

90 Error Code (Bad Combustion)

A 90 error code is a common code. In most cases it is either installation or environmentally related. Bad combustion means the unit is not burning properly; either you have an issue with air, gas, or venting. There is a test that can be done to determine if the issue is one of the above problems.

Set the unit at 120F, have the front cover on, and water running throughout the whole test.

You can run this test for multiple flow ranges to get a better idea of the issue, high flow (max out the unit), low flow (sink running about 1 gpm), and common use flow (shower running about 2-2.5 gpm)

With the unit set at 120F go into the maintenance monitor mode and record the following number while the fixture is running the whole time.

14=flow rate

30=inlet water temperature

31=outlet water temperature

32=heat exchanger temperature (smaller unit may not have this monitor because there is no bypass)

49= fan speed correction

With these numbers you can narrow down if the problem is with air, gas, or venting.

1. If you are **NOT** hitting your set temperature on MM# 31(this should be 120F same as the set temperature) or MM#32 (this should be about 140F to 180F depending on the unit) then the issue is more than likely gas related.
 - a. You do not have enough inlet gas pressure, so check the inlet pressure for the unit and it should not go below 5"H2O (NG) during maximum operation (all fixtures and gas burning appliances running)
 - b. You are not getting enough gas into the burner, so check to make sure there are no obstructions in the manifold or burner. You can clean out the manifold orifices with a paper clip and the burner with compressed air to make sure they are all clean and free of debris.
2. If you are not hitting MM#31 but MM#32 is 140F-180F then the bypass valve on the unit is open too much and it may need to be checked or replaced.
3. If you are hitting your temperatures on MM#31 & MM#32 then go to MM#49. This is the fan speed correction. If the front cover is on and unit is running correctly MM#49 should always read 100. If it is reading high than that (example 106) this means the fan is over working by 6% and your issue is either air or venting related.

Items to check when the fan speed correction is high are;

 - a. Venting is too long with too many elbows (see installation manual for max venting runs)
 - b. The dipswitches for venting or high elevations are not set correctly (see installation manual for correct settings)
 - c. The venting is blocked (snow, ice, dead bird, etc)
 - d. The damper is damaged, bent, or even screws in the flue keeping the damper shut during operation.
 - e. The fan is dirty (lint from laundry, grease from in kitchen area, dust from outside, etc)

Hopefully this will help you in solving a 90 code. If you need further assistance please contact Noritz Technical Support at 866-766-7489.