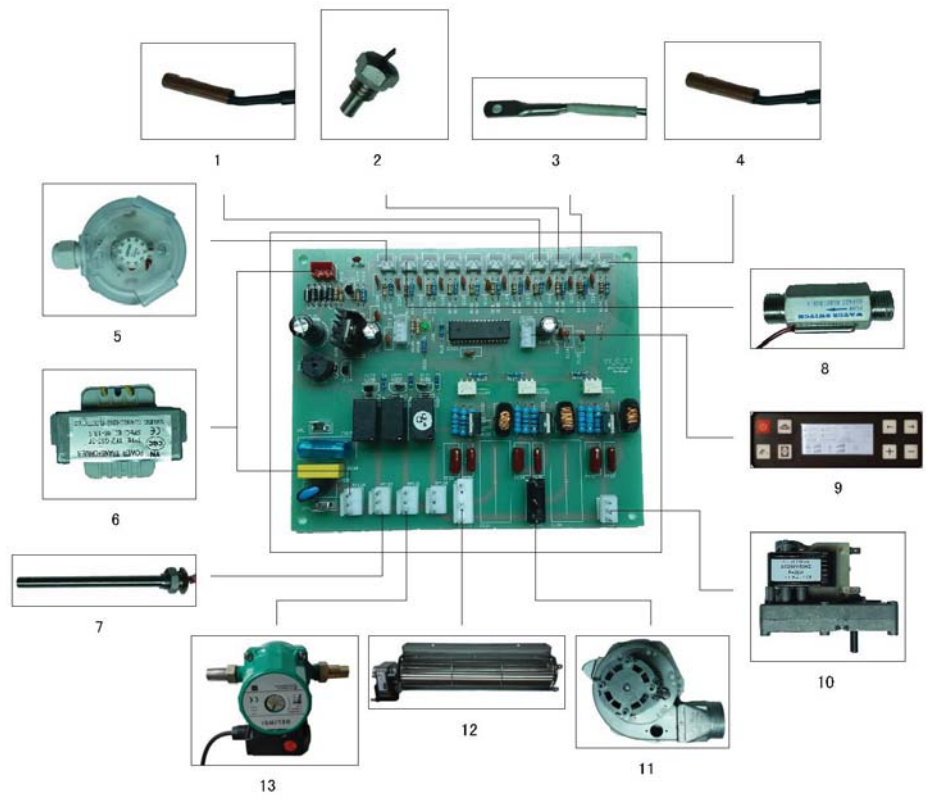


1.2. According to the figure instruction to connect hydrologic system, including: Inlet Pipe, Return Pipe, Water Supply Pipe, Exhaust Pipe, Pressure Relief Pipe.

Take notice of connection direction of Automatic Water Supply Valve, Single-direction Valve and Flow Rate Switch during installation, never be reverse connection. The pressure of Automatic Water Supply Valve should be set on 1.6 bar.

Open the electric appliance box cover from stove rear, according to the figure instruction to connect the Flow Rate Switch on main board, put back the cover on electric appliance box after installation.

Figure Instruction of Main Board Connection



- 1) Hopper Temperature Sensor
- 2) Water Temperature Sensor
- 3) Exhaust Temperature Sensor
- 4) Environment Temperature Sensor
- 5) Negative Switch
- 6) Voltage Transformer
- 7) Ignition
- 8) Flow Rate Switch
- 9) Display Panel
- 10) Feeder Motor
- 11) Exhaust Motor

12) Crossflow Draught Fan

13) Water Pump

1.3. Keep the Environment Temperature Sensor on stove rear far away from stove, don't close to high temperature object, to keep the environment temperature sensor accurate.

Turn on the Water Supply Pipe Stop Valve and Automatic Water Supply Valve at same time, you will hear a vent sound of hissing from the Exhaust Valve, which demonstrate the stove Water Tank is filling with water, when the sound is done, the tank will be full of water. (Suggestion of user to mount one 0-5 bar Water Pressure Gauge during the hydrologic circuit, to check the system pressure at all times.)

2. Stove Operation

2.1. Following the figure instruction of connecting the Display Panel with stove main body, and then inserting into the groove from the hopper cover rear panel.

2.2. Plug-in power, the LCD display will be shining 0.5 second, off 0.5 second, repeats three times later, it will be switched to the initial state.

Default Specification:

Environment Temperature Setting shows "30 Centigrade". Water Tank Temperature setting shows "60 Centigrade". the Heating Power Level setting shows 4 levels. Feeding Schedule setting shows 4 levels with relevant feeding duration (Which will display based on the main board expressed data). Displayed value of Actual Environment Temperature and Water Tank Temperature is according to the data sent by mainboard. Actual Feeding Duration shows "Auto". Current Time shows "12:00". Startup Timer shows "8:00". Shutdown Timer shows "18:00", Days Timing shows "0". Fan Speed shows high speed fan. Operation shows "OFF".



2.3. Open the top cover of hopper to fill in pellet fuel.

2.4. Startup: There are two ways on stove , one is handled by display panel "On/Off Button", and the other is handled by remote, both are same function.



Suggestion: After users operate the stove, the best way is to set the clock to local current time, as the further step of timing setting on startup/shutdown based on the stove clock time. In addition, there is memory function on Pellet Boiler、Boiler Burner, which based on the stove system clock time.

2.5. Environment Temperature Adjustment

Press the Display Panel button and Remote to adjust the environment temperature.

The Display Panel Operation Method: (Below are illustration and instruction)



Press the “Move Up Button” and “Move Down Button”, until the light of Environment Temperature is on flashing , press the “Plus +” or “Minus -” to set up the Environment Temperature until required temperature.

Operation Method on Remote: (Below are illustration and instruction)



Press A.T. button, until the light of Environment Temperature is on flashing, press the “Plus +” or “Minus -” to set up the Environment Temperature until required temperature.

2.6. Water Tank Temperature Adjustment

Press the Display Panel button and Remote to adjust the Water Tank Temperature.

The Display Panel Operation Method: (Below are illustration and instruction)



Press the “Move Up Button” and “Move Down Button”, until the light of Water Tank Temperature is on flashing , press the “Plus +” or “Minus -” to set up the Water Tank Temperature until required temperature.

Operation Method on Remote: (Below are illustration and instruction)



Press the W.T. button, until the light of Environment Temperature is on flashing, press the “Plus +” or “Minus -” to set up the Environment Temperature until required temperature.

2.7. Heating Power Level Adjustment

Press the Display Panel button and Remote to adjust the Heating Power Level.

The Display Panel Operation Method: (Below are illustration and instruction)



Press the “Scroll Up Button” and “Scroll Down Button”, until the light of Heating Power Level is on flashing , press the “Plus +” or “Minus -” to set up the required Heating Power Level.

Operation Method on Remote: (Below are illustration and instruction)



Press the “Fire” button, until the light of Fire is on flashing, press the “Plus +” or “Minus -” on Remote to set up the Heating Power Level until required.

Corresponding Fuel Consumption for Each Level of Heating Power

Heating Power	20kw		24kw		29kw	
	6 mm Pellet		6 mm Pellet		6 mm Pellet	
4	3.2-4		3.2-5		4-6	
3	2.7-3.2		2.7-3.2		3-4	
2	1-2.2		1-2.2		1.5-3	
1	0.7		0.7		0.7	

2.8. Fan Speed Adjustment

Press the Display Panel button and Remote to adjust the Fan Speed. There are three levels on Fan Speed --- Low, Medium, High; user could shut down the hot wind function when don't need. (The Pellet Stove doesn't install Hot Wind Motor, as it's connected with general purpose Hydrologic Cycle Pellet Stove Controlling Program, when users press the "Fan Speed Adjustment Button", which will show the Fan Speed on Display Panel, it will not affect hot wind function)

The Display Panel Operation Method: (Below are illustration and instruction)



Press the "Scroll Up Button" and "Scroll Down Button", until the light of Fan Speed is on flashing, press the "Plus +" or "Minus -" on Remote to set up the fan speed until required.
Operation Method on Remote: (Below are illustration and instruction)



Press the "Fan" button, until the light of Fan is on flashing, press the "Plus +" or "Minus -" on Remote to set up the Fan Speed until required.

2.9. Feed Speed Adjustment

Press the Display Panel button and Remote to adjust feed speed. The program sets the Feed Speed Adjustment function is for user to select the Feed Speed based on the pellet fuel quality lightly difference. User should select the appropriate Feed Speed based on actual pellet fuel status. Normally, the stove will set up the pellet fuel burning automatically; don't need do any adjustment deliberately.

The Display Panel Operation Method: (Below are illustration and instruction)



Press the Feed Speed button from the Display Panel, the LCD illustrated spot will be flashing, press the “Plus +” and “Minus -” , and then the Display Panel will show from -5 to +5, the Feed Speed will be adjusted accordingly, user could do selection freely.

Operation Method on Remote: (Below are illustration and instruction)



Press the Feed Speed button from the Remote, the LCD illustrated spot will be flashing, press the “Plus +” and “Minus -” , and then the Display Panel will show from -5 to +5, the Feed Speed will be adjusted accordingly, user could do selection freely.

2.10. Additional Function

2.10.1. Forced Feed

Press the button from the Display Panel and Remote for operation. The Forced Feed function is for unnormal condition when the lack of pellet fuel in burning box to keep the stove working.

The Display Panel Operation Method: (Below are illustration and instruction)



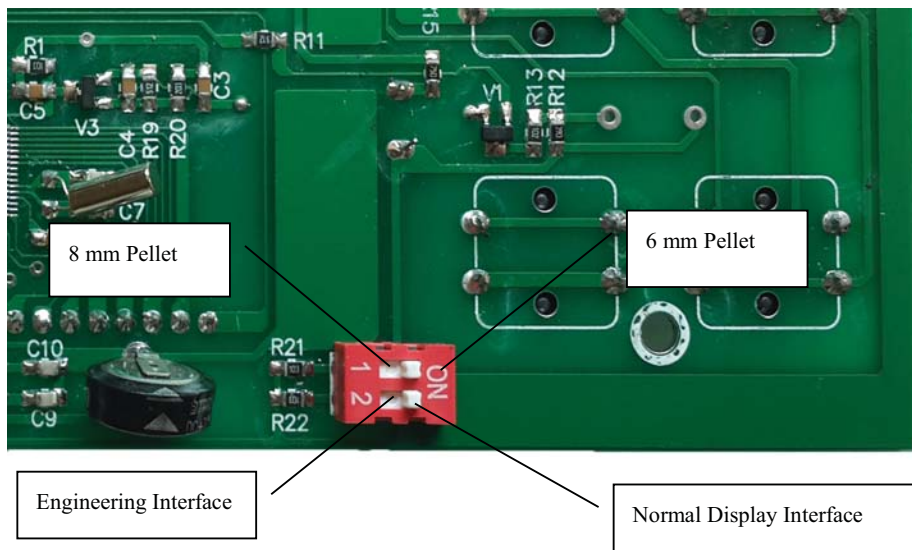
Please press the button from the Display Panel or the Remote as the illustration, the “Auto” button will be flashing on Display Panel, the system will keep going to feed, re-press the Forced Feed button, which will be back the initial controlling status.

Operation Method on Remote: (Below are illustration and instruction)



2.10.2. Diameter 6 mm/8 mm Pellet Fuel Switched Automatically

In order to make sure user could do selection from diameter 6 mm or 8 mm pellet fuel freely, we set up the program to switch the pellet fuel automatically, as illustration, when the stove is on power- off status, please dial the switch from the Display Panel Rear to make it happen.



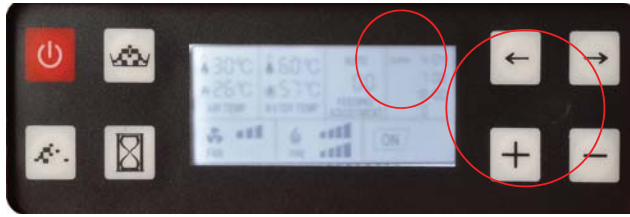
Function for Each Switch Illustration

- 1 ---- 8 mm pellet
- 1 on ---- 6 mm pellet
- 2 ---- Engineering Interface
- 2 on ---- Normal Display Interface

2.10.3. Clock Setting

Press the button from the Display Panel and Remote to set clock.

Operation Method on the Display Panel: (Below are illustration and instruction)



Press the “Scroll Up Button” and “Scroll Down Button”, to move the cursor to the illustrated “Clock” spot, and then pressing the “Plus +” and “Minus -” button to the required number, move the cursor to the illustrated “Minutes” spot with pressing “Plus +” and “Minus -” button to the required number, then the clock setting up.

Operation Method on Remote: (Below are illustration and instruction)



Press “Clock” button, the Clock spot will be flashing on LCD display, please press “Plus +” and “Minus -” button to required number. Then re-press the Clock button. Press the Min button When the minutes part is flashing, press “Plus +” and “Minus -” button to the required number.

2.10.4. Timing Setting

Press the button of the Display Panel and Remote to set up the Startup /Shutdown Time and Days.

The Display Panel Operation Method: (Below are illustration and instruction)



Press the “Scroll Up Button” and “Scroll Down Button”, move the cursor to the Clock Hour spot with pressing “Plus +” and “Minus -” until required hour number, and then

moving the cursor to the clock minutes spot with pressing “Plus +” and “Minus -”, until it’s done.

Continue to move the cursor, use the above method to set the Startup /Shutdown Time and Days.

Note: For the Days setting, the data must be equal or greater than 1 day, otherwise, the setting is invalid.

After all above steps done, press the “Confirm” button to make sure all setting effected. For all above time setting, all these must be a group time, including Startup/ Shutdown Timing; Days Timing, during the program setting process, any manual Startup/Shutdown stove will terminate the timing setting. The longest time is 19 days.

Operation Method on Remote: (Below are illustration and instruction)



Press the T.on button from Remote, the LCD Startup Time spot will be flashing, press the Hour button with pressing the “Plus +” and “Minus -” for the hours setting, and then pressing the Min button with “Plus +” and “Minus -” buttons on minutes setting.

Press T.off button, repeat above steps to set up the Shutdown Time.

Press Day button, with pressing “Plus +” and “Minus -” to set up the Days.

All above steps done, press the Confirm button from the Display Panel to make sure the setting effected.

Note: All ways setting must be confirmed through pressing the Confirm button from the Display Panel to make sure the setting effected.

2.10.5. Temperature Setting

Under the three following circumstances, the system will put the Heating Power Level on 1 level automatically.

When the Environment Temperature reaches the setting temperature, system will adjust the Heating Power Level to 1 level automatically, when the temperature is lower than the setting temperature by 2 Centigrade, the Heating Power Level will return the initial level.

When the Water Tank temperature reaches the setting temperature, the system will adjust the Heating Power Level to 1 level automatically, when the temperature is lower than the setting temperature by 10 Centigrade, the Heating Power Level will return the initial level.

When the Hopper temperature reaches 70 Centigrade, system will adjust the Heating Power Level to 1 level, when the temperature is lower than 50 Centigrade, the Heating Power Level will return the initial level.

Notes: During the Pellet Boiler and Boiler Burner program setting, when the Water Tank Temperature reaches the setting temperature, the system will be flameout automatically, when the temperature is lower than setting temperature by 10 degrades, the system will be ignited automatically. During the period of flameout, the circulation water pump will keep working.

2.10.6. Fault Indication

In order to help user to understand the root cause of fault, we set up the corresponding fault code, when the stove is failure, the code will express the code on the Display Panel Spot, which is the spot showing the Environment Temperature, after pressing the Confirm button from the Display Panel, you will eliminate the fault indication.

No	Fault Indication	Fault Code
1	Communication Fault. When the Communication Fault happen, 1 minute later, showing Code E1 with Display Panel flashing. After 5 minutes, the stove will be shutdown automatically, keep the Code E1 indication and the Display Panel flashing.	E1
2	Voltage Control Switch Action Protection. The protection is handled by the Main Board. After 15 minutes, the stove will be shutdown automatically.	E2
3	Flow Rate Switch Action Protection. The protection is handled by the Main Board, after 15 minutes, the stove will be shutdown automatically.	E3
4	Too Lower Temperature on Exhaust Pipe Protection. The protection is handled by the Main Board, after 15 minutes, the stove will be shutdown automatically.	E4
5	1000 Hours Operation Protection. When the system operation with 1000 hours, it will be on protection status, the Display Panel will be flashing. The system is just on Lowest Heating Power Level operation. User must inform local dealer to send specialist for checking and release the protection purpose.	EE

2.10.7. Engineering Interface

In order to help technician to understand the stove operation status, we set up the Engineering Interface during program. Such as the illustration, user could toggle switch from the Display Panel rear, and then will be on Engineering Interface. Current, there is Exhaust Temperature and Hopper Temperature indicates on the spot that Environment Temperature and Water Tank Temperature indication.

VII. Troubleshooting and Solution

1. Messy Code Indication

After power-off, re-connect the cable, checking the Main Board and the Display Panel connection.

2. Negative Pressure Switch Alarm

Checking whether the Plastic Pipes and Brass Pipes of connection Negative Pressure Switch and burning box are blocked or not, check whether there is clearance on burning box Door or the Door is unseal or not. Disassemble the Negative Pressure Switch, checking the switch working correctly or not.

3. Flame is Small, Strength of flame is lower

Checking the Pellet Fuel diameter, which matches the stove setting or not, checking the Exhaust Motor working correctly or not, checking the burning box is combustion plugging or not.

4. Ignition Failure

Checking the Ignition Bar is breakage or not, checking the Ignition Bar is covered by combustion slagging or not, checking the Feeder Motor working correctly or not.

5. Water couldn't be heated

Checking the Water Supply Switch is on position or not, whether there is reverse connection or not, checking the Outlet Pipe and Return Pipe are reverse connection or not, checking the Exhaust Valve and Exhaust Pipe are blocked or not.

6. No Feeding

Checking the Feeder Motor working correctly or not, checking there is any other clinker inside of Feeder or not.

VIII. Maintenance

1. Each 15 days, please clean the burning box, including clean the combustion plugging. If users put the impure pellet fuel as fuel, the days of cleaning burning box should be shorter to 3 days.

2. Each 30 days, please clean the Exhaust Pipe inside of burning box and Water Tank.

3. Yearly, before stove operation, please clean the Ash Box underneath burning box and Exhaust Fans.