TROUBLESHOOTING GUIDE
(for all Gen II units)

This guide contains information for identifying and correcting any issues that may arise.

Product Support/Warranty
If the water heater requires additional service, please use one of the following options for contacting Intellihot Technical Support:

- Call: 309-473-8040 (toll-free 1-877-835-1705), press 1
- Email: support@intellihot.com

When contacting Technical Support, please have the following information ready:

- Model Number
- Serial Number
- Date Purchased/Installed
- Installation location & application
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Suggested Tool List

- Digital Manometer
- Electrical Multimeter
- Flue Gas Analyzer (for NOx & CO₂)
- 7mm Socket/Ratchet
- #1 & #2 Phillips Screwdrivers
- Instrument Flat Blade Screwdriver
- Pliers
- Adjustable Wrench
Air Filter Blocked Alert

Locate the air switch near the air filter. Carefully remove the two connections out of the air switch.

Use multimeter and check the resistance between the two contacts of the air switch (where the wires plugged into).

Is the resistance less than 1 ohm?

Yes

No

Replace the Air Switch

Is the air intake ducted from the outside?

Yes

No

Inspect Air intake filter

Is there debris/dirt?

Yes

Clean filter per the manufacturer’s manual

No

Is the filter damaged?

Yes

Replace the filter

No

Please contact intellihot support team.
Blocked Flue Fault

1. Check & Clean the condensate connection from the back of the unit to the external Neutralizer/drain.
2. Make sure condensate water is going to the drain freely.
3. If necessary adjust the piping slope so that water flows freely to the drain.

Was there a blockage?

Yes

Is the resistance less than 1 ohm?

Yes

Replace the Air Switch

No

Is the vent piping sized (diameter & total length) as per the manual?

Yes

Correct Vent Piping as per the manual

No

Check Air Switch wiring (green/black). Is it loose or damaged?

Yes

Replace faulty air switch wiring.

No

Check Exhaust termination. Is it blocked?

Yes

Remove the blockage. If bird screens were not previously installed, please install bird screens

No

Check & Clean the condensate cup.

if wall-hung, remove the condensate hose, and clean/rinse it.

Model is iQ2001/iQ3001?

Yes

Carefully remove the two connections out of the air switch. Use multimeter check the resistance between the two contacts of the air switch (where the wires plugged into)

No

Please perform condensate maintenance more frequently, preferably every 3 months. For air filter models(iQ751/iQ1001/iQ1501/iQ2001/iQ3001), please clean it as part of the maintenance.

Yes

Model is iQ2001/iQ3001?

No

Is the drain hoses sloped away from the unit?

Yes

Adjust the drain hoses. Drain hoses from the HEXes are sloped down to the condensate trap.

No

Check for double loops, air locks or debris in the loop

Are the drain hoses sloped away from the unit?

Yes

Check Air Switch wiring (green/black). Is it loose or damaged?

Yes

Replace faulty air switch wiring.

No

Check & Clean the condensate cup.

if wall-hung, remove the condensate hose, and clean/rinse it.

Was there a blockage?

Yes

Check Exhaust termination. Is it blocked?

No

Check & Clean the condensate cup.

if wall-hung, remove the condensate hose, and clean/rinse it.

Correct Vent Piping as per the manual

No

Is the vent piping sized (diameter & total length) as per the manual?

Yes

Correct Vent Piping as per the manual

No

Is the vent piping sized (diameter & total length) as per the manual?

Yes

Correct Vent Piping as per the manual

No

Replace the Air Switch

Is the resistance less than 1 ohm?

Yes

Replace the Air Switch

No

Is the drain hoses sloped away from the unit?

Yes

Adjust the drain hoses. Drain hoses from the HEXes are sloped down to the condensate trap.

No

Check for double loops, air locks or debris in the loop

Are the drain hoses sloped away from the unit?
E1 Blower Speed Fault

- Reboot the unit. Check all harnesses are plugged in and free of corrosion.

Does the blower run on Start-up?

- No
  - Measure the AC voltage at the Control board's J15 connector, between blue & brown wires.
  - Measures 120V AC?
    - Yes
      - Replace the blower (SPR0008).
    - No
      - Replace the Control board (SPR0002).

- Yes
  - In Floor models, unplug the 5 pin connector from the blower. In wall hung models, unplug the J18 connector from the Control board.
  - Does the blower run?
    - No
      - Shut down the unit and disconnect the J18 connector. Power cycle the unit. At startup, use a multimeter to measure the voltage at Control board's J18, pin 1 & 5.
    - Yes
      - Does the blower speed ramp up?
        - No
          - Is the voltage reads 24V DC?
            - Yes
              - Use the multimeter to measure the AC Voltage at the transformer connector J12, between PIN 7 & 10.
            - No
              - Yes
              - No
        - Yes
          - Is the voltage reads 24V AC?
            - Yes
              - Replace the Control board (SPR0002).
            - No
              - Replace the transformer
Blower Speed Signal Fault

E1.1 Blower Speed Signal Fault

At the blower, is the blower signal (5 PIN connector) PIN 3 connected to PIN 5 (black wire)?

- Yes
  - Any of the Blower signal wires damaged?
    - Yes: Replace the Blower signal wiring harness
    - No: Please replace the blower & the blower wiring harness

- No
  - Please contact intellihot support team and request ECL0305 blower signal jumper package.
Breaker Tripped (Over-Load)

1. Breaker Tripped
   - Review manual for breaker sizes. Are they size appropriately?
     - Yes: Power down the unit. Unplug transformer, pump and blower. (J12, J7, J18)
     - No: Appropriately size the breakers per the manual

2. Plug in transformer (J12), and power up unit did breaker trip?
   - Yes: Replace transformer
   - No: Plug in Pump (if present) (J17) Did breaker trip?
     - Yes: Replace pump
     - No: Plug in blower, (J18) Did Breaker trip?
       - Yes: Replace blower
       - No: Contact Authorized Service Personnel
Cascading Alert (Fault)

Any cascaded model is iQ751, iQ1001, or iQ1501?

No

Yes

Brand new install or This setup working without issues for few weeks?

Yes

No

Existing Install

Any blower blower faults found in the error history?

Yes

No

Does all blower signals PIN 3 (5 PIN connector) is connected to PIN 5?

Yes

No

Please contact intellihot support team and request ELC0305 blower signal jumper package.

Cables connected first

1. Turn OFF each units.
2. Disconnect all cables.
3. Turn ON each unit to make sure no errors.

No errors

Yes, Errors

Please contact intellihot support team.

Setup Cascading ID First

Did you connect cascading cable first prior to changing the cascading ID?

Yes

No

Does any of the units have any other errors?

Yes

No

In each unit, go to settings, and cascading. Does each unit has a unique cascading ID?

Yes

No

Are the DIP SW3 setup correctly as per the manual?

Yes

No

1. Turn OFF each unit. Disconnect cascading cables.
2. Turn ON each unit and set unique cascading ID.
3. Set DIP SW3 as per the manual.
4. Connect cascading cables.
5. Turn ON units sequentially from 1,2,etc.

All units have same software version?

Yes

No

Update the units so that all units have the same software version.

No

Resolve the unit’s error. Any other error would induce cascading error.

No

Yes

Any units show cascading error (standalone, without cascading cables connected)?

1. In each unit, set Cascading ID.
2. Turn OFF all units.
3. Set DIP SW3 as per the manual.
4. Connect cascading cables.
5. Turn ON units sequentially from 1,2,etc.

Please contact intellihot support team.
Dead Unit - No Power Up

- Is Unit plugged in? Yes: Plug in Unit(s); No: Is corresponding breaker tripped?
  - Yes: See Breaker tripped page
  - No: Check the power connection to the controller (J14). Is it loose or damaged?
    - Yes: Correct or replace power connection
    - No: Check the fuses on controller. Are they rated at 10A / 250V?
      - Yes: Are the fuses blown or damaged?
        - Yes: Replace Fuse and see Breaker Tripped page.
        - No: Contact Authorized Service Personnel
      - No: Replace with appropriate fuse

- Is Unit plugged in? No: See Breaker tripped page

See Breaker tripped page
Flue Overheat Fault

Is the inlet return temp greater than 157 deg F?

Yes

Is the venting material CPVC, PP or SS?

Yes

On the display, advanced settings, is the venting material set to CPVC, PP or SS?

Yes

Check resistance of the flue sensor. Refer to the above table.

Is the flue sensor faulty?

Yes

Replace the flue sensor

No

Check and clean the condensate assembly. Check the bottom of the sidecast where the condensate connects for any blockage or build up.

No

Please contact intellihot support team for further assistance.

Yes

Check and clean the condensate assembly. Check the bottom of the sidecast where the condensate connects for any blockage or build up.

If PVC, make sure that the inlet temperature is less than 150 deg F

If CPVC or SS, make sure that the inlet temperature is less than 190 deg F

Change Flue material setting on the display (settings->advanced settings)

No

Install proper approved venting material

Sensor Resistance depends on temperature of Flue gas

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Sensor Resistance (KΩ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>18</td>
</tr>
<tr>
<td>77</td>
<td>10</td>
</tr>
<tr>
<td>140</td>
<td>3</td>
</tr>
</tbody>
</table>

Sensor Resistance

Temperature (°F) | Sensor Resistance (KΩ)
<table>
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</table>
Heat Exchanger Overheat

- On a well water system?
  - Yes: Is pressure within 30 - 150 psi?
    - Yes: Wallhung model or floor model?
      - Yes: Check the temperature before and after the pumps.
        - Is the pump working? Temperature is same before and after the pump?
          - Yes: Install external recirculation pump
          - No: Replace the pump.
      - No: Check the temperature at the external recirculation pump.
        - Is there an external recirculation pump?
          - Yes: Wallhung
            - Check the temperature before and after the external recirculation pump.
              - Is there air in the system?
                - Yes: Turn off the unit. By using T&P valve, bleed out the air in the unit.
                - No: In the control board, disconnect the J3 connector. Check the orange wires for damage, corrosion and perform continuity from the orange wire to sensor.
          - No: Correct well water system
        - No: Install external recirculation pump
      - No: Check the temperature at the floor model.
        - Is there an external recirculation pump?
          - Yes: Wallhung
            - Check the temperature before and after the external recirculation pump.
            - Is there air in the system?
              - Yes: Turn off the unit. By using T&P valve, bleed out the air in the unit.
              - No: In the control board, disconnect the J3 connector. Check the orange wires for damage, corrosion and perform continuity from the orange wire to sensor.
          - No: Correct well water system
        - No: Install external recirculation pump
      - No: Replace the Overheat sensor.
    - No: Correct well water system
  - No: Is pressure within 30 - 150 psi?
    - Yes: Wallhung
      - Check the temperature before and after the external recirculation pump.
      - Is there air in the system?
        - Yes: Turn off the unit. By using T&P valve, bleed out the air in the unit.
        - No: In the control board, disconnect the J3 connector. Check the orange wires for damage, corrosion and perform continuity from the orange wire to sensor.
      - No: Correct well water system
    - No: Install external recirculation pump
  - No: Replace the Overheat sensor.

Outlet water Temperature (°F) | Sensor Resistance KΩ
---|---
50 | 18
77 | 10
140 | 3

Check for scale buildup. Contact authorized service personnel.

Replace the wiring harness.

Wires damaged / corroded or no continuity?
E7 Ignition Failure

If wall-hung model, turn off the unit and reset the overheat limit switch. If floor model, press the overheat limit switch to reset it.

Is the overheat switch tripped?

Yes

Check internal & external re-circulation pump.

No

New install or existing install for more than 6 months?

New Install

Existing Install

Check & clean the condensate hose (wall-hung) or condensate trap (all other models)

By using the display, restart the unit.

Natural Gas (NG) or Liquid Propane (LP)?

Natural Gas

Liquid Propane

LP Conversion completed?

Yes

Complete the conversion as per the manual

No

Are the regulators & gas lines sized for loads?

Yes

Check the static gas pressure at the gas valve. Is it within specs?

No

Size gas lines and regulators for max BTU/h requirements

Size gas lines and regulators for max BTU/h requirements

Yes

Yes

Are the regulators & gas lines sized for loads?

No

Size gas lines and regulators for max BTU/h requirements

Check & clean the condensate hose (wall-hung) or condensate trap (all other models)

By using the display, restart the unit.
Ignition Fault

Do you see flame in the glass window?

- Yes, flame visible
  - Replace the wiring.

- No flame
  - Check wiring DSI (brown/blue) to gas valve. Is it damaged?
    - Yes
      - Replace the wiring.
    - No
      - Do you get 120 V AC at the wire going from the DSI (brown/blue) to gas Valve?
        - Yes
          - No
          - No
          - Replace the control board
          - Yes
          - Yes
          - No
          - Replace the control board

- Check for AC voltage at the J23 of the control board. Do you get 120V AC?
  - Yes
    - Replace the control board
  - No
    - No

- Do you get 120 V AC at the Gas Valve?
  - Yes
    - Yes
    - No
    - No
    - Replace the gas valve
    - No
    - Replace the gas valve
    - Yes, sparking
      - Leave the electrode outside and try to spark by firing the unit. Do you see a spark?
        - Yes
          - Replace DSI & high voltage cable
        - No Spark
          - Size gas lines and regulators for max BTU/h requirements
  - No
    - Yes, 120 V AC at the control board
      - Check the static gas pressure at the gas valve. Is it within specs as per manual?
        - Yes
          - No
          - Size gas lines and regulators for max BTU/h requirements
        - No
          - Create hot water demand to cause ignition at the unit. Check the dynamic pressure. Is it changing from negative to +ve?
            - Yes
              - Clean the air filter, swirl plate and gas valve. Remove burner, inspect and clean it. If burner damaged, replace it.
              - Check the gas regulator size or gas line is inadequate.
            - No
              - Replace electrode

- Check the static gas pressure at the gas valve. Is it within specs as per manual?
  - Yes
  - No
    - Yes, 120 V AC at the Gas Valve
      - Check the gas regulator size or gas line is inadequate.
    - No
      - Size gas lines and regulators for max BTU/h requirements

- By using multimeter, do you see continuity between the two connections at the High limit switch?
  - Yes
    - Replace the high limit switch
  - No
    - Replace the high limit switch

- Check the gas regulator size or gas line is inadequate.
  - Yes
    - Check the static gas pressure at the gas valve. Is it within specs as per manual?
      - Yes
        - No
        - Size gas lines and regulators for max BTU/h requirements
      - No
        - Create hot water demand to cause ignition at the unit. Check the dynamic pressure. Is it changing from negative to +ve?
          - Yes
            - Clean the air filter, swirl plate and gas valve. Remove burner, inspect and clean it. If burner damaged, replace it.
            - Replace DSI & high voltage cable
          - No
            - Size gas lines and regulators for max BTU/h requirements
          - Check the static gas pressure at the gas valve. Is it within specs as per manual?
            - Yes
              - No
              - Size gas lines and regulators for max BTU/h requirements
            - No
              - Create hot water demand to cause ignition at the unit. Check the dynamic pressure. Is it changing from negative to +ve?
                - Yes
                  - Clean the air filter, swirl plate and gas valve. Remove burner, inspect and clean it. If burner damaged, replace it.
                  - Replace DSI & high voltage cable
                - No
                  - Size gas lines and regulators for max BTU/h requirements

- If wall-hung model, turn off the unit and reset the overheat limit switch. If floor model, press the overheat limit switch to reset it.
  - Yes
    - No
    - Replace DSI & high voltage cable
  - No
    - No
    - Yes
      - No
      - Replace DSI & high voltage cable
      - Replace DSI & high voltage cable

- After resetting, still no continuity replace the overheat limit switch
Is the RED LED on the control board ON?

No, RED LED on the Control Board

For floor models, perform continuity test on the (white color) flame sensor wire (that goes between the electrode and the control board). For wall hung, check the continuity and damages on the electrode white wire.

Is the AC Voltage measurement at J21 is 15V AC or higher?

No

Replace the control board

Yes

Yes, flame visible

Yes, RED LED on the Control Board

Do you hear or see spark at the DSI connector where wires plugged in?

No

Check the Wiring harness connection for damages. If no issues found, replace the wiring harness.

Yes

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Yes

Perform combustion as per IOM.

For wall hung, iN401, iN501, iQ2001 and iQ3001, replace the electrode. For floor model, replace the flame sensor wiring harness.

By using the main gas adjusting (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Yes

Replace DSI & high voltage cable

No

Replace DSI & high voltage cable

Yes, RED LED on the Control Board

By using the main gas adjusting (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.

No

Replace DSI & high voltage cable

Yes, flame visible

Yes, RED LED on the Control Board

By using the high fire adjustment (flat screw), ricken the gas until the color changes to orange 80% & blue 20%. 1/8th of a turn at a time, but please do not go more than 3 turns.

Does the flame stay lit?

Yes

Perform combustion as per IOM.
Pump Alert

Is there a GREEN LED on the pump?
  No
  Fix wiring or replace the fuse.
  Check to see if the pump is rotating by using Grundfos pump checker or by
  Bad pump?
    Yes
    Replace the pump.
    No
    Is there air in the system?
      Yes
      Bleed the air by using the Pump Bleed Screw.
      No
      Check the flow rate at the unit. Open faucets & showers to increase the flow.
      Is the flow rate less than 2 gpm?
        Yes
        Contact Authorized Service Personnel.
        No
        Set staging OFF (Settings->cascading)
        Close the hot water outlet to the unit. Wait for 2 minutes. Check Flow rate at each HEX. Normally, the flow rate is more than 4 gpm.
        Any HEX with less than 3 GPM flow
          Yes
          Blockage inside the Heat exchanger such as scale buildup.
          No
          For each HEX, connect a garden hose to the cold water connection at the bottom and make sure the other end of the hose goes to drain.
          3 GPM or more flow going through the hose?
            Yes
            Close the drain ball valve. Remove the garden hose. Close the hot water outlet ball valve at the top of the HEX. Open the T&P valve.
            No
            Blockage in the Silver cold water pipe. Drain the unit.
            3 GPM or more flow going through?
              Yes
              Blockage or scale buildup in the heat exchanger.
              No
              Any more HEX with low flow
                Yes
                End.
                No
                No
                Contact Authorized Service Personnel
Rough Ignition

- Check HV cable. Is it unplugged or damaged?
- Check the emissions. Are they within specs?
- Check the static gas pressure. Is it within specs?
- Check with gas company about the caloric value of gas value is within limit (975-1050)?

Nat. Gas or LP?

- Yes
  - Check HV cable. Is it unplugged or damaged?
  - Yes
    - Replace or plug in HV cable
  - No
    - Gas lines and/or regulators inadequate. Please correct.
- No
  - Has unit been converted to LP per manual?
  - Yes
    - See manual and convert.
  - No
    - Contact Authorized Service Personnel

Yes

No
Rumbling

Unit is Rumbling

Verify the intake & exhaust is installed per specification?

Yes

Is the vent length less than 5 ft?

Yes

Add an elbow or reducer to bring effective length to over 10 ft.

No

Install according to manual instructions

Contact Authorized Service Personnel

No

Check the CO₂ is within specs.

Yes

Set the CO₂ level within table below

No

CO₂ and CO Standards

<table>
<thead>
<tr>
<th>Description</th>
<th>CO₂ Range (ppm)</th>
<th>Max CO₂ Level (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>High: 200 ppm</td>
<td>Low: 10 ppm</td>
</tr>
<tr>
<td></td>
<td>Low: 10 ppm</td>
<td></td>
</tr>
</tbody>
</table>
Inlet, Outlet, Heat Exchanger or Flue Sensor Open
Inlet, Outlet, Heat Exchanger or Flue Sensor Fault

Wire color table:
- **Heat Exchanger** - Heat exchanger water outlet temperature sensor (orange wire)
- **Flue Sensor** - Flue temperature sensor (gray wire)
- **Inlet Sensor** - Inlet water temperature sensor (blue wire)
- **Outlet Sensor** - Hot water outlet temperature sensor (green wire)

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Resistance depends on temperature of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheat (orange wires)</td>
<td>hot water at the outlet</td>
</tr>
<tr>
<td>Flue (gray wires)</td>
<td>Flue gas</td>
</tr>
<tr>
<td>Inlet (blue wires)</td>
<td>inlet cold water</td>
</tr>
<tr>
<td>Outlet (green wire)</td>
<td>hot water outlet</td>
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<td>77</td>
<td>10</td>
</tr>
<tr>
<td>140</td>
<td>3</td>
</tr>
</tbody>
</table>

In the control board, disconnect the J3 connector. Check the corresponding color wire for damage, corrosion and perform continuity from the corresponding color wires to sensor.

Wires damaged / corroded or no continuity?

- Yes: Replace the wiring harness
- No: Disconnect the harness at J3 connector from the control board. Check resistance between the two respective color wires.

Resistance as per the table?

- Yes: Contact authorized service personnel
- No: Replace the Overheat sensor.
Water Valve Fault

If floor model, are all HEXes giving water valve alert?

Set staging OFF (Settings->cascading)

Shut down the unit by using touch screen. Power down the unit using the power switch (or unplug power cable), wait for 15 seconds and reboot again.

Is the water valve alert back within 15 minutes of reboot?

Power down the unit by using the power switch or unplugging the power cable (this will ensure the water valve open). Close the outlet & inlet water to the unit. Drain the water out of the unit. Check and Clean the Y-strainer

Remove the water valve. Inspect for debris or PTFE paste. Make sure the water valve is in open position (the pin is all the way inside).

Power on the water valve inlet side. Do you to hear the movement of the turbine?

Inspect wiring for valve and flow sensor.

Is wiring damaged or loose?

Replace or reconnect appropriate wiring harness

Replace the water valve

Check the total flow rate to the HEX (floor mount) or to the unit (wall-hung). Increase the flow by opening showers, faucets etc.

Is flow less than 1 gpm?

Check the silver cold water inlet pipe for blockage or ice buildup.

Found issues with Silver cold water inlet pipe?

For wall-hung, close the hot water ball-valve outside the unit. For floor units, close the hot water outlet valve at the HEX.

Open the T&P valve. Check the flow rate at the drain outlet as well as on the display screen.

Do you see flow of more than 3 gpm steadily?

Blockage inside the Heat exchanger such as scale buildup.

Clear the silver cold water pipe blockage.

Contact Authorized Service Personnel

Contact Authorized Service Personnel

Yes

No

Yes

No

Yes

No

Check blockages at the Y-strainer and at each water valve. Check internal and external recirculation pumps are working.

Check the silver cold water inlet pipe for blockage or ice buildup.

Yes

No

No

Set staging OFF (Settings->cascading)

Shut down the unit by using touch screen. Power down the unit using the power switch (or unplug power cable), wait for 15 seconds and reboot again.

Is the water valve alert back within 15 minutes of reboot?

Power down the unit by using the power switch or unplugging the power cable (this will ensure the water valve open). Close the outlet & inlet water to the unit. Drain the water out of the unit. Check and Clean the Y-strainer

Remove the water valve. Inspect for debris or PTFE paste. Make sure the water valve is in open position (the pin is all the way inside).

Power on the water valve inlet side. Do you to hear the movement of the turbine?

Inspect wiring for valve and flow sensor.

Is wiring damaged or loose?

Replace or reconnect appropriate wiring harness

Replace the water valve

Check the total flow rate to the HEX (floor mount) or to the unit (wall-hung). Increase the flow by opening showers, faucets etc.

Is flow less than 1 gpm?

Check the silver cold water inlet pipe for blockage or ice buildup.

Found issues with Silver cold water inlet pipe?

For wall-hung, close the hot water ball-valve outside the unit. For floor units, close the hot water outlet valve at the HEX.

Open the T&P valve. Check the flow rate at the drain outlet as well as on the display screen.

Do you see flow of more than 3 gpm steadily?

Blockage inside the Heat exchanger such as scale buildup.

Clear the silver cold water pipe blockage.

Contact Authorized Service Personnel

Contact Authorized Service Personnel

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes
BLOWER REPLACEMENT (See Diagram, page 20)

The blower is located on the top of the heat exchanger
- Shut off the gas to the heater
- Shut off power to the heater by unplugging the unit from the 120 VAC outlet
- remove the front panel (three screws at top and three at bottom)
- Unplug the display cable from the pcb (press plastic tab and pull)
- lift up and remove the front display bracket
- Unplug all the wiring connections from the blower (press the tabs and pull)
- remove the gas valve wiring located behind the blower
- Unplug the HV cable from the DSI
- Remove the gas connection at the top isolating the unit's gas supply from the building
- remove phillips screws to remove the aluminum gas fitting at the top the unit
- remove 4 allen screws to remove the aluminum gas adapter fitting
- remove two plastic taps on top of the cabinet to access the screws securing the blower
- remove 4 screws securing the blower from the top using a long screwdriver
- remove the entire blower gas valve assembly from the unit
- remove the gas valve 3 torx screws
- install the gas valve on the new blower
- reverse process to assemble the blower back to the heater
- ensure the gasket is installed between the blower and the top housing
- Install the blower gas valve using 4 screws and a long screw driver
- Install the aluminum gas adapter on top of the gas valve
- Install the gas fitting and secure it using 4 screws to the cabinet
- Install the building gas supply
- Install the blower wiring, HV cable and gas valve wiring
- turn gas supply back on and check for any gas leaks
- turn water on and plug the heater to the outlet
**GAS VALVE REPLACEMENT (See Diagram, page 20)**

The blower gas valve assembly is located on the top of the heat exchanger
- Shut off the gas to the heater
- Shut off power to the heater by unplugging the unit from the 120 VAC outlet
- remove the front panel (three screws at top and three at bottom)
- Unplug the display cable from the pcb (press plastic tab and pull)
- lift up and remove the front display bracket
- Unplug all the wiring connections from the blower (press the tabs and pull)
- remove the gas valve wiring located behind the blower
- Unplug the HV cable from the DSI
- Remove the gas connection at the top isolating the unit's gas supply from the building
- remove phillips screws to remove the aluminum gas fitting at the top the unit
- remove 4 allen screws to remove the aluminum gas adapter fitting
- remove two plastic taps on top of the cabinet to access the screws securing the blower
- remove 4 screws securing the blower from the top using a long screwdriver
- remove the entire blower gas valve assembly from the unit
- remove the gas valve 3 torx screws
- reverse process to assemble the blower back to the heater
- ensure the gasket is installed between the blower and the top housing
- Install the blower gas valve using 4 screws and a long screw driver
- Install the aluminum gas adapter on top of the gas valve (ensure the o-ring is in place)
- Install the gas fitting and secure it using 4 screws to the cabinet
- Install the building gas supply
- Install the blower wiring, HV cable and gas valve wiring
- turn gas supply back on and check for any gas leaks
- turn water on and plug the heater to the outlet
ELECTRODE REPLACEMENT

The electrode is located on the top of the heat exchanger
- Shut off the gas to the heater
- Shut off power to the heater by unplugging the unit from the 120 VAC outlet
- remove the front panel (three screws at top and three at bottom)
- Unplug the display cable from the pcb (press plastic tab and pull)
- lift up and remove the front display bracket
- Unplug the HV cable from the electrode
- Unplug the electrode connection from the controller at connection E12
- Remove the 2 screws & washers securing the electrode
- Remove electrode from HEX assembly.
- Insert new electrode into the HEX assembly, careful to use new probe hole seal
- Fasten the electrode with the 2 screws with washers. Verify that the yellow/green wire is attached beneath the right hand screw.
- Connect the electrode to the controller at connection E12
- Connect the HV cable to the electrode
- turn gas supply back on
- turn water on and plug the heater to the outlet
Controller Pin Layout

Wiring Diagram (all wall-hung units)
Wiring Diagram (all floor-standing units)
Hi-Fire uses flat screwdriver. Low-fire uses T20 Torx screwdriver.
Resettable overheat switch
Resettable overheat switch