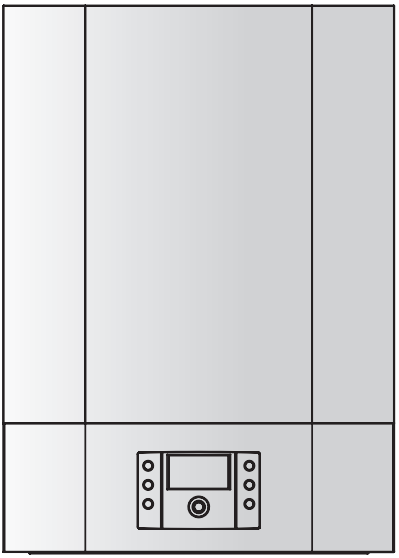
ROC

USER'S GUIDE

Wall-hung Gas Boiler



GENERAL NOTICE

- *The user's guide is very important for the product, the user's guide must be kept in user.There are very important instructions for operation and maintenance.*

- *Installation and maintenance must be performed by qualified professional person according to the current rules and instructions of manufacturer.*

- *Manufacturer will not take any responsibility for those person harm and property damage causing by incorrect installation. Gas boiler only use for supplying heating and hot water, can not change to other use.*

⚠ WARNING!

Please follow the instruction of user's guide to operate the machine.Manufacturer will not take any responsibility for those person harm and property damage causing by incorrect operation.

CONTENTS

FEATURE OF PRODUCT

1. Adopt heat exchanger system with high efficiency and energy saving

Adopt fine copper heat exchanger with good quality and NOx burner, which can increase burning rate, save the energy and protect the environment. They have two excellent functions, heating with high efficiency and supply hot water with super-large capability.

2. Adopt cuspidate PWM gas proportion control technique.

Our key technology is the control system. According to the feedback information from the temperature and pressure sensor, system can accommodate the gas supply volume automatically, control heating and domestic hot water temperature, which is above the temperature you have set so that you can save much energy.

3. Adopt multiple safe protection device

Our products have the most safe protection device in the same trade. Adopt equilibrium force air exhaust system in which the combustion chamber and air exhaust channels are completely hermetic. It can absorb the fresh air, exhaust the waste air after burning and eliminate the harm of CO for human's body. There are multiple over-heat protection device, protection for flameout, protection for flue building up, protection for over-pressure, multiple protection for preventing frostbite.

4. Adopt super mute running way

Adopt device for assimilating noise in the burner to assimilate all the noise when burn. At the meantime, with the low-noise excellent fan, circulation pump and flawless hermetic system,all noise will be the least. You will have a peaceful life space.

5. Adopt international one-up technique

Adopt international one-up automatic adjustment cushion design to reduce the probability of malfunction farthest. This design makes a breakthrough on international heating technology and shows our abundance.

6. Adopt firm and durable components

First-rate key components ensure the products' quality and usage.Inner material is machininged by thermalization and antisepsis, and the panel on which we use special coating with beautiful and elegant colour to improve products' durability and safety.

7. De-energize performance

If the power breaks when the machine is running, this performance will save all the orders which is saved before the power breaks. it will carry out all the orders automatically as soon as the power works like before.

8. Microcomputer chip controls and prevents incrustation

Heat exchange system with good quality and prevent-incrustation design connected modern microcomputer chip control temperature for use to delay the incrustation forming.

9. Exquisite design and simple installation

With exquisite design and compact inner structure, our products are simple to install and maintain. Coaxial supply and exhaust pipe are manufactured according to the product's model so that the installation time will be shortened a lot.

DON'T WORRY! WE HAVE SAFE DEVICE AS FOLLOWS

1. Treble protection for overheating
There are three protection devices, preventing over temperature, preventing heating water over heat, prevent domestic hot water over heat. If there is overheating these devices will stop the gas supply and working.

2. The earlier safe ignition device
For the sake of avoiding deflagration, this device only supply minimum gas in the earlier ignition.

3. Induction system for unusual combustion
When there is unusual combustion, the gas supply will be cut automatically.

4. Device for trash elimination
There are different filter screens in the machine, which can extend the product's life.

5. Device for preventing empty-combustion
This device can induce whether there is water leakage in the heating pipe. If there is leakage, combustion will be cut automatically. Machine reruns after pouring the water according to the way to first operation.

6. Self-diagnoses device
This device can avoid system safety losing control which is caused by protection damage and make sure that the system operates in the safe and reliable environment.

7. Device for blaze detection
After operation, this device detects the blaze signal any time and distinguish whether the present working is normal or not.

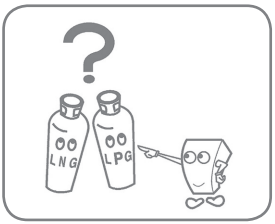
8. Safe device for water flow volume
Detect the water flow volume (super-low water flow protection) to make sure that the machine works safely.

9. Other safe device
Safe device for preventing flue building up, safe device for refiring, protection for overpressure, automatic safe device for air pressure adjustment, safe device for preventing frostbite, anti-creepage protection, de-energize/water/gas protection and so on.. please use it without any worry.

ITEMS FOR SAFETY

1. Make sure the gas type before use

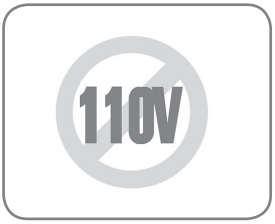
- Must use the certain gas type and pressure of gas appointed by the label on the machine.
- Forbid to change the gas type willingly. If it is necessary to change, please contact our after-sales service department.



⚠ Important items for safety!

2. Make sure the voltage (220V)

- Voltage is220V/50hz, alternating current.
- After confirm the voltage, connect the plug. (voltage is required 220V±15%. the subscriber had better allocate a manostat if pressure is unstable.



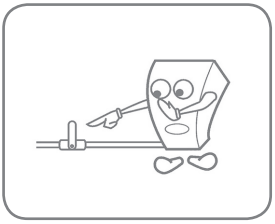
⚠**Warning!** In order to avoid the risk of leakage, the socket used in connection with this product must have a good grounding device.

3. The water filling valve must be closed after adding water.

- When adding water to the heating system with the water filling valve, the water pressure is increased to between 1-1.2bar, the water filling valve must be closed immediately, otherwise when the water pressure in the pipelineis greater than 3bar, the safety valve will automatically drain. To prevent accidents,be sure to close the water filling valve.

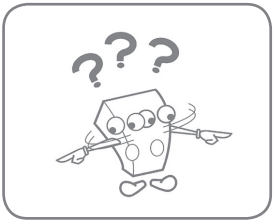
4. Check the switch for gas before use

- Check the middle switch connected on the gas pipe to see if there is leakage.
- Ensure whether pressure of gas and flow volume of gas supply meet requirement of our product.



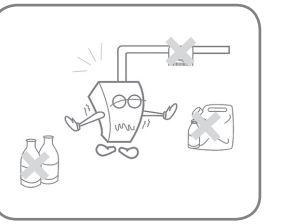
5. Make sure the connecting state of the valve for heating.

- Make sure whether the valves for connecting the heater and cooling systems of each room are open or not.
- Parallel—connect pipe could not be operated less than one group cooling valve opening.



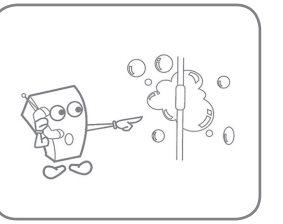
ITEMS FOR SAFETY

6. Make sure the surrounding environment of the product



- Make sure the surrounding environmentof the product Get rid of the combustible and explosive material surrounding the product. It is forbidden to hang clothes to dry on the flue.
- The temperature of flue and water pipe is very high. Be careful, please!
- Please do not directly touch the fire hole during use to avoid burns.

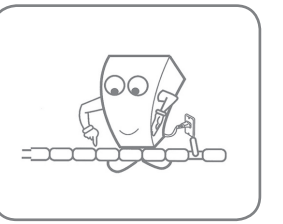
7. Make sure if there is gas leakage



- It is necessary to use soap water to check the gas pipe whether there is gas leakage. (when you put soap water on the gas pipe, if air bubble comes out, that means there is gas leakage.) Ought to close the gas immediately and contact local gas supplier.

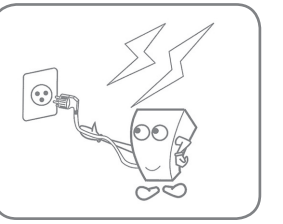
⚠ Important items for safety!

8. Prevent frostbite in winter



- When heating, heater must be unimpeded. (including water, electricity, gas) There is a prevent-frostbite device in the heater, so the heater will work automatically in low temperature.
- During freezing season or no one at home for a long period, please exhaust the water in the machine and in the heating pipe, cut off the gas supply and pull out the power plug to prevent frostbite.

9. Be careful when it fullmines



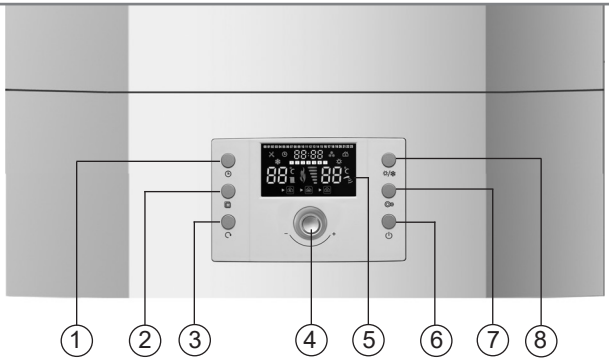
- Please pull out the power plug when it fullmine so that the heater won't be damaged.

⚠ Warning!

- Users should strictly observe the above safety warnings.
- This product must be installed, debugged and regular maintenance by professionals authorized by the manufacturer. All locking devices cannot be adjusted at will, and it is strictly forbidden to operate the boiler when the seal structure is damaged.

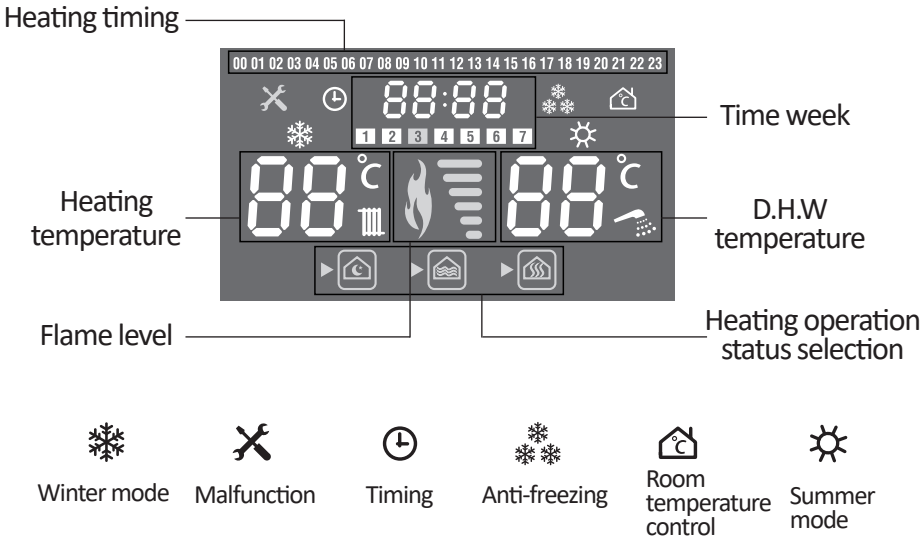
FUNCTION AND USE FOR THE MAIN CONTROL PANEL

Each part name on the control panel



1.Timing 2.Function Switch 3.Reset 4.Encoder
5.Information Indication Display 6.ON/OFF 7.Setting 8.Mode

Icon Meaning



FUNCTION AND USE FOR THE MAIN CONTROL PANEL

The function of the buttons on control panel

- **[Timing] Button** – In the OFF state, long pressing this button for 3s is regarded as Clock and Week setting. In the ON state, long press this button for 3s is regarded as Timing Activation button.
- **[Function switch] Button** – Circulate switch during these three working modes Sleep, Standard, Comfort.
- **[Reset] Button** – Press this reset button to restart gas boiler when it is malfunction.
- **[Mode] Button** – WINTER/SUMMER working mode switch.
- **[Setting] Button** – Factory parameters setting
- **[ON/OFF] Button** – ON/OFF switch
- **[Encoder] knob** – Clockwise rotation is temperature up or setting parameters up; Counter clockwise rotation is temperature down or setting parameters down, and softly touch encoder button to as Confirmation button in the parameters setting state.

Icon on display meaning

- Winter mode Icon : indicate when select Winter mode.
- Malfunction Icon : flash when in malfunction, otherwise no indication.
- Anti-freezing Icon : static status indicates when pump is in anti-freezing status; flash indicates when heating anti-freezing (anti-freezing also will be operated in Power off status).
- Timing Icon : Icon indicates after activating timing mode(including day timing or week timing) , otherwise no indication.
- Room Temperature Control Icon : indicate when switch is on; otherwise no indication; communication mode flash indicates.
- Summer Mode Icon : indicate when select Summer mode.
- Heating Icon : indicate when in heating mode.
- Hot Water Icon : dynamic indication when received hot water flow signal, otherwise no indication.
- Sleep Mode Icon : indicate after entering this status, otherwise no indication.
- Standard Mode Icon : indicate after entering this status, otherwise no indication.

FUNCTION AND USE FOR THE MAIN CONTROL PANEL

- Comfort Mode Icon : indicate after entering this status, otherwise no indication.
- Time Icon 88:88 : indicate the current time.
- Week Icon 1 2 3 4 5 6 7 : indicate when Power off or operate the weekly timing mode, current day will be indicated as color orange.
- Timing Icon 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 : indicate when timing function is activated; indicates when timing regional period is valid, otherwise no indication.
- Flame and Power Level Icon : flame icon flash when igniting, after detecting the flame signal and flame, 6 levels will indicate dynamically in according with the fan rotation speed.
- Heating temperature digit 88°C : indicate the heating temperature, the malfunction code and setting menu in heating operation.
- D.H.W temperature digit 88°C : indicate D.H.W temperature, the malfunction code and setting menu in D.H.W operation.

The method of turning on/off boiler

- Long press **[On / Off]** button to switch between startup and Shutdown.

Heating temperature setting

For example, when 55 °C heating temperature is required:

- In the heating state, directly rotate encoder knob to set the heating outlet water temperature (clockwise is up, counter clockwise is down), at this time, presetting temperature will indicate flashing out, then set the temperature to 55 °C.
- The D.H.W is preferentially used when under heating status, open the D.H.W tap will operate according to the preset D.H.W temperature.
- Turn off the D.H.W tap, it will return to heating status.

FUNCTION AND USE FOR THE MAIN CONTROL PANEL

Operation Mode Setting

● Operation mode setting: start in non-malfunction status, soft touch the mode button to switch the operation mode, there are 3 modes:

Sleep mode —— after entering this mode,the system will operate according to the 80% of preset temperature value.

Standard mode —— after entering this mode, the system will operate according to the standard parameter.

Comfort mode —— after entering this mode,the system will operate according to maximum power.

Clock Proofreading

Clock Proofreading (non input in 20S,it will automatic save and quit)

Under the OFF mode, long press the **[Timing]** button for more than 3s to make minutes calibration; And coordinate to rotate **[Encoder]**  knob to make calibration; and press the **[Timing]** button again to make clock calibration; And press the **[Timing]** button again to make week calibration; And then press the **[Timing]** button again or [Power] button to exit from calibration state.

(Proofreading process: Minute-Hour-Week-Quit)

Timing activation

In Power On mode, press **[Timing]** button to activate the “day timing” ; press the **[Timing]** button to activate the “week timing”; the third time press the **[Timing]** button will turn off the Timing function.

(Activation process: day timing-week timing-turn off)

“Day timing” Setting

“Day timing” setting (20S non input will automatically save and quit)

Under the working mode of Day Timing, long press **[Timing]** button for more than 5s to make Day Timing setting(from 00:00 to 23:00); First time segment flashes, press **[Timing]** button again, it will allow or forbid heating during this time segment; rotate the **[Encoder]**  knob to choose other time segment, rotate **[Encoder]**  button (or no input within 20s to automatically save and exit) to exit from Day Timing setting state.

FUNCTION AND USE FOR THE MAIN CONTROL PANEL

"Week timing" setting

"Week timing" setting (every week icon built-in orange LED)

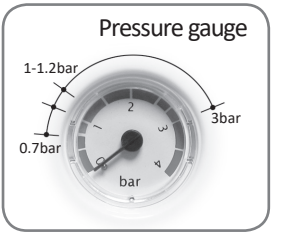
Under the working mode of Week Timing , long press **[Timing]** button for more than 5s to make Week Timing setting(from Monday to Sunday, and then from 00:00 to 23:00 for every day). Just enter the Week Timing setting, the Monday icon indicates orange flashing ,other icon is blue static indication ,at this time rotate the **[Encoder]** knob to choose other date; If some day icon for week is blue static indication, and press Time Setting button to enter Day Timing setting of that day (specific operation please refer to Day Timing setting) ; Press **[Encoder]** button to exit from Day Timing setting of that day; And rotate the encoder knob to choose next date, or press **[Power]** button to exit or with no input within 20s to automatically save and exit from Week Timing setting state.

Malfunction Display And Maintain

Malfunction display	***Code Meaning***	***Malfunction Reason***
E1	Flue malfuction	The malfunction of air pressure or air speed.
E2	Heating NTC malfuction	NTC open circuit and short circuit.
E3	Hot water NTC malfunction	NTC open circuit and short circuit.
E4	NTC overheat malfunction	The pipe water temperature is higher than 93 degree.
E5	Gas valve's circuit malfuntion	The output circuit of the gas valve is abnormal.
E6	Ignition failure	Can not detect the flame.
E7	Fake fire malfuntion	Flame detect circuit is out of control.
Eb	Slash fire malfuntion	There is fire after the boiler turns off four seconds.
EC	Communication malfuntion	The communication is interrupted or disturbed.
EP	Pipe malfunction	The water pressure switch is not acted.

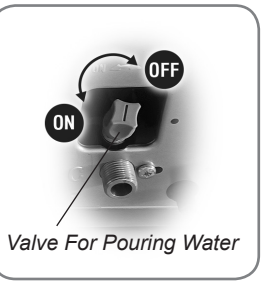
FIRST OPERATON

1.Adding water to the heating system



● Turn on the **[water adding valve]** (anti-clockwise direction), at the same time, turn on the vent valve of heating in each room, turn off the vent valve until the water flow out. When the pressure gauge indicator point to 1-1.2bar, turn off the **[water adding valve]** (clockwise direction).

⚠ **Attention:** The gas boiler supplement water pressure can not be more than 1.2 bar. Please remember that the water adding valve must be turn off after adding water, otherwise the safety pressure relief valve will be turned on to relief the pressure due to the overhigh pressure in heating system. In order to avoid the unnecessary property loss, please connect a water pipe from the safety valve outlet to floor drainage.



Valve For Pouring Water

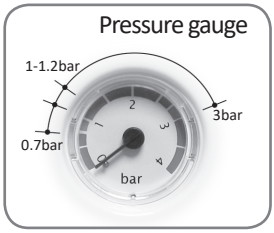
2.Operation

● Plug in the power plug to connect power supply, open the gas valve to connect the gas, and press the gas boiler control panel **[On/Off]** ⏻ button to turn on the gas boiler, meanwhile the circulating pump works again and autocratically exhaust out all air of heating system. During the exhaust process,watch the pressure pointer on pressure gauge, to know if the pressure is down, and if it is less than 0.7 bar, add water again.(water adding method is the same as above) When the pressure gauge is balanced, then press **[Mode]** ☼/❄ button to confirm the system works in Winter mode (color screen indicates Winter icon),the system switches to normal state, and automatically ignites and burns.Rotate the **[Encoder]**  you can set the heating water outlet temperature, the range is (30 °C ~ 80 °C), ground heating is (30 °C~ 60 °C).

● If using domestic hot water, you need to open shower nozzle or hot water tap, and rotate the **[Encoder]**  you can set the hot water outlet temperature,(the temperature adjusting range of domestic hot water is (30 °C ~ 55°C).The outlet speed of domestic water depends on length of hot water outlet pipe, and hot water doesn't flow out until the cold water in the hot water pipe is drained out.

3.Finish operation

- The trial run can finish and enter the normal operation after adjusting to comfort temperature.
- The gas boiler may lack of water after the long time operation, when the pressure indicated on pressure gauge is lower than the above value, you can supplement water according to above method.(It would be the best that the indicator on pressure gauge points at 1-1.2bar,)

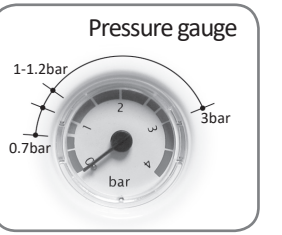


⚠ ***Attention:***

The first operation must be after the boilers installation and eligible examination.

Because of installing acreage or environment factors, valve for decompression may drain some water automatically. That is the reason that water in circulator has thermal expansion. To connect a rubber duct with the interface of the thermal expansion is the best way to exhaust the water or control the water pressure properly while pouring water.

TURN ON/OFF THE MACHINE CORRECTLY



1.Start boiler

● If restarting the gas boiler after the gas boiler turns off, abserve the pressure gauge firstly. If it is less than 0.7 bar, please pour the water again according to the pouring way in page “First Operation”. Plug in and connect the power and gas, turn on the gas boiler according to the operation way in page first operation after pouring the water again. (the pressure is between 1-1.2 bar,)

2.Not be used for short Period

● Gas boiler needs to be off if it won’t be used for a short period. Press ⏻ and then the machine turns off. When the gas boiler is under OFF state, please keep the current and gas supply. Gas boiler will run according to self-protection program.

3.Long period shutdown

● The gas boiler needs to be turned off if it won’t be used for a long period. Press ⏻ button and the machine will turn off. Cut the current and gas supply, close the gas switches and valves for heating/domestic hot water system. For preventing frostbite, exhaust all the water in the boiler (heating and domestic hot water) and in the heating pipe, close the boiler’s gas valve and pluck the plug.

CLEANING AND MAINTENANCE

4. Cleaning And Maintain

Gas boiler must be cleaned and maintained more than one time per year. If over one year, the trash in each pipe will make the performance debase and make some noise, which becomes the reason for malfunction. If it happens, please contact our after-sales service department and clean the boiler under the skilled man's direction. (Cleaning and maintenance must be before the heating period)

Maintenance	***Check on time once a year***	***Check on time twice a year***
Check the obturator	✔	✔
Clean the heat exchanger beyond the flue	✔	✔
Clean the combustion chamber, fan and inner pipe	✔	✔
Check the device for electricity and gas	✔	✔
Check the gas flow volume and pressure	✔	✔
Check all the smoke pipes	✔	✔
Clean the burner and exam the fire performance	✔	✔
Check the water system	✔	✔
Analyze combustion state	–	✔
Check the lubrication of components	–	✔
Check the tightness of gas device	–	✔
Clean the quadric heat exchanger	–	✔
Check the performance of electric and electronic components	–	✔
Volume and speed of the fan	–	✔

Attention: ✔ necessary, - not necessary.

Attention: ***When cleaning and maintenance, don't damage the sealed construction of product and accessories.***

MAKE SURE THE FOLLOWING ITEMS BEFORE REPAIRING

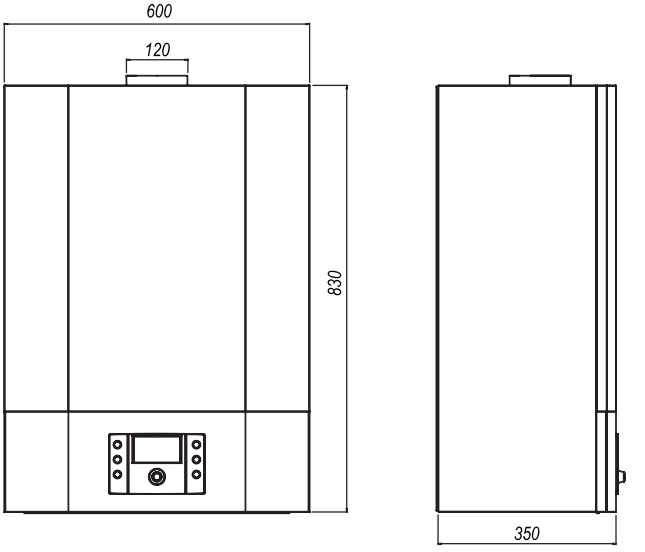
Abnormal Occurrence	*Abnormal Reasons*	*Way to Maintain*
A gas smell	Close the mid-valve connected by gas pipe. Don't turn on or off the electrical equipments and then ventilate. Contact the supplier or the local after-sales service department to make it repaired. Use the suds termly to make sure whether there is gas leakage on the connection of the gas pipe.	Close the mid-valve connected by gas pipe. Don't turn on or off the electrical equipments and then ventilate. Contact the supplier or the local after-sales service department to make it repaired. Use the suds termly to make sure whether there is gas leakage on the connection of the gas pipe.
Can't ignite	Does the fuse break? Does the electrical source work normally? Does the gas supply normally?	Change a new fuse(250V/3A). Check the outer electric circuit. Open the mid-valve, and if the gas is used up (provided you use LPG), please refill.
Some unusual noise when start	Are the air supply tube and smoke pipe built up? Is the heating pipe unimpeded?	Please consult installing guider. Please exam the heating pipe and mid-valve.
A smoke smell	Is the installation for the air supply tube and smoke pipe correct? Are there some gaps on the smoke pipe? Is the blaze normal? (Is there yellow blaze)	Please consult installing guider. Please mend the gap. Clean and maintain more than one time per year.
Bad heating effect	Is the distributing valve for radiation open? Is the heating temperature set too low? Is there air in the radiator?	Please adjust to heating mode. Please exam the heating pipe and mid-valve. Please compare each room's acreage firstly and compare the open state of valves for the distributors. Please set a suitable temperature. Please exhaust all the air in the pipe.
No hot water (or hot water isn't hot)	Is the temperature set too low? Are there several places using water? Is there leakage in the hot water pipe? Is the water supply pressure too low? Is the valve for water supply close?	Please set a suitable temperature. Please close excessive taps. Please mend the places where leak. Please take some measures (such as add a raising-pressure pump) when the water pressure is less than 0.02 MPa(0.2kgf/cm^2). Please open the valve for water supply.

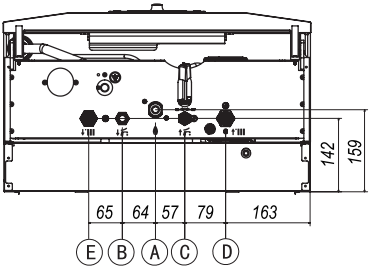
TECHNICAL DATA

STYLE		L1PB60-V6
POWER		
Maximum heat input	kW	60.0
Minimum heat input	kW	22.8
Maximum heat output	kW	54.0
Minimum heat output	kW	19.4
EFFICIENCY		
Efficiency (100% of Nom. Power)	%	≥89
Efficiency (30% of Nom. Power)	%	≥85
TECHNICAL PARAMETERS		
NG consumption	m^3/h	6.35
Preventing-frostbite system's start temperature	℃	5
Minimum effluent volume of D.H.W.	kg/min	2.5
Maximum pressure of D.H.W.	bar	8
Minimum pressure of D.H.W.	bar	0.2
Expansion vessel capacity	L	12
Expansion vessel preload capacity	bar	1
Maximum heating system pressure	bar	3
NG pressure	mbar	20
PERFORMANCE		
Maximum heating water temperature	℃	80
Minimum heating water temperature	℃	30
Maximum D.H.W. temperature	℃	60
Minimum D.H.W. temperature	℃	30
D.H.W. flowing rate (△ t=25 K)	kg/min	31.0
D.H.W. flowing rate (△ t=30 K)	kg/min	25.8
CIRCUIT		
Voltage/frequency	V~/Hz	220/50
Input electricity power	W	175
Electric insulation degree		IPX4D

APPEARANCE AND DIMENSION

unit:mm





- **A.** Gas Inlet
- **B.** D.H.W. Outlet
- **C.** C.W. Inlet
- **D.** B.F.W. Inlet
- **E.** W.O.H. Outlet

D.H.W.=Domestic Hot Water
C.W.=Cold Water
B.F.W.=Back Flow Water
W.O.H.=Water Of Heating

APPENDIX

Packing List in A Whole Unit

1.Host machine

2.Installation bag
  Two pothooks
  Two expansion bolts (used for fix the pothook)

3.Accessory bag
  One user's guide

Notice:

Due to the improvement of the product, some contents and illustrations in this manual may not be completely consistent with the product without prior notice. please understand that the product specification shall be subject to the product nameplate.