# Troubleshooting

Before You Call For Service Troubleshooting Tips Save time and money! Review the charts on the following pages first and you may not need to call for service.
This water heater incorporates a variety of shut off devices that prevents the operation of the water heater down if undesirable combustion conditions occur. Such as the presence of a blockage of the combustion air vent insufficient gas or pressure which can impact the safe operation of the water heater. Please contact a Qualified Service Technician if this occurs. When the water heater fails, the display shows the fault code, and the buzzer continuously sends out "B, B, B" alarms.
Please follow the table below.

| Error Code | Possible Cause | Fault Handling |
|---|---|---|
| When the system is turned on or working, the wired controller displays code"E0", and the buzzer alarms the fault. | 1. The outlet water temperature sensor connector is loose or has poor contact.<br>2. The outlet water temperature sensor is damaged (open circuit, short circuit or metal parts). | 1. Clamp the outlet water temperature sensor terminal.<br>2. Replace the water temperature sensor. |
| When the system is turned on the working or the working, the displays code "E1" and the buzzer alarms the fault. | 1. The gas valve is not open;<br>2. The gas supply pressure or gas composition is abnormal,causing accidental flameout;<br>3. The igniter, ignition needle is damaged or the line is faulty.<br>4. Damage to the flame induction needle or wire failure.<br>5. The combustion system (burner, nozzle, air control panel, proportional va lve , sectional valve) is damaged, the specifications are inconsistent or the wiring is wrong, resulting in abnormal combustion.<br>6. The control program or parameter settings are incorrect, resulting in unstable combustion.<br>7. The fan speed is abnormal, resulting in unstable combustion. | 1. Open the gas valve to ensure that the water heater can get normal gas supply.<br>2. Confirm that the gas type and pressure meet the requirements of the water heater.<br>3. Check if the igniter, ignition pin and circuit are damaged, and replace the damaged parts.<br>4. Check if the flame induction needle is damaged and replace the damaged parts.<br>5. Check if the combustion system is damaged, if the wiring is wrong, and replace the damaged parts.<br>6. Check whether the program and parameters meet the values in the parameter table.<br>7. The wind speed of the fan is abnormal. Check whether the program and parameters meet the values in the parameter table. |

| Error Code | Possible Cause | Fault Handling |
| --- | --- | --- |
| When the system is turned on, the wired controller displays code"E2" and the buzzer alarms the fault. | 1.The feedback pin is bent and in contact with other metal parts.<br>2.The feedback pin plug-in terminal is loose and hits the metal part.<br>3. Feedback pin wire is broken. | 1. Replace the ignition feedback needle assembly.<br>2. Plug the feedback pin terminal correctly and firmly into the feedback pin.<br>3. Check if the wire is disconnected and replace the wire. |
| When the system is turned on working, the wired controller displays code"E3" and the buzzer alarms the fault. | 1. The thermostat opens or the wire is faulty;<br>2. The gas supply pressure or gascomposition does not match,causing abnormal combustion;<br>3. The control program or parameter settings are incorrect,resulting in abnormal requirements combustion;<br>4. The combustion system is damaged or the specifications are inconsistent, resulting in abnormal combustion. | 1. Check the temperature controller or circuit and replace the damaged parts.<br>2. Confirm that the gas type andpressure meet the requirements of the water heater.<br>3. Check whether the programand parameters meet the valuesof the parameter table.<br>4. Check the combustion system for damage and replace damaged parts. |
| When the system is turned on working, the wired controller displays code"E4" and the buzzer alarms the fault. | 1. The inlet water temperature sensor connector is loose or has poor contact.<br>2. The inlet water temperature sensor is damaged (open circuit.short circuit or metal parts). | 1. Clamp the water temperature sensor terminal.<br>2. Replace the water temperature sensor. |

| Error Code | Possible Cause | Fault Handling |
| --- | --- | --- |
| When the system is turned on or working, the wired controller displays code"E5" and the buzzer alarms the fault. | 1. The fan signal is not detected or the speed is too low in the system startup 5S.<br>2. During operation, the fan speed is not detected for 2 s consecutively, or the speed is too low.<br>3. The power supply voltage is too low, causing the fan speed to slow down. | 1, 2, the fan assembly, controller damage or line failure, causing the fan not to run or the speed is too low, check the fan, the main controller is damaged, the wiring is damaged, loose, replace the damaged parts.<br>3. Confirm whether the power supply and fan voltage meet the design requirements. |
| During the system working process, the wired controller displays code “E6” and the buzzer alarms the fault. | 1. The gas supply pressure or gas composition does not match,causing abnormal combustion;<br>2. The control program or parameter settings are incorrect,resulting in abnormal combustion;<br>3. The water temperature sensor specifications do not match, the display temperature is much higher than the actual temperature;<br>4. The combustion system is damaged or the specifications are inconsistent, resulting in abnormal combustion;<br>5. The heat exchanger fins of the heat exchanger are poorly welded,and the heat transfer is slow.<br>After the water valve is closed,the water in the tube is continuously heated. | 1. Confirm that the gas type and pressure meet the requirements of the water heater;<br>2. Check whether the program and parameters meet the values of the parameter table;<br>3. Test whether the actual water outlet temperature and the wired controller display temperature are close (±3 °C), and replace the wrong outlet water temperature sensor;<br>4. Check the combustion system for damage and replace damaged parts;<br>5. Detect if the heat exchanger fins are poorly welded and replace the damaged parts. |
| When the system is turned on or working, the wired controller displays "E7"and the buzzer alarms the fault. | 1. The valve connector is loose or has poor contact.<br>2. The valve is short-circuited. | 1. Clamp the water temperature sensor terminal.<br>2. Check if the valve coil is short circuited and replace the damaged parts. |

| Error Code | Possible Cause | Fault Handling |
| --- | --- | --- |
| When the system is turned on or working, the wired controller displays code “E8” and the buzzer alarms the fault. | 1. During operation, the fan speed continuously exceeds the set value of 5S speed;<br>2. The outdoor wind pressure is too high, and the fan speed exceeds the upper limit of the speed.<br>3.A large amount of carbon in the heat exchange fins (when the gas source is used incorrectly),causing blocked, and the fan speed increase exceeds the upper limit of the speed. | 1. Check if the exhaust passage is blocked.<br>2. Stop starting, and start after no strong wind in the outdoor;<br>3. Remove the heat exchanger, use a brush to gently clean the carbon on the fins, and ensure that the type and pressure of the gas used subsequently meet the requirements of the water heater. |
| During the system working process, the wired controller displays "En" and the buzzer alarms the fault. | In order to prevent oxygen deficiency, some models have timing protection. Please turn off the tap and use it after a while. | 1. Set the appropriate time according to the usage habits,and the timed shutdown time can be set to 20, 30, 40, 50, 60 minutes;<br>2. It is not necessary to set "OF"to turn off the timing function. |
| Fault alarm release and reset method: If the above code appears, please check the waterway, the gas path is normal, press "Switch button" to turn off or turn off the power to restart.The water heater is restored to normal use.If the above operations cannot be resumed, please notify the after-sales service personnel. | | |

## The following phenomenon is not a malfunction:

| Problem | Possible Cause |
|---|---|
| White smoke at the exhaust | When the outdoor temperature is too low, the discharged smoke encounters outdoor cold air and condenses into a white mist. |
| Water is not hot | If the water flow is too low, the water will get cold.<br>The minimum water flow rate is required to be 0.6 gallons per minute.<br>Make sure the water heater is running smoothly. |
| The water heater suddenly shuts down | When timing protection is up. the water heater will shut down automatically.<br>Press on the power button to restart the water heater. |
| Close the hot water valve,but the fan cannot stop immediately | This is a function to delay the fan off， so that the exhaust gas of the water generated by the combustion of the water heater is completed discharged, ensuring user's safety. |
| After the water heater starts, it does not supply hot water immediately | There is a distance from the water heater to the hot water tap, because there is still cold water in the water pipe, it takes time to drain the cold water. The longer the pipe, the more time it takes to drain the cold water. |
| After the water heater is powered on, the controller does not respond | There is no power input, please check the circuit. |

# Maintenance

It can only be carried out by authorized personnel and cannot be modified privately.For your comfort and safety, **we recommend checking and maintaining the product every month.** Broken turn on the power and allow the unit to cool before performing maintenance. Do not disassemble the air line and safety devices during maintenance. There are some electronic components in this device. Please do not open, avoid using any kind of liquid to clean electronic components.

**• Daily inspection:**

1. periodic examination the inlet and venting systems .And clean up in time.
   • Check the intake louvers for dust and debris to avoid clogging.
   • Check the exhaust vents for dust and debris to avoid clogging.
2. Check if the appearance of the device is abnormal.
3. Check the device for abnormal noise during operation.
4. Check for leaks.(soap water can be used to detect leakage)
5. When carbon deposits are found, they should be promptly notified to the after-sales service provider for maintenance. The serviceman will remove the burner with the crater facing down, use a bristled brush to remove the coke, or replace the burner with a new one.

**• Maintenance instructions:**

1. Clean the equipment regularly. Do not use chemical lotions and volatile solvents.
2. To ensure better performance, clean the intake blinds and exhaust pipe. This ensures that combustion and ventilation are unhindered.
3. Close the inlet pipe, remove the inlet filter plug, remove the filter, clean and reinstall.
4. Wipe the display with a damp cloth. Do not use gasoline or grease cleaners to avoid shape changes.
   • Keep the equipment area clean and free of flammable materials, gasoline and other flammable vapors and liquids.
   • If the temperature is set too high, it may cause hot water burns.
   • If overheating occurs or the gas supply cannot be turned off, turn off the manual switch gas control valve to the unit.

**Note: When servicing, mark all wires before disconnecting. Improper wiring can result in improper operation and danger. Check if the operation is normal after maintenance.**

**Minimum load adjustment method:**

Set the temperature on the controller to **35 °C** and increase the inlet water temperature so that the outlet temperature is above **35 °C**. It then proves that the water heater is operating at its minimum heat load.

Service Center: **service@fogattiliving.com**
**Tel.: 877-216-1818(8:30am-5:00pm EST Monday-Friday)**

# Antifreeze System

**•This water heater is equipped with an automatic electric heating unit for antifreeze.**
The specification is **120V 101w**.When the temperature is in the range of **3℃ (37. 4℉)~ 8℃ (46. 4℉)**, electric heating starts. Make sure the power is on when you need to start heating.

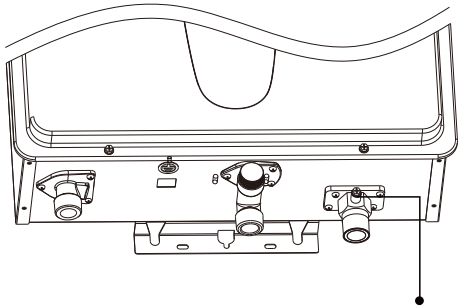
**• If you do not use the heater for a long time:**
1. Disconnect the water heater from the water source and turn off the water and gas.
2. Discharge the water from the water heater completely.
This will protect your equipment from freezing and damage.

## Antifreeze Tips

• When the temperature is below 8℃ (46.4℉)while above 3℃ (37.4℉), keep your water heater staying plugged in a 120v 60HZ power supply, the anti-freeze system will automatically heat up to prevent the water heater from damages. No manual work is needed.
• While if the temperature is below 3℃ (37.4℉), or the machine is not in use for a considerable time, the water heater must be drained to avoid freezing damages. And here is the process:
1) Turn off the gas shut-off valve.
2) Power off the water heater and unplug the power supply to the machine.
3) Turn off the water supply shut-off valve.
4) Turn on hot water taps in the house, to release the water and pressure in the pipes.
5) Screw out the drain screw on the hot water outlet.
6) Remove the inlet water filter from the cold water inlet and it's valve by turning counterclockwise.
7) Use a bucket to collect the residual water while draining. It may take more than 10 minutes to drain out the water thoroughly.
8) Securely screw the drain screw back in place; and screw the inlet water filter back in place.
9) Before you use the water heater next time, plug it into a 120V 60 HZ power supply, and power on the water heater, and then open the water supply valve, hot water outlet valve, and the gas valve.

• Please note damages caused by freezing are NOT covered under the thankless water heater warranty as an industry standard. Please make sure to take all the measures to protect your water heater.

# Gas pressure test position



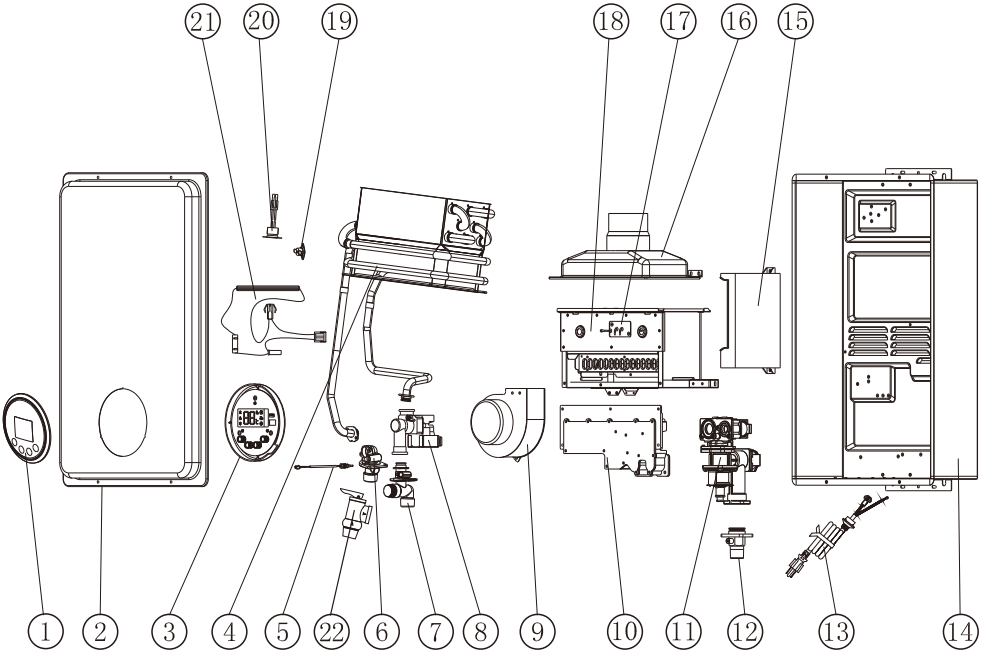

• The gas inlet has a pressure measuring nozzle.The inlet gas pressure can be measured by unscrewing the screw.

**Note:** Please close the gas valve before connecting the measuring instrument.Avoid accidents such as fires.

# Component Diagram

Here is the place to replace the spare parts:
**Fogatti Inc. (18521 NW 82 Court, Miami, FL 33015)**

## FDG370INA



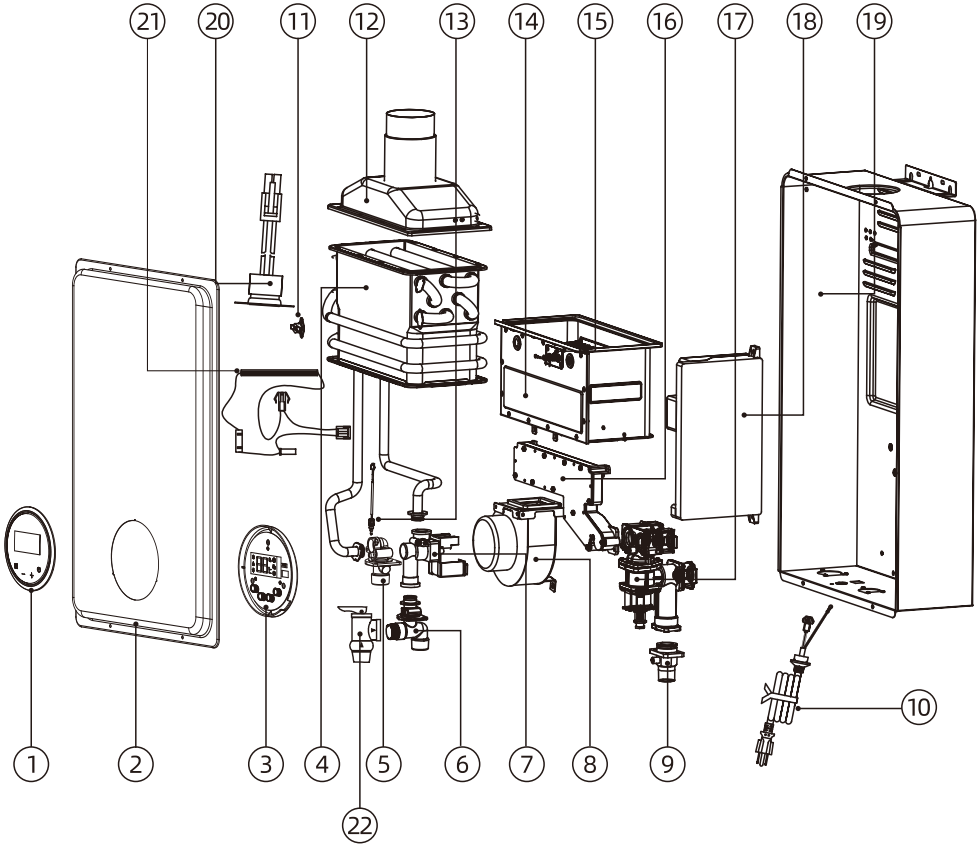
## FDG370INA

| No. | Name | QTY. | Remarks |
|---|---|---|---|
| 1 | Decoration board | 1 | |
| 2 | Front panel | 1 | |
| 3 | Display assembly | 1 | |
| 4 | Heat exchanger | 1 | |
| 5 | Water outlet temperature sensor | 1 | |
| 6 | Water outlet connector | 1 | |
| 7 | Water inlet connector | 1 | |
| 8 | Water proportional valve | 1 | |
| 9 | Motor fan assembly | 1 | |
| 10 | Manifold | 1 | |
| 11 | Proportional valve | 1 | |
| 12 | Gas inlet connector | 1 | |
| 13 | Power line | 1 | |
| 14 | Back panel | 1 | |
| 15 | Controller | 1 | |
| 16 | Chimney | 1 | |
| 17 | Ignition pin assembly | 1 | |
| 18 | Burner | 1 | |
| 19 | Over temperature protection thermostat | 1 | |
| 20 | Anti-freezing Thermostat | 1 | |
| 21 | Heating device | 1 | |
| 22 | Pressure Relief Valves ( for canada ) | 1 | |

# Component Diagram

Here is the place to replace the spare parts:
**Fogatti Inc. (18521 NW 82 Court, Miami, FL 33015)**

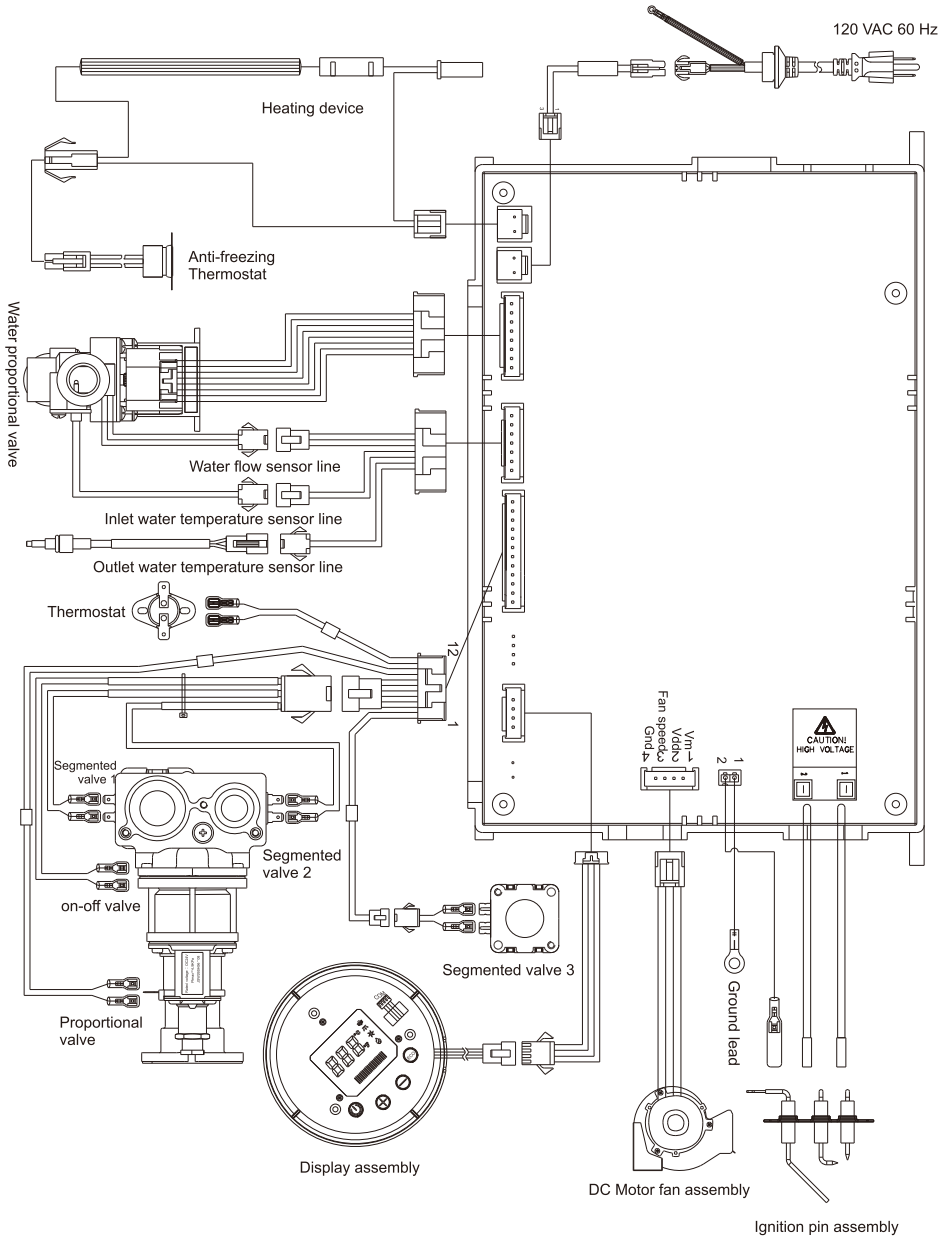
## FDG420IN



## FDG420IN

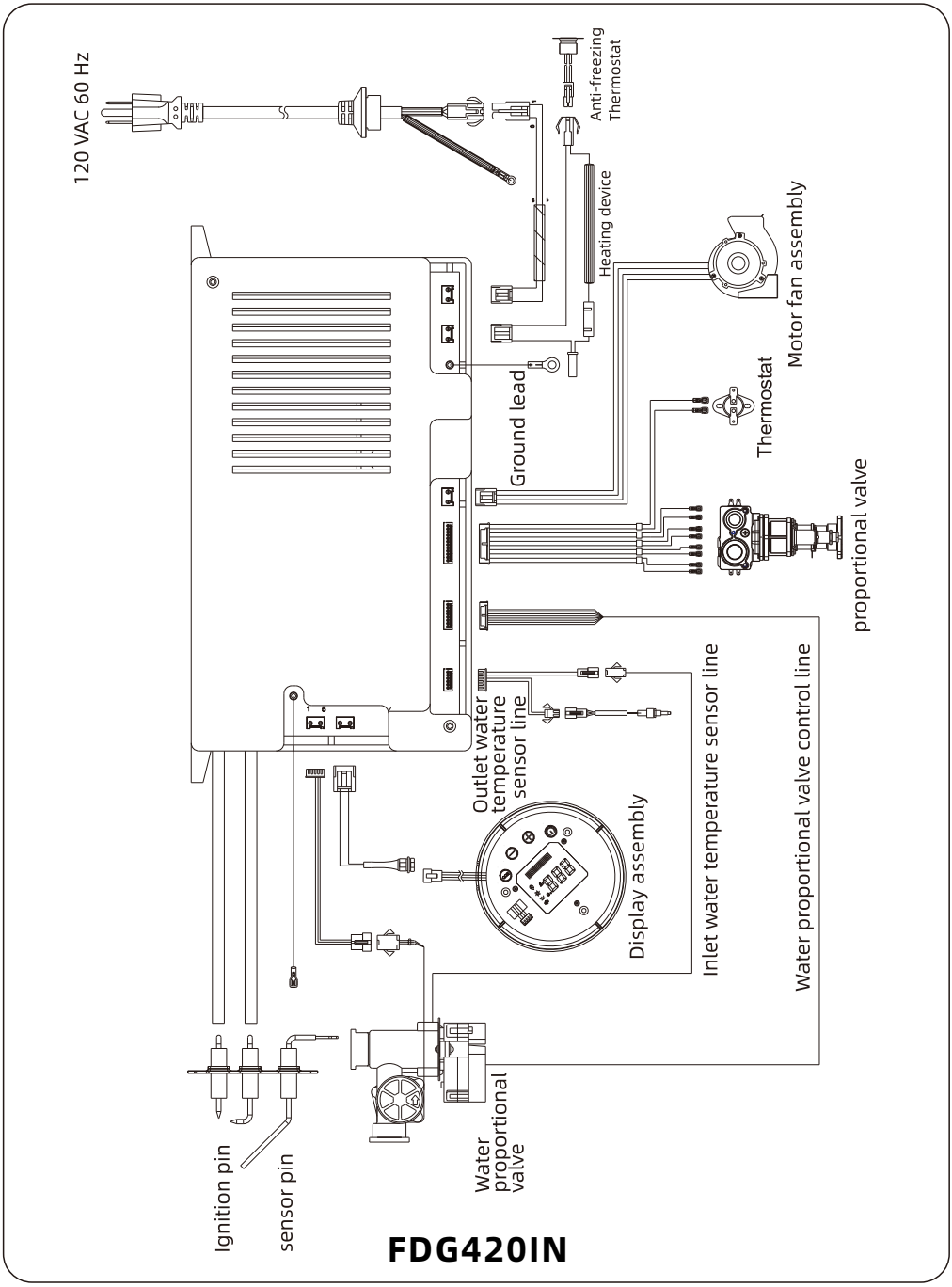
| No. | Name | QTY. | Remarks |
|---|---|---|---|
| 1 | Decoration board | 1 | |
| 2 | Front panel | 1 | |
| 3 | Display assembly | 1 | |
| 4 | Heat exchanger | 1 | |
| 5 | Water outlet connector | 1 | |
| 6 | Water inlet connector | 1 | |
| 7 | Water proportional valve | 1 | |
| 8 | Motor fan assembly | 1 | |
| 9 | Intake connector | 1 | |
| 10 | Power line | 1 | |
| 11 | Over temperature protection thermostat | 1 | |
| 12 | Chimney | 1 | |
| 13 | Water outlet temperature sensor | 1 | |
| 14 | Burner | 1 | |
| 15 | Ignition pin assembly | 1 | |
| 16 | Manifold | 1 | |
| 17 | Proportional valve | 1 | |
| 18 | Controller | 1 | |
| 19 | Back panel | 1 | |
| 20 | Anti-freezing Thermostat | 1 | |
| 21 | Heating device | 1 | |
| 22 | Pressure Relief Valves ( for canada ) | 1 | |

# Wiring Diagram



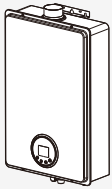

**FDG370INA**

# Wiring Diagram



# Packing List

**Check if the following items are included in the water heater.**

| Gas water heater | Installation manualand owner's guide | Fittings bag |
|---|---|---|
|  QTY1 |  QTY1 |  QTY1 |
| **Warranty** | **Service Card** | **Perforated Paper** |
|  QTY1 |  QTY1 |  QTY1 |

FOGATTI

**FOGATTI Inc.**
Company Website:fogattiliving.com
Service E-mail: service@fogattiliving.com
Tel.: 877-216-1818

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