

**Error code 13** is incoming air supply or outgoing vent. This applies to gas water heaters.

Note: All gas appliances consume oxygen when burning hydrocarbon fuel.

**Take for example direct-vent tankless located inside house:** When gas is burned inside tankless combustion chamber, the open vent stack causes natural draft upward. Oxygen from surrounding rooms is drawn into the combustion chamber where it combines with hydrogen content of the gas. The mixture is ignited by standing pilot light or pilotless igniter. The resulting by-product from combustion includes poisonous CO gas and acidic water vapor that vents upward through the vent stack where it exits above the roof and releases by-product into atmosphere. Condensate from the vapor forms inside the vent pipe and this water is directed into a drain so it does not drip back into the heat exchanger causing parts to deteriorate.

As air enters the combustion chamber, the sensor reads that air quality is sufficient for combustion. If incoming air or outgoing vent are not correct, then tankless sensors shut down the burner.

### **What does error code 13 mean?**

- 1) Oxygen depletion. Clean or replace sensor. Test sensor resistance. Replace burner assembly. Call Rheem tech support for possible do-it-yourself help. Call service technician for recommended yearly service.
- 2) Internal part failure: Sensor fails resistance test. Internal wiring problem. PC board failure. Call service technician. Contact Rheem. Read manual and check warranty papers.
- 3) Incoming air filter needs to be cleaned. Read manual for required maintenance.
- 4) Tankless does not receive enough air. House is too well insulated. Doors are closed causing reduced air supply. Read manual. Also read: [http://waterheatertimer.org/pdf/Bosch\\_Ventilating\\_tight\\_houses.pdf](http://waterheatertimer.org/pdf/Bosch_Ventilating_tight_houses.pdf)
- 5) Obstruction in vent pipe, or poor drafting. <> If you suspect venting is issue: **Due to risk of CO poisoning**, service technician should be called. There are numerous codes and technical manuals on proper tankless and gas-appliance venting. This is not a do-it-yourself field that is mastered quickly. Danger is real.

### **Other causes:**

a) Thermostat set too high.

Tankless arrive with preset temperature. Customer can reset temperature using remote control. Customer can raise temperature above 120° F using Dip switches to set temperature up to 140° F. Service technician should be called to do this. Instruction are in the manual.

When temperature is higher, the unit has to heat water faster with more combustion and more venting. More air is required. More stress is put on each tankless system, wear and tear increases, and lifespan of each part is shortened. Read cautions in manual.

<http://waterheatertimer.org/pdf/How-to-adjust-temperature-on-Rheem-tankless-water-heater.pdf>

b) Chemical content of incoming air will damage burner parts. Gas burning appliances cannot be exposed to bleach or pool chemicals or process chemicals in trace amounts without resulting in burner and burner part damage. Read manual. Also read: <http://waterheatertimer.org/pdf/Corrosive-atmospheres.pdf>

Image shows PVC vent pipe.

Venting is common problem unless vent was installed correctly.

Improper vent can cause burner shut-down.

Improper condensation drain or clogged drain can rust out heat exchanger.

[http://waterheatertimer.org/pdf/TanklessVerticalVentKitInstructions\\_AP15230.pdf](http://waterheatertimer.org/pdf/TanklessVerticalVentKitInstructions_AP15230.pdf)

### **Tankless require yearly maintenance.**

Yearly maintenance will cover causes for most common error code.

<http://waterheatertimer.org/Troubleshoot-Rheem-Tankless-water-heater.html>

