

SIAL[®]

Mobile Heater

Instruction Manual



**Gasoline is forbidden
Ventilated used**

**Welcome to use
Please read this manual carefully before operating
and keep this manual well.**


**IY220W
IY220
IY130W
IY130**


SA afety symbol identification


- ◆ The instruction records notes for save and correct of this heater .

Note:  Hazard,  Warning,  Notcie.




please read this manual carefully and understand the meaning of symbol.

	Hazard: Ignoring the symbol and using it incorrectly can cause serious security accidents
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	Warning : Ignoring the symbol and using it incorrectly can lead to serious security accidents
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	Note : Ignoring the symbol and using it incorrectly can lead to serious security accidents
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- ※ There is also the possibility of significant consequences due to different circumstance of the records in the table,so please observe all records. Meaning of the symbol as follow.

	FORBIDDEN: this symbol means the action is forbidden
	MANDATORY: this symbol means compelling and directing
	NOTE: this symbol means some important aspects





Important notes







Warning:













- Please read this manual before operating, inspecting, and maintaining the heater.
- Please use the parts made by our company when there is any replacing. if not, the company cannot be responsible for any damage and accident.
- The company cannot be responsible for any damage and accident caused by not observing this manual, incorrect using or reequipping.
- Since it's impossible to predict all dangers of the heater operating, the notices in this manual may not cover all prediction of dangers. Adequate safety issues should be concerned when operating or daily inspecting the heater.
- Please consult the agency for detail information if any question about the heater.
- This manual can be replaced if any random pages or incomplete information.
- Please keep the manual and accessory properly.

Safety matter

※ There are some important safety matters for using the heater, please read it in detail before using.

 HAZARD		
Gasoline is forbidden	Gasoline is highly volatile oil can cause a fire when used, absolutely not used.	
No use in the place with flammable gases	Eater must be prohibited to use in rooms using or storing substances that are easy to release flammable.	
Ventilation is needed	Heater must not be successive used in the place with poor ventilation. xyben deficiency causes incomplete combustion, which can lead to carbon monoxide poisoning. Do air exchange when heater used.	

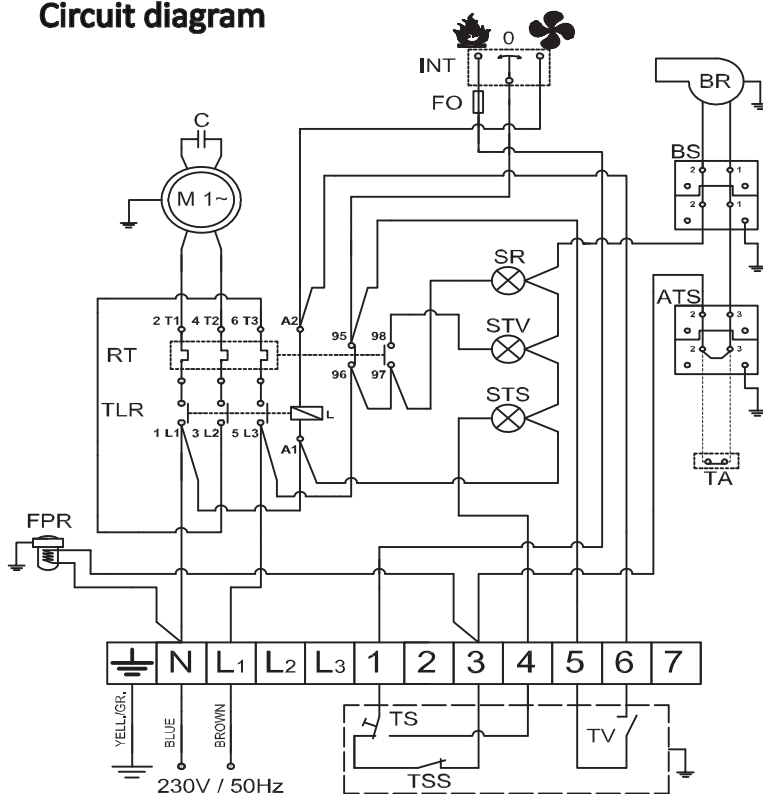
 warning		
No spray jet container nearby	The sealed container with flammable oil or gas cannot be in the heat coverage of the heater. An explosion would be caused by pressure of the heated close container.	
No flammable dust	No use in the places full of flammable dust as saw dust, paper scrap or fiber tow. The dust would enter into the heater and be heated up, then turns into spark. It can cause a fire.	
Avoid scald from hot parts	Do not touch the hot parts and hot exist of the heater during burning or within 30 minutes after flameout to prevent scald.	
No alternation	Alternation would cause machine damage or a fire.	
Bewar of electric shock	No use in places where is rain and snow. No operating with hands. Do overhauling and maintenance de-energized to avoid electric shock.	

 Note		
Pay attention to voltage	Use the power supply requested on the nameplate of the heater, install the leakage protector.	
Cannot be used without grounding protection	Connect grounding protection to the socket to prevent electric shock.	
No repeated ignition	Do not repeat ignition when no burning after 3 times ignitions, stop operating and ask professional to inspect or connect with the agency.	
No use in abnormal conditions	Stop operating immediately if any peculiar smell or black smoke occurs. Ask professional to inspect or connect with the agency.	
No move during burning	Heater cannot be moved during burning, which may cause burn injury or a fire.	
Cease fire operation	Heater has the function of auto cooling. Please switch off the heater and confirm it stop completely. and then pull the plug off.	
No cover on the heater	Do not put cover within 5m of the outlet and 2m of the inlet. Machine failure may be caused if no well-ventilation.	
Refuel after flameout	Must refuel after flameout .	
No bad fuel used	Do not use bad fuel such as overdue or contaminated fuel.	
Pay attention to ambient temp during using	Use in -20~30 degrees, above 30 degrees would cause an accident.	
Unavailable places	Vibrating ground/sloping ground/ stairs, emergency exit, entrance and exit / a place where subjects are piled up unstable.	

Technical parameter

model	IY130W	
Combustion forms	Lndirect bumng	
Power supply	1--AC220~240/50Hz	
Lnput power	1.55Kw	
Electric current	7.2A	
Heat output	135Kw(116100kcal/h)	
Output heat blast rate	8500m ³ /h	
Total pressure	150Pa	
Fuel	Antifreeze indicator light diesel oil	
Fuel consumption	11.5kg/h (13.4L/h)	
Noise	75dB(A)	
Electric current fuse	5A	
Nozzle specification	GPH 2.5 60°S	
Output size	φ280mm*4	
	φ560mm*1	
Smoke vent size	φ210mm	
Safety device	Flameout protection device	
	Overheat protection device	
	Current overload protection device	
Overall dimension	W1760*D701*H1270mm	
Weight	250Kg	

Circuit diagram



M: electric machinery

C: capacitance

TLR: contactor

RT: thermo relay

BR: burner

TS: temperature limiter

FPR: preheat oil cup temperature controller **(Matching)**

TA: cover of external short circuit

BS: Burner opening temperature controller

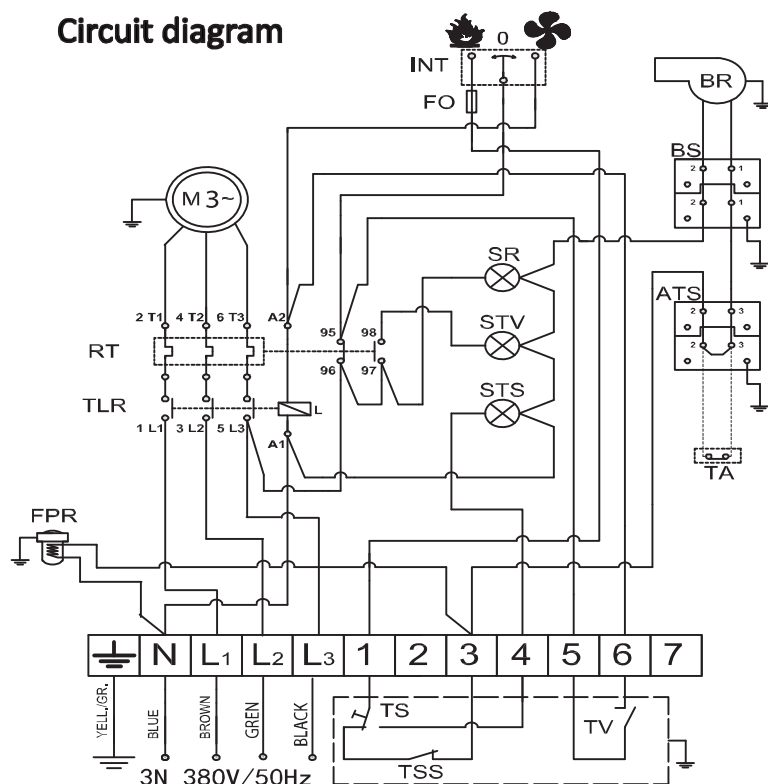
TSS: burner

TV: fan temperature controller

Technical parameter

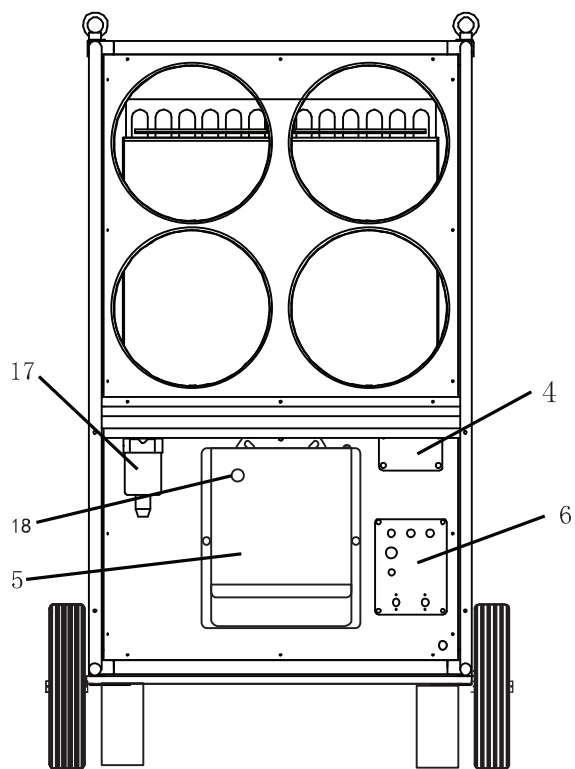
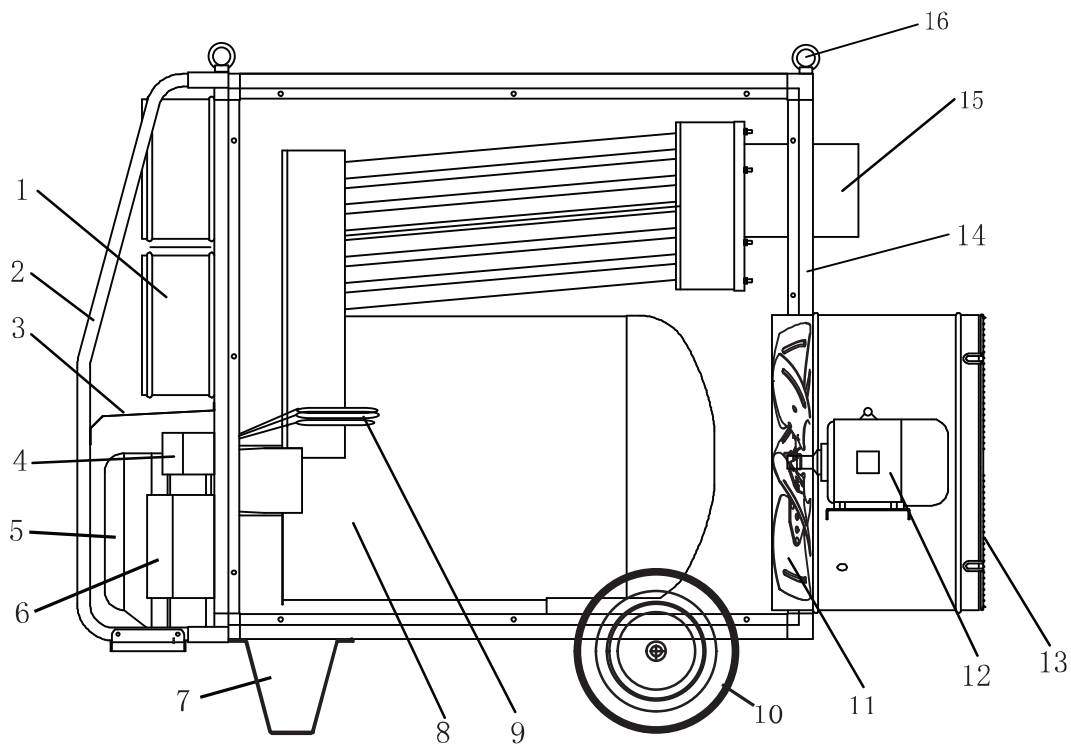
model	IY130	IY220W	IY220
Combustion forms	Lndirect bumng		
Power supply	3--AC380/50Hz		
Lnput power	2.58Kw	2.67Kw	4.4Kw
Electric current	6.0A	6.3A	8.2A
Heat output	135Kw(116100kcal/h)	220Kw(190000kcal/h)	220Kw(190000kcal/h)
Output heat blast rate	8500m ³ /h	14000m ³ /h	14000m ³ /h
Total pressure	450Pa	150Pa	450Pa
Fuel	Antifreeze indicator light diesel oil		
Fuel consumption	11.5kg/h (13.4L/h)	19kg/h (22L/h)	19kg/h (22L/h)
Noise	70dB(A)	80dB(A)	75dB(A)
Electric current fuse	5A	5A	5A
Nozzle specification	GPH 2.5 60°S	GPH 4.5 60°S	GPH 4.5 60°S
Output size	φ280mm*4	φ320mm*4	φ320mm*4
	φ560mm*1	φ660mm*1	φ660mm*1
Smoke vent size	φ210mm	φ210mm	φ210mm
Safety device	Flameout protection device		
	Overheat protection device		
	Current overload protection device		
Overall dimension	W2100*D730*H1350mm	W2130*D784*H1520mm	W2520*D790*H1750mm
Weight	370Kg	360Kg	500Kg

Circuit diagram



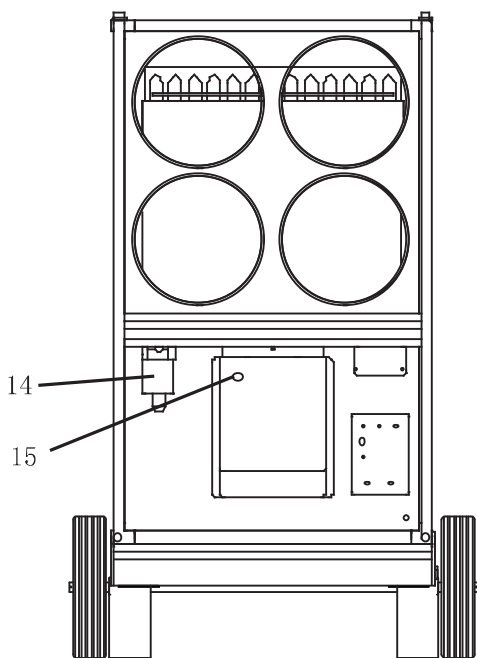
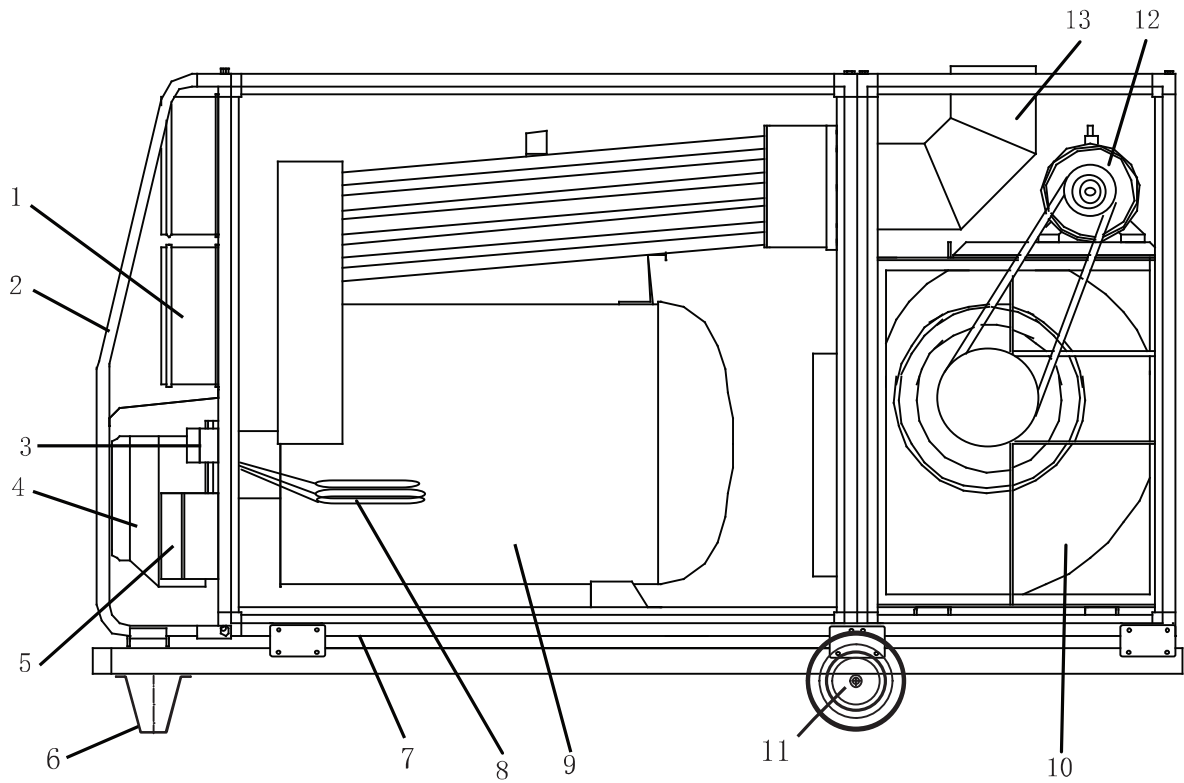
- M: electric machinery
- C: capacitance
- TLR: contactor
- RT: thermo relay
- BR: burner
- TS: temperature limiter
- FPR: preheat oil cup temperature controller (**Matching**)
- TA: cover of external short circuit
- BS: Burner opening temperature controller
- TSS: burner
- TV: fan temperature controller

Component name: IY130W/IY220W



- 1. Air outlet
- 2. Handle
- 3. Burner coverplate
- 4. Temperature-control box
- 5. Burner
- 6. Electric box
- 7. Trestle
- 8. Heat exchanger
- 9. Temperture controller
- 10. Wheels
- 11. Fan blade
- 12. Electrical machinery
- 13. Back shield
- 14. Frame
- 15. Smoke vent
- 16. Rings
- 17. Preheat oil cup (Matching)
- 18. Lock button of burner

Component name: IY220/IY130

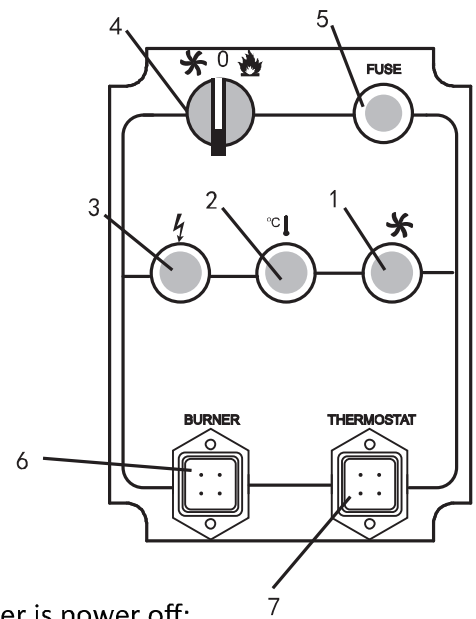


- 1. Air outlet
- 2. Handle
- 3. Temperature-control box
- 4. Burner
- 5. Electric box
- 6. Trestle
- 7. Underframe
- 8. Temperature controller
- 9. Heat exchanger
- 10. Centrifugal fan
- 11. Wheels
- 12. Electrical machinery
- 13. Smoke vent
- 14. Preheat oil cup(Matching)
- 15. Lock button of burner

Name & function of control units

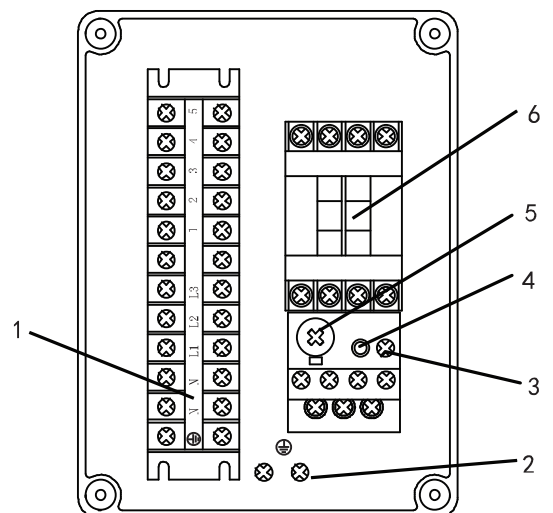
Functional specification of control panel

1. Fan failure indicator light:
the fan failure indicator light keeps on when fan failure
2. Overheat indicator light & current overload indicator light:
overheat indicator light
lights up when shell of heat exchanger is overheated.
Current overload indicator
light lights up to indicate the excessive current.
3. Power indicator light:
Power indicator light is always on when turn on the current.
4. Control switch:
it's a three-way switch, when switch is on the position of 0, heater is power off;
when switch is on the position of flame, heater is in work condition;
when switch is on the position of fan, heater is in air distribution mode.
5. Fuse:
fuse would break if burner failure. Ask professionals check the circuit and troubleshoot problems.T
6. Burner socket:
connected with power supply socket of burner
7. External control socket:
connected with external temperature controller or timer for remote control.



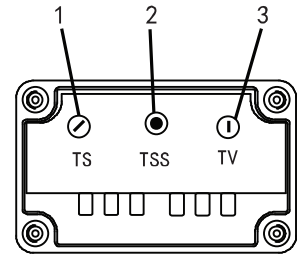
Electric box

1. Terminal:
connected with power lines and control lines(see the circuit diagram in detail)
2. Grounding screws:
used for grounding wire for all electrical equipments
3. Reset button of thermorelay :
when extensive voltage fluctuation occurs or air outlet blocks up,indicator light is on during the thermorelay protection
4. Stop button of thermorelay:
just used for testing whether the thermorelay working.
5. Current regulator of thermorelay:used for adjusting setting current of thermorelay.
(has been adjusted when delivery, customers are not allowed to adjust.)
6. Contactor:
control the power switch of the fan.



Temperature-control box

1. TS Automatic temperature-control switch:
when the temperature inside the heater is above 90 degrees, the burner would automatically stop with the indicator light on;
when the temperature is less than 90 degrees, the automatic temperature-control switch would connect the burner power.



2. TSS manual temperature-control switch(break off at 120 °C degrees):
when automatic temperature-control switch has error, the temperature inside the heater is continuously rising. When above 120 degrees, the manual temperature-control switch would automatically cut off the power supply of the burner until the temperature reduced. Then connect the burner power by manual reset.

Notes:

when manual temperature-control switch break off, ask professionals to check and solve the problem before reusing.

Manual reset button would stand out when break-off, reset by pressing the button until the temperature reduced.

3. TV Automatic switch of fan:
During the normal operation of the heater, the fan would automatic run when the inside temperature reaches the setting temperature(35~40 °C) .
When break off, the fan would continuously run until the temperature less than the setting temp of the automatic switch.

ACCESSORIES INSTALLATION

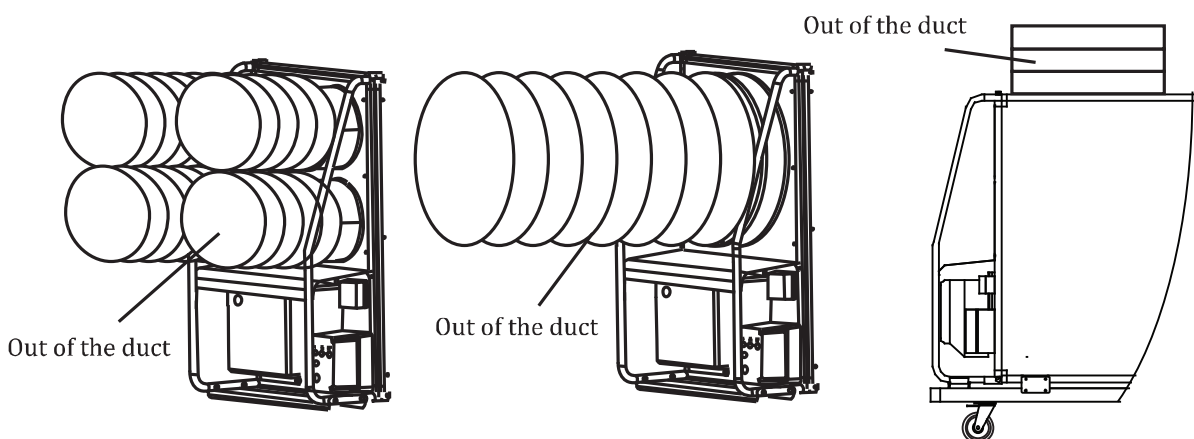
Air discharge pipe

1. Air discharge pipe of the heater can be ins tall as per customer requ irement, as shown in the figure.
2. Bending radius of the air discharge pipe cannot be so small, and the pipe cannot be too long, otherwise, the heater would be overheated and stopped caused by stuffed pipe.

Notes:

if the air-discharge pipe is longer than 7 m, it's suggested increasing the pipe diameter and the pipe should be vertical use without bending

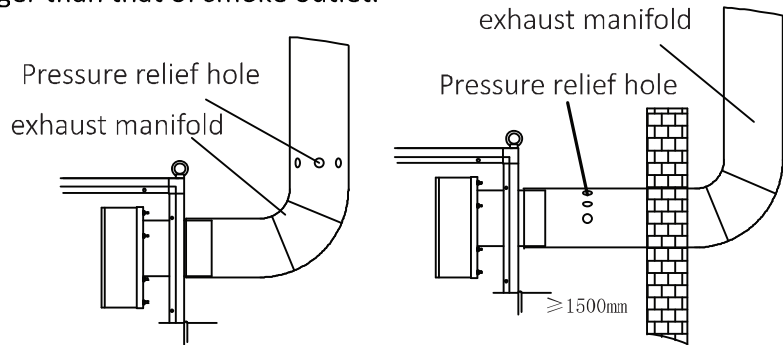
Air-discharge pipe specification		
Length	IY130	IY220
7M	Φ320*4	Φ350*4
	Φ600*1	Φ700*1



Installation of smoke vent

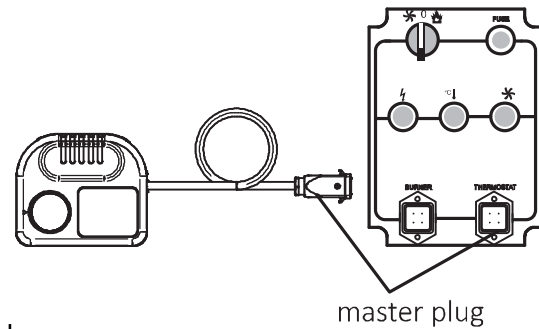
1. In order to keep the air from air-discharge pipe clearer, smoke vent must be-connected to the outdoor with the open side up. Air inlet must keep more than 1m away from the wall.
2. If used in outdoor, vertical up ward line must be installed shown as the figure.
3. Smoke vent must have pressure relief holes, otherwise, smoke cannot be discharged smoothly.
4. Diameter of smoke vent must bigger than that of smoke outlet.

Smoke vent specification	
Length	diameter
≤3m	≥ Φ 250mm
≥3m	≥ Φ 300mm



Installation of temperature controller

1. TH5 temperature controller from LEIMINGDUN can be used if customer needs
2. Installation method: pull off the plug on the inlet of external control and plug in to connect with the temperature controller.
3. If any other temperature be used, pull off the plug on the inlet of external control, open the plug, replace the short to the connecting line of the temperature controller and fix the plug back.



Note:

terminals of the external control plug would be placed on position 2 & 3.

Preparation for operation

Site requirement

1. Adequate oxygen should be ensured in the installation site. It's forbidden to be installed in closed rooms or place storing flammable and explosive objects.
2. Inlet of the fan must be 1m away from the wall and any other obstacles. Hot air outlet must be 5 m away from the wall and any other obstacles.
3. Oil collector must be 1m away from this machine. Do not place the oil collector near the inlet and outlet.
4. If put the waste gas outside, vertical height of the outlet pipe should be less than 3 m or tilt the outlet pipe 45 degrees to outdoor. Length of the outlet pipe should be less than 5m. Moreover, there should be no flammable and explosive objects at the outlet.

Power supply

1. Please use the required power supply on the nameplate with the leakage protection device. Incorrect use would cause a failure, a fire or an electric shock.
2. Connect the electric grounding line to prevent the electric shock.
3. Hold the plug and pull it off. Do not bend the plug or pull the wire hard, which may damage the wire and lead to accidents such as a fire or an electric shock.
4. Automatic voltage regular should be installed if the range of the voltage fluctuation exceeds 10%. Total power of the voltage regular must be 3 times of the heater. Otherwise, machine failure and damage even accident would occur.

Fuel adding



Danger : never use highly volatile oil that may cause a fire when used

Note:

check whether the oil inlet clear and clean it by clean fuel if there is any dirt.
Never refuel with the used fuel.

Clean fuel must be used. No use the metamorphic or impure fuel.

1. Use kerosene or antifreeze diesel oil.
2. Refueling with the refueling tilter.

Operating method:



Note: Stop operating immediately if any peculiar smells or black smoke occurring. Do not repeated ignition when no burning after 3 times ignitions, stop operating and connect with the agency.

1. Check before start

- 1) Check if the joint parts of the oil pipe tight enough.
- 2) Check if the power supply is normal and the connectors are well connected.

2. Test run

There may be air in the oil transferring pipeline when the machine first used, which made the burner not work. At this time, red light would be shown when pressing the reset button of the burner controller. Please wait about 20 s, and press the reset button manually. The burner is restarted and normally run until evacuating the air in the pipeline. Repeat above procedure 3 times. If the machine still cannot operate normally, ask the professionals to debug.

3. Start:

turn the switch from position 0 to position flame as shown, and the burner begins working. After burning for 10-20s, rear axial fan would automatic run until getting the set temperature (controlled by temperature controller). Then hot air blows out.

4. Power off:

turn the switch from position flame to position 0, burner stops working but the axial fan still run for cooling machine until the inside temperature less than the set temp. axial fan would be restarted if the temperature rises again until cooling the machine to the set temperature and then stopped totally

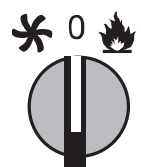
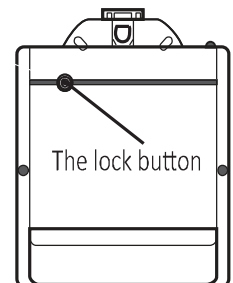
Note: Do not pull the plug off directly. Overheat would damage the machine even cause an accident.

5. Cold air blowing

Turn the switch from position 0 to position fan, axial fan would be started with blowing normal temperature air. it's used in the place where needs blowing normal temperature air.

6. Turn off the machine if moving or refueling.

Do it until the heater totally cooling and stopped.



As for operating method of the burner, please refer to the Burner Specification.

Daily maintenance



Note: Do the maintenance after switching off the machine and pulling off the plug first.
Fuel used for cleaning cannot be filled into the fuel tank. And contaminated fuel removed from the oil tank when overhauling cannot be filled into the fuel tank again.
All above can cause a machine failure.

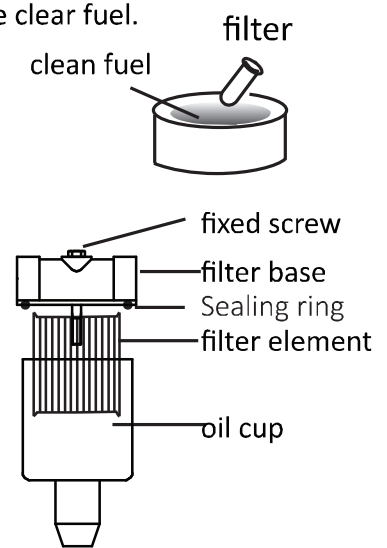
Check the outlet pipelines and smoke vents to confirm if any blocking or flattening before using the machine.
Check the fuel inlet pipes and the oil return pipes regularly to confirm if any exuding, leaking or blocking.
Check the blades regularly to confirm if any dust scaling and clean them.
Note: mild detergent and soft cloth should be used when cleaning-up, hard tools such as hammer are not allowed.

Check the refuel filter

- 1.) pen the cover of the fuel tank and check if any dirt on the refuel filter.
- 2.) if any dirt, take the refuel filter from the refuel inlet and clean it with the clear fuel.

Cleaning of the filter

1. Clean the filter regularly
2. Clean the filter after switching off the machine and confirming there is no flaming objects nearby.
3. Unscrewing the fixed screws towards anticlockwise direction with wrench and take the oil cup down.
4. Take the filter element out and remove the remaining oil in the oil cup. Put the filter element and oil cup into clear fuel and clean them. (if the filter element cannot be clean cwell, replace a new one). Then fill clean fuel into the oil cup and fix all parts back and screw tightly.

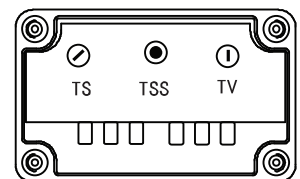


Inspection of Temperature controller

Take the cover of the temperature controller down, plug in and switch on.

Check the TV automatic switch of the fan:

Before starting the fan, turn the regulating screw of the automatic switch of the fan towards anticlockwise direction to-by straight screwdriver, (reduce the starting temperature) and make sure the fan be started immediately, whereas, the fan is stopped. Please confirm turning back the regulating screw to the initial position after the temperature controller working normally.



Check the TS automatic temperature switch:

In working state of the burner, turn the regulating screw towards anticlockwise direction to-by straight screwdriver (reduce the protection temperature), burner stopped automatically, whereas, burner still works, Please confirm turning back the regulating screw to the initial position after the temperature controller working normally.

As for maintenance of other parts of the burner, please refer to the specification of the burner.

Failure causes and treatments

Failure phenomenon	Cause analysis	treatment
Heater cannot run	No power	Check the socket and main switch
		Check the position of the switch
		Check if the fuse breaking
	Damage of the temperature controller	Replace a new temperature controller
	Failure of the temperature controller	Check and readjust the setting temperature Check the connecting line
	Temperature controller safety locked	Press the locking button
	Phototube sense fake flame	Eliminate the light source
7-pin plug not plug in	Re-plug in and confirm it (see the specification in detail)	
Fan still work when overheat indicator light and overload indicator light on	Over high temperature in fire chamber	The burner works normally after the fan cooling till the lights off
		Reset the manual switch of the temperature controller If it cannot work
Fan cannot work when overheat indicator light and overload indicator light on	Fan overcurrent when thermorelay working	Check if errors about the power supply and the voltage
		Check if the motor damaged
		Check if the blades blocked
Black smoke from the smoke vent	Low air flow	Adjust supply air rate
	Inlet blocked	Get the blocking objects away
Please refer to the specification of the burner if find errors as follows		
Burner started normally but no ignition, locking button light up	Dust on phototube	Clean the phototube
	Invalid phototube	Replace the phototube
	Blow-off or stall	Check the pressure of the pump and output of the fuel
		Check the air volume
Replace new nozzle		
Burner started but hard to be ignited	Wrong position of the ignition electrode	Adjust the position of the ignition electrode
	Too much air volume	Adjust the air inlet of the burner
	Dirty nozzle or damaged nozzle	Replace new nozzle

Warranty terms

1. The company would be responsible for one year's free maintenance if only failures caused by product quality problems under normal use.
2. If the product or relative parts are no longer produced within the warranty period, the company has the right to replace them by similar product or parts.
3. Damages caused by unauthorized modification, misoperation, bad operation environment or force majeure would not be in warranty coverage.
4. Damages caused by not using the product or parts in required application environment would not be in warranty coverage. Damages caused by using accessories from other companies are also not in warranty coverage
5. Maintenance or replacing accessories which are not covered in the warranty coverage should be charged.
6. Any representative or employee of the company has no right to modify the warranty content.
7. The company would not be responsible for insurance and any other derivative fees. The product and the manual cannot be used in special purpose or special environment.

Maintenance services

1. Please report to the company the product model, failure phenomenon and part where need to be repaired when the user asks for repairing service.
2. The technical department would always provide technical support to users for free.
3. The user can get the free technical training in our company if needed.

SIAL[®]

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