

## Service Bulletin: TWH-G1-08

Model: 125HX, 125FX, 425HN, 425EF

# Pilot flame, no burner flame troubleshooting



# BOSCH

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### Introduction

Follow the procedures below and report results to Bosch Technical Support. This will assist in determining the cause and solution to the problem.

**Note:** This bulletin applies to 425HN models with serial numbers of FD685 or lower. For 425HN models with newer serial numbers ( $\geq$ FD686), refer to Service Bulletin CT-06.

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### Tools needed:

- ▶ Voltmeter/ multimeter

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### If the pilot lights, but the burners do not light:

A. If the sparking does not stop when pilot lights:

1. Check gas type on heater rating label on right side of cover. LP is for propane, NG is for natural gas. If heater gas type is incorrect, exchange heater for correct gas type. It is not practical to convert a heater to a different gas type.
2. Pilot flame must be blue and completely engulf flame sensor. If pilot flame is yellow or orange or does not hit flame sensor, pilot orifice must be cleaned. See bulletin G1-15.
3. Clean flame sensor gently with fine steel wool. Be sure to clean the 90° bend on the flame sensor .
4. Check flame sensor wire connection.

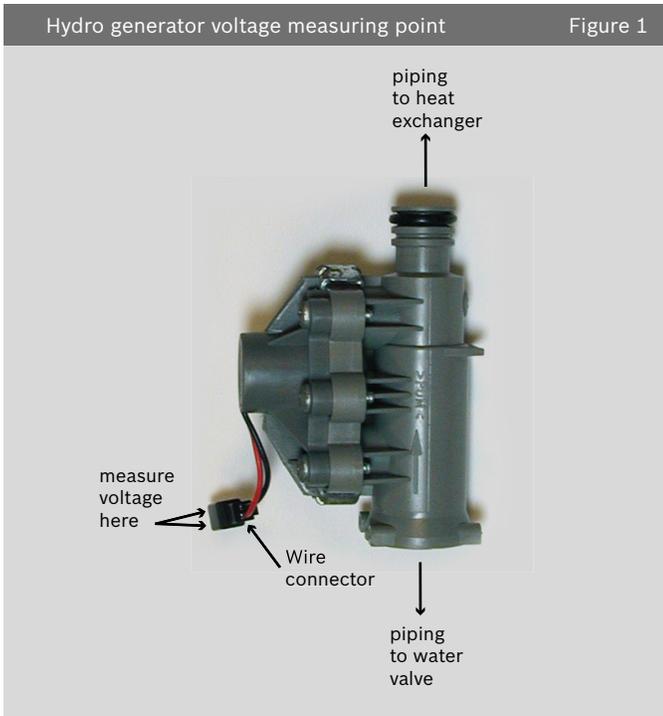
B. If the sparking stops when pilot lights:

1. Measure voltage between burner electrovalve wire connection and ground when pilot is lit; must be at least 1.1VDC.
  - a. If less, ignition unit may be faulty.
  - b. If voltage is adequate, check burner electrovalve function: Turn off gas supply to heater, remove wire connection from electrovalve, connect positive terminal from a single cell battery (1.2-1.5VDC) to electrovalve terminal and a jumper wire from negative terminal of battery to ground. When connection is complete, there should be an audible "click" from the electrovalve. If no click is heard, electrovalve may be faulty.
2. Check wire from ignition unit to burner electrovalve and connection at electrovalve. If there is corrosion, clean terminal with a pencil eraser.
3. The gas valve may be faulty. Contact Bosch Tech Support for further information.
4. Measure gas pressure at inlet tap. See G1-04. If inadequate, check for inverted or locked Maxitrol regulator. If locked, see G1-16.
5. On 425HN (before serial number 686), 125HX and 125FX models:
  - a. With flow control knob turned to full clockwise, the heater has an activation rate of about .5 gallons per minute but if knob is turned full counter-clockwise, the activation rate will rise to about 1 gallon per minute. At that setting, if the flow rate is between .5 and 1 gallon per minute, the pilot will light but not the burners.
  - b. If water valve parts are worn or sticking, rebuild water valve with repair kit and lubricate new parts. See G1-32.

### On 125HX, 425HN only:

- C. If the pilot flame stays lit less than 5 seconds or is pulsing, check color of wires coming out of hydro generator:
1. If the wires are blue and brown, the voltage supplied to the ignition unit by the hydro generator is AC and must be changed to DC within the ignition unit. Measure DC voltage at pilot electrovalve when pilot is lit. If it fluctuates, the voltage is AC and electrovalve will not function correctly. Ignition box may be faulty or a replacement hydro generator is supplying AC voltage.

2. If the wires are black and red, the voltage supplied to the ignition unit by the hydro generator is DC. Measure voltage at hydro generator wire connector with water flowing. See Figure 1. If less than 1.3VDC, clean or replace hydro generator. See bulletin G1-17.



**Note:** Hydro generator design may vary



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