



Advantage Plus - How to Diagnose A Heat Exchanger Leaker

Water may collect inside the combustion chamber of the AdvantagePlus water heater. Here is how to determine where the water is coming from; and if the heat exchanger may be leaking.

There are only two reasons to find liquid in the combustion chamber of the AdvantagePlus:

- Fresh air inlet not installed correctly
- Leaking heat exchanger

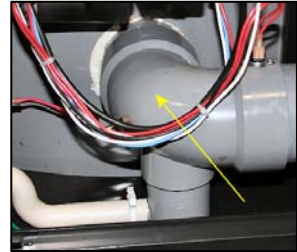
Any liquid (rain or condensation) collecting in the exhaust vent will be evacuated by the condensate removal system.

It is not possible for the condensate removal system to 'back up' enough to introduce liquid into the combustion chamber. You can see from a picture of the coil, it is just impossible for liquid to back up from the exhaust into the combustion chamber.

It is also not at all probable for condensation to collect inside the main burner. The temperature of the heat exchanger exceeds 1600°F. ANY moisture will immediately evaporate; any moisture collecting on the big six inch main burner tube boil off and not be allowed to collect.

It is also perfectly normal to have liquid in the exhaust portion of the venting connected to the AdvantagePlus. Do not attempt to remove the exhaust elbow connected to the machine.

Finally, any indications of oxidized copper (green particles) should not be included in your diagnosis. The heat exchanger is stainless steel composite – not copper. The presence of patina (oxidized copper) may be seen on the exterior of the water heater – but that does not indicate the water heater is leaking.

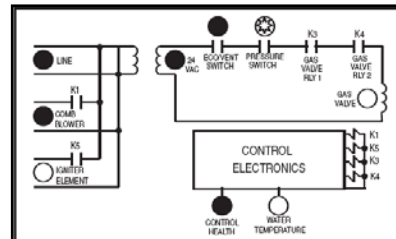


Probably error codes will be:

- Pressure switch (moisture in tubing) (FLU)
- Igniter (F09)
- Max ignition attempts due to damaged igniter (F09)

See document 1706 for older style AdvantagePlus troubleshooting:

- Pressure Switch
- Igniter

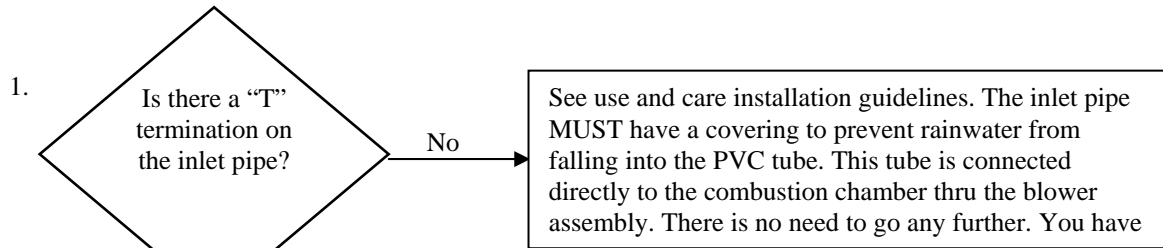


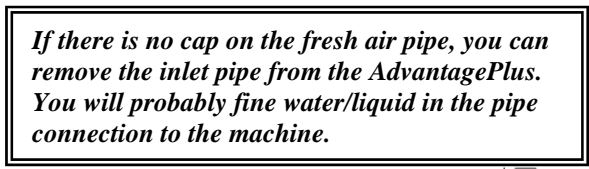
See the next two pages for troubleshooting.

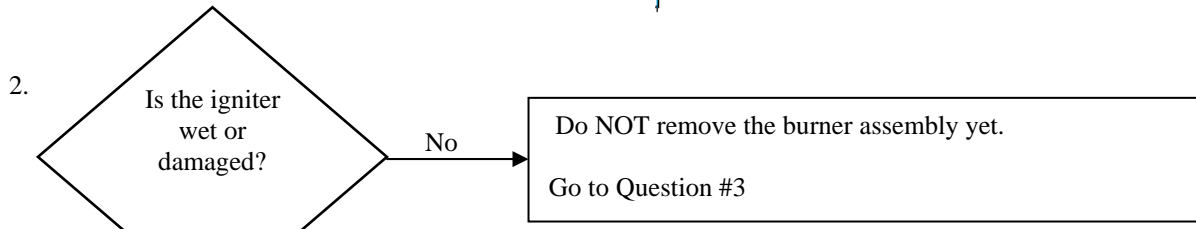
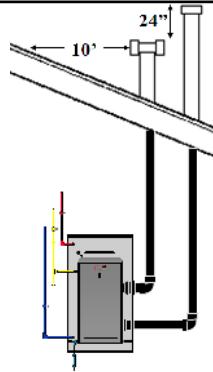


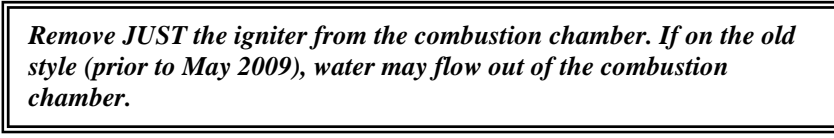
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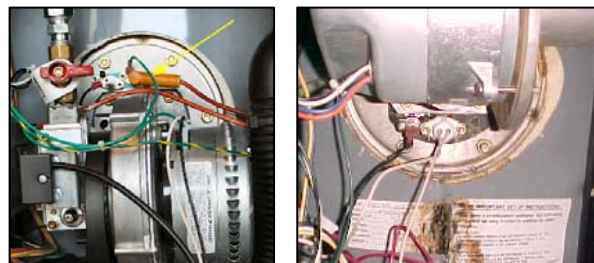
Fresh air inlet not installed correctly?



Yes ↓ 



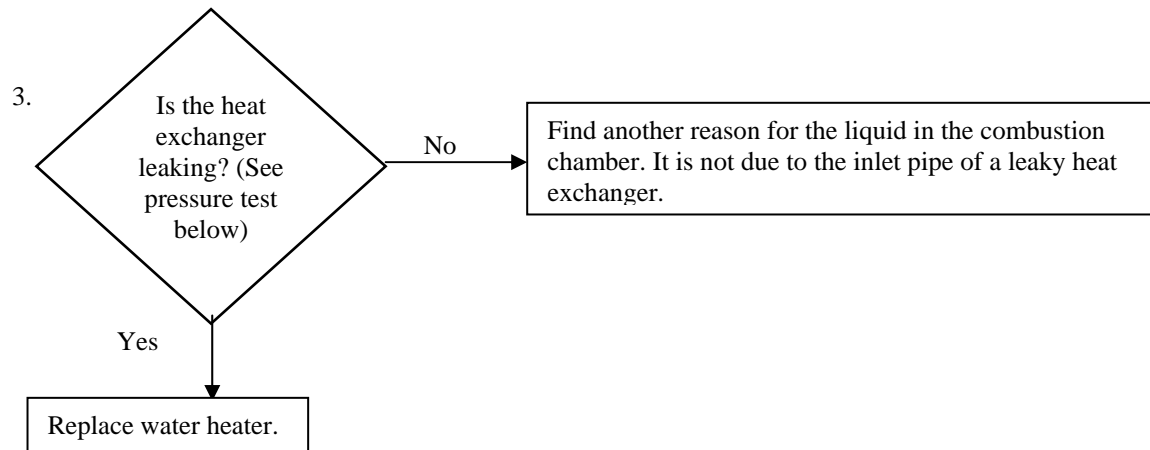
Yes ↓ 



Is the heat exchanger leaking?



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Pressure Test for Leaking Water Heater

1. Make sure water heater is full of water.
2. Place a pressure gauge on the drain valve of the water heater.
3. Open the drain valve all the way. Note the starting pressure.
4. Isolate the heater by closing the cold inlet water valve.
5. Isolate the heater by closing the hot outlet water valve.*
6. Watch the pressure gauge. This test may be run for several minutes or as much as an hour.
7. Notice any pressure drop on the pressure gauge. If there is ANY pressure drop, then chances are the tank has a leak somewhere.**
8. If the pressure does not change, then the tank or heat exchanger does not have a leak.



*It is common practice to have isolation valves on the hot and cold side of commercial water heaters. If there is no isolation valve on the hot side, you will need to make sure there is not water drawn from the water heater during this test.

**If you suspect the leak is in the heat exchanger, you may see the water start to collect inside the combustion chamber. You may need to remove the burner assembly to confirm the diagnosis.